

Barwick Pond Local Nature Reserve
Management Plan 2008-2012

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1. INTRODUCTION

1.1. Local Nature Reserves (LNRs) form a key component to Stockton's green infrastructure network and as such are of vital importance in relation to biodiversity and the movement of species from one area to another.

1.2. Fig. 1 shows the location of Barwick Pond Local Nature Reserve (LNR) and its boundary. The site is important in a local and national context, as it is a habitat that was created specifically for the Great Crested Newt (*Triturus cristatus*), the UK's most strictly protected amphibian and a UK Biodiversity Action Plan species. The area was declared a LNR on 20th February 2004.

1.3. The site is situated in Ingleby Barwick (OS Grid Ref. NZ442135), which is approximately 2 miles from Stockton centre and is set in an urban environment

1.4. This plan describes Barwick Pond and evaluates it as a LNR. It sets out objectives for management and identifies a five-year work programme. With appropriate management the site will continue to be a locally important area for the Great Crested Newt and for additional species that are known to be utilising the area.

2. STRATEGIES RELEVANT TO THE MANAGEMENT PLAN

2.1. Stockton-on-Tees Local Agenda 21 Strategy

Environmental Objective No.2 'To protect and enhance the wildlife habitats and the diversity of species throughout the Borough'.

2.2. Stockton-on-Tees Local Plan

Objective 1 section 2.15 relating to Local Nature Reserves states that 'The council will continue to protect existing LNRs within the Borough from inappropriate development'

Objective 1 Policy EN2 states that, 'Development in LNRs will not be permitted if it would be harmful to the elements giving rise to their designation.

2.3. Tees Valley Green Infrastructure Plan

Sets out the intention of linking up areas of greenspace of which LNRs are a component of this vision.

Fig.1 Location plan of Barwick Pond and its boundary

3. SITE DETAILS

3.1. Area

3.1.1. The area of the LNR is 0.27 hectares and comprises a pond, grassland and areas of new woodland.

3.2. Surrounding Environment

3.2.1. Barley Fields Primary School and its wildlife area and playing fields are adjacent to the site at its southern boundary with a proposed park development to the west that is currently amenity grassland. A small wooded area is immediately to the east with a shopping development to the north.

3.3. Administrative Details

3.3.1. The whole of the area is within the ownership of Stockton-on-Tees Borough Council. The land is under the jurisdiction of Development and Neighbourhood Services and the Parks and Countryside Section have adopted responsibility for the site.

3.3.2. There are no current byelaws in operation at the site although these are in the process of going to cabinet and will be incorporated into the management plan once adopted.

3.3.3. The presence of the Great Crested Newt is protected under British and European law. In Britain the Wildlife and Countryside Act 1981 is the main nature conservation legislation. The European Union's 'Habitats Directive' on the Conservation of Natural Habitats and of Wild Fauna and Flora requires that areas are designated as Special Areas for Conservation (SACs) for the Great Crested Newt (Langton, Beckett and Foster 2001). This Directive is implemented in the UK by the Conservation Regulations 1994

3.3.4. There are no constraints on management, e.g. tenancies, separately owned mineral rights or soil contamination.

3.4. Management Infrastructure

3.4.1. There is a regular, but not permanent, presence on site by the Local Nature Reserves Officer who is responsible for site maintenance, management, development and promotion.

3.5 History

3.5.1. An archaeological dig by Durham University in Ingleby Barwick during 2003 - 2004 and situated approximately 1 mile from Barwick Pond revealed that Romans occupied the area. The site is particularly significant given the lack of evidence for sites of this type in the northeast of England.

3.5.2. Before housing development commenced the whole area of Ingleby Barwick was predominantly farmland. Barwick Pond was created in 1994 with design and technical input coming from Cleveland Environmental Consultants Ltd., the trading arm of Cleveland Wildlife Trust, now Tees Valley Wildlife Trust, to provide an appropriate habitat for Great Crested Newts.

3.5.3. The newts were translocated, due to the infilling of their original pond (Lanehouse Pond) for development purposes, during the breeding season of 1995 – 96 by means of drift fencing, pitfall traps and bottle traps were also used.

3.5.4. The location of Barwick Pond was chosen from 2 options as it was afforded better protection and was more visible to the public in its present location. Additionally, it is located approximately 100 metres from Lanehouse Pond making it a more obvious choice due to the homing instincts that newts are alleged to possess.

3.6 Access

3.6.1. The site currently has restricted access to authorised/supervised groups due to the presence of a protected species. Barley Fields Primary School is an authorised key holder and may, with supervision, use the area for environmental studies although pond dipping will not be allowed.

3.7 Boundaries

3.7.1. The site is bounded to the south by Barley Fields Primary School and its perimeter fence. A 4' galvanised metal mesh fence separates the site from a

wooded area to the east whilst hedgerows form boundaries to the north and west. Immediately beyond the hedgerow to the west is a pedestrian and cycle route that runs the full length of Barwick Lane.

3.8 Public benefit and usage

3.8.1. The area will predominantly be used by school groups. On occasion there will also be small-scale events held at the site, allowing members of the public to come into contact with nature that is present here and to gain a more intimate experience of the reserve. Views of the LNR for the public are possible via a fenced off platform area at the site entrance located on Barwick Lane.

3.8.2. There is still some scope for community involvement particularly in relation to providing educational opportunities both to residents, but in particular, to local schools and educational establishments.

4. SITE DESCRIPTION

4.1 Barwick Pond

4.1.1. For management purposes the site has been split into compartments as can be seen in Fig.2. The following section investigates the character of the area in more detail.

4.2. General

4.2.1. Barwick Pond contains components of established and newly planted woodland areas, rank grassland, hedgerows and a pond. The pond is generally L-shaped and has a maximum depth of 2 metres. Some of the grassland area has a propensity to become waterlogged during winter and early spring due to the clay content of the soil.

4.2.2. No in-depth ecological surveys have taken place on site although bottle trapping for Great Crested Newt has taken place in 2005 & 2006. A list of flora and fauna that is known to reside or use the area is shown in Appendices 1 & 2.

4.3. Compartments

4.3.1. From a management perspective the main areas of the site are as follows

- The pond
- Woodland, scrub and grassland
- Viewing area
- Perimeter hedging

4.4 PHYSICAL

4.4.1. Climate

4.4.1.1. Due to the relatively small size of the site and the protection afforded by perimeter hedging, the climate of the area is generally temperate. However, during the hot summer months the site can become something of a heat trap. This, in no way, causes the water level in the pond to drop to anything approaching critical levels.

4.4.2. Hydrology

4.4.2.1. The pond is largely rain fed, however, it is also replenished from nearby ditches that feed the pond via a culvert on Barwick Lane.

4.4.3. Geology

4.4.3.1. The whole of the area is composed of glacial till that would have been deposited during the advance of ice sheets approximately 20 – 30,000 years ago.

4.4.4. Soils and substrates

4.4.4.1. The soil is generally heavy clay in composition due to the glacial deposits detailed above. The pond has a liner incorporated into its design with an additional 300mm of clay added to it.

Fig.2 Barwick Pond Compartments

1

4.5. BIOLOGICAL

4.5.1. Flora

4.5.1.1. As mentioned above, no in-depth flora surveys have taken place as yet (see Appendix 1 for provisional list). However, it is known that no species of any particular note have been recorded on site.

4.5.2. Fauna

Mammals

4.5.2.1. One or two mammals have been sighted in and around the site although there are no records or sightings of any species of note. Fox has been the most visible mammal, although trapping with Longworth traps will be taking place to determine the presence of any smaller species. Pipistrelle bats have also been seen foraging for insects over the pond's surface during late spring (see Appendix 2).

Birds

4.5.2.2. No bird records have been taken although species that have been seen using the site include Grey Heron. Again, no species of any note have been seen or recorded in the area (see Appendix 2).

Amphibians

4.5.2.3. The site is known more for amphibians than any other class of animal. Most of the common amphibian species occur at the site including Common Frog, Common Toad and Smooth Newt. The more rare Great Crested Newt also resides here (see Appendix 2).

Lepidoptera

Several species of butterfly are known to use the site including the Speckled Wood (pic1) and Ringlet (pic2).

Pic1. Speckled Wood

Pic2. Ringlet

Ordonata

Several species of dragonfly and damselfly have been observed at the site. However, most of these species have yet to be identified.

Other invertebrates

Many invertebrates occupy the site both in the grass and pond areas of the LNR. As with most species that are known to utilise the reserve, many of

these have yet to be identified. Pond snails are abundant as are leech species whilst water boatman has also been observed.

5. MANAGEMENT OBJECTIVES

The main management priority is to retain a suitable habitat for the Great Crested Newt. Therefore, the following objectives have been identified.

5.1 Protect the area as a haven for wildlife and in particular the Great Crested Newt.

5.2 Raise biodiversity in the area.

5.3 Continue to create and improve links with the local community.

5.4 Maximise opportunities for schools and other groups to use the area as an educational and environmental resource.

5.5 Ensure the pond does not become overgrown with vegetation

5.6 Retain a safe environment for the public to view the site from

5.7 Undertake a full ecological survey of the area

5.8 Take into consideration the potential impact of climate change on flora and fauna.

6. IMPLEMENTATION

6.1. Protect the area as a haven for wildlife.

6.1.1. Having attained Local Nature Reserve status in 2004, Stockton Borough Council is demonstrating its commitment to protecting this area for future generations to enjoy. The Council is also demonstrating that no inappropriate

development or uses will take place at the site and that it is committed to managing the land in an appropriate manner for the benefit to wildlife and the local community.

6.2. Raise biodiversity in the area.

6.2.1. Biodiversity in the area can be increased by the cutting of invasive species such as thistle in Compartment B and planting with native wildflowers to encourage invertebrates. The cutting/strimming should be done at least twice a year or more depending on weather conditions etc

6.2.2. Plants to be used should be in relation to their tolerance to withstand waterlogged conditions, e.g. pond plants to bog plants graded to traditional wildflowers, dependant upon the plants requirements (see Fig 3).

6.2.3. Once the new woodland area becomes more established and robust, bird and bat boxes can be installed.

6.2.4 Any trees that are thinned out or have their limbs removed for any reason should be stored on site so that they provide a habitat and refuge both for newts and invertebrates.

6.3. Continue to improve links with the local community

6.3.1. Good links with the local community are already in place to some degree as the Local Nature Reserves Officer has been into several schools and the local library to discuss various projects and to take part in activities relating to Barwick Pond. These links have been further improved by regular contributions to the community newsletter, The Insider Magazine, about Barwick Pond and the surrounding countryside.

6.3.2. Regular small-scale events will also promote the site and will make people aware of the importance of the area to Great Crested Newts and to other wildlife in general.

6.4. Maximise opportunities for schools and other groups to use the area as an environmental resource.

6.4.1. As mentioned above, nearby primary schools are aware of the site and have undertaken supervised visits. However, the catchment can be enlarged to include schools from further away and to possibly include secondary schools to undertake projects or environmental studies in the area.

6.4.2. Specialist amphibian groups or students may wish to study the site and look at data relating to breeding, dispersal and population influences. Therefore, colleges and universities should be made aware of the site's potential for such topics.

6.5. Ensure the pond does not become overgrown with vegetation

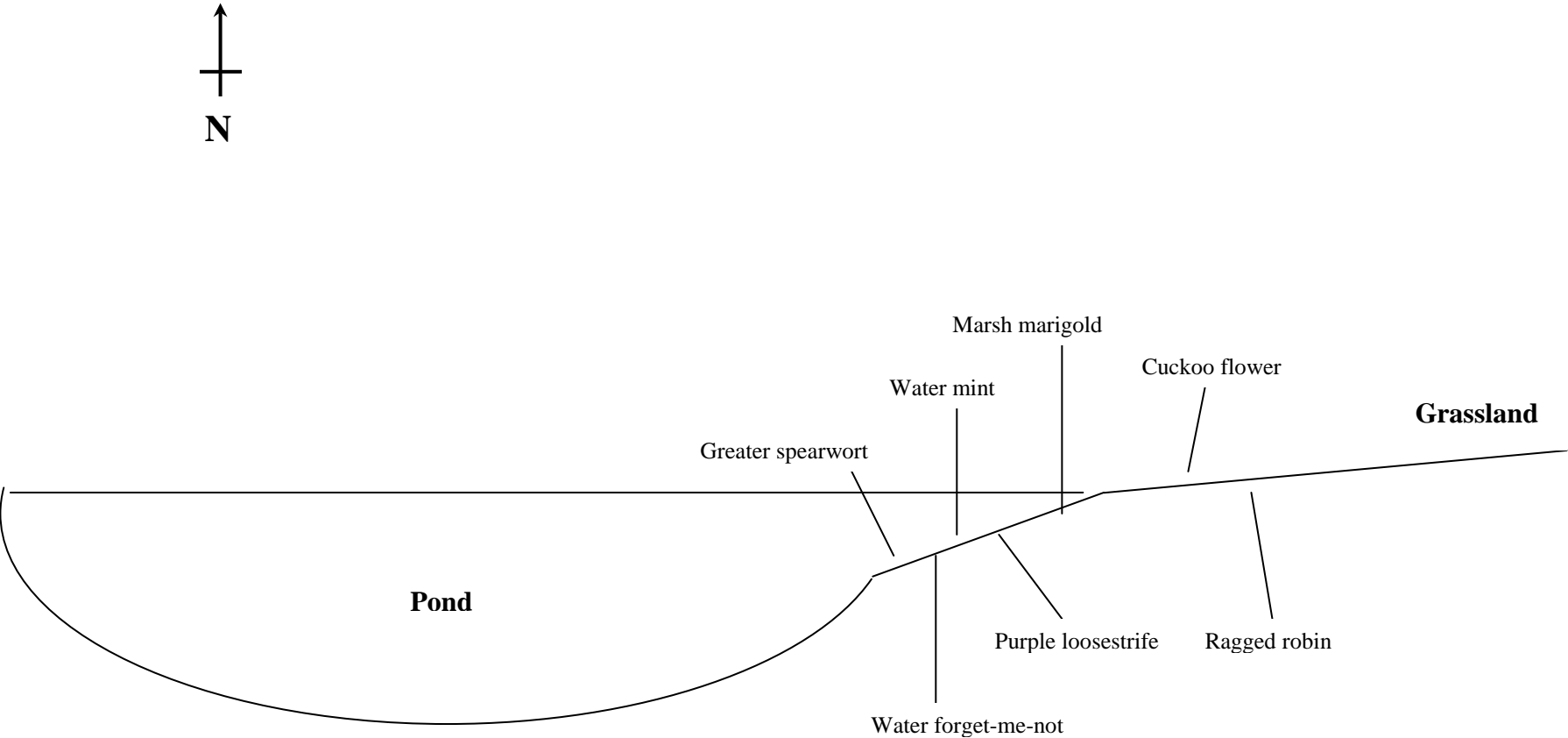
6.5.1. The ponds' more invasive species, e.g. Reedmace, should be removed on a rotational basis to ensure that it does not become the dominant aquatic species and effectively chokes the pond. The same applies to floating vegetation and other marginal pond species (see Appendix 3 for work programme) as these species are effectively sediment traps and will exacerbate the natural succession for a pond to become infilled over time. Any vegetation removed should be left around the pond's perimeter for at least 24 hours so that any aquatic species that are present are able to return to the water body.

6.5.2. Tree and shrub branches will also need to be monitored to ensure they do not overhang the pond and subsequently drop their leaves into the water as this will cause the water to stagnate and deplete oxygen availability. Such branches will also hinder access around the pond; this is particularly relevant with regard to patrolling the site and for monitoring/surveying purposes.

6.6 Retain a safe environment for the public to view the site from

6.6.1. The viewing area will need to be monitored throughout the year to ensure that the fencing is safe and secure. Adjacent vegetation to the viewing area will need to be cut back so that members of the public do not become entangled with species such as rose and bramble.

Fig. 3 Suggested plant species to be used from pond edge to grassland area



6.7 Undertake a full ecological survey of the area

6.7.1. A full ecological survey of the area needs to be undertaken so that baseline data can be gathered. The survey will also determine the best way to manage the area and how the site is progressing in relation to existing species and those species that have colonised the area since the habitat was created.

6.8. Take into consideration the potential impact of climate change on flora and fauna

6.8.1. Climate change will undoubtedly have some form of impact on species composition and therefore also needs to be taken into consideration. More drought resistant native tree species may need to be planted or the location of species with particular requirements may be altered, e.g. certain tree species could be planted closer to waterways so that they receive an adequate water supply throughout the year etc.

6.8.2. As mentioned above, a full ongoing ecological survey would help to identify shifts in species assemblage and the northerly migration of historically southern species that are linked to climate change. Butterflies are a useful tool in this respect and both the Comma and, more recently, the Speckled Wood butterflies are now resident in this area as a consequence of a warmer climate.

Appendix List

APPENDIX ONE

BARWICK POND FLORA (Provisional List)

TABLE 1 Vascular Plants

APPENDIX TWO

BARWICK POND FAUNA (Provisional List)

TABLE 1 Mammals

TABLE 2 Amphibians

TABLE 3 Lepidoptera

TABLE 4 Birds

TABLE 5 Invertebrates

APPENDIX THREE

WORK PROGRAMME 2008 – 2012

APPENDIX 1

BARWICK POND FLORA (PROVISIONAL LIST)

Table 1 Vascular Plants

Common Name	Latin Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Bird's-foot-trefoil	<i>Lotus corniculatus</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus agg</i>
Branched Bur-Reed	<i>Sparganium erectum</i>
Broad-Leaved Pondweed	<i>Potamogeton natans</i>
Common Duckweed	<i>Lemna minor</i>
Common Knapweed	<i>Centaurea nigra</i>
Common Osier	<i>Salix viminalis</i>
Common Ragwort	<i>Senecio jacobaea</i>
Cranesbill sp.	<i>Geranium sp.</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Thistle	<i>Cirsium arvense</i>
Cut Leaved Crane's bill	<i>Geranium dissectum</i>
Dandelion	<i>Taraxacum officinale</i>
Dog Rose	<i>Rosa canina</i>
Field Maple	<i>Acer campestre</i>
Goat Willow	<i>Salix caprea</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Ground Elder	<i>Aegopodium podagraria</i>
Ground Ivy	<i>Glechoma hederacea</i>
Hawthorn	<i>Crataegus monogyna</i>
Holly	<i>Ilex aquifolium</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Norway Maple	<i>Acer platanoides</i>
Oak	<i>Quercus robur</i>
Primrose	<i>Primula vulgaris</i>
Reedmace	<i>Typha latifolia</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Scots Pine	<i>Pinus sylvestris</i>

Sedge sp	<i>Carex sp.</i>
Stinging Nettle	<i>Urtica dioica</i>
Sycamore	<i>Acer pseudoplatanus</i>
Vetch sp.	<i>Vicia sp.</i>
Water Plantain	<i>Alisma plantago-aquatica</i>
White Clover	<i>Trifolium repens</i>
Wild Cherry	<i>Prunus avium</i>
Yarrow	<i>Achillea millefolium</i>

APPENDIX 2

BARWICK POND FAUNA (PROVISIONAL LIST)

Table 1 Mammals

Common Name	Latin Name
Fox	<i>Vulpes vulpes</i>
Pipistrelle Bat	<i>Pipistrellus pipistrellus</i>

Table 2 Amphibians

Common Name	Latin Name
Common Frog	<i>Rana temporaria</i>
Common Toad	<i>Bufo bufo</i>
Great Crested Newt	<i>Triturus cristatus</i>
Smooth Newt	<i>Triturus vulgaris</i>

Table 3 Lepidoptera

Common Name	Latin Name
Large White	<i>Pieris brassicae</i>
Peacock	<i>Inachis io</i>
Red Admiral	<i>Vanessa atalanta</i>
Ringlet	<i>Aphantopus hyperanthus</i>
Small Skipper	<i>Thymelicus sylvestris</i>
Small Tortoiseshell	<i>Aglais urticae</i>
Speckled Wood	<i>Pararge aegeria</i>

Table 4 Birds

Common Name	Latin Name
Blackbird	<i>Turdus merula</i>
Grey Heron	<i>Ardea cinerea</i>
House Sparrow	<i>Passer domesticus</i>
Magpie	<i>Pica pica</i>
Robin	<i>Erithacus rubecula</i>
Wren	<i>Troglodytes troglodytes</i>
Mallard	<i>Anas platyrhynchos</i>

Table 5 Invertebrates

Common Name	Latin Name
Grasshopper	

Billingham Beck Valley Country Park

Management Plan



April 2008 - March 2013

(2010 Review)

BILLINGHAM BECK VALLEY COUNTRY PARK

MANAGEMENT PLAN SUMMARY

Site Description

Locally known as 'Billingham Bottoms, the Country Park was created in 1986 and was designated as a Local Nature Reserve in 1992 to safeguard the area as a resource for both people and wildlife.

Billingham Beck Valley Country Park is approximately 150 acres of mixed habitats including ponds, the beck itself, scrapes, reedbeds, wet grassland and scrub - along with areas of woodland, hedges and copses which all add up to a major wildlife haven in an urban setting. It is also a much used and loved resource for the thousands of visitors who use the site each year.

The middle section of the site has had a very mixed history and a dominant feature of this area until the construction of the A19 carriageway in 1980 was Norton Mill, which originally ground corn-using power from the beck.

Much of the land was also previously owned by ICI or the Church and regular winter flooding has prevented any form of development in the area. The origin of some of the field names can be tracked back through historical records.

Stockton Borough Council encourages people from the surrounding area to volunteer at the site, using traditional practical countryside methods such as hedge laying, grassland management and arboricultural management - along with other tasks such as surveys and data collection.

Management Plan Purpose

This Management Plan is designed to to be a working document for the overall management of the site. This will generally be achieved through the use of the maps, tables and the Action Plan. These outline the works required on site and are an important tool on a day to day basis.

The main bulk of the document is a reference work about the site providing details on site history, past management and the rational for the management prescriptions that cover conservation, education and recreation management.

The plan is intended to be a rolling programme that can be regularly updated and modified. The annual review provides an opportunity not just to create the annual plan for the forthcoming year, but also to evaluate successes and failures over the previous twelve-month period. This should be a fairly quick and straightforward process

The Management Plan covers the period April 2008 – March 2013. The Plan has subsequently been broken up into a year-by-year work programme.

Location

Billingham Beck Valley lies within the narrow flood plain of a shallow river valley situated on the north-west fringe of the Teesside conurbation. To the east is the industrial town of Billingham, whilst to the west is the residential area of Norton. The valley which runs north to south is contained within two major roads - the A1027 Wolviston Road to the east and the A19 Billingham Bypass to the west.

Tradition

Regular flooding has always been a feature of Billingham Beck Valley which, in combination with traditional summer hay cutting or grazing, has led to a wide variety of different plants such as meadowsweet, flag iris and valerian. The wet fields also support a variety of wildlife such as orange tip and comma butterflies and birds including snipe, sedge warbler and reed bunting.

With help from local farmers and grazers, traditional methods of managing wet grassland continues to this day – which makes the area not only valuable for learning about nature, but also a popular place for quiet relaxation.

Conservation Management

This details the measures taken to manage all the habitats within the park - woodland, hedges, wet grassland, amenity grassland, watercourses, ponds, wetland areas and the establishment of better links with adjacent landowners to improve wildlife habitats in the wider area.

The Plan examines the park's management measures for many wildlife species or generic groups that are considered to be under threat or have special significance at a local or national level. Many of these species are covered by Biodiversity Action Plans (BAP's) and this plan identifies how these can be implemented.

Education, Events and the wider Community.

The Rangers at Billingham Beck Valley Country Park organises and lead themed lessons for school groups throughout the year. Popular activities include pond dipping, minibeast studies, the investigation of habitats and animal adaptation.

There is also a full programme of public events on local and natural history, and other organized events throughout the year.

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Section 1 : Introduction

Billingham Beck Valley consists of a corridor of land predominantly within the original floodplain of Billingham Beck. Regular winter flooding combined with a long history of traditional management has given rise to a rich and varied marsh and grassland flora within the valley basin. The plant communities present are of considerable nature conservation interest representing some of the last remaining examples of their kind on Teesside. These communities include areas of damp neutral grassland (NVC¹ MG4) and lowland marsh (NVC² M27) dominated by large areas of reed interspersed with pockets of sedge and herb rich meadow.

In recent years there have been major alterations in land use throughout the area bordering the beck valley, including the rapid expansion of Billingham and Norton townships and in 1980 the construction of the A19 dual carriageway.

Recognising the potential of Billingham Beck Valley as both a resource for wildlife and the local community Cleveland County Council purchased and entered into lease agreements for a substantial part of the valley during the 1980's and early 1990's. In the late 1980's a large part of the valley was recognised as a Site of Nature Conservation Importance (SNCI), then in 1991 land in the valley managed by Cleveland County Council was designated as a Country Park, followed in 1992 by the recognition of 25 hectares of the park as a Local Nature Reserve. Within the Tees Forest Plan 9Tess Forest went into administration November 2008), Billingham Beck Valley is designated as a gateway site into the wider Community Forest area.

In April 1996 responsibility for the Country Park and associated land passed over to Stockton Borough Council, the new unitary authority. The primary objectives of Stockton Borough Council in managing the Country Park and Local Nature Reserve are:

to provide a facility where visitors can partake in the quiet enjoyment of the countryside, whilst at the same timework towards protecting and improving the wildlife value of the valley.

The early objectives for the development and management of the Country Park were detailed in a five-year development plan and draught management plan, both produced in 1990. Many of the development proposals have now been attained, including the construction of a Visitor Centre, completion of a footpath network and the design and construction of a 4-hectare 'Ecology Park'.

The key objectives of the draft management plan remain true today and the following plan aims to update that document and see the management of the Country Park and associated land managed by the park staff for the foreseeable future.

The plan follows the guidelines for management plans initially developed by the Nature Conservancy Council and updated by the Countryside Council for Wales.

¹ British Plant Communities Vol. 3 Grasslands and Montane Communities. Ed. J.S. Rodwell. National Vegetation Classification (NVC).

² British Plant Communities Vol. 2 Mires and Heaths. Ed. J.S. Rodwell.

NB This site Management Plan refers to **Financial Years** from April 2008 to March 2013 for ease of reference by all parties, including the general public. It is also the basis of the work plan for the site, submitted annually to the Countryside Recreation Officer based around the financial year from April and the Stewardship works from October each year, as agreed with DEFRA. The scheduling of works within these parameters is at the discretion of the Countryside Ranger.

Section 2 : Site Description

2.1 General Information

Location

Billingham Beck Valley lies within the narrow flood plain of a shallow river valley situated on the north-west fringe of the Teesside conurbation. To the east is the industrial town of Billingham, whilst to the west is the residential area of Norton. The valley is contained within two major roads - the A1027 Wolviston Road to the east and the A19 Billingham Bypass to the west.

In addition several link roads and a rail line cross the valley dissecting it into several major parts. See overleaf for map of the Country Park.

Land Tenure

The whole open space corridor of Billingham Beck Valley covers some 200 hectares, of which the Country Park comprises 63 Hectares. The other major landowners in the lower valley are Scott Bros and Air products - with other small pockets of land under private ownership, including much of the upper valley given to horse pasture. Several areas of land managed by the Country Park staff are not under council ownership. This includes Scott Bros and Church Commission land, where formal lease agreements are in place. There is also land owned by Billingham Golf Club, where an informal agreement has been reached.

A map of land ownership is shown in Appendix 2.

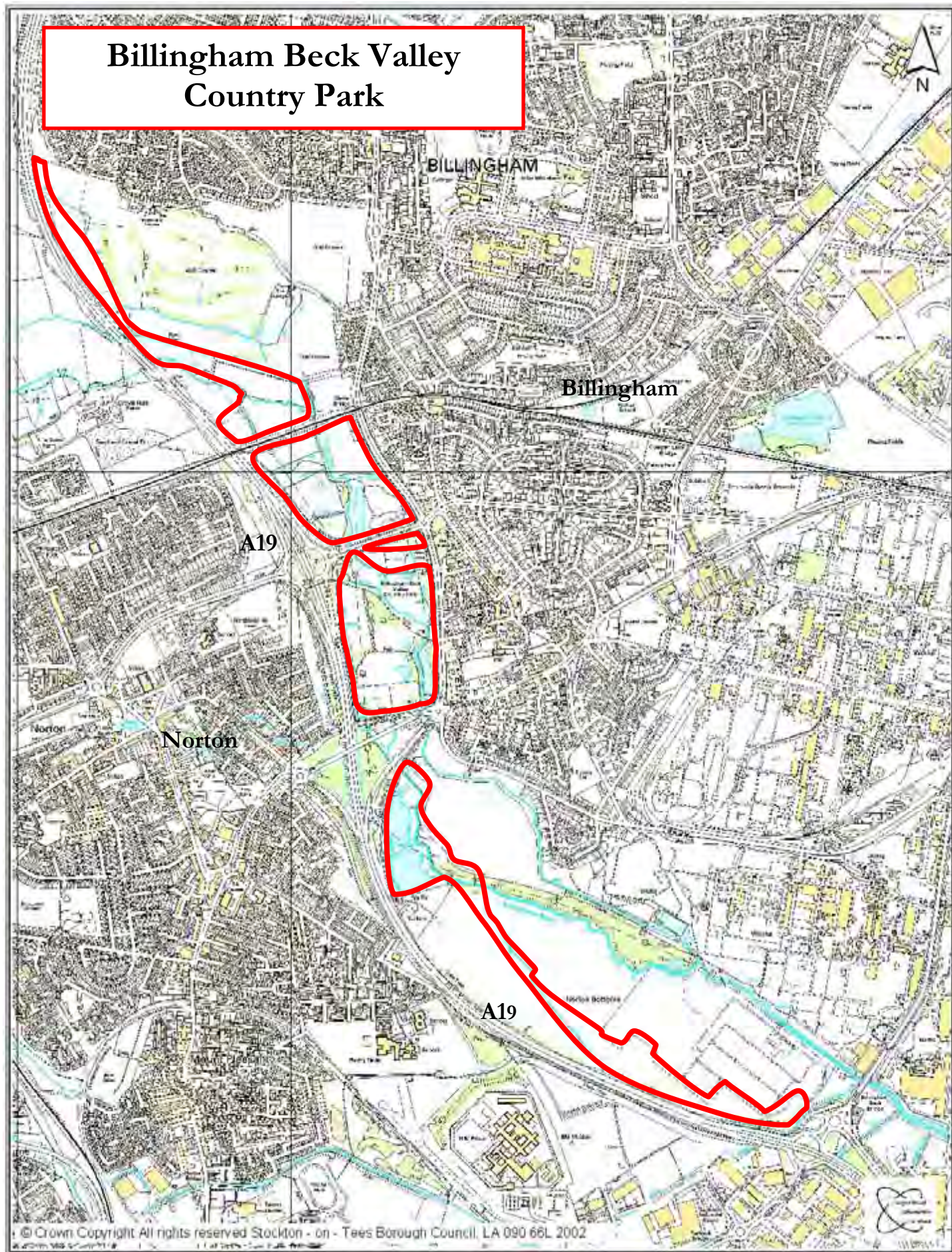
Management Infrastructure

The site is staffed by a Countryside Ranger, an Assistant Ranger, a Visitor Centre Co-ordinator and occasional information assistants in the Visitor Centre. The Countryside Ranger has overall responsibility for the management of the Country Park and Visitor Centre. A job description and breakdown of duties for each of these posts is given in Appendix 1.

Map Coverage

Stockton Borough Council has a comprehensive set of plans, shown at a range of scales, covering the area. These are held at the Visitor Centre Office and at Municipal Buildings in Stockton. Map Reference to the centre of the Country Park is NZ 454 228. Some historical maps of the valley are also held at the Country Park Visitor Centre. Comprehensive maps of the Teesside area dating from the mid nineteenth century are also held at Middlesborough Central Library.

Billingham Beck Valley Country Park



Records

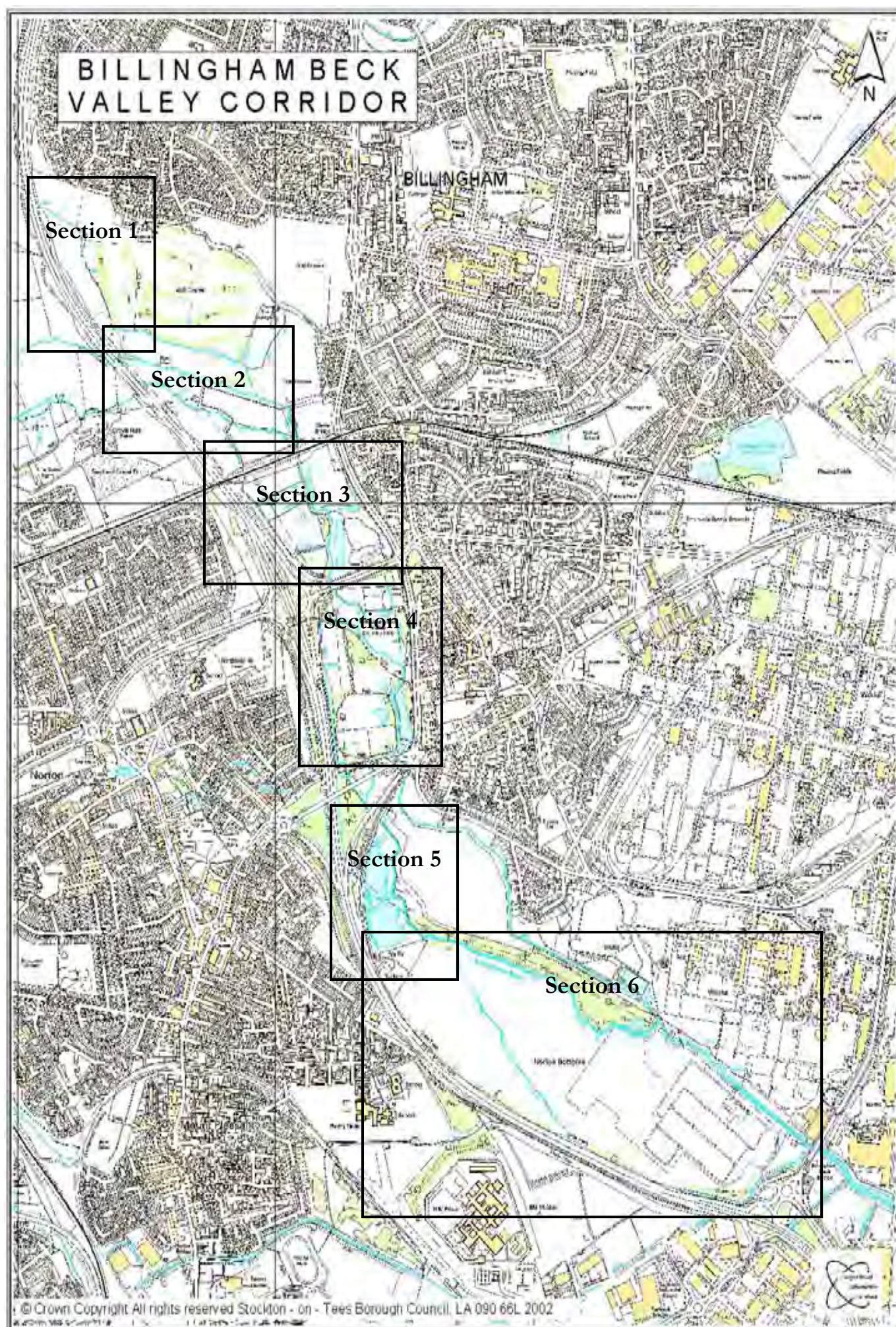
A large number of photographs are available at the Visitor Centre office. These include an extensive selection of slides detailing practical management work, schools' activities and Countryside Events. Budget records, previous event schedules and site diaries detailing significant events and activities are also kept at the Visitor Centre. Security of sensitive information is verified by Stockton Borough Council's internal auditor at least every three years.

Volunteer Countryside Warden attendance records are kept along with attendance figures for all scheduled user groups and are submitted on a regular basis to both the Countryside Recreation Officer and the Community Forest. Total attendance figures for the Volunteer Wardens are also submitted to the local Volunteer Development Agency.

Compartments

Billingham Beck valley has a diverse range of different habitats and is bisected by the beck, several roads and a railway line. In the process of constructing a Management Plan it has proved useful to divide the valley up into six main sections, using hard physical features such as the railway line or roads as boundaries. Within these main sections the land has been further compartmentalised on the basis of field boundaries and/or different habitat types.

These compartments are named and mapped over the following pages.

