

Heart of Teesdale Biodiversity Audit

Heart of Teesdale Landscape Partnership

May 2011



Durham
Wildlife Services

Durham Wildlife Services

Rainton Meadows
Chilton Moor
Houghton-le-Spring
Tyne & Wear
DH4 6PU

info@durhamwildlifeservices.com
www.durhamwildlifeservices.com
01388 488885

Heart of Teesdale Biodiversity Audit

CONTENTS

Introduction	4
Background:	4
Biodiversity Audit	5
Outline description of the project area.....	5
Methodology	6
Results	8
Environmental Stewardship	8
English Woodland Grant Scheme (EWGS)	11
Designated Sites.....	12
Habitats	13
Species.....	14
Questionnaire Responses.....	19
Discussion	29
Potential future survey work.....	29
Potential future biodiversity projects.....	30
Ecological advice for proposed projects.....	30

Appendices

Appendix A	Maps (Note these may be located in a separate folder due to size)
Figure 1	Statutory and non-statutory designations
Figure 2:A	Floristic records – DBAP species: Lady’s Mantle
Figure 2:B	Floristic records – DBAP species: Juniper
Figure 2:C	Botanical Society of the British Isles – Floristic records
Figure 3:A	Butterfly Conservation – DBAP species: Green Hairstreak
Figure 3:B	Butterfly Conservation – DBAP species: White-letter Hairstreak
Figure 3:C	Butterfly Conservation – Butterfly records
Figure 4	Reptile, Great Crested Newt and White-clawed Crayfish records
Figure 5	Mammal records
Figure 6:A	DBAP bird species – Barn Owl records
Figure 6:B	DBAP bird species – Black Grouse records
Figure 6:C	DBAP bird species – Curlew records
Figure 6:D	DBAP bird species – Dunlin records
Figure 6:E	DBAP bird species – Golden Plover records
Figure 6:F	DBAP bird species – Hen Harrier records
Figure 6:G	DBAP bird species – House Sparrow records
Figure 6:H	DBAP bird species – Lapwing records
Figure 6:I	DBAP bird species – Linnet records
Figure 6:J	DBAP bird species – Merlin records
Figure 6:K	DBAP bird species – Peregrine Falcon records
Figure 6:L	DBAP bird species – Raven records
Figure 6:M	DBAP bird species – Redshank records
Figure 6:N	DBAP bird species – Reed Bunting records
Figure 6:O	DBAP bird species – Ringed Ouzel records
Figure 6:P	DBAP bird species – Skylark records

Figure 6:Q	DBAP bird species – Snipe records
Figure 6:R	DBAP bird species – Song Thrush records
Figure 6:S	DBAP bird species – Spotted Flycatcher records
Figure 6:T	DBAP bird species – Starling records
Figure 6:U	DBAP bird species – Tree Sparrow records
Figure 6:V	DBAP bird species – Yellow Wagtail records
Figure 7:A	Habitat layers – constructed from National and Regional datasets
Figure 7:B	Habitat layers – derived from Ordnance Survey Mastermap
Figure 8	DWT Veteran Tree Project – Veteran Tree records
Figure 9	Agri-Environment Schemes
Figure 10	Land Ownership and Management
Figure 11	Land Accessibility

Appendix B

Species Lists

Plants Species in the HoT obtained from the BSBI
Birds Species in the HoT obtained from Durham Bird Club

Appendix C

Relevant Habitat and Species Durham Biodiversity Action Plans

Appendix D

Flow chart to be used in conjunction with the "Ecological advice for proposed projects" section of the Discussion

Introduction

Background

In 2010 the Heritage Lottery Fund (HLF) approved funding of £87,200 for a Stage 1 Development project to focus on the landscape of mid Teesdale, covering an area along the Rivers Tees and Greta. This funding is to be used to develop a Stage 2 bid for nearly £2 million HLF money which is being held until late 2011, and has to be matched by other donors and help in kind. The second bid has to be planned in detail, with supporting evidence, project outlines and budgets.

Reason for the Partnership

The initial bid aims to rediscover and celebrate the beauty and heritage of the landscape and involve communities in and around Barnard Castle in its conservation and appreciation. The area has remarkable natural features and associations, with historic, cultural and wildlife sites of enduring appeal to scientists, artists and authors, as well as visitors from far and wide.

Broad Objectives

The Heart of Teesdale Landscape Partnership will inspire people to re-discover the lost landscapes of Teesdale, celebrate its unique beauty and character, and benefit from its rich cultural heritage and potential.

In particular the Heart of Teesdale Landscape Partnership will help people:

1. To re-discover the particular visual qualities of Teesdale drawing on the historic and cultural legacy of artists, scientist and others who have explored the area and foster creativity and imagination through art , crafts and other media
2. To understand the historic value of the local landscape and how it has been shaped over time.
3. To conserve or restore the built and natural features that characterise the area
4. To take action to protect the local environment and wildlife, and increase biodiversity

5. To enhance the quality and amenity value of public and community spaces, key views and settings for enjoyment and learning
6. To engage individuals and communities in learning, training, skills and new technology to understand and interpret the local landscape, traditions and heritage and improve access, especially by those who might be disadvantaged or excluded from activities
7. To promote opportunities for cooperation, mutual support and volunteering within the community to develop strategies and action so that the benefits of partnership can be sustained long term

Biodiversity Audit

The biodiversity audit that is the subject of this report was commissioned in May 2011 with the aim of providing a baseline audit, assessment and mapping of existing biodiversity research, policies and activities and potential for protecting and enhancing biodiversity within the project area.

