Cresswell Shore © NBP Photographer John Williamson

Working with Wildlife

Partnership Action Plan

Plan Co-ordinator	Northumberland Biodiversity Partnership
Plan Author	Elaine Jaggs
Plan Lead	Partnership Steering Group
Latest version	January 2008

Description

The Northumberland Biodiversity Partnership is a collection of organisations and individuals working together to conserve, enhance and promote biodiversity in Northumberland.

The word 'biodiversity' comes from the term 'biological diversity' and simply means all living plants and animals on earth and the complex and fragile natural systems that they support. This includes everything from plankton to puffins, weasels to willows and backyards to border mires.

The members of the Northumberland Biodiversity Partnership deliver action for wildlife through implementation of the Biodiversity Action Plan (BAP) for Northumberland. Individual plans have been developed to reflect those habitats and species which are characteristic of Northumberland's natural heritage and most at risk from loss, fragmentation and deterioration of quality. Specific actions within the individual plans vary depending on the species or habitat and range from practical conservation management and survey work, through to promotional activities and working with policy makers.

The Northumberland BAP enables partners to focus resources and develop local projects in order to conserve and enhance the threatened habitats and species. Action at a local level in Northumberland helps to contribute to the conservation of English, UK and world-wide biodiversity.

The action plans were developed by members of the six habitat groups for the Northumberland Biodiversity Partnership:

- Coastal
- Lowland
- Rivers & Wetlands
- Upland
- Urban
- Woodland

Each group is made up of environmental professionals that operate in Northumberland. They have selected the habitats to be included in the BAP based on their level of protection, current threatened status and local knowledge of their extent and condition in Northumberland. The conservation of habitats will automatically lead to improvements for various species so each group only selected BAP species that they deemed to require specific conservation measures to reduce threats. The list of habitats and species action plans has been approved by the partnership steering group.

The action plans for Northumberland are:

Habitats	Species
Blanket Bog	Barn Owl
Brownfield Land	Bats
Built Environment	Black Grouse
Calaminarian Grassland	Coastal Birds
Coastal Heathland	Common Seal
Fen, Marsh & Swamp	Dingy Skipper
Gardens & Allotments	Dormouse
Heather Moorland	Farmland Birds
Lowland Heathland	Freshwater Fish
Lowland Meadows & Pastures	Freshwater Pearl Mussel
Maritime Cliffs & Slopes	Garden Birds
Native Woodland	Great Crested Newt
Ponds, Lakes & Reservoirs	Grey Seal
Recreational & Amenity Spaces	Hedgehog
Reedbeds	Otter
Rivers & Streams	Red Squirrel
Rocky Shore, Reefs & Islands	River Jelly Lichen
Saline Lagoons	Upland Waders
Saltmarsh & Mudflat	Violet Crystalwort
Sand Dunes	Water Rock Bristle
Transport Corridors	Water Vole
Trees & Hedges	White Clawed Crayfish
Upland Hay Meadows	
Whin Grassland	

Partnership Action Plan

Each action plan provides a brief description of its habitat or species, which is followed by a list of the key legislation that it is protected by. The amount of information that is known about presence and distribution in Northumberland is then briefly explained and where little or no data has been recorded this is stated. Specific threats that inhibit the survival or expansion of a habitat or species are then listed, followed by sources of further information such as relevant websites or journal articles.

The key sections of each document are the targets and priority actions. Targets are identified for each plan against which the partnership can measure progress towards the conservation of that habitat or species. Finally, the priority actions that need to be carried out in order to help achieve the targets are listed along with dates by which they must be achieved. Action points are not static and continuous review of the BAP will ensure that they are constantly updated. Biodiversity mapping for habitats and species in the county is being developed by the partnership so that visual representations of their distribution throughout the county can be included in the respective action plan.

Each action plan has a named lead partner, which is the body responsible for the overall coordination of the actions and the gathering and reporting of information on work progress.

Conservation Status

The different habitats and species within this action plan are each afforded various levels of protection under a variety of environmental legislation and these are identified in each specific plan. Key pieces of environmental legislation that organisations in Northumberland should be aware of when planning any operations with implications for biodiversity include:

- EC Habitats Directive
- EC Birds Directive
- Bern Convention
- EIA Directive
- SEA Directive
- Wildlife & Countryside Act 1981
- Countryside and Rights of Way Act 2000
- Environmental Impact Assessment (Agriculture) (England) Regulations 2006
- Natural Environment & Rural Communities Act 2006
- Planning Policy Statement 9
- UK Biodiversity Action Plan
- North East Biodiversity Action Plan
- UK Red Data List
- Northumberland Red Data List

Current Extent in Northumberland

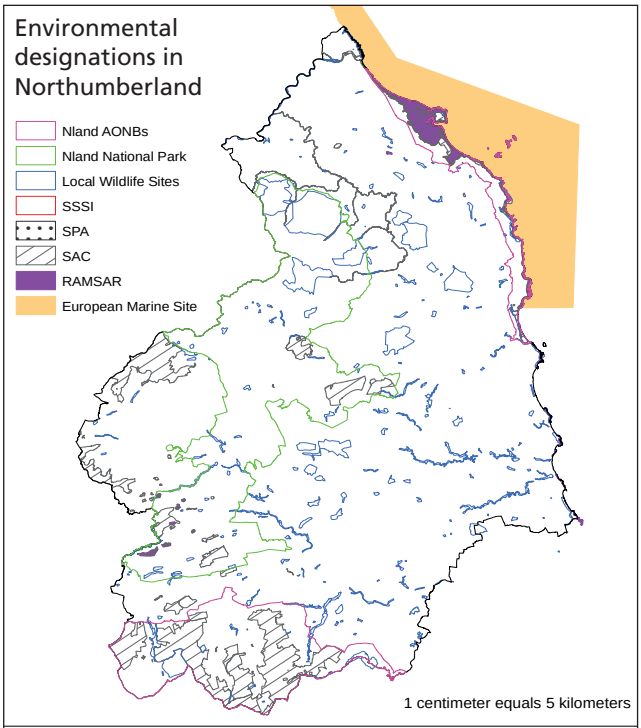
There is currently no central ecological information centre in Northumberland and this makes it difficult to ascertain exactly how much information is in existence and for what particular habitat or species. The Northumberland Biodiversity Partnership will continue to support the development of the Exploring Your Environment (EYE) project to hopefully develop into an ecological record centre for the North East and will also urge its partners to submit their information to such a central source. Information will then be accessible by all and contribute significantly to both strategic planning and development control.

Northumberland is home to a wide variety of important wildlife and as such certain areas are specifically designated for their wildlife importance. The following environmental designations exist within Northumberland:

- Special Areas of Conservation (SAC) - designated under the EC Habitats Directive as a network of sites of European importance (Natura 2000)
- Special Protection Areas (SPA) – designated for their importance for birds under the EC Birds Directive
- RAMSAR – designated for wetlands of particular importance, especially as wildfowl habitat following the convention on wetlands of international importance in 1971
- Northumberland National Park – one of 14 parks designated in the UK for their spectacular and valued landscapes whose natural beauty, wildlife and cultural heritage is conserved and enhanced by the national park authority
- Area of Outstanding Natural Beauty (AONB) – precious landscapes whose distinctive character and natural beauty are so outstanding that they have been safeguarded. Northumberland is covered by all of the Northumberland Coast AONB and part of the North Pennines AONB.
- National Nature Reserves (NNR) - areas of national importance for nature conservation. Owned or leased by Natural England or other approved bodies, or managed by agreement with landowners.
- Sites of Special Scientific Interest (SSSI) - selected and notified by Natural England under the Countryside and Rights of Way Act 2000 with the aim of safeguarding the best examples of habitat types, sites with notable species and sites of geological importance.
- Local Nature Reserve (LNR) – places with wildlife or geological features that are of specific interest locally declared by local authorities.
- Local Wildlife Sites (LWS) – locally valued non-statutory sites declared by local authorities.

Not all priority habitats will be protected by land designations and it is important to pay particular attention to these habitats as they will be most under threat from development.

Partnership Action Plan



Current Factors Causing Loss or Decline

Each individual action plan identifies the threats specific to that habitat or species. There are however a number of key overarching threats that apply to all environments which are identified below.

- Recreational pressure
- Development
- Habitat fragmentation
- Nutrient enrichment
- Unsuitable management
- Sterilisation of the 'wild' through over tidiness
- Invasive species
- Climate change
- Vandalism

Further Information

Northumberland Biodiversity Partnership website
www.northumberlandbiodiversity.org.uk

Exploring Your Environment (EYE) Project website
www.eyeproject.org.uk

Environmental Designations, Natural England website
www.naturalengland.gov.uk

Local Wildlife Sites data, Northumberland Wildlife Trust
Tel: 0191 2846884

Targets

Create numeric values for the 'maintain', 'achieve condition', 'restore' and 'expand/increase' targets in each relevant habitat and species action plan where not already done so based on new survey information by 2010.

Deliver all 'maintain extent' targets for Northumberland BAP habitats and species in line with the 'countdown 2010' programme by 2010.

Create and maintain a website for the Northumberland Biodiversity Partnership by 2007.

Include specific objectives for biodiversity conservation in the community strategy for Northumberland by 2008.

Include specific objectives for biodiversity conservation in the Local Area Agreement for Northumberland by 2008.

Include specific policies for biodiversity conservation in the Local Development Framework for the new Northumberland authority by 2015.

Create and maintain a computer based mapping system for BAP habitats and species in Northumberland by 2010.

Create and maintain a system to ensure the conservation of local wildlife sites in Northumberland by 2010.

Produce a targeted promotional campaign using key Northumberland BAP species to encourage members of the public to record wildlife sightings in Northumberland on the EYE Project website by 2008.

Produce an annual report on progress towards the targets in the Northumberland Biodiversity Action Plan by 2008.

Ensure that 95% of SSSI's in Northumberland are in unfavourable recovering or favourable condition by 2010.

Create and maintain an up to date reference of biodiversity related legislation by 2008.

Create a series of information fact sheets on the invasive species found in Northumberland by 2009.

Create and maintain an image library of the habitats and species in the Northumberland BAP for use by partners in promotional material by 2010.

Review the Northumberland BAP in 2015.

Partnership Action Plan

Code	Priority Actions	Date
NBP A01	Input the targets and actions in the revised Northumberland BAP on to the National Biodiversity Action Recording System (BARS)	2008
NBP A02	Record progress on targets and actions in the Northumberland BAP on the national Biodiversity Action Recording System (BARS)	ongoing
NBP A03	Ensure that the biodiversity habitat and species maps for Northumberland are available to all planning departments for use in development control and strategic planning	ongoing
NBP A04	Develop local partnership projects to deliver targets and actions for specific habitats and species in the Northumberland BAP	ongoing
NBP A05	Continue to support the creation of an environmental records centre for the North East	ongoing
NBP A06	Raise public awareness and involvement in conserving and enhancing Northumberland's biodiversity resource	ongoing
NBP A07	Update plans on a regular basis as conditions and information changes and actions are completed	ongoing

Barn Owl © EYE Project

Working with Wildlife

Barn Owl *(Tyto Alba)* Species Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Ian Graham
Plan Lead	RSPB
Latest version	January 2008

Description

The barn owl is a medium sized owl with a distinctive golden-brown back, white heart shaped face and white under parts. An average barn owl is 35 centimetres in length, with a wingspan of 90 centimetres. They can weigh up to 400 grams depending on the time of year and are believed to live for 3 to 4 years although much older owls have been recorded.

The diet of the barn owl consists mainly of small mammals such as field voles, common shrew, wood mouse and brown rats. They hunt low in flight over rough grassland but are often seen hunting from exposed perches such as fence posts. Their exceptional hearing and almost silent flight enables them to locate prey by sound alone and approach them undetected. Prey is usually swallowed whole and the parts that can't be digested such as bones, teeth and fur are regurgitated as a dark, smooth, cylindrical pellet.

The barn owl is a UK resident and is typically found in low intensity agricultural areas, field margins, mature rough grassland, banks of watercourses, along woodland edges, young tree plantations, hedgerows, fencerows and coastal saltmarsh. Recent studies suggest that a pair of owls require about 20-25 square kilometres of habitat with several suitable roosting sites, such as quiet buildings, tree cavities/hollows or nest boxes. The female will lay between four and seven eggs and incubate them for a month. The young birds will fly at 50 days and are fully grown from 10 weeks old. Breeding success depends on the availability of the main prey species which causes significant year to year variation in performance. It is estimated that 75% of young die in the first year.

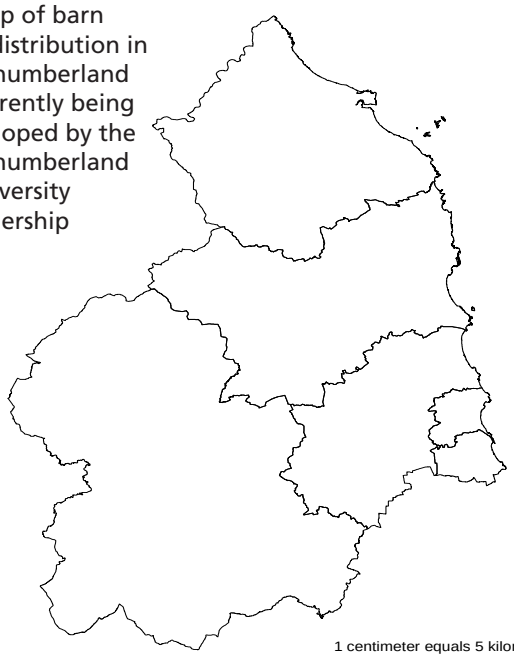
Conservation Status

Wildlife & Countryside Act 1981, Schedule 1
Birds of Conservation Concern: Amber Conservation Status
Red Data Birds in Britain 1990
Red Data Book for Northumberland 1998

Current Extent in Northumberland

Recent survey work in a specific section of the county identified 53 breeding pairs over 109 locations, with only 9 successfully rearing young. (British Trust for Ornithology, 2005). In Britain the barn owl is on the extreme northern fringe of its world breeding territory and is highly sensitive to even small changes in climate. The RSPB estimates that there are 4,400 breeding pairs nationally.

A map of barn owl distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



Barn Owl *(Tyto alba)* Species Action Plan

Current Factors Causing Loss or Decline

- Climatic changes causing lying snow or prolonged rainfall which dramatically affects ability to feed
- Loss of prey rich habitat as a result of agricultural intensification
- Reduction in winter food source through mechanical harvesting and hygienic grain storage which affects the small rodent population
- Secondary poisoning from rodenticides
- Loss of hunting habitat to large housing and industrial estates
- Loss of suitable nest and roost sites due to loss of mature trees, hedgerow clearance, conversion/ demolition of old farm buildings and human disturbance
- Increased road traffic collisions caused by severe pruning of hedgerows allowing owls to fly low over roads and use of road verges for hunting due to loss of other suitable habitat

Associated Action Plans

Built Environment
Coastal Saltmarsh
Lowland Meadows and Pastures
Rivers & Streams
Trees and Hedges

Further Information

The Barn Owl Trust website - http://www.barnowltrust.org.uk/index.html

RSPB website - http://www.rspb.org.uk/wildlife/birdguide/name/b/barnowl

The Hawk and Owl Trust website - http://www.hawkandowl.org

The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007, RSPB.

Targets

Maintain the current population of breeding barn owls in Northumberland by 2010

Maintain the current range of barn owls in Northumberland by 2010

Increase the population of breeding barn owls in Northumberland by 2015

Increase the range of barn owls in Northumberland by 2015

Code	Priority Actions	Date
BO A01	Continue to establish baseline population and distribution data by encouraging the reporting of sightings and locating and monitoring breeding pairs	2010
BO A02	Ring known breeding pairs and juveniles	ongoing
BO A03	Use survey data to quantify targets for maintaining and increasing barn owl population and range in Northumberland	2010
BO A04	Identify suitable habitat for feeding and nesting, particularly around known nest sites	2010
BO A05	Encourage landowners and managers to undertake appropriate habitat enhancement works in identified suitable areas	2010
BO A06	Install 20 nest boxes in areas of suitable habitat where natural nest sites are in short supply	2010
BO A07	Highlight the particular problem of loss of nesting sites from farm building conversions to local authority planning officers and seek specific policy on rural building change of use	2010
BO A08	Promote a planning design guide for barn owl box construction in building conversions	2008
BO A09	Promote the importance of veteran trees as potential nest and roost sites	ongoing
BO A10	Promote the barn owl as a flagship species for conservation and management of wet grassland and meadows in Northumberland	ongoing

Brown Long Eared Bat © Ruth Hadden

Working with Wildlife

Bats Species Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Sam Talbot & the Northumberland Bat Group
Plan Lead	Northumberland Bat Group
Latest version	January 2008

Description

10 of the 17 British species of bat have been recorded in Northumberland and although the different species have different requirements their needs are broadly similar. All are insectivorous and need insect-rich wetland, pasture or deciduous woodland in which to hunt. They navigate to feeding sites from their roosts using linear land features such as hedgerows, watercourses, avenues of trees or roads. All bats need a warm safe place to roost in the summer such as a hollow tree, in a building or in cavities external to a building such as hanging tiles, soffits and bargeboards or timber fascias. All bats hibernate and so need a cold, draft-free and safe place to spend the winter months, often within stone structures, mineshafts, large trees or even behind rotten timber window frames in wall cavities.

Pipistrelle bats are the most abundant and widespread bat species in the UK, but are thought to have undergone a significant decline in numbers in the last century. Estimates from the National Bat Colony Survey suggest a population decline of approximately 70% between 1978 and 1993. The current pre-breeding population estimate for the UK stands at approximately 2,000,000. The problems of estimating population trends have been compounded by the recent discovery that there are 3 distinct species of Pipistrelle bat in the UK.

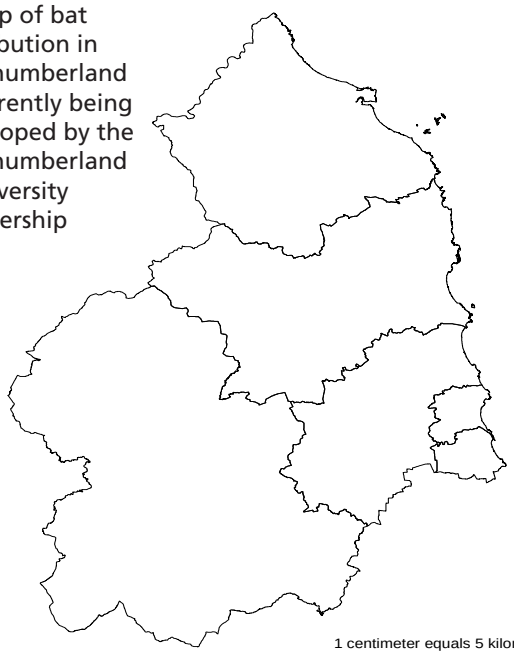
Conservation Status

Bern Convention, Appendix III
EC Habitats Directive, Annex IV
Bonn Convention, Appendix II
Conservation (Natural Habitats) Regulations 1994, Regulation 38
Wildlife and Countryside Act 1981, Schedules 5 and 6
UK Biodiversity Action Plan Species – Brown Long Eared , Noctule & Soprano Pipistrelle
North East Biodiversity Action Plan Species – Brandt's, Brown Long Eared, Daubenton's, Natterer's, Noctule & Whiskered

Current Extent in Northumberland

Species	Frequency
Brandt's bat *(Myotis brandtii)*	Rare
Brown Long Eared *(Plecotus auritus)*	Frequent
Common Pipistrelle *(Pipistrellus pipistrellus)*	Common
Daubenton's bat *(Myotis daubentonii)*	Frequent on water
Leisler's bat *(Nyctalus leisleri)*	Rare
Nathusius' Pipistrelle *(Pipistrellus nathusii)*	Rare
Natterer's bat *(Myotis nattereri)*	Uncommon
Noctule bat *(Nyctalus noctula)*	Scattered
Soprano Pipistrelle *(Pipistrellus pygmaeus)*	Common
Whiskered bat *(Myotis mystacinus)*	Uncommon

A map of bat distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Bats Species Action Plan

Current Factors Causing Loss or Decline

- Loss and fragmentation of insect-rich feeding habitats
- Loss of or damage to linear commuting routes such as tree-lines or hedgerows
- Loss of or damage to roosting sites, including buildings, hollow trees, and underground structures
- European protected species status not enforced by organisations when assessing planning applications
- Loss of many roosts through demolition and inappropriate building practices
- Reduction in the abundance and diversity of insect prey due to intensive agriculture
- Legal or illegal roost loss not being balanced by active general provision for bats elsewhere in new builds
- Predation of bats by domestic cats or accidental death by collision with vehicles

Associated Action Plans

Brownfield Land
Built Environment
Gardens & Allotments
Lowland Meadows & Pastures
Native Woodland
Ponds, Lakes and Reservoirs
Recreational & Amenity Spaces
Rivers & Streams
Transport Corridors

Further Information

This Bats action plan links to the Brown Long Eared, Noctule & Soprano Pipistrelle bat UK BAP action plans, all led by the Bat Conservation Trust.

Bat Conservation Trust - www.bats.org.uk

The Bat Conservation Trust, Unit 2, 15 Cloisters House, 8 Battersea Park Road, London, SW8 4BG. Tel: 020 7627 2629 Fax: 020 7627 2628

Targets

Maintain the current population of bats in Northumberland by 2010.

Maintain the current range of bats in Northumberland by 2010.

Code	Priority Actions	Date
B A01	Establish baseline knowledge of recorded bat roosts, swarming sites and hunting areas by mapping existing records	2008
B A02	Establish baseline knowledge of unrecorded areas through strategic car transect surveying and appealing to the public for roost reports.	2008
B A03	Monitor known bat roosts to establish population numbers	2010
B A04	Survey all old Pipistrelle roost records to establish which species is resident	2010
B A05	Review survey data to establish typical distributions for each bat species	2010
B A06	Identify importance of roosts to help inform future planning decisions	2010
B A07	Use the survey results to create numeric targets to maintain and increase the population and range of bats	2010
B A08	Create a display on bats and tour it through events and libraries	2009
B A09	Hold bat walks to promote bats and encourage people to submit roost records	ongoing
B A10	Engage schools and out of school groups through box making, craft activities and meet-the-bat events	ongoing
B A11	Continue to offer free general advice to householders and an injured bat rescue service via the Bat Advice Line	ongoing
B A12	Create advisory leaflets aimed at the construction sector and tree surgeons on how to deal with bats legally	2008
B A13	Prevent where possible, or mitigate against, any roost loss or habitat loss or fragmentation (including commuting roots)	ongoing
B A14	Require habitat enhancement as planning gain for all developments that adversely affect bat roosts	ongoing
B A15	Promote habitat enhancement through rural and farming grants	ongoing
B A16	Promote hedge cutting on at least a three-year cycle to increase hedge sizes and the establishment of new hedgerow trees. Lay hedges rather than flail where possible	ongoing
B A17	Install 20 suitable hibernation and summer roosts in areas known to be used by bats	2015

Black Grouse © northeastwildlife.co.uk

Working with Wildlife

Black Grouse *(Tetrao tetrix)* Species Action Plan

Plan Co-ordinator	Uplands Group
Plan Author	Elaine Jaggs
Plan Lead	Game & Wildlife Conservation Trust & Royal Society for the Protection of Birds
Latest version	February 2010

Description

Male black grouse or 'blackcocks' have glossy blue-black plumage with bright red patches over each eye called wattles and striking white stripes on each wing which can be seen when they are in flight. They have curved black tail feathers which they fan when displaying to reveal white under tail feathers.

The females or 'greyhens' have mottled brown feathers to camouflage them in heather and grass when nesting or feeding on the ground. They have a short, slightly forked tail and their white wing bars are narrower than on males. The female is slightly smaller than the male. Black grouse can live up to five years in the wild.

Adult black grouse have wide food requirements feeding on heather, herbs and grasses and the buds and berries from trees. Young chicks feed on insects. Black grouse therefore rely on a mosaic of habitats on moorland edges, where heather meets grassy fields and areas of scrub and woodland to provide sources of food all year round.

Studies on the dispersal patterns of black grouse show that juvenile females disperse on average 9 kilometres from their natal site compared with less than 1 kilometre by males. The male black grouse carry out early morning displays at clearings known as 'leks' to defend their territories and during spring compete for the attention of females to mate. The display involves strutting with their tails spread and heads held low whilst making their distinctive call.

Once mating is over the male takes no further part. The female makes a nest site on the ground in tall, reasonably dense, vegetation where she will lay 6 to 13 eggs which will hatch in mid to late June. Chicks leave the nest immediately, following the hen to feed in insect rich vegetation and become independent after 2 to 3 months. Cock poults will leave the family group first in early September, followed by the females in October and November.

Conservation Status

UK Birds of Conservation Concern - Red Conservation Status
UK Biodiversity Action Plan Species
North East Biodiversity Action Plan Species
Games Act, closed season 11th December to 19th August

Current Extent in Northumberland

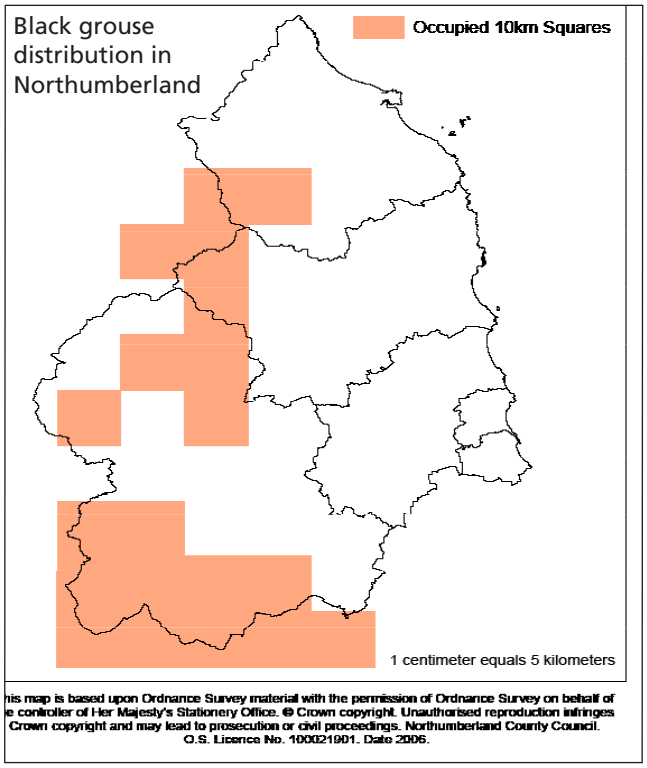
Measures to arrest the decline of black grouse in England are being coordinated by the North Pennines Black Grouse Recovery Project. The project covers the three main areas that contain black grouse in England which are the North Pennines AONB, the Yorkshire Dales and north-west Northumberland.

The county of Northumberland is included in two of these areas; the North Pennines AONB and north-west Northumberland.

The population of lekking males in the North Pennines AONB was recorded as 773 males in 1998 and has increased to 1029 males in 2006. The overall population covers a range of 93 occupied 5 kilometre grid squares, an increase of 19 grid squares since 1998.

The population of lekking males in north-west Northumberland was recorded as 61 males in 1998 and has declined to 50 males in 2006. The overall population covers a range of 12 occupied 5 kilometre grid squares, which has remained the same since 1998. The population in this area is isolated from the core North Pennines population and specific conservation measures will be required in order to arrest this decline.

Black Grouse *(Tetrao tetrix)* Species Action Plan



Current Factors Causing Loss or Decline

- Changes in farming
- Predation
- Poor weather conditions
- Fence collisions

Associated Action Plans

Blanket Bog
Heather Moorland
Native Woodland
Upland Hay Meadows

Further Information

This black grouse action plan links to the black grouse UK BAP action plan whose lead partners are the Game & Wildlife Conservation Trust and the Royal Society for the Protection of Birds.

Black Grouse UK website - http://www.blackgrouse.info/index.htm

The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007, RSPB

Targets

Increase the population of black grouse in England to 1,000 lekking males by 2010

Increase the range of the black grouse in England to 48 occupied 10 kilometre grid squares by 2010.

Code	Priority Actions	Date
BG A01	Ensure funding to continue the North Pennines Black Grouse Recovery Project	ongoing
BG A02	Continue to carry out brood counts on an annual basis to monitor breeding success	ongoing
BG A03	Continue to carry out lek counts every 4 years to monitor adult numbers	2010
BG A04	Provide free advisory visits to farmers and land owners to encourage them to improve conditions for black grouse	ongoing
BG A05	Ensure funding is available through agri-environment schemes and forestry grants to deliver landscape scale habitat improvements for black grouse	ongoing
BG A06	Continue to promote the code of conduct for bird watchers when observing black grouse	ongoing
BG A07	Promote and support efforts to secure and expand the range of black grouse in Northumberland	2010

Haughton Common © NBP Photographer John Williamson

Working with Wildlife

Blanket Bog Habitat Action Plan

Plan Co-ordinator	Uplands Group
Plan Author	Gill Thompson
Plan Lead	North Pennines Area of Outstanding Natural Beauty (AONB)
Latest version	January 2008

Description

Blanket bog is a habitat dominated by heather, bogmosses, cottongrass or deergrass that occurs over the mantle of peat that covers extensive areas of plateaux and gentle slopes in the uplands of north and west Britain. This has formed over the past 1,500 - 9,000 years (and is still forming) in areas where the impeded decay of plants caused by the cool wet environment, and acidic nature of the underlying mineral materials has favoured the accumulation of peat rather than the development of a mineral soil. The vegetation of blanket bogs in Northumberland is dominated by a heather - harestail cotton-grass community, with expanses of Sphagnum moss in places. Also included in this plan are raised and intermediate mires which are deeper peat habitats which have formed in depressions.

Blanket bog is listed on Annex I to the EC Habitats Directive, and active blanket bog (bog which still supports a significant area of peat-forming vegetation) is a priority habitat type under the Directive, which means that its conservation is considered to be of the highest priority. Blanket bog is confined to cool, wet oceanic regions, and a major part of the total resource of this habitat in the European Union occurs in the UK.

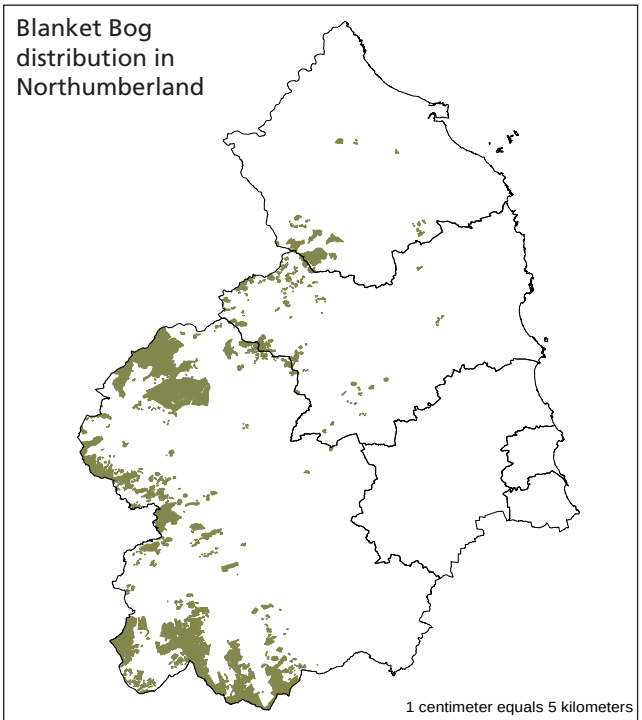
Conservation Status

Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

The approximate area of blanket bog in Northumberland is 29,388 hectares representing 2% of the UK and 14% of the English resource (based on the UK BAP figures of 1,485,000 and 215,000 hectares).

The key sites for blanket bog in Northumberland are the North Pennines, Border mires, Kielderhead and Emblehope Moors, the Cheviots and Otterburn mires.



Blanket Bog Habitat Action Plan

Current Factors Causing Loss or Decline

- Inappropriate burning
- Inappropriate management through over grazing
- Creation of moorland tracks
- Drainage (this is mostly historical)
- Formation and expansion of gully systems
- Tree regeneration – mainly on ungrazed sites in forests
- Windfarms
- Recreational pressure
- Vehicle pressure including all terrain vehicles and motorbikes

Associated Action Plans

Heather Moorland

Upland Waders

Black Grouse

Further Information

This blanket bog action plan links to the blanket bog UK BAP action plan, whose lead partner is Scottish Natural Heritage.

Lunn, A, 1976, The Vegetation of Northumberland

Targets

Maintain the current extent of blanket bog in Northumberland of 29,388 hectares by 2010.

Achieve favourable or recovering condition by appropriate management of blanket bog in Northumberland currently in unfavourable condition by 2010.

Code	Priority Actions	Date
BB A01	Accurately estimate the amount of blanket bog and mire in good condition	2008
BB A02	Use the condition assessment data to add a numeric value to the achieve favourable condition target for blanket bog	2008
BB A03	Block 100 kilometres of priority areas of grips in the North Pennines AONB	2008
BB A04	Identify locations and secure agreement for 100 kilometres of more ditch blocking in the North Pennines AONB	2010
BB A05	Carry out grip blocking on SSSI Border mires	2010
BB A06	Carry out grip blocking on other mires	ongoing
BB A07	Fence areas or achieve favourable grazing regimes	ongoing
BB A08	Remove tree regeneration on SSSI Border mire sites	ongoing
BB A09	Remove tree regeneration on other identified mire sites	ongoing
BB A10	Remove plantation forestry from SSSI Border mires and margins to maintain a minimum 30m buffer zone	2010
BB A11	Remove plantation forestry from other mires and margins to maintain a minimum 30m buffer zone	ongoing
BB A12	Establish environmental stewardship agreements for sites in poor condition including burning plans	ongoing
BB A13	Restore eroded areas caused by recreational pressure and provide sustainable surfaces where appropriate e.g. Simonside and Cheviot summit	2010
BB A14	Promote a precautionary approach to development e.g. windfarms and new tracks on or near blanket bogs	ongoing
BB A15	Remove derelict fences for landscape reasons and to prevent bird strike	ongoing
BB A16	Raise awareness about the importance and management of Northumberland's blanket bog and its associated species including its role in water management and climate change through publicity material, events and training	ongoing
UW A01	Compile a list of the key upland fields that are used as nesting and feeding sites by wading birds	2008

Former Bates Colliery © Elaine Jaggs

Working with Wildlife

Brownfield Land Habitat Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Elaine Jaggs
Plan Lead	Local Authorities
Latest version	January 2008

Description

The term 'brownfield' is applied to unused or vacant land which was previously occupied by human use, primarily by industry. Examples of industrial uses include:

- disused colliery sites
- spoil tips
- abandoned factories
- redundant dockland
- disused quarries
- industrial lagoons
- contaminated land
- former refuse tips
- restored open cast sites
- demolition sites

Disused railways, often associated as brownfield sites, are covered within the Transport Corridors Action Plan.