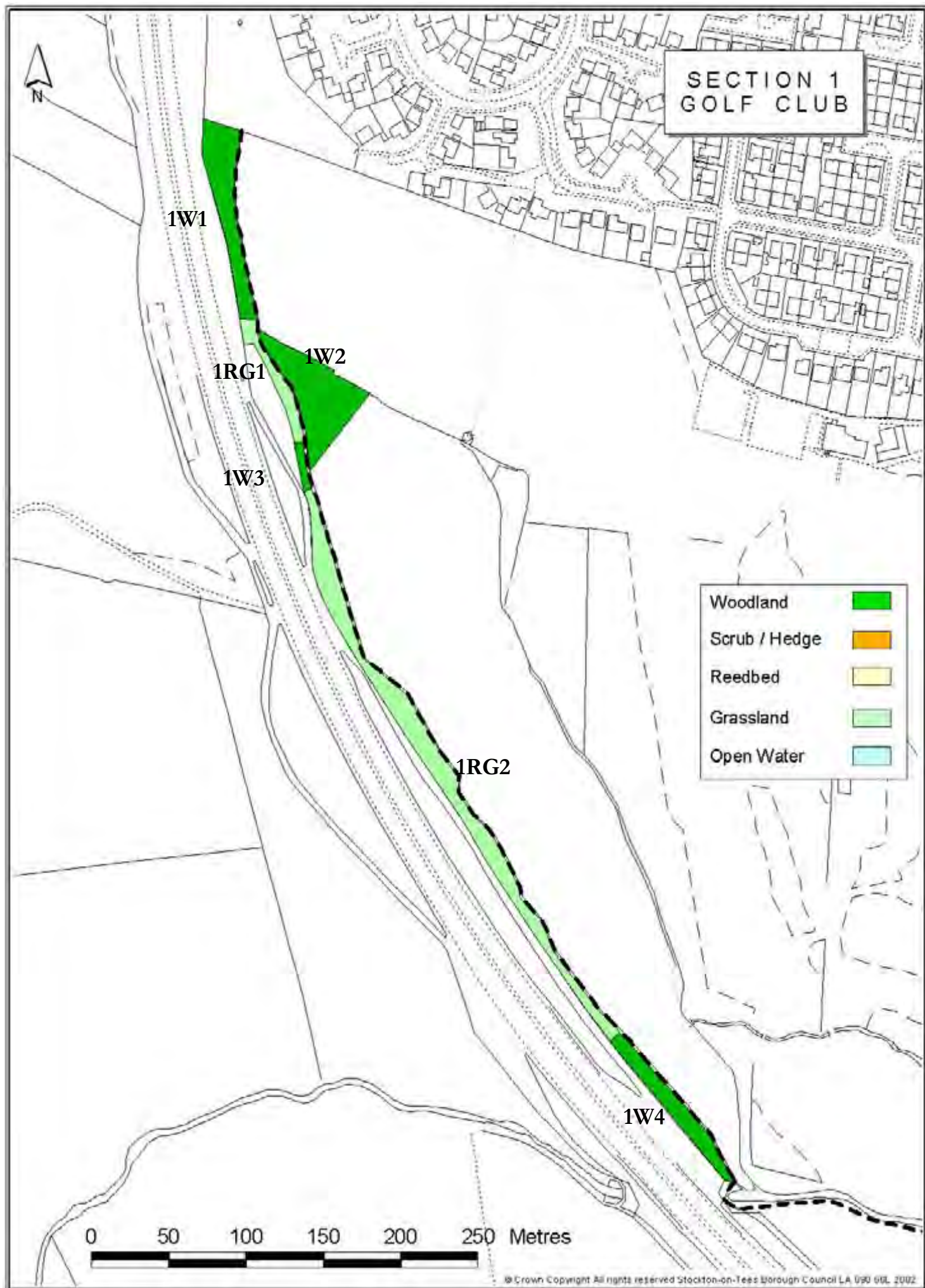


Management Compartments by Type

Symbol	Habitat Type
B	Beck
P	Permanent Pond
WS	Wetland Scrape / Seasonal Pond
D	Ditch
R	Reeds
RG	Rank Grassland
AG	Amenity Grassland
G	Cut Grassland
WG	Wet Grassland
W	Woodland
H	Hedge
SC	Scrub
CP	Car Park

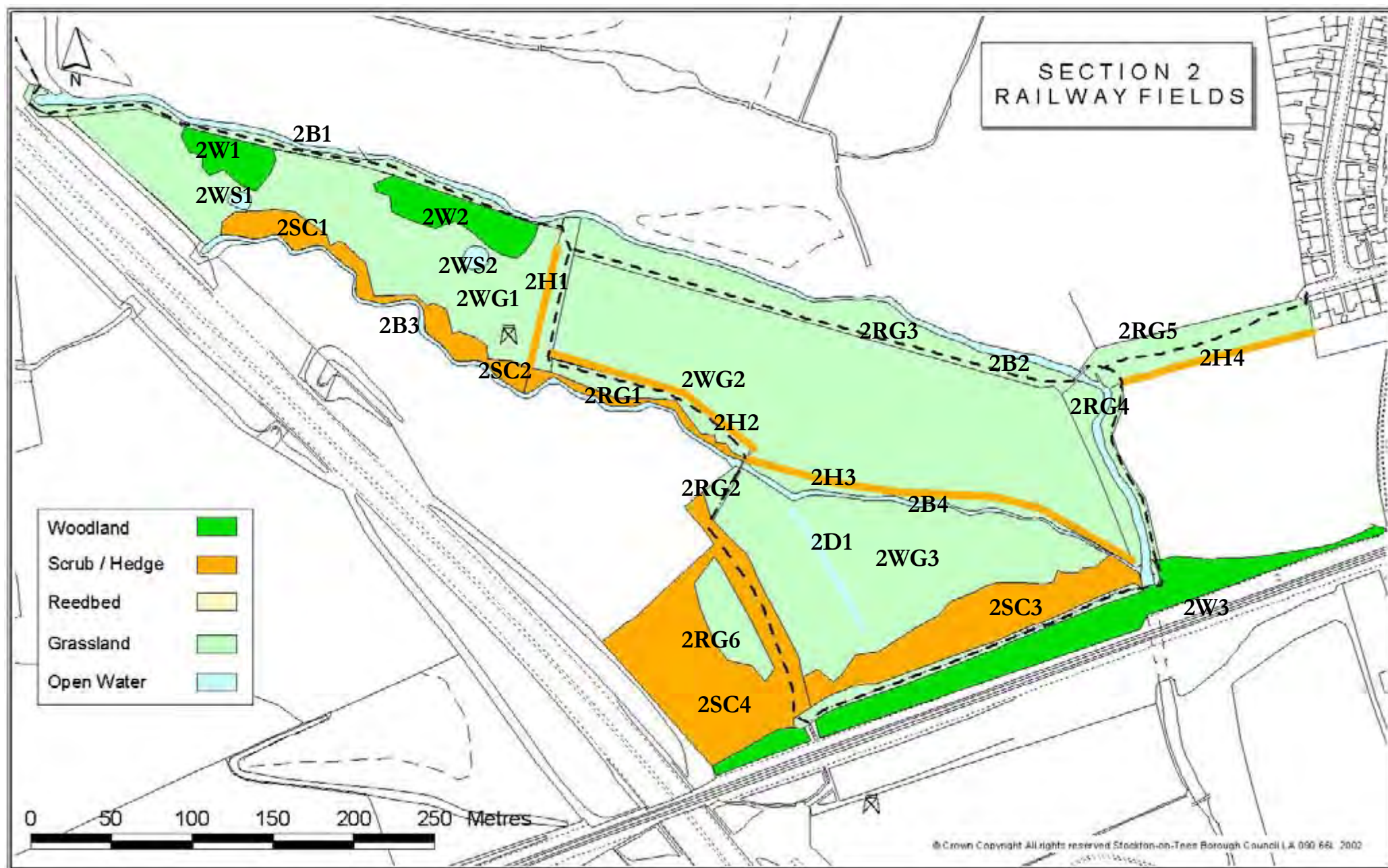
Section 1 : Golf Club

Category	Adopted Name
1RG1	Golf Club North Rank Grassland
1RG2	Golf Club Path Steps Rank Grassland
1W1	Skripka End Main Plantation
1W2	Golf Club Plantation
1W3	Golf Club Path Small Plantation
1W4	Halliwell and Tweedlum End Plantation



Section 2 : Railway Fields

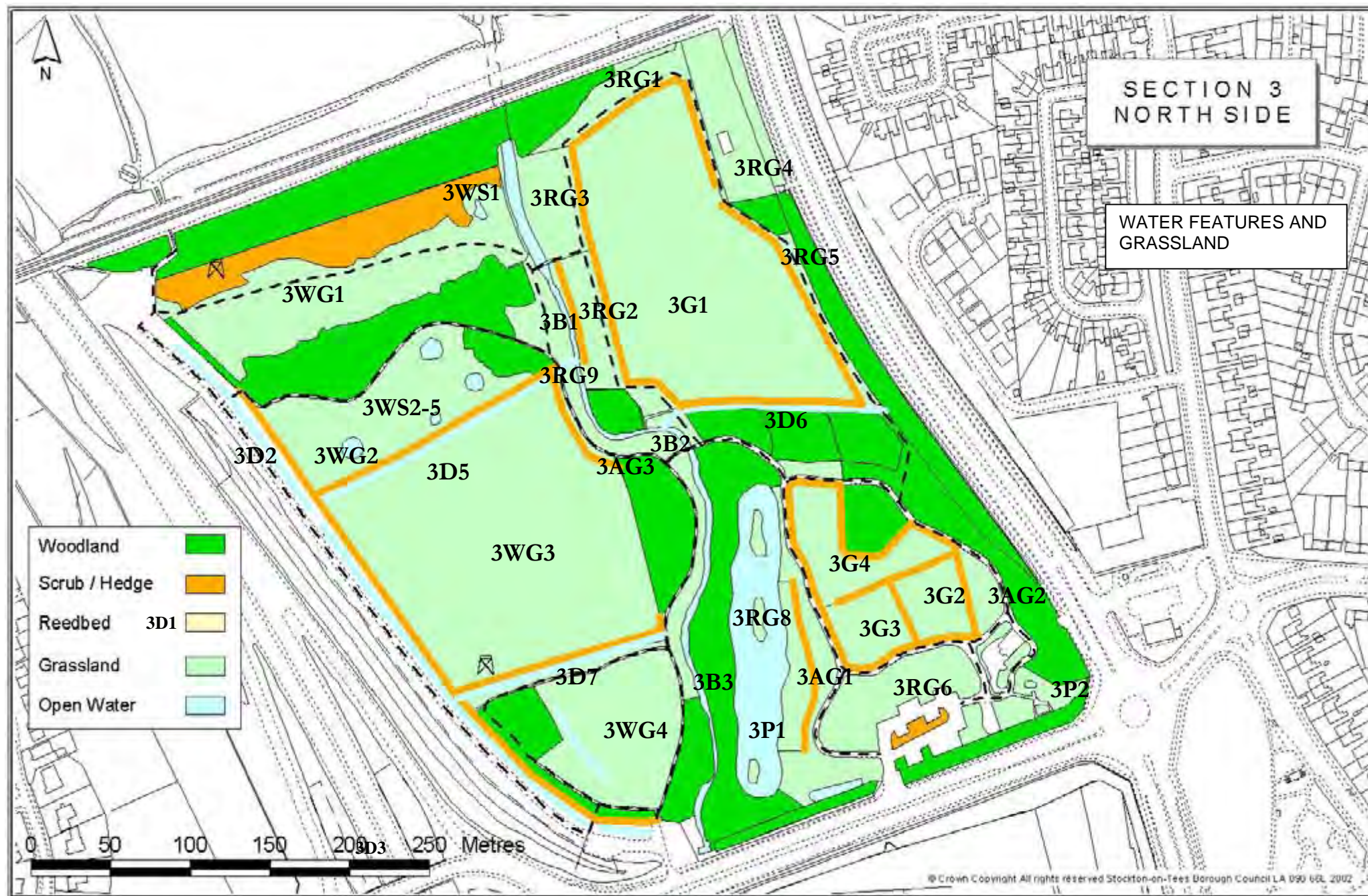
Category	Adopted Name
2B1	Halliwell and Tweedlum Beck
2B2	Railway Field Beck
2B3	St Columba's Beck
2B4	The Real Billingham Beck
2WS1	Halliwell
2WS2	Tweedlum
2D1	Small Railway Field Ditch
2RG1	Boardwalk Path
2RG2	Billingham Beck Path
2RG3	Railway Field Path and beckside
2RG4	St. Columba's Bridge Grassland
2RG5	The Stripe
2RG6	The Pound
2WG1	Halliwell and Tweedlum Field
2WG2	Railway Field
2WG3	Old Enclosure / Small Railway Field
2W1	Halliwell Wood
2W2	Tweedlum Wood
2W4	Northern Embankment Wood
2H1	Halliwell and Tweedlum Hedge
2H2	Railway Field Hedge North
2H3	Railway Field Hedge South
2H4	The Stripe Hedge
2SC1	Halliwell and Tweedlum Scrub
2SC2	Billingham Beck Scrub
2SC3	Old Enclosure / Small Railway Field Embankment Scrub
2SC4	The Pound Scrub



Section 3 : North Side

Category	Adopted Name
3B1	Willowgarth Beck
3B2	Peckett's Corner Beck
3B3	Whale Rock Beck
3P1	Ecology Park Pond
3P2	Visitor Centre Pond
3WS1	Willowgarth Pond
3WS2	Little Field Scrape
3WS2	Little Field Scrape
3WS3	Little Field Scrape
3WS4	Little Field Scrape
3WS6	Water Plant Nursery
3D1	A19 Ditch Willowgarth
3D2	A19 Ditch Little Field
3D3	A19 Ditch Stephenson's Bottom
3D4	A19 Ditch Small Car Park
3D5	Stephenson's Bottom Hedge Ditch
3D6	Bird Feeder Ditch
3D7	Mill Meadow North Ditch
3D8	Mill Meadow Central Ditch
3RG1	Stable Field North
3RG2	Hazel Copse Grassland
3RG3	Stable Field West
3RG4	Stable Building Grassland
3RG5	Stable Field Path Grassland
3RG6	Eco Park Rockery Grassland
3RG7	Eco Park Rank Grassland
3RG8	Ecology Park Pond Islands
3RG9	Willowgarth Bridge Rank Grassland
3AG1	Eco Park Pond Grassland
3AG2	Visitor Centre Grassland
3AG3	North Side Beckside
3G1	Stable Field
3G2	Wildflower Meadow
3G3	Wildflower Meadow
3G4	Wildflower Meadow
3WG1	Willowgarth
3WG2	Little Field
3WG3	Stephenson's Bottom
3WG4	Mill Meadow / Alder Field

3W3	Willowgarth Wood
3W4	Little Field Wood
3W5	Stable Plantation
3W6	Hazel Copse
3W7	Peckett's Wood
3W8	Stable Path Embankment Wood
3W9	Ossier Bed
3W10	Orchard / Study Area
3W11	Bird Feeder
3W12	Ecology Park Pond Wood
3W13	Ecology Park Willow Plantation
3W14	Mill Meadow Wood
3W15	Mill Meadow Beck Wood
3W16	Ecology Park Plantation
3W17	Car Park Wood
3H1	Stable Field North
3H2	Stable Field West
3H3	Stable Field East
3H4	Stable Field Entrance Hedge
3H5	Stable Field South
3H6	Little Field West Hedge
3H7	Little Field Ditch Hedge
3H8	Stephenson's Bottom West
3H9	Stephenson's Bottom South
3H10	Hazel Copse Hedge
3H11	Ecology Park Pond Hedge
3H12	Wildflower Meadow Hedge
3H13	Wildflower Meadow Hedge
3H14	Wildflower Meadow Hedge
3H15	Wildflower Meadow Hedge
3H16	Wildflower Meadow Hedge
3H17	Wildflower Meadow Hedge
3H18	Stephenson's Bottom Path Hedge
3H19	Mill Meadow Wood Hedge
3SC1	Willowgarth Embankment Scrub
3SC2	Car Park Mound
3CP1	Main Car Park
3CP2	Small Car Park

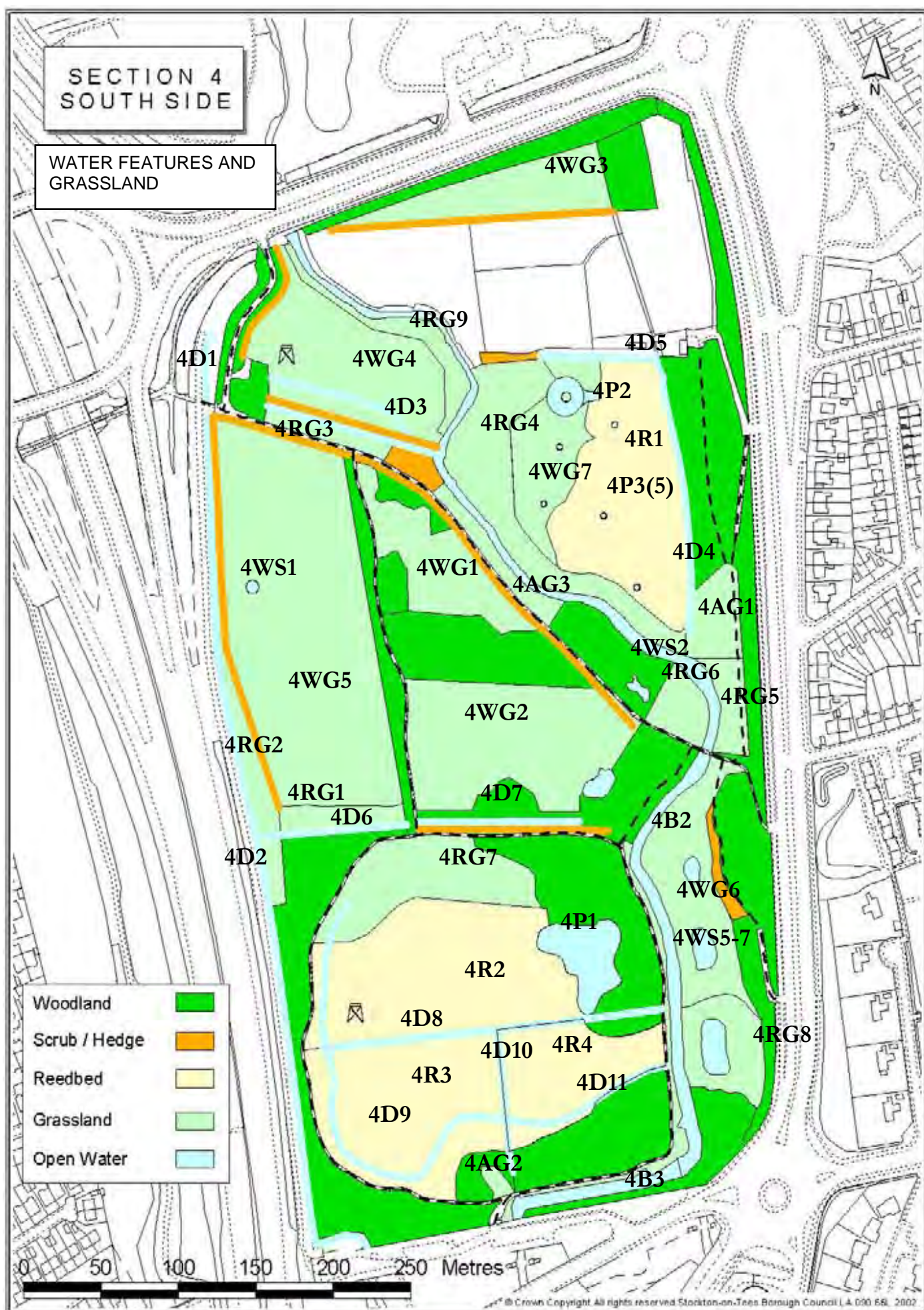


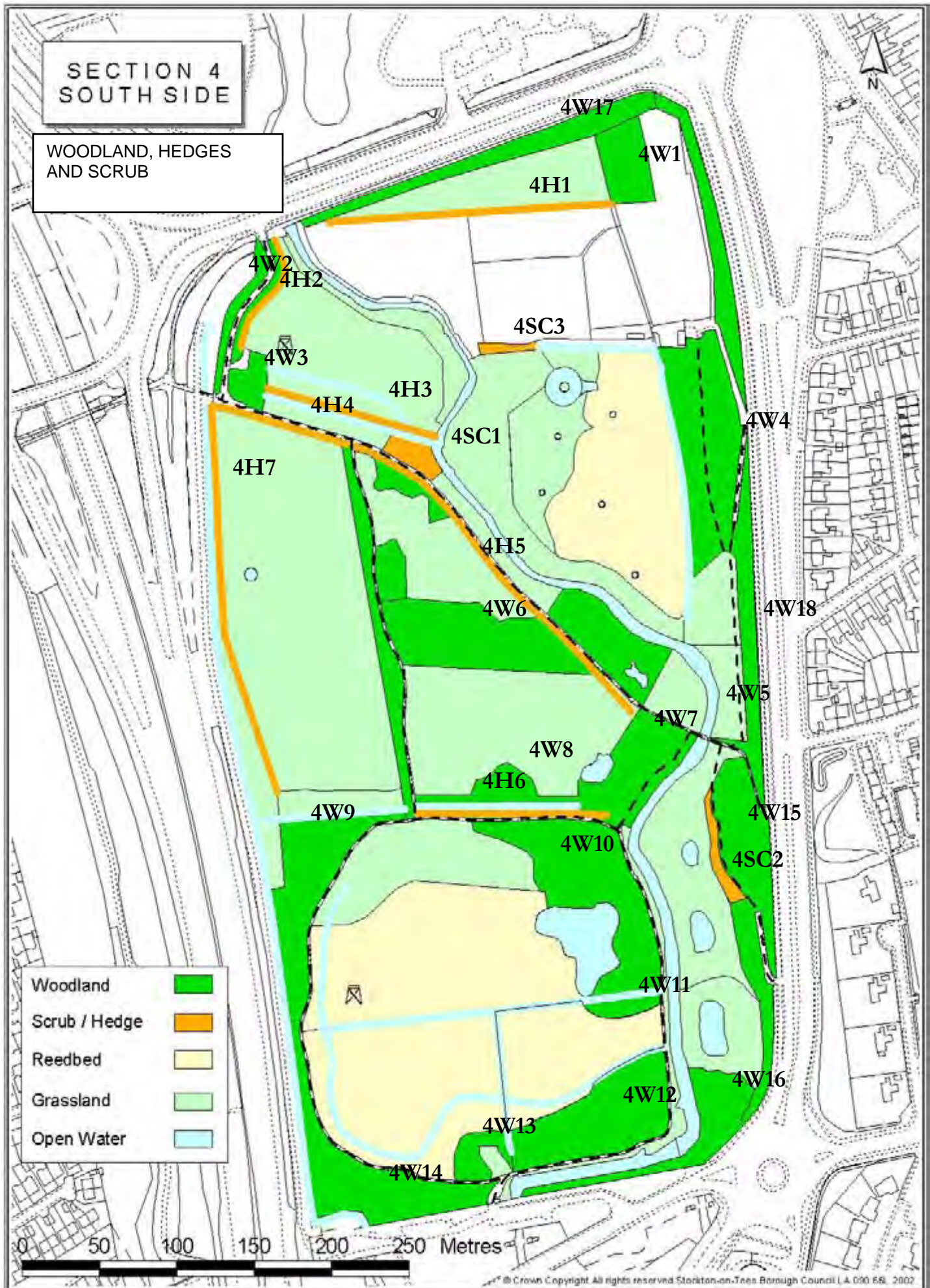


Section 4 : South Side

Category	Adopted Name
4B1	Main Path Beck
4B2	Sluice Beck
4B3	Weir South Beck
4P1	Reedbed Pond
4P2	Glebe Swamp Pond
4P3	Glebe Swamp Bore Holes (5)
4WS1	Smiths Field Tree Pond
4WS2	Main Path Woodland Pond
4WS3	Boardwalk Wood Pond
4WS4	Willow Crook North Scrape
4WS5	Willow Crook Middle Scrape
4WS6	Willow Crook South Scrape
4WS7	Settling Tank Pond
4D1	A19 Ditch North
4D2	A19 Ditch
4D3	Main Path Ditch
4D4	Glebe Ditch East
4D5	Glebe Ditch North
4D6	Smiths Field Ditch
4D7	Flutter Carr Ditch
4D8	Frognell Main Ditch
4D9	Frognell Bund Ditch
4D10	Frognell Cross Ditch
4D11	Frognell Panel Ditch
4R1	The Glebe
4R2	Frognell North
4R3	Frognell Bund Reeds
4R4	Frognell Panel Reeds
4RG1	Smiths Field South Rank Grassland
4RG2	Smiths Field West
4RG3	Main Path Rank Grass
4RG4	Glebe Swamp Rank Grass
4RG5	Swing Field Rank Grass
4RG6	Concrete Bridge Rank Grass
4RG7	North Frognell Rank Grass
4RG8	Willow Crook (Cricket Pitch) Rank Grass
4RG9	Mill Batts (Pylon Field) Becksides
4AG1	Swing Field
4AG2	South Picnic Area

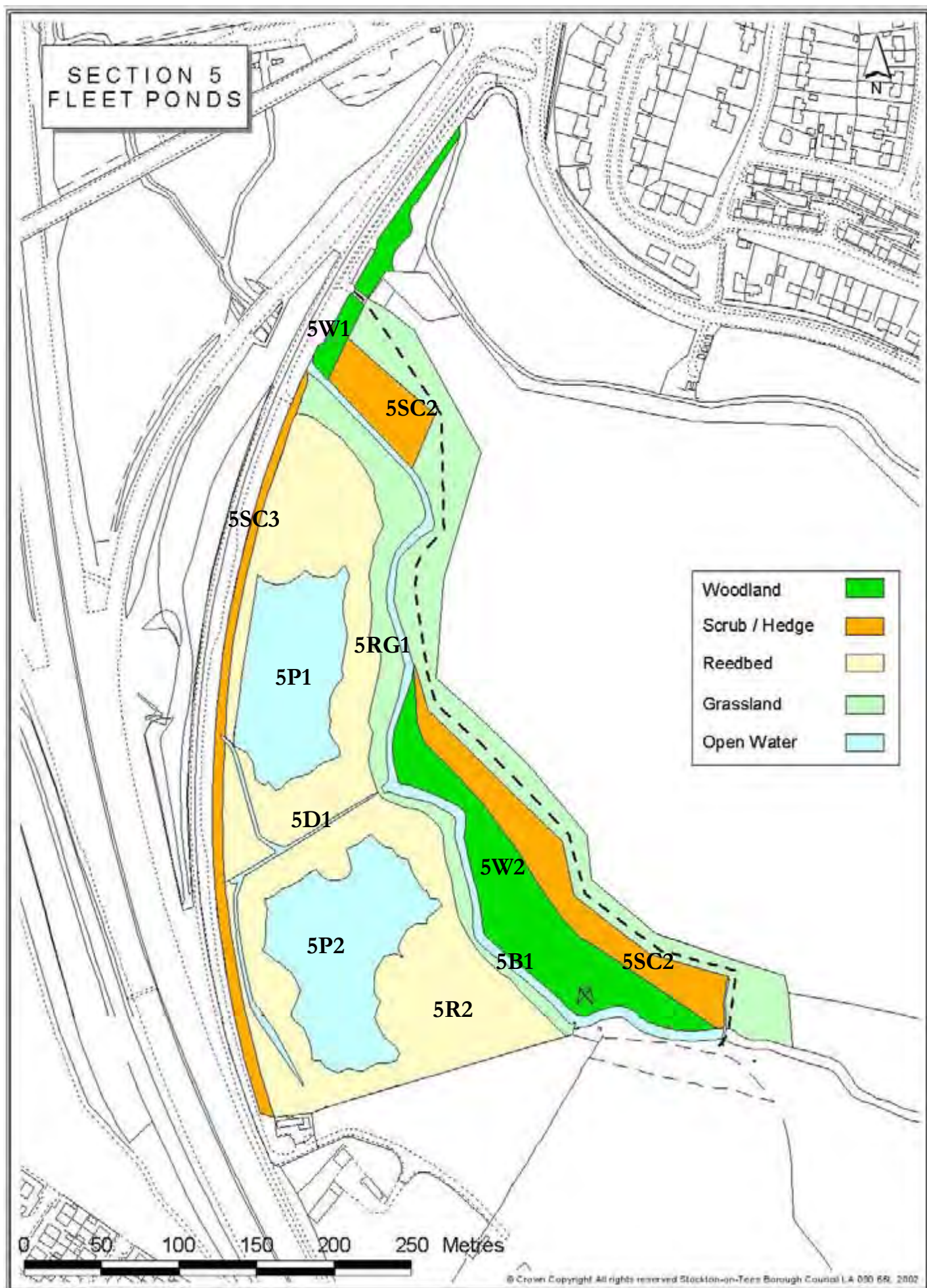
4AG3	Main Path Beckside
4AG4	Sluice Beckside
4WG1	North Flutter Carr Grassland
4WG2	Main Flutter Carr Grassland
4WG3	North Rushy Carr (Wedge Field)
4WG4	Mill Batts (Pylon Field)
4WG5	Smiths Field
4WG6	Willow Crook (Cricket Field)
4WG7	Glebe Swamp Wet Grassland
4SC1	Main Path Scrub
4SC2	Willow Crook (Cricket Pitch) Scrub
4SC3	Glebe Ditch Scrub
4W1	Allotment Woods
4W2	North Entrance Path Woods
4W3	Mill Batts (Pylon Field) Woods
4W4	Glebe Sycamore Woods
4W5	Main Path Wood
4W6	Flutter Carr Centre Wood
4W7	Flutter Carr East Wood
4W8	Flutter Carr Path Wood
4W9	Frognell Pylon Woodland
4W10	Frognell Pond Wood
4W11	Frognell Ditch Wood
4W12	Frognell Panel Wood
4W13	Frognell Picnic Table Wood
4W14	Frognell Bund Path Wood
4W15	Poplar Wood
4W16	Settling Tank Wood
4W17	A1027 Embankment Wood
4W18	Bypass Embankment Wood
4H1	Rushy Carr Hedge
4H2	Mill Batts Hedge North
4H3	Mill Batts Hedge South
4H4	Smiths Field Entrance Side Hedge
4H5	Main Path Hedge
4H6	Flutter Carr Path Hedge
4H7	Smith's Field Long Hedge *
4CP1	South Car Park





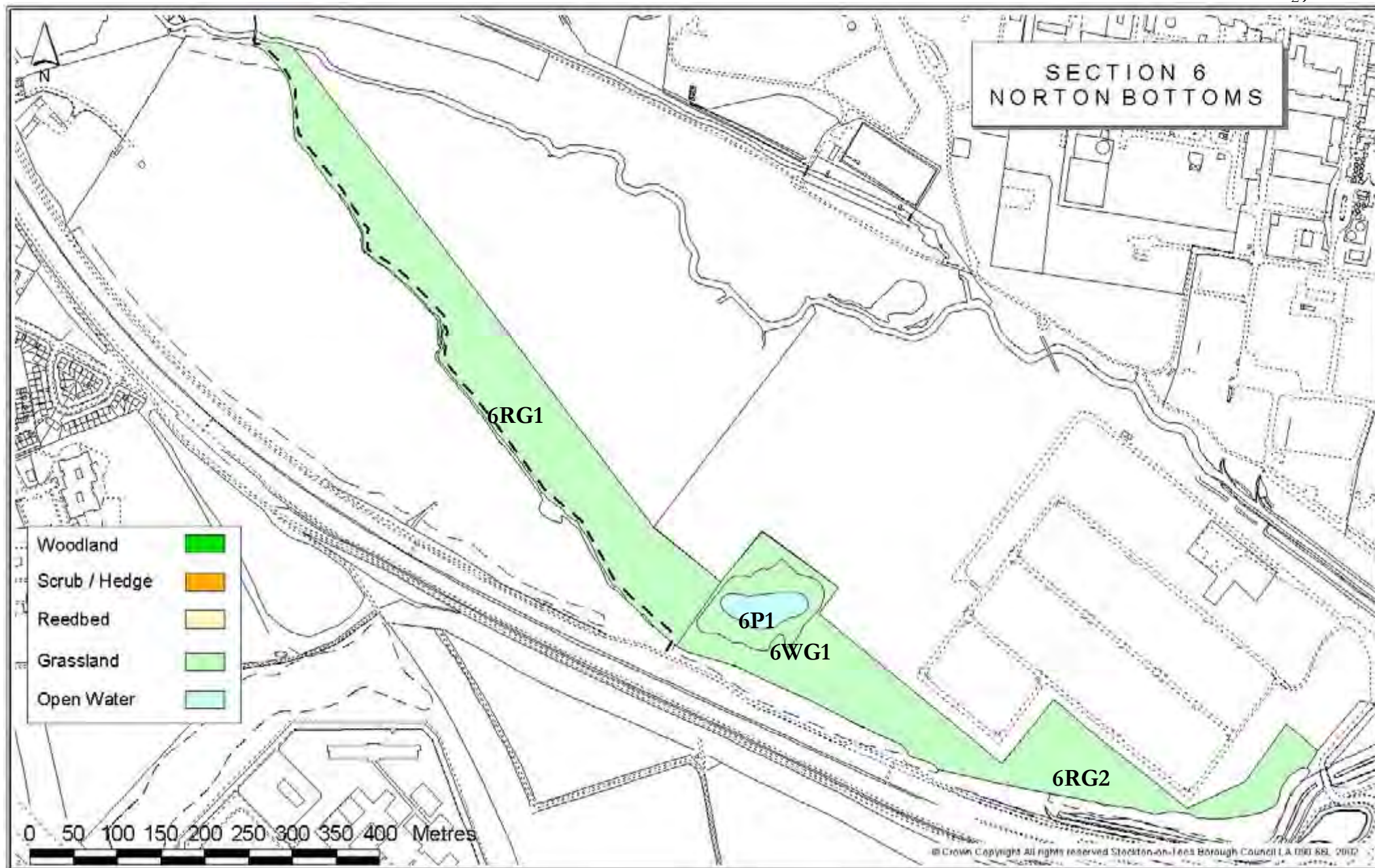
Section 5 : Fleet Ponds

Category	Adopted Name
5B1	Fleet Ponds Beck
5P1	North Fleet Pond
5P2	South Fleet Pond
5D1	Fleet Ponds Ditch
5R1	North Fleet Ponds Reeds
5R2	South Fleet Ponds Reeds
5RG1	Coal Yard
5RG2	Fleet Ponds Beckside
5W1	Fleet Road Wood
5W2	Fleet Ponds Pylon Wood
5SC1	Fleet Ponds Scrub North
5SC2	Fleet Ponds Pylon Scrub
5SC3	Fleet Road Scrub



Section 6 : Norton Bottoms

Category	Adopted Name
6P1	Layby Pond
6RG1	Fleck's Acre (Gypsum Path Grassland)
6RG2	Air Products Grassland
6WG1	Layby Pond Sedge Bed



Billingham Beck Valley Country Park

Management Compartments

	Number On Site	Length	Area	Percentage Of Site	Proposed Additions
Becks	2	4072m	9946m ²	1.6%	~
Permanent Ponds	12	~	26368m ²	4.2%	~
Seasonal Ponds	15	~	2535m ²	0.4%	~
Ditches	22	3236m	4534m ²	0.8%	~
Reeds	6	~	65 881m ²	10.5%	~
Rank Grassland	29	~	166 025m ²	26.0%	~
Amenity Grassland	7	~	8552m ²	1.4%	~
Wet Grassland	18	~	182 103m ²	29.0%	~
Woodland	44	~	119 791m ²	19.1%	2400m ²
Hedges	29	3434m	5106m ²	0.8%	239m
Scrub	12	~	32 991m ²	5.2%	~
Garden / Car Park	4	~	4908m ²	0.8%	~

Totals	200
---------------	------------

628 740m²	100
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1. Hedges and ditches assumed to be 1.5m wide
2. One hectare is 10 000m² = 2.47 acres.

Billingham Beck Valley Country Park is therefore 62.87Ha or 155.3 acres

2.2 Environmental Information

Physical

Climate

In keeping with the general picture for the North East of England, Billingham Beck Valley experiences a relatively cool climate, influenced in spring and summer by cool off sea winds and cloud cover. Average precipitation is low and a microclimate of high prevailing winds results in relatively dry conditions. Stockton on Tees, Climate Change Action Plan 2007 – 2012 has been incorporated into this document.

Hydrology

The hydrology of Billingham Beck Valley is relatively complex and is the main contributory factor influencing the distribution of habitats. Natural watercourses within the valley have been manipulated to a large extent for over two hundred years. This includes the construction of a series of drainage ditches and a millstream connecting Norton corn mill with Billingham Beck. In 1980 construction of the A19 dual carriageway on the western edge of the valley interrupted the flow of spring water and thereby contributed to the steady drying out of parts of the marshland. The creation of a bund and ditch around the southern Glyceria reed beds has largely alleviated this problem, along with an abstraction agreement with the Environment Agency, although this does require the periodic maintenance of the network of ditches within best conservation practice guidelines.

Geology

The solid geology is to a great extent masked by the deep glacial deposits, which shape the soil structure within the valley. The underlying rock is Keuper and Bunter sandstone.³

Geomorphology

Billingham Beck Valley consists of a shallow floodplain ranging from 3 to 5 metres above sea level. Prior to major land alterations during the mid 20th century, an expanse of intertidal marsh dominated the south-eastern area of the valley. Today this area has been raised by several metres through the process of industrial tipping and remains permanently free from tidal inundation. Further north and west the valley has been shaped by the processes of glaciation, river erosion and regular winter flooding. Today these processes have been arrested through the management of Billingham Beck in order to prevent wide scale flooding in the valley.

Soils

The underlying soil occupying the greater part of the lower lying areas within the valley consists mainly of alluvial deposits of fine grained silts and clay and is thus relatively deep, damp and slow draining. In the more elevated parts of the valley the soil is a more freely draining mixture of sand and gravel deposits also glacial in origin. Small pockets of boulder clay are also present, principally in the north-eastern corner of Section 3.

³ OS Solid Geology Map Sheet 4

During 1995/6 the University of Liverpool took several core samples from the valley basin as part of a study looking at estuaries on the east coast of England. Results indicate a relatively complex history of marine and freshwater ecosystems during the present periglacial period.

2.3 Biological Information

Flora and Fungi

Billingham Beck Valley supports a mosaic of marsh and drier grassland flora. Wetland areas are dominated by grasses such as Reed sweet grass (*Glyceria maxima*), Reed canary grass (*Phalaris arundinacea*) and in localised areas Common reed (*Phragmites australis*). Frequent herbs include meadowsweet (*Filipendula ulmaria*), Lady's smock (*Cardamine pratensis*), Great hairy willowherb (*Epilobium hirsutum*) and Butterbur (*Petasites hybridus*). More localised species, some of which are now uncommon throughout the Tees valley area, include Greater Burnet (*Sanguisorba officinalis*), Flag iris (*Iris pseudocarus*) and Common Valarian (*Valarian officinalis*). The diversity of vascular plants is impressive and a full list principally based upon a survey undertaken in 1993 by Chris Lowe (Cleveland Wildlife Trust) is given with a map of NVC classifications in Appendix 4.

Bryophytes

Little survey work has been done on the mosses and liverworts of the valley, although it is apparent that the lack of woodland cover and the wind exposure of much of the valley are factors likely to limit the abundance and distribution of bryophytes.

Fungi and Lichens

A thorough survey of fungi within the valley has not been undertaken, however work carried out in 1995⁴ provides evidence of a notable fungi community including several new vice county (VC 66) records. Air pollution has probably badly affected the native species of lichen once present in the valley. Common species such as *Hypogymnia physoids* can still be found on mature willow (*Salix spp*). See Appendix 5 for a species list of fungi and lichen recorded in the valley.

Vegetation species and percentages may alter if the predicted concerns about Climate Change come to fruition.

Fauna Information

Birds

The ecological diversity and structural complexity of the valley offers a wide range of suitable feeding and breeding areas for many bird species.

The extensive stands of Sweet reed grass and Reed canary grass provide good cover for Snipe (*Gallinago gallinago*), Sedge warbler (*Acrocephalus schoenobaenus*), Reed bunting (*Emberiza schoeniculus*), Coot (*Fulica atra*) and Moorhen (*Gallinula chloropus*). Kingfisher (*Alcedo atthis*) and Grey Wagtail (*Motacilla cinerea*) are often seen along Billingham Beck. The two fleet ponds attract wading birds such as Redshank (*Tringa*

⁴ Alex Weir and Malcolm Birtle, Cleveland Naturalist's Society.

totanus), Common sandpiper (*Actitis hypoleucos*) and Lapwing (*Vanellus vanellus*), whilst Reed warbler (*Acrocephalus scirpaceus*) nest in the Common reed around the fringe of the ponds. A total of 90 species have been recorded in the valley by the countryside ranger service since the mid 1980's. A full list of species is given (including known breeding species) in Appendix 6.

Mammals

Red fox (*Vulpes vulpes*), Rabbit (*Oryctolagus cuniculus*), Weasel (*Mustela nivalis*), Stoat (*Mustela erminea*), Common shrew (*Sorex araneus*), Bank vole (*Clethrionomys glareolus*) and Brown rat (*Rattus rattus*) are known to breed in the valley. Other species recorded are Water shrew (*Neomys fodiens*), Pygmy shrew (*Sorex minutus*), Roe deer (*Capreolus capreolus*), Pipistrelle bat (*Pipistrellus pipistrellus*), Brown hare (*Lepus capensis*), Mink (*Mustela lutreola*) and Hedgehog (*Erinaceus europaeus*). See Appendix 7 for a complete list.

Reptiles and Amphibians

Comprehensive survey work on breeding populations of amphibians has shown that Common frog (*Rana temporaria*), Common toad (*Bufo bufo*) and Smooth newt (*Triturus vulgaris*) all breed in the valley. Great crested newt has been recorded on one occasion in 1993. Large populations of three spined Stickleback (*Gasterosteus aculeatus*) are likely to be a major factor limiting the population size and diversity of heptero fauna. There are occasional problems with discarded terrapins in the Ecology Park pond, although Stockton Borough Council's Animal Welfare Team are obliged to accept any specimens caught alive.

Fish

No comprehensive surveys of fish have been undertaken, however incidental records show that species present include 3 Spined stickleback (*Gasterosteus aculeatus*), Minnow (*Phoxinus phoxinus*), Stone loach (*Noemacheilus barbatulus*), Gudgeon (*Gobio gobio*), Tench (*Tinca tinca*) and Perch (*Perca fluviatilis*). The Environment Agency Fisheries Officers do periodically 'electro fish' the beck and in 2001 found fine specimens of Trout in Section 4, although these were notably absent in 2004, although it is assumed that they come from commercial fisheries upstream. Another problem is the introduction of unwanted exotic species into the Ecology Park pond including Orfe and common Goldfish. These are traditionally moved to Charlton's Pond during Environment Agency investigations.

Invertebrates

At present, the list of invertebrate species inhabiting the valley is far from complete, however it is likely that given the range of habitats within the valley and in particular the large stands of reedbed and areas of wet dilapidated woodland that there is a rich invertebrate fauna. Interesting species which have been recorded in the valley include the Banded damselfly (*Calyptopteryx splendens*), a rare insect in northern Britain and Marsh pug moth (*Eupithecia* sp) - a regionally notable insect known only at three other sites in north east England. Dead and decaying woodland around the 'willowgarth' has yielded some notable species including *Pentarthron lubtonii*, *Chrysolina polita*, *Stenus bimaculatus* and *Loisome deflexum*. Regular butterfly surveys since 1991 have recorded 14 species commonly seen in the valley including Comma (*Polygonia c-album*), close to its northern limit in Britain.

Most of the common freshwater invertebrates are present in the valley including Dragonfly (*Anisoptera sp.*), Damselfly (*Zygoptera sp.*), Mayfly (*Ephemoptera*), Cased caddis fly (*Trichoptera sp.*) and freshwater Shrimp (*Gammaridae sp.*). See Appendix 8 for a complete list of both terrestrial and aquatic invertebrate species recorded.

Species of Fauna will need to be monitored to see if the predicted concerns over Climate Change affect the Woodland Park inhabitants.

Information regarding natural or biological communities

There are four readily distinguished semi natural habitat types present within the Country Park. In addition the Ecology Park represents a recently reclaimed area of land developed through landscaping to produce a range of habitat types in a small area. Each of the areas will be discussed in turn.

Open Water

Billingham Beck itself, several ponds and a network of drainage ditches provide a large area of open water in the valley. North of a weir situated at the southern end of compartment 4 the beck consists entirely of freshwater which can fluctuate in level from a depth of less than half a metre to three metres or more after heavy rainfall (this stretch of the beck is notoriously 'flashy'). South of the weir the beck is tidal and subject to high levels of pollution washed up with the tide from an industrial outfall close to its juncture with the River Tees.

North of the weir the banks of the beck support strong communities of the plants Butterbur (*Petasites hybridus*), Comfrey (*Symphytum officinale*) and Nettle (*Urtica dioica*). The macroinvertebrate population of the beck upstream of the weir is typical of a eutrophic lowland river system, with swimming mayfly (*Baetidae sp.*) and damselfly (*Zygoptera spp*) common, but cased caddis (*Trichoptera sp.*) rare and freshwater shrimp (*Gammarus Sp.*) absent.

North of the Norton to Billingham railway line in compartment 6, a small tributary joins the main beck. Here the community of macro-invertebrates is rich with cased caddis (*Trichoptera spp*) and freshwater shrimp, (*Gammarus Spp*) indicative of a more diverse and less eutrophic stream.

There are six permanent ponds in the valley, four fed entirely by rainwater and two intermittently topped up with flood-water from Billingham Beck. The latter ponds, known as Fleet Ponds (Section 5), form two large areas of open shallow water separated by a narrow strip of land. Extensive stands of common reed border these ponds and in recent years have slowly encroached upon the area of open water. The two Fleet Ponds support an extremely poor range of aquatic macro-invertebrates and no recorded aquatic vertebrates. This situation is a result of the extreme levels of ammoniac nitrogen and large pH fluctuations in the pond water. Despite the hostile conditions, Mallard (*Anas platyrhynchos*), Coot (*Fulica atra*) and Moorhen (*Gallinula chloropus*) are frequent visitors to Fleet Ponds. Rarer visitors include waders such as Redshank (*Tringa totanus*) and Common Sandpiper (*Actitis hypoleucos*).

Of the three remaining ponds, two are located within the boundary of the Country Park and the third is close to Portrack roundabout adjacent to Air Products reedbeds. The two ponds within the Country Park boundary both support diverse populations of aquatic macro-

invertebrates, amphibians and fish; principally stickleback and minnow. These ponds are fringed by dense vegetation, mainly consisting of Reedmace, Reed Canary grass and Branched Bur-reed. Mallard, Coot and Moorhen are permanently resident on these ponds. The Portrack pond also supports a rich macro-invertebrate fauna and a breeding population of common toad, although fish are absent from this pond. Fringing vegetation is predominantly low growing sea club rush (*Scirpus maritimus*). In addition to common wildfowl which regularly frequent the pond, snipe, redshank and lapwing commonly feed around the waters edge.

Wetland

A substantial part of the valley is characterised by marshland and reedbed habitat. These wetland areas are situated in the lower lying areas of the valley and range from large expanses of reed dominated vegetation to small pockets of wetland communities interspersed within grassland. Sweet reed grass (*Glyceria maxima*) and Reed canary grass (*Phalaris arundinacea*) dominate the larger wetland areas whilst Common reed (*Phragmites australis*) is generally less abundant, though where present forms dense stands. Lower growing vegetation within these areas is sparse, though in small pockets sedges (*Carex spp*) are locally abundant. Under the National Vegetation Classification scheme these areas are classified as M27 *Filipendula ulmaria*-*Angelica sylvestris* mires, sub community *urticica diocia-vicia crecca*. The smaller areas of wetland flora show a greater diversity of herbaceous species such as ragged robin (*Lychnis flos cuculi*), yellow flag iris (*Iris pseudacorus*), Common Valerian (*Valerian officinalis*), meadowsweet (*Filipendula ulmaria*) and great burnet (*Sanguisorba officinalis*).



Fig 2 : Wetland in Billingham Beck Valley

It is likely that all of these wetland zones are of considerable interest in terms of invertebrate populations, especially for ground dwelling species such as spiders, which prefer 'leaf litter' covered substrates.