Outline description of the project area

There are three principal County Character Areas which apply to the Partnership landscape. The North Pennines (NP) the Dales Fringe (DF) and the Tees Lowlands (TL) These are then separated into a number of Broad Landscape Types such as Gritstone Upland Fringe (DF1) and then further subdivided into Broad Character Areas such as Raby Hill and Marwood (DF1a). (For a more detailed description please refer to the Heart of Teesdale Landscape Partnership Landscape Appraisal 2011, Chris Burnett Associates, 2011).

The variety of habitats and the wildlife they support is another extraordinary feature of this landscape. This ranges from ancient parkland trees to wild ancient woodland which clings to the steep sides of the rivers; from lines of hedgerow trees which enrich the walls and hedgerows of the farmed landscape, to the ancient individual trees of the numerous parklands that frequent the area; from the rivers and the wildlife that depends on their fast flowing waters for survival, to the still waters of Hutton Magna; from lowland unimproved pasture to upland moorland. All contribute to the depth of biodiversity within the Partnership area and provide another layer of richness. (Chris Burnett Associates, 2011).

Methodology

The consultation and data collation exercise was undertaken simultaneously. Data from these initial consultations was then mapped using an Arcview GIS. It is important to note that any gaps in species/habitat distribution on these maps should not be interpreted as the species/habitat not being present; datasets are incomplete and it is likely that any gaps are due to that area having not been surveyed. All identified organisations with an interest in wildlife conservation in the Heart of Teesdale area were approached to answer a questionnaire, a copy of which and a summary of answers can be found in the results section of this report. Local record centres were also contacted to provide any species or habitat data that they may have for this area. These were then mapped and can be found in Appendix A. The following people responded to the consultation request:

Helen Ryde *Durham BAP*

Tim Wilkins *Plantlife*

Ruth Jackson *Natural England*

Jonathon Winn *Durham Wildlife Trust*

Jesse Meredith *Durham Wildlife Trust*

Terry Coult *Durham County Council*

Jim Cokill *Durham Wildlife Trust*

Mark Newsome/ John Olley *Durham Bird Club*

John Durkin *Botanical Society of the British Isles*

Dave Wainwright/ Stephen le Fleming/ Roger Norman *Butterfly Conservation*

Ged Lawson *Durham County Council*

Paul Hannaby *Durham Biodiversity Data Service*

Rebecca Barrett *North Pennines Area of Outstanding Natural Beauty*

Carole Sobkowiak *Darlington and Teesdale Naturalists Field Club*

Tricia Snaith *Durham Bat Group*

Noel Jackson *Durham Bat Group*

Ben Lamb *Tees Rivers Trust*

GIS

The GIS data used in the analysis was obtained through a combination of stakeholder interviews and desk-based research. We drew upon both national and regional datasets held by the relevant ecological groups identified in the interview process.

Datasets were provided in three different formats; GIS layers, paper records or a database of species records and associated spatial information. Where data was not stored within a GIS layer, it was manipulated in Microsoft Excel to calculate the x and y coordinates (if this information was present in the database). The process of xy calculation was required for data provided by local ecological groups; Durham Bird Club, Butterfly Conservation and the Botanical Society of the British Isles. In these cases the data was mapped on to a grid rather than recorded to the nearest metre (six figure Ordnance Survey grid reference) and was displayed on a grid because overlapping points would not be visible on maps.

All data manipulation and mapping was carried out within ESRI ArcView 10. The data was stored within a File Geodatabase. The data in the Geodatabase contains all attribute information provided by the data provider including date, count and any other relevant information. It was not considered necessary to convey all this information in the map appendix but nevertheless this should form a valuable resource in the future for the Heart of Teesdale Partnership.

Results

Environmental Stewardship

Much of the project area is privately owned farmland. Farmers and landowners can apply to Natural England for grants to help supplement the cost of biodiversity work on their holdings. The latest agri-environment scheme from Natural England is Environmental Stewardship. The primary objectives of which are to:

- conserve wildlife (biodiversity)
- maintain and enhance landscape quality and character
- protect the historic environment and natural resources
- promote public access and understanding of the countryside
- protect natural resources.

The secondary objectives of Environmental Stewardship are:

- genetic conservation
- flood management.

Environmental Stewardship consists of three strands;

Entry Level Stewardship which is open to all farmers and requires a low level of works for a relatively low payment which is paid across the whole farm area.

Organic Entry Level Stewardship (OELS) is the organic strand of ELS. It is geared to organic and organic/conventional mixed farming systems and is open to all farmers not receiving Organic Farming Scheme aid.