Brownfield sites are host to natural colonisers of the plant and animal communities and are characterised by a semi-natural, unmanaged nature. Soil quality and quantity is often poor, but a wide range of plants can grow in soils containing heavy metals.

Many brownfield sites are of a temporary nature as they await redevelopment. If a brownfield site is left undisturbed for a long period of time pioneer communities will develop through succession into habitats such as grassland, wetlands, scrub and woodland.

The biodiversity value of brownfield land is often underestimated. They are often described as being 'unsightly' and their ecological value misunderstood. Open ground is an important habitat for lichens, butterflies, moths, beetles and bees, and can act as an alternative for species that have declined due to the loss of native habitats in the wider countryside.

Local communities often use the sites for casual recreation.

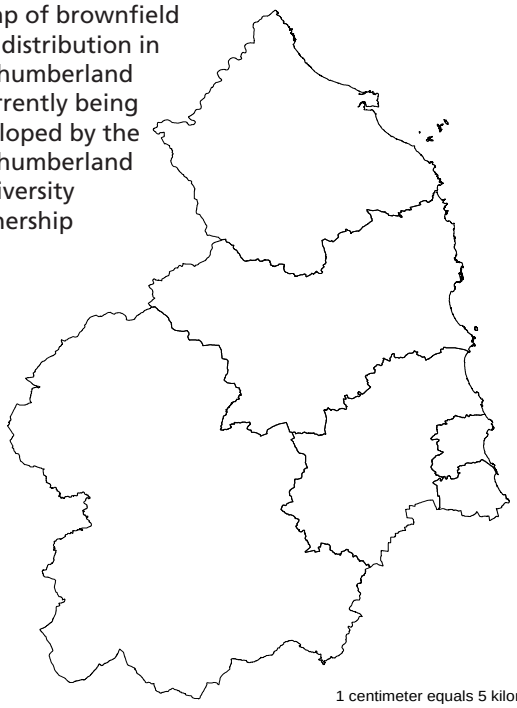
Conservation Status

Presently brownfield land as a habitat has no legal protection but individual species associated with sites may be protected

Current Extent in Northumberland

The extent of Brownfield land in Northumberland is currently unknown but the majority occurs in the South East of the county in the Blyth and Wansbeck local authority areas.

A map of brownfield land distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Brownfield Land Habitat Action Plan

Current Factors Causing Loss or Decline

- Pressure for previously developed land to be used for development for commercial or residential purposes resulting in consequent loss of habitat
- Loss of distinctive communities and uncommon species associated with waste and spoil tips
- Habitat fragmentation and isolation
- Small total area of brownfield sites
- Lack of management and spread of invasive species
- Excessive disturbance from recreational pressure
- Negative public perception due to site association with fly tipping, bonfires, motorbike scrambling, vandalism and anti-social behaviour
- Lack of public awareness of biodiversity values of a site
- Inappropriate management to create 'tidy' landscapes
- Lack of up to date information on the wildlife resource in brownfield sites

Associated Action Plans

Dingy Skipper

Further Information

ODPM, Nov 2006, Planning Policy Statement 3 (PPS3) – Housing

English Partnership, Nov 2003, Towards a National Brownfield Strategy

Targets

Maintain the current extent of brownfield land of wildlife value in Northumberland by 2010 (no net loss)

Code	Priority Actions	Date
BL A01	Identify all areas of brownfield land with significant wildlife value and confirm their conservation status	2008
BL A02	Monitor the conservation status of the brownfield resource	ongoing
BL A03	Use survey results to quantify the target to maintain the current extent and create targets for achieving condition on existing sites	2008
BL A04	Publish an information leaflet about the biodiversity value of derelict sites for planners and developers	2009
BL A05	Publish a promotional leaflet on Northumberland's key accessible brownfield sites to raise public awareness	2010
BL A06	Produce best practice management guidelines for brownfield land	2009
BL A07	Create management plans for all identified brownfield sites of conservation value	2010
BL A08	Carry out brownfield site focused events and activities across Northumberland	2011
BL A09	Promote the potential for the introduction/recovery programmes for flagship species which utilise brownfield sites, that are now rare or extinct	2009
BL A10	Identify potential areas for brownfield wildlife sites	2009
BL A11	Promote the retention of habitat interest features in the development of brownfield land in accordance with PPS9, paragraph 13	ongoing
BL A12	Promote the inclusion of habitat with 'brownfield' characteristics in mitigation schemes	ongoing
BL A13	Implement at least 3 brownfield site wildlife creation projects	2015

Wansbeck Riverside Country Park © NBP Photographer John Williamson

Working with Wildlife

Built Environment Habitat Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Gary Murphy
Plan Lead	Local Authorities
Latest version	January 2008

Description

This action plan covers the following:

- Buildings
- Structures such as: walls / bridges / tunnels / pylons / underground sites
- Hard surfacing such as: unit paving/ bound materials / hardcore / tarmac / concrete / railway ballast.

Historic buildings are often important for plants such as lichens, and modern buildings can be important to animals such as pipistrelle bats and their roosts. Birds such as the peregrine, kestrel and the feral pigeon may use buildings for roosting and nesting.

Canal, road and rail infrastructure can also form an important part of this habitat. Utilities such as sewage works, and structures relating to the supply of electricity and gas and communication facilities may also be used by birds and bats.

Plants and animals which use buildings and structures can be very common (e.g. brown rats, feral pigeons), or uncommon such as bats and barn owls. Some may spend all of their life-cycle living on/in a structure (e.g. lichens or ferns), or use the structure for part of their life-cycle, i.e. for nesting, and utilising local habitats for feeding.

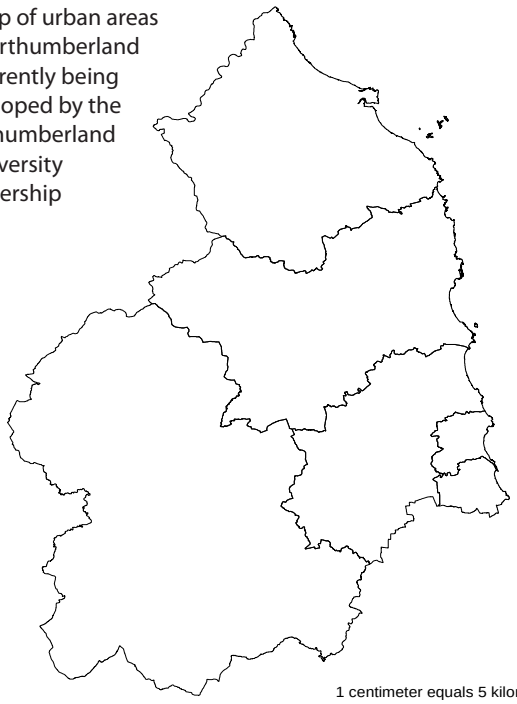
Conservation Status

Specific legislation for the built environment relates to the species that utilise its structures for roosting and nesting, such as birds and bats.

Current Extent in Northumberland

Little is known about the built environment as a habitat type compared with the more natural habitat types. The ecological requirements of many 'urban' species are poorly understood and options for management are often unclear. Without site specific knowledge, species cannot be protected even if they are covered by European law (for example bats). A lack of information about the habitat and the species which use it is the most important factor affecting this habitat.

A map of urban areas in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Built Environment Habitat Action Plan

Current Factors Causing Loss or Decline

- Lack of information
- Disturbance, destruction and fragmentation of the habitat
- Lack of framework for assessing the value and importance of the habitat
- Impractical to protect the habitat sometimes e.g. where maintenance of a structure for health and safety is required
- Lack of awareness of the importance of this habitat

Associated Action Plans

Bats

Barn Owl

Garden Birds

Brownfield Land

Transport Corridors

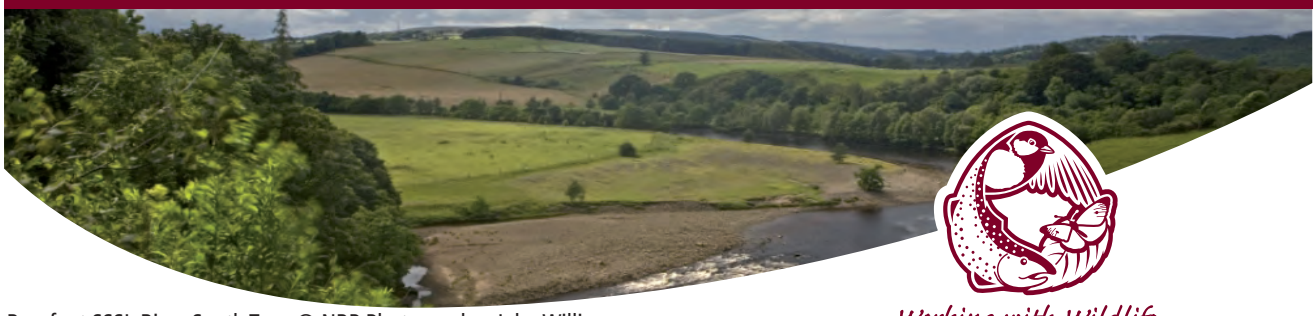
Further Information

Commission for Architecture and the Built Environment website - http://www.cabe.org.uk

Targets

Maintain the current extent of built environment sites containing legally protected species in Northumberland by 2010

Code	Priority Actions	Date
BE A01	Scope out the key types of structures that may be important for BAP priority species	2008
BE A02	Ensure that local wildlife site criteria include built structures as well as 'typical' habitats	2008
BE A03	Classify the best sites based upon the local wildlife site criteria	2010
BE A04	Develop and incorporate biodiversity design into new/converted structures through development plans and other policies	2008
BE A05	Provide guidelines for developers, local authorities and landowners about the importance of the built environment and how to manage and retain key features	2008



Burnfoot SSSI, River South Tyne © NBP Photographer John Williamson

Working with Wildlife

Calaminarian Grassland Habitat Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Northumberland Wildlife Trust
Latest version	January 2008

Description

Calaminarian grassland is found on alluvial shingle deposits that were contaminated by waste from historic mining for lead, silver, zinc, barium and fluorspar. Intense mining activity and large volumes of waste from the ore dressing process were released into the rivers and deposited downstream as fines trapped amongst the river cobbles. Contamination levels vary with the location and age of deposit, depending on which minerals were being mined at that time, or whether older contaminated deposits were being reworked by the river.

In recent years the rivers have cut deeper into their beds leaving these shingle bars above river level and only rarely subject to flooding. They soon develop short, open grassland dominated by species and ecotypes that are tolerant of toxic metals, low nutrient levels, drought and grazing.

The grassland community is structurally varied and may be species rich. It is typically grazed short by rabbits, and sometimes also by sheep. The most contaminated sites are sparsely vegetated with only the most metal tolerant vascular plants present, but lichens and bryophytes are abundant and may be highly diverse with as many as 30 lichen species per square metre. Less contaminated sites have a greater diversity of vascular plants, up to 22 per square metre, but fewer lichens and bryophytes.

Conservation Status

EC Habitats Directive, schedule II
UK Biodiversity Action Plan Habitat

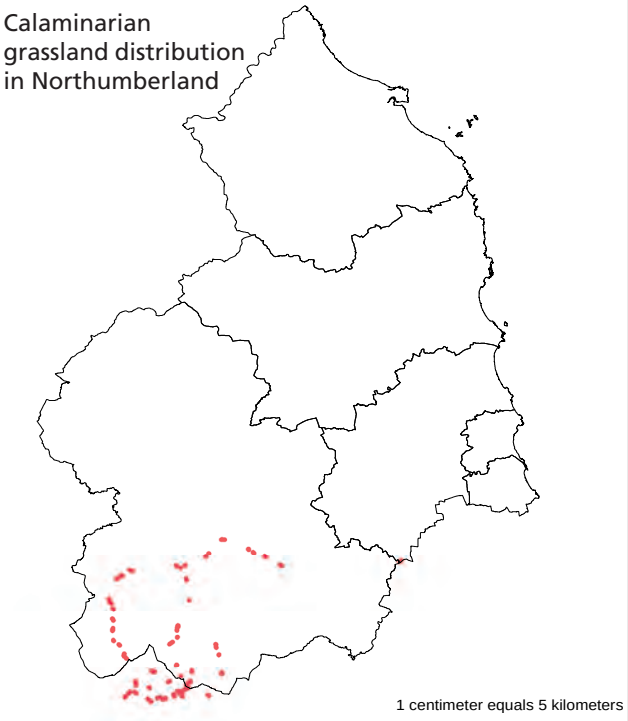
Current Extent in Northumberland

Calaminarian grassland is a widespread but uncommon habitat in Britain, generally associated with mine spoil or natural mineral outcrops in the Pennines, Cumbria, Wales and Scotland. The national extent is small but not precisely known, and the ranges and populations of metallophyte species have declined dramatically over the last 50 years as mine sites have been reworked for minerals or taken into agricultural use.

Calaminarian grassland occurs in the North Pennines on alluvial deposits of the rivers South Tyne and Allen and their tributaries, and also on places along the main River Tyne. So far 33 sites have been identified on these river systems, of which 27 (approximately 40 ha) are in Northumberland. Many of these are of geomorphological, as well as biological interest. The areas of calaminarian grassland are generally small and diminishing rapidly, with no more than 12ha in Northumberland now in favourable condition. A number of Calaminarian grassland sites are designated as SSSI's including Ninebanks River Shingles and Lambley River Shingles.

There are a few other heavy metal sites of importance in Northumberland at Carrshield and Coalcleugh in Allendale. These have important lichen and metallophyte populations and are in need of protection from disturbance and restoration. Important populations of rare helleborines are found at the lead and barium contaminated spoil at Stonecroft Mine.

Calaminarian Grassland Habitat Action Plan



Current Factors Causing Loss or Decline

- Insufficient grazing leading to mature gorse scrub
- Manuring by cattle leading to coarse grass development
- Extraction of gravel from shingle bars
- Disturbance by building of river defences
- Recreational pressure
- Tree planting
- Fly tipping
- Overbank flooding
- Invasive species such as Himalayan Balsam

Associated Action Plans

Rivers and Streams

Further Information

This calaminarian grassland action plan links to the calaminarian grassland UK BAP action plan.

National Vegetation Classification -
OV37 *Festuca ovina – Minuartia verna* grassland

European context - *Violetalia calaminariae*

Targets

Maintain the current extent of calaminarian grassland in Northumberland by 2010

Improve the condition of calaminarian grassland to favourable on sites in Northumberland currently assessed as being in an unfavourable condition by 2015

Code	Priority Actions	Date
CG A01	Identify all remaining calaminarian grassland sites in Northumberland	2008
CG A02	Use the data from recent calaminarian grassland surveys to quantify the action plan targets	2008
CG A03	Agree a methodology for condition monitoring of calaminarian grassland	2009
CG A04	Secure and maintain appropriate management for all calaminarian grassland sites	2010
CG A05	Ensure relevant sites are designated as SSSI and included in the South Tyne & Allen River Gravels candidate SAC	2010
CG A06	Identify and undertake gorse and scrub removal on appropriate sites	2010
CG A07	Research techniques for re-creation of calaminarian grassland communities	2015
CG A08	Carry out condition monitoring of calaminarian grassland in Northumberland	ongoing

Redshank & Sanderling © NBP Photographer John Williamson

Working with Wildlife

Coastal Birds Species Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Tom Cadwallender
Plan Lead	Northumberland Coast AONB
Latest version	January 2008

Description

The Northumberland Coast is an important location for many species of birds. Offshore islands, cliffs, estuaries and duneland provide nesting habitat for a range of migratory and resident species some of which are internationally, nationally or regionally important or their populations are at extremities of the range.

During migration estuarine mudflats, rocky outcrops and the open shore provide a vital feeding resource and shelter for a range of wading birds. Also a number of species of waders and wildfowl, some of whose Northumberland populations have been recognised as nationally or internationally important, overwinter in numbers in those same food rich areas, whilst offshore significant numbers of seaduck, divers and grebes also spend the winter.

A full list of associated breeding and wintering/passage birds is included as an appendix to this action plan.

Conservation Status

As recognition of the importance to birds, the Northumberland Coast has a range of ornithological related designations for example:

- Lindisfarne National Nature Reserve/Special Protection Area/ Ramsar/Site of Special Scientific Interest
- Farne Islands National Nature Reserve/Site of Special Scientific Interest
- Northumbria Coast Special Protection Area and Ramsar
- Northumberland Shore Site of Special Scientific Interest
- Coquet Island Special Protection Area/Site of Special Scientific Interest

The conservation status of each individual bird is included in the appendix.

Current Extent in Northumberland

The Northumberland Coast provides nesting habitat for a significant proportion of the UK's breeding seabirds including, currently, the largest colony of Roseate Tern and the southern most breeding site on the east coast of Eider. The tern and auk breeding colonies on the offshore islands of the Farnes and Coquet, the sea cliffs at Dunstanburgh and Meadow Haven and sandy estuary of Long Nanny, are all of international importance.

The Northumberland Coast plays an important role as part of the East Atlantic Flyway, with two species of shorebird present in internationally important numbers; turnstone (regularly over 1300) and purple sandpiper (regularly over 600). The populations of four other species regularly exceed 1% of the British wintering populations; 240 sanderling (1.6%), 37 ringed plover (1.6%), 1100 redshank (1.5%), and 3500 golden plover (1.8%).

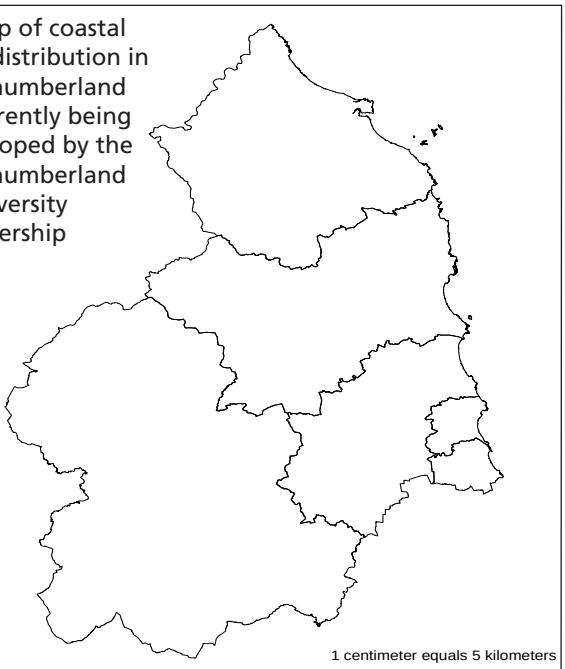
In particular the coastal habitats host good proportions of the UK's wintering wildfowl. The mudflats of Lindisfarne NNR is the only site for the Svalbard population of Brent goose, plus many thousands of wigeon, teal and pintail as well as the majority of the Northumberland Grey plover winter population.

The inter-tidal rock platform is an important resource used by wintering purple sandpipers, (they also utilise man-made structures such as Blyth Pier) and turnstones, although they are also commonly found along the seaweed-strewn strand-line of sandy beaches. The sanderling and ringed plover typically utilise sandy beaches such as Bamburgh, Newton Haven and Blyth South Beach. Wintering redshanks occur in a wide range of coastal habitats and at various places also roost on nearby farmland. Golden plover make extensive, but intermittent use of many fields close to the foreshore in addition to their use of the inter-tidal area.

The inter-tidal zone is also favoured all year round as a feeding area for eiders, which are present along the coast in nationally important numbers and use the mudflats as a feeding ground for their young.

Offshore along the whole coast, seaduck such as Common Scoter frequently occur in reasonable numbers alongside smaller populations of other seaduck such as Long-tailed duck and small numbers of divers and grebes.

Coastal Birds Species Action Plan



Current Factors Causing Loss or Decline

- Agricultural intensification of coastal farmland, restricting use by birds
- Nitrate run off - Loss of quality of feeding particularly of the mudflats where entromorpha could be restricting feeding opportunities.
- Casual recreation such as walking affecting high tide roosts and feeding sites for wintering and passage waders
- Water sports affecting feeding grounds of breeding birds such as little tern
- Unlicensed shooting
- Large scale bait digging reducing the food resource
- Over fishing of sand eels
- Oil spills and pollution incidents
- The future effects of climate change on breeding and wintering seasons
- Loss of artificial roost sites to redevelopment
- Loss of intertidal feeding resource through coastal squeeze

Associated Action Plans

Coastal Heathland
Maritime Cliffs and Slopes
Rocky Shore, Reefs and Islands
Saline Lagoons
Saltmarsh and Mudflat
Sand Dunes

Further Information

This coastal birds action plan links to: the roseate tern UK BAP action plan, led by the RSPB; the common scoter UK BAP action plan led by RSPB and the Wildfowl and Wetlands Trust; the lapwing UK BAP action plan and the curlew UK BAP action plan.

The Atlas of Wintering Birds in Northumbria: Northumberland and Tyneside Bird Club, 2003

The Atlas of Breeding Birds in Northumbria: Northumberland and Tyneside Bird Club, 1995

The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007, RSPB

The State of the UK's Birds, 2005

Important Bird Areas of European Union Importance – An explanation of the EU criteria applied in IBA, 2000

Targets

Maintain the current range of coastal birds in Northumberland by 2010

Increase the current range of coastal birds in Northumberland by 2015

Code	Priority Actions	Date
CB A01	Compile a list of the key coastal sites that are used as roosting and feeding sites by coastal birds	2008
CB A02	Encourage zoning of activities along the Northumberland Coast to minimise disturbance to coastal birds	ongoing
CB A03	Encourage ELS and HLS recruitment to increase feeding and roosting sites and address unsuitable agricultural management regimes	ongoing
CB A04	Promote the importance of Northumberland's coastal birds through publicity material, events and training	ongoing
CB A05	Create new nesting sites for kittiwakes in estuary areas	2010
CB A06	Minimise disturbance to sites used by wading birds at high tide when normal feeding sites are not available, known as high tide roosts	ongoing

Coastal Birds Species Action Plan Appendix

Breeding Coastal Birds

Species	Conservation Status			
	UK BAP	Regional BAP	UK Red List	UK Amber List
Arctic Tern - *Sterna paradisaea*		x		x
Common Tern - *Sterna hirundo*		x		
Cormorant - *Phalacrocorax carbo*				x
Eider - *Somateria mollissima*				x
Fulmar - *Fulmarus glacialis*				x
Guillemot - *Uria aalge*				x
Kittiwake - *Rissa tridactyla*				x
Little Tern - *Sterna albifrons*		x		x
Oystercatcher - *Haematopus ostralegus*				x
Puffin - *Fratercula arctica*				x
Razorbill - *Alca torda*				x
Red Breasted Merganser - *Mergus serrator (Occasional breeder)*				
Redshank - *Tringa tetanus*				x
Ringed Plover - *Charadrius hiaticula*		x		x
Roseate Tern - *Sterna dougalli*	x		x	
Sandwich Tern - *Sterna sanvicensis*		x		x
Shag - *Phalacrocorax aristotelis*				x
Shelduck - *Tadorna tadorna*				x

Red and Amber listed species as listed in 'The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007'

Coastal Birds Species Action Plan Appendix

Wintering Passage/Migrants

Species	Conservation Status			
	UK BAP	Regional BAP	UK Red List	UK Amber List
Bar-tailed Godwit - *Limosa lapponica*		x		x
Brent Goose (pale bellied) - *Branta bernicla hrota*		x		x
Common Scoter - *Melanitta nigra*	x		x	
Curlew - *Numenius arquarta*	x			x
Dunlin - *Calidris alpina*				x
Golden Plover - *Pluvialis apricaria*				x
Goldeneye - *Bucephala clagula*				x
Grey Plover - *Pluvialis squatarola*				x
Greylag Goose - *Anser anser*				x
Knot - *Calidris canutus*		x		x
Lapwing - *Vanellus vanellus*	x			x
Long-tailed Duck - *Clangula hyemalis*				x
Oystercatcher - *Haematopus ostralegus*				x
Pink Footed Goose - *Anser brachyhynchus*				x
Pintail - *Anas acuta*				x
Purple Sandpiper - *Calidris maritima*		x		x
Redshank - *Tringa tetanus*				x
Ringed Plover - *Charadrius hiaticula*		x		x
Sanderling - *Calidris alba*		x		
Teal - *Anas crecca*				x
Turnstone - *Arenaria interpres*		x		x
Velvet Scoter - *Melanitta fusca*				x
Wigeon - *Anas penelope*		x		x

Red and Amber listed species as listed in 'The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007'

Brada Hill SSSI © NBP Photographer John Williamson

Working with Wildlife

Coastal Heathland Habitat Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Sarah Coles & Steve Pullan
Plan Lead	Natural England
Latest version	January 2008

Description

Maritime cliff and slope vegetation exists as far as the limit of sea spray influence. Coastal heathland is heathland located adjacent to the coast but inland from that sea spray influence. Coastal heathland is composed of heather *(Calluna vulgaris)* and bell heather (*Erica cinerea*) and occurs in dune systems on stretches of fixed acidic sand that has stabilised and become acidic through leaching. It is also on formed sand which is naturally acidic i.e. washed glacial sands which were deposited at the end of the last ice age. Coastal heathland also occurs over rock and thin soils in transition/mosaic with grassland and has strong links to maritime cliff and slope communities.

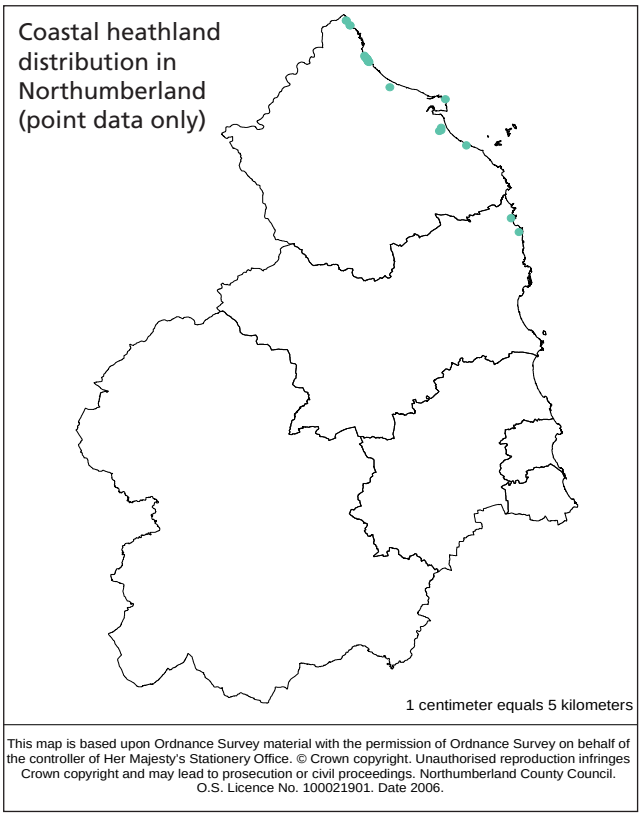
Historically coastal heathland may have been more extensive on the landward side of dune systems where sand has leached and become acidic. This land has been lost to agricultural improvement, fairway creation, and coastal roads and railways.

Conservation Status

Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

Heath is locally extensive in patches on the glacial sand of Ross Links sand dune system, part of Lindisfarne SSSI and the North Northumberland Dunes SAC. Heather is also present on Goswick golf course on the dune closest to the road. On Bamburgh golf course, part of Bamburgh Coast and Hills SSSI, the coastal heathland is associated with whin grassland. Heather patches also occur on the sandstone rocks between Cocklawburn and Spittal and is associated with maritime cliff communities.



Current Factors Causing Loss or Decline

- Inappropriate cutting regimes
- Overgrazing
- Scrub and bracken encroachment

Associated Action Plans

Maritime Cliffs and Slopes
Sand Dunes

Further Information

This coastal heathland action plan links to the lowland heathland UK BAP action plan, whose lead partner is Natural England.

Lunn, A, 2004, Northumberland, New Naturalist Series, Collins, UK.

Coastal Heathland Habitat Action Plan

Targets

Maintain the current extent of coastal heathland in Northumberland by 2010

Code	Priority Actions	Date
CH A01	Identify the locations of the current coastal heathland resource	2007
CH A02	Survey the extent, soil conditions, plant communities and habitat condition of the existing coastal heathland resource to inform improved management schemes	2009
CH A03	Utilise the survey results to quantify the maintain extent target	2009
CH A04	Identify possible locations for coastal heathland restoration and creation utilising the survey results from existing sites and create targets for achieving condition and increasing extent for coastal heathland	2010
CH A05	Work with the land manager to increase the structural diversity of the heath at Ross Links and increase extent through appropriate grazing and bracken control	2010
CH A06	Work with land owners and managers to maintain and expand the extent of heath on golf courses	2010
CH A07	Raise awareness about the importance and management of Northumberland's coastal heathland and its associated species through publicity material, events and training	ongoing

Common Seal © northeastwildlife.co.uk

Working with Wildlife

Common Seal *(Phoca vitulina)* Species Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Arthur Cranson & John Walton
Plan Lead	National Trust
Latest version	January 2008

Description

Common seals vary in colour from brown, grey or tan, with a uniform pattern of small darker patches. Males reach up to 2 metres in length and 160 kilograms in weight and are slightly bigger than females who reach approximately 1.7 metres and 130 kilograms. Common seals have a rounded head with no external ear flaps. Their eyes are situated halfway between the nose and the ear openings. Their nostrils form a 'v' shape when viewed head on, helping to distinguish them from the grey seal, whose nostrils slits are nearly parallel.

Common seals are known to eat a wide variety of fish, molluscs and crustaceans. They feed at sea, making short regular dives. As seals are at the top of the food chain they tend to accumulate pollutants such as heavy metals and polychlorinated biphenyls (PCBs) which can affect breeding success. Male common seals have a shorter life span than females; up to 20 years as opposed to 30 years. This is believed to relate to the stresses incurred through fighting in order to increase their chances of breeding.

Rocky shores, mud flats and sandy beaches are favoured haul out sites for resting, though common seals do not tend to gather in such large groups as grey seals. Females give birth to a single pup in June or July each year. Pups are very well developed at birth and can crawl and swim within a few hours. This enables common seals to breed in estuaries where sand banks are exposed for only part of the day. Pups grow rapidly from the rich milk that they suckle from their mothers. The mother will mate again immediately after weaning, with courtship and mating taking place under water. The annual moult of fur takes place after breeding in August.

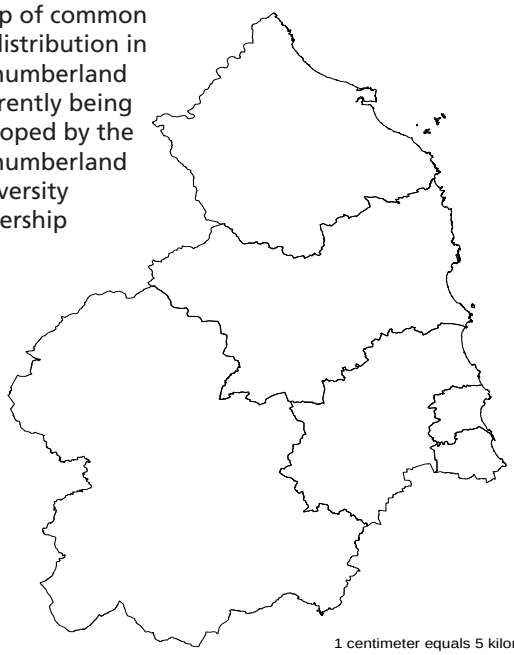
The distribution of the common seal extends across the North Atlantic and North Pacific Oceans. Common seals in Europe belong to a distinct sub-species. In the UK the most important haul out areas are around the coast of Scotland and on the east coast of England, particularly in the Wash. Seals can become entangled and drown in fishing nets and in the UK it is legal to shoot any seals that come near fisheries if you have a licence. The conservation of Seals Act provides a closed season for the common seal during its pupping season when it is illegal to kill or take seals without a licence.

Conservation Status

EC Habitats Directive, Annex II and V
Bern Convention, Appendix III
UK Biodiversity Action Plan Species
The Conservation of Seals Act 1970 – close season end May until end August
Habitats Regulations, Part III and schedule 3

Current Extent in Northumberland

A map of common seal distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Common Seal *(Phoca vitulina)* Species Action Plan

With an estimated UK population of approximately 34,000 breeding adults, the local population is small, and difficulties in monitoring the animals means there are no estimates of the regional population. There is a small breeding population on Lindisfarne of about twenty individuals, with single pups seen in 1993 and 2006. There is also a resident population of about five to six individuals in the Blyth estuary. They prefer estuaries and inlets rather than the open sea, preferring to haul out on mud flats and sand banks, though they will inhabit protected rocky shorelines in the more remote areas. Breeding density is very difficult to estimate as the pups usually take to the water within their first hour of life and are often missed when monitoring populations.