Reed bunting (*Emberiza schoeniclus*) and sedge warbler (*Acrocephalus schoenobaenus*) are common throughout the wetland areas. Reed warbler (*Acrocephalus scirpaceus*), grasshopper warbler (*Locustella naevia*) and common snipe (*Gallinago gallinago*) are often present in the least disturbed areas of the wetland. Rare past visitors have included water rail (*Rallus aquaticus*), and corncrake (*Crex crex*).

Grassland

The grassland communities within the valley are on the whole characterised by their low lying position, poor drainage and susceptibility to winter flooding. The most interesting of these grasslands are predominantly of the NVC type MG4 *Alopecurus pratensis*-*Sanguisorba officinalis*, today a relatively rare habitat type in Britain, consisting of fine leaved grasses, principally Meadow foxtail (*Alopecurus pratensis*) and Red Fescue (*Festuca Rubra*) interspersed with herbaceous species such as Greater Burnet (*Sanguisorba officinalis*), Cow parsley (*Anthriscus sylvestris*), Cuckoo flower (*Cardamine Pratensis*) and Buttercup (*Ranunculus spp*). Other areas of wet grassland consist of MG 10 *Holcus lanatus*- *juncus effusus* pasture.

These grasslands support a wealth of common grassland butterflies including Meadow brown (*Mariola juritina*), Common blue (*Polyommatus icarus*) and Dingy skipper (*Erynnis tages*). Meadow ants (*Lasius flavus*) are also present, traditional indicators of 'old grassland'.

Ground nesting birds known to have previously bred in these areas include Grey partridge (*Perdix perdix*), skylark (*Aluada arvensis*), Meadow pipit (*Anthus pratensis*) and Lapwing (*Vanelles vanelles*). Breeding of all but the former of these species is today restricted to the more isolated and less disturbed areas of the valley, and may have ceased altogether.

Woodland / Scrub

The railway embankments to the north of the site support mature woodland and scrub. Here the woodland canopy is dominated by willow (*Salix spp*) and black poplar (*Populus nigra*) with an understorey of hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and elder (*Sambucus nigra*). Ground flora on the embankments is relatively poor though does support a good colony of Sweet violet (*Viola oderata*) and Herb Bennet (*Geum urbanum*).

Immediately south of the A1027 and adjacent to a small number of council owned allotments an area of mature sycamore (*Acer pseudoplatinus*) with a hawthorn under storey supports a poor range of ground flora. Remaining areas of drier woodland are situated along the periphery of the valley basin and consist predominantly of native deciduous species such as Ash (*Fraxinus excelsior*), Oak (*Quercus petrea*), and rowan (*Sorbus acuparia*). The majority of these trees were planted during the 1980's, although an extensive area of woodland was planted in the 'Stable Field' in Section 3 in 2003/4. Another recent plantation (1995) funded by the woodland grant scheme is now growing in the northern most section of the valley on land under informal agreement with Billingham Golf Club.

Small pockets of wetter willow and alder (*Alnus glutinosa*) woodland are situated throughout the valley, many of which were planted in the early 1980's.

Concerns over future Climate Change weather patterns may have a dramatic effect upon future Woodland species and management. Drought, floods, prevailing winds and snow will all affect the growth rate of trees and shrubs. Different tree species are more susceptible to internal damage of the heartwoods, root systems and branch decay, at different rates, this may increase due to the changing climate. New and more aggressive organisms encouraged by a changing climate may also affect the growth rate of the trees, or may hasten decay.

Ecology Park

The Ecology Park is located on the site of a former landfill site used for the disposal of construction materials. Tipping ceased in 1986 and the site was landscaped with the intention of creating an educational resource encompassing a mixture of different wildlife habitats within a relatively small area. Today many of the envisaged habitats are coming into fruition. The most successful of these being the large freshwater pond which is a popular resource for schools and a valuable additional habitat for many of the species of invertebrate, amphibian and wildfowl seen elsewhere in the valley. Small woodland plantations within the Ecology park include a Hazel copse, Ash / Oak woodland and a Scots pine / Silver birch plantation. These are at present still in the early stages of development though already provide a useful resource for studying trees. As part of the initial landscaping scheme in the Ecology Park a large limestone rockery was created adjacent to a car parking area. Today this small area provides a habitat for over seventy species of vascular plant of which some of the notable species include Bristly Hawksbeard (*Crepis setosa*), Yellow Rattle (*Rhianthus minor*) and Bloody Cranesbill (*Geranium sanguineu*).

The remaining area of open grassland within the Ecology Park is separated into three small meadows by hedgerows planted in the early 1990's. Of botanical interest is a cornfield meadow, which provides a now meagre display of colour in the early summer. This meadow was originally seeded with a cornfield meadow mix, containing seeds of the Common Poppy (*Papaver rhoeas*), Corn Chamomille (*Anthemis arvensis*), Cornflower (*Centaurea cyanus*) and Corncockle (*Agrostemma githago*), although insensitive management by contractors has left it somewhat degraded. The other two small meadows are managed by a once yearly cut and removal of hay.

2.4 Socio Cultural Information

Billingham Beck Valley or 'Billingham Bottoms' as it is often called, has a long tradition of being used for informal recreation and de facto access has traditionally existed over much of the area. In the pre war hard winters, the valley was used for ice-skating on the frozen marsh.

Archaeology / Past land use

The valley's history is now well documented by Norton Heritage group in their publication 'Billingham c.790 – 1948'. Of particular local and regional interest is the proximity of a large Saxon cemetery and tales of a Saxon battle across the valley. There are later accounts of people drowning in the marsh and how by 1000 AD a causeway had been constructed to allow safe passage. This route remains to this day as a Public Right of Way across the southern part of the Country Park.

Historically, much of the valley was managed as rough pasture for summer grazing and for annual haymaking - with occasional summer flooding resulting in only few attempts at arable cropping.

A corn mill was constructed in the mid eighteenth century at a site on the western side of the valley. This was connected to Billingham beck via a system of mill 'races' which can still be seen today. The site of the corn mill is today beneath the A19 dual carriageway roundabout off the A1027 (at around '8pm' as if the roundabout were a clock face facing north).

The topography of the southern edge of the valley close to the river Tees was radically altered during the third quarter of the 20th century from estuarine marshland to dry grassland and woodland scrub. This was principally as the result of the large scale tipping of gypsum and fly ash on the former marsh from the locally important chemical industry.

Present Land Use

Despite recent changes in traditional agricultural practices much of the valley has remained intact as unimproved grassland. Today much of the central area of the valley is still managed in a traditional way, and in accordance with guidelines set out in the Countryside Stewardship Scheme, which was renewed in 2000.

The Country Park is still well used by local people for informal recreation.

The Visitor Centre.

The Visitor Centre and the Country Park provides an ideal facility for the provision of environmental activities throughout the year. Currently most educational use by schools and other organized groups takes place during the summer months.



Fig 3 : Billingham Beck Valley Country Park Visitor Centre

Billingham Beck Valley Country Park is one of a number of sites managed by the Parks and Countryside section of Stockton Borough Council. There are two full time Countryside Rangers who are responsible for the day-to-day management and development of the Site. These posts are supported by a Countryside Recreation Officer who oversees the management of all of the Countryside sites in Stockton Borough.

The centre is normally open to the general public at the following times :

All Year : Sunday 10am-4pm

School holidays : Mon, Fri and Sun 10am - 4pm

The Car park is open :

8.30am - 4pm, winter and autumn months.

8.30am - 9pm spring and summer months

These hours keep the Centre open at times when there are high numbers of people in the park and yet take account of the limited staffing at the Park. These hours will be reviewed on an annual basis.

Staff numbers and past visitor numbers to the Centre are the controlling factors. More emphasis is being placed on encouraging people to visit the Centre.

Stockton Borough Council's Parks and Countryside Department was audited in 2009 as part of the larger 'Care For Your Area' Department. Billingham Beck Valley Country Park was audited individually as part of this process.

There is a guide dogs only policy relating to the Visitor Centre introduced in 2009 with dog tethering rings placed on the exterior of the building for visitor use.

The Centre could theoretically be used every weekday in the spring and summer terms by visiting school groups. This would be the most cost-effective use of the building. Unfortunately, current staffing levels do not allow anything close to this level of use. This means SBC are not receiving the full cost benefit from the expense of building the Centre. Promoting the use of the Centre by school groups during the winter and spring terms.



Fig 4 : Billingham Beck Valley Country Park Entrance

There is a very limited space for the provision of environmental interpretation within the Visitor Centre. The Parks and Countryside Visitor Centre Co-ordinator placed some new interpretative material inside the building in 2009.

The Car Park and immediate frontage of the Visitor Centre will be upgraded over several years, starting in 2010 with funding from the CFYA Parks Improvement Plan.

Standards and Awards

Billingham Beck Valley Country Park has been awarded the prestigious Green Flag in 2005, 2006, 2007, 2008 and 2009. The Green Flag is on display on a flagpole at the car park entrance to the Site.

The Country Park was also awarded the Silver Gilt award in the conservation category of Northumberland in Bloom in 2008. Billingham Beck Valley Country Park forms part of the bigger Stockton Borough Council's 'Northumbria in Bloom' application.

Leaflets

A number of leaflets have been produced. The Site Leaflet gives information about the park, facilities and wildlife to be found in the park. There is also a seasonal events programme and a Discover Stockton's Countryside leaflet that covers all the Stockton Borough Council sites.

Past Management for Nature Conservation

Although prior to the mid 1980's no formal management took place with nature conservation as an objective, the traditional forms of management, hay cutting and summer grazing within the central part of the valley (Sections 3, 4 & 5) have helped maintain the diversity of habitats seen today.

Past Status/Interest

Prior to the late 1970's the Billingham Beck Valley corridor had no official recognition as an area of nature conservation interest. However, the valley was important to local people both as an area known to be rich in wildflowers and other wildlife and a place for informal recreation.

Northern Naturalists Union⁵ visited the valley on several occasions during the early part of the 20th Century, noting in particular a rich marshland flora characterised by Globeflower (*Trollius europaeus*), although this is now very rare and localised to a small area in Section 2.

Present Conservation Status

Today a large area of the valley is designated as a Local Nature Reserve (LNR) and site of nature conservation interest (SNCI) and as such is afforded protection within local authority planning guidelines. The valley is also recognised as a site of biological interest within the Cleveland Wildlife Strategy⁶ produced in the late 1980's.
(See map Appendix 3 outlining the LNR and SNCI boundaries.)

There are 200 National Indicators that monitor how the UK is performing against a range of criteria. National Indicator 197 refers to Biodiversity and the reporting / monitoring of this is subject to review by a regional partnership board. Within the Tees Valley this is the Local Biodiversity Steering Group with delegates from Local Authorities, The Wildlife Trust, Natural England, RSPB, Northumbrian Water, Wildflower Ark, Teesmouth Bird Club etc.

⁵ Durham Naturalist's Society

⁶ Cleveland Wildlife Strategy, Principal authors David Counsell & Malcolm Steele Cleveland County Council, Alex Weir Cleveland Wildlife Trust and John Hickling Nature Conservancy Council.

There are 53 designated Local Wildlife Sites within Stockton Borough plus 5 Local Geological Sites. This designation supersedes the old Site of Nature Conservation Importance (SNCI) designation, but not the Local Nature Reserve designation which also contains an acknowledgement of the site as used for educational purposes.

A recording of the sites under positive management can be made by means of a site managed under a Management Plan or by a standards award such as Green Flag. All three of Stockton Borough Council's Country Parks are Local Wildlife Sites and all are recorded as being under positive Management in the annual returns to the local board.

Landscape

Billingham Beck Valley comprises of a low-lying area of land sandwiched between Billingham and Norton townships. Whilst the overall landscape appeal of the valley has undoubtedly been affected by the bordering industrial and suburban developments, it still provides an important area of green space characterised by marshland, ponds and wildflower meadows. The encroachment of the neighbouring settlements has almost certainly been restricted by the seasonal inundation of the flood plain.

Public Interest

Billingham Beck Valley Country Park is today extremely popular as a place for informal recreation. Access to the Country Park can be gained on foot from thirteen different entrances, with routes linking in with housing estates in old Billingham, Wolviston Court estate and Norton. A Car park is available for visitors coming from further afield, with a picnic area close to the main car park, situated in the Ecology Park.

The Ecology Park serves as a focal point for many visitors, with a Visitor Centre, including a small exhibition and shop being a popular feature. Local community involvement has extended into the active commitment of many people in helping the Countryside Rangers manage the Country Park. A voluntary warden scheme operates for those who wish to participate. This provides invaluable support to the salaried staff and helps to engender a sense of 'ownership' amongst volunteers.



Fig 5 : Billingham Beck Valley Country Park – 'Ecology Park'

Educational use

Billingham Beck Valley has become extremely popular with schools. Hundreds of children each year take part in structured educational activities organised by the Country Park staff. A short orienteering course is also in place, promoting the structured use of the park by groups without the assistance of the countryside warden staff.

The Ranger staff offer a range of day and half-day programmes for primary and secondary schools. Educational programmes are modified to fit any changes in the National Curriculum 2007-2013.

Research Use

At present the valley is little used for postgraduate level research, although as previously mentioned the University of Liverpool have taken several core soil samples from the valley as part of a wider research programme into estuaries on the east coast of England. A placement scheme from Sunderland University also operates and has provided students for a work placement and thesis writing, including an in depth analysis of water quality with regard to storm over flow drains into the Beck channel in 2004. This scheme is expected to play an important role in the monitoring programme scheduled by the LBAP partnership, in which the Country Park staff play an active role.

Interpretation

The need to provide information to visitors coming to the valley was recognised in the original Billingham Beck Valley 5 year Development Plan. Key features identified were the provision of a Visitor Centre staffed by an information assistant or ranger staff, leaflets describing the site and information panels located at main access and interest points.

Today visitors are able to obtain free leaflets about the valley and other nearby countryside sites. A small exhibition is open to viewing in the Visitor Centre every Sunday and twice during the week in school holidays - and further information boards are located around the site. Other information available includes a map and leaflet showing the route of the popular 'Park to Park' circular walk from Billingham Beck Valley to Wynyard Woodland Park.



Fig 6 : Interpretation Panel in Billingham Beck Valley Country Park

Recreational Use

Billingham Beck Valley Country Park is well used for informal recreation particularly by small family groups and by dog walkers. A substantial minority of visitors were shown to arrive on foot, 35 % in a survey undertaken during the autumn of 1991⁷. This is probably due to the network of busy roads that all but encircle the Country Park boundary.

No serious attempt has been made at quantifying the number of casual visitors to the overall Country Park, as this would prove quite difficult given the number of access points. Attendances are however recorded for organised Countryside events held in the park through the year. Overall attendance at around 15 events each year varies given the nature of the event, although summer family events can see attendances of over 50.

There is a well-established and dedicated team of voluntary wardens at the site.

Site Furniture

There are individual benches throughout the site and picnic benches situated beside the car park and to the front of the Visitor Centre. Two metal benches were installed next to the Ecology Park ponds in 2009.

Health Walks

These are being implemented as part of SBC commitment to creating a healthier community. A number of walks and other activities have been held at Billingham Beck Ecology/Country Park. This initiative is likely to increase in importance during the life of this plan.

The two members of staff are trained as Health Walk Leaders and Support the Health Walks Officer appointed by Stockton Borough Council.

Access

Billingham Beck Valley Country Park is accessible from many points along its three-mile linear length.



Fig 7 : Billingham Beck Valley Country Park Car Park

⁷ Countryside Recreation Survey, Research and Intelligence Unit Cleveland County Council.

Vehicular access is restricted to the one main Car Park as signposted directly from the A19, A1027 and surrounding area. There are two other small Car Parks, although these are locked due to the volume and speed of traffic compromising driver safety on exit and anti social behaviour in secluded outlying Car Parks.

There are a further thirteen pedestrian access points. Between 2000 and 2002 all stiles at entrances were replaced with kissing gates, with the access point to the rear of the Visitor Centre having its 'pen' enlarged to accommodate electric 'scooter' chairs for the disabled.

The Visitor Centre is also accessible to wheelchairs and has a dedicated disabled toilet.

The Country Park is also the start of the popular Park-to-Park circular Walk to Wynyard Woodland Park.

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Section 3 : Confirmation of Important Features

3.1 Ecological relationships and implications for management

The wetland plant communities present in Billingham Beck Valley are dependent to a large degree on soil moisture as reflected by the height of the water table, the extent and duration of winter flooding and whether or not areas of herb rich grassland are flushed by water issuing from springs located on the western side of the valley, although as noted these are now largely redundant or intercepted by the A19 dual carriageway.

Historically much of the permanent pasture within the valley was subject to winter flooding and a high water table throughout the year. The construction of flood embankments along Billingham beck, the general lowering of the beck level and the effects of the A19 have resulted in both reduced frequency and shorter duration of flooding. The future maintenance of these plant communities is linked to the appropriate control of water levels within the valley as outlined previously.

Historical patterns of management as also described above have contributed to the herb rich swards of grassland interspersed with small 'fen' communities, present in sections 3, 4 & 5. Future management, if undertaken in accordance with traditional agricultural practices will go along way towards maintaining this mosaic of community types.

Developing woodland, located mainly around the periphery of the valley, will provide a new and beneficial habitat for birds, small mammals and invertebrates. However, in order to maintain the important wetland areas, encroachment of scrub into the marshland must be prevented.



Fig 8 : Plantation Woodland in the Ecology Park

Billingham Beck Valley is also an important recreational area for many people. Whilst the quiet enjoyment of the country park should be encouraged it is equally important to ensure that this does not impinge on the wildlife value of the valley.

3.2 List of Important Features

This section is intended to provide a checklist of key features of the valley in terms of wildlife importance, educational value, recreational appeal and intrinsic interest. This list is set out in tabular form and is not intended to be any order of priority.

Justification for the selection of species is to a large extent based on published information. For example, in the case of breeding birds relevant references are the publications 'Red Data Birds in Britain', 'The New Atlas of Breeding Birds in Britain and Ireland 1988-1991', and the more recent Birds of Conservation Concern, Conservation Review - RSPB, 1996. Obviously not every species recorded is either a regular visitor or part of a resident breeding population, dependent to a large extent on the primary types of habitat present in the valley. In such instances important species which are regularly recorded and known to prefer the habitat types present in the valley have been listed in the important features table. Other species, for example Song Thrush, whilst regularly recorded, is a species that can be found occupying most types of terrestrial habitat, and is therefore not listed as an important feature.

Features and location	National Importance	Regional Importance	Local Importance	Rationale
<u>Wildlife Habitats</u> (National vegetation classification given where appropriate.)				
Flood Meadow NVC MG 4 Section 3 2WG2	High			< 1500 Ha MG 4 remaining in UK Reference: Lowland Grassland Management Handbook English Nature, RSNC.
Wet grassland NVC MG 10 <i>Holcus lanatus</i> - <i>Juncus effusus</i> pasture. Section 3 3WG2, Section 4 4WG4&5			Medium	Common grassland community characteristic of permanently moist soils throughout Britain.
Rank grassland NVC MG 1 <i>Arrhenatherum elatioris</i> grassland. Throughout – see prescription Matrix			Medium	Common grassland community characteristic of unmanaged swards. Beneficial as cover for mammals, food supply for mammals and birds.
Rank grassland NVC variant Section 6 6RG1				Unusual habitat developing on site of old gypsum tip.
Reedbeds S5a <i>Glyceria maxima</i> swamp <i>Glyceria maxima</i> sub-community. Section 4 – Frognell and the Glebe		High		Rare habitat type in the Lower Tees Valley Area

Reedbeds S4a <i>Phragmites australis</i> swamp <i>phragmites australis</i> sub-community. Section 5 'Fleet Ponds'.		High		Rare habitat type in the Lower Tees Valley Area
Fresh Open Water - Billingham Beck Sections 2 - 4			Medium	Class 1B freshwater river. Heavily polluted sections 5 & 6.
Open water - Ponds Sections 3-6			Medium	3 good quality ponds, rich in invertebrates. 2 Fleet ponds, poor in aquatic life- potential for improvement.
Hedgerows. Sections 3-4			High	Well-managed hedgerows providing good cover for birds and small mammals. Also a good landscape feature.
Mature / semi mature woodland/ scrub. Sections 2 - 4			Medium	Important landscape feature. Habitat for many species of bird, mammal and invertebrate.
New woodland plantation. Sections 1 & 3			Low	Currently of little conservation or amenity value. In future will provide a screen from A19 traffic noise and a new woodland habitat.
<u>Important Species: Birds</u>				<u>Status</u>
<u>Ref. :Birds of Conservation Concern, RSPB Conservation Review. (Red & Amber Species)</u>				
a) Skylark Section 6	High RED			Present in summer, breeding status not confirmed.

b) Reed Bunting Section 4&5	High RED			Present in summer, breeding status not confirmed.
c) Grey Partridge Section 5	High RED			0 - 10 birds, breeding confirmed 2 pairs 1996, Total number unknown.
d) Water Rail, Section 5	Med. AMB			Unknown (last sighted 12 / 2002)
e) Grasshopper Warbler Sections 2,3 & 4	Med. AMB			Regular summer visitor, breeding status not confirmed.
f) Willow Tit Section 4	Med. AMB			Present in summer, breeding unconfirmed, total number unknown.
g) Kingfisher Sections 2 - 5	Med. AMB		High	Regular sightings, presumed to breed North West of the A19
h) Snipe Sections 3 & 4	Med. AMB		High	> 10 birds, breeding status unknown.
i) Sedge Warbler Sections 2 - 6	High. Red			> 10 breeding pairs 2002
j) Reed Warbler Section 5		High		4 - 5 breeding pairs 2002
Mammals				
Water Shrew (<i>Neomys fodiens</i>)		High		Present breeding status unknown.
Invertebrates				
a) Banded Agrion (<i>Calopteryx splendens</i>)		High		Common in summer sections 2 - 4
b) Marsh Pug Moth		High		
c) Crescent Moth		High		

d) Chrysomelid Beetle (<i>Chrysolina polita</i>)			High	
e) Wood Boring Weevil (<i>Pentarthrus huttonisi</i>)			High	
<u>Flora- individual species</u>				
Ref. Atlas of the British Flora Ed. Perring & Walters, BSBI.				<u>Status</u>
Greater Burnet (<i>Sanguisorba officinalis</i>)			High	Strong presence in MG4 grassland. Sections 2.
Marsh Ragwort (<i>Senecio aquaticus</i>)			High	
Common Valarian (<i>Valeriana officinalis</i>)			Medium	Present in wet flush area section 3.
Greater Pond Sedge (<i>Carex riparia</i>)		High		Locally uncommon, found in several locations throughout the valley.
Common Comfrey (<i>Symphytum officinale</i>)			Medium	Widespread throughout sections 3 & 4.
Cuckoo Flower (<i>Cardamine pratensis</i>)			Medium	Large population in Section 4.
Orchid, Common Spotted			Medium	Small densely clustered area in Section 3 adjacent to A19.

(<i>Dactylorhiza fuchsii</i>)				
Sea Club Rush (<i>Scirpus maritimus</i>)			Medium	Localised population on fringe of pond Section 5.
<u>Ecology Park & Visitor Centre</u>				
Section 3. Variety of recently created habitat types, focal point for visitors. Car park & picnic facilities.			High	A well used centre for educational visits (>500 children per year on organised activities). Centre for Countryside Events (c.15 per year). Focal point for visitors.
Visitor Centre with exhibition area, shop and toilets.			High	Rangers' base and information point for visitors. Essential facilities for visiting groups.
<u>Site interpretation</u>				
Interpretation boards plus map boards			High	Useful information for visitors to the Country Park, outlining extent of the park and footpath routes.
Leaflets on the Country Park			High	Important means of promoting the Country Park and conveying information both to visitors and to potential visitors through distribution to libraries, information centres.
<u>Voluntary Warden Scheme</u>			High	Important means of promoting local community involvement in the management of the valley.
<u>Countryside Events Programme</u>			High	Effective means of promoting the Country park and raising local awareness of environmental issues.

<u>Educational Visits</u>			High	Provides a key service for local schools and helps to engender a sense of respect for the valley amongst school children.

Section 4 : Evaluation and objectives for Management

4.1 Evaluation for Nature Conservation

Billingham Beck and adjacent pastures are of considerable nature conservation interest, representing one of the largest remaining examples of it's kind in the Tees valley area. 25 hectares of the valley is designated as a Local Nature Reserve and Site of Nature Conservation Interest.

Criteria for Evaluation

The nature conservation interests of a site may be appraised using a systematic consideration of criteria devised by Ratcliffe (1977).⁸

Size

Billingham Beck Valley is the largest area of freshwater marshland in the lower Tees valley area. Of sufficient size that small changes within will not lead to the loss of the site's interest.

Diversity

The valley supports a wide diversity of habitat types including running water, damp grassland, herb rich fen, ponds and ditches, reedbeds, dry grassland and small woodland copses.

Naturalness

A large part of the valley consists of reedbeds and unimproved grassland both relatively natural habitats although the latter maintained through traditional management practices. The remaining areas within the valley have been subject to change as a result of human influences. Principally the large scale tipping of gypsum at the far south-eastern end of the valley and the construction of several highways both across and parallel with the valley. The increasing impact of recreation on the valley is also evident with a network of footpaths now in place.

Rarity

Freshwater marsh is a habitat now scarce in the region, and declining nationally. The valley supports a number of locally uncommon vascular plants and although lists are incomplete a number of regionally rare invertebrates, including the marsh pug moth (*Epithecia sp*) the drysomelid beetle (*Chrysolina polita*) and the banded agrion (*Calyptarix splendens*).

Fragility

Freshwater marshland and flood meadow are habitats reliant primarily upon the appropriate management of water levels. Rare or declining species of breeding bird are at risk from disturbance by people and more particularly dogs. Eutrophication from fertilizer use and Combined Storm Overflow Drains is particularly damaging.

⁸ Ratcliffe 1977 Site Management Planning (Nature Conservancy Council).

Typicalness

The semi-natural habitats remaining within Billingham Beck Valley provide a good example of the rich and varied ecological communities, which are typical of land within a lowland river valley basin.

Recorded History

Past land use has been well documented by Norton Heritage group in the publication 'Billingham' c. 790-1948. Also in Billingham 'from Earliest Times To The Modern day' (Francis Gerard Owens, 1995). Records of wildlife interest are limited, although some areas of the valley were visited by the Northern Naturalist's Union in the 1920's, 1930's and 1950's.

Position in Ecological Unit.

The only freshwater marsh of large extent remaining in the lower Tees Valley area and an important green wedge into the heart of Teesside.

Potential for improvement.

Improved water level control and the appropriate management of recreation in sensitive areas would increase the ecological diversity of the valley. The valley's location within the urban fringe prevents any further expansion of the land managed for nature conservation and size will remain a limiting factor for certain species, for example Marsh Harrier (*Circus aeruginosus*).

4.2 Evaluation for Landscape

An attractive 'rural' landscape between the urban area's of Norton and Billingham.

4.3 Evaluation for Public Use

As previously noted Billingham Beck Valley Country park is well used for informal recreation and organised countryside events. Public enjoyment of the valley is a key priority for both the Country Park and adjoining land where new access links have recently been developed. The very nature of many of the most sensitive areas of the valley (wet marshland) will to a large extent prevent over use of these areas by the public. However restrictions on access are necessary in some localities principally to allow for grazing of the grasslands, to protect ground-nesting birds and for public safety.

4.4 Evaluation for Educational Use

The Country Park is today well used by primary schools for educational visits. During the spring and summer term the Country Park is fully booked with school visits requiring assistance by the park staff. A number of set activities are available for primary schools or if requested a more specifically tailored programme can be organised. A limited number of secondary schools and colleges have used the Country Park, in many instances it appears that timetable restrictions place a major constraint on further use by post primary aged students.

4.5 Evaluation for Historical, Cultural and Environmental Interpretation

As noted above, interpretation is at present available in several forms for visitors to the Country Park. The provision of further interpretation in the form of leaflets should remain a priority, in particular updating old leaflets and targeting particular groups.

Increasing the provision of outdoor information boards should not be a priority at present within the Country Park, however areas of land adjacent to the park through which access links are available would benefit from new information panels and maps. Given the urban situation of the valley careful consideration is required as to the cost and durability of such facilities particularly in certain vulnerable locations (see Appendix 12).

4.6 Evaluation for research/study

The valley has and will continue to provide an opportunity for under graduate students to undertake various types of research or study. Predominantly these will be local students from the University College Stockton or other universities/colleges in the region. The Countryside warden staff will be the first point of contact for students wishing to carry out such work in the valley.

Section 5 : Factors which influence or *may* influence the management of Billingham Beck Valley Country Park

5.1 Owners / Occupiers objectives

- a) Land owned by Stockton Borough Council will be managed so that the primary objectives of the council relating to Billingham Beck Valley are upheld. As stated above, these are:

To provide a facility where visitors can partake in the quiet enjoyment of the countryside whilst at the same timework towards protecting and improving the wildlife value of the valley.

- b) Land leased by the council and managed by the Country Park staff will be managed with the same primary objective as in a), for the duration of the lease.
- c) Land managed by the Country Park staff, but neither owned or leased by the council, will be managed in accordance with the above objectives wherever agreement can be reached with the landowner.

5.2 Internal natural factors

Natural succession includes ditches and ponds to reedbeds and subsequently Carr woodland. Succession of open grassland communities to rank vegetation occurs naturally, dominated by creeping thistle, docks and scrub. Recent climatic changes, drier warmer summers leading to considerable drying out of the marshland may also increase in significance.

5.3 Internal man induced factors

The close proximity to large urban and industrial areas has and will continue to exert an affect on the valley. Roads constructed have had a detrimental affect in terms of visual landscape appeal, noise and access for pedestrians. Furthermore road construction has significantly altered the hydrology of the valley, contributing to the drying out of some of the marshy areas. Dredging of Billingham beck has reduced the frequency and duration of winter flooding.

Public access, if not managed appropriately, will also inevitably have an impact upon the wildlife value of the valley.

5.4 External Factors

Plans to widen the A19 bypass may further adversely affect the hydrology, visual appeal and traffic pollution levels within the valley.

The Environment Agency has statutory responsibility for managing Billingham Beck and consequently Environment agency policy, particularly in relation to flood control, may significantly affect the ecology of the valley basin.

The catchment area of Billingham Beck consists predominantly of arable agricultural land interspersed with small villages. Pollution incidents and further general eutrophication of the beck could have serious implications for the valley. The tidal zone of Billingham Beck is

subject to a discharge of industrial waste close to it's juncture with the river Tees. Consequently this stretch of the beck is extremely poor in aquatic life.

5.5 Factors arising from legislation or tradition

The successful management of the Country Park and associated land within Billingham beck valley will depend upon compliance with the following legal and non-legal obligations:

Stockton Borough Council Strategies

There are a wide range of strategies published by various stakeholder organizations, such as Tees Forest, English Nature, and Tees Valley Wildlife Trust. These are listed in the bibliography.

There are also a number of Stockton Borough Council strategies that influence the general management of Billingham Beck Valley Country Park. The main documents are outlined below.

Stockton-on-Tees Parks, Open Spaces and Countryside Strategy 2007-2012

This is the main strategy document for the Countryside Team. The key objectives for countryside sites are:

Objective 8 – Access to The Countryside

The Council will improve access to the countryside through the management of the existing Public Rights of Way Network and the creation of new access links from urban areas to the wider countryside.

Objective 9 – Community Involvement

Encourage community involvement in the management of sites.

Objective 10 – Wildlife Management

Protect and improve existing important wildlife habitats and where appropriate create new enhanced wildlife value.

Objective 11 – Education

Promote environmental educational use by schools, colleges and local community groups.

Objective 12 – Social Inclusion

To provide opportunities for a greater variety of visitors to countryside sites, especially those from socially disadvantaged areas and visitors with special needs.

Full details can be found within the strategy.

Stockton-on-Tees Local Agenda 21 Strategy

The Stockton-on-Tees Local Agenda 21 Strategy sets out objectives and targets for sustainable issues that the council has control over or can influence. A number of the issues and objectives within the strategy have already been implemented while others require further work to put in place the principles at Billingham Beck Valley Country/Ecology Park

Issue 1 : Energy Conservation

- Objective 2 To provide efficient and effective energy management throughout all Council owned and occupied buildings.

Issue 2 : Transport

- Objective 2 Improve access to public transport.
- Objective 3 Encourage and promote cycling, both as a mode of transport and for leisure purposes.
- Objective 4 Encourage walking.
- Objective 7 Reduce the emissions from the Councils own fleet and that of staff who use their cars to get to work and carry out their duties.

Issue 3 : Waste and Recycling

- Objective 1 Reduce the amount of waste disposed of through incineration to both environmentally and economically achievable and acceptable levels.
- Objective 2 Reduce the amount of waste going to landfill to a minimum acceptable level.
- Objective 3 Create a tidier Borough

Issue 4 : Healthy Living

- Objective 4 Protect and improve the water environment.
- Objective 5 Reduce crime, disorder and anti-social behavior.
- Objective 6 Promote the health and well being of children.
- Objective 7 Promote the health and well being of adults.

Issue 5 : Economic Development

- Objective 3 Regenerate the Tees Corridor.
- Objective 5 Develop the Borough as a tourist and visitor destination.

Issue 6 : Sustainable Communities

- Objective 1 Increase public participation in local Democracy.
- Objective 2 Increase the level of voluntary activity to above the national average.
- Objective 3 Strengthen local community and

Cultural identity.

Issue 7 : Natural Environment

- Objective 1 Enhance and improve the quality of public open spaces within the borough.
- Objective 2 Protect and enhance the wildlife habitats and diversity of species throughout the borough.

Health and Well-Being Strategy

This is currently being developed within the council and will expand on issues within the Community Strategy. It will be aimed at increasing the health of residents of Stockton Borough Council and covers issues from exercise on prescription, mental and physical well-being and fitness, healthy eating, and ties with the governments Healthy Schools Initiative.

This will be implemented through supporting the health walks programme, exercise on prescription, providing healthy outdoor activities for all ages and abilities and the promotion of healthy eating by stocking appropriate refreshments in the shop.

A new Healthy Walks Officer has been appointed by Stockton Borough Council (2007) and both staff members are trained in leading Health Walks.

Stockton-on-Tees Community Strategy

This sets out the policy platform to the key national themes which have been pursued by Government into the policy areas that address local needs and aspirations.

Issue 1 : Environment

- Objective 1 Engage the community in implementing LA21
- Objective 4 Make Stockton a litter free borough
- Objective 8 Protect & enhance the natural & built environment
- Objective 9 Ensure that all residents have access to quality greenspace
- Objective 10 Engage the community in environmental education

Issue 2 : Community Safety and Well-being

- Objective 8 Reduce crime & the fear of crime
- Objective 9 Reduce anti-social behavior and youth offending

Issue 3 : Health

- No Objective that directly impinge upon our works but the general principal applies

Issue 4 : Economic Regeneration

- Objective 6 Improve the image of the borough by improving environmental surroundings

- Objective 8 Raise skill levels through lifelong learning

Issue 5 : Education

No Objective that directly impinge upon our works but the general principal applies

Issue 6 : Arts & Culture

- Objective 2 Extend range of opportunities to experience & participate in the arts & leisure
- Objective 3 Widen participation of young people in all forms of arts, and cultural activities including sports

Stockton Borough Council Climate Change Action Plan 2007-2012

This action plan identifies our collective responses to the threat of climate change and achieves emissions reductions. Its primary aims are to :

- Raise the awareness of climate change through working with public and private sector organisations across the region.
- Involve communities to make sure that they understand what actions that they might undertake to reduce their greenhouse gases emissions.

Aims and Targets

The key aims of this action plan are:

To reduce greenhouse gases emissions from within the Stockton Borough Council area through reducing energy use, better waste management, the use of sustainable transport and green procurement.

Impacts on Stockton-On-Tees Borough Council

Climate change imposes additional stress to the wildlife habitat. This may bring damages to important habitats. As the weather becomes warmer, some species may migrate northward to find a suitable living environment.

As the sea level rises this may present a threat to some of the Sites of Special Scientific Interest on the Tees estuary.

Environmental Policy 2007-2011

The Environmental Policy aims to improve the Council's environmental performance. It provides a framework for action and for the setting of environmental objectives and targets.

Mitigation – reducing greenhouse gas emissions

Action on non-energy emissions and supporting land management practices that increase the amount of atmospheric carbon captured and stored in “carbon sinks” such as trees, woodlands and soils. Switching to lower carbon technologies for power, heat and transport.

Alternative Energy

Most energy we use today comes from the burning of fossil fuels and nuclear power stations. Carbon and sulphur dioxide emissions are released into the atmosphere when fossil fuels are burnt.

Recycling prevents potentially useful materials from being landfilled or incinerated and it also saves energy from processing raw materials to make new products. By far the most effective way to reduce emissions is to re-use products that are no longer wanted or needed such as furniture, clothing, toys etc.

Environment Agency Jurisdiction

The Environment Agency has statutory responsibility for the management of Billingham Beck and must therefore be consulted prior to undertaking any works which involve:

- Extracting or discharging water to the beck.
- Limiting access to the beck.
- Planting trees within 5 metres of the bank sides.
- Creating ponds or carrying out any other large scale earth movements within the floodplain of the beck.
- Significantly altering the flow of drainage channels within the valley.

Wildlife and Countryside Act 1981

Public Rights of Way through the valley must be kept open. Management operations also must not compromise other aspects of this legislation

Health and Safety at Work Act 1974

All work carried out by rangers, volunteer countryside wardens or by contractors on land owned or managed by the Country Park staff must be undertaken by suitably trained personnel in accordance with guidelines laid down by the Health and Safety Executive, in compliance with Stockton Borough Council policy and also following instructions set out in the Country Park Health and Safety Manual.

All tasks undertaken within the operating job descriptions and management prescriptions outlined below must also be subject to specific Risk Assessments, which are to be kept within the Visitor Centre Office.

All contractors working on land owned or managed by the Country Park staff must obtain a recognised and signed Permit To Work, supply a risk assessment and COSHH (Control of Substances Hazardous to Health) assessment if using a COSHH substance.

Regular Health and Safety Inspections including an audit must also be carried out by Stockton Borough council's health and safety unit. Electrical appliance, fire alarm, fire

extinguisher and emergency lighting for the Visitor Centre are all under routine inspection and maintenance, with the cyclical log being kept in the Visitor Centre Office.

It should also be noted that Billingham Beck Valley Country Park also has an internal Health and Safety Policy, which is available in the Country Park Office and is familiar to all salaried staff. The Accident Book is also kept in this office and salaried staff are aware of the legislative implications of the Data Protection Act. The Head Ranger is also qualified as a fully certified First Aider, with the Assistant Ranger qualified as an Emergency First Aider in his absence. There is also a Risk Assessment relevant to Lone working, with specific reference to the Visitor Centre Information Assistant.

The 'mustering' point in case of a fire in the Visitor Centre is the main Car Park. Salaried staff are expected to attack the fire if possible with the appliances provided but without taking personal risks.

The Head Ranger is responsible for ensuring that safe working systems are in place and that these systems adhere to the requirements laid down by the Health and Safety Executive. Individual employees at the site have a duty to comply with these safe working systems.

General Health and Safety Policies of Stockton Borough Council

- The Authority recognises and accepts its general statutory duty as an employer to ensure so far as reasonably practicable the health, safety and welfare of all its employees. Without prejudice to that general obligation, the particular matters to which that statutory duty extends so far as is reasonably practicable are:
- The provision and maintenance of plant and systems of work that are safe and without risks to health.
- Arrangements for ensuring safety and absence of risks to health in use, handling, storage and transport of articles and substances.
- The provision of such information, instruction, training and supervision as is necessary to ensure health and safety at work of all employees.
- The provision of, and the maintenance of, places of work in such a condition that are safe and without risk to health; and the maintenance of means of access and egress from places of work, which are safe and without risk to health.
- The provision and maintenance of a working environment for all employees, without risks to health and adequate as regards facilities and arrangements for their welfare at work.
- The periodic revision of its policy with regard to health and safety at work of its employees; and the organisation and arrangements for carrying out that policy as may be deemed appropriate; and the bringing to the notice of all employees such revisions.
- Consultation with appropriate representatives with a view to the making and maintenance of arrangements which will enable the authority and its employees to co-operate effectively in the promotion and development of measures to secure that health and safety at work of all employees; and in checking the effectiveness of such measures.

- The conduct of the authorities business wherever carried out, in such a way to secure the health and safety of persons not employed by the authority.
- The controlling of emissions into the atmosphere of noxious or offensive substances from any of the Authority's premises.

The Authority recognises that as a good employer it should wherever reasonably practicable seek to ensure places of work, working environments, methods of working and plant and equipment, which are safe and without hazard to health.

Occupier's Liability Act 1984

Every reasonable care must be taken on land owned or managed by the Country Park staff to remove any risk both to legitimate visitors and to trespassers.

Compliance with this act will require that all footpaths, bridges, stiles, gates, ditches, culverts and landslip areas are not hazardous or that any hazard is made plain using warning signs. It must also be ensured where reasonably practicable that there are no dangerous trees close to footpaths, roads, car parks or other areas frequented by people. Billingham Beck Valley is also susceptible to severe flooding following heavy rain. Where practicable the Country Park should be closed to the public when the beck is in flood (in consultation with the authorities footpaths officer with relation to the emergency closure of Public Rights of Way or by appropriate signage alone by way of disclaimer). Routine site patrols must recognise this requirement and a framework of action must be in place to facilitate immediate action as required.

The exact location of wayleaves (Appendix 11) running through the valley must be known to all staff or contractors working who need to know e.g. digging or using heavy machinery. This is restricted to a main gas main that runs along the western boundary of Section 3 and the southern boundary of Section 4 and the obvious hazard of the overhead power lines. This information is also readily available from Transco. The Visitor Centre wayleaves run directly from the back of the building to Wolviston Road. The housed main fuse box and meter for the building is beside the boundary fence 50m to the south east of the building with the internal fuse box in the Visitor Centre kitchen.

It must be ensured that any work undertaken on land owned or managed by the Country Park staff does not cause a hazard to visitors or where a hazard is unavoidable appropriate measures are taken.

Country Park Bylaws

The ratified byelaws are displayed at the main entrance to the site and in the Visitor Centre and are familiar to all salaried staff. This does not presuppose that all visitors are aware of the byelaws. The Country Park byelaws relevant to all of Stockton Borough Council's Countryside Sites are listed on in Appendix 10.