Higher Level Stewardship is a much more targeted scheme and is now only open to those who have been invited to apply by Natural England, this scheme requires a much higher level of management but in return attracts higher payments.

The targeting of Higher Level Stewardship is set in targeting statements which are produced by Natural England and are regionally distinct. There is a targeting statement for the 'North

Pennines Target Area'. This targeting statement sets out the land management activities that applicants must perform in order to apply for the scheme, these are;

Maintain/ Restore important areas of the following habitats: **heather moorland** (including blanket bog and heathland particularly where **golden plover, merlin** and **hen harrier** are present) **juniper woodland; upland hay meadows; calaminarian grasslands; limestone grassland; purple moor-grass and rush pastures; upland native mixed-deciduous woodland and wet woodland**

Provide habitat for the following range-restricted farmland birds:

Inbye Birds: Provision of nesting habitats and summer food where three or more the following wet grassland species breed – **lapwing, snipe, redshank, curlew, yellow wagtail** or (with strong supporting evidence) the holding is known to support an important regional breeding population for any of these species

AND / OR

Rare Birds: wherever priority sites for any of the following individual species occur – **black grouse** and **twite**

Positive management of **visible and below ground archaeological and historic features** that are assessed as a priority in the region such as: well preserved settlement remains and extensive associated field systems from the late **prehistoric, early medieval and medieval periods; medieval deer parks; remains of iron and lead industries** from the medieval period onwards; and **lime kilns** from the 18th and 19th Centuries

Maintain or restore **historic buildings** that are assessed as a priority in the region

Implement land management practices and capital works to minimise soil erosion from **land at risk of generating diffuse pollution**

Maintain/restore **characteristic landscape features including:** the area's valued and highly distinctive stock of **stone walls**, respecting differences in local styles and using local stone and that are assessed as a priority in the region

Create **new permissive access** where there is identified demand or need in order to link people with places, enhance existing networks and/or provide opportunity to improve

people's understanding of the farmed environment through **educational access** particularly in areas where improvements assist with the delivery of the Cumbria, Durham and Northumberland Rights of Way Improvement Plans (ROWIPs), links with the **Pennine Way** and **Pennine Bridleway**, or strategic access improvements identified by the AONB Partnership

Protect and restore **degraded blanket bog** and other habitats on deep peat soils to reduce loss from nationally important carbon stores

Some of the project area lies outside of this primary target area and is therefore subject to a regional theme statement for non target areas.

The most relevant themes in respect of this document are summarised below, applicants must contribute to at least one theme:

Theme 1: Improving the resilience of Nationally Important (UK Biodiversity Action Plan) habitats to climate change: Natural England will consider applications offering to maintain and/or restore/link/buffer 'significant' areas of priority habitats outside Target Areas. We are especially interested in lowland heathland sites in Northumberland and Durham, woodland pasture, and other areas of species rich grassland not otherwise covered by target areas.

Theme 2: Reversing the decline of farmland birds : Natural England will consider applications that will provide a package of ELS/HLS options capable of delivering the most appropriate management possible within Nationally Important Farmland Bird Hotspots defined as areas supporting (a) 3 or more of the following range restricted arable birds: grey partridge; corn bunting; lapwing; sparrow; yellow wagtail

OR (b) 3 or more of the following breeding range restricted wet grassland species: lapwing, redshank, curlew, snipe, yellow wagtail

OR (c) (with strong supporting evidence) important regional breeding populations for any of the above species particularly in areas of arable or mixed farming in East Durham, South East Northumberland and the Saltburn area (Redcar & Cleveland).

Theme 3: Securing the recovery of UKBAP species outside of UK BAP Habitats. Natural England will consider applications offering to maintain/restore/create appropriate habitat for

the following rare & rapidly declining UKBAP species outside of areas of UK BAP habitat: rare arable plant species.

Theme 8: Improving people's enjoyment & understanding of the farmed environment: Natural England will consider applications offering to enhance or improve access and recreation (where it can be shown that (a) there is identified demand or need and (b) where it will link people with place or (c) where it will enhance existing networks and/or provide opportunity to improve the public's understanding of the farmed environment through educational access visits.

Table 1 below shows the uptake rates of Environmental Stewardship in the project area. In addition to this there were 1081.2 ha of Countryside Stewardship Schemes within the project area. Countryside Stewardship was the predecessor to Environmental Stewardship and as these schemes come to an end it is likely that they will go into either Entry Level or Higher Level Stewardship.

Table 1 Agri environment uptake rates

Scheme	Hectares
Entry Level plus Higher Level Stewardship	552.3
Entry Level Stewardship	6298.1
Organic Entry Level plus Higher Level Stewardship	60.2
English Woodland Grant Scheme	309.9

English Woodland Grant Scheme (EWGS)

EWGS is part of a suite of environmental support measures provided by the Defra family. The Forestry Commission operates the scheme under the Rural Development Programme for England (RDPE). The purpose of the scheme is to develop the coordinated delivery of public benefits from England's woodlands. The grant scheme has a national framework but funding is allocated and grants targeted at regional level. The overarching objectives for EWGS are:

- to sustain and increase the public benefits derived from existing woodlands in England
- to invest in the creation of new woodlands in England of a size, type and location that most effectively deliver public benefits.