Current Factors Causing Loss or Decline

- Waterfront development of harbour/dock areas and land bordering estuaries, limiting quiet haul out sites
- Spread of PDV through contact with Weddel seals as a result of global warming
- Shooting of seals around fishing nets and salmon traps

Associated Action Plans

Coastal Saltmarsh and Mudflat

Rocky Shore, Reefs and Islands

Further Information

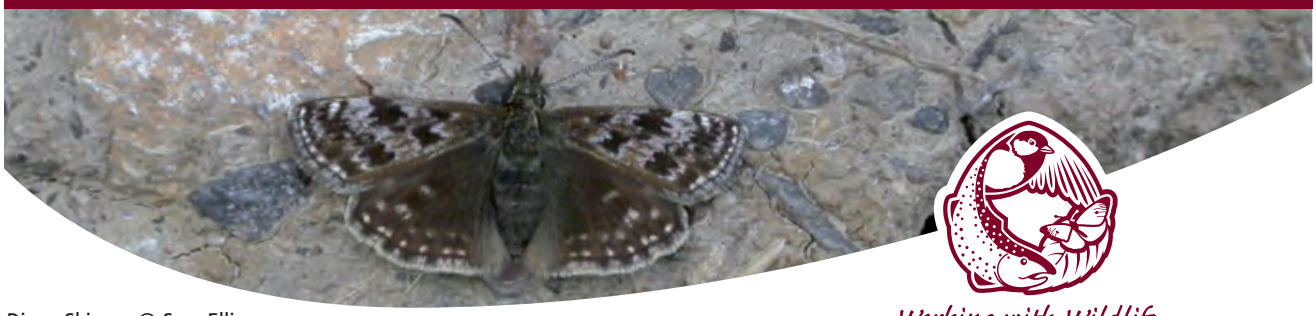
The Mammal Society - http://www.abdn.ac.uk/mammal/index.shtml

Seal Conservation Society - http://www.pinnipeds.org/

Targets

Maintain the current range of common seals in Northumberland by 2010

Code	Priority Actions	Date
CS A01	Collate all existing information on common seals in Northumberland and identify their regular haul out sites.	2008
CGS A02	Promote the importance of Northumberland's seals through publicity material, events and training to help to ameliorate the negative attitudes towards them and reduce disturbance to juveniles	ongoing
CGS A03	Seek to establish a code of practice for sight seeing boats and pleasure craft with specific reference to seal breeding areas	2009
CGS A04	Create an information leaflet on the procedures for dealing with a stranded, hurt or dead seal	2008
CGS A05	Promote the economic value of seals to the rural economy as part of the overall nature based tourism of the county	2009
CGS A06	Increase dialect with local fishing communities regarding the legal shooting of seals	2010



Dingy Skipper © Sam Ellis

Working with Wildlife

Dingy Skipper *(Erynnis tages)* Species Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Derek Hilton-Brown
Plan Lead	Butterfly Conservation
Latest version	January 2008

Description

From a distance the dingy skipper can easily be mistaken for a day-flying moth. Both the male and female are fast fliers and appear similar. It is a small well camouflaged brown and grey butterfly and is best seen on sunny days. During dull days or at night they rest with their wings folded back in a moth-like way.

They require a sparse sward with an abundance of the larval food plants, common bird's foot-trefoil, greater bird's foot-trefoil or horseshoe vetch. Bare ground is also important for this species, as much of it's time is spent basking in the sun with its wings wide open. Habitats include woodland rides and clearings, chalk downland, sand dune systems, heathland, old quarries, railway lines and waste ground. Periodic scrub cutting and rabbit grazing can prolong the suitability of sites for this butterfly.

Eggs are laid singly on young leaves of the food plants with larvae emerging in May. The larvae feed through the summer months, hiding in tents that they create by spinning leaves together. By August the larvae will be fully grown and will spin more leaves together to form a hibernaculum for the winter.

The Dingy Skipper is an inactive species and unlikely to colonise new areas of habitat unless they are in close proximity to existing populations. Colonies are distinctly small, containing fewer than 50 individuals at the peak flight period, which means they can easily be overlooked.

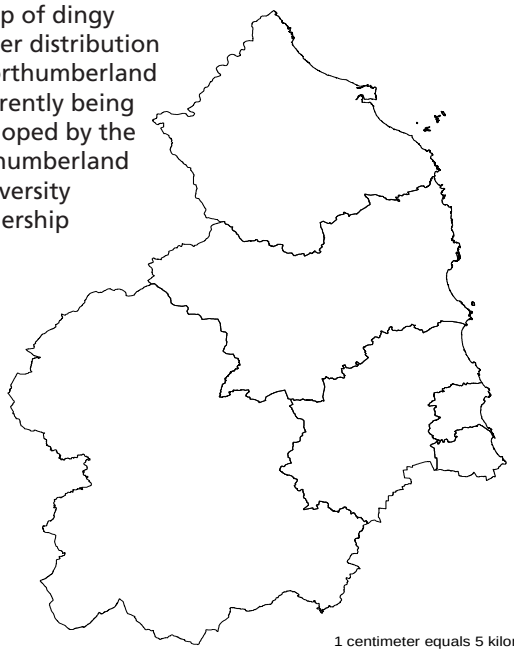
Conservation Status

UK Biodiversity Action Plan Species

Current Extent in Northumberland

In recent decades the Dingy skipper has had a 42% decline nationally. Although the species has no legal protection it is designated a medium priority both locally and nationally by Butterfly Conservation. Any site found supporting a dingy skipper population automatically meets the criteria for designation as a Local Wildlife Site. It is a highly localised species and except for a few isolated colonies in Scotland, Northumberland is generally considered the most northerly extent of its distribution. Many of the key sites in Northumberland tend to be post industrial sites in the south east of the county. There are no recent reports of dingy skipper to the north of the county.

A map of dingy skipper distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



Dingy Skipper *(Erynnis tages)* Species Action Plan

Current Factors Causing Loss or Decline

- Loss of habitat through development, agriculture and tree planting
- Lack of site management leading to natural succession by scrub and tall vegetation, which shades out the food plants and reduces bare ground
- Isolation of existing colonies
- Trampling of vegetation by humans in the larval and pupal stages

Associated Action Plans

Brownfield Land

Transport Corridors

Lowland Meadows & Pastures

Further Information

This dingy skipper action plan links to the dingy skipper UK BAP action plan

Butterfly Conservation website - http://www.butterfly-conservation.org/index.php

United Kingdom Butterfly Monitoring Scheme website – http://www.ukbms.org/default.htm

UK Butterflies website - http://www.ukbutterflies.co.uk/index.php

Targets

Maintain the current range of the dingy skipper in Northumberland by 2010

Increase the current range of the dingy skipper in Northumberland by 2015

Code	Priority Actions	Date
DS A01	Carry out monitoring at all key sites to determine any change in status	ongoing
DS A02	Secure the protection of all known dingy skipper sites	ongoing
DS A03	Ensure that land owners and managers are aware of the presence of the species and establish appropriate methods of habitat management	2009
DS A04	Include the habitat requirements of dingy skipper when drawing up mitigation or restoration measures in the development control process where sites are located adjacent to existing colonies	ongoing
DS A05	Seek and develop opportunities to establish new colonies	ongoing
DS A06	Re-survey locations where current status is not clear	2009

Allen Banks © NBP Photographer John Williamson

Working with Wildlife

Dormouse *(Muscardinus avellanarius)*

Species Action Plan

Plan Co-ordinator	Woodland Group
Plan Author	Denis Fleming
Plan Lead	National Trust
Latest version	January 2008

Description

The dormouse has characteristic sandy coloured fur, bulging black eyes and a thick bushy tail and rarely exceeds 70mm long with a tail of similar length. Dormice live in and amongst trees and shrubs being mainly active between 2-10 metres off the ground but at times 10-20 metres in tree canopies. Dormice rarely go more than 70 metres from their day nests with most remaining within 50 metres of it which they exploit seasonally according to food availability such as ripe nuts, berries, flowers and invertebrates. Low population density (typically dormice occur at a density of 3-5 per hectare) coupled with low dispersal ability and a low annual reproductive rate renders dormice extremely vulnerable to population decline. Well developed and structurally diverse woodland is considered to be the most suitable habitat for dormice. A shrub layer is critical; as this increases so do numbers of dormice.

Hibernation takes place between November and March (Northumberland) to save energy when food is unavailable or limited. Dormice hibernate at ground level in woven nests, under moss or leaves, under brushwood as well as among roots of trees and bushes. In early summer dormice will become inactive if food is in short supply or if the weather is wet and windy which prevents foraging. In Britain dormice can spend up to half the year in hibernation and be torpid much of the remaining time.

Dormice often build nests in low shrubs during summer as well as use tree holes for nest sites. They also use a wide variety of places during daylight hours including old bird nests, squirrel dreys and specially designed dormouse boxes. In Britain, day and breeding nests have also been located within the cascade of conifer needles that form on the lower branches of trees. In Northumberland woodrush has often been found woven into nests along with grasses. Leaves have been found to be used as bulk in nest boxes.

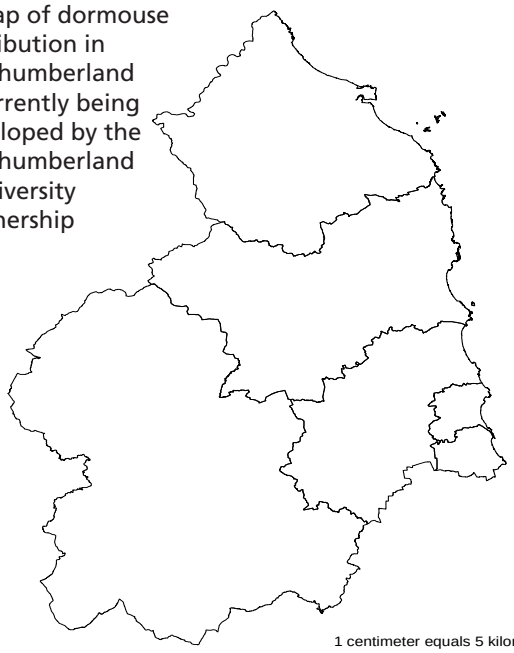
Conservation Status

Wildlife & Countryside Act 1981, Schedule 6
UK Biodiversity Action Plan Species
North East Biodiversity Action Plan Species

Current Extent in Northumberland

At present, the only recording in Northumberland is at Stawardpeel Wood Site of Special Scientific Interest (SSSI) which is managed by the National Trust. This is an area of ancient-semi natural woodland along with plantation on ancient woodland sites, comprised of non-native conifer species. This is the most northerly known location inhabited by dormice in England.

A map of dormouse distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



Dormouse *(Muscardinus avellanarius)* Species Action Plan

Current Factors Causing Loss or Decline

- Loss and fragmentation of habitat
- Woodland management resulting in a poor shrub layer
- Grey squirrels may have a significant effect however there is currently no evidence to substantiate this

Associated Action Plans

Native Woodland (specifically mature oak wood with hazel and bramble)
Trees and Hedges

Further Information

This dormouse action plan links to the dormouse action plan for the UK BAP, whose lead partners are Natural England and Devon Wildlife Trust.

The National Dormouse Survey - http://www.greatnuthunt.org.uk/

Bright, P. & Morris, P. (1989) A Practical Guide to Dormouse Conservation. The Mammal Society, London.

Bright, P, W., Morris, P, A. & Mitchell-Jones, A, J. (1996) A new survey of the Dormouse *Muscardinus avellanarius* in Britain, 1993-1994. Mammal Review, Vol 26, No. 4, pgs 189-195.

Roger Trout (Forest Research) PAWS restoration and dormouse conservation

Bright, P. & Morris, P. (2005) The Dormouse. The Mammal Society, London

Targets

Maintain the current range of the dormouse in Northumberland of 1 ten kilometre square by 2010.

Code	Priority Actions	Date
D A01	Continue with monitoring of nest boxes as part of the National Dormouse Monitoring Programme	ongoing
D A02	Maintain nest boxes in woodland within the existing range	ongoing
D A03	Carry out a dormouse survey training event	2009
D A04	Survey known past and present Dormouse sites	ongoing
D A05	Improve knowledge and information of dormouse conservation and subsequently raise public awareness	2010
D A06	Encourage creation and development of interlinking hedges, scrub, bramble patches and woodlands within their existing range	ongoing

Skylark © northeastwildlife.co.uk

Working with Wildlife

Farmland Birds Species Action Plan

Plan Co-ordinator	Lowland Group
Plan Author	Andy McNaught & Steve Pullan
Plan Lead	Natural England
Latest version	January 2008

Description

The arable land, grasslands, hedges and hedgerow trees of Northumberland provide important nesting habitat for a range of migratory and resident species of bird. Some of these species are internationally, nationally or regionally important or their populations are at extremities of the range.

The crop growing and harvesting seasons provide both a vital feeding resource and shelter for a range of birds. Those species that are resident to the UK rely on suitable habitat to ensure survival through the winter.

Farmland birds are included in the national index of wild bird populations, linking them to the Government's Public Service Agreement (PSA) target which seeks to reverse the long term decline of these species by 2020. The farmland species included in the North East Regional index are therefore the focus of this action plan.

Current data (BTO & DEFRA) indicates no significant regional change for this group between 1994 and 2004 in the North East region. Some individual species are faring better than others with indices for nine of the species increasing by 10 per cent or more, but still from a very low base.

A full list of associated farmland birds is included as an appendix to this action plan.

Conservation Status

The conservation status of each farmland bird is included in the appendix to this action plan.

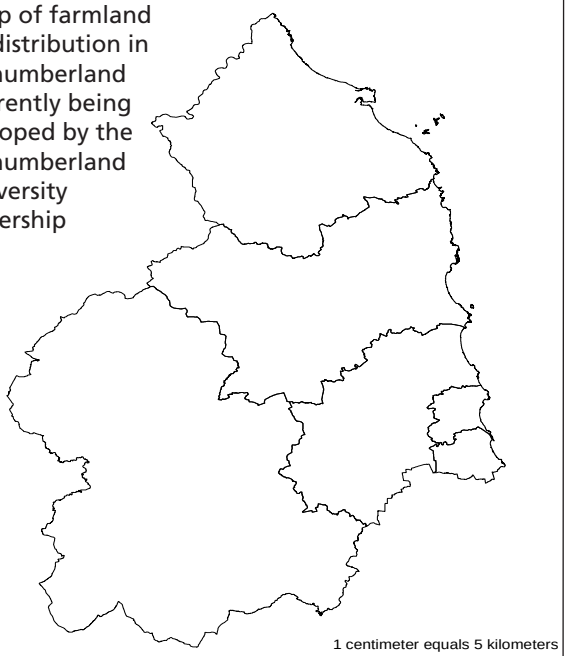
Current Extent in Northumberland

Against a background of long term decline, most of the species in this action plan are still classified as well represented, common, or in some cases abundant (Birds in Northumbria). However, several species are listed as being of national conservation concern (BTO).

Corn bunting are now very rare in Northumberland, bordering on extinction with just a few individuals reported each year. Tree sparrow and grey partridge are still well reported but have suffered long term declines. Reed bunting, yellowhammer, linnet, skylark and starling are also 'Red listed' but still relatively common in Northumberland. Yellow wagtail is now uncommon and 'Amber listed' under Birds of Conservation Concern.

Nationally grey partridge, corn bunting, tree sparrows and reed buntings have declined dramatically in lowlands. In Northumberland the above species are the ones which have declined the most and have decreased by at least 50% since the 1970s. The birds have very specific requirements and it has been shown that a number of important parts of their life cycles have been severely impacted by the changes in agriculture. If these populations are to be recovered then a comprehensive package of measures including nesting, chick rearing and adult feeding sites in both winter and summer should be instigated on any know sites specifically for tree sparrows, corn buntings and reed buntings.

Farmland Birds Species Action Plan



Current Factors Causing Loss or Decline

- Agricultural intensification of farmland, specialisation into livestock and crops only and loss of mixed farming systems
- Loss of stubble feed crops before a spring crop
- Change from spring to predominantly winter sown crops with the associated loss of weedy stubbles
- Chemical usage and the "clean crop" mentality when grass weeds are not present in the cereal field.
- Decline of organic matter in arable soils and the impact on soil fauna that provides food for a wide range of birds
- Loss of hedgerows and hedgerow trees
- Loss of wet areas, ponds and rough field corners that provide invertebrates as food and nesting sites
- Timing and method of mechanical farming operations that can destroy nests and kill chicks and adults in the spring
- Loss of spilt grain and on farm food processing, associated with a "tidy farm" mentality.

Associated Action Plans

Lowland Heathland
Lowland Meadow and Pasture
Ponds, Lakes and Reservoirs
Reedbeds
Wet Grassland
Whin Grassland
Trees & Hedges

Further Information

This farmland birds action plan links to the:

- corn bunting UK BAP action plan, led by Natural England and the RSPB,
- grey partridge UK BAP action plan, led by the Game Conservancy Trust,
- linnet UK BAP action plan led by the RSPB,
- reed bunting UK BAP action plan, led by the RSPB,
- skylark UK BAP action plan, led by the RSPB,
- tree sparrow UK BAP action plan, led by the RSPB.

Andrews, J & Rebane, M, 1994, Farming & Wildlife: A Practical Management Handbook, RSPB Publications

The Game Conservancy Annual reviews (various years)

Lowland Farmland Handbook, RSPB Publications

Targets

Maintain the current range of farmland birds in Northumberland by 2010

Increase the current range of farmland birds in Northumberland by 2015

Code	Priority Actions	Date
FB A01	Promote Agri-Environment options for farmland birds, particularly in targeted areas	ongoing
FB A02	Review uptake of relevant options in existing ELS & HLS agreements	ongoing
FB A03	Promote the use of appropriate options to ensure their use in future agreements	ongoing
FB A04	Ensure that HLS agreements are properly designed to deliver optimum benefits	ongoing
FB A05	Consider the need/feasibility for individual species action plans (e.g. tree sparrow, corn bunting, grey partridge)	2008
FB A06	Provide advice on farming friendly systems	ongoing
FB A07	Monitor the changes in lowland farmland birds on a systematic basis on a sample number of farms	2010
FB A08	Promote awareness of all farmland birds, their needs and legislation through suitable events and promotional material	ongoing

Farmland Birds Species Action Plan Appendix

Farmland Birds

Species	Conservation Status			
	UK BAP	Regional BAP	UK Red List	UK Amber List
Corn Bunting - *Emberiza calandra*	x		x	
Goldfinch - *Carduelis carduelis*				
Greenfinch - *Carduelis chloris*				
Grey Partridge - *Perdix perdix*	x		x	
Jackdaw - *Corvus monedula*				
Kestrel - *Falco tinnunculus*				
Lapwing - *Vanellus vanellus*	x			x
Linnet - *Carduelis cannabina*	x		x	
Reed Bunting - *Emberiza schoeniclus*	x		x	
Rook - *Corvus frugilegus*				
Skylark - *Alauda arvensis*	x		x	
Starling - *Sturnus vulgaris*	x		x	
Stock Dove - *Columba oenas*				x
Tree Sparrow - *Passer montanus*	x		x	
Whitethroat - *Sylvia communis*				
Woodpigeon - *Columba palumbus*				
Yellow Wagtail - *Motacilla flava*	x			x
Yellowhammer - *Emberiza citronella*	x		x	

Red and Amber listed species as listed in 'The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007'

Newham Fen © NBP Photographer John Williamson

Working with Wildlife

Fen, Marsh & Swamp Habitat Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Natural England
Latest version	January 2008

Conservation Status

EC Habitats Directive, Annex I - fen
UK Biodiversity Action Plan Habitat – lowland fen; upland flushes, fen and swamps
North East Biodiversity Action Plan - fen

Description

Fen, marsh and swamp are vegetated, non-woodland, habitats that are groundwater fed and either permanently, seasonally or periodically waterlogged. Grasses do not predominate as they have peat or mineral soils. They usually exist as marginal vegetation at the edge of lakes and ponds, along river edges and within wet ditches and pools.

Fen

Fens are alkaline wetland areas developed on peat soils which receive water and nutrients from a ground source as well as from precipitation. Fens can also be classed as poor; where water is derived from base-poor rock such as sandstone; and rich when they are fed by mineral-enriched calcareous waters from base-rich rocks such as limestone.

Marsh

Marsh refers to vegetation occurring on waterlogged mineral soils or shallow peat, where the water table is close to the surface for most of the year, but not usually above ground level.

Swamp

Swamps are characterised by water levels that are at or above the surface of the vegetation for most of the year. They are generally characterised by very low topographic relief and therefore very-slow moving waters, with tall emergent or marginal vegetation such as reeds or sedges.

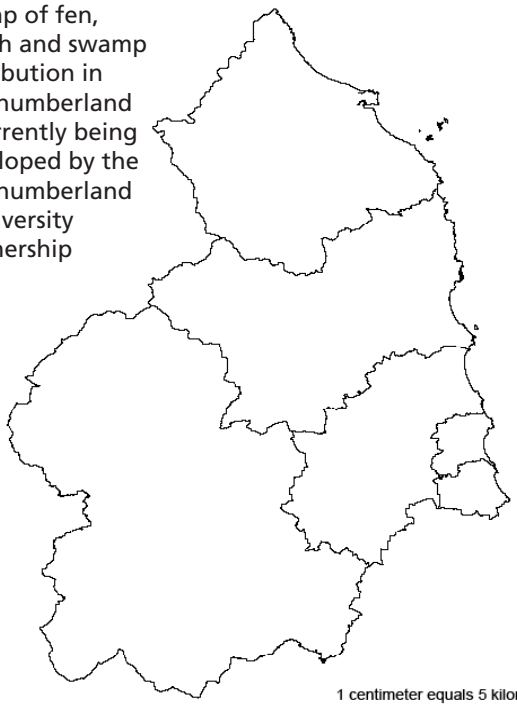
This action plan does not include:

- Reedbed - see Reedbed action plan
- Bog – see Blanket Bog action plan
- Floodplain grassland – see Lowland Meadows and Pastures action plan
- Carr – see Native Woodland action plan

Current Extent in Northumberland

The current extent of fen, marsh and swamp in Northumberland is currently unknown. Some of the largest wetlands in Northumberland are associated with coal mining. The tunnels that were produced have led to subsidence and the resulting bowls penetrate the local water table resulting in water bodies of varying depth leading to wet vegetation types.

A map of fen, marsh and swamp distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Fen, Marsh & Swamp Habitat Action Plan

Current Factors Causing Loss or Decline

- Drainage of land for conversion to intensive agriculture
- Change in water table and spring line flows from excessive water abstraction or development
- Fragmentation of habitat
- Agricultural run-off
- Afforestation
- Increased growth and dominance of vigorous plant species from nutrient enrichment
- Changes in hydrology where they have become isolated from the river water which irrigated them
- Siltation of watercourses feeding into wetlands and causing a build up of deposited silt
- Lack of, or inappropriate management leading to drying, scrub encroachment and succession to woodland
- Invasive species

Associated Action Plans

Water Vole

Otter

Further Information

This fen, marsh and swamp action plan links to the lowland fen and the upland flushes, fen & swamps UK BAP action plans

Rodwell, J.S. 1992, British Plant Communities Vol. 2 Mires and Heaths, Cambridge University Press, Cambridge

Rodwell, J.S. 1992, British Plant Communities Vol. 4 Aquatic Communities, Swamps and Tall Herb Fens, Cambridge University Press, Cambridge

Targets

Maintain the current extent of fen, marsh and swamp in Northumberland by 2015

Code	Priority Actions	Date
FMS A01	Identify the locations of the current fen, marsh and swamp resource	2008
FMS A02	Implement condition monitoring of known fen, marsh and swamp sites	ongoing
FMS A03	Review the fen, marsh and swamp habitat action plan once baseline data is available and create targets to increase the identified extent.	2008

Leaping Salmon © Tyne Rivers Trust

Working with Wildlife

Freshwater Fish Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Environment Agency
Latest version	January 2008

Description

This action plan covers the following three species:

- Atlantic Salmon *(Salmo salar)*
- Brown and Sea Trout *(Salmo trutta)*
- European Eel *(Anguilla anguilla)*

Northumberland's rivers and streams are important locations for migratory salmonids in the UK. The gravels of the upland streams provide ideal breeding habitats and the good water quality supports both the diversity and richness of aquatic invertebrates needed as a food source.

Atlantic salmon and sea trout spend the early part of their lives in freshwater, defending the territories provided by the broken water of the gravels and boulders of the upland streams. Both species migrate to the sea when they are about two years old having undergone physical changes to allow them to adapt to seawater. Migration usually occurs in May. The marine environment provides the fish with rich feeding grounds where they can grow very quickly.

Both species return to the rivers to breed. Spawning occurs between November and December with ova being laid in excavations in the gravel called redds. The young fish emerge from the gravels in spring.

Brown trout differ to sea trout as they do not migrate, despite having exactly the same requirements and being genetically the same.

The common or European eel is believed to spawn in the Sargasso Sea (Atlantic Ocean) with larvae reaching European shores on the strong sea currents. Like salmon and trout, eels undergo physical changes but to be able to survive in freshwater. They are most often found on the floor of the river or estuary they are living in. Once they have reached sexual maturity they migrate back to the Sargasso Sea to spawn and die.

Conservation Status

EU Habitats Directive, Annex II – atlantic salmon
UK Biodiversity Action Plan Species - all
North East Biodiversity Action Plan Species – atlantic salmon

Salmon season – 1st February to 31st October (30th November for the River Tweed and Till under Scottish law). A "catch and release" byelaw obliges the return of any salmon caught before 16 June on English rivers.

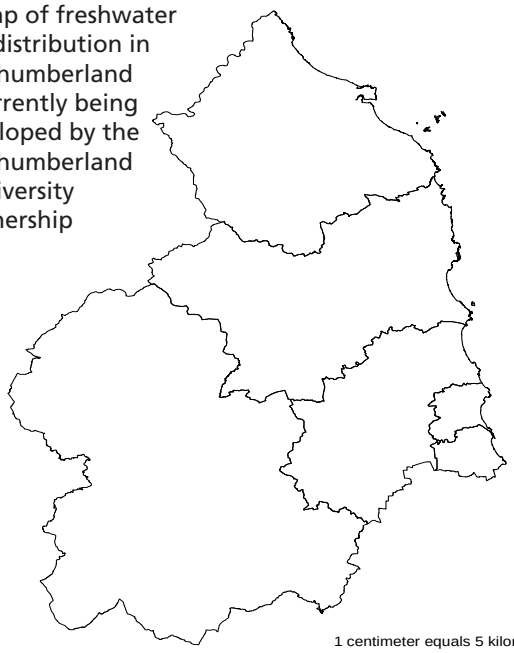
Sea trout season – 3rd April to 31st October.

Brown trout season - 22 March to 30 September in England and 15 March to 6 October in Scotland. Local byelaws in Scotland often impose a restricted season from 1 April to 30 September. Fishing on Sundays is not permitted on Scottish rivers.

There is no statutory "catch and release" on the Tweed and Till but a voluntary code requires the return of every other spring salmon caught by rod and line.

Current Extent in Northumberland

A map of freshwater fish distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Freshwater Fish Species Action Plan

Juvenile salmonids are recorded by the Environment Agency using a methodology known as Fishery Classification Scores (FCS). A section of river or stream is electrofished and the density of 0+ and 1+ juvenile salmonid is assessed and graded as a score of A – F, with A being high density and F being absent. The Term 0+ refers to a fish in the first year of its life, and 1+ is a fish in its second year. Scores for individual sections of the rivers Tyne, Coquet, Blyth, Wansbeck and Aln have been combined to provide an average score and overview of 0+ salmonid density for Northumberland in the table below.

Average FCS scores for all Northumberland Rivers			
0+ salmon		0+ trout	
a	9%	a	17%
b	12%	b	14%
c	14%	c	19%
d	9%	d	9%
e	43%	e	33%
f	13%	f	8%

Source: Environment Agency 2005

There is little data on the abundance of eels in the Northumberland area although it is thought that their numbers are in general decline throughout Europe.

Current Factors Causing Loss or Decline

- Increased nutrient inputs resulting from poor agricultural practices
- Industrial and sewage pollution
- Urban run off
- Bank erosion and siltation resulting in lack of suitable gravel and nursery areas
- Barring of good headwater gravels by man made obstructions
- Exploitation of adult fish by anglers and poachers reducing the spawning population
- Over stocking of farm strain trout, causing loss of genetic integrity amongst wild populations

Associated Action Plans

Rivers and Streams

Freshwater Pearl Mussel

Further Information

This freshwater fish action plan links to the atlantic salmon, brown/sea trout and eel UK BAP action plans.

Tyne Rivers Trust website -
http://www.tyneriverstrust.org/

Atlantic Salmon Trust website -
http://www.atlanticsalmontrust.org/

Targets

Trout

Maintain grade A – C FCS for wild trout populations in Northumberland by 2010.

Increase grade A – C FCS for wild trout populations in Northumberland by 2010.

Salmon

Maintain grade A – C FCS for salmon populations in Northumberland by 2010.

Increase grade A – C FCS for salmon populations in Northumberland by 2010.

Eel

Maintain the current range of eel occupied reaches in Northumberland by 2010.

Code	Priority Actions	Date
FF A01	Improve access for fish migration at obstructions, specifically at Hexham weir	2015
FF A02	Improve water quality throughout the area in line with EA targets	ongoing
FF A03	Increase communication with angling organisations to help to monitor existing populations and preserve stocks	ongoing
FF A04	Promote sensitive approaches to agricultural practices to reduce erosion and chemical inputs to rivers thus improving the aquatic environment	ongoing
FF A05	Conduct a baseline survey for eels	2009
FF A06	Carry out investigations of the shad and greyling populations and consider their inclusion as part of the freshwater fish action plan	2009

Freshwater Pearl Mussel © Anne Lewis

Working with Wildlife

Freshwater Pearl Mussel *(Margaritifera margaritifera)* Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Environment Agency
Latest version	November 2009

Description

The freshwater pearl mussel is a bivalve mollusc that lives in fast flowing, nutrient poor rivers with clean sandy and stony bottoms. They are filter feeders, extracting fine organic particles from the water. Their shell is oval and elongated and is dark brown or blackish in colour. They can grow up to 15cm long and have a natural life span of up to 80 to 100 years, making them one of the longest lived known invertebrates. As the name suggests they can produce pearls and have been exploited for these since Roman times.

During reproduction females inhale male sperm from the water, producing tiny bivalve larvae called 'glochidia' from the fertilised eggs. Each female is able to shed about 3 million of these in late summer. The species is dependent on the presence of salmonid fish as the larvae lodges on their gills. It is estimated that only 0.1% survive this stage of the life cycle. In spring the juvenile mussels fall off their host gills and try to find a suitable location in clean sand or gravel. There is further massive mortality at this stage as juvenile mussels are eaten by fish. Those that are successful grow quite rapidly reaching 2cm in 4 to 5 years. Adult mussels are known to be eaten by otters and also avian predators if they are stranded by low water.

The freshwater pearl mussel is a rare, globally threatened species that had been lost from all but seven rivers in England. Many of the UK populations may not have produced young for over 30 years, creating a fragile aging population.

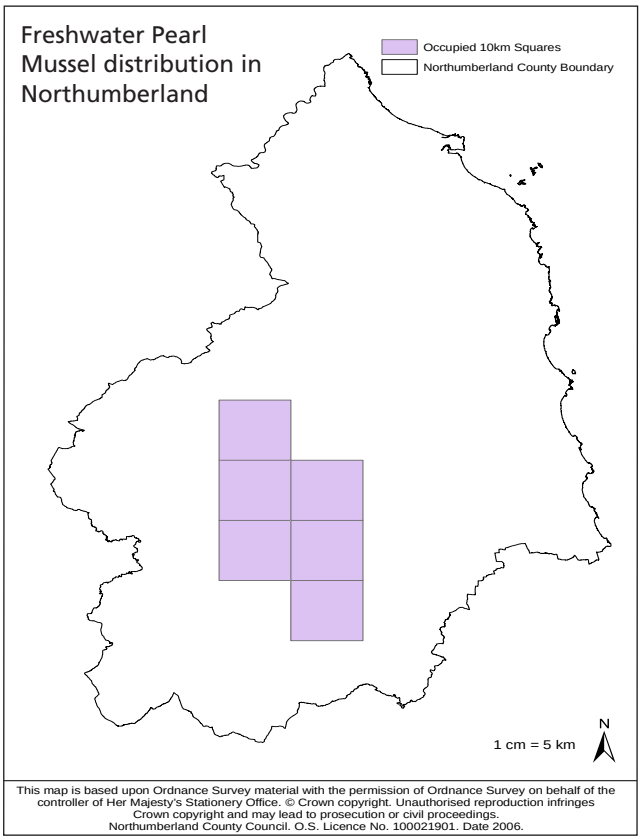
Conservation Status

IUCN/WCMC Red Data List, vulnerable
Bern Convention, Appendix II
EC Habitats Directive, Annexes II and V
Wildlife & Countryside Act 1981, Schedule 5
UK Biodiversity Action Plan Species

Current Extent in Northumberland

In Northumberland the freshwater pearl mussel is found on the North Tyne and River Rede; collectively making up one of the two remaining significant populations in England.

A breeding programme for freshwater pearl mussel is currently being implemented at Kielder hatchery with a view to infecting the fish stock for the North Tyne and Rede to try and address the decline in the species.



Freshwater Pearl Mussel *(Margaritifera margaritifera)* Species Action Plan

Current Factors Causing Loss or Decline

- Eutrophication
- Chemical water pollution
- Habitat removal and alteration through diffuse pollution, works in rivers, drainage schemes, flow regulation and fisheries management
- Amateur pearl fishing, aided by improved accessibility
- Sedimentation from bankside soil erosion

Associated Action Plans

Rivers and Streams

Freshwater Fish

Further Information

This freshwater pearl mussel plan links to the freshwater pearl mussel UK BAP action plan, whose lead partner is the Environment Agency.