Tenancy Agreements

Where Stockton Borough council is a tenant on land within the valley management of that land must comply with the terms set out in the tenancy. Copies of the tenancy agreements are held on file in the Visitor Centre office. These are : Fleet Ponds Lease Scott Bros 2001 (see Appendix 2) Supplementary Lease Portrack Access Route Air Products 2001 (see Appendix 2). Church Commission Lease July 2004 (see Appendix 2).

All of the Network Rail associated paraphernalia, furniture, track and cabling lies outwith the ownership and Country Park boundaries and their staff are able to access all of their property internally. Formal rights of access to the designated property outwith Public Rights of Way are restricted to Mr John Potter who owns the land to the south of Hedgerow 2H4 and requires access, Transco / National Grid who manage the Wayleaves as outlined above and the Environment Agency who have responsibilities with regard to Billingham Beck as Main River. There are individual clauses with regard to access (and the activities of Stockton Borough Council) concerning the leased property, details of which are held at Queensway House. With regard to this, Stockton Borough Council staff have a right of access to the Fleet Ponds property leased from Scott Bros, along the track owned by the Highways Agency. The keyholder for this property is Scott Bros, again under an informal agreement. The resident grazier also has a right of access to his stock whilst on the site by informal agreement and is also a keyholder.

Tenant farmers

Grazing and cropping of hay are important components of the management of grassland within the Country Park. Farmers and stock holders undertaking work or running livestock in the Country Park will be liable for any injury caused to person (s) or to property and must therefore carry a suitable level of liability insurance. The resident grazier Barry Erskine of Four Acres Farm in Norton alongside this also holds the DEFRA single occupancy holding licence and is as such restricted to be the sole grazier of the holding under Foot and Mouth restrictions while still in force. The stocking shall be undertaken on the site by informal agreement with the Head Ranger, as it is relevant to the Countryside Stewardship Agreement. Stock fencing remains the responsibility of the Country Park staff, although the stock management and control is the sole responsibility of the grazier. Welfare of the stock is also the responsibility of the grazier and where or when stock welfare is compromised then the matter shall be referred to Stockton Borough Council's Animal Welfare Team. Country Park staff shall ensure that the land shall not be 'poached' by livestock to maintain the integrity of the grassland communities.

Countryside Stewardship (2000 and onwards)

The Countryside Stewardship Agreement comprises of scheduled annual grant payments for the appropriate management of land within the Country Park. In addition several capital grant payments have also been made for works carried out in the Country Park. These are fully itemised in the Prescription Compartments below.

There is a legal obligation to fulfil the management prescriptions set out in the stewardship agreement and failure to do so would require the repayment of grant moneys received. An agreed schedule of works with regard to satisfying the agreement shall be outlined with the contractor prior to the commencement of works. Details of this agreement plus a map are given in Appendix 9

It should be noted that the hay crop has traditionally been undertaken at Billingham Beck by informal agreement (recently with Richard Atkinson) who has no obligation to complete the work once started, e.g. with regard to spoiled crops as in 2004 by summer flooding).

Woodland Grant Scheme (1995) - Billingham Golf Club

This scheme is being operated by the Country Park on land owned by Billingham Golf Club. Capital grant aid has been paid to Stockton Borough Council for the planting and subsequent aftercare of 0.7 hectares of woodland. There is a legal obligation to fulfil the management prescriptions set out in the woodland grant scheme and failure to do so would require the repayment of grant moneys received. The five year settlement of this agreement was paid in 2000 although the ongoing care of the tree stock remains the responsibility of the Country Park staff.

Children's Act and 'Disclosure'

All staff who have contact with young people or vulnerable groups shall be subject to current legislation. The discretion of the site based staff is also applicable with regard to registered volunteers wishing to work with such groups, over and above the required legislation.

Community Involvement

Volunteer Countryside Wardens are required to complete the relevant paperwork prior to undertaking any duties in this capacity. This is a formal requirement with regard to Stockton Borough Council's third party insurance. The site-based staff also have a responsibility to discuss any limitations that the prospective volunteer may have with regard to their own health and abilities and act accordingly. Volunteers shall not operate machinery without specific training unless under the direct supervision of the site based staff. The site-based staff shall also make any required PPE applicable to a given task available prior to the commencement of the task.

Personal details of Volunteer Countryside Wardens are considered confidential and stored accordingly. Attendance figures are kept and submitted regularly along with figures for all scheduled user groups.

The Volunteers who work at Billingham Beck Valley are a much valued asset. Their work is much appreciated and without them several tasks may not be done. The tasks vary each week, depending on numbers, activities that need attention, season and weather. The Volunteers who come to the Park to work see it as a social event as much as a working one. Many meet old working colleagues and friends while they are working.

The Site has two volunteer days in the week (Thursday and a Sunday) and the sessions run from 10am -12pm and 1pm -3pm.

The majority of Volunteers have made a long term commitment to the site and their knowledge and skills is a tremendous asset to the Park. Every Christmas there is volunteer social gathering, where volunteers from many of the Countryside Sites come together for a group social event.

Several Volunteers are referred to the Park by Health Organisations such as SBC Footsteps, an organization who work in returning people back into work with health problems.



Fig 9: Volunteers at Billingham Beck Valley Country Park - Hedgelaying

Opportunities also exist for other groups to use the site to carry out practical countryside management tasks or as a team building exercise. Local scout/cub/brownie/rainbow groups, the YMCA, The East Durham Community College, school groups with pupils working towards their Duke of Edinburgh undertake activities, individual Duke of Edinburgh Volunteers also use the site for such opportunities.

The Volunteer Induction involves a tour of the Site, a Health and Safety briefing including Risk Assessments for various tasks and inquiry as to specific requests such as learning new skills such as hedge laying.

Many specialised groups utilise the Site such as the Teesmouth Bird Club who undertake bird ringing days in the winter months. Volunteers also undertake other Bird, Amphibian, Butterfly and Wildflower surveys.

The Site staff also give talks to interested groups such as The University of the 3rd Age, offer evening talks at WI, Church or Youth groups or any other interested party. Stockton Borough Councils Footsteps, a family run community group have used the Ranger service both on Site, to explain the wildlife, the families can see as they walk around, and off Site to build bird and bat boxes at organised events.

5.6 Environmental Policy / Adopted Internal Policies

Dogs

Dog walking is allowed anywhere in the valley with the exception of The Ecology Park, which is kept dog free as the majority of school groups and educational visits take place within this area. A new dog walking policy for the Ecology Park is under review in 2009-2010.

This restriction is highlighted on the Risk Assessments made available to schools prior to each visit and generally welcomed by most visiting groups and is generally respected by the local dog walking fraternity.



Fig 10: Notice in Ecology Park in Billingham Beck Valley Country Park

It is also accepted that dog owners may wish to allow their dogs to swim in the Beck and this is recognised as a reasonably natural activity. It is restricted, however, to two places where steps have been installed largely for this purpose as they do pose a threat to waterside nesting birds. As dogs are creatures of habit, this policy has not proven difficult to enforce. Details of these points are displayed in the Visitor Centre and at various local Veterinary Practices.

Elsewhere on the site dog owners are required to keep their dogs under close control, as highlighted in the Country Park Byelaws. A total of six new dog faeces bins were placed on site in 2009, which are emptied under contract, and several more in the local neighbourhood. The vast majority of dog walker's use the site on a daily basis and faeces is not considered so great a problem as general disturbance. The location of the bins have to be accessible so that they can be easily emptied.

Under the 'Dog Fouling of Land Act' owners of dogs now have a legal responsibility to clean up after their dogs in public places. Local Authorities are obliged to enforce this legislation. The whole of Billingham Beck valley Country Park is covered by this legislation and fixed penalty tickets of £50 can be issued. The Stockton Borough Council Animal Welfare Officers regularly patrol the site, both in uniform and under cover in order to approach irresponsible dog owners. The Countryside Rangers report anyone allowing their dog to foul in the park to the officers, who can issue tickets on our behalf, even if they do not personally witness the incident. Options for training Countryside Rangers in the 'Police and Criminal Evidence Act' so they can also issue fixed penalty tickets are ongoing.

Litter, Anti Social Behaviour and Vandalism

Litter is recognised as a significant factor in the management of any public countryside site. There are no permanent bins on the site outside of the Visitor Centre. Ad hoc litter is collected on daily site patrols, with an annual 'clean up' undertaken by the site staff in winter when it proves easiest and causes minimal disturbance to wildlife. Extensive research at countryside sites has shown that on sites with litterbins, more litter is left than on sites without. There is some complex psychological explanation for this strange behavioural trait in humans. This has been experienced this first hand at a number of sites in Stockton where

litterbins have been removed and the amount of litter has decreased. There are no plans to install litterbins on site. Ranger's litter pick the site daily to maintain a litter free environment.

At the entrance to the car park a large red bin has been installed for use by the Rangers to put rubbish in from the Centre, although the general visitor is also allowed to use this bin to place any rubbish they have.

Stockton's Borough Councils Parks and Countryside Department is placed within the 'Care for your Area' Section and as such can call upon many departments within the council to help maintain the Park. For example, any large amounts of litter or flytipping is quickly removed by the Cleansing Department.

Sewerage

The sewerage litter problem within the Beck channel from the Combined Storm Overflows has been a perennial problem in the valley for several years. This material is not collected by the site based staff for a number of reasons, including the contractual obligations of Northumbrian Water to collect it and the Health and Safety implications of the material itself and the working environment. This issue is routinely brought to their attention after flood events and recorded in the site diary.

Anti Social Behaviour

Instances of Anti Social Behaviour occur sporadically throughout the summer months with groups of up to 50 teenagers congregating at specific spots. This issue is considered the responsibility of Stockton Borough Council's Community Warden Service and the local police who are well aware of the problems and respond well to the reports from the site based staff, although the site based staff do undertake ad hoc evening patrols in an attempt to combat this behaviour. At principal entrances to the site notices provided by the local police have been placed to deter drinking on site. It is considered fortunate that hypodermic needles are found very rarely on the site, although it is believed that the closure of the main car park gate at 4pm daily has brought an end to what was at one time a problem.

Pesticides

Pesticides are not used within the boundaries of the Country Park unless specifically sanctioned by the salaried staff. They are not scheduled within the Management Prescriptions outlined below and shall be restricted to the cobbled area to the front of the Visitor Centre as required for cosmetic purposes only. This work will be undertaken by the contracted Grounds Maintenance Team by specific 'one off' arrangement and within their recognised operating procedures.

Wherever possible environmentally friendly methods of control are used to combat invasive species. A key example of this is the response to the periodic bloom of water fern in the Ecology Park Pond when under initial guidance from the Environment Agency the introduction of *Stenopelmus rufinasus* Weevil species that only eats the Water Fern was introduced in 2008. This has proven very successful in controlling the problem.



Fig 11 : Introduction of Weevils to Manage Water Fern in Ecology Park Pond, 2008

Horticultural management

Compartments scheduled for ‘amenity grass cutting’ are detailed in Appendix 13. This work shall be undertaken under contract. Contractors shall have a set of maps agreed by all parties, which are also available in the Visitor Centre Office. Outwith this, areas may be cut or uncut by informal agreement between the Country Park staff and the contractors, although this shall not compromise any grassland conservation initiatives and shall be subject to the existing Health and Safety guidelines and legislation. This may be with regard to ground nesting birds, requirements for additional public access etc.

Arboricultural Management

Stockton Borough Council employs a team of Arboculture Officers who shall be made aware of any issues regarding trees that may pose a threat to public or staff safety on the site and have the authority to instruct contractors in tree surgery work as required. The Country Park staff will also recognise the additional skills, knowledge and qualifications of these Arboculture staff and their assistance should be sought with regard to new woodland plantation, relevant legislation, disease etc. The site is also inspected *specifically* for damage to trees after abnormal weather conditions and appropriate action taken.



Fig 12 : Woodland In Billingham Beck Valley

The Environment Agency also have a responsibility for trees in the Beck Channel and site based staff shall inform them immediately of any obstruction in the channel that may

compromise a regular flow. This is particularly relevant to Billingham Beck Valley given the high number of 'Crack Willows' present along the beck sides.

The trees of the adjoining properties, with specific reference to Network Rail Property, shall remain their responsibility and there is an understanding that they shall make good any damage caused by the loss of any of their trees. There is also an informal agreement that the Country Park staff can use trees on the embankment for the placing of nesting boxes within reason and shall only be accessed from the Public Rights of Way.

'In house' tree felling operations, all woodland management and planting shall be with regard to the Risk Assessments as in the Visitor Centre Office and with regard for the visiting public. 'Ring Marking' of trees for conservation purposes e.g. with regard to invertebrate life, should not be undertaken within 50m of any path or regular thoroughfare and the practice should be undertaken only occasionally.

Sustainability

Where practicable and financially viable, Billingham Beck Valley Country Park is managed in keeping with recognised best ethical and environmental practices. The site-based staff also encourage contracted cleaners, training organisations and other contractors to adopt this framework of operations.

This includes the recycling of all paper, glass, metal and plastic waste and there are public recycling bins to promote this practice in the car park. The recycling bins are emptied monthly, but the owners can be called upon to come and empty them if they are full at any time.



Fig 13 : Recycling Facilities at Billingham Beck Valley Country Park

Formal paths are surfaced with either recycled road planings, blast furnace slag or woodchips donated by local tree surgeons. Logs generated from in-house felling or arbocultural operations are used in the provision of environmental education. The issue of flooding on the valley floor also precludes the accepted practice of building 'habitat piles' after felling operations and timber is purposefully left in situ, with a variety of hibernation boxes put above the level of seasonal inundation.

The Visitor Centre has also been inspected by a Home Energy Advisor who was satisfied that the heating arrangements were appropriate to the building. Long-life low-energy bulbs have been phased in to replace the old. There is no use of peat on the site.

The Ranger Staff are also 'Carbon Saver' Volunteers within the Council's own 'Carbon Saver' Initiative.

Carbon Saver 'Job Description'

Changes in building regulations and an increase in legislation and European directives on emissions and energy efficiency have increased the need for organisations to employ energy conservation staff. The overall aim is to assist the UK to meet its environmental commitments on the reduction of carbon dioxide emissions.

We are looking for an out going individual with knowledge of both carbon and energy saving methods, to increase energy and carbon awareness within their existing department. This is achieved by:

- *Applying cost effective solutions to reduce department/buildings consumption of energy.*
- *Raising the profile of energy conservation.*
- *Encouraging the use of renewable/sustainable energy resources, both within the Authority and in the home.*

Typical work activities

Duties will vary according to the setting in which the work is being carried out and can range from encouraging people to turn off lights, through to feeding back any energy saving suggestion received from staff members.

Typical work activities generally include:

- *Distributing Carbon/energy saving materials throughout your building/department*
- *Offering practical advice to staff members on the efficient use of energy.*
- *Contributing to our monthly Carbon Management Team meetings.*
- *Collecting staff member's energy saving suggestions.*
- *Developing Carbon/energy saving promotional activities to suit your department/building.*
- *Conduct short energy awareness audits on your department/building throughout the programme.*

Benefits

Benefits to be given to everyone who contributed to the success of the program, with extra bonuses given to the departments/buildings who reach their annual energy saving targets.

Transport

Local schools are encouraged to walk whenever possible, provided it is done safely.

The Visitor Centre shop is also stocked with regard to the 'Healthy Schools Initiative' whereby a healthy alternative is always available alongside the regular products and the full range of goods are always sourced from ethically sound manufacturers and suppliers.

Site Vehicle

There is a small van shared between Cowpen Bewley Woodland Park, Billingham Beck Valley and Wynyard Woodland Park. Vehicle use has been reduced over the last few years in line with the SBC LA 21 Strategy on reducing the use of Council and staff vehicles for SBC business.

Access

Pedestrian access Billingham Beck Valley Country Park is available to the public at all times at the points listed in 2.4. In 2009 6 new kissing gates were installed at points of access to the site by volunteers. Signs welcoming visitors to the park were placed on all the main entrances to the Site.

The site is occasionally closed to pedestrian access when flooded, although the Public Rights of Way can only be closed with proper consultation with the appropriate officer and the water has often receded by the time this process is enacted. It is accepted that mud is a significant problem in the summer months, although given the nature of the site this cannot be alleviated. Ad hoc signage is implemented at these times to warn the public. Information on Public Rights of Way is available in the Visitor Centre Office.

For vehicular access, the site is signed from the A19 dual carriageway, the A1027 and local area using standardised brown road signs. Parking is restricted to the one main Car Park and there is no vehicular access to the site, although disabled visitors are allowed to drive to the pond or Visitor Centre on request.

Cycling in the Country Park is restricted within the Country Park byelaws, although the site is accessible from the cycle lane along Wolviston Road to the rear of the Visitor Centre. Information on other cycle routes is kept available in the Visitor Centre.

In 2004 the Tees Valley Wildlife Trust's 'Tees Corridor Regeneration' Officer took on the responsibility of developing the footpath network in Section 6 to promote access between their two sites at either end of the valley. This work was sanctioned by the Head Ranger and is certainly in the best interests of the site and promotes further pedestrian access.

A large number of Park users currently access the park by car. Even those living within a few minutes walk of the site often drive. There is a contradiction here as people are contributing to the destruction of our environment while trying to access and enjoy it. Stockton Borough Council will continue to support alternative forms of travel by ensuring the footpath networks are well maintained, improving signage on routes in the park, promoting cycling and walking and promoting the public transport system.

Countryside staff will promote the use of the public transport system by advertising services in leaflets and timetables on site.

Water Safety

Although there are several large permanent water bodies on the site and the beck itself, there is no emergency water safety equipment on the site as it would inevitably be destroyed, stolen or compromised in its effectiveness due to the sporadic problems of anti social

behaviour. Escorted groups are routinely informed of the dangers of deep water and there are four platforms to safely access the Ecology Park pond for educational purposes.



Fig 14 : Billingham Beck

There is a safety throw line in the office for use by the Sites Rangers - it is also available for pond dipping environmental education activities.

Along the beck sides the paths are routed away from the direct edge of the channel, although there is safe access to the water as listed under 'Dogs' above. There are five pedestrian bridges over the beck and the handrails are kept in good condition and inspected regularly.

It is accepted that the countryside is not inherently a safe place and there will inevitably be some risk associated with the water features of the site.

5.7 Physical Management Constraints

Access to large parts of the valley with machinery is limited to the drier months of the year and in some areas not possible without causing major damage at any time of year. However the appropriate management of the grassland areas is usually possible given normal levels of summer rainfall.

5.8 Availability of Resources, Budget Management and Insurance

There are just two full time Rangers employed in the valley to undertake a wide range of duties. Consequently staff time is limited and in order to achieve many of the practical objectives it is necessary to enlist the help of voluntary wardens or for larger projects contractors.

Financial constraints are a major limiting factor and thus it is important that management proposals are thoroughly evaluated and where possible grant aid is obtained.

The appropriate management of the grassland areas requires the cooperation of one or more local farmers. Pastoral farming is today uncommon in the district, therefore it is important that good contacts are maintained with those farmers who are able to run stock on the meadows within the valley. This may require some compromise between the needs of nature conservation and those of modern stock husbandry.

The Country Park finances are managed by the Countryside Ranger, with purchases sanctioned by the Countryside Recreation Officer. The majority of annual expenditure is pre-scheduled, for example with regard to the Visitor Centre operating costs etc., although an annual budget is available for ad hoc purchasing. There are other finances available for issues such as vandalism, interpretation etc. although these are held centrally and a bid is made annually by means of the 'Action Plan' as drawn up by the Head Ranger with regard to the management prescriptions outlined below.

The revenue from the Countryside Stewardship Agreement is secured for spending on Environmental Conservation Initiatives and is kept in a 'rolling' holding account.

The Visitor Centre, its contents and other structures are covered within Stockton Borough Council's insurance policies. Regular inventories are undertaken centrally for larger items within the Visitor Centre and internal inventories are undertaken with regard to the tool store and 'Stable' wood store. The Country Park also owns a boat for scheduled wetland management work, although this is kept at the grazier's property by informal arrangement.

5.9 Environmental and other factors which may have implications for management.

The statutory obligation of the Environment Agency to prevent flooding of the major road links within the valley places a constraint upon the management of water levels. Negotiation between the Head Ranger and the Environment Agency is vital in reaching a balance between the need for flood control and requirement for a high water table on the marshland.

5.10 Summary of factors which influence or *may* influence key features of the valley.

Positive Factors	Negative Factors
Stockton Borough Council owns or has formal lease agreements for a large area of Billingham Beck Valley.	The drying out of parts of the wetland areas as a result of the construction of the A19.
The majority of the land managed by the Country Park staff within the valley is designated as both an SNCI and LNR.	Management of Billingham Beck by the Environment Agency to prevent flooding has resulted in less frequent flooding of the wetland habitats.
The close involvement of many local people in the practical management of the valley.	Climatic changes, drier warmer summers leading to further drying out of the marshland.
The importance of Billingham Beck Valley as both an educational and recreational facility for local people.	Pollution of Billingham Beck, both from it's large catchment area to the north and along it's lower tidal reaches as a result of industrial, road and domestic discharges.
	Urban fringe nature of the valley leading

	<p>to problems such as:</p> <p>Vandalism</p> <p>Road noise and other pollution</p> <p>Possible disturbance of sensitive nature conservation areas.</p> <p>Dogs not being kept firmly under control.</p>
	<p>Succession of open grassland to rank vegetation and scrub if not appropriately managed.</p>

Section 6 : Objectives, Limits and Monitoring

The purpose of this section is to identify, for each feature, attributes which may be used as the basis for quantifying each feature.

6.1 Habitats and Communities

Flood Meadow MG4 *Alopecurus pratensis-Sanguisorba officinalis*

Size : 2.6 Hectares

Location : Section 2

Quality: Very good examples of MG 4 grassland

Indicator species: *Alopecurus pratensis*, *Festuca rubra*, *Sanguisorba officinalis*, (Smiths Field *Cardamine pratensis*).

Species indicating Change: *Arrhenatherum elatius*, *Holcus lanatus*, *Cratogeomys monogyna*, *Prunus spinosa*.

Wet Grassland MG10 *Holcus lanatus- Juncus effusus* pasture

Size : 8 Hectares

Location : Sections 3 & 4.

Quality : Typical example of MG 10 grassland, ubiquitous in poorly drained grasslands.

Indicator Species : *Holcus lanatus*, *Juncus effusus*, *Agrostis stolonifera*.

Species indicating change : *Cirsium arvense*, *Urtica dioica*, *Arrhenatherum elatius*.

Rank Grassland MG 1

Size : 12 Hectares

Location : Sections 1 - 4.

Quality : typical of unmanaged grassland, poor mix of herbaceous species. Some value as a habitat for seed eating birds and small mammals

Indicator Species: *Arrhenatherum elatius*, *Poa trivialis*, *Dactylis glomerata*

Species indicating change : *Cratogeomys monogyna*, *Prunus spinosa* and other shrubs / trees.

Rank Grassland MG variant

Size: 4.2 Hectares

Location : Section 6

Quality : Unusual grassland habitat developing on site of former gypsum tip.

Indicator species : *Agropyron repens*, *Agrostis stolonifera*

Species indicating change : *Cratogeomys monogyna*, *Prunus spinosa* and other shrubs / trees.

Reedbeds S5a *Glyceria maxima* swamp *Glyceria maxima* sub- community.

Size : 3.66 Hectares

Location : Section 4.

Quality : Good example of M27 mire, continuous stands of *Glyceria maxima*/*Phalaris arundinacea* in central areas with fringing stands of *Epilobium hirsutum* and *Filipendula ulmaria*.

Indicator species : *Glyceria maxima*, *Phalaris arundinacea*, *Carex acutiformis*, *Carex riparia*.

Species indicating change : *Epilobium hirsutum*, *Urtica dioica*, *Cratogeomys monogyna*, *Prunus spinosa* and other trees.

Reedbeds S4a *Phragmites australis* swamp *Phragmites australis* sub-community.

Size : 2.9 Hectare

Location : 90% within Section 5 around the Fleet Ponds with a small bed on ditch 4D8.

Quality : Typical example of developing *Phragmites australis* reed bed.

Indicator Species : *Phragmites australis*

Species indicating change : *Glyceria maxima*, *phalaris arundinacea*, *Salix spp*

Open Water (Billingham Beck) (freshwater Section downstream to weir)

Quality : Class 1B (National Water Council Classification) Eutrophic lowland river.

Biological Monitoring Working Party Score 22.3. The Average score per taxon score between June in 1996 (Owen Wilson) and June 2004 (Emily McCarthy) had reduced considerably with regard to the Combined Storm Overflows and the prevalent use of agro chemicals elsewhere in the catchment.

Indicator Species of water quality : *Baetidae sp.*, *Gammaridae*, *Unionidae*

Open Water (Permanent Ponds)

Quality : Generally good (excluding Fleet Ponds)

Location : Sections 3, 4, 5 & 6.

Indicator Species of water quality : *Baetidae sp.*, *Gammaridae*, *Unionidae*

Other species : *Bufo bufo*, *Rana temporaria*, *Triturus vulgaris*

Common breeding birds: *Anas platyrhynchos*, and *Gallinula chloropus*.

Open Water (Seasonal Ponds)

Quality : Generally good

Location : Sections 2, 3 & 4.

Indicator Species of water quality : *Baetidae sp.*, *Gammaridae*, *Unionidae*

Other species : *Bufo bufo*, *Rana temporaria*, *Triturus vulgaris*

Open Water (ditches)

Quality : Generally good

Location : Sections 3 & 4 (NB some ditches as listed are not considered permanent water bodies).

Indicator Species of water quality : *Baetidae sp.*, *Gammaridae*, *Unionidae*

Other species : *Bufo bufo*, *Rana temporaria*, *Triturus vulgaris*

Common breeding birds: *Anas platyrhynchos*, and *Gallinula chloropus*.

Hedgerows

Length : 707 Metres in the current Countryside Stewardship Scheme in Country Park. 2700 Metres Outside Stewardship Scheme in Country Park.

Quality : Generally Good.

Main species : *Crataegus monogyna*, *Prunus spinosa*, *Rosa canina*, *Sambucus nigra*

Location : Sections 2,3 & 4.

Mature / Semi mature Woodland

Size : 4 hectares

Quality : Fair, Mainly characterised by stands of *Salix sp.*, *Alnus glutinosa* *Acer pseudo platinus*, poor under storey.

Location : Section 2 & 4

New woodland plantation.

Size : 1.6 Ha

Quality : Developing mixed deciduous woodland planted under the woodland grant scheme 1995 and Countryside Stewardship Agreement 2004

Location : Section 2 and 3

Ground nesting birds – wet grassland.

Quality : Good habitat though subject to some disturbance from visitors and dogs.

Location: Sections 2 - 6.

Indicator Species : *Alauda arvensis*, *Perdix perdix*

Status : *Alauda arvensis* present in summer, breeding status not confirmed. *Perdix perdix*. 10 - 20 birds, breeding confirmed 2 pairs 1996, Total number unknown.

Marsh and waterside nesting birds.

Quality : Large wetland areas dominated by stands of reed. Relatively free from disturbance.

Location : Sections 4 - 6.

Indicator Species : *Acrocephalus schoenobaenus*, *Acrocephalus scirpaceus*, *Locustella naevia*, *Emberzia schoeniculus*, *Gallinago gallinago*, *Parus montanus* and *Rallus aquaticus*.

Status : *Acrocephalus schoenobaenus* (> 10 breeding pairs) *Acrocephalus scirpaceus* (4-5 breeding pairs) *Locustella naevia*. (Regular summer visitor, breeding status unknown.) *Emberzia schoeniculus* (Resident, breeding status not confirmed). *Gallinago gallinago* (> 10 birds, breeding status not confirmed). *Parus montanus* (Resident, breeding confirmed, 1 pair 1996) *Rallus aquaticus* (Occasionally recorded, breeding status unknown - extremely elusive species.)

Mammals

Quality : Large areas of grassland bordered by scrub woodland and hedgerows, beck and ponds suitable for aquatic and land living mammals. All common indigenous small mammals present, data on populations not currently available.

Location : Throughout valley.

Terrestrial Invertebrates

Quality The wide range of plant species present and structural diversity of the different habitats within the valley are likely to give rise to a rich invertebrate community. At present little data is available on this difficult group to determine the overall value of the valley in other than purely qualitative terms.

Flora

Noteworthy species are given in the list of important species above with a summary of their respective status in the valley.

6.2 Educational and Socio Cultural Features

Ecology Park and Visitor Centre

Size : 4 Hectares

Quality : Focal point for visitors and environmental education activities. Habitat areas include Oak \ Ash plantation, Silver birch \ Scots Pine plantation, Hay and cornfield meadows, Hedgerows, Large pond, Limestone Rockery.

Visitor centre with shop and exhibition area, open 1 to 3 days per week dependant on school holidays.

Location : Section 3.

Site interpretation

Interpretation boards with site map located at main access points. Published information available on the Country Park and organised events via site leaflet and biannual events programme. See Appendix 12.

Location : Sections 3 & 4.

Active local community involvement through Voluntary Warden scheme.

Voluntary wardens partake in a wide range of activities within the Country Park and associated land. Regular meetings are held for volunteers, plus an annual training programme and several social events each year.

Countryside Events Programme

An active programme of events aimed at attracting people to the Country Park and surrounding countryside. Around 15 events are organised every year.

Educational Visits Providing both educational material and leading school and college groups on visits to the valley are important components of the countryside rangers work. Several hundred schoolchildren take part in an organised visit requiring a countryside ranger every year.

Footpaths structures and furniture

A network of surfaced and grass paths, boardwalk, stiles, bridges and gates.

Section 7 : Objectives to Outline Management Prescriptions

7.1 Habitat Management

Maintain 2.6 Ha of MG 4 grassland in a favourable condition.

Limit of Acceptable Change: 10 % reduction in MG 4 grassland area.

Current Condition : Favourable

Rationale : This land is owned and managed by Stockton Borough Council. Suitable agricultural management of the land is dependent upon the availability of local farmers. This has not been a problem in the recent past. The land is also part of a Countryside Stewardship agreement (2000 – 2010).

Invasive species upper limits: 10% *Arrhenetharium elatius* / *Holcus lanatus*. 5% *Cratogeomys monogyna* / *Prunus Spinosa* or other scrub.

Outline Prescription : Active management of MG 4 grassland - annual haymaking in July or August. Grazing in late summer / autumn with cattle and sheep as available. Monitor species composition on five year cycle and link in with LBAP initiative.

Maintain 8 Hectares of MG10 *Holcus lanatus* - *Juncus effusus* pasture

Limit of Acceptable Change: ± 10 % change in MG10 grassland area.

Current Condition : Favourable

Rationale : This land is owned and managed by Stockton Borough Council. Suitable agricultural management of the land is dependent upon the availability of local farmers. This has not been a problem in the recent past. The land is also part of a Countryside Stewardship agreement (2000 - 2010).

Invasive species upper limits: 10% *Arrhenetharium elatius* 5% *Cratogeomys monogyna* / *Prunus Spinosa* or other scrub.

Outline Prescription : Active management of MG 10 grassland. Hay making where ground conditions allow, followed by grazing with cattle / sheep. Monitor species composition on a five year cycle and link in with LBAP initiative.

Maintain / retain 12 hectares of rank grassland, MG 1

Limit of Acceptable Change : ± 10 % change in extent of MG1 grassland area.

Current Condition : Favourable

Rationale : This land is owned and managed by Stockton Borough Council and is favourable to a range of mammal, invertebrate and avian species.

Invasive species upper limits: 5% *Cratogeomys monogyna* / *Prunus Spinosa* or other scrub.

Outline Prescription : Limited intervention, remove invading scrub. Monitor species composition on a five year cycle and cut on this rotation.

Maintain 4.2 Ha of Rank Grassland MG variant rank grassland

Limit of Acceptable Change: ± 20 %

Current condition : Unusual grassland habitat developing on former gypsum tip.

Rationale : Land owned by Scott Bros. part of which is leased by Stockton Borough Council for informal access and nature conservation management.

Outline Prescription : Limited intervention. Monitor vegetation on a five year cycle.

Maintain 3.66 Ha of S5a *Glyceria maxima* swamp *Glyceria maxima* sub- community.

Limit of Acceptable Change : 10 % overall reduction in size.

Current Condition : 4R1 Favourable, 4R2-4 declining due to invasion.

Rationale : This land is owned and managed by Stockton Borough Council. Areas noted as unfavourable declining are generally subject to a lower than preferred water table, input of nutrients from Billingham Beck when in flood and pressure from invasive species *Urtica dioica* / *Epilobium hirsutum*. Also in Countryside Stewardship Agreement.

Invasive species upper limits : 10% *Urtica dioica* / *Epilobium hirsutum*. 5% Scrub.

Outline Prescription : Active management, cutting small areas of reed on a four to five year rotation. Manage water table in consultation with EA. Monitor species composition on a five year cycle.

Maintain 2.9Ha S4a *Phragmites australis* swamp *Phragmites australis* sub-community.

Limit of Acceptable Change : 20 % increase in size. 10% reduction in size.

Current Condition : Favourable Maintained

Rationale : This land is owned by Scott Bros and leased by Stockton Borough Council. The reedbeds are currently extending out over the Fleet Ponds (5P1 and 5P2) and today provide a valuable habitat for marshland birds, particularly warblers.

Invasive species upper limits: 10% *Glyceria maxima* / *Phalaris arundinacea* 10% *Epilobium hirsutum*.

Water table lower limit : Winter ground surface. Summer 0.2 M below ground surface

Outline Prescription : Limited intervention, remove invading scrub. Monitor and review status periodically, possibly introducing a cutting regime in the future, although this is notoriously difficult, costly and invasive.

Maintain and improve the condition of the freshwater section of Billingham Beck.

Limit of Acceptable Change : Lower limit, current status as measured by the biotic index, Average Score per Taxon (ASPT).

Current Condition : Unfavourable - no change

Rationale : Billingham Beck has several sources arising out of a large catchment area south of Sedgfield comprising approximately 40 square kilometres of predominantly intensively farmed arable land. In keeping with many lowland river systems general eutrophication and degradation due to sewage discharges has significantly harmed the aquatic ecosystem.

Outline Prescription : Active management encouraging Northumbrian Water to remove litter and debris from the beck. Lobby Northumbrian Water and Environment Agency with regard to improving water quality.

Maintain and improve the condition of the still water bodies within the valley.

Limit of Acceptable Change : Extent of open water, $\pm 10\%$ Sustain current freshwater invertebrate populations (measured by ASPT). Retain current populations of breeding amphibians. Ensure that fringing nesting habitat is retained and protected from disturbance. Improve water quality of Fleet Ponds as measured by biotic indices.

Current condition : Favourable

Invasive species : Canadian Pondweed (*Elodea canadensis*), Reedmace (*Typha latifolia*), Branched Bur-Reed (*Sparganium erectum*). Common Reed (*Phragmites australis*).

Outline Prescription : Active management to maintain open water and improve water quality of all permanent water bodies.



Fig 15 : Ecology Park Pond

Hedgerows

Limit of Acceptable Change : No reduction in extent of hedgerows

Invasive species upper limits : *Sambucus nigra* 15%

Outline Prescription : Manage hedges in Countryside Stewardship Scheme in accordance with work programmes detailed in the Scheme. Manage other hedgerows in a similar fashion, thereby maintaining a thick hedge.



Fig 16 : Hedgerow in Billingham Beck Valley Country Park

Mature / Semi mature Woodland

Limit of Acceptable Change : $\pm 10\%$ change in overall woodland cover.

Invasive species upper limits : No increase in number *Acer pseudoplatanus*.

Outline Prescription : Maintain current extent of woodland cover and work towards removing none indigenous species and increasing the diversity of the native woodland flora.

New woodland plantation

Limit of Acceptable Change: 10 % loss of trees planted.

Outline Prescription : Manage new plantation in accordance with Woodland Grant Scheme and Countryside Stewardship Agreement.

7.2 Species / Community Management

Birds

Maintain current population of ground nesting birds and work towards increasing the availability of safe nesting sites.

Limit of Acceptable Change : No reduction in breeding populations of Skylark, Meadow Pipit and Grey partridge.

Current condition : Unfavourable declining and may well be absent.

Rationale : In parallel with the national trend for these species there has been a decline in numbers over the last decade. Within the valley disturbance pressure from people and dogs is a problem.

Outline Prescription : Encourage and increase aim to reduce levels of disturbance. Monitor on an annual basis.

Maintain current population of Marsh and waterside nesting birds and work towards increasing the availability of safe nesting sites.

Limit of Acceptable Change : No reduction in the breeding populations of Sedge, Reed and Grasshopper warblers, Reed Bunting, Snipe, Willow Tit and Water Rail (breeding status not confirmed).

Current Condition : Favourable Maintained (Exception Reed Bunting-Unfavourable Declining)

Rationale : Within the valley disturbance pressure from people and dogs is a problem. Known breeding areas should be kept free from disturbance where practicable.

Outline Prescription : Encourage and increase, restrict access to sensitive locations. Maintain suitable wetland habitats, Reed, scrub woodland and wet pasture. Monitor on an annual basis.

Mammals

All common indigenous species have been recorded, little quantitative data is available on which to set management priorities.

Limit of Acceptable Change : Cannot set realistic targets.

Current Condition : Water Vole – Destroyed. Other species insufficient data available.

Rationale : The range of habitat types present within the valley provides the potential environment for a large number of small mammals and a few fox and roe deer. Of the species recorded in the valley during the last twenty years water vole is of the greatest importance in nature conservation terms. Restoring this species to the valley may depend upon several factors, not least the water quality of Billingham Beck and disturbance from Mink.

Outline Prescription : Set up a monitoring programme for small mammals.

Terrestrial Invertebrates- Insufficient data available to set clear priorities and limits of change.

Rationale : At present habitat management within the valley is not focused on conserving any specific species of terrestrial invertebrates.

Outline Prescription : Maintain ad hoc terrestrial invertebrates survey initially focusing on reed and willow Carr habitats.

Flora

Significant individual species and communities are present in the valley.

Rationale : The noted species above form an integral part of the important communities present in the valley. Management of these communities as described above will benefit these species.

7.3 Educational / Interpretation Management / Visitor Services

Ecology Park and Visitor Centre.

Rationale : A focal point for visitors, several small habitats developing on the location of a former landfill site.

Outline Prescription : Active management – the Ecology Park requires fairly intensive management in order to promote the development of the newly created mini- habitats. Visitor centre requires regular maintenance and attention.

Site Interpretation

Rationale : Interpretation boards with site maps and site leaflets provide valuable means of informing visitors. Exhibition in the Visitor Centre acts as both an educational resource and a place for people to visit.

Outline Prescription : Maintain interpretation boards and leaflets. Review and replace interpretation boards as regularly as deemed appropriate and within the confines of resources available. Maintain the Visitor Centre exhibition area updating seasonal displays through the year. See Appendix 12 for current Interpretative Panel Rationale.



Fig 17 : Interpretation Panel in Ecology Park Visitor Centre

Countryside Events Programme

Rationale : A key means of attracting visitors to the Country Park and an important outdoor recreational facility provided by Stockton Borough Council.

Outline Prescription : Produce a biannual programme of themed countryside events aimed at a wide cross section of the community. These shall be in keeping with the general perception of Billingham Beck Valley Country Park as a place for both people and wildlife

and will aim to exploit the wealth of opportunities that the site has to offer in terms of environmental and socio cultural history.

Educational Visits

Rationale : Billingham Beck Valley is well used by local schools and colleges for educational visits.

Outline Prescription : Maintain good relationship with local schools and discuss study options so that they are linked to National Curriculum. Hold occasional teacher training days to raise awareness of the Country Park.

Footpaths , structures and site furniture

Rationale : An extensive network of surfaced and grass paths are available for the public to access various parts the Valley. They shall also act to deter casual access into the fenced fields where stock may be grazing or they may disturb ground flora or nesting birds.

Outline Prescription : Footpaths, structures and seating should be regularly inspected and maintained to a good standard.

Community Involvement

7.4 Maintain active community involvement through a voluntary warden scheme.

Rationale : Voluntary wardens provide both a valuable input into the Country Park and support for the park from the local community.

Outline Prescription : Maintain an active voluntary wardens scheme with a programme of practical activities, survey work, social events and walks. Provide ad hoc training for volunteers.

Section 8 : Prescriptions for management.

Key

Beck
Permenet Pond
Wetland Scrape / Seasonl Pond
Ditch
Reeds
Rank Grassland
Amenity Grassland
Cut Grassland
Wet Grassland
Woodland
Hedge
Scrub
Car Park

X = indicates the year the work is due to be carried out.

8.1 Outline Perscription; Maintain and improve the freshwater section of Billingham beck.

The Beck

Unit	Name	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Year s	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
2B1	Halliwell and Tweedlum Beck	348m x 2	Ref Notes	Envi Ag	N/A	SBC	No	1,5			X	X	X	X
2B2	Raiway Field Beck	363m x 2	Ref Notes	Envi Ag	N/A	SBC	No	1,5			X	X	X	X
2B3	St Columba's Beck	166m x 2	Ref Notes	Envi Ag	N/A	SBC	No	1, 2, 5			X	X	X	X
2B4	The Real Billingham Beck	757m x 1.5	Ref Notes	Envi Ag	N/A	SBC	No	4, 5			X	X	X	X
3B1	Willowgarth Beck	303m x 2	Ref Notes	Envi Ag	N/A	SBC	No	1, 3, 5			X	X	X	X
3B2	Peckett's Corner Beck	181m x 2	Ref Notes	Envi Ag	N/A	SBC	No	1, 3, 5			X	X	X	X
3B3	Whale Rock Beck	273m x 2	Ref Notes	Envi Ag	N/A	SBC	No	1, 3, 5			X	X	X	X
4B1	Main Path Beck	550 x 3	Ref Notes	Envi Ag	N/A	SBC	No	1, 3, 5			X	X	X	X
4B2	Sluice Beck	330 x 3	Ref Notes	Envi Ag	N/A	SBC	No	1, 3, 5			X	X	X	X
4B3	Weir South Beck	121m x 3	Ref Notes	Envi Ag	N/A	SBC	No	1, 3, 5			X	X	X	X
5B1	Fleet Ponds Beck	680m x 3	Ref Notes	Envi Ag	N/A	SBC	No	1, 3, 5			X	X	X	X
	Lobby NW / EA re CSOs		Monitor	Staff	On going			3,			X	X	X	X
	Total	4072m												

Notes

1. Environment Agency are responsible for management of Billingham Beck as Main River. They must be consulted on issues regarding abstraction, or activities, which will potentially alter the watercourse. In 2001, however, they did halt the scouring of the channel vegetation at the request of site staff who will monitor vegetation and order removal by the EA as appropriate. This is in keeping with the Biodiversity initiative re. Banded Demoiselle.
2. Installed concrete slips and base as at Thorpe Beck (2004)
3. Studies have shown that the CSOs on the beck have a negative impact on its wildlife and amenity value and although scheduled on the AMP, continue to monitor.
- 4 legislation for removal in 2009 it is considered that lobbying for a review of this may prove successful. Also to contact NM and EA at each flood event and pressure for litter picking as required.
- 4 Review The 'Real' Billingham Beck as part of the LBAP initiative.
- 5 Monitor / Manage / Remove all non-native flora and fauna (Giant Hogweed, Himalayan Balsam, Japanese Knotweed, Azola - Water Fern, Mink, North American Signal Crayfish, Terrapin, etc).