The component grant types of EWGS have their own objectives. Some grants are focused regionally to meet the priorities of Regional Forestry Framework action plans, and the objectives are specified more closely to suit. Applications for grants under EWGS will be considered if they deliver key targets in the areas of:

- area of woodland under certified sustainable forest management and approved management schemes
- expanding the area of woodland with public access
- bringing woodland SSSIs into favourable condition
- assisting delivery of Priority Habitat and Species Action Plans for woodlands
- improving the environment of disadvantaged urban communities
- woodland creation.

A number of other funds can be used to match EWGS grant rates in order to make creation schemes more attractive to landowners.

Designated Sites

Much of the project area falls within the North Pennines Area of Outstanding Natural Beauty and/ or falls under one or more designations for its nature conservation interest. These designations include Sites of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Special Protection Area (SPA) and Local Wildlife Site (LWS). The specific sites are listed in Table 2 below.

Table 2 Designated sites

Class	Name	Hectares
AONB	North Pennines	509.4
LWS	Flatts Wood	46.1
LWS	Cotherstone Railway	4.3
LWS	Waskey Wood	18.1
LWS	Pecknell Wood	22.1
LWS	Gainford Spa Wood	12.1
LWS	Waterman's Island	1.5
LWS	Teesbank Woods, Winston	37.2
LWS	Deepdale Wood	101.5
LWS	Lartington High Pond	13.2
LWS	Bowser's Island	3.9
LWS	Teesbank Woods, Rokesby	48.5
LWS	Thorsgill Wood	9.4
LWS	Wycliffe Wood	20.0
LWS	Whorlton Banks	9.8
LWS	Rokeby Park/Mortham Wood	49.4
SAC	North Pennine Moors	35.1
SPA	North Pennine Moors	35.1
SSSI	God's Bridge	6.4
SSSI	Cotherstone Moor	15.2
SSSI	Bowes Moor	19.9
SSSI	Sleightholme Beck Gorge - The Troughs	6.9
SSSI	Baldersdale Woodlands	5.8
SSSI	Brignall Banks	79.7
SSSI	Kilmond Scar	4.5
SSSI	ShIPLEY & Great Woods	65.0

Habitats

A range of habitats are known to be present within the HoT. Figures 7:A and 7:B (Appendix A) show the distribution of known habitats and show that there are large areas where habitat type is unknown. The two main DBAP habitats present are woodland (ancient semi-natural and broadleaved) and rivers and streams. Other DBAP habitats present include woodland pasture, upland heath, ponds, road verges of conservation importance and scrub.

Waterways

The EU Water Framework Directive has provided a good mechanism to push forward the recovery of watercourses and encourages stakeholders and local communities to get involved and take ownership of their local waterway. The majority of the rivers in the HoT area are classified as moderate or poor. Classifications are assigned through assessment of chemical, biological and morphological factors. The majority of the waterbodies in the HoT area are failing for fish and invertebrates for reasons such as siltation, nutrients and pesticides in the water.

Veteran Trees

There are a number of veteran tree records in the HoT area, mainly close to the river corridors and all recorded in low numbers (less than 10) (Figure 8, Appendix A). With this being a largely rural area it is highly likely that Figure 8 shows only a very small percentage of the actual number of veteran trees present in this area.

Species

Plants

The DBAP plant species present in the Heart of Teesdale area are Juniper (Figure 2:B, Appendix A) and Lady's mantle (Figure 2:A, Appendix A). Plants are well recorded across most of the HoT area (Figure 2:C, Appendix A), with very high numbers recorded in some areas (Over 100), especially around Barnard Castle and Cotherstone. There are several areas under surveyed, particularly around Hutton Magna, north of Gainford and north of Barningham. A list of plant species present in HoT from the BSBI can be found in the Appendix B.

Butterflies

There is a good coverage of butterfly records across the Heart of Teesdale area (Figure 3:C, Appendix A), although there are very low numbers of records (less than 10) across most of the 1km grid squares. There are several gaps in the data, with no butterflies recorded around Boldron and Whorlton. Durham Biodiversity Action Plan (DBAP) species present are Green Hairstreak (Figure 3:B, Appendix A) and White-letter Hairstreak (Figure 3:A, Appendix A). A full list of butterfly species present is in Table 3 below.

Table 3 Butterfly species present in the project area

Species
Clouded Yellow
Comma
Common Blue
Green Hairstreak
Green Vnd. White
Holly Blue
Large Skipper
Large White
Meadow Brown
Orange Tip
Painted Lady
Peacock
Purple Hairstreak
Red Admiral
Ringlet
Small Copper
Small Heath
Small Skipper
Small Tortoiseshell
Small White
Speckled Wood
Wall Brown
White-l.Hairstreak

Reptiles

Adder, slow worm and common lizard have all been recorded within the Heart of Teesdale area (Figure 4, Appendix A), these are all DBAP species. However, there are only very small numbers of records, with only one adder record, one common lizard record, and 3 slow worm records. All these records are in the western half of the HoT area and it is likely that these species are under recorded across the whole of the HoT area.