Targets

Maintain the current range of the Freshwater Pearl Mussel in Northumberland of 6 ten kilometre squares by 2015

Code	Priority Actions	Date
FPM A01	Monitor known populations of freshwater pearl mussel	ongoing
FPM A02	Continue the breeding programme at Kielder hatchery and implement stocking of the Tyne and Rede with infected fish	ongoing
FPM A03	Identify a programme of measures to address the problem of works in rivers based on the requirements of the species	2008
FPM A04	Contact land owners and managers to advise where the species is present and the effect that various activities can have on the species	2008
FPM A05	Continue dialogue with Natural England on establishing SSSI status for the pearl mussel population area	2010

Song Thrush © Northumberland National Park Authority

Working with Wildlife

Garden Birds Species Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Sam Talbot
Plan Lead	RSPB
Latest version	January 2008

Description

This garden birds action plan covers the following species:

- Bullfinch *(Pyrrhula pyrrhula)*
- Dunnock *(Prunella modularis)*
- Goldcrest *(Regulus regulus)*
- House Sparrow *(Passer domesticus)*
- Song Thrush *(Turdus philomelos)*
- Starling *(Sturnus vulgaris)*
- Swallow *(Hirundo rustica)*
- Swift *(Apus apus)*

Garden Birds is a broad group, which includes a wide range of bird species that are typically found in gardens. Many of the species that are found in parks and gardens are not truly urban but woodland birds that have adapted through loss of natural habitat. All the birds covered in this action plan are seed eating or insectivores, or both. They often have a close relationship with man either recently or historically, due to man providing nesting sites or feeding opportunities (deliberately or inadvertently) which the bird makes use of, and in some cases has come to depend on. Garden birds can provide the main contact with wildlife for many people. Over the years man has become familiar with the presence of these birds and many of them have been viewed as common, however in the last century some of these species have undergone a crash in population levels, the exact reasons for which are not well known.

This plan focuses on those species that have undergone the most worrying declines and as such have been given a red conservation classification. Other species that are not faring as poorly but still causing concern and given an amber classification are also included.

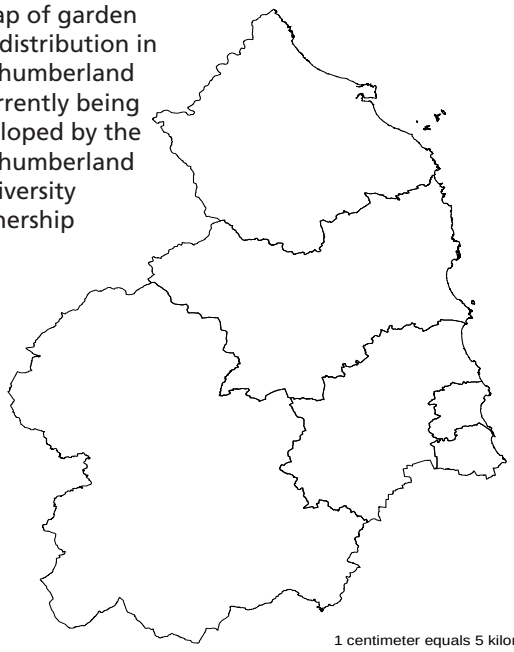
Conservation Status

Wildlife & Countryside Act 1981 Part I, Section 1 (with exceptions)
UK Biodiversity Action Plan Species – Bullfinch, House Sparrow, Song Thrush, Starling & Tree Sparrow
North East Biodiversity Action Plan Species – Bullfinch & Song Thrush
Birds of Conservation Concern: Red Conservation Status – Bullfinch, House Sparrow, Song Thrush, Starling & Tree Sparrow
Birds of Conservation Concern: Amber Conservation Status – Dunnock, Goldcrest, Swallow & Swift

Current Extent in Northumberland

The Northumberland and Tyneside Bird Club recently undertook both a study of Wintering Birds and a study of breeding birds in Northumbria.

A map of garden bird distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Garden Birds Species Action Plan

Current Factors Causing Loss or Decline

- Loss of suitable nesting sites due to modern building design and construction
- Reductions in sources of both invertebrate and seed food due to habitat loss and increased use of pesticides
- Increasing 'tidiness' and pesticide use both in gardens and public greenspaces
- Replacement of hedgerows with fencing, removal of creepers on walls and clearance of shrubberies causing reduction in suitable nesting sites
- Development of brownfield sites used for foraging for insects and seeds

Associated Action Plans

Brownfield Land
Built Environment
Gardens & Allotments
Recreational & Amenity Spaces
Transport Corridors
Native Woodland
Lowland Meadows & Pastures
Trees & Hedges

Further Information

This garden birds action plan links to the bullfinch, house sparrow, song thrush, starling and tree sparrow UK BAP action plans, all led by the RSPB.

Summers-Smith, J.D (1999). Current status of the House Sparrow in Britain. British Wildlife, 10: 381-386.

British Trust for Ornithology website - www.bto.org

RSPB website - www.rspb.org.uk

Day, J.C & Hodgson, M.S (ed) 2003, The Atlas of Wintering Birds in Northumbria, Northumberland and Tyneside Bird Club

Day, J.C. 1995, The Atlas of Breeding Birds in Northumbria, Northumberland and Tyneside Bird Club

The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007

Targets

Maintain the current range of garden birds in Northumberland by 2010

Increase the current range of garden birds in Northumberland by 2015

Code	Priority Actions	Date
GB A01	Encourage public participation in the BTO and RSPB Garden Birdwatch schemes	ongoing
GB A02	Ensure that boxes are put up in suitable areas for a range of species, particularly whenever hedges or suitable nesting habitats are lost due to development	ongoing
GB A03	Encourage responsible and continuous feeding of birds, especially in the winter, by the public and at country parks	ongoing
GB A04	Encourage wildlife friendly gardening, in particular avoiding molluscicides, including plants that are good winter seed sources and leaving dead herbaceous stems and leaves over winter	ongoing
GB A05	Encourage inclusion of boxes in new builds or renovations (e.g. brick boxes for inclusion in walls) and eaves ledges for swallows, swifts and house martins	ongoing
GB A06	Promote installation and registration of nest boxes via National Nestbox Week	ongoing
GB A07	Encourage management of amenity grassland to include plant species that are good winter seed sources and support a wide range of insect species	ongoing

Ashington Allotments © NBP Photographer John Williamson

Working with Wildlife

Gardens & Allotments Habitat Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Sam Talbot
Plan Lead	Local Authorities
Latest version	January 2008

Description

Gardens and allotments are managed heavily by man to provide spaces that are aesthetically pleasing, or produce food on a small scale, or both. Many gardens now perform other functions such as outdoor storage or animal housing, such as a shed, an extra room for entertaining friends and holding barbeques or have been adapted to include or become a parking space for cars. It is usual to discover a wide range of plants and habitat types (and so wildlife) within a relatively small area as gardeners seek to maximise the space they have to grow plants to provide a range of colour, structure or food over the seasons. Gardening was once seen to be with an aim of excluding nature or controlling it, but now gardens can be good for wildlife.

Recently the increased density of the human population coupled with intensive farming methods and gardening chemicals that leave less space for wildlife, has greatly increased the significance of gardens as biodiversity refuges. Both gardens and allotments serve a crucial role in helping wildlife. They now make up the largest area of green space in a typical British city, some 15% of the land area, usually far more than public open spaces such as parks. Fragmentation of habitat into a series of 'islands' surrounded by development is particularly damaging for slow-moving species, and several small areas cannot support the same diversity of life as one larger fragment, even if their total areas are the same. Gardens can help to extend some habitats or help link together 'islands' of habitat.

Increased environmental awareness has led to high profile articles and programmes being produced to help gardeners work with wildlife. Garden pond creation can reap great benefits for biodiversity, as can tackling pests while avoiding harmful effects on other organisms and the careful choice of gardening materials. Trapping or collecting slugs and snails is preferable to putting out slug pellets, a hedge is better for wildlife than a fence and a gravelled area with low plants is better than a poured concrete parking bay. It should be noted that gardens could not only be a force for good or bad in terms of biodiversity, but also in terms of other environmental issues such as water conservation, waste minimisation and carbon emissions (woody plants absorb and retain carbon, but transport of goods bought for the garden, and power tool use emits it).

Conservation Status

Gardens and allotments as habitats are not covered by legislation. However, some of the species that may use them do have protection under the Wildlife & Countryside Act. For example, it is illegal to take, damage or destroy the nest of any wild bird while that nest is in use or being built

Current Extent in Northumberland

A map of allotment distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership

1 centimeter equals 5 kilometers

Gardens & Allotments Habitat Action Plan

In the UK gardens cover an estimated 3% of the land surface area of England and Wales whilst allotments cover over 13,000ha, most of which are in urban areas. The extent of gardens and allotments in Northumberland is currently unknown but as a collective resource they are an essential part of wildlife conservation in the county.

Current Factors Causing Loss or Decline

- Permanent loss of garden area due to conversion to hard-standing such as parking areas, patios, paving, decking or gravelling reducing forage opportunities for garden birds and habitat to a range of invertebrates
- Development of part of the garden into another domestic dwelling or development of allotment sites into housing or industrial premises
- Use of herbicides such as lawn weed and moss killer and pesticide sprays or pellets that either directly kill invertebrates, or other animals higher up the food chain
- Use of plants with low nectar production, inedible seeds or low nesting value
- Removal of trees, hedges or climbers from walls reducing hibernation sites and nesting sites
- Excessive 'tidying' under hedges and around herbaceous perennials removing habitat for invertebrates and small mammals such as hedgehogs
- Use of peat in gardening does not affect the biodiversity of the gardens, but dramatically reduces the biodiversity of peat bogs as they are depleted for sale as compost materials
- Aquatic alien invasive plants such as Australian Swamp Stonecrop *(Crassula helmsii)*, Canadian pondweed *(Elodea canadensis)*, Floating Pennywort *(Hydrocotyle ranunculoides)*and Water Fern *(Azolloa filliculoides)* and fish in ponds reduce biodiversity by either blanketing out other species, or in the case of fish, eating them.
- Introduction of non-native plants via dumping of garden waste "over the fence" or in flytipping can cause problems through blanketing out of existing wild plants (Sedum), enrichment of the soil leading to proliferation of aruderal species (thistles and nettles) or hybridisation with the native plants, diluting and altering the populations, (bluebell or Geum species)
- Regular short mowing of grass reduces opportunities for invertebrates and so birds and other animals. Inventive retention of longer grassed areas should be promoted

Associated Action Plans

Bats
Garden Birds
Great Crested Newt
Hedgehog
Trees and Hedgerows

Further Information

Northumberland Wildlife Trust Wildlife Gardening pack - http://www.nwt.org.uk/index.php?section=helping:merchandise

BBC Gardening website - http://www.bbc.co.uk/gardening

Royal Horticultural Society website - http://www.rhs.org.uk/

Plant Life website, non native invasive plants, species to avoid – http://www.plantlife.org.uk/uk/plantlife-campaigning-change-invasive-plants.html

Targets

Set up three demonstration wildlife gardens at public venues in Northumberland by 2010.

Create 20 wildlife gardens in school grounds and other community areas in Northumberland by 2010.

Hold 4 wildlife gardening open days at established wildlife gardens, allotments or garden centres in Northumberland by 2010.

Code	Priority Actions	Date
GA A01	Encourage provision of bird and bat boxes	ongoing
GA A02	Encourage the planting of native trees, shrubs and hedgerows	ongoing
GA A03	Promote home and community composting schemes	ongoing
GA A04	Promote wildlife friendly gardening practices such as discouraging the use of pesticides and planting of nectar rich flowers	ongoing
GA A05	Promote the Northumberland Wildlife Trust wildlife gardening pack	ongoing
GA A06	Create information sources to encourage people to create wildlife friendly gardens and allotments	ongoing
GB A03	Encourage responsible and continuous feeding of birds, especially in the winter, by the public and at country parks	ongoing

Great Crested Newt © Northumberland Wildlife Trust

Working with Wildlife

Great Crested Newt *(Triturus cristatus)*
Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Northumberland Wildlife Trust
Latest version	November 2009

Description

The great crested newt is the UK's largest and rarest newt, reaching an adult size of between 140 and 170mm. This particular species is one of three species of newt native to the UK and requires both terrestrial and aquatic habitats for survival. A good quality terrestrial habitat surrounding the pond, including rough grassland, scrub and woodland, is vital for hibernation throughout the winter. The habitat requirements of the species indicate a preference to small to medium sized ponds of 50 to 250 metres square with a dense submerged vegetation cover of two thirds.

Adult great crested newts are easily distinguished from the Palmate and Smooth newt, which are the two other native species of newt, by size and colouring. The skin of the adult great crested newt is granular in appearance; it has a black or dark brown background colour with darker spots which extend on to the crest of the male. The lower flank is peppered with very fine white spots. Females are without a crest and white tail stripe but do possess a yellow orange stripe running along the tail, both sexes possess a vivid orange underbelly with an irregular pattern of dark black spots.

The species breeds in still or slow moving water in late March to early April, laying eggs on submerged vegetation. They leave the water in late summer and spend the rest of the year in cover or hiding under stones or logs. Tadpoles leave the water as young newts in late summer or sometimes next spring, holing up for several years until they are big enough to breed. Great crested newts can be found in terrestrial habitat up to 1 kilometre from breeding sites.

The great crested newt is still quite widespread in Britain, making the population one of the largest in Europe. The south east of England is the newt's stronghold.

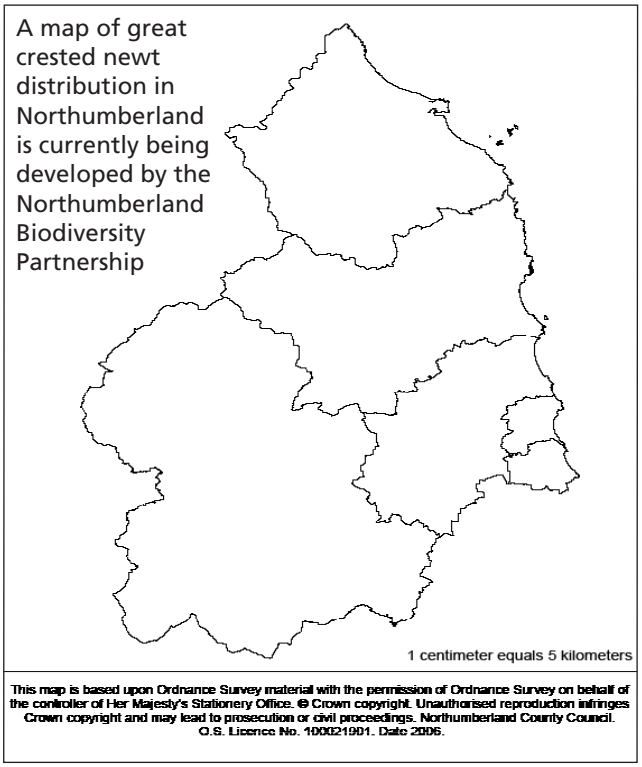
Conservation Status

EC Habitats Directive, Annexes II and IV
Bern Convention, Appendix II
Wildlife & Countryside Act 1981 Schedule 5
UK Biodiversity Action Plan Species
North East Biodiversity Action Plan Species

Current Extent in Northumberland

A study of great crested newt distribution in Northumberland was undertaken by Northumberland Wildlife Trust in 2006.

The study shows a distribution in Northumberland concentrated within the large numbers of ponds in the eastern lowlands.



Great Crested Newt *(Triturus cristatus)* Species Action Plan

Current Factors Causing Loss or Decline

- Loss of suitable breeding ponds from deliberate infilling and drainage
- Loss of terrestrial habitat for foraging and hibernation by human activity
- Habitat fragmentation caused by development leading to reduction in population size and flow of newts between sites
- Introduction of fish which consume larvae
- Release of exotic species that compete with or eat newts
- Pollution, reducing the amount of submerged vegetation
- Pond deterioration through neglect or misuse – excessive removal of vegetation during breeding season, overgrazing of surrounding vegetation, natural silting, park style management, reclamation of derelict land

Associated Action Plans

Ponds, Lakes and Reservoirs

Further Information

This great crested newt plan links to the great crested newt UK BAP action plan, whose lead partners are the Herpetological Conservation Trust, British Herpetological Society and Froglife.

The Herpetological Conservation Trust website - http://www.herpconstrust.org.uk/index.php

Targets

Maintain the current range of the Great Crested Newt in Northumberland of 41 sites by 2015

Increase the current range of the Great Crested Newt in Northumberland to 66 sites by 2015

Code	Priority Actions	Date
GCN A01	Collate great crested newt data held by consultancies	2008
GCN A02	Prioritise areas for further survey where there are gaps in the current baseline dataset	2008
GCN A03	Carry out further surveys based on gaps identified in the baseline dataset	2009
GCN A04	Organise training in identification skills and survey techniques	2009
GCN A05	Seek to increase breeding success at sites using shallow pond features. Identify sites where fish stocking has taken place and create adjacent habitat for great crested newt breeding.	2009
GCN A06	Create a network of appropriate habitats for the species through strategic pond creation and associated terrestrial habitat	2015
GCN A07	Ensure compliance with Environment Agency policy to prevent impact on species populations from fish stocking through section 30 licences	ongoing
GCN A08	Monitor known populations of great crested newt	ongoing

Grey Seal - kind permission of Blyth Valley Borough Council

Working with Wildlife

Grey Seal *(Halichoerus grypus)* Species Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Arthur Cranson & John Walton
Plan Lead	National Trust
Latest version	January 2008

Description

Grey seals vary in colour from dark brown to grey or black with blotches. Males have broad shoulders, an elongated snout with a wide heavy muzzle. Females tend to be lighter in colour than males and have a thinner snout and a less rounded profile. They are the largest native mammal of the British Isles with males reaching up to 2.3 metres long and weighing up to 230 kilograms. The cows are much smaller up to 2 metres in length and 150 kilograms in weight. The nostrils of the grey seal are almost parallel, helping to distinguish them from the common seal whose nostrils form a 'v' shape.

Their diet mainly consists of fish, but they will also eat squid, octopus and crustaceans. The average daily food requirement is estimated to be 5 kilograms, though they do not feed every day and fast during the breeding season. The oldest female was recorded to live up to 46 years, with the average male only reaching just over half this age.

Seals can be seen hauled out on rocky shore and islands, where they rest in the sun. Females arrive at the breeding sites first in order to give birth from September to November. Males compete for space nearest to the females, with the older males usually getting the best positions. A pup weighs about 15 kilograms at birth and is born with dense, soft white coat. They will gain about 2 kilograms of weight a day due to the high fat content of their mother's milk. Females will suckle their pup for approximately 3-4 weeks during which time the pup will shed its pup fur and start to develop the dense adult waterproof fur. The cows will then mate again and leave the breeding area. Pups must then learn to fish for themselves.

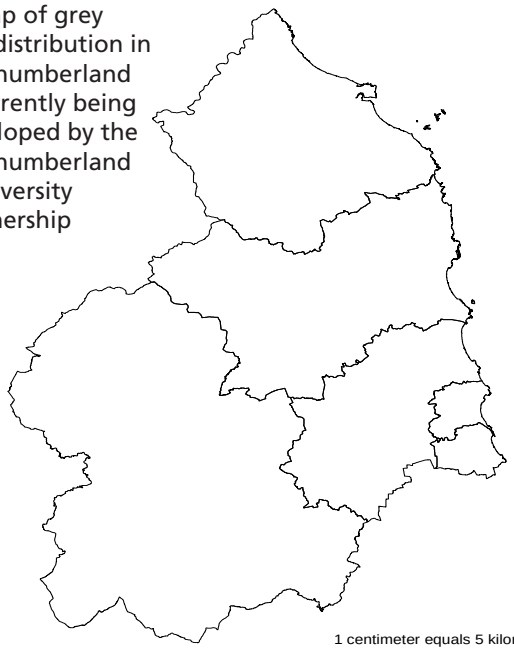
Grey seals are found in the North Atlantic Ocean; along the West Atlantic coast, East Atlantic coast and the Baltic coast. The East Atlantic stock ranges from Iceland, the Faroe Islands, Norway, the British Isles and the Wadden Sea. It is estimated that half of the world's total population are found on and around the British coasts. Seals can become entangled and drown in fishing nets and in the UK it is legal to shoot any seals that come near fisheries if you have a licence. The conservation of Seals Act provides a closed season for the grey seal during its pupping season when it is illegal to kill or take seals without a licence.

Conservation Status

EC Habitats Directive, Annex II and V
Bern Convention, Appendix III
Seals Act 1970 – closed season 1st September to 31st December
Habitats Regulations, Section 3
North East Biodiversity Action Plan Species

Current Extent in Northumberland

A map of grey seal distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Grey Seal *(Halichoerus grypus)* Species Action Plan

The current Farne Island population is between 3 and 4 thousand seals, with a transient population of mainly juvenile and non-breeding seals of 1 thousand to fifteen hundred seals along the rest of the Northumberland coastline. The main breeding site in the region is the Farne Islands, with the transient population favouring rocky promontories and cliff bottom haul out sites, though the younger pups do tend to use sandy beaches for up to six or eight months, as they are less likely to injure themselves hauling out in rough weather.

Current Factors Causing Loss or Decline

- Shooting of Seals around fishing nets and Salmon nets (decreasing in frequency as the Salmon drift netting industry declines)
- Increase in the number of sight seeing and pleasure boats visiting breeding and haul out sites
- Increasing disturbance of resting Seals, especially pups and juveniles, due to increased accessibility of mainland coast
- Increase in inshore prawn trawling resulting in increased by-catch mortality rate amongst adult Grey Seals

Associated Action Plans

Rocky Shore, Reefs and Islands
Coastal Saltmarsh and Mudflat
Maritime Cliffs and Slopes

Further Information

The Mammal Society - http://www.abdn.ac.uk/mammal/index.shtml

Seal Conservation Society - http://www.pinnipeds.org/

Targets

Maintain the current range of the grey seal in Northumberland of 1 breeding haul out site by 2010

Maintain the breeding population of the grey seal in Northumberland of approximately 3,500 by 2010

Code	Priority Actions	Date
GS A01	Collate all existing information on grey seals in Northumberland and identify their regular haul out sites.	2008
CGS A02	Promote the importance of Northumberland's seals through publicity material, events and training to help to ameliorate the negative attitudes towards them and reduce disturbance to juveniles	ongoing
CGS A03	Seek to establish a code of practice for sight seeing boats and pleasure craft with specific reference to seal breeding areas	2009
CGS A04	Create an information leaflet on the procedures for dealing with a stranded, hurt or dead seal	2008
CGS A05	Promote the economic value of seals to the rural economy as part of the overall nature based tourism of the county	2009
CGS A06	Increase dialect with local fishing communities regarding the legal shooting of seals	2010

Harbottle Crag © NBP Photographer John Williamson

Working with Wildlife

Heather Moorland Habitat Action Plan

Plan Co-ordinator	Uplands Group
Plan Author	Gill Thompson
Plan Lead	Northumberland National Park Authority
Latest version	January 2008

Description

Heathlands are dwarf shrub, mainly heather-dominated habitats that develop over mineral soils of low pH and over very shallow peat. Upland heathland dominates extensive areas of the unenclosed uplands in Northumberland, especially the drier eastern areas where conditions are less conducive to blanket bog formation. Such habitats are dominated by ling heather with bell heather, bilberry, a range of grasses, sedges, mosses and lichens and, in the wetter areas, cross leaved heath and deer grass.

Upland heathland often occurs in combination with mire and grassland habitats. This plan covers both wet and dry heath. The UK has the most extensive examples of upland heath in Europe, and also a significant proportion of its lowland heath (although Northumberland has very little of the latter). Consequently, a number of the types of heath found in Northumberland are listed on Annex I to the EC Habitats Directive; Northern Atlantic wet heaths with cross-leaved heath, dry heaths, and juniper formations on heath.

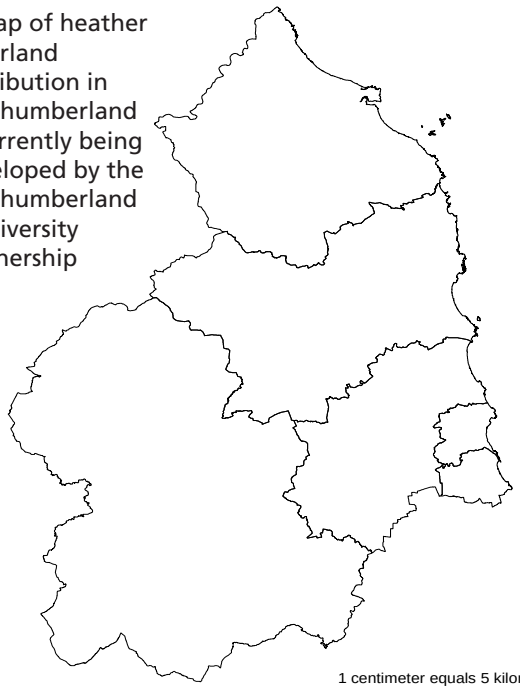
Conservation Status

Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

Approximately 40,000 hectares of upland heath (including heath and acid grassland mosaics) occurs in Northumberland; about 15% of the total occurring in England (based on the UK BAP figure of 470,000 hectares). This occurs in four main areas; the granite and andesite plateaux and slopes of the Cheviots, the Fell Sandstone moorlands that occur in an arc to the east and south of the Cheviots, below the blanket bog clad summits of the Border Hills, and on Millstone Grit plateaux in the east of the North Pennines.

A map of heather moorland distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Heather Moorland Habitat Action Plan

Current Factors Causing Loss or Decline

- Inappropriate burning particularly on short rotation and on sensitive sites
- Inappropriate management through over grazing
- Creation of moorland tracks
- Windfarms
- Recreational pressure
- Vehicular use including all terrain vehicles and motorbikes

Associated Action Plans

Blanket Bog

Black Grouse

Upland Waders

Further Information

This heather moorland action plan links to the upland heathland UK BAP action plan, whose lead partner is Natural England.

Lunn, A, 1976, The Vegetation of Northumberland

Targets

Maintain the current extent of heather moorland in Northumberland of 40,000 hectares, including distribution and range of habitat types.

Achieve favourable or recovering condition by appropriate management of 20,000 hectares of heather moorland currently in unfavourable condition by 2010.

Restore 100 hectares of heather moorland in Northumberland on 'white ground' by 2015.

Code	Priority Actions	Date
HM A01	Accurately estimate the amount of heather moorland in good condition	2008
HM A02	Identify key sites for restoration	2008
HM A03	Establish environmental stewardship agreements for sites in poor condition including burning plans and grazing levels	2010
HM A04	Re-seed areas ensuring that the current vegetation and grazing pressure is controlled	2015
HM A05	Promote a precautionary approach to planning applications for development on or near heather moorland including windfarms and new tracks	ongoing
HM A06	Raise awareness about the importance and management of Northumberland's heather moorland and its associated species through publicity material, events and training	ongoing
UW A01	Compile a list of the key upland fields that are used as nesting and feeding sites by wading birds	2008

Hedgehog © northeastwildlife.co.uk

Working with Wildlife

Hedgehog *(Erinaceus europaeus)* Species Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Derek Hilton-Brown
Plan Lead	Northumberland Wildlife Trust
Latest version	January 2008

Description

Hedgehogs are the only spiny British mammal having up to 7000 dense sharp brown spines on its back and sides. When threatened, it curls into a ball, so that the spines offer protection. The chest and belly are covered in coarse grey-brown fur.

These widespread mammals are found in most lowland habitats, but are most commonly seen in areas where there is grassland close to woodland, scrub or hedgerow. Urban and suburban gardens have become particularly important to hedgehogs seeking food and nest sites.

Hedgehogs are mostly nocturnal, and can travel up to 2km in their nightly forages for food. Beetles, caterpillars, earthworms, slugs and snails are the hedgehog's favourite food, but the diet is varied and they will also eat cereals, pet foods, and fresh meat.

The young are born between May and September, in litters of four or five. Hogs have been known to live for up to 14 years, but in the wild, most will die after two years.

Hedgehogs build nests called hibernacula in which to avoid the coldest times of winter by hibernating, usually between November and early April, depending on the weather. Favourite sites for these are under timber buildings, in piles of brushwood or leaves, or in compost heaps. If it is warm enough and there is enough food, hedgehogs do not hibernate at all. Hedgehogs need to be in good condition physically and weigh over 600 grams before they enter hibernation.

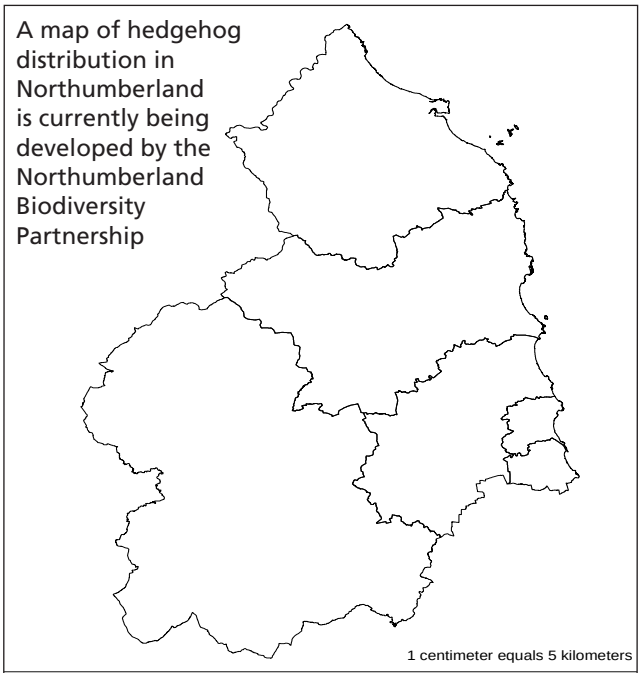
Conservation Status

Wildlife and Countryside Act 1981, Schedule 6
UK Biodiversity Action Plan Species

Current Extent in Northumberland

Hedgehogs are widespread in lowland Britain, except for some Scottish islands. The UK population of Hedgehogs was thought to be about 1,555,000 (Review of British Mammals, JNCC, 95). The latest findings from the Mammal Trust UK (2006), reported a rapid decline in hedgehogs, with some areas experiencing a 50% decline.

There is currently no systematic survey of Hedgehogs in Northumberland, therefore the population status and distribution is unknown.



Hedgehog *(Erinaceus europaeus)* Species Action Plan

Current Factors Causing Loss or Decline

- Loss and fragmentation of suitable habitat to agriculture and urban development
- Reduction in insect food supply from overuse of pesticides
- Secondary poisoning from slug pellets
- Death from road traffic
- Removal of leaf litter and tendency towards fences rather than hedges in gardens causes a reduction in hibernation sites
- Lighting of bonfires without checking for hibernating hedgehogs
- Drowning in garden ponds with steep sides
- Becoming trapped in cattle grids causing death by starvation
- Feeding of milk and bread by humans causing diarrhoea and dehydration which can lead to death
- Trapping of hedgehogs in discarded cans, yogurt pots and plastic cups

Associated Action Plans

Gardens & Allotments
Native Woodland
Lowland Meadows & Pastures
Recreational & Amenity Spaces
Trees & Hedges

Further Information

This hedgehog action plan links to the hedgehog UK BAP action plan.

British Hedgehog Preservation Society - http://www.britishhedgehogs.org.uk/

The Mammal Society - http://www.abdn.ac.uk/mammal/hedgehog.shtml

Targets

Maintain the current range of the hedgehog in Northumberland by 2010

Code	Priority Actions	Date
H A01	Collate all existing information on the hedgehog in Northumberland	2008
H A02	Engage the public in surveys to determine the distribution of the hedgehog in Northumberland	2008
H A03	Use the distribution data to add a numeric value to the maintain range target for hedgehog	2008
H A04	Increase the amount of woodland, hedgerows and grasslands in urban areas	ongoing
H A05	Produce an advice leaflet for managing gardens and urban green space for hedgehogs	2009
H A06	Promote the importance of Northumberland's hedgehogs through publicity material, events and training	2009
H A07	Place 30 hibernation boxes at appropriate nature reserve sites throughout Northumberland	2010

Longhorsley Moor SSSI © Ian Craft

Working with Wildlife

Lowland Heathland Habitat Action Plan

Plan Co-ordinator	Lowland Group
Plan Author	Ian Craft
Plan Lead	Natural England
Latest version	January 2008

Description

Lowland heathland is generally found below 300 metres in altitude, and is characterised by the presence of ericaceous dwarf-shrubs such as heather and cross-leaved heath. It is often found in association with open water, bogs, scattered trees and scrub, bare ground and acid grasslands. Lowland heaths have a different compliment of plants and birds to the more exposed and wetter upland heaths. There is approximately 58,000ha of lowland heathland in the UK, with particular strongholds being found in the south and southwest, Staffordshire, East Anglia and Wales. The UK has about 20% of the international total for this habitat.

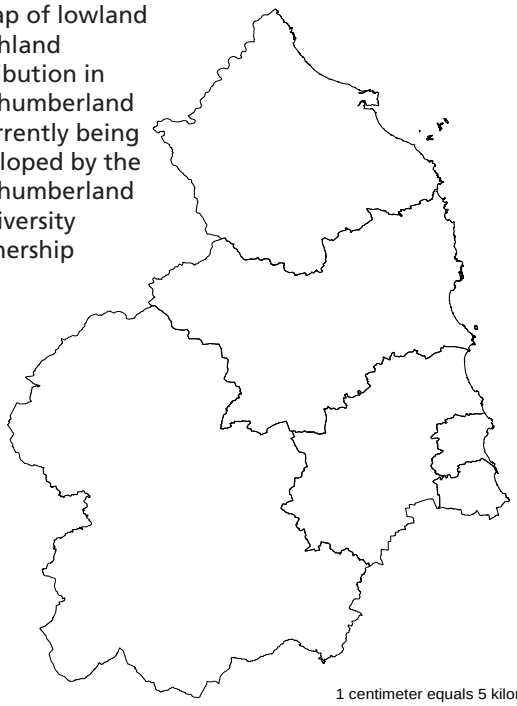
Conservation Status

EC Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

There is approximately 25 hectares of lowland heathland in Northumberland, which represents less than 0.05% of the UK total. The habitat was once much more common and would once have been characteristic of the coal measures of southeast Northumberland, but now mainly small isolated fragments remain. The only extensive example of this habitat in the county is found at Longhorsley Moor, although a number of small sites are identified in English Nature's Lowland Heath Inventory. The most important of these smaller sites is at Arcot Hall, where there is a clear transition from areas of unimproved neutral grassland to areas of heathland.