8.2 Outline Prescription: Maintain and improve the condition of all ponds within the valley.

Permanent Ponds

Unit	Name	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
3P1	Ecology Park Pond	478m2	Treat with Barley straw and manage encroaching reed to maintain 75% open water. Remove invasive blanket weed.	Ranger Staff and Volunteers	1-5 March / Oct	SBC	No	2, 3, 7		X	X	X	X	X
3P2	Visitor Centre Pond	25m2	Thin vegetation	Ranger Staff and Volunteers	1,3,5 Oct	SBC	No	4, 7		X	X	X	X	X
4P1	Reedbed Pond	1780m2	Treat with Barley straw and manage encroaching reed to maintain 75% open water. Remove invasive blanket weed	Ranger Staff and Volunteers	1,3,5 Mar / Oct	SBC	No	5, 7			X	X	X	X
4P2	Glebe Swamp Pond	500m2	Monitor Vegetation	Ranger Staff and Volunteers	1-5 March	Church	No	6,7			X	X	X	X
4P3	Glebe Swamp Bore Hole	5 x 5m2	Skim duckweed, Remove thistles	Ranger Staff and Volunteers	1-5 Sept	Church	No	7			X	X	X	X
5P1	North Fleet Pond	7394m2	None	Ranger Staff and	N/A	Scott Brothers	No	7			X	X	X	X

				Volunteers										
5P2	South Fleet Pond	899m2	None	Ranger Staff and Volunteers	N/A	Scott Brothers	No	7			X	X	X	X
6P1	Layby Pond	2940m2	Monitor and control Giant Hogweed, Surveyed 2006-07	Ranger Staff and Volunteers	2,5	Scott Brothers	No	1,7			X	X	X	X

Notes

1. Lay-by Pond surveyed by Martin Howard 2006 & 2007
2. Ecology Park Ponds water fern controlled by Weevils 2008 (Environmental agency initiative), monitor for future occurrence
3. Typha pulled by hand in Ecology Park Pond 2009
4. Re lined December 2000
5. Silt clearances by machine c.1998
6. Created Oct 2002, monitor natural regeneration.
7. Monitor/Manage/Remove all non-native flora and fauna.

Seasonal Ponds

Unit	Name	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
2WS 1	Halliwell	112m2	None		N/A	Golf Club	No	3						
2WS 2	Tweedllum	180m2	None		N/A	Golf Club	No	3						
3WS 1	Willowgarth Ponds	54m2	Treat with Barley Straw	Ranger Staff and Volunteers	1,3,5	SBC	No	3			X	X	X	X
3WS 2	Little Field Scrape	37m2	Monitor for Amphibians / Dig out scrapes to clear out vegetation	Ranger Staff and Volunteers	Spring, all	SBC	No	3			X	X	X	X
3WS 2	Little Field Scrape	99m2	Monitor for Amphibians / Dig out scrapes to clear out vegetation	Ranger Staff and Volunteers	Spring, all	SBC	No	3			X	X	X	X
3WS 3	Little Field scrape	141m2	Monitor for Amphibians / Dig out scrapes to clear out vegetation	Ranger Staff and Volunteers	Spring, all	SBC	No	3			X	X	X	X
3WS 4	Little Field Scrape	128m2	Monitor for Amphibians / Dig out scrapes to clear out vegetation	Ranger Staff and Volunteers	Spring, all	SBC	No	3			X	X	X	X
3WS 6	Water Plant Nursery	255m2	Monitor Purple Loostrife & clear reedmace	Ranger Staff and Volunteers	2,4 Aug / March	SBC	No	3			X	X	X	X

4WS 1	Smiths Field Tree Pond	100m2	Remove non native flora and fauna		N/A	SBC	No	1,3			X	X	X	X
4WS 2	Main Path Woodland Pond	200m2	Remove non native flora and fauna		N/A	Church	No	3			X	X	X	X
4WS 3	Boardwalk Path Pond	237m2	Remove non native flora and fauna		N/A	Church	No	3			X	X	X	X
4WS 4	Willow Crook North Scrape	126m2	Monitor purple Loosestrife and treat with Barley Straw	Ranger Staff and Volunteers	2,4 March / Oct	SBC	No	2,3			X	X	X	X
4WS 5	Willow Crook Middle Scrape	303m2	Monitor purple Loosestrife and treat with Barley Straw	Ranger Staff and Volunteers	As 4WS4	SBC	No	2,3			X	X	X	X
4WS 6	Willow Crook South Scrape	503m2	Monitor purple Loosestrife and treat with Barley Straw	Ranger Staff and Volunteers	N/A	SBC	No	2,3			X	X	X	X
4WS 7	Settling Tank Pond	60m2	None			SBC	No	3			X	X	X	X
	Total	28 903m2												

Notes

1. Created by one of the first WWII bombs on Teesside
2. Created 1996. Also transplant other appropriate species by availability from water plant nursery.
3. Monitor/Manage/Remove all non-native flora and fauna.

8.4 Outline Prescription: Maintain and improve the condition of all the ditches within the valley, especially those required for Water Level management.

Ditches

Unit	Name	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Year s	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
2D1	Small Railway Field Ditch	83m	Ref Notes			SBC	No	4			X	X	X	X
3D1	A19 Ditch Willowgarth	42m	Ref Notes		Ref notes	Highways	No	1,4			X	X	X	X
3D2	A19 Ditch Little Field	79m	Ref Notes		Ref Notes	Highways	No	1,4			X	X	X	X
3D3	A19 Ditch Stephenson's Field	242m	Ref Notes		Ref Notes	Highways	No	1,4			X	X	X	X
3D4	A19 Ditch Small Car Park	31m	Ref Notes		Ref Notes	Highways	No	1,4			X	X	X	X
3D5	Stephenson's Bottom Hedge Ditch	174m	Machine clear patches	Contractors or Rangers / Volunteers	04-Jan	SBC	No	4			X	X	X	X
3D6	Bird Feeder Ditch	142m	Ref Notes	Contractors or Rangers / Volunteers		SBC	No	4			X	X	X	X
3D7	Mill Meadow North Ditch	134m	Clear by hand	Contractors or Rangers / Volunteers	1,3,5 Nov	SBC	No	4		X	X	X	X	X
3D8	Mill Meadow Central Ditch	51m	Ref Notes	Contractors or Rangers / Volunteers		SBC	No	4			X	X	X	X
4D1	A19 Ditch North	39m	Ref Notes		Ref Notes	Highways	No	1,4			X	X	X	X
4D2	A19 Ditch	541m	Ref Notes		Ref Notes	Highways	No	1,4			X	X	X	X
4D3	Main Path Ditch	111m	Ref Notes		2	SBC	No	4			X	X	X	X

4D4	Mill Batts Ditch	96m	Ref Notes			SBC	No	4			X	X	X	X
4D5	Glebe Ditch East	168m	See notes			Church	Yes	2,4			X	X	X	X
4D6	Glebe Ditch North	74m	See notes			Church	Yes	2,4			X	X	X	X
4D7	Smiths Field Ditch	98m	Ref Notes			SBC	No	4			X	X	X	X
4D8	Flutter Carr Ditch	104m	Ref Notes			SBC	No	4			X	X	X	X
4D9	Frognell Main Ditch	219m	Manage vegetation	Contractors or Rangers / Volunteers	3 Nov	SBC	Yes	3,4			X	X	X	X
4D10	Frognell Bund Ditch	284m	Manage vegetation	Contractors or Rangers / Volunteers	3 Nov	SBC	Yes	3,4			X	X	X	X
4D11	Frognell Cross Ditch	86m	Manage vegetation	Contractors or Rangers / Volunteers	3 Nov	SBC	Yes	3,4			X	X	X	X
4D12	Frognell Panel Ditch	118m	Manage vegetation	Contractors or Rangers / Volunteers	3 Nov	SBC	Yes	3,4			X	X	X	X
4D13	Fleet Ponds Ditch	320m	Ref Notes		N/A	Scott Bros	No	4			X	X	X	X
	Total	3236m												

Notes

1 Separate management proposal prepared for Highways Agency Sept 2002. Southern section completed 2002, Funding unavailable, review annually.

2 Ditch reinstated Oct 2003 as part of Stewardship Agreement.

3 Ditches reinstated by machine September 2001. Operate in conjunction with EA Penstock and sluice gates.

4 Monitor / Remove non native flora and fauna

.

Notes

- 1 Cut by machine 2003.
- 2 Significantly drier and prone to Great Willowherb etc. Maintain high water table in summer months.
- 3 Cut by machine Nov 2001.
- 4 Recognise beneficial effects of Phragmites for improvement of water quality. Consult Air Products re.cutting.
5. The Glebe cut winter 2006-07
6. 4R3 & 4R4 require bridge
- 7 Monitor/ Manage/Remove non native flora and fauna
- 8 No reeds were cut under stewardship in 2009

8.6 Outline Prescription: Maintain rank grassland on rotation where access conditions allow.

Outline Prescription: Restrict access where practicable to promote ground-nesting birds.

Rank Grassland

Unit	Name	NVC	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
1RG1	Golf Club North Rank Grassland	MG1	600m ²	Strim	Ranger Service / Vols	3 Aug	Golf Club	No				X	X	X	X
1RG2	Golf Club Path Steps Rank Grassland	MG1	3600m ²	Strim	Ranger Service / Vols	3 Aug	Golf Club	No			X	X	X	X	X
2RG1	Boardwalk Path	MG1	1040m ²	Scallop and rake	Ranger Service / Vols	2 Aug	SBC	No				X		X	
2RG2	Billingham Beck Path	MG1	1315m ²	Scallop and rake / Strim	Ranger Service / Vols	2 Aug	SBC	No				X	X	X	X
2RG3	Railway Field becksides	MG1	5278m ²	Scallop and rake	Ranger Service / Vols	2 Aug	SBC	No				X		X	
2RG4	St. Columbia's Bridge Grassland	MG1	1242m ²	None			SBC	No							
2RG5	The Stripe	MG1	3159m ²	Scallop and rake	Ranger Service / Vols	2,4 Aug	SBC	No	1				X		X
2RG6	The Pound	MG1	1577m ²	None			SBC	No							
3RG1	Stable Field North	MG1	1703m ²	Scallop and rake	Ranger Service / Vols	5 Aug	SBC	No				X		X	
3RG2	Hazel Copse	MG1	2546m ²	Scallop and rake	Ranger	4 Aug	SBC	No	2				X		X

	Grassland		2		Service / Vols										
3RG3	Stable Field West	MG1	2207m 2	Scallop and rake	Ranger Service / Vols	4 Aug	SBC	No				X		X	
3RG4	Stable Building Grassland	MG1	2661m 2	None		N/A	SBC	No	3						
3RG5	Stable Field Path Grassland	MG1	1189m 2	Scallop and rake	Ranger Service / Vols	2 Aug	SBC	No					X		X
3RG6	Eco Park Rockery Grassland	MG1	3571m 2	Cut step	Ranger Service / Vols	Annually	SBC	No	4		X	X	X	X	X
3RG7	Eco Park Rank Grassland	MG1	2999m 2	Cut step	Ranger Service / Vols	Annually	SBC	No	4		X	X	X	X	X
3RG8	Ecology Park Pond Islands	MG1	424m2	Clear shingle Island	Ranger Service / Vols	1	SBC	No	5			X		X	
3RG9	Willowgarth Bridge Rank Grassland	MG1	1266m 2	Scallop and rake	Ranger Service / Vols	5	SBC	No				X		X	
4RG1	Smiths Field South Rank Grassland	MG1	1202m 2	Scallop and rake	Ranger Service / Vols	2	SBC	No				X		X	
4RG2	Smiths Field West Rank Grassland	MG1	2074m 2	None			SBC	No							
4RG3	Main Path Rank Grassland	MG1	805m2	Scallop and rake	Ranger Service / Vols	3	SBC	No				X		X	
4RG4	Glebe Swamp Rank Grassland	MG1	5800m 2	Scallop and rake	Ranger Service / Vols	2	Church	No	8		X		X		
4RG5	Swing Field Rank Grassland	MG1	1180m 2	Scallop and rake	Ranger Service / Vols	4	SBC	No				X		X	

4RG6	Concrete Bridge Rank Grassland	MG1	1240m 2	Scallop and rake	Ranger Service / Vols	2	SBC	No			X		X		
4RG7	North Frognell Rank Grassland	MG1	5000m 2	Scallop and rake	Ranger Service / Vols	1	SBC	No				X		X	
4RG8	Willow Crook Rank Grassland	MG1	3700m 2	Scallop and rake	Ranger Service / Vols	3	SBC	No	8				X		X
4RG9	Mill Batts Beckside	MG1	1485m 2	None			SBC	No							
5RG1	Coal Yard	MG1	12291 m2	None		N/A	Scott Bros	No							
5RG2	Fleets Ponds Beckside	MG1	5926m 2	None		N/A	Scott Bros	No							
6RG1	Fleck's Acre (Gypsum Path	MG1	52849 m2	None		N/A	Scott Bros	No							
6RG2	Air Products Grassland	MG1	42022 m2	None		N/A	Air Products	No	6						
	Total		171 951m2												

Notes

1 Formerly on Amenity annual cutting. Halted due to anti social behavior problems.

2 Scalped November 2001.

3 Tree planting tried several times unsuccessfully. Lack of management may deter antisocial behaviour.

4 As part of Amenity Grass cutting contract.

5 Willows planted on North and Central Island Dec 2000.

6 TVWT now manage to promote access to Portrack marsh.

8. Smiths Field South Rank Grassland & Willow Crook Rank Grassland has access difficulties

8.7 Outline Prescription: Maintain amenity grassland to provide safe easy access for visitors.

Amenity Grassland

Unit	Name	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
3AG1	Eco Park Pond Grassland	1391m2	7 cuts annually	Under Contract	Apr - Oct	SBC	No	1		X	X	X	X	X
3AG2	Visitor Centre Grassland	850m2	7 cuts annually	As 3AG1	Apr - Oct	SBC	No	1		X	X	X	X	X
3AG3	North Side Beckside	2161m2	7 cuts annually	As 3AG1	Apr - Oct	SBC	No	1		X	X	X	X	X
4AG1	Swing Field	1625m2	7 cuts annually	As 3AG1	Apr - Oct	SBC	No	1, 2		X	X			
4AG2	South Picnic Area	247m2	7 cuts annually	As 3AG1	Apr - Oct	SBC	No	1		X	X	X	X	X
4AG3	Main Path Beckside	1100m2	7 cuts annually	As 3AG1	Apr - Oct	SBC	No	1		X	X	X	X	X
4AG4	Sluice Beckside	1178m2	7 cuts annually	As 3AG1	Apr - Oct	SBC	No	1		X	X	X	X	X
	Total	8552m2												

Notes

1 See amenity grass cutting contract in appendix.

2 Leave as Rank Grassland as area often populated by large number of amphibians under threat from a cutting / on going management regime.

8.8 Outline Prescriptions: Maintain wet grassland where practicable on annual rotation with priority given to meadows in the Countryside Stewardship Agreement, preferably baled with aftermath grazing.

Outline Prescriptions: Monitor wet grassland in conjunction with LBAP partnership recognising Grazing Marsh as priority habitat – see-monitoring prescriptions.

Outline Prescriptions: Restrict access during breeding season to promote ground-nesting birds.

Managed and Wet Grasslands

Unit	Name	NVC	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
3G1	Stable Field	MG8	19116m2	Cut or graze annually	Tennant Farmers / Grazier and of Contractors	July / all	SBC	Yes	1		X	X	X	X	X
3G2	Wildflower Meadow	MG?	3384m2	Cut and bale annually	Tennant Farmers / Grazier and of Contractors	Aug	SBC	No	2		X	X	X	X	X
3G3	Wildflower Meadow	MG?	1940m2	Cut and bale annually	Tennant Farmers / Grazier and of Contractors	Aug	SBC	No	2		X	X	X	X	X
3G4	Wildflower Meadow	MG?	1834m2	Cut and bale annually	Tennant Farmers / Grazier and of Contractors	Aug	SBC	No	2		X	X	X	X	X
2WG1	Halliwell and	MG1	13100m2	No cut	.		Golf Club	No	3						

	Tweedlum Field														
2WG 2	Railway Field	MG4	26088m2	Cut and bale annually		July	SBC	Yes				X	X	X	X
2WG 3	Old Enclosure/ Small Railway Field	MG?	14606m2	Cut patches Annually	Tennant Farmers / Grazier and of Contractors	Aug	SBC	Yes	4		X	X	X	X	X
3WG 1	Willowgart h (Grass land bit)	MG10	8822m2	Cut and rake in patches	Tennant Farmers / Grazier and of Contractors	Aug	SBC	Yes				X		X	
3WG 2	Little Field	MG9	6751m2	Graze annually	Tennant Farmers / Grazier and of Contractors	Apr-Oct	SBC	Yes			X	X	X	X	X
3WG 3	Stephenson's Bottom	MG9	23232m2	Graze annually	Tennant Farmers / Grazier and of Contractors	Apr-Oct	SBC	Yes	6		X	X	X	X	X
3WG 4	Mill Meadow / Alder Field North Flutter Carr Grassland	MG10	6780m2	Cut and bale annually	Tennant Farmers / Grazier and of Contractors	Aug	SBC	Yes			X	X	X	X	X
4WG 1	North Flutter Carr Grassland	MG10	4055m2	Cut patches annually	Tennant Farmers / Grazier and of Contractors	Sept 1,3,5	Church	No			X	X	X	X	X
4WG 2	Main Flutter Carr (Wedge	MG1	9435m2	Cut patches annually	Tennant Farmers / Grazier and	Sept 1,3,5	Church	No			X	X	X	X	X

	Field)				of Contractors										
4WG 3	North Rushy Carr (Wedge Field)	MG9	4231m2	Cut patches annually	Tennant Farmers / Grazier and of Contractors	July	SBC	Yes			X	X	X	X	X
4WG 4	Mill Batts (Pylon Field)	MG10	7807m2	Cut or graze annually	Tennant Farmers / Grazier and of Contractors	August	SBC	Yes	5, 8		X	X	X	X	X
4WG 5	Smiths Field	MG10	19998m2	Cut or graze annually	Tennant Farmers / Grazier and of Contractors	August	SBC	Yes			X	X	X	X	X
4WG 6	Willow Crook (Cricket Field)	MG10	4766m2	Cut in patches	Tennant Farmers / Grazier and of Contractors	Aug 1,3,5	SBC	No				X	X	X	X
6WG 1	Layby Pond Sedge Bed	?	6158m2	None			Scott Bros	No							
	Total		182 103m2												

Notes

1. Grazed winter 2001 / 2 by agreement, Cut at least 1 year in 3.
2. On grass cutting contract, Barry and Harrow. Re seeded 2001.
3. Consider formalising access if purchased.
4. Improve access and monitor for Globeflower.
5. Cut and raked 2001 for first time in c. 5 years.
6. Topped, post grazing Sept 2000. Graze again annually
7. Removed from first stewardship agreement.

8. Reports of problems with worms in stock from Clarence's .
9. 2006 bales removed from :
 - smiths field = 56
 - pylon field = 10
 - alder field = 16
 - stable field = 24
 - railway field = 60
- 11 No fields were cut in 2008 due to bad weather
- 10 All of the hay fields in stewardship were cut, baled and had the bales removed in 2009.

8.9 Outline Prescriptions: Maintain current extent of woodland cover and work towards removing non indigenous species and increasing the diversity of native flora. Assume all woodland work as winter.

Prescriptions for thinning assume 1 in 5 to be cleared.

Woodland and Plantations

Unit	Name	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
1W1	Skipka End Mail Plantation	1750m2	Monitor and Thin when needed	Rangers/ Volunteers	2	Golf Club	No	1		X			X	
1W2	Golf club Plantation	22100m2	Feather and Thin	Rangers/ Volunteers	1,4	Golf Club		1			X			
1W3	Golf Club Path Small Plantation	1940m2		Rangers/ Volunteers	Late	Golf Club		1						
1W4	Halliwell and Tweedlum End Plantation	1834m2	Monitor and Thin when needed	Rangers/ Volunteers	Late	Golf Club		2						
2W1	Halliwell Wood	13100m2	Monitor and Thin when needed	Rangers/ Volunteers		Railtrack		2				X		
2W2	Tweedlum Wood	26088m2	Monitor and Thin when needed	Rangers/ Volunteers		Railtrack		2			X			
2W4	Northern Embankment wood	14606m2	Monitor and Thin when needed	Rangers/ Volunteers		SBC							X	
3W1	Willowgarth Embankment wood	8822m2	Monitor and Thin when needed	Rangers/ Volunteers		SBC								
3W2	Pump House Wood	6751m2	Monitor and Thin when	Rangers/ Volunteers		SBC						X		

			needed											
3W3	Willowgarth Wood	23232m2	Monitor and Thin when needed	Rangers/ Volunteers		SBC					X			
3W4	Little Field Wood	6780m2	Monitor and Thin when needed	Rangers/ Volunteers	2	SBC		8			X			
3W5	Stable entrance Plantation	4055m2	Monitor and Thin when needed	Rangers/ Volunteers	4	SBC		7					X	
3W6	Hazel Copse	9435m2	Leave		3	SBC		Leave						
3W7	Peckett's Wood	4231m2	Monitor and Thin when needed	Rangers/ Volunteers	4	SBC				X	X			
3W8	Stable Path Embankment Wood	7807m2	Monitor and Thin when needed	Rangers/ Volunteers		SBC						X		
3W9	Ossier Bed	19998m2	Thin and Coppice	Rangers/ Volunteers	2,4	SBC		3			X			
3W10	Orchard / Study Area	4766m2	Prune	Rangers/ Volunteers	1,3,5	SBC		5						
3W11	Bird Feeder	1222m2	Monitor and Thin when needed	Rangers/ Volunteers	4	SBC						X		
3W12	Ecology Park Pond Wood	1424m2	Monitor and thin .			SBC					X			X
3W13	Ecology Park Willow Plantation	2028m2	Monitor and Thin when needed	Rangers/ Volunteers	5	SBC								
3W14	Mill Meadow Wood	1394m2	Monitor and Thin when needed	Rangers/ Volunteers	4	SBC				X		X		
3W15	Mill Meadow Beck Wood	1394m2	Monitor and Thin when needed	Rangers/ Volunteers		SBC					X			
3W16	Ecology Park Plantation	3877m2	Monitor and Thin when	Rangers/ Volunteers	2,4	SBC		3		X	X			

			needed											
3W17	Car Park Wood	1980m2	None			SBC		Islands trimmed back 08		X				
3W18	Stable Field Plantation	2400m2	Aftercare, thin (ref notes)	Rangers/ Volunteers,	All	SBC		10			X			X
4W1	Allotment Wood	1436m2	Selectively thin branches overhanging the allotment fences, see notes			SBC		9			X	X		
4W2	North Entrance Path Woods	974m2	Monitor and Thin when needed	Rangers/ Volunteers	2	SBC								
4W3	Mill Batts (Pylon Field) Wood	528m2	None			SBC								
4W4	Glebe Sycamore Woods	4958m2	None			SBC								
4W5	Main Path Wood	2351m2	Monitor and Thin when needed	Rangers/ Volunteers	2	Church								
4W6	Flutter Carr Central Wood	4231m2	Monitor and Thin when needed	Rangers/ Volunteers	1,4	Church								
4W7	Flutter Carr East Wood	4756m2	None			Church								
4W8	Flutter Carr Path Wood	3280m2	Monitor and Thin when needed	Rangers/ Volunteers	2	Church						X		
4W9	Frognell Pylon Woodland	3695m2	Monitor and Thin when needed	Rangers/ Volunteers	1,3	SBC		6						X
4W10	Frognell Pond Wood	5321m2	Monitor and Thin when needed	Rangers/ Volunteers	1,3	SBC		6					X	
4W11	Frognell Ditch wood	524m2	Monitor and Thin when	Rangers/ Volunteers	1,3	SBC		6						

			needed											
4W12	Fronell Panel Wood	4158m2	Monitor and Thin when needed	Rangers/ Volunteers	1,3	SBC		6				X		
4W13	Frognell Picnic table wood	766m2	Monitor and Thin when needed	Rangers/ Volunteers	1,3	SBC		6						
4W14	Frognell Bund Path Wood	3695m2	Monitor and Thin when needed	Rangers/ Volunteers	1,3	SBC		6				X		
4W15	Poplar Wood	4118m2	None			SBC								
4W16	Settling Tank Wood	2159m2	Monitor and Thin when needed	Rangers/ Volunteers	3	SBC								X
4W17	A1027 Embankment Wood	2330m2	None			SBC					X			
4W18	Bypass Embankment Wood	3831m2	None			SBC								
5W1	Fleet Road Wood	1710m2	None			Scott Bros						X		
5W2	Fleet Ponds Pylon Wood	8138m2	None			Scott Bros								
	Total	4072m												

Notes

1. Golf Club WGS plantation. 5 year final payment received 2001.
2. Consider extending throughout compartment if purchased as little carr woodland north of railway and sound barrier from A19
3. Planted c. 1996
4. Cut and thinned 2000. Also maintain archway although prone to vandalism
5. Study area path installed 2001.
6. Thinned 1 in 5 Dec 2001

7. Planted under stewardship 2004 (dec 03-jan 04) 25% oak, 25% ash, 10% hazel, 3% apple, 3% birch, 3% elm, 3% hawthorn, 3% cherry, 3% rowan, 5% blackthorn and 1% holly
8. Tilhill pollarded trees under pylons spring 2007
- 9 Trees overhanging fence next to the Allotment on the south side of the Site, were inspected by SBC Arboriculture department in 2009, with the proposal they be selectively thinned and overhanging branches removed.
- 10 Selectively thin trees in stable field plantation, started 2009-1010

8.10 Outline Prescription: Maintain existing hedges in keeping with Countryside Stewardship and best practice guidelines.

Also acknowledge desire of volunteers to hedge lay, which will bias work to that means of management.

Assume all work as winter work and that hedges are not so predictable and these schedules may change but the outlying prescription of sound management remains.

Hedges: Current

Unit	Name	Size	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
2H1	Halliwell and Tweedlum Hedge	74m	None			Golf Club	No							
2H2	Railway Field Hedge North	138m	Gap up	Ranger Service / Volunteers	1, Jan	SBC	Yes				X			
2H3	Railway Field Hedge South	249m	Coppice, Gap up & fence	Ranger Service / Volunteers	2	SBC	Yes							
2H4	The stripe Hedge	121m	Trim as required			SBC	No	1						
3H1	Stable Field North	84m	Trim as required			SBC	Yes	2		X		X		X
3H2	Stable Field West	163m	Lay, Trim as required,			SBC	Yes	2, 9		X	X	X		X
3H3	Stable Field East	149m	Lay	Ranger Service / Volunteers		SBC	No			X		X		X
3H4	Stable Field Entrance Hedge	73m	Cut as required, trim			SBC	Yes	2		X	X	X	X	X
3H5	Stable Field South	120m	Coppice and gap up / lay	Ranger Service / Volunteers	4	SBC	Old	3			X		X	
3H6	Little Field west Hedge	80m	Trim	Ranger Service / Volunteers	1, Dec	SBC	No						X	
3H7	Little Field Ditch	169m	None			SBC	Old	4						

	Hedge													
3H8	Stephensons Bottom West	143m	Trim	Ranger Service / Volunteers	2	SBC	Old	3					X	
3H9	Stephensons Bottom South	142m	Trim	Ranger Service / Volunteers	1, Jan	SBC	Old	5		X				
3H10	Hazel Copse Hedge	59m	Monitor Coppice / Lay	Ranger Service / Volunteers	5	SBC	No					X		X
3H11	Ecology Park Pond Hedge	101m	Trim / Lay as required	Ranger Service / Volunteers	2,3	SBC	No				X			
3H12	Wildflower Meadow Hedge	122m	Trim / Lay as required	Ranger Service / Volunteers	3	SBC	No					X		
3H13	Wildflower Meadow Hedge	125m	Trim / Lay as required	Ranger Service / Volunteers	3	SBC	No					X		
3H14	Wildflower Meadow Hedge	82m	Trim / Lay as required	Ranger Service / Volunteers	3	SBC	No					X		
3H15	Wildflower Meadow Hedge	82m	Trim / Lay as required	Ranger Service / Volunteers	4	SBC	No						X	
3H16	Wildflower Meadow Hedge	79m	Trim / Lay as required	Ranger Service / Volunteers	4	SBC	No						X	
3H17	Wildflower Meadow Hedge	43m	Trim / Lay as required	Ranger Service / Volunteers	4	SBC	No						X	
3H18	Stephensons Bottom Path Hedge	74m	Gap up	Ranger Service / Volunteers	1, Dec	SBC	Yes				X			
3H19	Mill Meadow Wood Hedge	135m	Trim	Ranger Service / Volunteers	4	SBC	No						X	

4H1	Rushby Carr Hedge	183m	Half Coppice	Ranger Service / Volunteers	2	SBC	Old	6						X
4H2	Mill Batts Hedge North	76m	None			SBC	No							
4H3	Mill Batts Hedge South	112m	None			SBC	Old	7						
4H4	Smiths Field Entrance Side Hedge	90m	Trim	Ranger Service / Volunteers	5	SBC	Old					X		
4H5	Main Path Hedge	244m	Trim	Ranger Service / Volunteers	5	Church	Old							X
4H6	Flutter Carr Hedge	122m	Coppice	Ranger Service / Volunteers	5	Church	Old							X
4H7	Smiths Field Long A19 Hedge	100m	Aftercare	Ranger Service / Volunteers	All	SBC	Yes	8			X			X
	Willowgarth Fence		Plant new hedge	Ranger Service / Volunteers		SBC		10				X		
	Total	343m	At 1.5m wide = 5106m²											

Notes.

1. Deter anti social behaviour to John Potters land.
2. Double fenced 2001 / 02
3. Not completed from original Stewardship agreement.
4. Layed prior to fencing 2001
5. First layed on original agreement.
6. Half completed on first agreement.
7. Layed c. 1995 – Do not manage to shelter field and keep private
8. Was scheduled with DEFRA as 239m² but only 100m planted in 2004 due to flooding issues.
9. Stable field west – started to lay 2009.

10. Plant new hedge alongside railway fence (south side) to hide it from public view.
11. Future suggested hedge laying programme (2009) :
 - The hedge leading up to the stables from the centre. This will allow a view of the stable field trees.
 - Lower edge of meadow, continue programme of cutting the hedges around the hay meadows.
 - Lake Side hedge (previously laid 2004/5)
 - Western hedge along Stephenson's Bottom

8.11 Outline Prescription : Maintain existing dense areas of scrub on site to promote nesting birds. Monitor encroachment of scrub on to wetland areas and remove as necessary.

Scrub

[illegible]

Notes

1. Never previously managed.
2. Left after extensive scrub removal when reinstating ditches 2002.

8.12 Outline Prescription: Maintain features as listed in a safe and good condition.

Paths, Furniture, Structures and Interpretation.

Unit	Name	mSize	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
3Gn	Wild Life Garden	1158m2	Litter Pick	Ranger Services / Vols	All	SBC		1		X	X	X	X	X
3CP1	Main Car Park (Due for upgrading)	(1500m2)	Fill potholes as required, landscape	Ranger Services / Vols	As req	SBC		2, 17		X	X			
3CP2	Small Car park	(1500m2)	None			Highways		3,4						
4CP1	South Car park	(750m2)	None			Highways		4						
	Bridges		Treat wood / silt / monitor	Ranger Services / Vols	As req	SBC		5, 14		X	X	X	X	X
	Pond Dipping platform		Maintain, put barriers on platforms 09							X	X	X	X	X
	Bird Screen (section 3)		Maintain	Ranger Services / Vols	As req	SBC				X		X		X
	Stiles (1 at 3H19) and (2 at 3WG1)		Maintain	Ranger Services / Vols	As req	SBC		6		X	X	X	X	X
	Car Park Picnic Area	3 of	Replace benches	Ranger Services / Vols	2	SBC		14			X			
	Seating Section 3	4 of	Replace as required	Ranger Services / Vols	As req	SBC				X			X	
	Seating Section 4	2 of	Replace as required	Ranger Services /	As req	SBC				X			X	

				Vols										
	Main Boardwalk Section 4		Monitor/ Replace	Ranger Services / Vols	Summer	SBC		7		X	X	X	X	X
	Gates		Monitor, replace as required			SBC		8		X	X	X	X	X
	Entrance Signage		Erect and maintain entrance signs							X	X	X	X	X
	Pond Platforms Eco Park Pond	4 of	Resurface as required	Ranger Services / Vols		SBC		9, 15		X	X	X	X	X
	Path Section 1		Monitor	Rangers		SBC		10		X	X	X	X	X
	Path Section 2		Monitor	Rangers		SBC		10		X	X	X	X	X
	Path Section 3		Monitor	Rangers		SBC		10		X	X	X	X	X
	Path Section 4		Monitor	Rangers		SBC		10		X	X	X	X	X
	Path Section 5		Monitor	Rangers		SBC		10		X	X	X	X	X
	Path Section 6		Monitor	Rangers		SBC		11		X	X	X	X	X
	Tree Nursery at 3G1		Maintain	Rangers		SBC				X	X	X	X	X
	Tool Store		Keep tidy / Stocked	Ranger Services / Vols	All	SBC				X	X	X	X	X
	Visitors Centre		Open as scheduled	Ranger Services / Vols	All	SBC				X	X	X	X	X
	The Stable Woodstore		Keep tidy / stocked	Ranger Services / Vols	All	SBC				X	X	X	X	X
	Monitor Panels Section 3 as required		Replace/ clean when required	Ranger Services / Vols	2	SBC		11		X	X	X	X	X
	Monitor Panels Section 4 as required		Replace/ clean when required	Ranger Services / Vols	2	SBC		12		X	X	X	X	X
	Country Park Leaflet		Update as required	Ranger Services /	See notes	SBC								

				Vols										
	Visitor Center Main Display		Replace	Ranger Services / Vols	3	SBC					X		X	
	Monitor benches next to Ecology Park ponds		Paint and maintain	Ranger Services / Vols		SBC		13			X	X	X	X
	Dog Bins		Monitor	Rangers		SBC		16			X	X	X	X
	Salt Bins		Monitor / CFYA maintain and fill	Rangers / SBC CFYA		SBC					X	X	X	X

Notes

- 1 Useful 'wild' recourse for schools.
- 2 Locked for security 4pm daily.
- 3 Nb. Useful as strong storage of slag and surfacing.
- 4 Nb. Dog toilet. Both on Grasscutting contract but not owned by BBV.
- 5 Concrete bridge section 4 belongs on Highways as PROW. Treat other 4 timbers bridges as necessary and remove silt annually
- 6 Only stile is at 3W14
- 7 Turn sleepers over
- 8 Prone to vandalism – replace as necessary
- 9 Resurface north 2 2004
- 10 Manage as part of Amenity grass
- 11 Managed by TVWT to promote access to Portrack
- 12 See Appendix 12
- 13 Two new picnic benches installed in 2009
- 14 The footbridge leading to Railway Field was redecked in 2009 - monitor all bridges for wear and tear.
- 15 In 2009 rails were placed around the pond dipping platforms in the Ecology Park
- 16 6 new dog bins were installed in 2009 at several entrances to the Park, each bin cost £400 to install and came with 1 years free emptying by SBC 'Care For Your Area' refuse dept. After its first initial year the emptying contract was put on a Service Level Agreement.
- 17 On the car park raised banks 1500 daffodil bulbs were planted in autumn 2009.

8.13 Outline Prescription: Monitor significant communities and visitor numbers and make data widely available as appropriate. Act appropriately on any significant data trends. Surveys on Site depend upon the knowledge of the Rangers or those people/organisations prepared to offer their services to the Park.

Environmental Monitoring, Research and Data sharing

Survey	Partners	Who	When	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
Grazing Marsh	LBAP	Assistant Ranger	July	1		X	X	X	X	X
Mammals: Water Shrews	TVWT	Assistant Ranger	Summer	2			X	X	X	X
Butterflies	B. Cons Soc.	Assistant Ranger	Apr-Sept			X	X	X	X	X
Waterside Birds	BTO	Assistant Ranger	Summer				X	X	X	X
Dragonflies	Inst Ecology	Assistant Ranger	Summer				X	X	X	X
Amphibians	Inst Ecology	Assistant Ranger	Spring			X	X	X	X	X
Fish	EA	Environment Agency	Summer				X	X	X	X
Events	SBC	Assistant Ranger	On going			X	X	X	X	X
Visitors	SBC	SBC Countryside dept	On going				X			

Notes

- 1 Surveys are carried out when the Staff and knowledgeable experts are available
2. Set thesis proposal to establish monitoring regime with Sunderland University
- 3 Very difficult to verify but not laborious therefore continue in partnership with TVWT also monitoring beck for signs of mink by visual inspection
4. Butterfly survey transects was part carried out in 2008, not completed.

Outline Prescription: Maintain and promote community involvement in /use of BBVCP

Outline Prescription : Maintain and promote environmental Education provision

Outline Prescription : Maintain and promote programme of Countryside Events

Outline Prescription : Provide advice and assistance in other local conservation initiatives

8.14 Education, Countryside Events, Training and Promotion of Site and Ranger Service.

Activity	Example / target	Who	Seasons	Promotion	Notes	Year	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
Continue Existing Programme of Environmental Education to Schools	Respond to demand and tailor activities to National Curriculum Target 500 pupil days per year	For all providers	On going	Word of mouth, reputation and tradition. SBC's Learning Opportunities Pack	1		X	X	X	X	X
Produce formal Education pack for BBV Country Park	In keeping with Education Packs at other SBC Countryside Sites	Ranger Staff	2	Via SBC web site, 'train' website, direct contact and other Council publications				X			X
Countryside Events	Provide at least 15 themed Countryside Events annually	Whole Community	On going	Posters, Radio, direct media contact			X	X	X	X	X
Community and Uniformed groups	Lead sessions with local groups such as cubs, scouts etc and record as appropriate	All Groups	On going	Word of mouth, reputation and tradition			X	X	X	X	X
Facilitate other Events as appropriate	E.g. Inter Schools Annual Cross Country Run	All groups	On going	Word of mouth, reputation and tradition			X	X	X	X	X
Maintain Community Involvement	Regular programme of varied conservation tasks	Open to all	Thursdays & Sundays	Leaflet, Site leaflet, events programme and SBC website			X	X	X	X	X
Volunteer	Walks, Meals and	All active vols	On going	Internally			X	X	X	X	X

Social Activities	Speakers etc and by request										
Volunteer Site Newsletter	Produce informative material and distribute on quarterly basis	All active vols and display in VC	On going	Refer to at recruitment of vols	2		X	X	X	X	X
Talks	E.g. University of the Third Age, Student visits etc	All groups	On going	Word of mouth, reputation and tradition.			X	X	X	X	X
Promotion / campaigns e.g. National Volunteering Week	Annual Student Recruitment Drive at Middles borough University	Whole community	On request	All relevant media			X	X	X	X	X
Aid local groups where possible and as appropriate	Provide hall for meetings	Schools	Routinely	Routinely and in proposed Education Pack			X	X	X	X	X
Act as donor site	Reed donation as part of LBAP etc	Relevant organisations	On request	Word of mouth and reputation			X	X	X	X	X
Act as 'think tank' and advisory service	Act in advisory role e.g. For wetland restoration.	Site Staff	On request	Through representation on various groups or committees e.g. LBAP steering Group and Action Group			X	X	X	X	X
Maintain commitment to LBAP partnership	Representation on Wetland and Coastal Action Team	Site Staff	On going	Undertaken by TVWT			X	X	X	X	X
Maintain commitment to Health Walks Initiative	Act in partnership with Health Walks Co coordinator	All users as appropriate	On going	Undertaken externally			X	X	X	X	X
Undertake training as appropriate	CMA, Loosehill Hall etc.	Site Staff	Employee Development interviews and 6months review	N/A			X	X	X	X	X
Monitor bird species on bird	Feed up tables and ecology ponds.	Rangers	Autuumn and winter months	N/A				X	X	X	X

tables and Ecology ponds											
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Notes

- 1 Generally schools request habitats, adaptations and seasons, although other activities are provided such as biological classification, lifecycles etc.
- 2 See restrictions on volunteering leaflet

SECTION 9 : Appendices

1. Job Descriptions Billingham Beck Valley
2. Land Ownership Billingham Beck Valley
3. Site Designation Boundaries (LNR & SNCI)
4. List of Vascular Plants recorded within Billingham Beck Valley
5. List of Fungi recorded within Billingham Beck Valley
6. List of Birds recorded within Billingham Beck Valley
7. List of Mammals and Amphibians recorded within Billingham Beck Valley
8. List of Invertebrates recorded within Billingham Beck Valley
9. Countryside Stewardship Agreement
10. Byelaws
11. Wayleaves in Billingham Beck Valley
12. Interpretational Strategy and Panel Locations Map
13. Contract Grass Cutting Schedule
14. Promotion of Countryside Events
15. A Brief History of the local and adopted names for site compartments.