Great Crested Newts (GCN)

There are two clusters of GCN records to the west of Barnard Castle in the west of the HoT area (Figure 4, Appendix A). It is highly likely that this species is also under recorded in this region. GCN are also DBAP species.

White Clawed Crayfish

There are four white clawed crayfish records along the River Tees within the HoT area (Figure 4, Appendix A). These are highly significant because there are so few records of white clawed crayfish in County Durham. This is a DBAP species that has nationally undergone a massive decline. These records are now several years old and it is important to establish whether these populations are still present.

Badgers

There are a handful of badger records through the HoT area, mostly near to the River Tees (Figure 5, Appendix A). These records are likely to only represent a small percentage of the badgers that actually live within this area. Again badgers are a DBAP species.

Brown Hare

Brown hares are a DBAP species and have recently had a public survey carried out by the Durham Biodiversity Partnership. This, and the previous early survey, has resulted in a good scattering of brown hare records throughout the HoT area (Figure 5, Appendix A). There is still likely to be an even wider distribution of brown hare than the records show.

Otter

Otters are on the increase in County Durham and records show they are present along the full length of the River Tees in the HoT area, as well as there being a record from the River Greta and from one of the smaller tributaries off the Tees (Figure 5, Appendix A). It is highly likely that otters utilise most of the watercourses throughout the HoT area.

Water Voles

There are only two water vole records within the HoT area (Figure 5, Appendix A). This area is under surveyed for the DBAP species and further public reports of water voles around Barnard Castle have never been confirmed. It is likely that many of the streams and becks within HoT will provide suitable habitat for this species but have never been surveyed for them.

Birds

There are 22 DBAP bird species present within the HoT area, they are listed below and a full species list of birds present can be found in the Appendix B. Figures 6:A to 6:V (Appendix A) show distribution maps of each DBAP bird species present. Bird data for this area is good, with Durham Bird Club obviously very active. However, as with any data set, it is likely that most of these species have been under recorded.

Table 4 DBAP bird species

DBAP - Birds	Present
Barn Owl	✓
Black Grouse	✓
Corn Bunting	
Curlew	✓
Dunlin	✓
Golden Plover	✓
Hen Harrier	✓
House Sparrow	✓
Lapwing	✓
Linnet	✓
Little Tern	
Merlin	✓
Nightjar	
Peregrine	✓
Purple Sandpiper	
Raven	✓
Redshank	✓
Reed Bunting	✓
Ring Ouzel	✓
Sanderling	
Skylark	✓
Snipe	✓
Song Thrush	✓
Spotted Flycatcher	✓
Starling	✓
Tree Sparrow	✓
Yellow Wagtail	✓

Fish

Species of fish present on the upper Tees include:

- Bullhead – AKA Millers thumb, this species is a bottom dweller and is an ambush predator with an enormous head and mouth. Although common in the area, it is a SAC species.
- Brook lamprey – there are 3 types of lamprey and this is the smallest growing to a max length of about 120mm. Lamprey are an ancient fish and are all distinguishable by their circular vents instead of gills and their circular mouthpiece which contains 4-7 circular rows of teeth. All of the lamprey species are BAP species.
- Sea lamprey – this much larger relative migrates in from the sea to spawn and build nests made of stone. Sea lamprey can grow up to 6ft in length and are increasingly uncommon. They have great difficulty moving past man-made obstacles such as weirs and their length makes them prone to fatal damage by hydroelectric turbines.
- Brown trout – numbers of this species have declined throughout the country and they are now a BAP priority species. The Tees is renowned for the quality of its brown trout. Numbers of trout have declined as a result of habitat degradation as well as a loss of their main invertebrate food source through pollution. Invertebrates such as may fly and stonefly are very sensitive to pollution and many rivers have suffered with the now banned synthetic pyrethroid sheep dips. Teesdale is an area famed for its sheep farming and it is quite possible that this has impacted on the fish populations. Invert life takes between 6-10 years to recover fully from a sheep dip incident.
- Atlantic salmon– slowly recovering in the Tees, this species occupies much the same niche as the trout, requiring well oxygenated water and a ready food supply. The salmon migrate in from the sea at different times of year. The Tees has two runs the main one being between October and December and a smaller run in spring.
- Sea Trout – this is a brown trout that goes to sea. Sea trout can often be seen jumping up the Greta at waters meet and their marine diet helps them to reach large

sizes, up to 50lb. They are bright silver on their return but the males often revert to brown trout.

- Eel - the eel is a species in peril – numbers have declined by approx 98% since 1979. Loss of wetland habitat and ponds as well as man made barriers have contributed to the decline in the eel.
- Grayling– classed as a coarse fish, the grayling is similar to trout and salmon in its food requirements but is less sensitive to water quality. The grayling are making a good recovery in the Tees.

Domesticated Species

Teeswater sheep and Northern Dairy Shorthorn cattle are present in the HoT area and as important parts of this areas heritage it is important that these breeds are kept alive. Teeswater sheep are, as the name suggests, native to Teesdale and have been bred here for 200 years. The Northern Dairy Shorthorn also originated in this area, but is now critically endangered.