A map of lowland heathland distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Current Factors Causing Loss or Decline

- Lack of management such as grazing and burning leading to scrub and tree encroachment
- Habitat fragmentation due to developments such as housing and road construction
- Agricultural improvement such as fertilizer and lime application, intensive livestock farming and over-grazing

Lowland Heathland Habitat Action Plan

Associated Action Plans

Farmland Birds
Lowland Meadows and Pastures
Ponds, Lakes & Reservoirs
Trees and Hedges
Whin Grassland

Further Information

This lowland heathland action plan links to the lowland heathland UK BAP action plan whose lead partner is Natural England.

Michael, N. (1993) The lowland heathland management booklet English Nature Science No. 11. Peterborough

Putwain, P.D. and Rae, P.A.S. (1998) Heathland restoration: a handbook of techniques British Gas: Southampton

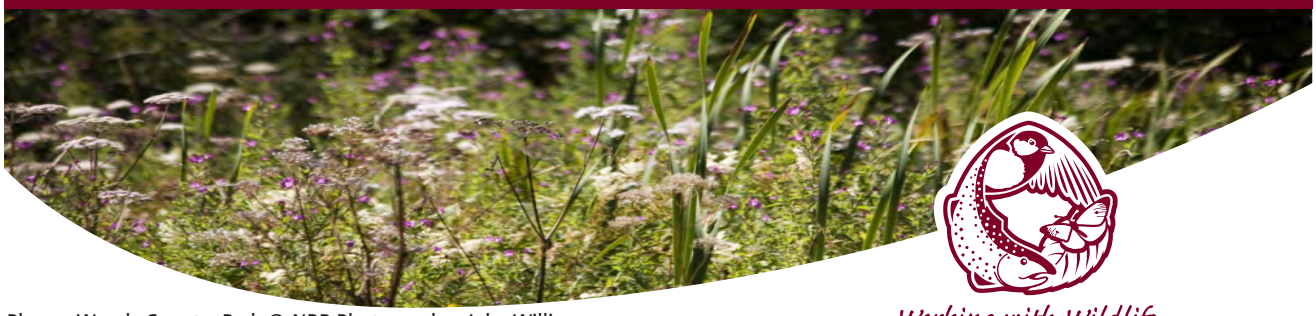
Rodwell, J.S. (1992) British Plant Communities. Vol. 2 'Mires and heaths' Cambridge University Press: Cambridge

Targets

Maintain the current extent of lowland heathland in Northumberland by 2010.

Achieve favourable or recovering condition by appropriate management of lowland heathland currently in unfavourable condition by 2010.

Code	Priority Actions	Date
LH A01	Identify all remaining areas of lowland heathland	2008
LH A02	Use the heathland inventory data to add numeric values to the maintain extent and achieve condition targets	2008
LH A03	Identify areas where heathland was present in the past	2008
LH A04	Prioritise former sites for restoration according to quality and area of degraded habitat and ability to increase connectivity between existing fragmented sites	2008
LH A05	Develop targets for restoration and expansion	2008
LH A06	Review the extent of Local Wildlife Site coverage of lowland heathlands and update as necessary	2009
LH A07	Ensure that heathland restoration or creation is incorporated into at least one land development or reclamation scheme	2010
LH A08	Provide management advice to heathland landowners and managers, including possible funding sources	ongoing
LH A09	Carry out condition monitoring of lowland heathland in Northumberland	ongoing
LH A10	Ensure that 50% of non-SSSI lowland heathland sites are receiving management that will enhance or maintain their nature conservation interest	2010
LH A11	Ensure that 80% of non-SSSI lowland heathland sites are receiving management that will enhance or maintain their nature conservation interest	2015



Plessey Woods Country Park © NBP Photographer John Williamson

Working with Wildlife

Lowland Meadows & Pastures Habitat Action Plan

Plan Co-ordinator	Lowland Group
Plan Author	Ian Craft
Plan Lead	Natural England
Latest version	January 2008

Description

Lowland meadows and pastures are species-rich grasslands with a near neutral pH, usually occurring below 250m in altitude. These grasslands are characterised by low nutrient inputs and are traditionally managed with either a summer hay cut followed by grazing (meadows) or by grazing (pasture). Most examples are found on farmland but fragments do exist in non-agricultural settings such as churchyards and roadside verges.

Northumberland's species-rich lowland grassland is almost exclusively examples of the National Vegetation Classification (NVC) community MG5 – crested dog's-tail Cynosurus cristatus – black knapweed Centaurea nigra grassland.

This action plan also includes the range of grasslands in meadows and pastures which are either inundated with water periodically, permanently moist or water logged. They are collectively referred to in this plan as 'wet grassland'. Sites may contain seasonal water-filled hollows and permanent ponds. Wet grassland is particularly important for breeding waders such as snipe, lapwing and curlew.

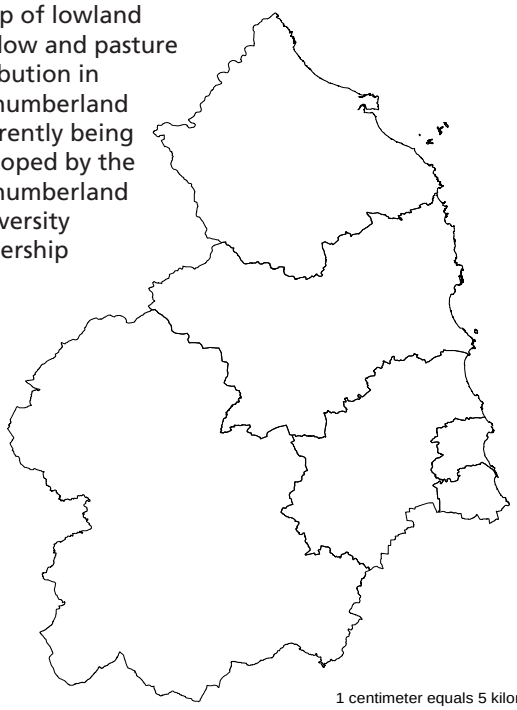
Many areas of pasture-dominated agriculture have been improved by more efficient land drainage which has allowed conversion to arable cultivation. Fragmented pockets of semi-natural grassland can still be found on road verges, railway embankments, old quarries and along ancient rights of way.

Conservation Status

UK Biodiversity Action Plan Habitat – lowland meadow & coastal and floodplain grazing marsh
Environmental Impact Assessment (Agriculture) (England) Regulations 2006
North East Biodiversity Action Plan – lowland meadow & coastal and floodplain grazing marsh

Current Extent in Northumberland

A map of lowland meadow and pasture distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

In 1994 there was estimated to be less than 14,000 ha of species-rich, neutral grassland remaining in the UK. This includes both lowland meadows and pastures. Northumberland has about 93ha of species-rich neutral grassland, although this figure may undergo revision as new sites are discovered. This represents less than 1% of the national resource.

Northumberland's species-rich grassland is mostly located within the southeast of the county. The best examples occur at the Arcot Hall Grassland and Ponds Site of Special Scientific Interest (SSSI) (17.2ha), Willow Burn Pasture SSSI (7.1ha) and Darras Hall Grassland SSSI (2.7ha). A significant proportion of the species-rich grassland remaining in the county occurs on brownfield land, such as abandoned quarries and industrial sites, and also roadside verges.

Lowland Meadows & Pastures Habitat Action Plan

The extent of wet grassland in Northumberland is currently unknown and it is hoped that the Natural England grassland inventory will help to determine how much exists.

Current Factors Causing Loss or Decline

- Land drainage due to agricultural intensification
- Overgrazing
- Neglect
- Development
- Inappropriate Tree Planting
- Atmospheric Pollution
- Ecologically insensitive flood defence works constructed in the past

Associated Action Plans

Farmland Birds
Lowland Heathland
Ponds, Lakes & Reservoirs
Trees and Hedges
Whin Grassland

Further Information

This lowland meadows and pastures action plan links to the lowland meadow UK BAP action plan, whose lead partner is the Countryside Council for Wales and the coastal and floodplain grazing marsh UK BAP action plan whose lead partners are Natural England and Faber Maunsell.

JNCC UK Habitat Classifications web page - http://www.jncc.gov.uk/page-1425#1464

Targets

Maintain the current extent of lowland meadow and pasture in Northumberland by 2010.

Achieve favourable or recovering condition by appropriate management of lowland meadow and pasture currently in unfavourable condition by 2010.

Restore 20 hectares of species rich lowland neutral grassland in Northumberland by 2015.

Increase the extent of species rich lowland neutral grassland by 25 hectares in Northumberland by 2015.

Code	Priority Actions	Date
LMP A01	Identify all remaining areas of species-rich lowland neutral grassland, not included within the Grassland Inventory	2008
LMP A02	Use the grassland inventory data to add a numeric value to the maintain extent target and to develop numeric values for the achieve condition, restoration and create targets	2008
LMP A03	Carry out a survey of existing data on the wet grassland resource in Northumberland	2008
LMP A04	Assess whether to create a separate wet grassland action plan	2008
LMP A05	Review the extent of Local Wildlife Site coverage of lowland meadows and pastures and update as necessary	2008
LMP A06	Ensure that the significance of lowland meadow and pasture type communities is recognised in the development control process, including those on brownfield sites	ongoing
LMP A07	Promote grassland creation and management as part of regeneration schemes/developments	ongoing
LMP A08	Undertake the re-establishment of lowland meadow and pasture vegetation on species poor grassland, establish monitoring and appraise its potential role in the conservation of this habitat	ongoing
LMP A09	Promote the appropriate management of lowland meadows and pastures and relevant financial incentives among land managers	ongoing
LMP A10	Promote the North East's regional grazing project 'flexigraze' to land managers	ongoing
TC A04	Develop sympathetic roadside verge management practices where practical and ensure that these are implemented	2010

Cullernose Point © Nick Brodin

Working with Wildlife

Maritime Cliffs & Slopes Habitat Action Plan

Plan Co-ordinator	Coatal Group
Plan Author	Steve Pullan & Sarah Coles
Plan Lead	Natural England
Latest version	January 2008

Description

Maritime cliffs and slopes comprise sloping faces on the coastline, from 15 degrees to vertical. They are formed at the interface between land and sea, where a break in slope is formed either by slippage or erosion.

Cliffs vary in profile depending on the nature of the rock forming them and the geomorphology of the surrounding land. Most cliffs are formed by erosion.

Cliffs are divided into 'hard' or 'soft' rock, dependent on geology. Hard rock cliffs tend to be formed of rock resistant to weathering and wave action such as limestone, whinstone or sandstone. Vegetation develops on their ledges or in crevices. Soft cliffs are typically made of clay, generally of glacial origin. These cliffs are more unstable and landslides are common. Their slopes are less steep, and these cliffs gradually become vegetated. The vegetation is a complex mosaic with whin grassland and coastal heath over much of the coast with natural grasslands and National Vegetation Classification (NVC) maritime cliff communities. Where the vegetation occurs on the cliffs it is confined to steep slopes, crevices, flushes and on the break of slope it is confined to no more than a few meters from the top.

The cliff top zone extends landwards, at least to the limit of salt spray impact. On the seaward side, the plan extends to the limit of the splash zone (supralittoral) zone.

Conservation Status

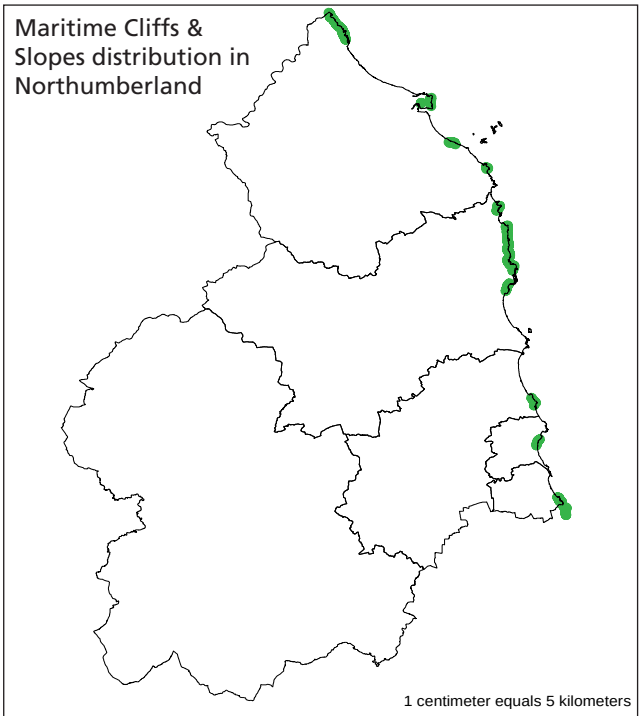
Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

Northumberland has 100km of coastline, of which 19km are cliffs. Of this, 16.9km is classified as hard cliff (rocks) and 2.1km as soft cliff (boulder clay). This represents 0.5% of the national resource (based on the UK BAP figure of 4,000km)

North of Berwick, along the Northumberland Shore SSSI, there are extensive areas of coastal grassland associated with sandstone. The vegetation associated with this habitat grades into the type of vegetation associated with the geology. From Spittal to Cocklawburn Beach, part of Lindisfarne SSSI, the grassland is a mosaic with coastal heath. Castle Point to Cullernose Point SSSI is the main site for maritime cliff and slope.

In the urban areas remnant vegetation can be found and the extent is confined by engineering, both sea defence and urban use, to small rocks and crevices on the rock face e.g. Spital Carrs to Seaton Sluice.



Maritime Cliffs & Slopes Habitat Action Plan

Current Factors Causing Loss or Decline

- Coarse weed species from agricultural runoff due to close proximity of agriculture to the cliff top
- Acceleration of erosion from agricultural drains discharging from cliff faces
- Impact of over/undergrazing or cutting regimes
- Erosion caused by heavy trampling from recreational pressure in urban areas
- Erosion through increased storm frequency from climate change and sea level rise

Associated Action Plans

Coastal Heathland

Rocky Shore, Reefs and Islands

Further Information

This maritime cliffs and slopes action plan links to the maritime cliff and slopes UK BAP action plan, whose lead partner is the Countryside Council for Wales.

Lunn A, 2004, 'Northumberland' New Naturalist series, Collins

Swan, G.A, 1993, Flora of Northumberland, ISBN 0952078201.

Targets

Maintain the current extent of maritime cliff and slope vegetation habitat in Northumberland by 2010.

Code	Priority Actions	Date
MCS A01	Identify the key sites of maritime cliff and slope vegetation in Northumberland	2008
MCS A02	Survey the extent, plant communities and habitat condition of the existing resource to inform improved management schemes	2008
MCS A03	Use the survey results to create targets for achieving condition for maritime cliff and slope vegetation	2008
MCS A04	Create low input grass buffer zones at the top of maritime cliffs to reduce agricultural impacts and allow the community to move backwards over time	2010
MCS A05	Achieve favourable condition for maritime cliff and slope SSSI's, including those with cliff-top vegetation	2010
MCS A06	Improve the quality of vegetation outside designated sites by introducing cattle grazing and other appropriate management	2010
MCS A07	Manage the recreational pressures on maritime cliffs to improve the quality of vegetation	2010
MCS A08	Monitor the change impacts on maritime cliffs due to coastal erosion	2010
MCS A09	Raise awareness about the importance and management of Northumberland's maritime cliffs and slopes and their associated species through publicity material, events and training	ongoing

Allen Banks © NBP Photographer John Williamson

Working with Wildlife

Native Woodland Habitat Action Plan

Plan Co-ordinator	Woodland Group
Plan Author	Richard Pow
Plan Lead	Forestry Commission
Latest version	January 2008

Description

Native woodland represents an important habitat type in Northumberland and the following four main native woodland types are found in the county:

- Upland Oak
- Upland Mixed Ashwoods
- Wet Woodland
- Lowland Mixed Broadleaved Woodland

Northumberland also contains a small area of Juniper woodland.

Native woodlands can be divided into two main categories: Ancient Semi-Natural Woodland (ASNW) and Other Semi-Natural Woodland (OSNW) or secondary woodland. ASNW is on the whole more valuable and important because it is woodland that has occupied the site, normally with minimal human change to the tree species composition, since at least 1600AD. It is the closest we have to natural woodland in the UK and is an irreplaceable part of our heritage. The other form of ancient woodland is Plantation on Ancient Woodland Site (PAWS). This is ancient woodland that has been altered by man, normally through felling and replanting that has changed the tree species composition. Although the conservation value of PAWS is generally less than that for ASNW many of them can be effectively restored to native species.

A simple description of each of the native woodland types occurring in Northumberland is included as an appendix to this action plan.

Conservation Status

UK Biodiversity Action Plan Habitat (all)

Current Extent in Northumberland

A detailed survey of the ancient woodland in Northumberland was undertaken between 2003 and 2006. The final report provides detailed information on the nature, extent and condition of the County's ancient woodland and has been drawn on in compiling this HAP.

There is approximately 81,000ha (National Inventory of Woodlands and Trees, Forestry Commission, 2002) of woodland in Northumberland of which 12,500ha is broadleaved. 3,222ha or 4% is ASNW and 2,432ha or 3% is PAWS. Ancient woodland occupies just 1% of the total land area of Northumberland so represents a tiny fragment of the native woodland cover that was found prior to significant human influence several thousand years ago. The table below shows the total area of ancient woodland broken down by woodland type. The data on ancient woodland only includes woodlands greater than 2 hectares.

Woodland Type	ASNW (ha)	PAWS (ha)	All Ancient (ha)
Upland Oak	1444	1646	3090
Upland Ash	1205	505	1710
Lowland Mixed Broadleaf	399	270	669
Wet Woodland	163	11	174
Juniper	11		11
Total Area	3222	2432	5654

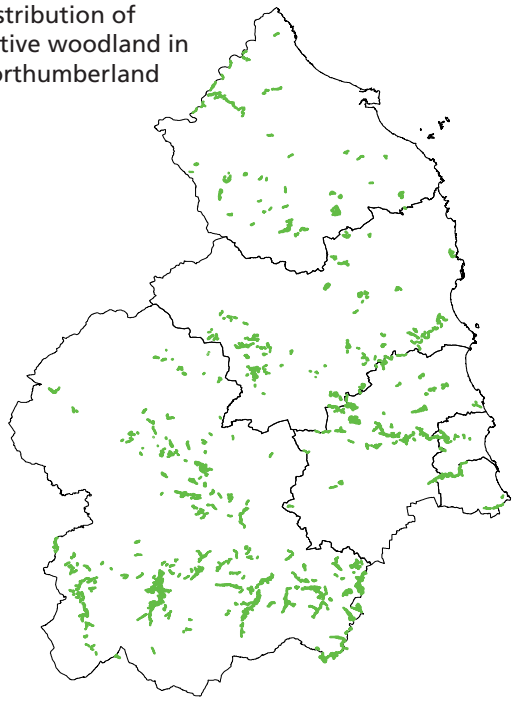
The extent of OSNW is not known but is likely to be around 2,000ha. This is made up of ancient woodlands that are less than 2ha in size and non-ancient semi-natural woodlands and includes approximately 1,000ha of new native woodlands that have been planted on formerly open land over the last 10 years.

The condition of ancient woodland in Northumberland can be summarised as follows:

- 61% of Ancient Woodland (ASNW and PAWS) is in an unfavourable declining or partially destroyed condition
- 44% of ASNW is in an unfavourable declining or partially destroyed condition
- 82% of PAWS is in an unfavourable declining or partially destroyed condition

Native Woodland Habitat Action Plan

Distribution of native woodland in Northumberland



1 centimeter equals 5 kilometers

Current Factors Causing Loss or Decline

- Lack of regeneration caused by inactive management and no protection from grazing animals
- Conifer canopy out competing native broadleaved species
- Invasive alien species such as rhododendron
- Regeneration of non native tree species such as sycamore, beech and most conifers
- Loss and/or fragmentation due to development
- Opencast mining

Associated Action Plans

Red Squirrel
Dormouse
Black Grouse
Farmland Birds
Trees and Hedges

Further Information

This native woodland action plan links to the lowland mixed deciduous, upland mixed ashwoods, upland oakwood and wet woodland UK BAP action plans, all led by the Forestry Commission.

Forestry Commission, 2006, Northumberland Native Woodland Project, Final Report
http://www.forestry.gov.uk/forestry/infd-6w6jwj

Forestry Commission, 2003, The Management of Semi-Natural Woodlands, Forestry Commission Practice Guides

Targets

Maintain the current extent of ASNW in Northumberland of 3,222 hectares by 2010.

Maintain the condition of the 1804 hectares (56%) of ASNW in Northumberland currently assessed as favourable by 2010.

Achieve favourable condition of 2,255 hectares (70%) of ASNW in Northumberland by 2015.

Ensure that 730 hectares (30%) of PAWS in Northumberland have been restored or are under gradual restoration by 2015.

Increase the extent of native broadleaved woodland in Northumberland by 1,000 hectares through new woodland creation by 2015.

Increase the extent of native broadleaved woodland in Northumberland by 600 hectares through the introduction of native species to plantations when restocking by 2015.

Code	Priority Actions	Date
NW A01	Encourage planning authorities to resist development impacting on ASNW in line with Planning Policy Statement 9	ongoing
NW A02	Forestry Commission and Natural England to work with partners to target support at ASNW in unfavourable declining condition	2008 onwards
NW A03	Create and distribute a leaflet on the results of the Northumberland Native Woodland Project	2007
NW A04	Provide support through the English Woodland Grant Scheme (EWGS) to encourage restocking of PAWS with native species	ongoing
NW A05	Begin to restore all Forestry Commission owned PAWs	2015
NW A06	Provide support through EWGS and Higher Level Stewardship Scheme to encourage the creation of new native woodlands in priority areas	ongoing
NW A07	Provide support through EWGS to encourage an increase in diversity in conifer plantations by increasing the proportion of native broadleaves	ongoing
NW A08	Increase the diversity of Forestry Commission conifer plantations by increasing the ratio of native broadleaves	ongoing
NW A09	Maintain the database of extent and condition of native woodland in Northumberland.	2015

Native Woodland Habitat Action Plan Appendix

All native woodland types are equally valuable, hosting a range of different dependent plant and animal species. Below are simple descriptions of each of the native woodland types occurring in Northumberland.

Upland Oakwoods

Upland oakwoods are the most common type of native woodland occurring in Northumberland. They occur on acid soils and are characterised by a predominance of oak (most commonly sessile, but locally pedunculate) and birch in the canopy, with varying amounts of holly, rowan and hazel as the main understorey species. The range of plants found in the ground layer varies according to the underlying soil type and degree of grazing from bluebell-bramble-fern communities through grass and bracken dominated ones to moss-dominated areas. Most oakwoods also contain areas of more alkaline soils, often along streams or towards the base of slopes where much richer communities occur, with ash and wych elm in the canopy, more hazel in the understorey and ground plants such as dog's mercury. Many of these woodlands are grazed and have a history of coppice management.

Upland Mixed Ashwoods

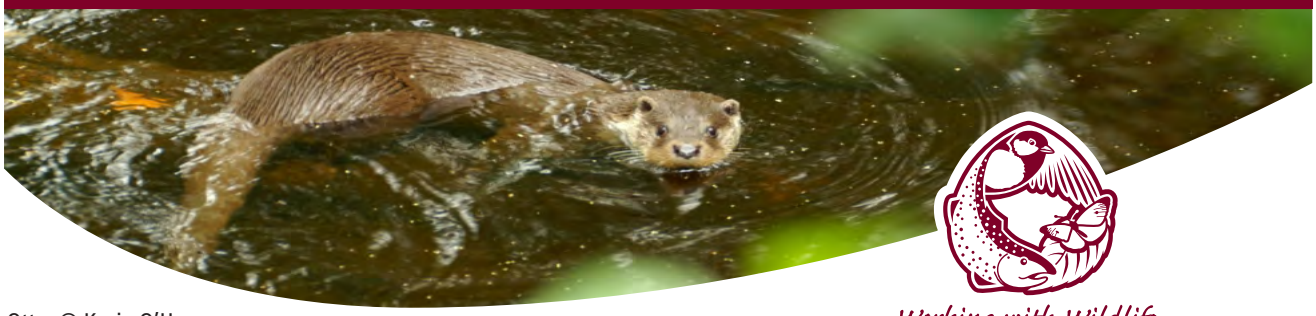
Upland mixed ashwoods are the second most common native woodland type in Northumberland. They occur on base-rich soils in upland areas. In most, ash is a major species, although locally oak, birch, wych elm and even hazel may be the most abundant species. Yew may form small groves in intimate mosaics with the other major tree species and alder may occur where there are transitions to wet woodland. Despite variations in canopy composition the ground flora remains broadly similar and is characterised by dogs mercury and ramsons (wild garlic). Most upland mixed ashwoods are probably ancient, but ash is a vigorous colonist of open ground, so upland mixed ash is a common form of secondary woodland.

Wet Woodlands

Wet woodlands are found on poorly drained or seasonally wet soils, usually with alder, birch and willows as the predominant tree species, but sometimes including ash and oak on the drier riparian areas. They are found on floodplains, as successional habitat on fens, mires and bogs, along streams and hill-side flushes, and in peaty hollows. They generally only occupy small areas or small parts of other woodlands where they form part of a mosaic of different woodland types. They account for just 5% of the total area of ASNW in Northumberland. These woodlands occur on a range of soil types including nutrient-rich mineral and acid, and nutrient-poor organic ones, but all are poorly drained or frequently flooded. Most alder woods are ancient. Wet woodland combines elements of many other ecosystems and as such is important for many plant and animal species.

Lowland Mixed Broadleaved Woodland

This woodland type occurs in the lowland parts of the county such as the south-east and forms about 12% of the total area of ASNW in Northumberland. These woods are dominated by oak, ash and hazel and are typically associated with fertile moist loam and clay soils and support a rich ground flora. Where the soils are alkaline or neutral, ash normally dominates the canopy with dogs mercury *(Mercurialis perennis)* the characteristic field layer. On the more acid soils oak dominates the canopy and bluebell, wood anemone, bramble, honeysuckle and bracken are often found in the understorey. Historically these woods were often managed as coppice or coppice with standards although there is often little management activity today and these woods are typically surrounded by intensively farmed agricultural land.



Otter © Kevin O'Hara

Working with Wildlife

Otter *(Lutra lutra)* Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Northumberland Wildlife Trust
Latest version	November 2009

Description

The Eurasian or European otter is a native to Britain and is one of its largest carnivores. A full-grown male otter averages 1.2m in length and weighs about 10.5kg. Females are smaller, weighing in at about 7kg and reaching little more than 1m in length.

The otter is beautifully adapted to its semi-aquatic life style. It has a long stream lined body powered by a thick rudder like tail and webbed feet on short powerful legs. The coat is waterproof and consists of 2 layers, a thick under layer of insulating down like fur and an outer layer of longer guard hairs that trap air to form an insulation layer between.

Much of their life is actually spent out of the water sleeping; with hunting bouts rarely lasting longer than half an hour. They are active at any part of the day but are usually nocturnal in reaction to the ease of catching the available prey.

Travel is made extensively along rivers, streams and ditches as well as overland. Generally the otter rarely strays from its riparian habitat, resting in underground and above ground locations. Preferring somewhere with good escape routes, they are often beneath tree root systems close to the river's edge. Other locations may be in drains, undercut riverbanks, and rock cavities or above ground in thick vegetation. Many sites are very traditional having been used by generations of otter. They have a large number of resting sites within a range, rarely using the same one for more than a couple of nights.

Breeding can occur at any time of the year with a very distinct preference for the spring in Northumberland. Between 1 and 3 cubs are born in secure surroundings away from prospecting males and floods. Breeding sites are again traditional by nature and are often in riverbank trees or away from main river situations on ponds, lakes or tributary streams. The cubs stay with the mother for approximately 10 to 12 months, in which time the male acts as both protector and sometimes provider, particularly as the cubs grow. Up until about 18 months old, cubs will stay very close to their mother and home range before eventually finding there own ranges. Surviving the second year could see an otter reach 10 years old but generally their life span in the wild is about 4 to 5 years.

They principally feed on fish, feeding generally on the most abundant species available on the watercourse inhabited. Seasonal gluts are also taken advantage of as in the salmon run and spawning amphibians. In impoverished habitat they appear readily to adapt to catching voles, mice, rats and water birds rather than the usual fish species.

Conservation Status

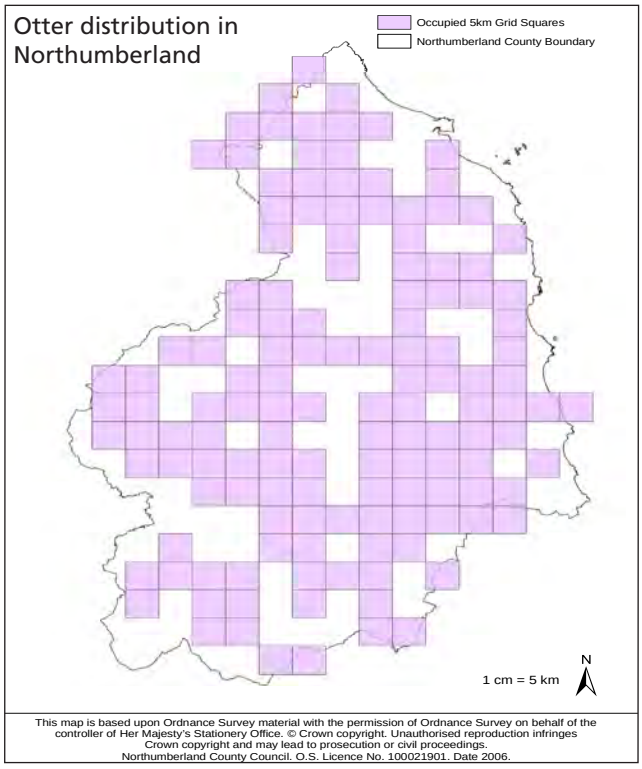
EC Habitats Directive, Annex II & IV
Bern Convention, Appendix II
Convention on International Trade in Endangered Species, Appendix I
Wildlife & Countryside Act 1981, Schedule 5 & 6
UK Red Data List 1993
UK Biodiversity Action Plan Species
North East Biodiversity Action Plan Species

Current Extent in Northumberland

At present every river catchment in Northumberland boasts signs of otter. In more recent years they have even started to populate urban centres such as Blyth, Morpeth and Newcastle upon Tyne. In many cases however, this expansion is into largely 'unsuitable' areas, which support impoverished prey resources and poor habitat qualities.

Improvements in water quality and habitat have been largely responsible for the return of the otter to Northumberland's rivers. This has led to its much increased distribution in the past 5 years. It has also led to the sharp increase in the number of fatalities on the region's roads as the population expands to seek new territory. It is far too early to understand what impact this will have on a population of animals that naturally live at relatively low densities but it is understood that the majority of fatalities are young, fit and healthy individuals.

Otter *(Lutra lutra)* Species Action Plan



Current Factors Causing Loss or Decline

- Disturbance by boating, angling, dog walking and close proximity of urban areas
- Loss of habitat due to historical land drainage and flood defence works
- Obstructions such as road bridges and weirs restricting otter movement and encouraging them to exit the water on to busy roads
- Reduction in riparian habitat from intensive agricultural practices, grazing pressure and sites for angling which decreases available resting sites and foraging areas for otters
- Pollution of watercourses from fertilisers, pesticides, toxic discharges and sewage treatment works which reduces water quality and subsequently populations of prey species such as fish and crayfish

Associated Action Plans

Rivers and Streams
Ponds, Lakes and Reservoirs
Fen, Marsh and Swamp
Reedbed
Saltmarsh and Mudflats
Freshwater Fish
White-clawed Crayfish

Further Information

This otter action plan links to the otter UK BAP action plan whose lead partner is the Environment Agency.

The Mammal Society otter fact sheet - http://www.abdn.ac.uk/mammal/otter.shtml

Targets

Maintain the current range of the otter in Northumberland of 135 five kilometre squares by 2015

Increase the current range of the otter in Northumberland to 185 five kilometre squares by 2015

Code	Priority Actions	Date
O A01	Quantify the maintain and increase current range targets based on the distribution data	2008
O A02	Keep records of road mortalities for otters	ongoing
O A03	Encourage the use of otter proof fencing on new fisheries	ongoing
O A04	Ensure that designated otter sites are properly recognised within River Basin Management Plans as required by the Water Framework Directive	2009
O A05	Ensure all operations affecting watercourses take account of otters, retaining features such as old trees, scrub and overhanging root systems	ongoing
O A06	Encourage the creation of log piles and construction of artificial holts adjacent to watercourses where the habitat is considered to be suitable for otters	ongoing
O A07	Encourage land owners and managers to carry out favourable management of the riparian zone to protect river margins and encourage the expansion of otter populations	ongoing
O A08	Identify and prioritise sites where suitable enhancement, restoration and management works may be considered to benefit the otter	2008
O A09	Promote the otter as a high profile flagship species to highlight the importance of water quality and riparian habitats to biodiversity	ongoing
O A10	Monitor the range of the otter in Northumberland	2015

Greenlee Lough © NBP Photographer John Williamson

Working with Wildlife

Ponds, Lakes & Reservoirs Habitat Action Plan

Plan Co-ordinator	Rivers & Wetland Group
Plan Author	Elaine Jaggs
Plan Lead	Natural England
Latest version	January 2008

Description

There are a wide range of waterbodies in Northumberland; some formed naturally and some intentionally or otherwise, by human activity. Waters in Northumberland vary in size from ponds a metre or two across to the 1112ha Kielder Water, and often occur in association with other important wetland habitats such as marshy grassland, fen, reedbed and wet 'carr' woodland. This action plan excludes saline lagoons which are covered by a separate plan.

Natural ponds occur in depressions created by glacial action or the action of rivers. Subsidence of land as a result of mining activities has created over 100 ponds in the south east of the county, and some have been intentionally created as an afteruse of minerals workings. Others have been created over the centuries by farmers and landowners for watering stock, shooting or fishing. Ponds are defined here as small water bodies between 1m sq and 2ha in area. Anything larger than 2ha is termed to be a lake.