Appendix 1 : Job Descriptions

Countryside Ranger

- Supervise the work of assistant ranger, trainees and seasonal or temporary staff at Billingham Beck Valley Country Park.
- Undertake responsibility for the management of the Billingham Beck Valley Country Park Visitor Centre and oversee the work of the visitor centre information assistant.
- Ensure that good Health and safety practices are maintained by site and voluntary staff to include programmed updating of risk assessments.
- Produce a full programme of countryside events aimed at a wide cross section of the local community.
- Maintain the high level of educational use of Billingham Beck Valley by schools and colleges.
- Lead school parties and other groups on visits to the Country Park.
- Co-ordinate practical site management work including the supervision of contractors and to ensure that criteria set by the Stewardship and Woodland Grant Schemes are attained.
- Ensure that regular site patrols are carried out on land managed by the Billingham Beck Valley Countryside Ranger Service. to act as a deterrence to vandalism and abuse of the countryside and to include the regular removal of litter.
- Maintain a good working relationship with the local police.
- Liase with adjacent landowners in promoting nature conservation and where applicable countryside recreation.
- Promote access into the wider countryside on the public right of way network.
- Review the management plan for Billingham Beck Valley on a five year cycle and produce an annual work programme for the Country Park.
- To liase with Scott Bros in the management of the Norton Bottoms access link and 'layby' pond.
- Co-ordinate natural history surveys and make data available to relevant bodies.
- Prepare reports on request, detailing the work completed by the Billingham Beck Countryside Ranger Service.
- Publicise the work of the countryside service through the local press and media.
- Encourage participation of the local community through a voluntary warden service and contact with local community groups. Give talks on the work of the countryside wardens and related topics to local community and other organisations.

Assistant Countryside Ranger Billingham Beck Valley

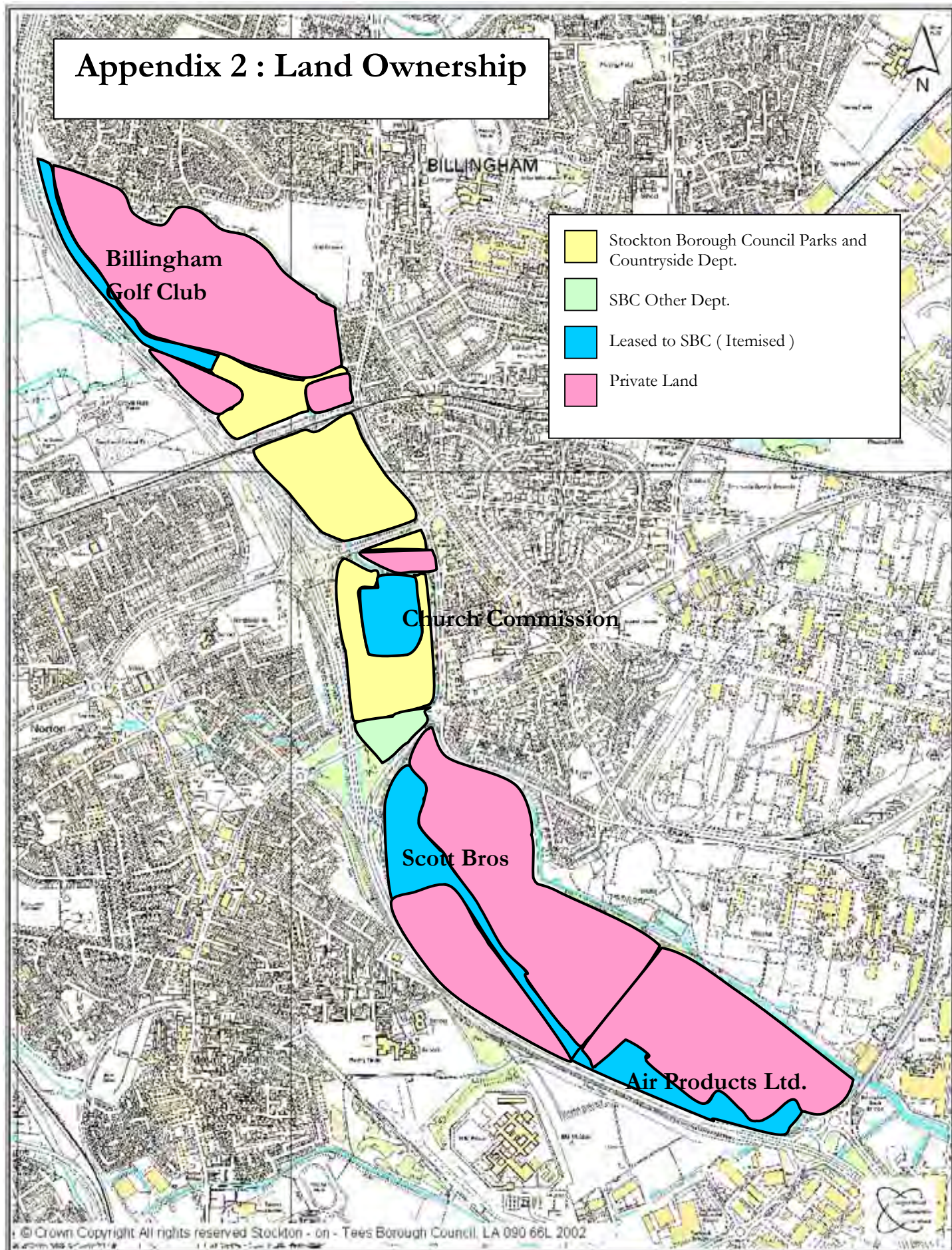
- Assist the countryside ranger in the management of Billingham Beck Valley Country Park and in promoting access to the wider countryside
- Supervise trainee wardens, voluntary wardens, temporary staff and contractors working at Billingham Beck Valley.
- Undertake practical management tasks in accordance with the management plan. To include working with voluntary wardens and work teams made available through local training or employment initiative schemes.
- Carry out natural history surveys and in conjunction with the Countryside Ranger co-ordinate volunteer participation in surveys.

- Assist with the organisation of the Countryside Events programme and take a lead role in running some of the events.
- Lead school parties on educational visits to Billingham Beck Valley and other countryside sites if called upon.
- Take local community groups on guided walks around Billingham Beck Valley Country Park.
- Give talks, on request to Community groups and other interested organisations.
- Assist in the running of a voluntary warden service and produce an annual programme of voluntary warden meetings and social activities.
- To carry out day to day patrols, to include the removal of litter and monitoring the condition of site equipment. (Gates, Stiles, fences etc....).
- To deter abuse of the countryside and ensure that the country code is understood and observed by visitors.
- In the absence of the information assistant staff the Country Park Visitor Centre and shop.

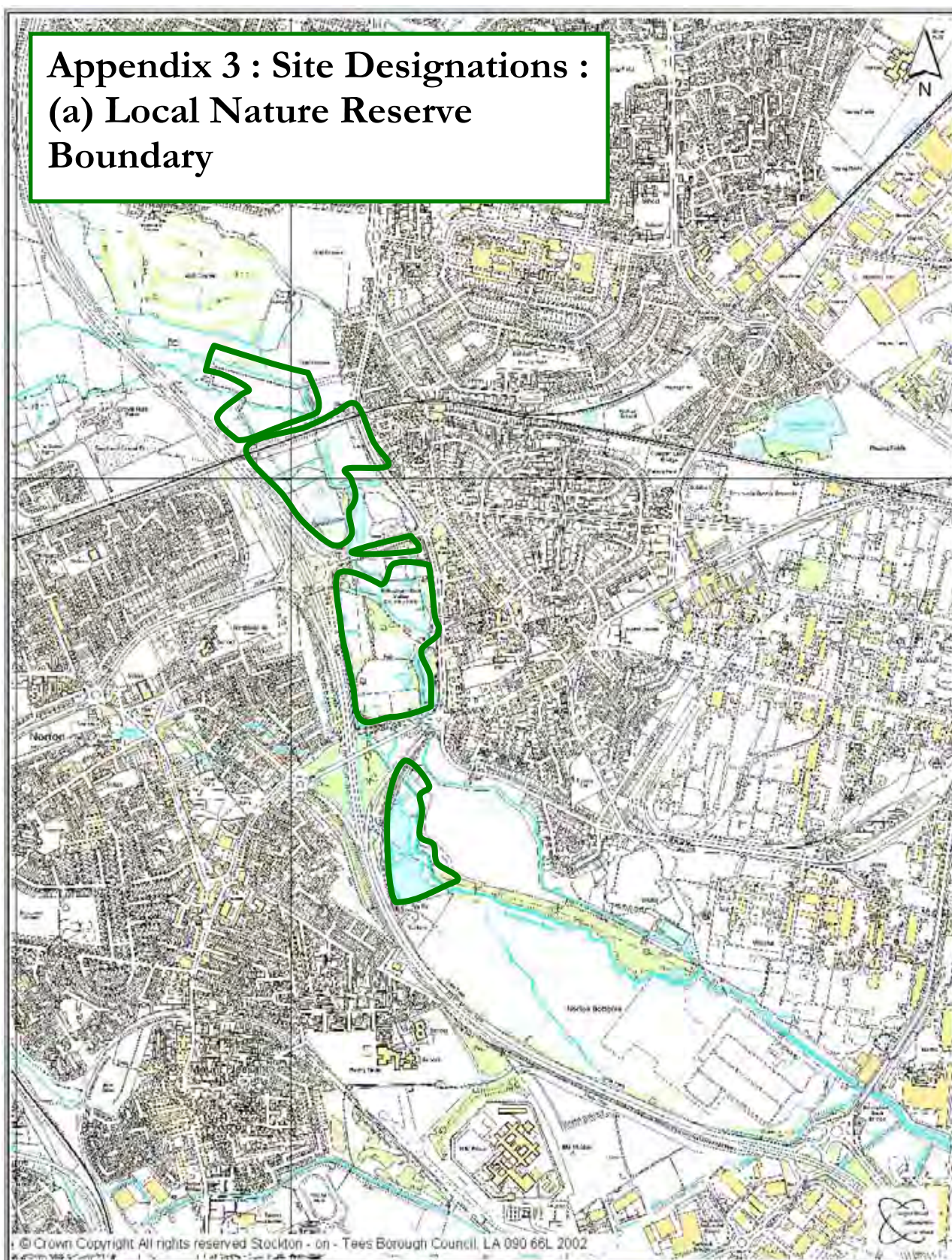
Visitor Centre Information Assistant

- Work in the Country Park Visitor Centre, providing information to visitors and act as a first point of contact with the general public.
- Take bookings for school and other visits and provide advice to teachers and group leaders wishing to organise a visit.
- Assist the Visitor Centre Co-ordinator in the Visitor Centre shop budget and organise the purchase of shop stock.
- Keep accurate financial records of all shop sales, schools donations and other income generated through Countryside Events.
- Assist in the production of the Countryside Events programme and take a lead role in organising Countryside craft activities.
- Assist in publicising the Countryside Events programme, through contact with the local press and the production of posters for display in libraries and other public buildings.
- Provide general secretarial support to the Ranger staff at Billingham Beck

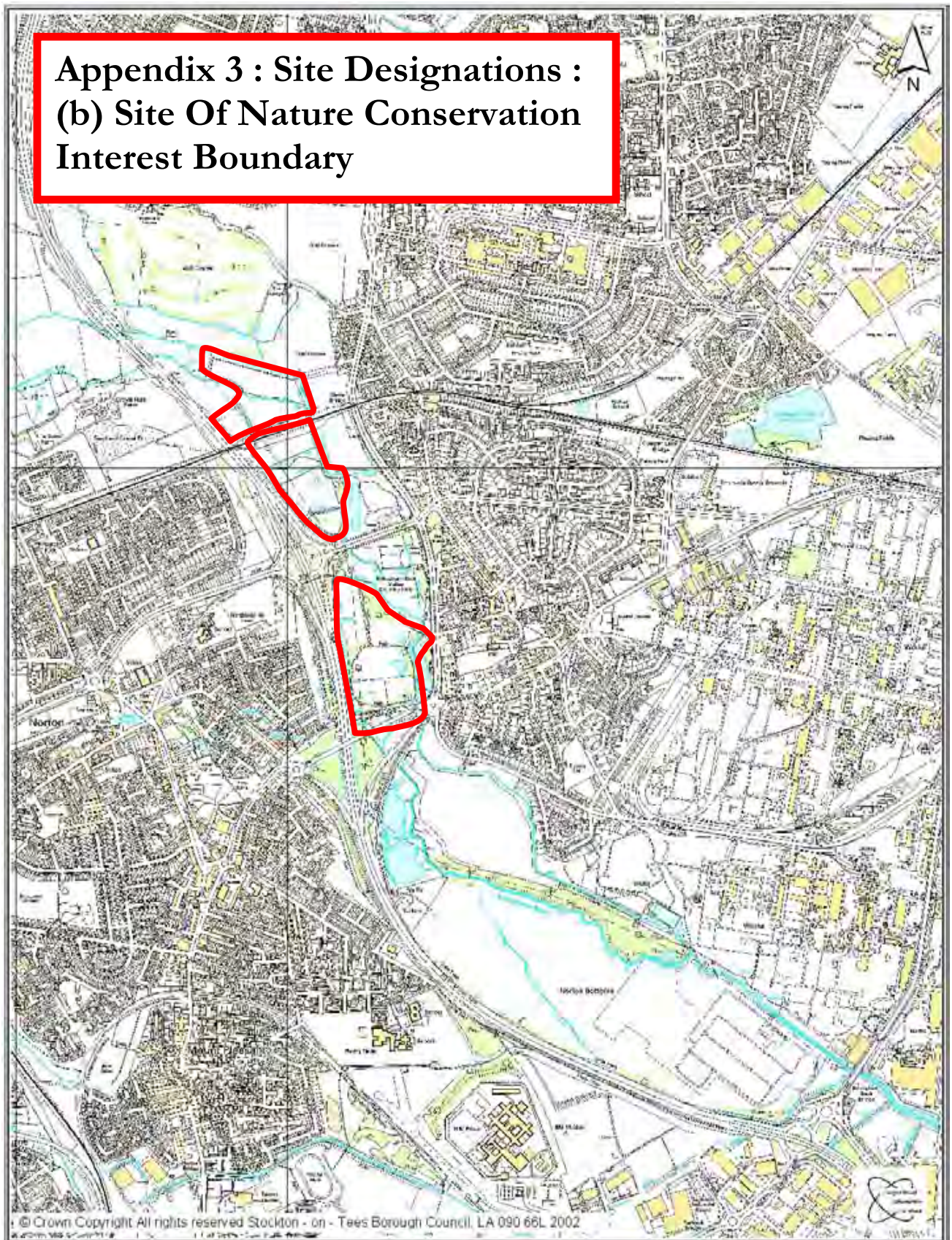
Appendix 2 : Land Ownership



**Appendix 3 : Site Designations :
(a) Local Nature Reserve
Boundary**



**Appendix 3 : Site Designations :
(b) Site Of Nature Conservation
Interest Boundary**



Appendix 4 : List of Vascular Plants Recorded to date within Billingham Beck Valley

Species	Location Recorded (See map for section numbers)
Alder (<i>Alnus glutinosa</i>)	Scattered throughout.
Alsike Clover (<i>Trifolium hybridum</i>)	16,L
Angelica (<i>Angelica Sylvestris</i>)	18,19,23,26.
American Willowherb (<i>Epilobium ciliacum</i>)	16,L
Amphibious Bistort, aquatic (<i>Persicaria amphibia</i>)	(16,P),7
Amphibious Bistort, terrestrial.(<i>Polygonum amphibium</i>)	17,18,19.
Annual Meadow Grass (<i>Poa annua</i>)	16,L
Ash (<i>Fraxinus excelsior</i>)	(16,H),scattered throughout.
Barren Brome (<i>Anisantha sterills</i>)	16,M
Bedstraw, Lady's (<i>Galium Verum</i>)	16,L
Bedstraw, Marsh (<i>Galium aparine</i>)	18,24.
Bindweed, Large. (<i>Calystegia silvatica</i>)	16,O
Birch (<i>Betula sp</i>)	(16,L,O).
Birds Foot Trefoil (<i>Lotus Corniculatus</i>)	(16,L,M), 26.
Bittercress, Large. (<i>Cardamine amara</i>)	6
Bittersweet (<i>Solanum dulcamara</i>)	6,7.
Black Horehound (<i>Ballota nigris ssp foetida</i>)	16,L
Black Medick (<i>Medicago lupulina</i>)	(16,L), 26.
Blackthorn (<i>Prunus spinosa</i>)	(16,H), 26, Planted hedgerows throughout Park.
Bladder Campion (<i>Silene vulgaris ssp vulgaris</i>)	16,M
Bloody Cranes-bill (<i>Geranium sanguineum</i>)	16,L
Bog Pondweed (<i>Potamogeton polygonifolius</i>)	16,P
Branched Bur Reed (<i>Sparganium erectum</i>)	16,P
Bristly Hawksbeard (<i>Crepis setosa</i>)	16,L
Broad Leaved Dock (<i>Rumex obtusifolius</i>)	16,L,M
Broad Leaved Plantain (<i>Plantago major</i>)	16,P
Bugle (<i>Ajuga reptans</i>)	26.
Burdock (<i>Arctium ssp nemorosum</i>)	(16,O),21,Rb.
Burnet, Greater (<i>Sanguisorba officinalis</i>)	9,17,18,19,23,24,26.
Burnet Saxifrage (<i>Pimpinella saxifraga</i>)	16,L,M
Butterbur (<i>Petasites hybridus</i>)	(16,P), Rb.
Buttercup, Creeping (<i>Ranunculus repens</i>)	(16,M,P),1,6,7,9,10,17,18,19,20, 23,26.
Buttercup, Bulbous (<i>Ranunculus bulbosus</i>)	1.
Buttercup, Meadow (<i>Ranunculus acris</i>)	10,17,18,19,20,26.
Campion, Red(<i>Silene dioica</i>)	(16,H),17,18,Rb.

Species	Location Recorded (See map for section numbers)
Campion, White (<i>Silene alba</i>)	26.
Cats Ear (<i>Hypochoeris radicata</i>)	(16,O),1.
Celandine (<i>Ranunculus ficaria</i>)	6,20.
Celery Leaved Crowfoot (<i>Ranunculus scleratus</i>)	(16,P).1.
Centaury, Common (<i>Centaureum erythraea</i>)	(16,O),1.
Charlock (<i>Sinapsis arvensis</i>)	(16,L), 26.
Cherry, Bird (<i>Prunus avium</i>)	(16,O)
Chickweed, Common (<i>Stellaria media</i>)	(16,O),1,20.
Chickweed, Mouse ear (<i>Cerastium holosteoides</i>)	1.
Cleavers (<i>Galium aparine</i>)	1,7,9,17,18,19,20,23,26,Rb.
Clover, Alsike (<i>Trifolium hybridum</i>)	1.
Clover, Hares Foot (<i>Trifolium arvense</i>)	1.
Clover, Hop (<i>Trifolium campestre</i>)	1.
Clover, Red (<i>Trifolium pratense</i>)	(16,L).1.
Clover, Small Yellow (<i>Trifolium dubium</i>)	26.
Clover, White (<i>Trifolium repens</i>)	(16,L,P),26
Cocks Foot (<i>Dactylis glomerata</i>)	(16,L,P),1,17,18,20,26.
Colts-foot (<i>Tussilago farfara</i>)	(16,L,M),1,26,Rb.
Comfrey (<i>Symphytum officinale</i>)	(16,L,M) 6,9,13,17,18,19,Rb.
Corn Chamomile (<i>Anthemis arvensis</i>)	(16,M)
Corn Cockle (<i>Agrostemma githago</i>)	(16,M)
Cornflower (<i>Centaurea cyanus</i>)	(16,M)
Couch, Common (<i>Elytrigia repens ssp repens</i>)	(16,O),1.
Cow Parsley (<i>Anthriscus sylvestris</i>)	(16,O),9,10,17,18,19,20,23,24, Rb, 26.
Cowslip (<i>Primula veris</i>)	(16,M),23,26.
Crab Apple (<i>Malus sylvestris</i>)	(16,O), 21.
Creeping Bent (<i>Agrostis stolonifera</i>)	1,17,18,19.
Creeping Cinquefoil (<i>Potentilla reptans</i>)	(16,L,M),26.
Creeping Soft Grass (<i>Holcus mollis</i>)	1.
Cress, Water (<i>Rorippa nasturtium aquaticum</i>)	16,P
Cress, Winter (<i>Barbarea vulgaris</i>)	(16,L) 6,9,17,18,19,20, Rb.
Crested Dogs Tail grass	26.
Crosswort (<i>Cruciata laevipes</i>)	(16,M), 9,17,20,26.
Cuckoo flower (<i>Cardamine pratensis</i>)	6,8,9,10,14,16,17,18,19,20,23, 24.
Cut-leaved Cranes-bill (<i>Geranium dissectum</i>)	(16,L), 17,18,19,26.
Daisy (<i>Bellis Perennis</i>)	(16,L), 26.
Dames Violet (<i>Hesperis matronalis</i>)	Rb.
Dandelions (<i>Taraxacum officinale agg</i>)	(16,L,M,P),1,9,10,17,18,20,26.
Dock, Curled (<i>Rumex Crispus ssp crispus</i>)	(16,L),1.
Docks (<i>Rumex spp</i>)	7,9,17,18,19,20,23,26,Rb.
Duckweed, Common (<i>Lemna minor</i>)	7
Elder (<i>Sambucus nigra</i>)	(16,O), scattered throughout.
False Oat Grass (<i>Arrhenatherum elatius</i>)	(16,L,M,P),1,17,26.
Fat Hen (<i>Chenopodium album</i>)	(16,O)

Fescue, Red (<i>Festuca rubra</i>)	9,10,17,18,19,26.
Fescue, Meadow (<i>Festuca Pratensis</i>)	18,26.
Field Forget-me-Not (<i>Myosotis aruensis</i>)	(16,M), 1,17,18,19.
Field Speedwell (<i>Veronica persica</i>)	16,O
Figwort, Water (<i>Scrophularia nodosa</i>)	(16,P) 18,19.
Flax (<i>Linum usitatissimum</i>)	(16,P)
Flax, Fairy (<i>Linum catharticum</i>)	1.
Fleabane (<i>Pulicaria dysenterica</i>)	(16,O)
Fleabane, Blue (<i>Erigeron acer</i>)	1.
Flote - grass (<i>Glyceria sp.</i>)	6
Fodder Burnet (<i>Sanguisorba minor ssp muricata</i>)	16,L
Forget-me-not (<i>Myosotis arvensis</i>)	26.
Fumitory (<i>Fumaria officinalis sp</i>)	16,O
Garden Arabis (<i>Arabis caucasia</i>)	16,L
Garlic Mustard (<i>Alliaria petiolata</i>)	(16,O)Rb
Giant Hogweed (<i>Heracleum mantegazzianum</i>)	16,P
Globe flower (<i>Trollius europaeus</i>)	23 * re-introduction.
Goats Beard (<i>Tragopogon pratensis</i>)	16,L
Gorse (<i>Ulex Europaeus</i>)	(16,L), 26.
Great Horsetail (<i>Equisetum telmateia</i>)	16,O
Greater Knapweed (<i>Centaurea scabiosa</i>)	16,L
Greater Plantain (<i>Plantago major</i>)	16,L
Greater Spearwort (<i>Ranunculus lingua</i>)	16,P
Groundsel, Heath (<i>Senecio sylvaticus</i>)	1.
Groundsel, Sticky (<i>Senecio viscosus</i>)	1.
Gypsywort (<i>Lycopus europaeus</i>)	16,P
Hard Rush (<i>Juncus inflexus</i>)	16,L,P
Hawksbeard, Beaked (<i>Crepis vesicaria</i>)	1.
Hawkweed Oxtongue (<i>Picris hieracioides</i>)	16,O
Hawthorn (<i>Crataegus monogyna</i>)	(16,H),9,17,18,19,20,26, Planted hedgerows throughout park.
Hazel (<i>Corylus avellana</i>)	(16, M)
Hedge Bindweed (<i>Calystegia sepium ssp sepium</i>)	16,O
Hedge Mustard (<i>Sisymbrium officinale</i>)	16,L
Hedge Woundwort (<i>Stachys sylvatica</i>)	(16,O),26.
Hemlock (<i>Conium maculatum</i>)	(16,O),1,Rb.
Hemp Agrimony (<i>Eupatorium cannabinum</i>)	(16,O),1.
Hemp Nettle (<i>Galeopsis bifida bifida</i>)	16,O
Herb Robert (<i>Geranium robertianum</i>)	16,L
Hoary Mustard (<i>Hirschfeldia Incana</i>)	16,L
Hogweed (<i>Heracleum sphondylium</i>)	(16,L),1,17,18,19, 26,Rb.
Holly (<i>Ilex aquifolium</i>)	(16,H), 12,21.
Honesty (<i>Lunaria redivia</i>)	(16,O), 8,12.
Iris , Yellow (<i>Iris pseudocaris</i>)	18,19,23.
Ivy (<i>Hedera helix</i>)	11,20.
Ivy, Ground (<i>Glechoma hederacea</i>)	12,20.
Jointed Rush (<i>Juncus articulatus</i>)	16,P

Kidney Vetch (<i>Anthylus vulneraria</i>)	16,L
Knapweed, Common (<i>Centaurea nigra</i>)	(16,L,M), 26.
Knotgrass (<i>Polygonum aviculare</i>)	(16,L),1
Large Bindweed (<i>Calystegia silvatica</i>)	(16,O)
Burdock (<i>Arctium ssp nemorosum</i>)	(16,O)
Long Headed Poppy (<i>Papauer dubium ssp dubium</i>)	(16,O)
Lucerne (<i>Medicago sativa ssp sativa</i>)	(16,O)
Marsh Foxtail (<i>Alopecurus geniculatus</i>)	16,P
Marsh Marigold (<i>Caltha palustris</i>)	18,19,23
Marsh Ragwort (<i>Senecio aquaticus</i>)	16,P
Meadow Cranesbill (<i>Geranium pratense</i>)	(16,M), Rb.
Meadow Foxtail (<i>Alopecurus pratensis</i>)	16,M, common throughout.
Meadow Vetchling (<i>Lathyrus pratensis</i>)	(16,M), 10,17,18,20,26.
Meadowsweet (<i>Filipendula ulmaria</i>)	(16,P) 6,7,9,10,17,18,19,20,23,26.
Michaelmas Daisy (<i>Aster novi belgi</i>)	16
Mint, Water(<i>Mentha aquatica</i>)	(16,P) 19
Mouse-ear, Common (<i>Cerastium fontanum</i>)	10,17,18,19,20,26.
Mugwort (<i>ariemisia vulgaris</i>)	(16,L,M), 1, 26, Rb.
Musk Mallow (<i>Malva moschata</i>)	(16,L)
Nettle (<i>Urtica dioica</i>)	(16,P,L),1,9,10,17,18, 19,20,26, Rb.
Nipplewort (<i>Lapsana communis</i>)	16,O
Oak (<i>Quercus robur</i>)	
Orache, Common (<i>Atriplex patula</i>)	16,O
Orchid, Bee (<i>Ophrys apifera</i>)	A19 verge adjacent to 9
Orchid, Common Spotted (<i>Dactylorhiza fuchsii</i>)	1, 16, A19 verge adjacent to 9,26.
Orchid, Early Purple (<i>Orchis mascula</i>)	1,16.
Oxeye Daisy (<i>Leucanthemum vulgare</i>)	(16,L), 26.
Pepper Saxifrage	26.
Perennial Rye Grass (<i>Lolium perenne</i>)	(16,L,P) + scattered throughout park.
Pignut (<i>Conopodium majus</i>)	26.
Pineappleweed (<i>Matricaria matricaroides</i>)	16,L
Pink Water Speedwell (<i>Veronica catenata</i>)	16,P
Pondweed, Floating (<i>Potamogeton natans</i>)	7
Pondweed, Curly (<i>Lagarosiphon major</i>)	(16,P)
Poplar, White (<i>Populus alba</i>)	(16,O)
Poplar, Black (<i>Populus nigra</i>)	20
Poplar, Lombardy (<i>Populus nigra italica</i>)	(16,O)
Poplar, Aspen (<i>Populus tremula</i>)	(16,O)
Poppy (<i>Papaver rhoeas</i>)	16,M
Prickly-Sow-Thistle (<i>Sonchus asper</i>)	16,L
Purple Spurge (<i>Euphorbia pepelis</i>)	16,L
Ragged Robin (<i>Lychnis flos cuculi</i>)	(16, P)7,17,18,19,20,23,26.
Ragwort (<i>Senecio jacobae</i>)	(16,L),1,26
Ragwort, Oxford (<i>Senecio squallidus</i>)	1.
Rape (<i>Brassica napus</i>)	(16,O)
Red Bartsia (<i>Odontites vernus</i>)	(16,L),1.

Red Dead-Nettle (<i>Lamium purpureum</i>)	(16,L)
Red Goosefoot (<i>Chenopodium rubrum</i>)	1.
Redshank (<i>Pericaria maculosa</i>)	16,O
Reed Canary Grass (<i>Phalaris arundinacea</i>)	(16,L,P) 1,6,7,4,13,17,18,19,23,26.
Reed, Common (<i>Phragmites australis</i>)	2,3,6,7,19,26.
Reedmace (<i>Typha latifolia</i>)	(16,P), W2, W7.
Reed Sweet Grass (<i>Glyceria maxima</i>)	(16,P) 6,7,9,13,17,18,19,23.
Reflexed Saltmarsh Grass (<i>Puccinallia distans</i>)	1.
Ribwort Plantain (<i>Plantago lanceolata</i>)	(16,L,M), 26.
Rosa sp.	(16,H), 1,26.
Rough Meadow grass (<i>Poa trivialis</i>)	7,9,17,18,19,20,26.
Rowan (<i>Sorbus aucuparia</i>)	(16,H,O),26.
Rush, Hard (<i>Juncus inflexus</i>)	6,7,13,17,18,23.
Rush, Jointed (<i>Juncus articulatus</i>)	7.
Rush, Sea Club (<i>Scirpus maritimus</i>)	1.
Rush, Soft (<i>Juncus effusus</i>)	(16,P) 7,18,23.
Rush, Toad (<i>Juncus bufonius</i>)	1.
Scarlet Pimpernel (<i>Anagallis major</i>)	(16,O).
Scented Mayweed (<i>Matricaria recutita</i>)	16,O
Scentless Mayweed (<i>Tripleurospermum maritimum</i>)	16,O
Scots Pine (<i>Pinus sylvestris</i>)	(16,O),26.* recent plantings.
Scurvy Grass (<i>Cochlearia officinalis</i>)	(16,O)
Sedge, Brown (<i>Carex disticha</i>)	6,7,9,17,18,19,23.
Sedge, Carnation (<i>Carex panicea</i>)	26.
Sedge, Hairy (<i>Carex hirta</i>)	26.
Sedge, Glaucous (<i>Carex flacca</i>)	26.
Sedge, Greater pond (<i>Carex riparia</i>)	6,7,19,23.
Sedge, Lesser pond (<i>Carex acutiformis</i>)	6,7, 18,19,26.
Self Heal (<i>Prunella vulgaris</i>)	26.
Shepherds Purse (<i>Capsella bursapastoris</i> agg.)	(16,O).
Silverweed (<i>Potentilla anserina</i>)	(16, O), 26.
Smooth Meadow Grass (<i>Poa pratensis</i>)	1.
Smooth-Sow-Thistle (<i>Sonchus oleraceus</i>)	16,L
Soft Brome (<i>Bromus hordeaceus</i>)	18,20.
Sorrel , Common (<i>Rumex acetosa</i>)	9,10,17,18,19,20,26.
Spear Leaved Orache (<i>Atriplex prostrata</i>)	(16,L).1.
Speedwell, Bird's Eye (<i>Veronica Chamaedrys</i>)	26.
St. John's Wort (<i>Hypericum perforatum perforate</i>)	(16,L), 26.
Stitchwort, Lesser (<i>Stellaria graminea</i>)	(16,O), Rb.
Stitchwort, Greater (<i>Stellaria holostea</i>)	(16,O), Rb.
Sweet Vernal grass	26.
Tall Melilot (<i>Melilotus altissimus</i>)	(16,L,P)
Tall Rocket (<i>Sisymbrium altissimum</i>)	1.
Tansy (<i>Tanacetum vulgare</i>)	(16,O), Rb.
Thistle, Creeping (<i>Cirsium arvense</i>)	(16,L,M),1, 9,17,18,20,26.
Thistle, Marsh (<i>Cirsium palustre</i>)	26.
Thistle, Spear (<i>Cirsium vulgare</i>)	(16,L),26.
Thistle, Sow, Perrenial (<i>Sonchus arvensis</i>)	1.

Thistle, Welled (<i>Cardus acanthoides</i>)	1.
Thyme Leaved Sandwort (<i>Arenaria serpyllifolia</i>)	1.
Timothy (<i>Phleum praiense</i>)	(16,L,P)
Toadflax, Common (<i>Linaria vulgaris</i>)	(16,L),1.
Tufted Hair Grass (<i>Deschampsia cespitosa</i>)	(16,M,P)1, 6,9, 17,18,19,23,26.
Tufted Vetch (<i>Vicia cracca</i>)	(16,L,M)
Upright Hedge Parsley (<i>Torilis japonica</i>)	(16,P)
Valerian, Common (<i>Valeriana officinalis</i>)	(16,O), 19,23.
Vetch, Tufted (<i>Vicia cracca</i>)	26.
Vetch, Hairy (<i>Vicia hirta</i>)	26
Vetch, Common (<i>Vicia sativa</i>)	26.
Vetch, Bush (<i>Vicia sepium</i>)	26.
Vetch, Narrow leaved (<i>Vicia angustifolia</i>)	1.
Violet, Dog (<i>Viola riviniana</i>)	20.
Violet, Sweet (<i>Viola odorata</i>)	20.
Vipers Bugloss (<i>Echium Vulgare</i>)	(16,L)
Wall Rocket, Annual (<i>Diplotaxis muralis</i>)	1.
Wall Rocket, Perrenial (<i>Diplotaxis tenuifolia</i>)	1
Water Crowfoot (<i>Ranunculus aquatilis</i>)	(16,P)
Water Plantain (<i>Anisma plantago-aq</i>)	7
Weld (<i>Reseda luteola</i>)	(16,L,O)
Welled Thistle (<i>Carduus acanthoides</i>)	16,P
White Dead Nettle (<i>Lamium aubum</i>)	(16,O), Rb.
White Poplar (<i>Populus alba</i>)	(16,O)
White Ramping Fumitory (<i>Fumaria capreolata</i>)	(16,L)
Wild Carrot (<i>Daucus carota ssp carota</i>)	(16,L,M)
Wild Mignonette (<i>Reseda lutea</i>)	(16,L),1
Wild Oat (<i>Avena fatua</i>)	(16,L)
Wild Radish (<i>Raphanus raphanistrum ssp raphanistrum</i>)	(16,O)
Wild Turnip (<i>Brassica rapa.</i>)	1,9,17,18,19,20,26.
Willow (<i>Salix sp.</i>)	(16,P) + scattered throughout park.
Willowherb, Great Hairy (<i>Epilobium hirsutum</i>)	(16,L,P)1, 6,7,9,13,17,18, 19,20,23,24,26,Rb.
Wood Avens (<i>Geum urbanum</i>)	(16,O),20.
Yarrow (<i>Achillea millefolium</i>)	(16,L,M),26.
Yellow Oat Grass (<i>Trisetum flavescens</i>)	16,M
Yellow Rattle (<i>Rhinanthus minor ssp minor</i>)	16,L
Yorkshire Fog (<i>Holcus lanatus</i>)	(16,L,P),1,9,17,18,19,20,26.

Key to Symbols

Ecology Park Hedgerows	H
Ecology Park Limestone rockery area	L
Ecology Park Meadow area	M
Ecology Park Pond & immediate area	P
Other parts of Ecology Park	O

Riverbanks throughout Country park area.	Rb
See compartment map for key to section numbers.	

Ecology Park records - Pat Wood and Ian Lawrence with their natural history class 1996.
 Other records- Chris Lowe Cleveland Wildlife Trust Botanical Recorder 1993, R.T. McAndrew 1985 and Section I, Ian Lawrence 1989, Countryside Warden staff 1987 -1997.
 Bee Orchid - First reported by John Marshall 1995.
 Areas not yet fully surveyed are compartments : 8, 11,12,14,15 and 21.

Appendix 5 List of Fungi recorded to date Billingham Beck Valley

Species list compiled by Alex Weir & Alan Legg 31st May 1995.	
<i>Acanthophiobulus helicosporus</i> (new vc 66 record)	
<i>Apiospora montagnei</i>	
<i>Armillaria mellea</i>	
<i>Auricularia auricula-judae</i>	
<i>Bolbitius vitellinus</i>	
<i>Botryosphaeria stevensii</i>	
<i>Calycellina phalaridis</i>	
<i>Ceriporai viridans</i> (new vc 66 record)	
<i>Coprinus domesticus</i>	
<i>Coprobria granulata</i>	
<i>Coriolus versicolor</i>	
<i>Crocicreas cyathicula</i>	
<i>Crocicreas starbaeckii</i>	
<i>Cytospora salicis</i> (new vc 66 record)	
<i>Dacrymyces stillatus</i>	
<i>Dasyscyphus mollissimus</i>	
<i>Dasyscyphus nudipus</i>	
<i>Dasyscyphus virgineus</i>	
<i>Diapleella clivensis</i> (new vc 66 record)	
<i>Diaporthe arctii. var artemisiae</i>	
<i>Ditopella ditopa</i>	
<i>Entyloma ficariae</i>	
<i>Hyaloscypha hyalina</i>	
<i>Hymenoscyphus repandrum</i>	
<i>Lachnum acutipilum</i>	
<i>Lasiosphaeria hirsuta</i> (new vc 66 record)	
<i>Leptosphaeria acuta</i>	
<i>Leptosphaeria caricis</i> (new vc 66 record)	
<i>Leptosphaeria culmicola</i> (new vc 66 record)	
<i>Lophiostoma semiliberum</i>	
<i>Lophodermium arundinaceum</i> (new vc 66 record)	
<i>Melampsorella epitea</i>	
<i>Melampsorella symphytii</i> (new vc 66 record)	
<i>Mollisia cinerea</i>	
<i>Mollisia hydrophila</i> (new vc 66 record)	

<i>Mollisia melaleuca</i>
<i>Mollisiopsis lanceolata</i> (new vc 66 record)
<i>Niptera pilosa</i>
<i>Nitschkia copularis</i>
<i>Ophiovalsa suffusa</i>
Species - Fungi
<i>Periconia cf laminella</i>
<i>Pezizella eburnea</i> (new vc 66 record)
<i>Phellinus igniarius</i>
<i>Pleurophragmium parvisporum</i> (new vc 66 record)
<i>Pleurotus cornucopiae</i>
<i>Psathyrella candolleana</i>
<i>Pseudopeziza trifolii</i>
<i>Puccinia caricina</i>
<i>Puccinia phragmitidis</i>
<i>Puccinia punctiformis</i>
<i>Pyrenopeziza artemisiae</i> (new vc 66 record)
<i>Septocytia ruborum</i>
<i>Tapesia knieffii</i> (new vc 66 record)
<i>Tricholoma gambosum</i>
<i>Trimmatostroma betulinum</i>
<i>Triphragmium ulmariae</i>
<i>Urocystis agropyri</i> (new vc 66 record)
<i>Uromyces geranii</i>
<i>Uromyces valeriane</i>
<i>Ustilago longissima</i> (new vc 66 record)
<i>Volutella melanoma</i> (new vc 66 record)
<i>Xenodochus carbonarius</i>
<i>Xylaria longipes</i>

Appendix 6 List of Birds recorded to date Billingham Beck Valley

Species	Status	Location (recorded)	Preferred habitat
Black Headed Gull (<i>Larus ridibundus</i>)	Common winter visitor. Breeding not confirmed	Section I,II,III,IV	Coastal saltmarshes, freshwater lakes & marshes, farmland.
Blackbird (<i>Turdus merula</i>)	Common resident Breeding	Section I,II,III,IV.	Scrub, hedgerow, woodland.
Blackcap (<i>Sylvia atricapilla</i>)	Summer visitor Presumed breeding	Section II,III,IV	Woodland
Blue Tit (<i>Parus caeruleus</i>)	Common resident Breeding	Section I,II,III,IV.	Scrub, hedgerow, woodland.
Brambling (<i>Fringilla montifringilla</i>)	occasional winter visitor	Section II,III ????	Scrub, hedgerow, woodland.
Bullfinch (<i>Pyrrhula pyrrhula</i>)	Occasional visitor	Section II,III.	Scrub, hedgerow, woodland.
Canada Goose (<i>Branta canadensis</i>)	Occasional visitor	Section III	Open water, Marsh & grassland.
Carriion Crow (<i>Corvus corone corone</i>)	Common resident Breeding	Section I,II,III,IV.	Scrub, hedgerow, woodland.
Chaffinch (<i>Fringilla coelebs</i>)	Common resident Breeding	Section I,II,III,IV.	Scrub, hedgerow, woodland.
Chiffchaff (<i>Phylloscopus collybita</i>)	Regular summer visitor, breeding status unknown.	Section II,III	Woodland, scrub.
Collared Dove (<i>Streptopelia decaocto</i>)	Common resident Presumed breeding.	Section I,II,III	Scrub, woodland, gardens.
Common Gull (<i>Larus Canus</i>)	Rare visitor		Coastal
Common Sandpiper (<i>Actitis hypoleucis</i>)	Occasional winter visitor	Section I, III	Upland breeder, winter visitor to estuaries, pools & reservoirs.
Common Tern (<i>Sterna hirundo</i>)	Occasional summer visitor	Section I	Open water, marsh
Coot (<i>Fulica atra</i>)	Common resident Breeding	Section II,III	lowland pools and rivers
Cormorant (<i>Phalacrocorax carbo</i>)	Occasional visitor	Section I	Coastal
Corn Bunting (<i>Miliaria calandra</i>)	Current status unknown		Hedgerows, cereal farmland.
Cuckoo (<i>Cuculus canorus</i>)	Occasional summer visitor		Woodland, scrub, farmland.
Curlew (<i>Numenius arquata</i>)	Occasional summer visitor		Marsh, wet grassland