Other DBAP Species

The status of other DBAP species within the HoT area is unknown. Future surveys could be focused on establishing whether some of the other DBAP species such as dormice, pine marten and polecat are present within the HoT area. All three of these are Nationally rare but have been recorded in the Northeast and the HoT provides some suitable habitat for these species.

All relevant DBAP habitat and species plans can be found in Appendix C.

Questionnaire Responses

1. *With reference to the Heart of Teesdale Landscape Partnership area which species or habitats do you consider to be important and at which level?*

A range of answers was given in response to this question. The table below lists these responses and the level of importance that each person assigned to each species or habitat. The most popular answers were woodland or grassland related, as well as river habitat. It was also felt that this area is important for bats.

Table 5 Summary of responses to question 1

Species/ Habitats	Community	HoT Project Area	County	Regional	National	International
Woodland		X	X X	X X	X	
Species rich (upland and lowland) grassland		X		X X		
Ancient Woodland				X		X
individual ancient trees						X
Riverine habitats		X	X	X	X	
White Clawed Crayfish				X	X	
Raptors		X				
Railway Tracks		X				
Road Verges		X X				
Limestone Grassland		X	X			X
Historic Parkland			X	X X		
Historic Field Boundaries				X		
Ponds			X			
Farmland Birds			X			
Hedgerows			X			
Bats				X	X	
Living Landscape			X			
Farming				X		
Brandt's Bats					X	
Whiskered Bats					X	
Caves/adits for bat hibernation sites				X		
Acid Grassland		X				
Marshy grassland		X				
Heathland		X				X
Urban		X				

2. *Are there any particular species or habitats that you consider are at risk, need attention or present opportunities for action?*

The following were given in response to this question:

- Veteran tree management is a problem, particularly on arable land.
- White clawed crayfish are at risk.
- Woodlands.
- Ponds.
- Bats
- Parklands
- River
- Marshy grasslands
- Limestone / neutral grasslands
- Wetlands (lack of)
- Whorlton Woodland: leopardsbane, spurge laurel, wood club rush, greater periwinkle, an uncommon rust *Puccinia vincae* with its attendant parasite *Tuberculina sbrozzi*.
- Eggleston Abbey Woodland : wood anemone, toothwort, bluebells and violets
- Limestone flora e.g. Romaldkirk /Cotherstone railway track.
- Dormouse records over 100 years old.
- Riparian woodland (gaps)
- Polecat.

In summary, woodland was again a popular answer, and was mentioned by over 50% of the people who complete the survey, thus illustrating its importance in this area. The importance

of targeting restoration/creation of ponds and wetlands in this area was also raised by a number of people. Species such as bats, dormice, white clawed crayfish and spurge laurel were all mentioned by more than one individual.

3. *What action is required to protect/ enhance the habitats and/ or species identified in question 2 above?*

The following were given in response to this question:

- Surveys for polecat, dormouse, white clawed crayfish, bats.
- Surveys.
- Education.
- Money.
- Protecting veteran trees - Funding set up for management practises (e.g. fencing, grassland margin maintenance, etc.)
- Review of the Ancient Woodland Inventory in the project area.
- Restore existing ponds and create new ponds/wetlands.
- Be careful when improving pathways or restoring buildings (to protect the rare flora present)
- Bats :
 - i. roost protection.
 - ii. corridor protection.
 - iii. feeding site protection.
- Management regime for parklands
- Stewardship schemes for farmland.
- Sympathetic management of woodlands and proper mapping and survey.

In summary, a common theme was the lack of survey data for this area, with further survey work targeted on species like dormice, polecat, white clawed crayfish, bats, as well as mapping of ancient woodland. Sympathetic and careful woodland management and pond/wetland creation schemes seemed to be popular choices for any habitat work in this area.

4. *Do you have any specific suggestions in relation to questions 2 and 3 above? Eg project ideas, research opportunities, data recording etc.*

The following were given in response to this question:

- Surveying of areas for veteran and ancient trees to contribute to Veteran Trees Project or Woodland Trust's Ancient Tree Hunt
- Roadside verges in Lower Teesdale were surveyed in 2002 with management recommendations provided - no actions taken since then. Could resurvey of work to deliver some of the management recommendations.
- Farmland birds – some suggestions for projects from DBAP actions: Establish and maintain feeding stations in areas with known populations of corn bunting and tree sparrow. Produce an information pack for small land-holders which highlights actions for priority species. Construct and erect tree sparrow boxes in appropriate locations
- The Darlington & Teesdale Naturalists' Field Club (DTNFC) has extensive records and for the Summer 2011 six field trips have been specially organised in the Heart of Teesdale.
- To conduct Bat Conservation Trust surveys during the year.
- Bat talks/ walks.
- Full bat surveys to identify all buildings used as roosts and hibernacula.
- Parkland project- link to veteran trees and woodland management search for remnant limestone grassland species and manage.
- Record woodland wildlife to inform management - are there any species such as dormouse present etc. Several respondents mentioned historic records for dormouse and suggested surveying for them in the area.