Reservoirs by definition are artificially created water bodies, some of which enclose a very large area of water. Over three quarters of the area of standing open water in Northumberland occurs in the form of reservoirs. Larger water bodies are noted for their wildfowl, providing important feeding & roosting sites.

Standing open waters are classified according to their nutrient status; eutrophic (nutrient-rich) waters predominate in the lowlands, where their nutrient status is often artificially increased by agricultural fertilizers, while oligotrophic (nutrient-poor) waters occur in the uplands. Mesotrophic waters have intermediate nutrient levels. They are relatively uncommon; occurring in the upland fringes of northern and western Britain, and can support the highest diversity of plants and animals of any waters. Dystrophic waters are acidic and peaty, and occur uncommonly in the uplands. It is proposed that the Environment Agency, Natural England and their counterparts elsewhere in the UK devise a 3 tier classification for such waterbodies, based on the criteria of naturalness, biodiversity and restoration potential. This will help to identify the most important sites, so that conservation resources can be allocated accordingly.

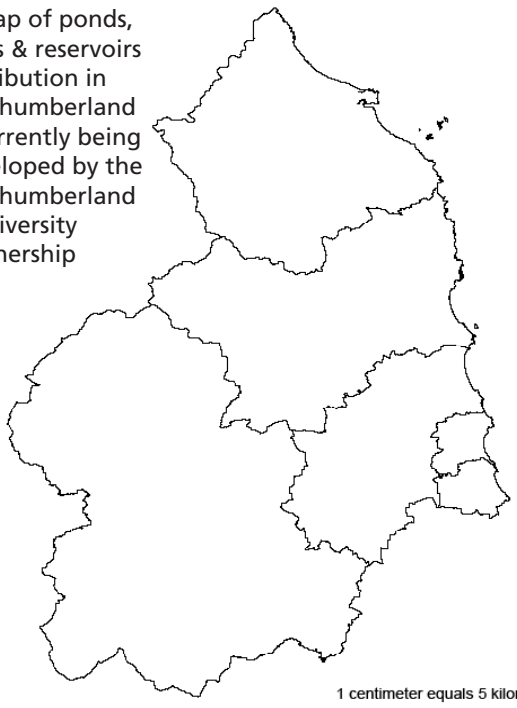
In addition to permanent waterbodies, ponds which seasonally or temporarily dry out are important for a variety of species of conservation concern. Particularly plants that rely on exposed mud for germination and the great crested newt, as drying out prevents fish colonisation of the water bodies.

Conservation Status

UK Biodiversity Action Plan Habitat – mesotrophic lakes, ponds, oligotrophic & dystrophic lakes
Individual ponds, lakes and reservoirs in Northumberland are covered by various site designations

Current Extent in Northumberland

A map of ponds, lakes & reservoirs distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



Ponds, Lakes & Reservoirs Habitat Action Plan

There is approximately 2290 ha of standing open water in Northumberland, of which 1724 ha (76%) is accounted for by reservoirs, and 560 ha by ponds and lakes. Nationally, ponds have declined in number by about 75% over the past century, but losses in Northumberland have been offset, at least to some extent, by the formation of mining subsidence ponds. Lowland ponds and lakes, which are generally eutrophic in character, are important for invertebrates such as dragonflies and diving beetles, amphibians such as great crested newt, birds such as little grebe, and a wide range of plants. Crag, Broomlee and Greenlee Loughs, which total 66 ha in extent, together form the main resource of mesotrophic lakes in Northumberland. They are of particular importance for their aquatic plant communities, particularly stoneworts and pondweeds, and for wintering wildfowl. Wintering wildfowl also occur in significant numbers on reservoirs, where the uncommon needle and northern spike-rushes can be found in the drawdown zones. Approximately 7 ha of dystrophic standing waters occur in the National Park.

Current Factors Causing Loss or Decline

- Nutrient enrichment
- Excessive fish stocking
- Disturbance from recreation
- Overgrazing of marginal vegetation
- Pollution from urban rainwater runoff, illegal dumping of rubbish, minewater or agricultural chemicals
- Introduced native and non-native invasive species
- Direct loss of water bodies to agriculture and development through infilling or drainage
- Acidification from felling of coniferous woodland adjacent to waterbodies
- Neglect or lack of management
- Intensive use of surrounding land leading to loss of semi-natural habitat
- Lowering of water tables from drainage, abstraction, flood protection or drought causing drying out of sites
- Conversion of ponds to fisheries
- Over zealous vegetation clearance

Associated Action Plans

Water Vole
Otters
Bats
Great Crested Newt
Upland Waders
Coastal Birds
Farmland Birds
Violet Crystalwort

Further Information

This ponds, lakes and reservoirs action plan links to the mesotrophic lakes, ponds, oligotrophic & dystrophic lakes UK BAP action plans.

Targets

Maintain the current number of ponds in Northumberland by 2015

Increase the number of ponds in Northumberland by 50 by 2015

Maintain the current extent of lakes and reservoirs in Northumberland by 2015

Code	Priority Actions	Date
PLR A01	Identify the locations of the current pond resource	2008
PLR A02	Identify priority areas for the creation of new ponds, increasing the linkages between existing groups of isolated ponds	2008
PLR A03	Encourage the creation of ponds through landscaping and mitigation of development schemes	ongoing
PLR A04	Continue the standing water characterisation project to determine the chemical and macrophyte status of lakes and reservoirs	2008
PLR A05	Create site action plans for those lakes and reservoirs that require enhancement of water quality and nutrient standards to restore to favourable condition	2009
PLR A06	Raise awareness of problems associated with non-native invasive species and encourage their control by riparian owners and other interested parties	2009
PLR A07	Review the ponds, lakes and reservoirs action plan once the characterisation data is available	2010

Plessey Woods Country Park © NBP Photographer John Williamson

Working with Wildlife

Recreational & Amenity Space Habitat Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Mick Sharpe
Plan Lead	Local Authorities
Latest version	January 2008

Description

This action plan covers the following:

- Parks
- Formal gardens
- Amenity grassland
- School grounds
- Churchyards & cemeteries
- Golf courses

Recreational and amenity land largely comprises improved grassland with relatively few species. The sward tends to be dominated by Perennial Rye Grass and agricultural legumes. These areas are usually intensively managed for formal sports use or informal recreational such as dog walking or picnicking. Areas not used for formal sports may have more biodiversity interest with less intensive management and reduced chemical inputs.

In many areas the recreational and amenity land has been developed around fragments of other habitat types such as woodland, wetland and hedgerows. Such areas are generally much more valuable for wildlife.

Conservation Status

Recreational & amenity land is often afforded local wildlife designations such as Local Nature Reserves
It often includes elements of other habitats at its periphery which may be protected under the provisions of various Acts and Regulations, for example trees and hedgerows

Current Extent in Northumberland

The current extent and condition of recreational and amenity land within Northumberland is unknown.

A map of recreational & amenity space distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership

1 centimeter equals 5 kilometers

Recreational & Amenity Space Habitat Action Plan

Current Factors Causing Loss or Decline

- Public perception that land not managed intensively is not cared for. Shifts in the way areas of parks are managed must be made slowly and with public consultation and information.
- Management practices: frequent mowing has left many areas of this habitat thin and compacted, with hardly any botanical diversity.
- Amenity value: the public requires areas for sitting, walking, ball games, etc. which in turn leads to trampling and compaction of the grassed areas.
- Contract specifications: these are often "fixed" and on tight time scales, with little scope for flexibility to incorporate "tweaking" as habitats evolve.
- Use of chemicals: herbicides and pesticides.
- Financial constraints have major implications for all aspects of amenity land management including biodiversity.
- Training: for both parks management and contractors in biodiversity management techniques.
- Pressure for increased levels of use: amenity areas are under pressure to increase their usage which in turn can impact on the biodiversity of sites. Large events create noise and soil compaction that can disturb wildlife and impact on invertebrates. Conversely if managed well then more people are offered the chance to benefit from the natural world.
- Sports intensification: modern sports facilities can change the character of small parks. All-weather pitches are sterile with no food chain base and floodlights can disturb nesting birds.
- Dog Waste

Associated Action Plans

Tress and Hedgerows
Transport Corridors
Bats
Hedgehog
Garden Birds
Barn Owl

Further Information

Green Space website - http://www.green-space.org.uk/

CABE Space website -
http://www.cabe.org.uk/

Neighbourhoods Green website -
http://www.neighbourhoodsgreen.org.uk/ng/

Targets

Increase the area of recreational and amenity land managed for wildlife in Northumberland by 2010.

Code	Priority Actions	Date
RAS A01	Identify the current extent and condition of recreational and amenity land in Northumberland	2008
RAS A02	Use survey results to quantify the target to increase the area managed for wildlife	2008
RAS A03	Promote 'best practice' management of Northumberland's recreational and amenity land	ongoing
RAS A04	Encourage the establishment of 'Friends of' groups to further enhance and develop areas of amenity land	ongoing

Red Squirrel © www.rick-thornton-photography.com

Working with Wildlife

Red Squirrel *(Sciurus vulgaris)* Species Action Plan

Plan Co-ordinator	Woodland Group
Plan Author	Mark Wilkinson
Plan Lead	Save Our Squirrels
Latest version	January 2010

Description

The red squirrel can reach a body length of up to 220mm, has a distinct red/brown pelt, a long bushy tail of uniform colour, and characteristic ear tufts that are particularly prominent in winter. The colour of a red squirrels coat can vary, ranging from dark brown/black, to blonde tones due to bleaching by summer sunlight.

Red squirrels are adapted for living and moving about in trees, with ranges extending up to 8 hectares dependent on the habitat type. Food sources vary throughout the year to include: ripe tree seeds and nuts, berries and fruits, fungi, shoots, flowers, bark, lichens and invertebrates. Population densities vary greatly from as low as 0.2 per hectare in Sitka Spruce woodland, to an average of 1 per hectare in broadleaf woodland. They are limited to crossing up to 500m of open ground so a structurally diverse and continuous habitat is therefore important.

Red squirrels live in either a dense ball of twigs and leaves known as a drey located in a branch fork against the tree trunk, or a hollow in a tree known as a den. Summer dreys are less substantial platforms of twigs, and squirrels rotate between several dreys to limit build up of parasites.

The red squirrel is active by day, and does not hibernate, although will remain in the shelter of a drey for longer periods during adverse weather conditions. The breeding season runs from January to October, with the first litter of around 3-4 kittens in spring and a second litter in summer dependent on food availability.

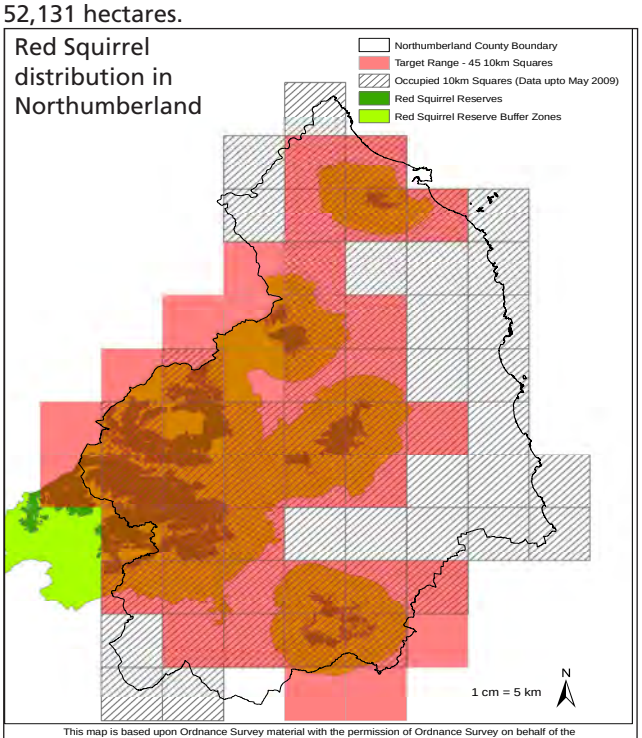
Conservation Status

Bern Convention, Appendix III
UK Biodiversity Action Plan Species
North East Biodiversity Action Plan Species

Current Extent in Northumberland

In order to maintain populations of red squirrels across their current range in the UK conservation activity will focus on selected priority woodland areas. A total of 16 red squirrel reserves have been established in the North of England and 9 of these are found in Northumberland. This strategy aims to ensure that main centres of populations will be viable in the long term. Areas outside of the priority zones with red squirrel populations can expect to lose them over the next few decades. Whilst it may seem strange to have a BAP target that recognises a decline, to do otherwise is considered to be unrealistic. If no action is taken to defend the priority areas the red squirrel is likely to decline to extinction in mainland England, Wales and Northern Ireland.

The red squirrel is widely distributed across Northumberland, recorded in 62 10km National Grid squares since 2000. Of these squares, 39 lie within the 9 red squirrel reserves in Northumberland and their 5km radius buffer zones. The reserves cover approximately 52,131 hectares.



Red Squirrel *(Sciurus vulgaris)* Species Action Plan

Current Factors Causing Loss or Decline

- Spread of the non-native grey squirrel *(Sciurus carolinensis)*
- Squirrelpox virus

Associated Action Plans

Native Woodland

Black Grouse

Further Information

This red squirrel action plan links to the red squirrel UK Biodiversity Action Plan, whose lead partner is JNCC.

The Save Our Squirrels project website - www.saveoursquirrels.org.uk

Pepper, H. & Patterson, G. (1998). Red Squirrel Conservation. Practice Note 5. Forestry Commission, Edinburgh.

Wauters, L.A, Lurz, P.W.W. & Gurnell, J. (2000). Interspecific effects of grey squirrels *(Sciurus carolinensis)* on the space use and population demography of red squirrels *(Sciurus vulgaris)* in conifer plantations. Ecological Research, Vol 15, 271-284.

Targets

Maintain the current range of the red squirrel in Northumberland within the 9 red squirrel reserves and their 5 kilometre buffer zones of 45 occupied 10 km grid squares by 2015

Code	Priority Actions	Date
RS A01	Establish contact with all reserve and buffer zone land owners and managers	2008
RS A02	Provide funding advice to landowners and managers in the buffer zone areas and encourage grant applications	ongoing
RS A03	Establish a grey control network in the buffer zones	ongoing
RS A04	Provide conservation advice and training for reserve and buffer zone landowners and managers and partner organisations	ongoing
RS A05	Establish a monitoring network across the 9 reserves	ongoing
RS A06	Conduct biannual monitoring across the 9 reserves	ongoing
RS A07	Establish and train a team of volunteers to assist in the monitoring of red squirrels in reserves and buffer zones	ongoing
RS A08	Produce additional Buffer Zone Management guidelines	2008
RS A09	Establish local groups in strategic locations to implement red squirrel conservation	ongoing
RS A10	Set up and maintain a database of all sightings data	ongoing
RS A11	Produce a map of red and grey squirrel distribution across the region	ongoing
RS A12	Establish contact with red squirrel conservation officers across the country to ensure that conservation efforts in Northumberland link up with those from bordering regions	2007
RS A13	Coordinate a summit of local councils to enhance the protection of urban and suburban populations	2007
RS A14	Raise awareness about the importance and management of Northumberland's red squirrels through publicity material, events and training	ongoing
RS A15	Create a flagship access and interpretation visitor facility in Kielder Forest	2010

East Chevington © Kevin O'Hara

Working with Wildlife

Reedbed Habitat Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Northumberland Wildlife Trust
Latest version	January 2008

Description

Reedbeds are areas of shallow water dominated by a tall wetland grass called common reed, *Phragmites australis*. Common reed is the UK's largest native grass and is particularly conspicuous, with cane like stems that last throughout winter. Reedbeds occur at the margins of all kinds of water bodies including areas of open water, ditches, and wet grassland. They can also occur alongside several other habitats including wet woodlands and willow dominated scrub. They can be wet or dry at the base, but the water table generally needs to be at or near ground level for most of the year for the habitat to thrive.

Reedbeds are a mid successional vegetation phase; with silting up, willow scrub and eventually carr woodland developing. Allowing grading of these successional habitats will not only support those species that require specific parts of the transition zone but also those that require habitat mosaics that incorporate reedbeds.

Reedbeds are known to support high invertebrate species diversity. Four species of bird are highly dependent on reedbeds for their survival; reed warbler, bearded tit, marsh harrier and bittern. They also provide nesting, roosting or feeding sites for various songbirds, waders, rails and wildfowl.

Where the reedbed habitat is smaller than 0.25 ha and within another larger Northumberland biodiversity action plan habitat then, for mapping purposes, it is counted as the larger habitat. Similarly, where the reedbed community is narrower than 5m around the fringe of a waterbody, it is counted as part of the waterbody.

Conservation Status

UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

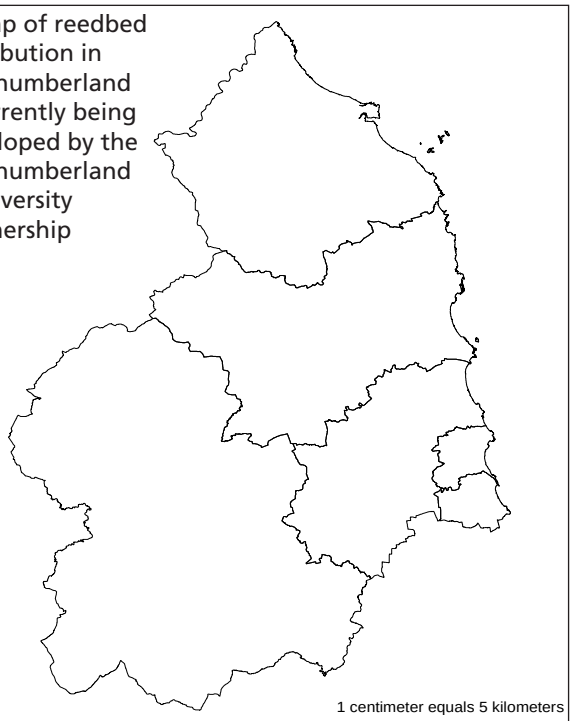
Reedbed is an extremely uncommon habitat in Northumberland with one large developing reedbed complex at East Chevington. A number of small reedbeds of a fragmentary nature are scattered throughout the county; located in mining subsidence ponds, sand and gravel extraction sites, lakes, rivers and ditches. A UK national survey in 2003 estimated a total of 5,000 ha of reedbed nationwide, from 900 sites. Only about 50 of these sites are greater than 20 hectares in size and are mainly found in the south and east of England.

The relatively small and fragmented nature of the reedbeds in Northumberland and their isolation from larger sites means that the biodiversity value, although still very rich, is less than the extensive reedbeds in counties like Norfolk and Suffolk. There is however potential to create significant areas of reedbed habitat through the restoration of minerals extraction sites, particularly within the Northumberland Coalfield.

The current area of reedbed in the county has not been calculated.

Reedbed Habitat Action Plan

A map of reedbed distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



Current Factors Causing Loss or Decline

- Nutrient enrichment (eutrophication)
- Damage and destruction from livestock grazing of marginal vegetation
- Pollution from runoff and mine water
- Illegal rubbish dumping
- Conversion to agriculture
- Inappropriate management leading to drying out, scrub encroachment and succession to woodland
- Small total area and fragmented nature of current sites
- Habitat loss to development
- Lack of data regarding extent and quality of habitat
- Changes in water supply from flood protection, land drainage and abstraction leading to drying out of reedbed and increasing speed of natural succession to scrub
- Disturbance from recreational activities e.g. angling, waterborne transport, noise and physical disturbance
- Subsidence and coastal changes increasing site salinity

Associated Action Plans

Otter
Water Vole
Bats
Coastal Birds
Farmland Birds
Upland Waders

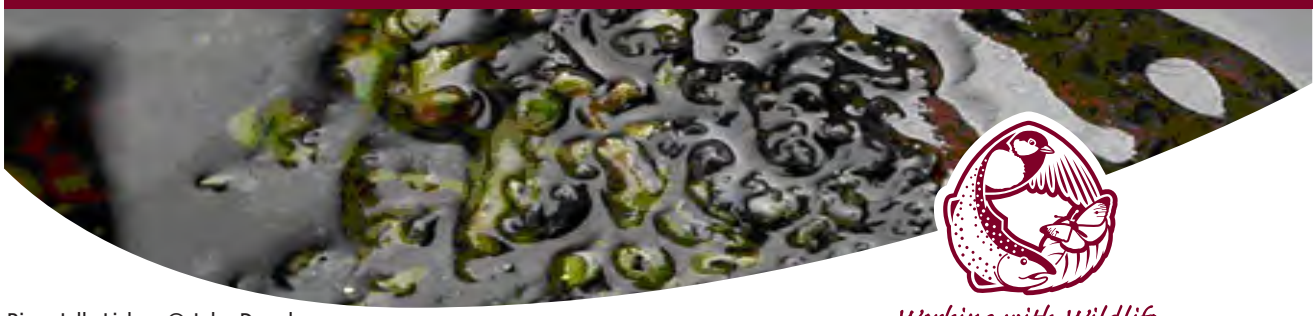
Further Information

This reedbed action plan links to the reedbed UK BAP action plan, whose lead partners are Natural England and Faber Maunsell.

Targets

Maintain the current extent of reedbed in Northumberland by 2010

Code	Priority Actions	Date
R A01	Identify the location and extent of Northumberland's reedbed resource	2008
R A02	Carry out condition monitoring of reedbed in Northumberland	ongoing
R A03	Identify and pursue opportunities to restore or create reedbed habitat through landscaping and mitigation of development schemes	ongoing
R A04	Review the reedbed habitat action plan once baseline data is available and create targets to increase the identified extent	2009



River Jelly Lichen © John Douglass

Working with Wildlife

River Jelly Lichen *(Collema dichotomum)*
Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Environment Agency
Latest version	November 2009

Description

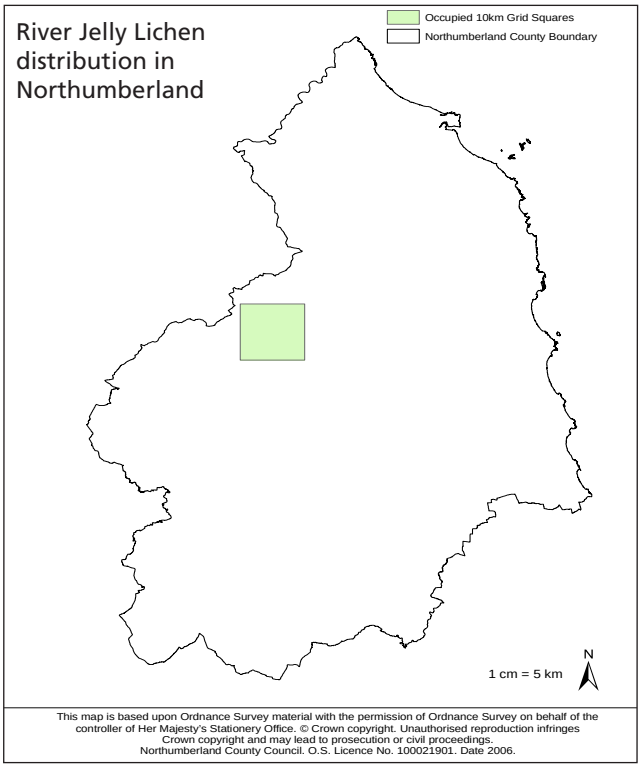
This aquatic lichen grows on submerged rocks and boulders in fast-flowing intermediate and upland streams. It is a small (1-2cm) finger-lobed lichen that has a rubbery consistency and is green-brown in colour. It usually occurs in well-lit, open sites but it can also tolerate light shading. The maximum depth at which it grows is 80 centimetres below summer water levels and it is only found in streams with a high water quality.

Conservation Status

IUCN Red Data List, vulnerable
Great Britain lichens red data list 1996, vulnerable
UK Biodiversity Action Plan Species
Wildlife & Countryside Act 1981, Schedule 8
North East Biodiversity Action Plan Species

Current Extent in Northumberland

River jelly lichen is found in the upper reaches of the River Coquet in Northumberland. In the UK it is rare and has been declining since 1960; now known only from eleven 10 km squares in mid-Wales, northern England, Scotland and Northern Ireland. Its distribution also extends into northern Europe and Russia.



Current Factors Causing Loss or Decline

- Nutrient enrichment – sewage discharges, runoff of agricultural fertilisers or the clear fell of forests leading to the stimulation of algae dominated communities that might out compete jelly lichen
- Increased silt loads in rivers and streams
- Growth of riverside trees causing shading out
- Changes to river water quality, particularly any reduction in the base status of the water
- Mechanical alteration to the bed of the river by re-profiling to reduce flood risk, create fish holding pools or construction of fishing platforms

Associated Action Plans

- Rivers and Streams

River Jelly Lichen *(Collema dichotomum)* Species Action Plan

Further Information

This river jelly lichen action plan links to the river jelly lichen UK BAP action plan, whose lead partner is the Environment Agency.

Targets

Maintain the current range of the River Jelly Lichen in Northumberland of 1 ten kilometre square by 2015

Code	Priority Actions	Date
RJL A01	Monitor the population of river jelly lichen	ongoing
RJL A02	Continue liaison with landowners and managers to highlight the importance and requirements of river jelly lichen following the campaign of targeted farm visits.	2008

River Allen © NBP Photographer John Williamson

Working with Wildlife

Rivers & Streams Habitat Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Environment Agency
Latest version	January 2008

Description

Rivers and streams are by nature dynamic systems, continually modifying their courses and consequently, their immediate environment as they undertake their natural function of draining the surrounding land. Included in this plan are the main rivers and the burns/ streams that feed them as well as associated features such as exposed riverine sediments and marginal and bankside ('riparian') vegetation. Exposed riverine sediments are sands, gravels and shingles of active streams and rivers. They support a rich invertebrate fauna including many rare and specialist beetles. Many of our rivers and streams have been heavily modified in the past, resulting in degraded habitats supporting fewer species. This trend is now being reversed with opportunities to recreate naturally functioning systems being implemented.

The habitat is of great value for wildlife, acting as important corridors that link together other wildlife features and provide safe routes for species to move between sites. They are also of value to humans through the various recreational uses associated with them such as fishing and canoeing.

Estuaries with a salt water or brackish influence are covered by the mudflat and saltmarsh action plan.

Calaminarian grassland areas are covered in a separate action plan.

Conservation Status

UK Biodiversity Action Plan Habitat - rivers

Current Extent in Northumberland

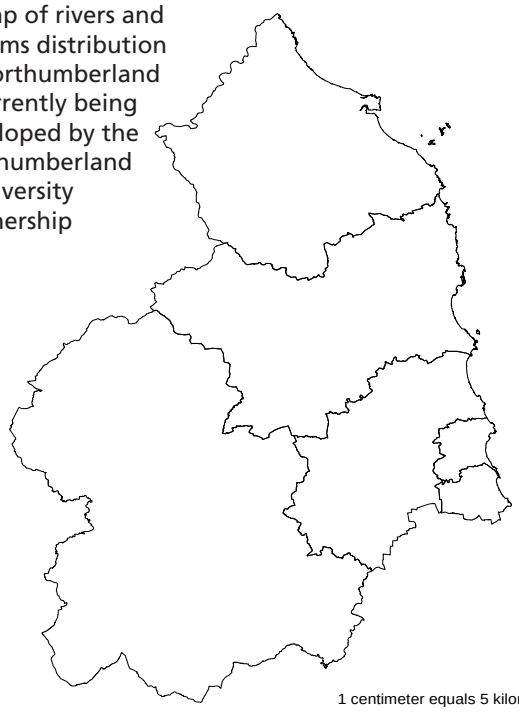
There are seven designated main rivers that flow within Northumberland. The Environment Agency measures the biological and chemical water quality of rivers and estuaries through a methodology known as General Quality Assessment (GQA). Each river is split into reaches and each reach is scored A to F; A being good ecological status and F being poor ecological status.

The range of scores for each of the rivers in Northumberland from 2005 are identified below.

River	Biological GQA	Chemical GQA
Aln	a/b	a/b
Blyth	a-c	b
Coquet	a/b	a-c
Till	a/b	a
Tweed	b	a/b
Tyne	a/b	a/b
Wansbeck	a/b	a/b

The length of Northumberland's main rivers is 1530km (EA Draft Plans 1997). The length of the smaller burns and ditches is not currently known.

A map of rivers and streams distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Rivers & Streams Habitat Action Plan

A recent survey of beetles on exposed riverine sediment (ERS) in Northumberland reported three river systems to be of national importance; the rivers Till and Coquet were found to have the best exposed riverine sediment quality scores of all English rivers previously surveyed, the South Tyne was also fourth on the list. The quality of ERS sites is measured using the ERS Quality Index (QI) score. This is used to compare the conservation interest of different sites and can be pooled to provide a single score for each catchment. The results from the 2005 survey are:

River	ERSQI
Till	489
Coquet	471
South Tyne	429

Current Factors Causing Loss or Decline

- Pollution including eutrophication and acidification from herbicides, pesticides, slurry, sewage, industrial effluent, minewaters and runoff which changes water quality
- Excessive ground water and surface water abstraction
- Construction of weirs, dams and reservoirs
- Physical modification and management for land drainage, flood defence works and navigation – intensive engineering
- Overgrazing or excessive mowing of bank vegetation leading to increased rates of erosion
- Introduction of invasive plants and species
- Development within the floodplain affecting catchment flows
- Peat stripping
- Removal of coniferous plantations at the edge of watercourses
- Re-alignment of watercourses, reductions in flow and loss of floodplain habitat from mineral extraction
- Water transfer schemes between rivers

Associated Action Plans

Otter
Water Vole
River Jelly Lichen
Bats
Freshwater Pearl Mussel
White-clawed Crayfish
Freshwater Fish

Further Information

This rivers and streams plan links to the rivers UK BAP action plan.

General Quality Assessment methodologies for the classification of river and estuary quality - http://www.environment-agency.gov.uk/science/monitoring/184353/

Eyre, M.D. and Luff, M.L, 2002. The use of ground beetles (Coleoptera: Carabidae) in conservation assessments of exposed riverine sediment habitats in Scotland and northern England. Journal of Insect Conservation, 6 (1), pp 25-38

Targets

Achieve 100% of River Basin Management Plan targets by 2010

Improve 50 kilometres of riparian habitat by 2010

Maintain the average ERSQI per river by 2010

Code	Priority Actions	Date
R&S A01	Achieve Water Framework Directive target of good ecological status	2010
R&S A02	Identify habitat creation opportunities utilising the Northumbria Area Wetland Feasibility GIS layer and seek to implement	2010
R&S A03	Promote the use of buffer strips along watercourses to improve riparian habitat and water quality	ongoing
R&S A04	Identify opportunities for reconnection of watercourses to their floodplains through sustainable flood risk management	ongoing
R&S A05	Increase and promote understanding of the wider functions of watercourses and their catchments among all relevant sectors	2009
R&S A06	Write and distribute gravel management guidance for exposed riverine sediment to ensure appropriate management of the habitat	2008
R&S A07	Monitor exposed riverine sediment quality	ongoing
PLR A06	Raise awareness of problems associated with non-native invasive species and encourage their control by riparian owners and other interested parties	2009

The Scars, Cresswell © NBP Photographer John Williamson

Working with Wildlife

Rocky Shore, Reefs & Islands Habitat Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Aisling Lannin
Plan Lead	European Marine Site
Latest version	January 2008

Description

This plan refers to 'rocky reefs'; both the rock surfaces that are exposed along the shoreline and out to sea above low tide and those that remain covered by high tide in the sublittoral zone (below the level of the lowest tide to the ocean bottom up to 6 nautical miles from the coast). Where rock surfaces are exposed on the coast at low tide they are often referred to as rocky shores. Rocky reefs come in a variety of types such as cobbles, vertical rock walls and horizontal ledges, areas of broken bedrock and boulder fields. These provide diverse habitats for marine plants and animals, both above the low water mark and below. Reefs are home to a diverse and important part of the marine ecosystem including kelp beds that are a key species for biodiversity, and algal communities that form the basis of many marine food chains. Northumberland rocky reefs are a primary reason for the designation of the Berwickshire and North Northumberland Coast European Marine Site, making them of national and European importance. The Joint Nature Conservation Committee (JNCC) identifies the Northumberland coast rocky reefs as the most diverse known on the North Sea coast.

Sheltered limestone rocky shores are rare in the UK but are found along the Northumberland coast. Biogenic reefs created by the burrowing worm Sabellaria spinulosa also occur in the waters off the Northumberland coast (3 of 14 UK sites). This species has considerable influence on the biodiversity living on or in the sea bed and is a keystone habitat structuring species.

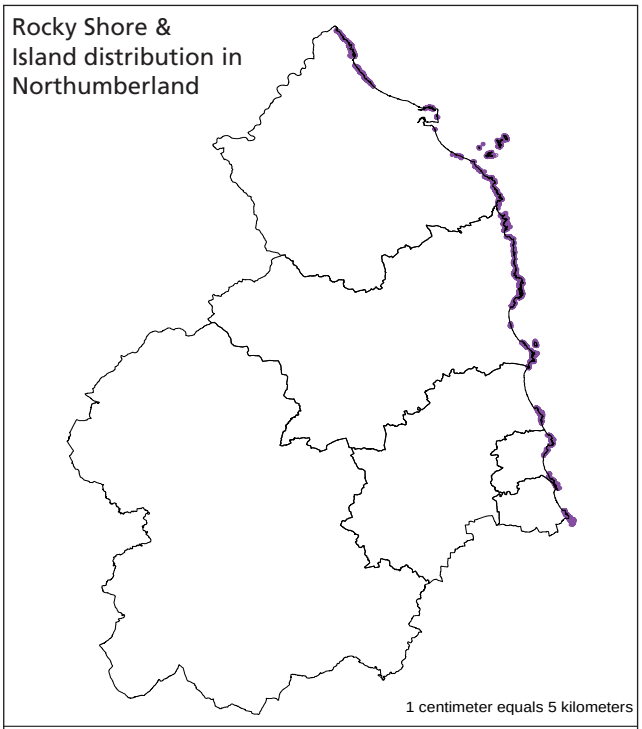
This plan also includes headlands, sea stacks and sea caves. Sea caves are associated with areas of reef and can include tunnels or caverns. They are found on the rocky shore in the intertidal zone and below the sea surface in the subtidal zone. They provide an important habitat for distinct biological communities and are another reason for the designation of the European Marine Site.