Species	Status	Location (recorded)	Preferred habitat
Dipper (<i>Cinclus cinclus</i>)	Current status unknown		Fast flowing streams or sometimes by weirs
Dunnock (<i>Prunella modularis</i>)	Common resident Breeding	Section I,II,III,IV	Scrub, hedgerow, wood.
Fieldfare (<i>Turdus pilaris</i>)	Common winter visitor.	Section II,III,IV	Scrub, hedgerow, wood.
Garden Warbler (<i>Sylvia borin</i>)	Occasional summer visitor, breeding status unknown	Section II,III	Scrub, wood.
Goldfinch (<i>Carduelis carduelis</i>)	Common resident Breeding	Section II,III,IV	Scrub, hedgerow, wood.
Grasshopper Warbler (<i>Locustella naevia</i>)	Occasional summer visitor, breeding status unknown	Section II,III	Tall herbage, bramble, sedges or rushes.
Great Black Backed Gull (<i>Larus marinus</i>)	Common winter visitor	Section II,III	Marsh, farmland
Great Spotted woodpecker (<i>Dendrocopos Major</i>)	Rare Visitor		Woodland
Great Tit (<i>Parus major</i>)	Common resident breeding	Section II,III,IV	Scrub, hedgerow, wood.
Greenfinch (<i>Carduelis chloris</i>)	Resident breeding	Section II,III,IV	Scrub, hedgerow, wood.
Grey Heron (<i>Ardea cinerea</i>)	Frequent visitor	Section I,II,III,IV	Marsh, open water.
Grey partridge (<i>Perdix perdix</i>)	Resident breeding	Section I,III	Farmland
Grey Wagtail (<i>motacilla cinerea</i>)	Occasional winter visitor	Section III	Fast flowing water
Herring Gull (<i>Larus argentatus</i>)	Common winter visitor.	Section I, II, III	Coastal, may feed on farmland
House Martin (<i>Delichon urbica</i>)	Summer visitor	Section I, II, III	Buildings
House Sparrow (<i>Passer domesticus</i>)	Breeding resident	Section II, III, IV	Buildings, gardens, scrub.
Jackdaw (<i>Corvus monedula</i>)	Occasional visitor		Buildings, woodland
Jay (<i>Garrulus glandarius</i>)	Rare visitor	Section III	Wood
Kestrel (<i>Falco tinnunculus</i>)	Breeding resident	Section II, III	
Kingfisher (<i>Alcedo atthis</i>)			
Lapwing (<i>Vanellus vanellus</i>)	Regular winter visitor	Section II, III	

Species	Status	Location (recorded)	Preferred habitat
Long Tailed Tit (<i>Aegithalos caudatus</i>)	Regular visitor, possible breeding	Section II, III	Scrub, wood
Magpie (<i>Pica Pica</i>)	Breeding resident	Section I, II, III	Scrub, wood
Mallard (<i>Anas platyrhynchos</i>)	Breeding Resident	Section II,III	Open Water
Marsh Tit (<i>Parus palustris</i>)	Rare visitor		Scrub, wood
Meadow Pipit (<i>Anthus pratensis</i>)	Winter visitor	Section I, II, III	Rough grassland
Mistle Thrush (<i>Turdus viscivorus</i>)	Resident, breeding status unknown	Section III	Woodland
Moorhen (<i>Gallinula chloropus</i>)	Breeding resident	Section II, III	Open Water, marshland.
Mute Swan (<i>Cygnus olor</i>)	Breeding resident	Section III	Open Water
Pheasant (<i>Phasianus colchicus</i>)	Resident	Section II	Woodland
Pied Wagtail (<i>Motacilla alba yarrellii</i>)	Resident, presumed breeding	Section II, III	Beck and marsh
Pochard (<i>Aythya ferina</i>)	Rare winter visitor	Section III	Open water
Redpoll (<i>Carduelis flammea</i>)	Resident, presumed breeding		Wood
Redshank (<i>Tringa totanus</i>)	Infrequent winter visitor	Section I	Marsh
Redwing (<i>Turdus iliacus</i>)	Regular winter visitor	Section II, III, IV	Hedgerow and woodland
Reed Bunting (<i>Emberiza schoeniclus</i>)	Resident breeding	Section II, III	Scrub and tall grassland
Reed Warbler (<i>Acrocephalus scirpaceus</i>)	Summer visitor, breeding	Section I	Tall reeds
Robin (<i>Erithacus rubecula</i>)	Breeding resident	Section II, III	Scrub and wood
Rook (<i>Corvus frugilus</i>)	Regular visitor		Wood, farmland
Sand Martin (<i>Riparia riparia</i>)	Summer visitor	Section I, II, III	Sandy banks
Sedge Warbler (<i>Acrocephalus schoenobaenus</i>)	Summer visitor, breeding	Section I, II, III, IV	Reed bed and marsh
Siskin (<i>Carduelis spinus</i>)	Occasional visitor	Section II,III	Summer woodland Winter often riversides.
Skylark (<i>Alanda arvensis</i>)	Resident, breeding	Section I	Grassland, marsh
Snipe (<i>Gallinago gallinago</i>)	Resident breeding	Section I	Marshland

Species	Status	Location (recorded)	Preferred habitat
Song Thrush (<i>Turdus philomelos</i>)	Resident, breeding status unknown	Section III	Hedgerow
Sparrowhawk (<i>Accipiter nisus</i>)	Regular visitor	Section II,III,IV	Scrub, open grassland
Starling (<i>Sturnus vulgaris</i>)	Breeding resident	Section III,IV	Farmland, gardens, buildings.
Stock Dove (<i>Columba oenas</i>)	Occasional visitor	Section III	Farmland
Swallow (<i>Hirundo rustica</i>)	Common summer visitor	Section I, II, III	Buildings
Swift (<i>Apus apus</i>)	Common summer visitor	Section I, II, III	Breeds on buildings
Tawny Owl (<i>Strix aluco</i>)	Occasional visitor	Section III	Wood
Teal (<i>Anas crecca</i>)	Winter visitor, rare	Section III	Open water
Tree Sparrow (<i>Passer montanus</i>)	Occasional visitor	Section III	
Treecreeper (<i>Certhia familiaris</i>)	Resident, breeding status unknown	Section II, III	Wood
Tufted Duck (<i>Aythya fuligula</i>)	Occasional winter visitor	Section III	Open water
Water Rail (<i>Rallus aquaticus</i>)	Rare visitor	Section II	Marsh
Whitethroat (<i>Sylvia communis</i>)	Summer visitor, breeding	Section II, III, IV	
Whooper Swan (<i>Cygnus cygnus</i>)	Occasional winter visitor	Section I, III	Scrub, hedgerow and open water
Willow Tit (<i>Parus montanus</i>)	Breeding resident	Section II,III	Scrub, woodland, marsh
Willow Warbler (<i>Phylloscopus trochilus</i>)	Summer visitor, breeding	Section II, III	Scrub and hedgerow
Woodpigeon (<i>Columba palumbus</i>)	Breeding resident	Section I, II, III	Wood
Wren (<i>Troglodytes troglodytes</i>)	Resident breeding	Section II, III, IV	
Yellowhammer (<i>Emberiza citrinella</i>)	Resident, breeding status unknown	Section II,III	Wood and hedgerow

Appendix 7 : List of Mammals and Amphibians Billingham Beck Valley

Species	Status	Location (recorded)	Preferred habitat
Hedgehog (<i>Erinaceus europaeus</i>)	Common resident. breeding	Section III, IV	Scrub, woodland, Hedgerows.
Common Shrew (<i>Sorex araneus</i>)	Resident, presumed common breeding	Section II,III,IV	Woodland, rank grassland, marsh.
Pygmy Shrew (<i>Sorex minutes</i>)	Resident, presumed common breeding	Section II,III	Scrub, rank grassland
Water Shrew (<i>Neomys aquaticus</i>)	Resident, presumed common breeding	Section II	Flowing water
Mole (<i>Talpa europaea</i>)	Resident,common breeding	Section III,IV	No definite preference
Pipistrelle bat (<i>Pipistrellus pipistrellus</i>)	Regular visitor May occ. roost	Throughout Roost Section III	Particularly feed over marsh and water.
Rabbit (<i>Oryctolagus cuniculus</i>)	Resident,common breeding	Section III, IV	Wood, Scrub and grassland.
Bank Vole (<i>Clethrionomys glareolus</i>)	Resident, presumed common breeding	Section III	Wood, Scrub and Hedgerow
Water Vole (<i>Arvicola amphibius</i>)	Current Status unknown - previously common.	Beck	Open water
Short Tailed Vole (<i>Campagnol agreste</i>)	Current status unknown- previously recorded		Wood, Scrub and grassland.
Grey Squirrel (<i>Neosciurus carolinensis</i>)	Occasional Visitor	Section III, IV	Woodland
Brown Hare (<i>Lepus capensis</i>)	Occasional Visitor	Section III, IV	Woodland / farmland.
Red Fox (<i>Vulpes vulpes</i>)	Resident,common breeding	Section I,III,IV	Woodland, scrub.
Brown Rat (<i>Rattus norvegicus</i>)	Resident,common breeding	Section III	Opportunist.
Stoat (<i>Mustela erminea</i>)	Resident, presumed common breeding	Section IV	
Weasel (<i>Mustela nivalis</i>)	Resident, presumed common breeding	Section III	
Wood Mouse (<i>Sylvaemus sylvaticus</i>)	Probably scarce breeding resident	Section III	Scrub / Hedgrows
Harvest Mouse (<i>Micromys minutes</i>)	Current status unknown.		Rough grassland / cornfields

Appendix 8 : List of Invertebrates recorded to date Billingham Beck Valley

Insecta	Order, sub-order or Family	Species (if known.)
- aquatic / semi-aquatic.		
Alderfly Larvae	<i>Sialidae</i>	
Blackfly larva	<i>Diptera ,Simuliidae</i>	
Caddis fly	<i>Trichoptera</i>	
Crane fly Larva	<i>Diptera ,Tipulidae</i>	
Damselfly	<i>Odonata, Anisoptera</i>	<i>Calopteryx splendens , Coenagrion puella.</i>
Diving Beetle	<i>Coloptera, Dysticidae</i>	<i>Dytiscus marginalis</i>
Dragonfly	<i>Odonata, Zygoptera</i>	<i>Sympetrum sanguineum , Anax imperator.</i>
Greater Water boatman	<i>Hempitera, Heteroptera, Notonectidae</i>	<i>Notonecta glauca</i>
Horse fly larvae	<i>Diptera ,Tabanidae</i>	
Lesser Water boatmen	<i>Hempitera, Heteroptera, Corixidae.</i>	<i>Corix punctata</i>
Mayfly	<i>Ephemeroptera , Baetidae</i>	
Non red Chironomids	<i>Diptera, Chironimidae</i>	
Pond Skater	<i>Hempitera , Gerridae</i>	
Rat tailed maggot	<i>Diptera ,Syriphidae</i>	
Red Chironomids	<i>Diptera ,Chironomidae</i>	
Water Scorpion	<i>Hempitera , Nepidae</i>	
Whirligig Beetle	<i>Coloptera, Gyrinidae</i>	
-Terrestrial		
Moths & Butterflies.	Lepidoptera	Angle Shades (<i>Phologophora meticulosa</i>)
		Barred Straw (<i>Eulithis pyraliata</i>)
		Beaded Chestnut (<i>Agrochola lychnidis</i>)
		Beautiful Yellow Y (<i>Autographa pulchrina</i>)
		Blood Vein (<i>Timandra griseata</i>)
		Bordered White (<i>Bupalus piniaria</i>)
		Brimstone Moth (<i>Opisthoptis luteolata</i>)
		Broad-bordered Yellow Underwing (<i>Noctua fimbriata</i>)
		Brown-line Bright-eye (<i>Mythimna conigra</i>)
		Buff Arches (<i>Habrosyne pyritoides</i>)

		Burnished Brass (<i>Diachrysis chrysis</i>)
		Canary-shouldered Thorn (<i>Ennomos alniaria</i>)
		Clouded Border (<i>Lomasipilis marginata</i>)
		Clouded Silver (<i>Lomographa temerata</i>)
		Clouded-bordered Brindle (<i>Apamea crenata</i>)
		Common Blue (<i>Polyommatus icarus</i>)
		Common Carpet (<i>Epirrhoe alternata alternata</i>)
		Common Pug (<i>Eupithecia vulgata vulgata</i>)
		Common Rustic (<i>Mesapamea secalis</i>)
		Common Wainscot (<i>Mythimna pallens</i>)
		Common Wave (<i>Cabera exanthemata</i>)
		Dark Arches (<i>Apamea monoglyphia</i>)
		Dingy Skipper (<i>Erynnis tages</i>)
		Dot Moth (<i>Melanchra persicariae</i>)
		Double Dart (<i>Graphiphora augur</i>)
		Drinker (<i>Philudoria potatoria</i>)
		Dusky Brocade (<i>Apamea remissa</i>)
		Flame Shoulder (<i>Ochropleura plecta</i>)
		Flounced Rustic (<i>Luperina testacea</i>)
		Frosted Orange (<i>Gortyna flavago</i>)
		Garden Carpet (<i>Xanthorhoe fluctuata</i>)
		Ghost Swift Moth (<i>Hepialus humuli</i>)
		Green Carpet (<i>Colostygia pectinataria</i>)
		Green Pug (<i>Chlorochystis rectagulata</i>)
		Green veined White (<i>Pieris napi</i>)
		Grey Dagger (<i>Acronicta psi</i>)

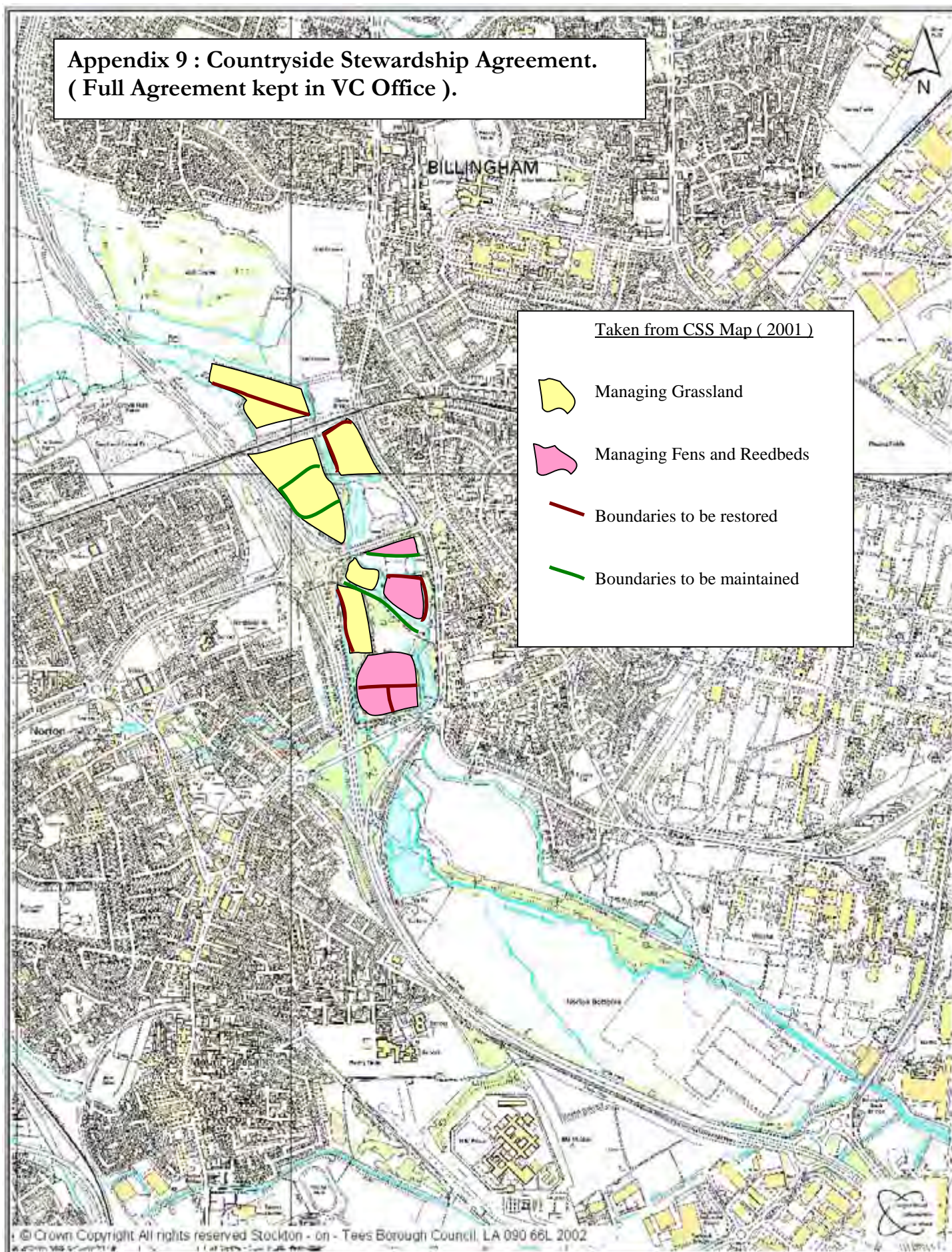
		Heart and Dart (<i>Agrostis exclamationis</i>)
		Ingrailed Clay (<i>Diarsia mendica mendica</i>)
		Large Skipper (<i>Ochlodes venata</i>)
		Large Yellow Underwing (<i>Noctua pronuba</i>)
		Latticed Heath (<i>Semiothisa clathrata clathrata</i>)
		Lempkes Gold Spot (<i>Plusia putnami gracilis</i>)
		Lesser Yellow Underwing (<i>Noctua comes</i>)
		Light Arches (<i>Apamea lithoxyla</i>)
		Lime-speck Pug (<i>Eupithecia centaureata</i>)
		Marbled Beauty (<i>Cryphia domestica</i>)
		Meadow Brown (<i>Maniola jurtina</i>)
		Middle-barred Minor (<i>Oligia fasciuncula</i>)
		Mottled Pug (<i>Eupithecia exiguata exiguata</i>)
		Mottled Rustic (<i>Caradrina morpheus</i>)
		Mouse Moth (<i>Amphipyra tragopoinis</i>)
		No English Name (<i>Udea lutealis</i>)
		No English Name (<i>Agapeta hamana</i>)
		No English Name (<i>Clepsis spectrana</i>)
		No English Name (<i>Hedya nubiferana</i>)
		Olive (<i>Ipimorpha subtusa</i>)
		Orange Tip (<i>Anthocharis cardamines</i>)
		Painted Lady (<i>Cynthia cardui</i>)
		Pale Mottled Willow (<i>Caradrina clavipalpis</i>)
		Peacock (<i>Inachis io</i>)
		Peppered Moth (<i>Biston betularia</i>)
		Poplar Grey (<i>Acronita megacephala</i>)

		Poplar Hawk Moth (<i>Laotthoe populi</i>)
		Red Admiral (<i>Vanessa atalanta</i>)
		Rosy Rustic (<i>Hydraecia micacea</i>)
		Rustic Shoulder-knot (<i>Apamea sordens</i>)
		Shaded Broad Bar (<i>Scotopteryx chenopodiata</i>)
		Silver Ground Carpet (<i>Xanthorhoe montanata montanata</i>)
		Silver Y (<i>Autographa gamma</i>)
		Single Dotted Wave (<i>Idaea dimidiata</i>)
		Small Copper (<i>Lycaena phlaeas</i>)
		Small Fan-footed Wave (<i>Idaea biselata</i>)
		Small Heath (<i>Coenonympha pamphilus</i>)
		Small Rivulet (<i>Perizoma alchemilla</i>)
		Small Tortoiseshell (<i>Aglais urticae</i>)
		Smoky Wainscot (<i>Mythimna impura</i>)
		Swallow Prominent (<i>Pheosia tremula</i>)
		Swallow Tailed Moth (<i>Ourapteryx sambucaria</i>)
		The Clay (<i>Mythimna ferrago</i>)
		The Crescent (<i>Celaena leucostigma leucostigma</i>)
		The Drinker (<i>Philudoria potatoria</i>)
		The Flame (<i>Axylia putris</i>)
		The Lychnis (<i>Hadena bicruris</i>)
		The Sallow (<i>Xanthia ictoria</i>)
		The Spectacle (<i>Abrostola triplasia</i>)
		The Spinach (<i>Eulithis mellinata</i>)
		True Lovers Knot (<i>Lycophotia porphyrea</i>)
		Turnip Moth (<i>Agrostis segetum</i>)

		Twin Spot Carpet (<i>Perizoma didymata didymata</i>)
		Wall Brown (<i>Lasiommata megera</i>)
		White-line Dart (<i>Euxoa tritici</i>)
		Willow Beauty (<i>Peribatodes rhomboidaria</i>)
		Yellow Shell (<i>Camptogramma bilineata bilineata</i>)
True Flies	<i>Diptera</i>	
Bee fly	<i>Diptera, Bombyliidae</i>	<i>Bombylius major</i>
Blow fly	<i>Diptera, Calliphoridae</i>	<i>Calliphora vomitoria</i>
House fly	<i>Diptera, Muscidae</i>	<i>Musca domestica</i>
Hover fly	<i>Diptera, Syrphidae</i>	<i>Syrphus ribisii</i>
Yellow Dung fly	<i>Diptera, Scathophagidae</i>	<i>Scathophaga stercoraria</i>
Common wasp	<i>Hymenoptera, Apocrita</i>	<i>Vespula vulgaris</i>
Ant	<i>Hymenoptera, Formicidae</i>	<i>Formica sanguinea</i>
Hornet	<i>Hymenoptera, Apocrita</i>	<i>Vespa crabro</i>
Honey bee	<i>Hymenoptera, Apocrita</i>	<i>Apis mellifera</i>
Bumble bee	<i>Hymenoptera, Apocrita</i>	<i>Bombus pratorum</i>
Bumble bee	<i>Hymenoptera, Apocrita</i>	<i>Bombus lucorum</i>

Mollusca
River Limpet (<i>Ancylus fluviatilis</i>)
<i>Anodonta SP</i>
Wandering Snail (<i>Lymnaea stagnalis</i>)
Dwarf Pond Snail (<i>Trochana</i>)
Garlic Glen Snail (<i>Oxychilus alliarius</i>)
<i>Helvetica</i>
White Rams'-Horn Snail (<i>Planorbis gyrans</i>)
Keeled Rams'-Horn Snail (<i>Cornutus</i>)
White lipped Rams'-Horn Snail (<i>Anisus</i>)
Rams'-Horn Snail (<i>Planorbis</i>)
Round Mouthed Snail (<i>Pomatias elegans</i>)
Jenkins Spire Snail (<i>Pomatofyrus jenkins</i>)
Rayed Glen Snail (<i>Retinella perfoliata</i>)
Pea Mussels (<i>Psidium sp</i>)
Flat Valve Snail (<i>Valvata crisata</i>)
Common Valve Snail (<i>Valvata fuscinalis</i>)
Milky Crystal Snail (<i>Vitrea contracta</i>)

**Appendix 9 : Countryside Stewardship Agreement.
(Full Agreement kept in VC Office).**



Appendix 10 : Stockton-On-Tees Borough Council Country Parks and Picnic Sites – Byelaws.

Bylaws made by the council of the Borough of Stockton-on-Tees under Section 41 of the Countryside Act 1968, with respect to Country Parks and picnic sites.

1. Interpretation

In these bylaws:

“The Council” means Stockton-on-Tees Borough Council.

“The land” means the Country Parks referred to in the schedule annexed.

2. Vehicles

(1) No person shall, without reasonable excuse, ride or drive a cycle, motor cycle, motor vehicle or any other mechanically propelled vehicle on the land, or bring or cause to be brought on to the land, a motor cycle, motor vehicle, trailer or any other mechanically propelled vehicle (other than a cycle), except on any part of the land where there is a right of way for that class of vehicle.

(2) If the Council has set apart a space on the land for use by vehicles of any class, this bylaw shall not prevent the riding or driving of those vehicles in the space so set apart, or on a route, indicated by signs placed in conspicuous positions, between it and the entrance to the land.

(3) This bylaw shall not extend to invalid carriages.

(4) In this bylaw:

“Cycle” means a bicycle, a tricycle, or a cycle having four or more wheels, not being in any case a motor cycle or motor vehicle;

“invalid carriage” means a vehicle, whether mechanically propelled or not, the unladen weight of which does not exceed 150 kilograms, the width of which does not exceed 0.85 metres and which has been constructed or adapted for use for the carriage of one person, being a person suffering from some physical defect or disability and is used solely by such a person; “motor vehicle” means a mechanically propelled vehicle, not being an invalid carriage, intended or adapted for use on roads; “trailer” means a vehicle drawn by a motor vehicle, and includes a caravan; “motor cycle” means a mechanically propelled vehicle, not being an invalid carriage, with less than four wheels and weight of which unladen does not exceed 410 kilograms.

3. Climbing

No person shall, without reasonable excuse, climb any wall or fence on or enclosing the land, or any tree, or any barrier, railing, post or other structure.

4. Removal of Structure

No person shall, without reasonable excuse, remove from or displace on the land any barrier, railing post or seat, or any part of any structure ornament, or any implement provided for use in the laying out or maintenance of the land.

5. Camping

No person shall on the land, without the consent of the Council, erect a tent or use any vehicle, including a caravan, or any other structure for the purpose of camping, except on any area which may be set apart and indicated by notice as a place where camping is permitted.

6. Fires

(1) No person shall on the land intentionally light a fire, or place, throw or let fall a lighted match or any other thing so as to be likely to cause a fire.

(2) This byelaw shall not prevent the lighting or use of a properly constructed camping stove or cooker in any area set aside for the purpose, in such a manner as not to cause danger of or damage by fire.

7. Trading

No person shall on the land, without consent of the Council, sell, or offer or expose for sale, or let to hire, or offer or expose for letting to hire, any commodity or article.

8. Protection of Wildlife

8. (1) No person shall on the land intentionally kill, injure, take or disturb any animal or fish, or engage in hunting, shooting or fishing, or the setting of traps or nets, or the laying of snares.

8. (2) This byelaw shall not prohibit any fishing which may be authorised by the Council.

9. Grazing

No person shall, without the consent of the Council, turn out or permit any animal to graze on the land.

10. Gates

Where the Council indicates by an notice conspicuously exhibited on or alongside any gate on the land that leaving that gate open is prohibited, no person having opened that gate, or caused it to be opened, shall leave it open.

11. Watercourses

No person shall knowingly cause or permit the flow of any drain or watercourse on the land to be obstructed or diverted, or open, shut or otherwise work or operate any sluice or similar apparatus on the land.

12. Pollution of waterways

No person shall intentionally, carelessly or negligently foul or pollute any waterway comprised in the land.

13. Bathing

No person shall, without reasonable excuse, bathe or swim in any waterway comprised in the land, except in an area where a notice exhibited by the Council permits bathing and swimming.

14. Boats

No person shall operate or sail on any waterway comprised in the land any boat which is not for the time being registered with the Council. Such registration shall be effected by the Council upon written application by the owner of a boat, by:

- (a) entering in an register by a duly authorised officer of the Council the name and address of the owner, a general description of the boat and the serial number of the registration; and
- (b) issuing to the owner a certificate of registration incorporating these particulars.

15. Dogs

(1) No person shall cause or permit any dog under his charge or control to be brought into any country park unless such dog is kept under proper control and restraint and is prevented from causing annoyance to any person or persons or from worrying or disturbing any animal or bird thereon.

(2) No person shall cause or permit any dog to enter those parts of the land coloured red on the attached plan during the period beginning 1st March and ending on the 31st August in any year.

16. Obstruction

No person shall on the land:

- (a) intentionally obstruct any officer of the Council in the proper execution of his duties;
- (b) intentionally obstruct any person carrying out an Act which is necessary to the proper execution of any contract with the Council; or
- (c) intentionally obstruct any person in the proper use of the land, or behave so as to give reasonable grounds for annoyance to other persons on the land.

17. Savings

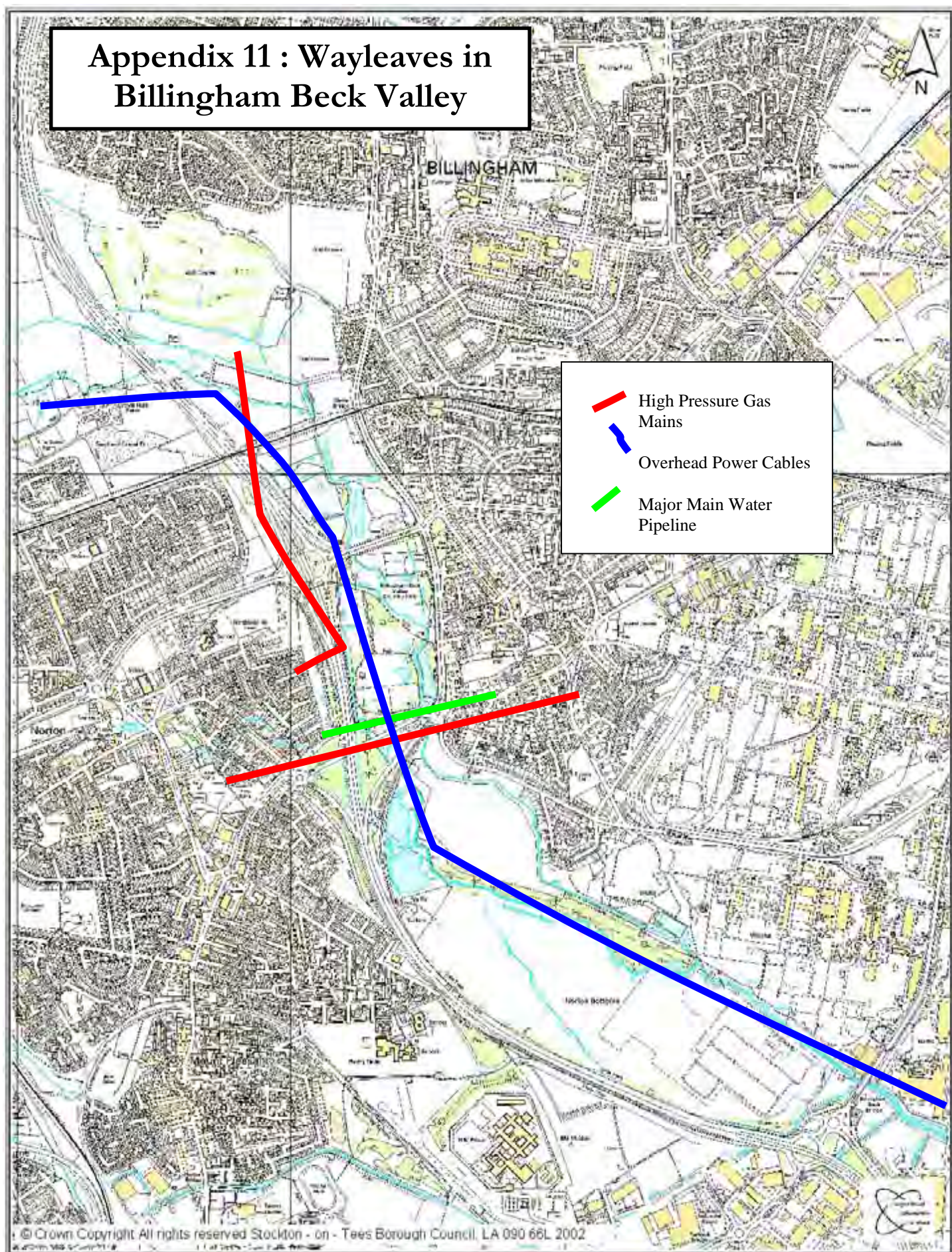
(1) An act necessary to the proper execution of his duty on the land by an officer of the Council, or any act which is necessary to the proper execution of any contract with the Council, shall not be an offence under these byelaws.

17. (2) Nothing in or done under any of the provisions of these byelaws shall in any respect prejudice or injuriously affect any public right of way through the land, or the rights of any person acting legally by virtue of some estate, right or interest in, over or affecting the land or any part thereof.

18. Penalty

Any person offending against any of these byelaws shall be liable on summary conviction to a fine not exceeding level 2 on the standard scale.

Appendix 11 : Wayleaves in Billingham Beck Valley



Appendix 12 : Interpretational Strategy for External Panels at Billingham Beck Valley Country Park.

With its colourful meadows, ponds, marsh and woodland, Billingham Beck Valley is one of Stockton Borough's most interesting areas of countryside. This wetland provides a home for plants and animals, which are beginning to disappear from our countryside, as wetlands are being drained. It has also had a rich industrial and agricultural heritage, prior to its current management largely for environmental conservation and these features combine to form an obvious basis for the on site interpretation.

The panels as schedule overleaf link up in Section 3 to form a short loop walk from the Visitor Centre to Panel 2 in the Ecology Park and to Panel 3 beside the pond. These are man made features and are used to provide Environmental Education to schools and as a resource for Countryside Events. Panels 4 to 6 reflect the significance of the beck itself, the agricultural management of wet meadows historically & today and an overview of the entire valley as it has changed over the past 100 years.

There are site maps located throughout Sections 3 & 4 as they are the most heavily used and visited sections of the site.

Appendix 12 : Interpretation Panels at Billingham Beck Valley Country Park



Billingham Beck Valley Country Park Interpretation Panels :

- 1 : Site Maps (5)
- 2 : Ecology Park
- 3 : The Pond
- 4 : The Beck
- 5 : Wet Grassland
- 6 : History of Billingham Beck Valley

Other Boards and Panels :

- 8 : Opening Times



Appendix 13 Grasscutting Under Contract.

Paths :

Ecology Park (Section3).

480m @ 2m = 960m²

960m² x 7 cuts =

6720m² annually.

North of A1027 / South of Railway (Section3).

320m @ 1m = 320m²

1020m @ 2m = 2040m².

2360m² x 7 cuts =

16520m² annually.

South of A1027 and to flyover (Section4).

600m @ 1m = 600m²

1150m @ 2m = 2300m².

+ 600m² picnic area.

2900m² x 7 path cuts = 20300m²

+ 600m² area x 2 cuts = 1200m²

21500m² annually.

North of A1027 / North of Railway (Section2).

460m @ 2m = 920m².

920m² x 7 cuts =

6440m² annually.

Wolviston Court Access Link (Section1).

430m @ 1m = 430 m²

380m @ 2m = 760m².

1190m² x 2 cuts =

2380 m² annually.

Fleet Ponds / Portrack (Sections 5&6).

None

Annual required BBV Path Cuts = 53560m².

Other contracted grass cutting requirements : Itemised under Amenity Grassland in prescriptions.

Beckside South of A1027 :

120m x 3m = 360m²

360m² x 2 cuts =

720m² annually

Beckside South of A1027

210m x 2 cuts = 420m².

420m² x 2 cuts =

840m² annually.

Beckside North of A1027

120m x 2m = 240m²

80m² x 2 cuts =

480m² annually.

Beckside North of A1027

40m x 2m = 80m²

80m² x 2 cuts =

160m² annually

Grassland Area South of A1027.

2000m² x 1 cuts =

2000m² annually

Additional Grasscutting requirements =

4200m² annually.

Cutting and Baling Requirements.

All three Ecology Park Wildflower Meadows : Itemised under Managed Grassland in prescriptions

Schedule

When

1. Path Cutting (7 cuts):

early April
 “ May
 “ June
 “ July
 “ August
 “ September
 “ October

2. Meadow cuts in Ecology Park and baling

late August

3. Ecology Park Rockery and behind centre:

early Sept

Appendix 14 : Promotional distribution for Public Events and Activities

See also Section 8.14 for wider promotional strategy of Billingham Beck Valley Country Park.

Posters

- To be produced one month before an event takes place and distributed to the following outlets :
- All libraries within Stockton Borough - all accessible via e mail - can be distributed via the Stockton Borough Council Intranet: Billingham, Egglescliffe, Fairfield, Norton, Ragworth, Roseberry, Roseworth, Stockton Central, Thornaby, Thornaby Central, Yarm.
- Main libraries in other neighboring boroughs: Middlesbrough Central Library, Hartlepool Central Library.
- All main Council buildings that are accessible to the public : The Environment Centre, Municipal Buildings, Parks and Countryside Office, William Newton centre, Wynyard House, Billingham Art Gallery.
- Countryside site Visitor Centres : Billingham Beck Valley Country Park, Cowpen Bewley Woodland Park, Wynyard Woodland Park, Preston Park and Clarendon Community Farm.
- Visitor Centres at key country sites in neighboring Boroughs: Flatts Lane Country Park, Lingfield Farm.
- Partner organisations for wider promotion: Tees Valley Wildlife Trust and Tees Forest
- Countryside Services for other Tees Valley Local Authorities where appropriate (for larger events): Hartlepool Borough Council, Redcar and Cleveland Borough Council, Middlesbrough Borough Council, Darlington Borough Council.
- Stockton's Youth and Community Centres
- Tourist Information Centres: Stockton, Hartlepool, Darlington, Middlesbrough, Redcar

Press Releases

To be produced for distribution one week before an event:

Evening Gazette - xxxx@xxxxxxxxxxxxxxxx.xx.xx
 BBC Radio Cleveland - xxxxxxxx.xx.xx@xxx.xx.xx
 Northern Echo - xxxxx.xxxxxx@xxx.xx.xx

Appendix 15

Local Names for Areas of the Site.

Anecdotal records from David Laing, Assistant Countryside Ranger, Billingham Beck Valley Country Park (2002 – 2007)

Glebe – a name that reflects the fact that this area was and still is Church land. It explains more than to just call the area Bottom, as on the tithe map of 1848.

Bore Holes – they monitor the water table levels with a view to creating open water.

Willowgarth – Ever since I can remember from my youth (1954) to growing up, this area of the Park has been known as the willowgarth, an enclosure fringed by willows. In the Cleveland County publications, ‘The water mill at Norton –on-Tees’ (1979) page 30 ‘Field Names of Billingham Bottoms’ the present willowgarth seems to have been a southern extension of Halliwell and Tweedlum’

Peckett’s Corner Beck – in 1950 I was in the final jnrs at the C of E School on the Green – a fellow classmate had a surname Peckett – so this could be an old established Billingham name.

‘Whale-Rock’ Beck – a name given by me to what is in reality the blocked off end to the old sewer pipe to old Billingham Hall.

Halliwell and Tweedlum - origin – Halliwell after the Old English ‘Halh’ – ‘ a nook or corner of land, water meadow’

Wel – Old English – ‘a deep pool or a place in a river’

Or ‘Well’ or ‘Wella’ – ‘ a well, spring or stream.

(from ‘The Water-Mill at Norton-on-Tees, Edited by J Bennett & B E Vyner 1979.

The name on the map roughly approximates to the original position of the field and has been retained to show the areas ‘ historic pedigree’

‘Railway Field’ – a recent designation, recognisable to present day Ranger staff (2007) – it actually refers to ‘West Meadow’.

Halliwell and Tweedlum and part of the ‘ Old Enclosure’ as detailed on History Panel in the Visitor Centre foyer.

‘St Columbas Beck’ – a convenient name taken from the nearest street name ‘at the top of the bank’ off Wolviston road.

‘The Real Billingham Beck’ – the western and lesser water course which joins ‘ Thorpe Beck ‘ and is then known as ‘Billingham Beck’ for the rest of its course.

‘Little Field’ & ‘Big Field’ - also referred to by Ranger staff (2007) as ‘Barrys Fields’ - after one of our graziers, Mr Barry Erstaine, of 4 Acres Farm.

‘Calf Fallow’ - on the 1848 tithe map referred to now (2007) as ‘Stephenson’s bottom’

‘Smiths Field’ – Named after the former owner of Northcote Farm, now private buildings (2007) but still owned by the Smith family.

‘Willow Crook’ - now the site of three large scrapes – but in 1950’s prior to the Parks creation, this area was level enough (just) to play cricket on. It also hosted the 1960 (or thereabouts ?) C of E (local school) sports day.

‘Settling Tank’ – a site of I.C.I four compartment silt traps – huge swirl chambers made out of concrete – constructed to take sediment out of the water in preparation for intake by the I.C.I. Power station. The weir downstream from this prevented salt water mixing with this ‘pure water’ – terminated?

‘Swingfield’ – still an area of amenity grassland – once the site for swings and slides.

‘Pump House’ – property of Railtrack – remains of water storage of pumping stage for steam trains – defunct?

‘Flecks Acre’ – Prior to 1961 – a low lying area – part of Norton Bottoms, and beginning of saltings with tidal channels – but still a habitat that had green sandpiper, greenshank and redshank – the former was an autumn visitor. I also remember saltings plants – (e.g.) marsh grass and sea aster.

After that date (1961) I.C.I. used it as a tip for gypsum – a mineral no longer required for the various products they made (e.g.) plasterboard. As it was being made cheaper elsewhere. The whimsical name is after Sir Alexander Fleck, the then chairman of the Agricultural division of I.C.I.

‘Coal Yard’ – Large rough grassland field, grazed unofficially by C Tyers, by arrangement with B Scott Brothers (still in place 2007). It was an area used to store coal for I.C.I. Power station and had railway sidings to serve the yard.

COWPEN BEWLEY WOODLAND PARK

MANAGEMENT PLAN

April 2008- March 2013

(Review 2010)



Cowpen Bewley Woodland Park

Management Plan Introduction and General Summary

Cowpen Bewley Woodland Park (CBWP) is a site with great potential as a woodland habitat. The majority of its 100 hectares (250 acres) has been planted with nearly a quarter of a million young trees. It has changed significantly from its status earlier this century when part of the site was a brickworks, then a landfill site, and the other half was pasture and arable land. The Park will take many years to reach maturity but even in its young state it contains a mosaic of habitats, a wealth of wildlife and provides many opportunities for countryside recreation and interpretation. The site was awarded Local Nature Reserve status in 1996.

The development of the site as a nature reserve was started by Cleveland County Council once landfill operations ceased during the 1980's and the land was reclaimed. In 1994 I.C.I donated 120 acres of land to Cleveland County Council. This was to be planted with trees to form a significant part of the then Cleveland Community Forest (now The Tees Forest, this organisation went into administration Nov 2008)). Most of the planting took place during the winter of 1994/95.

This Management Plan is designed to meet two criteria :

- To be a working document for the site Rangers. This will generally be achieved through the use of the maps, keys, tables, and the Action Plan. These outline the works required on site and should be an important tool on a day to day basis.
- The main bulk of the document is a reference work about the site providing details on site history, past management and the rationale for the management prescriptions that cover conservation, education and recreation management.

The plan is intended to be a rolling programme that can be regularly updated and modified. The annual review will provide an opportunity not just to create the annual plan for the forthcoming year, but also to evaluate successes and failures over the previous twelve-month period. This should be a fairly quick and straightforward process

The plan covers the period April 2008 – March 2013 and is broken down into a number of sections that are summarised below.

Part 1 – Background Information and Site Description

This provides the general background setting for the management plan with details such as: land ownership, physical geography of the area, an overview of the plant & animal life found on the site, and also examines the history of the site and changing land use in some detail.

This section also explores the significance of various legislation; national, international & local strategies & policies that all have a considerable influence on the management of the site. It also outlines the staffing and financial management of the

park, its place within Stockton Borough Council, and wider links with other conservation organisations.

Part 2 – Conservation Management (and Tables 1-3)

This details the measures taken to manage all the habitats within the park: woodland, hedges, grassland, amenity grassland & footpaths, watercourses, ponds, the lake, wetland areas, and the establishment of better links with adjacent landowners to improve wildlife habitats in the wider area.