- Create ponds, meanders on streams.

5. *What would be your 3 key priorities for raising the profile of specific habitats, species or biodiversity in general in the Heart of Teesdale project area? Including any that might have been overlooked?*

The following were given in response to this question:

- Surveying
- Educating
- Money
- Contact with landowners/farmers and distribution of management advice.
- Surveying area to find sites that are of particular significance.
- Explain importance of hedgerows, particularly upkeep of ancient field boundaries.
- Publicity (walks)
- General publicity i.e. Teesdale Mercury
- Teaching teachers and children
- Get images/videos, get them online and use for PR and engagement.
- Raise profile of rare and local flora
- Raise profile of woodland fauna - mammals and birds
- Raise profile of farmland birds and mammals

Surveys, education and publicity (media, walks etc) were popular answers. The use of cameras and recording equipment was suggested as a way of doing all three of these things.

6. *What suggestions do you have for raising the profile of the items identified in question 5 above? E.g. events, conferences, media, education and learning, training, skills, research, volunteering, community engagement etc.*

The following were given in response to this question:

- Survey events
- volunteering,
- hedge-laying training
- Surveying
- Educating
- Money
- Nature study in schools
- Training days for volunteers
- Celebrity involvement
- Reporting on species seen on walks in Heart of Teesdale
- Bat night walks
- Televised bat roosts in Middleton in Teesdale field study centre and Bowlees visitors centre to make them more widely accessible.
- Awareness raising for residents and landowners and opportunities for volunteering or management training include in newsletters and local events.
- Press releases and strong online content followed up by guided walks and school activity.

7. *Please give details of any specific biodiversity projects or activities that could be encouraged or supported through the Heart of Teesdale Landscape Partnership.*

The following were given in response to this question:

- Surveying
- Educating
- Woodland walks
- Hedge-laying competitions
- Use of Bat Conservation Trust guidelines
- Awareness raising of the wildlife and habitat present in the area
- Semi-natural woodland restoration
- Grassland management for waders and plant species
- Haymeadow management
- Record wildlife and capture images.
- Create ponds
- Hedgerow partnership
- DBAP ponds project (if funding is received)
- Monitoring of barn owl boxes

8. *Please give details of any expertise that you or others might be able to share within the Partnership, especially to support community based or educational projects emerging.*

The following were given in response to this question:

- DBAP veteran trees project - Woodland ecology
- Darlington & Teesdale Naturalists' Field Club (DTNFC) has members with great expertise. There are seven Section Organisers for the following topics: Archaeology, Botany, Lepidoptera, Geology, Mammals, Mycology, Ornithology. Our botanical recordings for the past 10 years have been submitted to the Botanical Society of the British Isles (BSBI). For the future we are planning to send all our data to the Environmental Records Information Centre North East (ERIC) so that all aspects can be collated.
- Tricia Snaith - Licenced bat worker/ educationalist/ ecological interests.
- Noel Jackson - could do bat walks if planned far enough ahead.
- Durham Wildlife Trust can support delivery of survey, education and PR/web management. Experience with remote sensed cameras - wildlife recording woodland and veteran tree management advice habitat management advice

Although not given as a response the following could also be a good source and expertise:

- BSBI
- RSPB
- FWAG
- Plant Life
- Pond Conservation Trust
- Northumbria Mammal Group
- Amphibian and Reptile Conservation Trust

9. *Do you have any other comments that could be helpful to developing the strategy and future action of the Heart of Teesdale Landscape Partnership?*

- Need to show a clear link between the landscape value and its biodiversity – e.g. how the wildlife and habitats present contribute to current landscape character - and how this has changed over time - with its "quality" arguably declining with intensification.
- Biodiversity is a key natural resource and one of the most important factors in attracting visitors to the area.

Discussion

It was the general consensus from all those consulted with that there is a lack of survey data for the HoT area. However the Darlington and Teesdale Naturalist Field Club may be the best source of local biodiversity information for the area but their data is not available electronically as yet. Species that consultees particularly felt needed further survey work were bats, white clawed crayfish, polecat and dormice. Polecat and dormice have been recorded in the north east but are very rare. The HoT area does provide some suitable habitat for these species, but their status in this area is completely unknown. Analysis of the species maps showed that most DBAP species require further survey work, especially water vole and reptiles. There are known to be good populations of water voles in upper Teesdale beyond Forest-in Teesdale, but the HoT is under surveyed for what is one of Britain's most threatened mammals.

It was also generally agreed by the consultees that some of the most important habitat types present in that area are woodland, species rich grassland and riverine habitats. It was felt that this area lacks wetland habitat and the focus of any habitat creation work should be on creating ponds and wetlands. The importance of mapping, and protecting woodland and veteran trees was also highlighted by several consultees. Carrying out surveys of the woodland in this area would help to develop a more complete picture of the amount of ancient woodland present and thereafter work towards ensuring its protection. There are also important species rich grasslands in this area and getting these sites into better management could be combined with helping to preserve the rare breeds of sheep and cattle by using them to graze the sites.