The Farne Isles are a rare group of volcanic Whin stone offshore rocky islands and their relatively undisturbed nature makes them a haven for birds (e.g. guillemots, puffins and kittiwakes) and for grey seals.

Conservation Status

EC Habitats Directive, Annex 1 - Reefs
Berwickshire & North Northumberland Coast European Marine Site - Special Area of Conservation (SAC)
Farne Islands Special Protection Area
Coquet Island Special Protection Area
UK Biodiversity Action Plan Habitat – *Sabellaria spinulosa* reefs
North East Biodiversity Action Plan Habitats

Current Extent in Northumberland



Rocky Shore, Reefs & Islands Habitat Action Plan

The rocky shore and islands in Northumberland cover approximately 929 hectares.

Lindisfarne has approximately 3,679 hectares of rocky reef with the reefs covering two coasts of the island.

The Farne Islands contains 15 to 28 islands depending on the tide and these are divided into an inner and outer group. The distance from the mainland varies from 2.5 to 7.5 kilometres.

From Dunstanburgh Head to Cullernose Point, the blue-grey columnar basalt of the Whin Sill outcrops to form a series of cliffs and steep rocky shores.

The Emblestones are a chain of raised reefs that extend from the shore at Low Newton and are exposed at low tide and partially covered at high tide.

Coquet island is located 1km off the coast of Amble and covers an area of approximately 6 hectares. The island is surrounded by low sandstone cliffs and a broad rock platform at low tide.

The Cresswell & Newbiggin foreshore SSSI contains exposures of fluvial sandstone and marine shale at low tide.

Sheltered limestone rocky shores are found at Cocklawburn, Ness End (northern Holy Island), and the shore adjacent to Seahouses golf course and at Coquet Island.

Sea caves are found in the sandstone cliffs of Berwick, in the limestone at Howick, and on the north side of Lindisfarne. Submerged sea caves, tunnels and arches occur in the volcanic rock off the Farne Islands.

Current Factors Causing Loss or Decline

- Oil spills
- Aggregate extraction
- Shoreline management – structures that influence natural processes of the shore
- Mooring – anchoring for dive or pleasure boats and commercial boats
- Fishing – this is the biggest threat to *Sabellaria spinulosa* reefs
- Invasive species – Caprella mutica threat to biogenic reefs

Associated Action Plans

Coastal Birds

Common Seal

Grey Seal

Further Information

This rocky shore, reefs and island action plan links to the littoral rock, inshore sublittoral rock and supralittoral rock UK BAP broad habitat action plans. It also links to the *Sabellaria spinulosa* UK BAP action plan, whose lead partner is Natural England.

Berwickshire & North Northumberland Coast European Marine Site - www.xbordercurrents.com

Fortune, F & Quigley, M, 2001, Berwickshire & North Northumberland Coast European Marine Site Management Scheme

The Habitats Directive: selection of Special Areas of Conservation in the UK - http://www.jncc.gov.uk/Default.aspx?page=1457

Northumberland Coast AONB Partnership, Explore the Geology and Landscape of the Northumberland Coast AONB

Connor, D.W, Allen, J.H, Golding, N, Howell, K.L, Lieberknecht, L.M, Northen, K.O and Reker, J.B (2004) The Marine Habitat Classification for Britain and Ireland Version 04.05 JNCC, Peterborough. ISBN 1 861 07561 8 (internet version) - http://www.jncc.gov.uk/page-1645

Targets

Maintain the current extent of rocky shore, reefs and islands in Northumberland by 2010 (no net loss)

Maintain the condition of rocky shore and islands in Northumberland currently assessed as favourable by 2010.

Code	Priority Actions	Date
RSRI A01	Promote the sea shore code through articles and events	ongoing
RSRI A02	Create a code of conduct for all anchoring boats	2008
RSRI A03	Ensure the proposed Marine Bill affords adequate protection for reef habitats	2008
RSRI A04	Raise awareness about the importance and management of Northumberland's rocky shore, reefs and islands and their associated species through promotional material, events and training	ongoing
RSRI A05	Create a code of practice for rock pooling activities for use by all nature conservation organisations in Northumberland	2008
RSRI A06	Carry out assessments of the impacts of the cockling, musseling and winkling industry on the habitat	2009

Cresswell Pond © NBP Photographer John Williamson

Working with Wildlife

Saline Lagoon Habitat Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Sam Talbot
Plan Lead	Northumberland Wildlife Trust
Latest version	January 2008

Description

Lagoons in the UK are bodies of saline water, natural or artificial, and partially separated from the sea. They retain a proportion of their sea-water at low tide and may develop as brackish, fully saline or hyper-saline water bodies. The largest lagoon in the UK is in excess of 800 ha (Loch of Stenness), although the rest are usually much smaller. There are several different types of lagoons, ranging from those separated from the adjacent sea by a barrier of sand or shingle ('typical lagoons'), to those arising as ponded waters in depressions on soft sedimentary shores, to those separated by an impermeable structure such as a rocky sill or sea wall. A notable number in Northumberland have arisen due to mining subsidence of land near the sea. Seawater exchange in lagoons occurs through a natural or man-modified channel or by percolation through, or overtopping of, the barrier. Various levels of fresh water input from ground or surface waters determine the salinity of the systems.

Lagoons can contain a variety of substrata, often soft sediments which in turn may support tasselweeds and stoneworts as well as filamentous green and brown algae. In addition, lagoons contain invertebrates rarely found elsewhere. They also provide important habitat for waterfowl, marshland birds and seabirds. The flora and invertebrate fauna present can be divided into three main components: those that are essentially fresh-water in origin; those that are marine/brackish species; and those that are more specialist lagoonal species. The presence of certain indigenous and specialist plants and animals makes this habitat important to the UK's overall biodiversity.

Of the 177 lagoon sites surveyed in England, covering 1200 ha, just over 50% occur within existing SSSIs and about 10% occur within NNRs and as many in LNRs. Internationally important lagoons have been designated for their bird interest as SPAs under the EC Birds Directive.

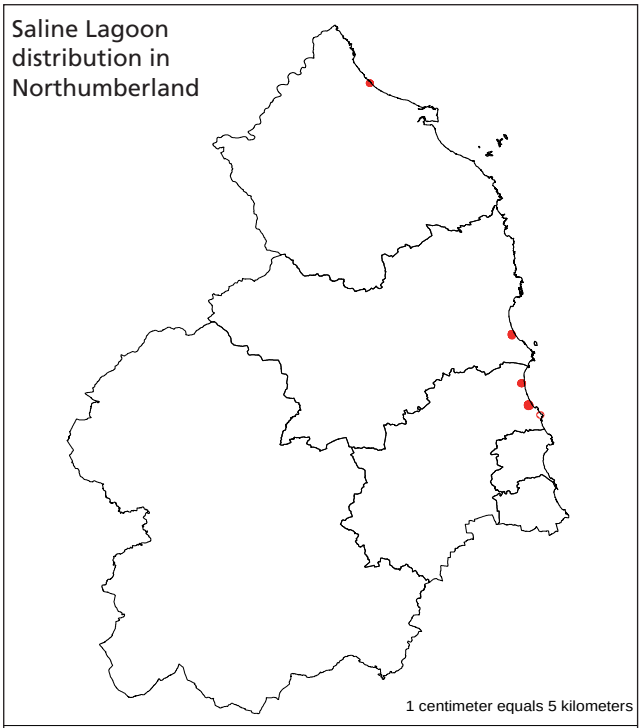
Conservation Status

EC Habitats Directive, Annex 1 – 'Priority Habitat'
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

There are five saline lagoons in Northumberland totalling approximately 9 ha; 0.75% of England's total (based on the UK BAP figure of 1200 hectares).

- Cresswell Pond
- Bog Hall Quarry – Cresswell Links
- Chibburn Mouth – Chibburn Links
- Far Skerr – Cocklawburn Dunes
- Coquet View Caravan Park – Coquet Estuary



Saline Lagoon Habitat Action Plan

Current Factors Causing Loss or Decline

- Pollution from agricultural run-off
- Erosion and over poaching of edges due to excessive stock access
- Artificial control of water inputs (sea and fresh)
- Natural processes (such as succession to Carr or other vegetation types) drying up lagoon
- Mining subsidence causing altered lagoon profile and altered salinity
- Rising sea levels, erosion of dunes or land in front of the lagoon causing increased salinity
- Coastal defence works that interfere with the water inputs or outputs of the lagoon system, or change the barriers of the lagoon but making them either more solid (such as a sea wall) or weaker (by deflected erosion power from a hard sea defence elsewhere)

Associated Action Plans

Otter

Coastal Birds

Coastal Sand Dune

Further Information

This saline lagoons plan links to the saline lagoons UK BAP action plan, whose lead partner is Natural England

Targets

Maintain the current extent of saline lagoons in Northumberland of 5 sites by 2010.

Code	Priority Actions	Date
SL A01	Maintain and monitor the stable exchange of waters to and from lagoonal habitats as part of site management plans	ongoing
SL A02	Establish the current condition of the saline lagoon resource by measuring physico-chemical form and function and community and species diversity	2009
SL A03	Use the survey results to create targets for achieving condition for saline lagoons in Northumberland	2009
SL A04	Assess sluice licences on a case-by-case basis to ensure optimum salinity levels are achieved for brackish lagoon species	ongoing
SL A05	Encourage the production of management plans for lagoonal sites, especially designated sites. Plans should include objectives for BAP priority species and ideally objectives for all relevant Red Data Book species.	2009
SL A06	Contribute to the different stages of producing shoreline management plans (including guidance on their preparation) to ensure that processes relevant to coastal lagoons are taken into account	ongoing
SL A07	Establish environmental stewardship agreements for saline lagoon sites in poor condition, or on agricultural land adjacent to saline lagoons	2011
SL A08	Identify possible sites for saline lagoon restoration, utilising the survey results from existing sites	2011
SL A09	Use the site identification information to create targets for saline lagoon restoration	2011

Lindisfarne National Nature Reserve © NBP Photographer John Williamson

Working with Wildlife

Saltmarsh & Mudflats Habitat Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Maria Hardy
Plan Lead	Environment Agency
Latest version	January 2008

Description

Coastal saltmarsh is defined as the upper, vegetated portions of intertidal mudflats occupying the area approximately between mean high water neap tides and mean high water spring tides. Saltmarshes occur on soft, shallow shores in sheltered coastal areas and estuaries. Mudflats are sedimentary intertidal habitats created by deposition in low energy coastal environments, particularly estuaries and other sheltered areas. Their sediment consists mostly of silts and clays with a high organic content.

Saltmarsh vegetation consists of a limited number of salt tolerant species adapted to regular immersion by the tides, with a clear zonation of vegetation according to frequency of inundation. Characteristic species include glassworts *Salicornia spp*, sea aster *Aster tripolium* and common saltmarsh grass *Puccinella maritima*. The saltmarsh at Alnmouth in Northumberland is dominated by sea-purslane *Halimione portulacoides*, with an abundance of free-living forms of seaweed *Bostrychia scorpioides*, *Fucus vesiculosus* and *Pelvetia canaliculata*, considered to be the most northerly example of this community in Britain.

Saltmarsh areas with a high structural and plant diversity, particularly where freshwater seepages provide a transition from fresh to brackish conditions, are particularly important for invertebrates. Mudflats are characterised by high biological productivity supporting an abundance of invertebrates, such as lugworms, sand mason worms and bivalves. These habitats are important breeding sites for wading birds and winter feeding areas for waders and wildfowl, including wigeon, teal and redshank. They also provide sheltered nursery sites for several species of fish.

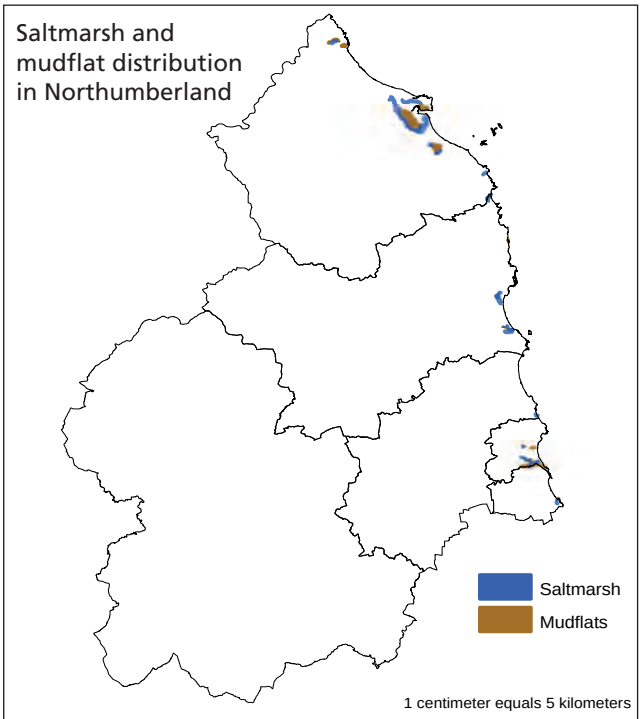
The 2006 review of the UK Biodiversity Action Plan identifies saltmarsh as one of three habitats still in decline.

Conservation Status

Habitats Directive, Annex I
UK Biodiversity Action Plan Habitats
North East Biodiversity Action Plan Habitats

Current Extent in Northumberland

In Northumberland, saltmarsh is estimated to cover around 384 hectares and mudflat 771 hectares. This represents approximately 0.8% and 0.3% of the national resources respectively (based on the UK BAP figures of 45,500 hectares and 270,000 hectares). Saltmarshes and mudflats are found in the estuaries of all the major rivers, with the largest site being Lindisfarne in north Northumberland. The estuaries of the Tweed, Aln, Coquet, Wansbeck and Blyth are all notified as SSSI's, as is Lindisfarne. The Tweed Estuary is also a SAC. Lindisfarne is an SPA and has also been included within the Berwickshire and North Northumberland Coast SAC.



Saltmarsh & Mudflats Habitat Action Plan

Current Factors Causing Loss or Decline

- Land claim of saltmarsh for industry, harbour facilities, transport infrastructure and waste disposal
- Drowning of mudflats from barrage construction
- Disruption of natural coastal processes required for saltmarsh development by coastal and flood defence works
- Erosion and 'coastal squeeze' from inappropriate coastal developments
- Pollution incidents and poor water quality, including increases in nutrient levels
- Reduction in vegetation diversity through invasion of Common cordgrass *(Spartina anglica)* to mudflats
- Under and over grazing of saltmarsh
- Disturbance from recreational and military activity

Associated Action Plans

Coastal Birds
Common Seal
Grey Seal
Otter

Further Information

This coastal saltmarsh and mudflat plan links to the coastal saltmarsh UK BAP action plan and the mudflats UK BAP action plan, both led by the Environment Agency.

Targets

Maintain the current extent of coastal saltmarsh in Northumberland of 384 hectares by 2010 (no net loss)

Maintain the current extent of mudflat in Northumberland of 771 hectares by 2010 (no net loss)

Code	Priority Actions	Date
SM A01	Survey the extent, plant communities and habitat condition of the existing saltmarsh and mudflat resource to inform improved management schemes	2010
SM A02	Use the survey results to create targets for achieving condition for saltmarsh and mudflat habitats	2010
SM A03	Work with land managers to ensure no further net loss of extent of saltmarsh and mudflat habitats	2010
SM A04	Provide farm management advice and promote agri-environment schemes to protect and enhance saltmarsh	2010
SM A05	Work with farmers to encourage creation of saltmarsh habitat through the Northumberland 4shores project	2009
SM A06	Promote and develop demonstration sites for the management and creation of saltmarsh and disseminate results	2009
SM A07	Raise awareness about the importance and management of Northumberland's saltmarsh and mudflats and their associated species through publicity material, events and training	ongoing
SM A08	Investigate the extent and impacts of non-native invasive species and disseminate results	2009
SM A09	Identify possible locations for saltmarsh restoration and creation utilising the survey results from existing sites	2010
SM A10	Use the results from the feasibility study for restoration and creation sites to create restoration and expansion targets	2010

Buston Links © NBP Photographer John Williamson

Working with Wildlife

Sand Dunes Habitat Action Plan

Plan Co-ordinator	Coastal Group
Plan Author	Kevin Redgrave & Sam Talbot
Plan Lead	National Trust
Latest version	January 2008

Description

Coastal sand dunes develop where there is an adequate supply of sand in the intertidal zone, particularly where onshore winds are prevalent. The critical factor is the presence of a sufficiently large beach plain whose surface dries out between high tides. The dry sand is then blown landwards and deposited above high water mark, where it is trapped by specialised dune-building grasses which grow up through successive layers of deposited sand. The type and extent of vegetation at various points within the sand dune system is dependent on the time elapsed since the sand was deposited, the degree of stability which it has attained, and the local hydrological conditions. The habitats supported range from embryo dunes and marram dominated mobile dunes on the seaward edge, to species rich grasslands and areas of scrub on the stable fixed dunes. Older fixed dunes, leached of calcareous sea shell remains, also support areas of heather dominated dune heath. Wetland communities develop where dune hollows or slacks are close to the water table. Northumberland's sand dunes support a range of important grassland communities, including several scarce plants, and also diverse invertebrate communities.

Conservation Status

Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

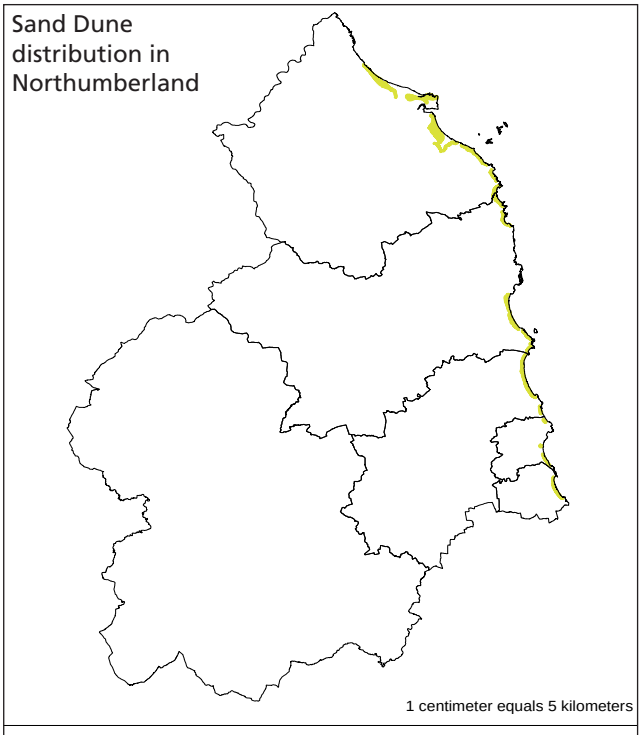
Current Extent in Northumberland

There is approximately 1211 ha of sand dune in Northumberland that are typically represented by steep narrow dune systems due to climatic and geological factors and also restrictions to development on the landward side by roads, car parks, golf courses and agriculture. Spit dunes also occur at estuaries and there is an island dune at Ross Links.

Habitats Directive, Annex 1 habitats present within the region are:

- Embryonic shifting dunes
- Shifting dunes along shoreline with Marram - *Ammophila arenaria* (white dune)
- Fixed dunes with herbaceous vegetation (grey dune)
- Dunes with Creeping willow - *Salix arenaria*
- Humid dune slacks

Six areas of dune SSSI form part of the North Northumberland candidate Special Area for Conservation (cSAC) and at Lindisfarne are part of a National Nature Reserve (NNR). The NNR also forms part of a Special Protection Area (SPA) under the EU Birds Directive and a wetland of international importance under the Ramsar Convention.



Sand Dunes Habitat Action Plan

Current Factors Causing Loss or Decline

- Inappropriate management through over or under grazing
- Erosion caused by heavy trampling from recreational pressure
- Stabilisation of dunes through road construction and agriculture behind them, stopping their natural processes of retreating inland
- Erosion at the front of dunes, through the deflection of wave energy along the coast from hard sea defences
- Introduction of non native species such as piri-piri burr and red hot poker
- Extraction of sand by aggregate companies
- Invasion by bracken, gorse and scrub

Associated Action Plans

Coastal Birds
Coastal Heathland
Common Seal
Grey Seal

Further Information

This sand dunes plan links to the coastal sand dunes UK BAP action plan, whose lead partner is Scottish Natural Heritage

The Sand Dune Survey of Great Britain, 1993-95

Targets

Maintain the current extent of coastal sand dune in Northumberland of 1211 hectares by 2010 (no net loss).

Code	Priority Actions	Date
SD A01	Survey the plant communities and habitat condition of the existing coastal sand dune resource to inform improved management schemes	2009
SD A02	Utilise the survey results to create targets for achieving condition for sand dune	2009
SD A03	Prioritise sand dune sites according to those in most need of improved management	2009
SD A04	Investigate the extent and impacts of non-native invasive species and disseminate results	2009
SD A05	Encourage landowners and managers to establish environmental stewardship agreements for sites in unfavourable condition	2010
SD A06	Raise awareness about the importance and management of Northumberland's sand dunes and their associated species through publicity material, events and training	ongoing
SD A07	Identify appropriate sites to extend the depth of protected dune grassland to enable mobile dunes to retreat inland	2010
SD A08	Establish management or land purchase agreements to secure sites for realignment/dune development to plan for sea level rise	2015

Wansbeck Riverside Country Park © NBP Photographer John Williamson

Working with Wildlife

Transport Corridors Habitat Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Ian Graham
Plan Lead	Local Authorities
Latest version	January 2008

Description

Transport Corridors are linear strips of land adjacent to roads, railway lines, cycle ways and bridleways. Most transport corridors are areas of rough grassland or embankment, sometimes shrub and tree lined. These transport corridors provide valuable habitat for a variety of small mammals, birds, invertebrates and wild flowers, facilitating the dispersal of plants and animals throughout the county.

Conservation Status

Specific legislation for transport corridors relates to the species that utilise them as wildlife corridors

Current Extent in Northumberland

Transport Corridors form a large and extensive network, although rail transport corridors are less extensive than the road network.

Major highways with mature semi-natural habitats include the:

- A1(T), A697 (the main north to south route)
- A696(T), A68 (cross border routes)
- A69(T) (the main east to west route)

Approximate distance of 'A' roads is 376 km
Approximate distance of 'B' roads is 340 km
Approximate distance of 'C' roads is 1,522 km

Approximate distance of 'unclassified' roads is 2,395 km

The main East Coast railway runs through the area with smaller branch lines (mineral use) in the southeast area. A rail link also runs east to west along the River Tyne valley corridor. The approximate distance of railway corridor in Northumberland is 208 km.

The main cycle ways are:

- The Coast and Castles cycle route' (part of National route 1) which starts at Tynemouth and ends up at Berwick-on-Tweed (approx. 160 km on road with approximately 48 km on traffic free routes)
- The Pennine Cycleway (National route 68) from Cumbria to Berwick-on-Tweed via Haltwhistle, Bellingham and Wooler (approximately 160 km on road with 13 km on traffic free tracks/bridleways)

There are many other cycleways around the southeast Northumberland area that link into the National routes network. These links use old waggonways, bridleways and other link paths.

A map of the main transport corridors in Northumberland is currently being developed by the Northumberland Biodiversity Partnership

1 centimeter equals 5 kilometers

Transport Corridors Habitat Action Plan

Current Factors Causing Loss or Decline

- Many linear features are subject to insensitive management – weed killing, intensity and timing of mowing or lack of knowledge of the composition, extent and status of roadside habitats
- Species subject to disruption by road improvement schemes as well as statutory services (underground pipelines, cables, etc.)
- Reseeding of sites using imported seed
- Biodiversity unfriendly landscaping and development for example tree planting in grassland of nature conservation value
- Inappropriate sitting and management of street trees
- Scrub encroachment and spread of invasive species on grassland of conservation value
- Vulnerability to vandalism, accumulation of litter and fly tipping
- Pollution of waterways and wetland habitats adjacent to roads and railways from inappropriate storage and use of road salts and petrochemical runoff
- A number of priority species killed on roads and railways
- Lack of knowledge about the habitat(s)

Associated Action Plans

Bats
Otters
Red Squirrel
Water Vole
Farmland Birds
Barn Owl
Great Crested Newt
Recreational & Amenity Space
Hedgehogs
Trees & Hedgerows
Garden Birds

Further Information

Commission for Architecture and the Built Environment website http://www.cabe.org.uk

Targets

Maintain the current extent of transport corridors of nature conservation value in Northumberland by 2010.

Restore 10 transport corridors to valuable nature conservation sites in Northumberland by 2012.

Create 10 new transport corridors of nature conservation value in Northumberland by 2015.

Code	Priority Actions	Date
TC A01	Survey known roadside and rail side verges for nature conservation value & identify other valuable verges and species-rich roadside hedges	2009
TC A02	Produce conservation management plans for all linear features of known wildlife importance	2010
TC A03	Make Local Authorities and Highways Authorities aware of valuable roadside verges	2010
TC A04	Develop sympathetic roadside verge management practices where practical and ensure that these are implemented	2010
TC A05	Monitor the success of management plans through repeat surveying of identified sites	2015
TC A06	Ensure that relevant habitat policy is included in local planning documents, to protect, enhance or create new landscape features of wildlife importance along transport corridors and to ensure that ecological surveys are undertaken prior to the determination of new transport schemes	ongoing
TC A07	Install wildlife warning signs and wildlife underpasses and bridges along appropriate roads	ongoing
TC A08	Produce best practice guidelines for rail side land management and statutory services to minimise disturbance to wildlife	2009
TC A09	Encourage people to follow guidelines for hedgerow & tree management to ensure that work which might disturb nesting birds avoids the breeding season (March-August)	ongoing
TC A10	Include oil/silt traps in the design of new road & rail schemes adjacent to sensitive wetland sites & watercourses	ongoing
TC A11	Promote the use of SUDS on any new road schemes	ongoing
TC A12	Encourage reporting of road/rail-kills (badgers, red squirrel, barn owls etc.) to relevant recording bodies	ongoing
TC A13	Raise awareness of the importance of linear transport corridors for biodiversity to the wider community and those responsible for their upkeep and maintenance	ongoing

Hedgerow, Whalton © NBP Photographer John Williamson

Working with Wildlife

Trees & Hedgerows Habitat Action Plan

Plan Co-ordinator	Urban Group
Plan Author	Mick Sharpe & Ian Graham
Plan Lead	Local Authorities
Latest version	January 2008

Description

This action plan covers the following:

Parkland - Parklands are the products of historic land management. They usually consist of large, grown on high forest trees (often pollards) at various densities. Most of the trees are usually native, but there may be non-native species, which have been planted or home grown naturally.

Roadside Trees - Trees and shrubs in streets, recreation areas or private gardens play an important part in making our urban area a more pleasant place to live. Trees perform a number of functions: reducing air and noise pollution, creating shade, softening the built environment and creating local distinctiveness. In urban areas, with few wooded habitats, roadside trees are especially important for wildlife.

Deadwood - Deadwood is valuable for wildlife, providing a range of habitats including dead limbs on living trees, decay columns in trunks and branches. Deadwood habitats become homes for a variety of invasive organisations such as bacteria, lichens and fungi these organisations make the habitat more easily accessible for other birds and animals for breeding or shelter.

Scrub - Scrub can be defined as vegetation made up of either native or non-native shrubs and tree saplings ranging from scattered bushes to closed canopy vegetation, usually less than five metres tall, occasionally with a few scattered trees. Scrub is often a stage in the natural succession to woodland. The value of scrub for wildlife depends on the species present and their age range, therefore it varies over time.

Hedgerows - Hedgerows resemble woodland edge and scrub habitat; they are important habitat for insects, birds and mammals. Hedgerows also act as wildlife corridors for many species. Hedgerows are the primary habitat for at least 47 species of conservation concern nationally.

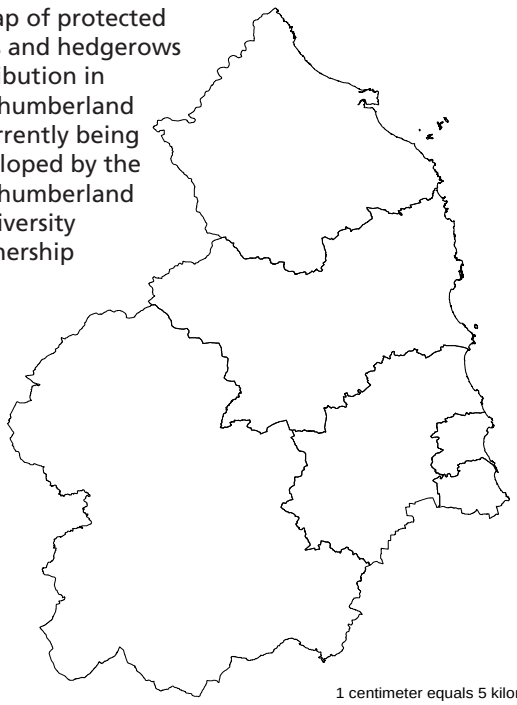
Conservation Status

Hedgerow Regulations 1997
Tree Preservation Orders (Town and Country Planning Act 1990, as amended)

Current Extent in Northumberland

The exact extent of urban trees and hedgerows within Northumberland would be difficult to identify. There are however a number of protected trees and hedgerows which are known to local authorities.

A map of protected trees and hedgerows distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



1 centimeter equals 5 kilometers

Trees & Hedgerows Habitat Action Plan

Current Factors Causing Loss or Decline

- Conflicting pressure for hard use and consequent loss of habitat
- Public perception that management of trees and woodland, however beneficial, may be damaging – despite increasing public interest in trees
- Public perception that land not managed intensively is not cared for
- Lack of management – numerous small and dispersed sites increase management costs
- Disturbance, trampling and heavy use on sensitive sites
- Inappropriate management to overcompensate for public safety and to create "tidy" landscapes
- The deliberate removal of trees during and following development
- Poor specifications for urban tree management, (planting and maintenance) and lack of resources to take offending contractors to task
- Severance of roots during the laying of cables and pipes
- Laying of impermeable surfaces around the base of the trees and so cutting off their water supply
- Excessive strimming, causing damage to the cambium under the bark, the part of the tree where growth occurs
- Failure to remove ties and stakes from planted saplings
- Conflicts between trees and the foundations of older houses, especially prevalent in areas with high clay content in soil
- Pressure from property holders for removal of mature trees because of shading of domestic gardens, heavy leaf and sap fall, and faecal deposits of feeding, nesting and roosting birds
- Introduction to exotic pests with planted exotic species – sometime disastrous for native species (e.g. Dutch Elm disease, sudden Oak Death fungus *(Phytophthera ramorum)*
- Damage to roadside tree roots from soil compaction and erosion can be caused by people walking and car parking
- If Scrub is left unmanaged it will eventually turn into woodland and the important habitat that Scrub provides will be lost
- Neglect or poor management of hedgerows (no cutting or laying) leads to them changing into lines of trees and the development of gaps
- Removal of hedgerows in advance of development for housing, industry, road building and mineral extraction (opencast coal mining)
- The use of herbicides, pesticides and fertilisers up to the base of hedges

Associated Action Plans

Recreational and Amenity Land
Transport Corridors
Bats
Hedgehog
Garden Birds
Barn Owl

Further Information

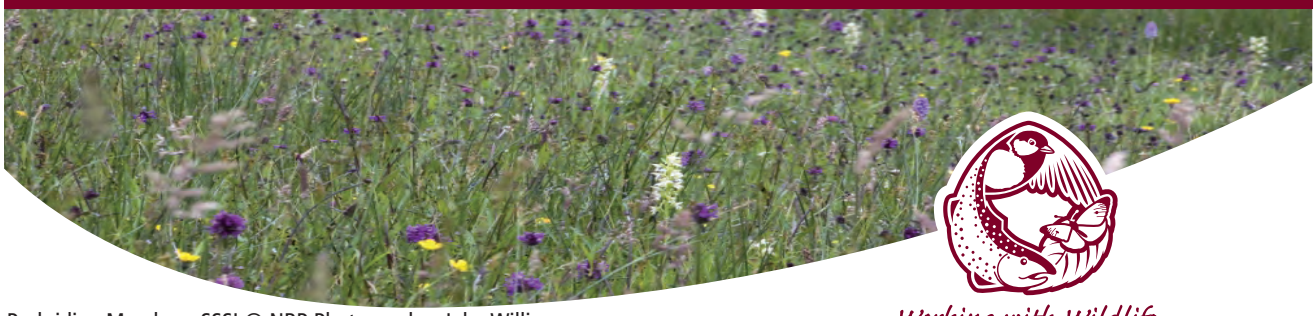
The Woodland Trust website -
http://www.woodland-trust.org.uk/

The Tree Council website -
http://www.treecouncil.org.uk/

Targets

Maintain the current extent of protected trees and hedgerows in Northumberland by 2015 (no net loss)

Code	Priority Actions	Date
TH A01	Identify the current extent and condition of protected trees and hedgerows in Northumberland	2008
TH A02	Use the survey results to quantify the target to maintain the current extent and create targets for achieving condition	2008
TH A03	Promote 'best practice' management of Northumberland's tree and hedgerow resource	ongoing
TH A04	Encourage the establishment and development of a Tree Warden scheme for Northumberland	ongoing



Peckriding Meadows SSSI © NBP Photographer John Williamson

Working with Wildlife

Upland Hay Meadow Habitat Action Plan

Plan Co-ordinator	Uplands Group
Plan Author	Gill Thompson
Plan Lead	Natural England
Latest version	January 2008

Description

This plan is concerned with traditionally managed upland meadows. Such fields are cut for hay in July or August, then grazed in the autumn and again in the spring until the livestock are removed to allow the hay crop to grow. Traditionally they receive light applications of farmyard manure and lime to maintain fertility and a neutral pH. Such fields support a characteristic northern montane meadow community, notable for its diversity, with up to 30 species per square metre and as many as 120 species per field. Typical species include wood cranesbill, lady's mantle, yellow rattle and pignut, while globeflower and melancholy thistle occur more rarely. Of particular importance is a plant community identified in the National Vegetation Classification as MG3, Anthoxanthum odoratum - Geranium sylvaticum grassland, the distribution of which is restricted to a few valleys in northern England. Upland hay meadows occur on a range of soils including brown earths on level to moderately sloping sites, lying between 200m and 400m above sea level.