Potential future survey work

- Dormice
- Polecat
- Bats
- White clawed crayfish
- Woodlands
- Veteran trees
- Reptiles
- Water Voles

Potential future biodiversity projects

- Help transfer the DTNFC records into an electronic format
- Pond and wetland creation
- Link up areas of woodland by woodland planting
- Awareness raising of the wildlife and habitat present in the area via new media technologies
- Semi-natural woodland restoration
- Grassland management for waders and plant species
- Haymeadow management
- Record wildlife and capture images.
- Monitoring of barn owl boxes
- Bat walks

Ecological advice for proposed projects

(The flow chart to accompany this can be found in Appendix D)

Step 1: Site Selection

Many ecological survey and mitigation expenses can be avoided by choosing areas of low intrinsic ecological value on which to develop. On the simplest level this can be choosing to place a play area within an area of existing amenity grassland rather than in a species diverse meadow, or simply minimising the removal of hedgerows or woodland. In other cases mitigating measures such as, placing paths along existing woodland rides rather than creating new routes, or placing barriers around particularly sensitive features can simplify matters.

Step 2: Approach the relevant management bodies for advice early in the process

Once a site is selected it is highly advisable to contact the relevant management body (i.e.: local county council Biodiversity officer, Environment Agency, Wildlife Trust, etc) for advice on the potential ecological impacts of the proposed development. Serious impacts can be related to fairly trivial actions such as bat roost destruction during re-roofing, damaging Great Crested Newt or Reptile hibernacula during pathway construction. In most cases impacts can be avoided by implementing suitable working practises or timing of works. However, failure to consider ecological issues and/or protected species can result in court cases and considerable fines.

Step 3: Approach local and national record centres and landowners for species and habitat information

Similar to step 1, issues can be circumvented by avoiding areas with existing habitat designations (i.e.: Sites of Special Scientific Interest, Sites of Importance for Nature Conservation etc) or existing protected species records (i.e: Great Crested Newt breeding ponds, Bat roosts etc.). National bodies such as Natural England will have records of site designations (accessible through www.Magic.defra.gov.uk) whilst Local Records Centres such as the Environmental Records Information Centre for the North East of England (www.ericnortheast.org.uk) will have access to species information. Landowners or stakeholders such as the Forestry commission or Environment Agency may also have records for potential sites.

Step 4: Appoint a suitable Ecologist

Once a site has been identified a suitable ecologist should be appointed. The ecologist should be affiliated with the Institute of Ecology and Environmental Management and conduct themselves in line with its professional guidance. If a particular species of interest has been identified during the record search (i.e: great crested newt ponds or bat roosts) the ecologist should be experienced and, where appropriate, hold a valid Natural England Licence to conduct surveys for that species. Appointing an ecologist early in the process can save time and avoid any breaches of habitat or species regulations.

Step 5: Factor in time for seasonal surveys

Most botanical and wildlife survey techniques have an optimal time in which they can be carried out. In addition some have specific time periods in which a survey is valid for instance nocturnal bat activity surveys can only be carried out between May and September. In most projects requiring planning permission, no decision will be able to be made until all the ecological survey results are submitted. This should be factored into the project timetable and will be a required consideration on certain funding streams. Your ecologist will be able to advise on the relevant suitable survey periods for the project.

Step 6: Incorporate Ecology at the design phase

Many publicly funded projects are required to include a biodiversity enhancement element within their scheme. Possible enhancements should be considered early in the design phase and should be carefully selected to suit the existing habitat sites. Most enhancements can be designed to also include an element of public engagement for example, planting wild flower bulbs, making bird/bat boxes, clearing invasive species or scrub. Some can be included at the design stage in new or refurbished buildings such as bat lofts and swallow boxes.

However, large scale projects are likely to require broader mitigation measures such as pond creation or the creation of long term management plans. Your ecologist will be able to advise on suitable enhancements and/or required mitigation.

Step 7: Liaise with local and regional stakeholders at the design phase

In order to avoid issues later in the project, either when submitting a planning application (if required) or when starting the works, it is worth liaising with the local community, relevant local interest groups (i.e: bat groups, bird group etc) and regional bodies such as Natural England or the Wildlife Trust at the design stage.

Step 8: Read the ecologists' report

It is important that you know any ecological conditions for your site. Failure to implement any further survey, method statement, or Natural England licence requirements can lead to you being liable for criminal prosecution and the associated fines.

Step 9: Submit all of the ecological data and plans to the relevant authorities on time

The planning authority and certain funding streams will require the full ecological data for the proposal up front. Not presenting this data or trying to short cut the system can result in lengthy and costly delays.

Step 10: Encourage community involvement in post development monitoring and management

In order for most ecological enhancement features to be successful, an element of post development management is likely to be required. By encouraging their involvement in a project in the early stages it may be possible to hand over management to the community (for instance in the case of management of a wildlife garden). In cases where specialist monitoring is required (i.e: projects requiring a Natural England License) once the statutory monitoring period is complete it may be possible to pass over the long term monitoring and management to a local interest group (i.e: Bat group, mammal group etc) hopefully ensuring that the project is a success in the long term.