Conservation Status

Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat
North East Biodiversity Action Plan Habitat

Current Extent in Northumberland

Until recently the total extent of this habitat in Northumberland has been unknown, but through the current projects 'Hay Time' and 'Seeding Change' a better estimate is being gathered. Of the designated sites 51.3 ha occur in SSSIs and of these 30.2 ha is included in the North Pennine Dales Meadows Special Area of Conservation (SAC).

In the North Pennines Area of Outstanding Natural Beauty (AONB) it is estimated that there are approximately 15 species rich meadows in the Northumberland part and another 35 that have some interest but might not reach full MG3 status. It is estimated that there are approximately 30 meadows in the Northumberland National Park with some species richness but the number of very good meadows is probably around 10. Therefore an estimate of current extent in Northumberland could be around 100 hectares.

A map of upland hay meadow distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership

1 centimeter equals 5 kilometers

Current Factors Causing Loss or Decline

- Addition of nitrogen based inorganic fertilisers
- Early cutting before flowers set seed
- Not cutting fields for hay and making silage
- Land abandonment or conversion to pasture
- Long term failure to apply any farm yard manure and lime

Upland Hay Meadow Habitat Action Plan

Associated Action Plans

Upland Waders
Black Grouse

Further Information

This upland hay meadow action plan links to the upland hay meadow UK BAP action plan, whose lead partner is Natural England.

North Pennines Area of Outstanding Natural Beauty 'Hay Time' project

Northumberland National Park Authority 'Seeding Change' project

Targets

Maintain the current extent of good upland hay meadows in Northumberland of approximately 100 hectares (25 sites) by 2010.

Achieve favourable or recovering condition by appropriate management of 110 hectares of upland hay meadows currently in unfavourable condition by 2010

Restore 20 hectares of other grassland sites not necessarily in hay meadow management but of MG3 type in Northumberland by 2015.

Code	Priority Actions	Date
UHM A01	Maintain favourable management and input regimes through the Higher Level Stewardship scheme	ongoing
UHM A02	Establish environmental stewardship agreements for sites which are not top quality to ensure correct management and addition of seed or plants where necessary.	ongoing
UHM A03	Enhance 60 hectares of upland hay meadows in the Northumberland part of the North Pennines Area of Outstanding Natural Beauty	2009
UHM A04	Enhance 20 meadows (c.50 hectares) of upland hay meadows in the Northumberland National Park	2008
UHM A05	Survey road verges to determine the best remaining fragments	ongoing
UHM A06	Manage species rich verge sites to maintain & improve the species present	ongoing
UHM A07	Identify woodlands and burnsides with meadow fragments	ongoing
UHM A08	Involve communities in projects to restore their local sites	ongoing
UHM A09	Raise awareness about the importance and management of Northumberland's upland hay meadows and their associated species through publicity material, events and training	ongoing
UW A01	Compile a list of the key upland fields that are used as nesting and feeding sites by wading birds	2008

Lapwing © northeastwildlife.co.uk

Working with Wildlife

Upland Waders Species Action Plan

Plan Co-ordinator	Upland Group
Plan Author	Gill Thompson
Plan Lead	RSPB
Latest version	January 2008

Description

This upland waders action plan covers the following species:

- Curlew *(Numenuis arquata)*
- Dunlin *(Calidris alpina)*
- Golden Plover *(Pluvialis apricaria)*
- Lapwing *(Vanellus vanellus)*
- Redshank *(Tringa totanus)*
- Snipe *(Gallinago gallinago)*

The upland hill areas of Northumberland are important locations for wading birds. Some of these species winter in the coastal areas of Northumberland and return to the uplands in spring, specifically to breed. Other species are long distance migrants.

Enclosed and improved farmland such as pastures and moorland edge are important feeding areas for several species including curlew and lapwing and higher altitude blanket bogs are used by species such as dunlin and golden plover.

Damp upland pastures and meadows with low levels of grazing are ideal habitat for ground nesting waders. Wader species have characteristic bills of differing length which they use to pick small invertebrates out of the mud and soft soil. Areas of rushy vegetation provide important cover for nests and chicks.

Conservation Status

EC Birds Directive, Annex 1 – Golden Plover
Bern Convention, Appendix 2 - Dunlin
Wildlife & Countryside Act 1981, Schedule 1 (all birds)
UK Biodiversity Action Plan Species – Curlew & Lapwing
North East Biodiversity Action Plan Species (all birds)
UK Birds of Conservation Concern: Amber Conservation Status – Curlew, Dunlin, Lapwing, Redshank & Snipe

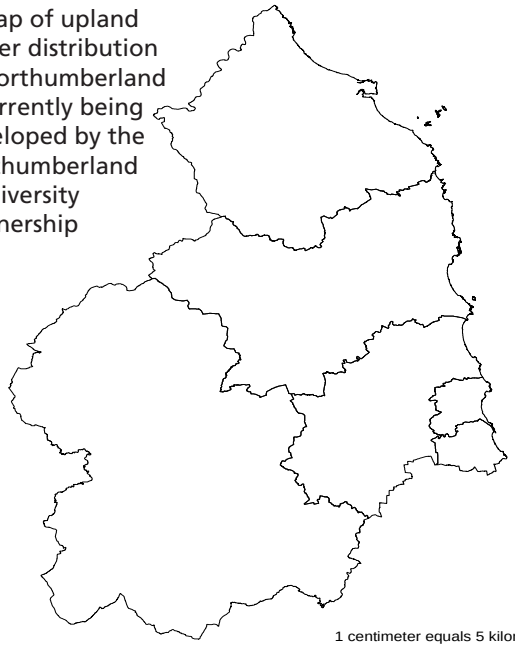
Current Extent in Northumberland

The North Pennines AONB is of significant importance for the populations of wading birds that breed in the area. The RSPB estimates that the AONB is home to upwards of 22,000 pairs of wading birds, making it the most important area in England for breeding waders. The area is particularly important given the significant declines of wader populations throughout the UK, particularly those in lowland areas.

Annual monitoring of waders occurs on the Otterburn Training Area. A predator control experiment is currently in progress to monitor the effects of foxes, crows and mustelids on ground nesting bird breeding success.

The RSPB is currently running a specific project for upland waders called 'Pastures for Plovers'. The project provides management advice to landowners and farmers on the work that most benefits nesting birds and encourages take up of agri-environment schemes.

A map of upland wader distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



Upland Waders Species Action Plan

Current Factors Causing Loss or Decline

- Overgrazing and trampling
- Predation
- Spring machinery operations
- Visual obstructions e.g. conifer shelter belts
- Drainage
- Disturbance
- Undergrazing resulting in rush infestation

Associated Action Plans

Heather Moorland
Upland Hay Meadows
Rivers and Streams
Blanket Bog

Further Information

This upland wader action plan links to the curlew and lapwing UK BAP action plans.

RSPB website - http://www.rspb.org.uk/

British Trust for Ornithology website - http://www.bto.org/

Pastures for Plovers website – http://www.rspb.org.uk/ourwork/farming/working/projects/pasturesforplovers.asp

The Population Status of Birds in the UK - Birds of Conservation Concern: 2002-2007, RSPB.

Targets

Maintain the current range of upland waders in Northumberland by 2010

Increase the current range of upland waders in Northumberland by 2015

Code	Priority Actions	Date
UW A01	Compile a list of the key upland fields that are used as nesting and feeding sites by wading birds	2008
UW A02	Quantify the maintain and increase range targets based on identified key upland fields	2008
UW A03	Encourage ELS and HLS schemes to increase feeding and nesting sites and address unsuitable agricultural management regimes	ongoing
UW A04	Promote the importance of Northumberland's upland waders through publicity material, events and training	ongoing
UW A05	Ensure continuation of the Pastures for Plovers project beyond March 2008	2008

Northumberland Pond © NBP Photographer John Williamson

Working with Wildlife

Violet Crystalwort (*Riccia huebeneriana*)
Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Northumbrian Water
Latest version	November 2009

Description

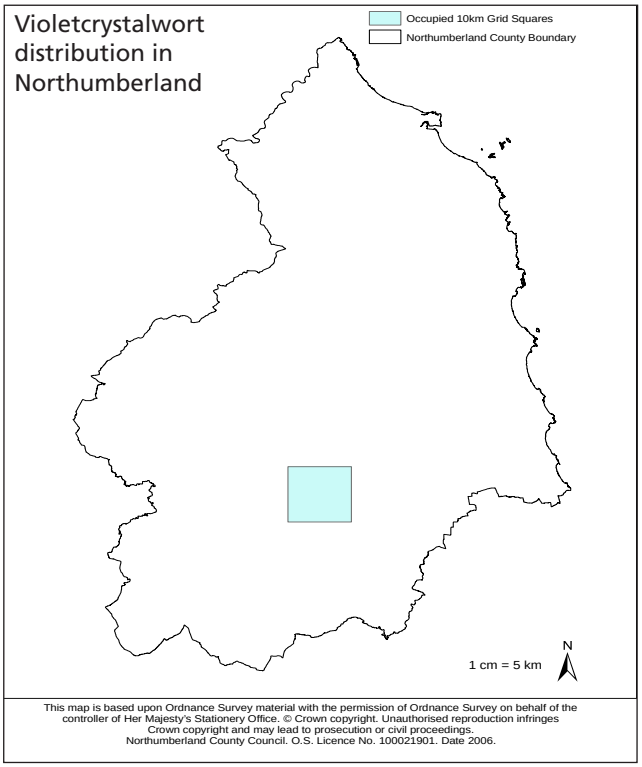
Violet crystalwort is a small thalloid liverwort which is essentially a colonist, growing on nutrient-poor mud at the edge of large ponds, lakes, reservoirs and rivers. It grows as tiny rosettes, smaller than a five pence piece, and is greenish in colour with the edges often having a violet or reddish tinge as it matures. It appears to favour locations that are exposed following dry summers, but are under water during the winter. Abundant capsules are produced in late summer and autumn, and the spores are presumably capable of lying dormant in the mud for several years until the right conditions for growth return. The appearance depends largely on environmental conditions. In drought years there can be very large populations. The natural distribution of this plant is limited by its need for slightly acidic mud.

Conservation Status

UK Red Data List, vulnerable
UK Biodiversity Action Plan Species
North East Biodiversity Action Plan Species

Current Extent in Northumberland

Violet crystalwort is found at one location in the county in the district of Tynedale. In Britain, this species has been recorded from over 20 widely scattered sites. It has not been recorded at many of these localities since 1970, but this may not reflect its true status because of its erratic population fluctuations.



Current Factors Causing Loss or Decline

- Stabilisation of water levels (for recreational/amenity purposes) leading to a loss of seasonal fluctuations which are a requirement of this species.
- Nitrate and phosphate pollution
- Human disturbance – watersports, fishing
- Competition from invasive non native species
- Scrub encroachment

Associated Action Plans

Ponds, Lakes and Reservoirs

Violet Crystalwort *(Riccia huebeneriana)* Species Action Plan

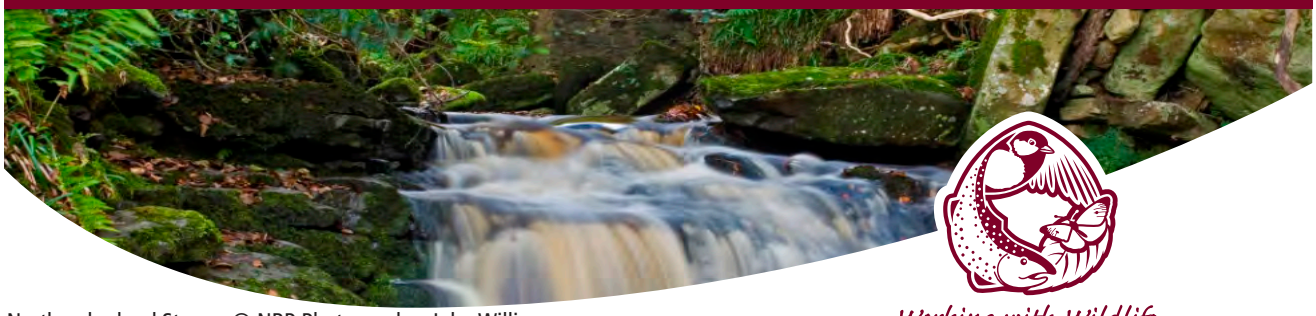
Further Information

This violet crystalwort action plan links to the violet crystalwort UK BAP action plan, whose lead partners are Plantlife and Natural England.

Targets

Maintain the current range of Violet Crystalwort in Northumberland of 1 occupied 10km grid square by 2015

Code	Priority Actions	Date
VC A01	Monitor the population of violet crystalwort	ongoing
VC A02	Explore the feasibility of expanding the range of the species in Northumberland	2010



Northumberland Stream © NBP Photographer John Williamson

Working with Wildlife

Water Rock-bristle *(Seligeria carniolica)*

Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Environment Agency
Latest version	November 2009

Description

Water rock-bristle is a minute moss growing in solitary to gregarious patches up to 3-4 millimetres high. It grows mainly on periodically or permanently moist, shaded, calcareous rocks in or near streams in small ravines, growing up to an altitude of about 100 metres. It has long thin leaves looking like tufts of dark green or blackish hair.

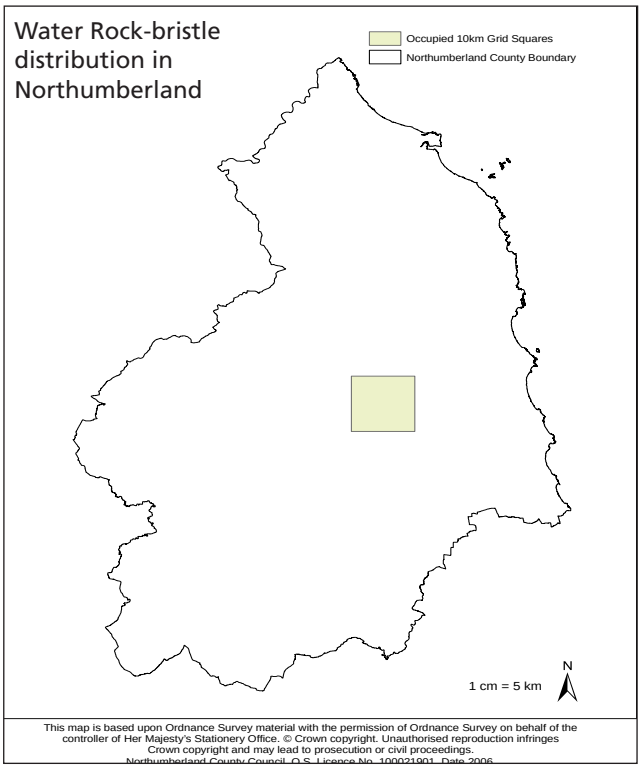
This is the only species of its genus in Europe, and is also endemic to Europe. In Britain, it has been recorded from only two sites in Roxburgh and Northumberland; it was seen at the latter locality in 1996, 2002 and 2006. Material was collected from the Scottish site in 1948, but was not correctly identified until later. Water rock-bristle is now believed to be extinct at Roxburgh.

Conservation Status

UK Red Data List, critically endangered
UK Biodiversity Action Plan Species
North East Biodiversity Action Plan Species

Current Extent in Northumberland

In the UK the water rock-bristle is currently only known from a single site in Northumberland. The plant grows in two areas at this site.



Current Factors Causing Loss or Decline

- Cattle grazing preventing tree regeneration
- Trampling and nutrient enrichment by cattle
- Changes in water quality and quantity
- Inappropriate collection

Associated Action Plans

Rivers & Streams

Water Rock-bristle *(Saligeria carniolica)* Species Action Plan

Further Information

This water rock-bristle action plan links to the water rock-bristle UK BAP action plan, whose lead partner is Plantlife.

Targets

Maintain the current range of the Water Rock Bristle in Northumberland of 1 ten kilometre grid square by 2015

Code	Priority Actions	Date
WRB A01	Carry out characterisation of the conditions of the site where the species is found, including nutrient status of the water courses	2008
WRB A02	Implement appropriate site management based on the outcomes of the characterisation process	2009
WRB A03	Carry out surveys for the species at two adjacent sites	2010
WRB A04	Assess the feasibility of reintroduction at other sites to expand the species' range	2010

Water Vole © northeastwildlife.co.uk

Working with Wildlife

Water Vole *(Arvicola terrestris)* Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Northumberland Wildlife Trust
Latest version	January 2008

Description

The water vole is the largest of the British voles weighing between 200 and 350 grams, with male voles normally being slightly larger than females. As a result of their size they are commonly mistaken for the brown rat, *Rattus norvegicus*. Distinguishing features are:

- Rounded body
- Blunt muzzle
- Short tail
- Almost invisible ears
- Darker colour
- Buoyancy (body is visible above surface of water)

Water voles favour a slow-flowing water course with thick herbaceous riparian vegetation, where extreme fluctuations in water levels are rare. The upper reaches of rivers, small backwaters, ditches and ponds are strongholds for the species. They avoid excessively shaded watercourses with extensive shrub and tree cover.

They prefer a steep earth bank profile into which they can create a series of burrows comprising many entrances and interconnecting tunnels, food storage and nest chambers. Breeding takes place from March to October, with females producing between 2 and 5 litters annually of 5 to 8 young. Water voles can survive three winters but this is the exception as mortality rates may be very high among dispersing juveniles. Above ground activity is largely confined to runs in dense vegetation within two metres of the waters edge.

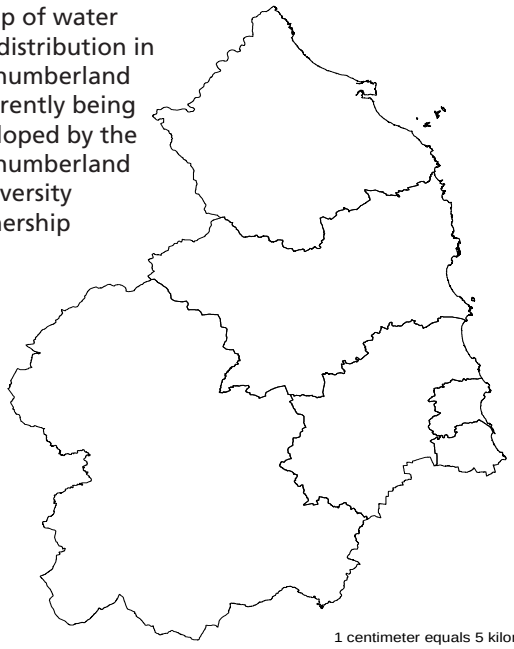
They are primarily herbivores, feeding on the aerial stems and leaves of waterside vegetation; grasses, sedges, rushes and reeds. During the winter the roots and bark of woody shrubs and trees form an important part of their diet, together with the rhizomes, bulbs and roots of herbaceous plants. They will occasionally eat fruit from shrubs and trees, invertebrates and even dead fish.

Conservation Status

Wildlife & Countryside Act 1981, schedule 5
UK Biodiversity Action Plan Species
UK Mammal Red Data Book
North East Biodiversity Action Plan Species
Northumberland Red Data List, Vulnerable

Current Extent in Northumberland

A map of water vole distribution in Northumberland is currently being developed by the Northumberland Biodiversity Partnership



The water vole was formerly a common sight to anglers and passers by on many inland waterways across the country. Populations have declined by almost 70% nationally since the 1960's. The principal reasons for the decline in the water vole populations are inappropriate wetland management and the introduction of the North American Mink, *Mustela vison*, which as a semi-aquatic mammal is able to follow its prey overland, under water and into burrows.

Water Vole *(Arvicola terrestris)* Species Action Plan

Populations have declined locally by over 95%, leaving very few sites left in Northumberland with water vole presence. As regional populations have contracted, colonies have become extremely fragmented and local surveys show that these isolated pockets survive at very low densities, making them extremely vulnerable and facing a real possibility of extinction from the county. Surviving colonies in Northumberland are mainly found in upland burns, coastal streams and drains and urban watercourses.

The future of the water vole in Northumberland as anywhere in the country is dependent on the relative presence or absence of the mink. Evidence from Northumberland has shown that the increase in the region's otter population has succeeded in reducing the overall presence of mink in the county. However, there is little hope of a total eradication of mink but some form of targeted control in key water vole areas would be beneficial.

Current Factors Causing Loss or Decline

- Predation by mink
- River engineering, bank protection and maintenance work
- Riverside vegetation cover removal by mowing and livestock grazing
- Compaction of soil and damage to burrows from livestock trampling
- Fluctuations in water levels from flooding, drought and abstraction
- Pollution
- Loss of habitat from culverting
- Poisoning by rodenticides from mistaken identity as rats
- Removal of habitat from changes in agricultural practices

Associated Action Plans

Reedbeds

Fen, Marsh and Swamp

Ponds, Lakes and Reservoirs

Rivers and Streams

Further Information

This water vole action plan links to the water vole UK BAP action plan, whose lead partner is the Environment Agency.

Kerslake, L. (1998) Ed. Red Data Book for Northumberland, Transactions of the Natural History Society of Northumbria. Vol. 58, Part 2.

Strachan, R. & Jefferies, D. J. (1993) The Water Vole *(Arvicola terrestris)* in Britain 1989/90: its changing status. The Vincent Wildlife Trust.

Strachan, C., Strachan, R. & Jefferies, D. J. (2000) Preliminary Report on the Changes in the Water Vole Population of Britain as Shown by the National Surveys of 1989-1990 & 1996-1998. The Vincent Wildlife Trust.

Targets

Maintain the current range of the water vole in Northumberland by 2010

Increase the current range of the water vole in Northumberland by 2015

Code	Priority Actions	Date
WV A01	Carry out a baseline survey of water voles	2006
WV A02	Collate all other existing survey data on water vole sightings	2008
WV A03	Quantify the maintain and increase current range targets based on the distribution data	2008
WV A04	Ensure that existing populations are protected, and their habitat enhanced and extended through development control and flood risk management operations	ongoing
WV A05	Promote awareness of the threats to the water vole and publicise their legal protection, habitat requirements and the importance of their conservation, particularly to development control and planning departments and residents near urban populations	ongoing
WV A06	Ensure all land managers/owners of sites containing, or adjacent to water vole populations are aware of their presence. Encourage sympathetic management and enhancement of habitat.	2008
WV A07	Carry out riparian habitat improvements for water vole, particularly up and down stream of known sites in order to prevent isolation.	ongoing
WV A08	Seek to strengthen the case for the North Pennines population to be recognised as a national key site, through the AONB project.	2008
WV A09	Establish an effective perimeter network of mink control around key water vole areas with appropriate parties. Initiate training where necessary.	2009
WV A10	Investigate the feasibility of re-introduction of the water vole to appropriate previously occupied sites.	2008

Spindlestone Heugh SSSI © NBP Photographer John Williamson

Working with Wildlife

Whin Grassland Habitat Action Plan

Plan Co-ordinator	Lowland Group
Plan Author	Ian Craft
Plan Lead	Northumberland Wildlife Trust
Latest version	January 2008

Description

Whin grassland only occurs on the thin soils that are present on the rocky outcrops of the Great Whin Sill and its associated dykes. It occurs typically on sill dip slopes, but also on ledges of scarp slopes and in quarries. Cliffed scarp slopes generally have different, fern-rich, vegetation and are not the subject of this action plan. The habitat is mainly of botanical interest, although outcrops of the Whin Sill in north Northumberland formerly supported populations of the Durham argus butterfly (the northern English race salmacis of the northern brown argus: *Aricia artaxerxes*) in association with its larval food plant, common rock-rose Helianthemum nummularium.

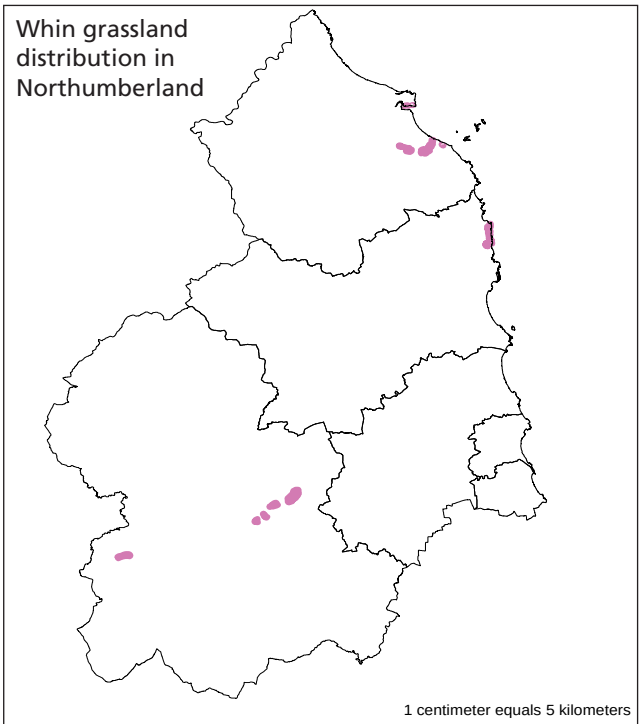
This particular habitat is almost unique to Northumberland, in that the Whin Sill complex is a local North East England formation and its Durham/ east Cumbrian outcrops are in a different, upland environment. However similar igneous rocks, with a similar ecology, outcrop locally in southern Scotland, although (as far as is known) without supporting as wide a range of plant species. The habitat is an important part of the county's biodiversity.

Conservation Status

EC Habitats Directive, Annex I
UK Biodiversity Action Plan Habitat – lowland dry acid grassland
North East Biodiversity Action Plan - lowland dry acid grassland

Current Extent in Northumberland

There are 19 sites of varied quality that exhibit characteristics that would normally be considered as whin grassland. Management is the key issue to the long term future of these localised remaining sites. Since the last reviews in 1980 and 1982 the number of key sites has declined significantly. Overgrazing and gorse encroachment and continued quarrying operations have all contributed to this loss. A limited number of sites are now managed using environmental stewardship and some sites also have statutory designations as protection, however many other sites still continue to suffer from inappropriate management. Further surveys of the 19 sites identified in the 2006 survey were carried out in 2007 to help to establish a programme of conservation measures.



Whin Grassland Habitat Action Plan

Current Factors Causing Loss or Decline

- Scrub invasion and woodland planting
- Quarrying
- Agricultural improvement
- Alteration of the grazing regime
- Use as hard-standing for cattle
- Golf course management
- Human trampling
- Fragmentation and isolation

Associated Action Plans

Lowland Meadows and Pastures
Lowland Farmland Birds

Further Information

This whin grassland action plan links to the lowland dry acid grassland UK BAP action plans whose lead partners is Natural England

Beamsley, N (2006) An Audit of Whin Grassland in Northumberland May – July 2006, Northumberland Wildlife Trust

Douglas, C (1982) Report on a survey of whin grassland in north Northumberland. Northumberland Wildlife Trust.

Penn, S & Lee, H (1980) A survey of whin grassland flora from Walltown to Kirkwhelpington and including limestone grassland within the Northumberland National Park. Report to Northumberland Wildlife Trust Ltd.

Targets

Maintain the current extent of whin grassland in Northumberland of 19 sites by 2010.

Achieve favourable or recovering condition by appropriate management of whin grassland currently in unfavourable condition by 2010.

Restore whin grassland sites in Northumberland to offset historical losses by 2015.

Code	Priority Actions	Date
WG A01	Use the results of the 2006 and 2007 surveys of whin grassland sites to determine numeric values for favourable condition and restoration targets	2008
WG A02	Collect seed from the most sustainable sites in order to create a source of local provenance	2008
WG A03	Identify appropriate sites for restoration using the survey data	2008
WG A04	Seek to prevent the loss of important sites to quarrying	ongoing
WG A05	Target agri-environment schemes at important sites, to help maintain good sites in favourable condition and to restore sites in unfavourable condition	ongoing
WG A06	Engage golf clubs in habitat management	ongoing
WG A07	Carry out a study on the desirability and practicality of re-establishing the Durham argus butterfly at selected sites, having regard to accepted guidelines	2009
WG A08	Carry out condition monitoring of whin grassland sites in Northumberland	ongoing
WG A09	Advise owners and occupiers of important sites about appropriate management	ongoing
WG A10	Advise members of the Quarry Products Association of the interest features of their sites	ongoing

White-clawed Crayfish © Kevin O'Hara

Working with Wildlife

White-clawed Crayfish *(Austropotamobius pallipes)* Species Action Plan

Plan Co-ordinator	Rivers & Wetlands Group
Plan Author	Elaine Jaggs
Plan Lead	Environment Agency
Latest version	November 2009

Description

The white-clawed crayfish is the only species of freshwater crayfish which is native to the UK and is found in clean, calcareous streams, rivers and lakes. The body is smooth and olive green to brown in colour and can reach up to 12cm in length from the tip of the rostrum (snout) to the telson (tail plate), making them the largest, most mobile freshwater invertebrate. It has a widespread, though patchy distribution in England, Wales and Ireland. They are distinguishable from other non-native crayfish by the underside of their claws, which are off-white to pinkish in colour, the origin of its common name. The key differences between the sexes are that females have wider abdomens for carrying the brood, whereas males have larger claws. Males also have a pair of specialist appendages on the underside of the abdomen which they use to introduce spermatophore onto the underside of the female during mating. Many populations have been lost since the 1970s.

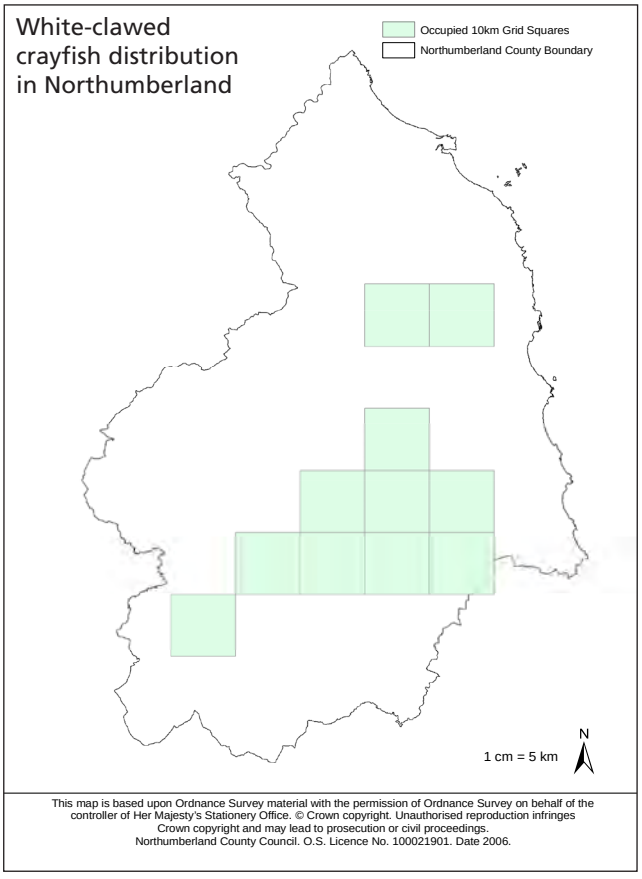
Conservation Status

IUCN/WCMC, globally threatened
Bern Convention, Appendix III
EC Habitats Directive, Annexes II & IV
UK Biodiversity Action Plan Priority Species
Wildlife & Countryside Act 1981, Schedule 5, 9 & 14
UK Red Data List 1993, Morris
North East Biodiversity Action Plan Species

Current Extent in Northumberland

Recorded viable populations in Northumberland are found in the River Wansbeck and the Roman Wall Loughs. Other isolated populations have been recorded on the rivers Aln and Blyth, the Allerdene and Eglingham Burns and around Hallington Reservoirs.

The non-native signal crayfish *(Pacifastacus leniusculus)* was introduced to the UK in the 1970s. The signal crayfish carries a fungal disease, the crayfish plague, which the native crayfish has no defence against. Signal crayfish have been recorded in both the River Till and River Blyth.



White-clawed Crayfish *(Austropotamobius pallipes)* Species Action Plan

Current Factors Causing Loss or Decline

- Crayfish plague
- Direct competition for food and habitat from non-native crayfish
- Habitat modification and management
- Water pollution

Associated Action Plans

Rivers & Streams

Further Information

This white-clawed crayfish action plan links to the freshwater white-clawed crayfish UK BAP action plan, whose lead partners are Dr David Rogers and Elizabeth Watson.

JNCC, 1994, Action plan for the conservation of the white-clawed crayfish in the UK

Targets

Maintain the current range of the white-clawed crayfish in Northumberland of 11 ten kilometre squares by 2015

Code	Priority Actions	Date
WCC A01	Monitor the range of the White-clawed Crayfish in Northumberland	Ongoing
WCC A02	Carry out a targeted campaign to address diffuse pollution issues in the Wansbeck catchment through farm visits	2008
WCC A03	Carry out an awareness campaign for angling clubs and fisheries owners on the importance of disinfection to prevent the spread of crayfish plague	2009
WCC A04	Identify areas for natural expansion of crayfish range	2009
WCC A05	Carry out targeted habitat improvement on sites suitable for increasing the crayfish's range (10km stretch)	2012
WCC A06	Determine the distribution of signal crayfish through surveys on the Blyth and Till and monitor their spread	2009
WCC A07	Identify still waters that would make suitable 'Ark' sites	2010
WCC A08	Investigate the feasibility of re-introduction of crayfish to previous historic sites, particularly the North Tyne tributaries	2011