This section then goes on to examine species management measures for 92 separate species or generic groups that are considered to be under threat or have special significance at a local or national level. Many of these species are covered by Biodiversity Action Plans (BAPs), and this plan looks at how we can implement the BAPs at CBWP.

Part 3 - Educational Management

This examines the facilities and staffing available both at CBWP and among competitors in the immediate area. It details the types of programmes available to both school and community groups and looks at how the educational work will be managed in the future.

This section also details the environmental interpretation available, such as: the nature trail, leaflets, newsletters and events. It outlines our aims for improvement & provision of new facilities over the plan period.

Part 4 - Recreation Management

This looks at how we manage the site for our general visitors, from access issues such as footpaths, the sustrans Cycle Route, greenways, access to the wider countryside, to new initiatives such as health walks and sustainable transport. The provision of facilities such as benches, bridges, the activity centre, dog bins and the dog zoning policy, through to measures to encourage wider community involvement in the park.

Action Plans 2008-2013

This sets out the routine day to day tasks and proposals for major projects in the park during the plan period. A summary of the major projects is detailed over.

The plan is further supplemented with three tables (that look at the management of the woodland blocks, hedgerows, and BAP species respectively), 30 full colour maps detailing management issues, eleven appendices and an extensive bibliography.

COWPEN BEWLEY WOODLAND PARK MANAGEMENT PLAN

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Stockton on Tees Borough Council

Countryside Team Vision :

“To enhance the natural environment and cultural heritage of Stockton Borough by providing areas for healthy leisure pursuits and lifelong learning, which at the same time will attract inward investment, in balance with the need to improve biodiversity”

Cowpen Bewley Woodland Park Vision Statement :

To develop a mixed landscape of semi natural woodland, hay meadows, wetland and aquatic habitats as a contribution to the development of the biodiversity of Teesside, encouraging community involvement and providing new opportunities for recreation and education while protecting and enhancing existing wildlife habitats.

A 50 Year Management Vision for the Creation of Semi Natural Mixed Broad Leaved Woodland at Cowpen Bewley Woodland Park

Introduction and Rational for a 50 Year Plan

The aim of the tree-planting programme undertaken at Cowpen Bewley Woodland Park is to create a semi natural mixed broad-leaved woodland. Tree planting is the easiest part of this complex task. Many woodland planting schemes fail to progress beyond overgrown thickets or plantations of single age stands of trees. In order to avoid this, the woodland creation scheme needs to be implemented over a considerable period of time. Further works will be required over at least fifty years, if not longer, in order to mimic the complexities of a semi natural woodland ecosystem.

Hence the initial establishment (let alone long term management) of the new woodland at Cowpen Bewley Woodland Park requires a serious long-term commitment from Stockton Borough Council and the various partner organisations.

For this reason a 50 year outline Management Plan / Vision is required. The details of the plan will need to be evaluated and adjusted on a regular basis, and this is best conducted in the framework of the five year Site Management Plans. The first five year plan (1998-2002) dealt with the establishment of the initial phases of tree planting. Subsequent plans will cover the implementation of selective tree thinning operations, and removal of the nursery crop. These thinning operations will need to continue over at least a forty-year period. During that time an under storey will need to be developed, deadwood introduced, and attempts made to create a ground flora. Open glades and woodland rides will need to be maintained.

The first 50 years of the woodland's management will be predominantly about creating a new habitat. However at some point during the term of this 50 year plan, decisions will need to be made over the future long term management of the woodland. Should the woodland be developed as managed high forest, coppice woodland, coppice with standards, wood pasture, left unmanaged, or some combination of these options? These decisions will be influenced by levels of finance, staffing, and the political commitment of Stockton Borough Council (or the appropriate branch of local government at that time), and the partner organisations. They will also be influenced by the way the soils, geology, hydrology and other elements of the physical environment affect the growth of trees around the park. It is currently too early to make these decisions.

Initial Planting Programme

Year 0-5 Planting of extensive areas with mixed tree species, mostly during March 1995, but with some additional plantings of small areas up until 1999. Maintenance of trees to ensure successful establishment. Beating up where in locations establishment was poor. The 1998-2002 Site Management Plan gave the following details of the scheme.

The area of young woodland on the site is approximately eighty hectares. The area of Cleveland covered by the Community Forest Plan has been divided into 11 zones. Cowpen Bewley Woodland Park is contained within zone 2 - Greatham Corridor. The total area of this zone is 1580 ha. Prior to the woodland planting at the Park the existing woodland cover in this zone was 0.2%, ie. Only 3.16ha. In the surrounding zones the total area the corresponding percentage of tree cover which exists is as follows:-

- Zone 1 - 3720ha, 0.8% tree cover
- Zone 3 - 1500ha, 35.6% tree cover
- Zone 4 - 1920ha, 0.6% tree cover

With the exception of zone 3, woodland cover in this area is minimal. The aim of the Community Forest project is to increase cover in the above areas to 20 - 40% with over 40% in some areas. Within Zone 2 the Woodland Park plantings increase the cover to just over 5% - a significant contribution to the overall project. The Woodland Park is, at present, the only single large block of woodland in this area. Further planting alongside the A1185 to create a greenway between the site and the outskirts of Billingham will increase the eventual extent of the woodland block. It is difficult to assess the diversity of the woodland in its present immature state other than to refer to the species composition detailed in section 2.2.2. The site has good potential for eventually supporting a diverse woodland with many associated species and communities within the area of the Park.

The Woodland Park is a plantation and therefore lacks naturalness. Over time semi natural characteristics associated with mixed broadleaved woodland should develop.

Typical woodland cover for this area would be NVC type W10 - oak, ash and hazel dominant due to the heavy, poorly drained clay soils - typical woodland cover of the English lowlands.

The woodland created here contains a high proportion of these trees but does not follow this closely for the following reasons:-

1. The woodland is a high profile site close to a large urban population. Species which would grow relatively quickly such as sycamore and cherry have been chosen so that there is a certain amount of tree cover in a relatively short time.
2. Due to the exposed nature of the site a shelter crop of corsican pine and larch has been planted. The pine will also provide some winter colour.
3. Small numbers of trees which will be particularly attractive to people have been planted - maple for its autumn colour for example.

Details of the trees planted and their location are held by Tilhill Economic Forestry. Some details are held in the wardens office.

Once the trees are better established, thinning work will be necessary. At this time a management regime which favours species typical of this area and soil type could be implemented.

This feature has great potential for improvement. With appropriate management it has the potential to become mature, semi natural mixed broadleaved woodland. This would be of much greater value for nature conservation than the arable fields which existed prior to planting.

Establishing woodland is the main concern on the areas of land leased to I.C.I. These former arable fields have little in the way of botanical interest. The woodland created to date consists of the following :- 25% oak, 15% sycamore, 5% wild cherry, 30% corsican pine, 5% ash, 3% lime, 7% larch and 10% minor broadleaves including red oak, walnut, poplar, willow, aspen, sweet chestnut, horse chestnut and alder. 8% of the land involved has been planted with woody shrubs - hawthorn, hazel, guelder rose, dog rose, crab apple, field maple and rowan.

The First 5-10 Years

The effects of soil and hydrology will start to be seen in terms of which trees are successful in which areas, e.g. wet areas will favour Willow/Alder Carr (some may be best left as wet grassland or developed as other marginal habitats).

Beating up operations in this period mimicked that of a natural selection woodland. From a long term nature conservation viewpoint, beating up is best avoided as it will overstock the woodland and create additional thinning operations in the future. However, it is a requirement of the woodland grant scheme (that funded the tree planting) that stocking densities be maintained for a ten year period. Failure to do so could result in the repayment of grant monies.

It may be pertinent to beat up some of the gaps with native Scots pine as all the conifers planted through the scheme so far are non-native Corsican pine. Scots pines are not as fast growing as Corsican and will struggle on heavy clay soils (which is why they were not used as a nursery crop). They will take in the clay soils, albeit with some losses.

Introduce deadwood where possible.

Maintain open glades and woodland rides.

Year 10-15

Start selective thinning of the trees. Targeted primarily at the nursery stock of Corsican pine and the Sycamore. Sycamore was planted due to its habit of rapid growth as it would create a 'certain' level of tree cover in a short space of time. This has been very successful but Sycamore is highly invasive and will have reached sexual maturity by this stage. To prevent it from taking over and dominating the new woodland it needs to be closely watched and controlled. Cut stumps of Sycamore will probably need stump treatment to prevent re-growth.

Thinning operations will be aimed at considerably reducing tree densities. Plantings were carried out at 2.1m spacings, mostly by machine planting. Semi natural broad leaved woodlands in the area, such as Castle Eden Walkway and Castle Eden Dene, have spacings averaging around 6m but with considerable variation. This should be the target density by the end of year fifty.

The amount of thinnings carried out in each five year period over the next forty years will depend upon a number of factors. Finance and staffing levels will be important. However the overriding factor should be one of trying to maintain a woodland feel throughout the site. Over thinning will lose this ascetic value, under thinning will mean that dense thickets will develop and create additional work in later years. The approach should be one of little and often throughout the remaining forty years of the creation phase of the project.

Introduce deadwood where possible. Leave thinnings in habitat piles where suitable.

Continue planting a few small areas of Scots pine if necessary.

The original planting plan left several areas of open glades in the woodland, many scattered around the edges. (*See Bibliography 2*). These open glades close to paths and gateways and hence accessible for mowing machinery were mown sporadically during the first five years of the planting. Several of these areas have subsequently been brought into the meadow-mowing regime. Many of the woodland edge glades included in the original planting plan are not accessible to mowing machinery. These have been left to undergo natural regeneration, adding variety to the otherwise uniform age structure of the plantation.

Consequently there are less open glades than originally intended. Furthermore it has become apparent that most of the key BAP species found on the site are dependent upon habitats other than woodland. The role of grassland and marshland on the site is an important one and underrepresented in the compartments on the south side of the park, especially those south west of Wolviston Back Lane. For these reasons thinning operations should include the creation of some woodland glades and wetland habitats close by paths to enable ease of maintenance.

Research details for establishment of ground flora species towards end of this period.

Year 15-20

Continue tree thinning operations. Leave some small stands of Corsican pine, as they do possess much ascetic appeal, the cones and all year shelter are beneficial to many species of bird and mammal.

Tree thinning should still concentrate on Corsican pine and Sycamore, but will need to be broadened to other species to allow tree densities to fall sufficiently to meet the desired final stocking density. The stumps of native broad-leaved trees should be left untreated so they can regrow. This regrowth will then start to create an under storey to the larger standard trees. Care must be taken however, if the under storey becomes

too dense, there may be a need to spot treat some of the stumps to thin out the under storey. If regrowth is very poor and an under storey does not develop, some additional shrub species may need to be planted to supplement the under storey, but this is unlikely. Woodland edges should be treated in a similar way.

Introduce deadwood where possible. Leave thinnings in habitat piles where suitable.

Maintain open glades and woodland rides. Some rides may need widening if shading becomes too dense and tracks become over wet and muddy. Continue glade and marsh creation work where necessary.

By this stage the area will have considerable landscape value and will be starting to develop a fairly good woodland structure with future standard trees, woodland edge and under storey clearly developing. However the ground flora is likely to be poor, with few traditional woodland ground flora plants. Many of the plants that make up the typical ground flora of a woodland are poor colonisers, and there are no mature woodlands nearby from which seed could disperse into the new woodland.

It will be necessary to undertake a second major phase of planting works within Cowpen Bewley Woodland Park, this time targeting herbaceous plants rather than tree saplings. At the present time little research has been conducted on introducing herbaceous plants into woodland plantations. Some research is being done at the Rising Sun Country Park in Tyneside, and other pieces of research are available (*see Bibliography 3&4*). These works would indicate that it is best to start establishing ground flora plants at the earliest opportunity. Research into this area will hopefully increase and allow a more informed decision to take place at this time.

Forestry Commission grant funding for the selective felling of tree in the Woodland park operation was applied for in 2009, under the Woodland Improvement Grant to 'Reduce the Decline in British Woodland Birds', 10% match funding was also available from the SBC Parks Improvement Fund.

Year 20-30

Continue thinning operations.

By this stage many of the species should be reaching sexual maturity. Some areas could be over thinned and bare ground exposed to encourage the growth of seedlings and hence increase the diversity of the age structure within the woodland. Supplementary planting of Scots pine may be necessary to assist in the development of a diverse age structure for this species.

Introduce deadwood where possible. Leave thinnings in habitat piles where suitable.

Continue with operations to establish ground flora.

Maintain open glades and woodland rides.

Year 30-40 **Decisions on Management Systems**

The beginning of this plan period may well be a pertinent time to make decisions on the long-term future management of the various woodland compartments from year 50 onwards. The decisions as to which management systems (short rotation coppice 5-10 years, long rotation coppice 12-20 years, coppice with standards, high forest, wood pasture or non intervention) should be adopted in which compartment are important ones and will be influenced by the commitment over the previous 30 years, the likely resources available in the future, and the physical development of the woodland over the 30 year period. A decision made at this stage will enable thinning operations, restocking and establishment of a ground flora during the remaining 20 years of the creation scheme to be geared towards the long-term management systems desired in each compartment.

Continue with thinning operations and the development of a diverse age structure within the woodland in line with the desired woodland systems in each woodland compartment.

Ensure a supply of standing deadwood by ring barking some standing trees and leave lying deadwood from thinning operations.

Continue with operations to establish ground flora.

Maintain open glades and woodland rides.

Year 40-50

Continue thinning operations to reach the desired woodland systems in each woodland compartment.

Continue with creation of deadwood habitats.

Continue with operations to establish ground flora.

Maintain open glades and woodland rides.

Write a new fifty year Woodland Management Plan.

Year 50 onwards

Implement long-term management of the new woodland.

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Part 1 Background Information and Site Description

1.1 General Information

1.1.1 Location

Cowpen Bewley Woodland Park consists of several areas of land, which encompass the former Greatham Brickworks and Cowpen Bewley Waste disposal site and areas of former arable land. It lies to the east of Billingham on the outskirts of Low Grange (Map 1 and 2). The site is bisected by the A1185 Seal Sands Road and is within 1 mile of the A19. It can easily be reached from the A19/A689 turn off or from Billingham town centre. The grid reference of the car park is NZ 479 255.

1.1.2 Land Tenure

This is not a legal document. Please refer to the original tenure documents before taking any decision or action, which may have legal implications.

The area of land covered by this plan covers about 250 acres. About 210 acres of this is owned by Stockton Borough Council. The Woodland Trust and Greatham Hospital Estates own Faith Wood - a 30-acre woodland plot that is managed as part of the park in agreement with the owners. The Woodland Trust and the Park are in discussion with regards to the future management of Faith Wood. Northumbrian Water owns 7 acres. St. Cuthbert's Church, Billingham also own a small field (Map 3). These areas are also managed as part of the park.

1.1.3 Management Infrastructure

Cowpen Bewley Woodland Park is one of a number of sites managed by the Parks and Countryside section of Stockton Borough Council. There are two full time Countryside Rangers who are responsible for the day-to-day management and development of the Site. These posts are supported by a Countryside Recreation Officer who oversees the management of all of the Countryside sites in Stockton Borough.

1.1.4 Site Infrastructure

Map 5 shows the locations of the site infrastructure. A Visitor Centre was constructed in 2000.

A network of grass footpaths has been established throughout the site (Map 6). There are two wooden bridges in Cow bridge Copse, allowing access over Cowbridge Beck. Three wooden bridges in Faith Wood link the wood to the rest of the park and there is another bridge forming part of Sustran's Route 14 over Cowbridge Beck all presently in good condition. One of the bridges that crosses Cowbridge beck and leads into Faith Wood from the Bottom Marsh (boardwalk) was condemned by a Stockton

Borough Council engineer and later removed (October 2009), a new bridge will be put in its place during 2010 funded by Woodland Access Grant.

A surfaced track runs from the car park to the lake on the former landfill site through St Michael's wood. Field and kissing gates and stiles have been positioned throughout the site (maps 6). There is a private bird hide by the lake. The site is generally bisected by roads such as the A1185 (which cut the site in half) and Cowbridge Lane and Wolviston Back Lane further divide the south side of the site. This combined with the houses of Low Grange located near to the south side mean that the site has many different entrances into its different compartments, which are individually named for ease of reference. (Map 9) Maps on each of the main entrances help visitors to explore the area. Access across the A1185 can be limiting to visitors as this is a fast piece of road to cross. However there is good visibility in both directions at all crossing points. It will be worth investigating creating a pedestrian crossing at the main crossing point in the future. However this will be limited by finances and possibly the Highways Department. It is unlikely that a bridge would be allowed, as this road is used by very large lorries accessing the busy seal sands industrial area.

There is a locked compound at the entrance to the car park, tools, wood supplies, a hazardous waste cabinet and several other items are stored here, the one present on Site has been there for several years and needs to be replaced with a new version.

1.1.5 Map Coverage

The area covered by Cowpen Bewley Woodland Park can be found on the Ordnance Survey Landranger map (1:50000) No. 93 and on the Pathfinder map (1:25000) No. 591 British Geological survey solid & drift geology map 1:50,000. 1:2500 scale maps of the site are held in the site office. There are also copies of old Ordnance Survey, wayleave & tyth maps held in the site office. There are at various scales & detail the locations of brickworks, clay pits and old field boundaries within the area

1.1.6 Photographic Coverage

A range of colour transparencies and prints of variable quality are held in the site office. These depict a wide range of views, species and activities from the site. In addition to these a series of 25 photographs were taken from fixed points on four occasions during 1996 (Jan, April, July and October) and also in January 2000. It is intended to continue with this every fourth year with photos taken in each season of that year. The transparencies of these are also held in the office. To maintain records, record events and produce material for talks and displays it is essential that additions are made to the collection of transparencies on a regular basis and the fixed-point photographs are repeated in the future. Many photographs are now also stored on CD format. A series of aerial photographs were taken in 1998. These are held in the site office. Map 8 shows the location from where the fixed-point photographs are taken. Details are also held on file in the site office. Digital photos are also taken on a regular basis to record all activities in the park. These are stored on computer in the site office. Photos are then used for publicity, displays, marketing and general records and reports.

1.1.7 Compartments

For ease of description the site can be divided into a number of compartments, see Map 9. For management purposes some of these compartments are grouped together, others are further subdivided. Compartment names are based on the old field names see Map 30. Each compartment has Signs on each of the main entrances to let you know what compartment you are in and where this is located within the park as a whole.

1.2 Environmental Information

1.2.1 Physical

1.2.1.1 Climate

Cowpen Bewley Woodland Park experiences a relatively cool climate, which, due to its proximity to the coast, is influenced by sea winds and cloud. Average precipitation is low. Much of the site is fairly exposed. This results in any prevailing winds having a stronger influence here than in more sheltered areas nearby. Stockton on Tees, Climate Change Action Plan 2007 – 2012, has been incorporated into this document.

1.2.1.2 Hydrology

The majority of the natural water courses in the vicinity of Cowpen Bewley Woodland Park have been altered relatively recently and now, in the main, flow underground in man made pipelines. The lake and the ponds on the site are largely rain fed, with the heavy clay soil acting as a natural liner.

1.2.1.3 Geology

The solid geology which underlies this area is Sherwood Sandstone. This is heavily masked by glacial deposits of laminated Clay laid down in the Devensian period. (Information from the B.G.S solid and drift geology map 1987, 1:50000)

1.2.1.4 Geomorphology / Landform

Cowpen Bewley Woodland Park is low lying and relatively flat - the height of the land ranges from 5 - 12 metres above sea level. The exceptions to this are the two mounds which have been created by a land raise for waste disposal. Due to the clay soil large areas of standing water are generally present on the site following periods of prolonged rainfall.



Fig 1 : The Mound at Cowpen Bewley Woodland Park

1.2.1.5 Soils/substrates

The soil is generally heavy clay in composition due to the glacial deposits detailed above. The only variation to this is along the watercourses - Cowbridge Beck, Claxton Beck and a beck, which formerly ran just north of the cemetery. The soils of these areas are made up from alluvial fan - postglacial from the Flandrian period.

1.2.1.6 Hazardous Substances

A wide range of industrial chemicals as well as general refuse were buried under the two mounds while the site was being used as Billingham Waste Disposal Site. The land rise that has created the mounds hides this from view. However there were considerable problems with leachate leaking out of the mound.



Fig 2 : The Leachate Plant

Some of the products buried in the landfill are highly poisonous and toxic. As a consequence all treatment plant was constructed by Stockton Borough Council and started operating in 1997. The plant is managed by Stockton Borough Council Environmental Services.

Leachate was noticed escaping from the mound at two locations during the winter of 2000/01. One area had slumped and the level of the land was raised.

The area at the back of the large mound close to the railway line has been known to have major gas leaks and have been dealt with by the Appropriate Authorities. The Rangers monitor the area and any suspected leaks are reported immediately.

Low-level radioactive waste was also deposited on the site. It is thought to be hospital waste but this is not certain. No measurements have been taken since the early/mid 1990's.

1.2.2 Biological

1.2.2.1 Flora

A number of surveys have been carried out on the vascular plant species found on the site. A list of those found on the former landfill site was compiled in August 1996

Detailed surveys & mapping was completed in late summer 2001 & spring 2002 (See Bibliography 63,64,66,87). The most interesting area of this part of the site are the banks of the lake which have been built up with tipped gypsum. This provides a chalky substrate and supports cowslips and common spotted orchids along with a selection of other plants that prefer lime soils, although many species are now spreading. In general, away from the banks of the lake, the grassland, which was seeded when the site was reclaimed, is coarse and of low species diversity. However regular hay meadow management was started in 1999, and has had a considerable effect on the flora. The mown area now supports a very different suit of plants than the more recent grassland areas. Tot Fennies field is a hay meadow of reasonable quality. It contains a number of flowering plants, which are not found anywhere else on the site (see appendix 7 for a species list). It also contains a clump of purple loosestrife, which has been entered on the single species site register for the county.

To date little other botanical survey work has been carried out on the site. Tillhill conducted some surveys of dominant species under lying tree planting, and work was conducted on aquatic /marginal species in the pond during 2001

Establishing woodland is the main concern on the former ICI land. These former arable fields have little in the way of botanical interest. The woodland created to date consists of the following: 25% oak, 15% sycamore, 5% wild cherry, 30% corsican pine, 5% ash, 3% lime, 7% larch and 10% minor broadleaves including red oak, walnut, poplar, willow, aspen, sweet chestnut, horse chestnut and alder. 8% of the land involved has been planted with woody shrubs - hawthorn, hazel, guelder rose, dog rose, crab apple, field maple and rowan.

Prior to the planting a biological survey of the area involved was carried out by the Cleveland Wildlife Trust (now Tees Valley Wildlife Trust). One species of note was found near one of the ponds - the common pepperwort (*Lepidium campestre*). At that time it was the only record of this plant in the County and it was entered onto the single species site register. However as this is usually encountered in arable/disturbed land it has died out in its former location. There is a possibility it is flowering in the car park beds.

There are several areas of semi-mature and mature trees on the site (see map 13): Pigeon Wood, Cowbridge Copse and the Northumbrian Water land copses. Pigeon Wood is mainly mature crack willow with some hawthorn and elder with a ground flora of reed sweet grass (*Glyceria maxima*) and nettles. Cowbridge Copse consists of mature hawthorn and elder with some ash. The Northumbrian Water land copses contain predominantly willow.

Vegetation species and percentages may alter if the predicted concerns about Climate Change come to fruition.

An Orchard is to be planted on some of the amenity grassland near to the Activity Centre. Apple, pear, plum and cherry species should be sourced wherever possible. This would be an asset to the wildlife of the area and advertise the Centre when the trees are in blossom and fruiting. It would also act to advertise the Activity centre.

Around the Park there are several fruit trees already present, but having them near to the Centre may act as an added attraction in future years.

1.2.2.2 Fauna

Mammals

A number of mammals have been sighted around the site (see appendix 2) - the most notable of which are the brown hare and water vole – Both are local BAP species. Much work has been carried out on water vole surveys. There are currently no quantitative records for brown hare. 150 Harvest mice have been introduced to the site under a reintroduction programme. Surveying and monitoring is currently being coordinated by Preston Park Rangers, (last recorded survey November 2008, nothing found).

Birds

Records of birds seen around the site have been made since September 1995 and there are some records of wildfowl from before this date. To date over 80 species have been recorded. A full list of these species can be found in appendix 3. Further details about sightings - dates, locations etc. can be found in the site office. One of the most notable residents is the Tree Sparrow - a species that has experienced a significant decline in its population in recent years. The next nearest known colony is about four kilometres away. Tree sparrows are now a BAP species and elements of the plan will be adopted at Cowpen.

Reptiles

There are no records of any reptile sightings around the site.

Amphibians

Four species of amphibian have been recorded at Cowpen Bewley Woodland Park (see appendix 4). The most notable of these is the Great Crested Newt. There is a small breeding colony of this species in and around two of the ponds. A survey of amphibian breeding activity - common frog, toad, common and great crested newt was undertaken in the spring of 1996 and 1997, full results are held in the site office. Newt numbers are counted annually in May using torches.

A recent (2009) survey by a member of The Tees Valley Wildlife Trust established that Cowpen Bewley Woodland Park has a good population of both Great Crested Newts and Smooth Newts. Their findings were carried out by torchlight survey method, and bottle trap. The Newt Ponds and Pigeon Wood Pond were some of the best populations of both species in the Tees Valley area. The survey carried out in 2008 also found Great Crested Newts populations in several other ponds, notably Pigeon Wood and Corner Pond.

Several kerbstones from the roadside of the track leading up to the Activity Centre have been removed. The reasoning is that small froglets and toadlets are trapped there and cannot escape predation from birds.

Fish

A population of perch is believed to live in the lake. Although no fishing has taken place in recent years, dead fish surface occasionally. Work would need to be undertaken to ascertain species and quantity. Sticklebacks have been found in a number of the ponds. During summer of 2005, over 300 fish were removed by nets from the car park ponds. These included carp and perch. Many of these fish were relocated to the lake. The intention being to keep the quality of the car park ponds good for dragonflies and amphibians by removing their main predators.

Invertebrates

Odonata – Dragonflies and Damselflies - These Species are mostly situated around the ponds, 16 species have so far been recorded here. (see appendix 5). CBWP is now one of the top three sites in Co. Durham.

Lepidoptera - A butterfly transect was established in 1996 and monitored in accordance with I.T.E guidelines. 18 species have been recorded so far - details in Appendix 6.

A moth trap was set out on a number of occasions in 1996 and 1997 and casual observations were made. 55 species were recorded in total including Small Clouded Brindle for which there are few records from this area and Dusky Sallow which is the first record for the County. A full list can be seen in appendix 7.



Fig 3 : Common Blue Butterfly

Some basic species lists for the ponds were compiled during 1996/7. These were acquired from pond dipping sessions. More detailed surveys of freshwater invertebrates were carried out in 2001, for half the ponds in the park, as part of a student placement (see appendix 8 and bibliography 65, 67, 68). It is hoped the remaining ponds can be surveyed in a similar way in the future.

With most other taxonomic groups no formal survey work has been conducted.

Species of Fauna will need to be monitored to see if the predicted concerns over Climate Change affect the Woodland Park.

1.2.3 Cultural

1.2.3.1 Archaeology/Past land use

The majority of the land within Cowpen Bewley Woodland Park was used for agriculture - both pastoral and arable for many years with a few notable exceptions. The Ordnance Survey Map from 1857 shows a brick and tile yard in the area now known as Pigeon Wood and the hollow behind the activity centre. The ponds which remain in this area today provide evidence of extraction occurring here in the past. There was also a brickyard situated where the lake can now be found to the north of the Seal Sands road. Work began here in the 1850's and continued until the mid 1950's. The lake has formed in a depression associated with the works. The nature of the land surrounding the lake has changed significantly as a result of landfill operations which have taken place. Other depressions and pits created by the brickworks operations have been filled with rubbish and two mounds created. The brickworks are shown on the 1952 O.S. map and must have closed some time after this. Landfill operations ceased in the early 1980's. Due to the landfill history, digging is not recommended on the mounds as this may damage the clay which caps the rubbish. This area was officially closed to the public until spring 1997 due to "leachate leaking through the landfill site". A special treatment works had to be constructed and was opened in 1996

Aerial photographs from 1991 show all of the former I.C.I land to be under arable farming, older people walking in the Park remember some of the fields being grazed.

1.2.3.2 Past Management for Nature Conservation

Prior to 1994 the site had very little management other than some pond creation work near the car park and some tree planting in Cowbridge Beck field and around the former landfill site. In 1994 the woodland planting on the former I.C.I land began - the mix of species planted is described above in section 2.2.2.1. In 1995/96 work to restore the hedgerow boundaries of the site began and by 1997 3km of hedgerow had been planted and fences installed. Remedial work was carried out to three ponds on the former I.C.I. land in 1995. Records of nature conservation works and management for the period 1995-2002 are found in the previous management plan, site records, and diaries, held in the site office.

As this site has previously been used as a brickworks, landfill site and testing ground for Nitram Fertilizer application methods. Some bird records for the lake have been kept but other than these there are few records about the natural history of the site. During 2001 an oral history project was conducted and many fascinating stories about the site were uncovered. The records are archived in the site office. A number of interpretation panels were produced and are periodically displayed in the centre. The stories were also shared via inclusion on the Local Heritage Initiative website.

1.2.3.3 Present Land Use

In March 1996 Cowpen Bewley Woodland Park was designated a Local Nature Reserve (L.N.R.) by Cleveland County Council. The criteria which made the Park a suitable site for L.N.R. designation are that it is of some reasonable natural interest and of high value in the Borough for formal education and informal enjoyment of nature by the public. It is also managed with the conservation of nature being the priority concern. Cowpen Bewley Woodland Park has also been designated a Site of Nature Conservation Interest (S.N.C.I.) because of the mix of semi-natural habitats which are contained within the site.

In 2007 the Site was given a gold award in the conservation section of the Northumbria in Bloom competition for the north East of England. The Site was also awarded Gold in the Northumbria in Bloom conservation section 2008 and 2009.

Cowpen Bewley Woodland Park has been awarded the prestigious Green Flag for four consecutive years, 2005, 2006, 2007, 2008 and 2009. The green flag is on display on a flagpole at the car park entrance to the Site.

1.2.3.4 Landscape

The area to the west and south west of the site is urban, to the north, east and west the site is bordered by a rural environment, the main constituents of which is fairly flat, extensive arable fields with some pastoral land around Cowpen Bewley Village and in the Cowpen Marsh area. Some stretches and remnants of hedgerow exist throughout the rural area. The Park, at present, appears similar to this but, in time, will form the only significant area of woodland in this area. The exceptions to the very gentle relief which is characteristic of the land in this area are the mounds created by the landfill operations. The larger of the mounds is the highest semi-natural feature in the area and can be seen from some distance away. The Cowpen Marshes, Teesmouth Estuary, Saltholme Pond, and various other high quality marsh aquatic, and coastal habitats exist within close proximity of the park. .



Fig 4 : Landscape view of Cowpen Bewley Woodland Park

A new RSPB Reserve to the south of the site is now open to the public in (2009). Its boundaries come very close to Cowpen Village and hence the Park. A working

relationship with the personnel is encouraged and several joint environmental education projects were carried out in 2009 . To the east of the Woodland Park is a large expanse of land at present used as landfill, this is expected to halt in 2013, It will be beneficial to open discussions with the operator (Impetus) to ascertain their future plans for the site.

The new woodland habitats and dry grasslands in CBWP act as an excellent compliment to these habitats. Proposals to improve the wetland habitats on the site will help to further strengthen the physical links for local wildlife.

There are a few buildings on the site including the Activity Centre, the leachate treatment plant, a wooden bird hide by the lake and a metal lock up container by the car park. There is one electricity pylon on the site, near to the lake, and two pylons in Faith Wood. There are a few small stands of mature and semi mature trees and scrub on the site in Pigeon Wood, in Cowbridge Beck field, by the lake and on the Northumbrian Water land. These are quite significant features in the local landscape given the immature nature of the woodland over the rest of the site.

1.3 Strategy

There are a wide range of strategies published by various stakeholder organisations, such as Tees Forest (this organisation went in to administration November 2008), English Nature, and Tees Valley Wildlife Trust. These are listed in the bibliography.

SBC have also produced a number of strategies that need to be incorporated into this management plan. The key documents and objectives that directly relate to this plan are:

1.3.1 Strategic Links

There are a number of Stockton Borough Council strategies, 4 policies that dictate the general direction in which the management of Cowpen Bewley Woodland Park has to go. The main documents are outlined below.

1.3.1.1 Stockton-on-Tees Parks, Open Spaces and Countryside Strategy 2007-2012

This is the main strategy document for the Countryside Team. The key objectives for countryside sites are:

Objective 7 – Tees Forest

The Council will support the Tees Forest project through improvements to existing facilities such as **major gateway sites**.

Objective 8 – Access to The Countryside

The Council will improve access to the countryside through the management of the existing Public Rights of Way Network and the creation of new access links from urban areas to the wider countryside.

Objective 9 – Community Involvement

Encourage community involvement in the management of sites.

Objective 10 – Wildlife Management

Protect and improve existing important wildlife habitats and where appropriate create new enhanced wildlife value.

Objective 11 – Education

Promote environmental educational use by schools, colleges and local community groups.

Objective 12 – Social Inclusion

To provide opportunities for a greater variety of visitors to countryside sites, especially those from socially disadvantaged areas and visitors with special needs.

Full details can be found within the strategy.

1.3.1.2 Stockton-on-Tees Local Agenda 21 Strategy

This is Stockton Borough Councils response to the Rio Earth Summit. It sets out objectives and targets for sustainable issues that SBC has control over or can influence. A number of the issues and objectives within the strategy have already been implemented, others require further work to put in place the principles at Cowpen Bewley Woodland Park.

Issue 1 – Energy Conservation

Objective 2 To provide efficient and effective energy management throughout all Council owned and occupied buildings.

Issue 2 - Transport

Objective 2 Improve access to public transport.

Objective 3 Encourage and promote cycling, both as a mode of transport and for leisure purposes.

Objective 4 Encourage walking.

Objective 7 Reduce the emissions from the Councils own fleet and that of staff who use their cars to get to work and carry out their duties.

Issue 3 - Waste and Recycling

Objective 1 Reduce the amount of waste disposed of through incineration to both environmentally and economically achievable and acceptable levels.

Objective 2 Reduce the amount of waste going to landfill to a minimum acceptable level.

Objective 3 Create a tidier Borough

Issue 4 - Healthy Living

Objective 4 Protect and improve the water environment.

Objective 5 Reduce crime, disorder and anti-social behaviour.

Objective 6 Promote the health and well being of children.

Objective 7 Promote the health and well being of adults.

Issue 5 Economic Development

Objective 3 Regenerate the Tees Corridor.

Objective 5 Develop the Borough as a tourist and visitor destination.

Issue 6 Sustainable Communities

- Objective 1 Increase public participation in local democracy.
- Objective 2 Increase the level of voluntary activity to above the national average.
- Objective 3 Strengthen local community and cultural identity.

Issue 7 Natural Environment

- Objective 1 Enhance and improve the quality of public open spaces within the borough.
- Objective 2 Protect and enhance the wildlife habitats and diversity of species throughout the borough.

1.3.1.3 Health and Well-Being Strategy

This is currently being developed within the council, and will expand on issues within the Community Strategy. It will be aimed at increasing the health of residents of Stockton Borough Council and covers issues from exercise on prescription, mental and physical well being and fitness, healthy eating, and ties with the governments Healthy Schools Initiative.

We will implement this through supporting the health walks programme, exercise on prescription, providing healthy outdoor activities for all ages and abilities, and the promotion of healthy eating by stocking appropriate refreshments in the shop.

A new Healthy Walks Officer has been appointed by Stockton Borough Council (2007) and we will be working alongside this officer to bring some walks into the Park, or supporting him on walks in the local neighbourhood. Both staff members are trained in leading Health Walks.

1.3.1.4 Stockton-on-Tees Community Strategy

This sets out the policy platform to the key national themes which have been pursued by Government into the policy areas that address local needs and aspirations.

Issue 1 - Environment

- Objective 1 Engage the community in implementing LA21
- Objective 4 Make Stockton a litter free borough
- Objective 8 Protect & enhance the natural & built environment
- Objective 9 Ensure that all residents have access to quality greenspace
- Objective 10 Engage the community in environmental education

Issue 2 - Community Safety and Well-being

- Objective 8 Reduce crime & the fear of crime
- Objective 9 Reduce anti-social behaviour and youth offending

Issue 3 - Health

No Objective that directly impinge upon our works but the general principal applies

Issue 4 - Economic Regeneration

Objective 6 Improve the image of the borough by improving environmental surroundings

Objective 8 Raise skill levels through lifelong learning

Issue 5 - Education

No Objective that directly impinge upon our works but the general principal applies

Issue 6 - Arts & Culture

Objective 2 Extend range of opportunities to experience & participate in the arts & leisure

Objective 3 Widen participation of young people in all forms of arts, and cultural activities including sports

Stockton Borough Council Climate Change Action Plan 2007-2012

This action plan :

- Identifies our collective responses to the threat of climate change and achieves emissions reductions.
- Raises the awareness of climate change through working with public and private sector organisations across the region.
- Involves communities to make sure that they understand what actions that they might undertake to reduce their greenhouse gases emissions.

Stockton Borough Council Countryside Sites will promote the Climate Change Action Plan.

2.0 Aims and Targets

The key aims of this action plan are:

To reduce greenhouse gases emissions from within the Stockton Borough Council area through green procurement.

What are the global impacts of climate change?

Climate change is one of the most serious environmental threats facing the world today. Global temperature increase is likely to trigger serious consequences for humanity and other life forms alike. The key global impacts are shown below: reducing energy use, better waste management, the use of sustainable transport

Rising sea levels - It is expected to rise by over 40 centimetres by 2080 because of thermal expansion of oceans as temperatures rise and because of melting land ice.

Flooding – 80 million people are projected to be at risk of flooding.

Food shortage and disease – Africa, Middle East and India are expected to experience significant reductions in cereal yields, and an additional 290 million people could be exposed to malaria by the 2080s.

Severe water shortages - In some areas, water resources for drinking and irrigation will be affected by reduced rainfall or by salination of ground water as sea levels rise.

Loss of tropical forests – By 2070 large parts of northern Brazil and central southern Africa could lose their tropical forests because of reduced rainfall and increased temperatures.

What are the impacts on Stockton-On-Tees Borough Council?

Natural environment

Climate change imposes additional stress to the wildlife habitat. This may bring damages to important habitats. As the weather becomes warmer, some species may migrate northward to find a suitable living environment. As a result, we may see new species in the North East. As the sea level rises this presents a threat to some of the sites of special scientific interest on the Tees estuary.

Environmental Policy 2007-2011

The Environmental Policy aims to improve the Council's environmental performance. It provides a framework for action and for the setting of environmental objectives and targets.

Mitigation – reducing greenhouse gas emissions

Action on non-energy emissions, and supporting land management practices that increase the amount of atmospheric carbon captured and stored in “carbon sinks” such as trees, woodlands and soils. Switching to lower carbon technologies for power, heat and transport.

Alternative Energy

Most energy we use today comes from the burning of fossil fuels and nuclear power stations (see Figure 8). Carbon and sulphur dioxide emissions are released into the atmosphere when fossil fuels are burnt. In order to reduce CO₂ emissions, we should seek alternate methods to produce energy.

Recycling prevents potentially useful materials from being landfilled or incinerated and it also saves energy from processing raw materials to make new products. By far the most effective way to reduce emissions is to re-use products that are no longer wanted or needed such as furniture, clothing, toys etc.

A schools activity programme has been written to accompany the Sustainable ethics of the Site, see Appendix.

Green Infrastructure:

Objective: Green infrastructure managed and developed, functioning as a carbon sink and contributing towards sustainable lifestyles.

Key actions

- Produce a Parks, Open Spaces and Countryside Strategy (2007-12) that promotes integrated planning and delivery of green infrastructure, creating a setting for sustainable living (e.g. encouraging walking/cycling and local recreation).
- Baseline data for woodland and tree cover within the Borough produced and targets set for increasing % cover by 2012.

Objective: Develop mechanisms to adapt to extremes in weather conditions.

Key actions

- Produce revised Parks, Open Spaces and Countryside Strategy (2007-12) promoting the moderating influence of trees and other green space to reduce climate change impacts on people and buildings.
- Encourage sustainable building design to maximise natural ventilation and utilise passive solar systems and thermal mass to reduce internal temperatures.
- Work with Tees Valley Wildlife Trust to promote 'Gardening for Wildlife' to reduce the loss of biodiversity.
- Produce new and revised management plans for urban parks; country parks and other green space take account of the need to adapt to climate change (e.g. to conserve biodiversity).

Objective: Install renewable energy technologies in Stockton Council properties where feasible and appropriate.

Key actions

- Undertake a feasibility study to utilise renewable energy sources in relevant council and school buildings and identify appropriate funding to finance implementation.

Objective: Raise awareness within the community of how they can reduce their impacts on climate change

1.3.1.5 Legislation

Legislation includes international treaties, European Law and Conventions and English Law. Legislation that needs to be taken into account for the effective management of Cowpen Bewley Woodland Park includes: wildlife law, access to the

countryside, disability access (DDA), health and safety regulations, public health. The key legislation is listed in the bibliography.

1.3.1.6 Health & Safety Policy

The park adheres to Health & Safety Policies and procedures as laid out by Stockton Borough Council, this includes The Health & Safety at Work Act 1974. Areas that are covered under these policies are summarised as; there is a Health and Safety master file kept in the office in the Visitor Centre. The file index is as follows :

- Health and Safety Policy
- Fire Risk Assessment
- Guidance for Strategic Risk Identification and Assessment
- COSHH – Risk Assessment
- COSHH – assessment Data Control of Contractors
- Lone Risk assessment (young person/children)
- General risk assessment
- Manual handling
- Notification of Accident or Industrial Disease
- Individual display Screen Equipment assessment
- First Aid
- Notification of assault
- Asbestos report
- PAT Testing records
- General information
- Accident reporting procedure

A Council run Health and Safety audit takes place each year, last recorded Jan 2009.

In addition to this the rangers carry out site patrols on a daily basis to monitor the park and its facilities. Any potential hazards are reported immediately to appropriate personnel. Any immediate hazards are cordoned off to make the area safe and dealt with immediately if possible.

Risk Assessments used on Site to carry out work by the Rangers or Sites Volunteers around the Park can be obtained from the Activity Centre.

There is a Control of Contractors procedure to be followed when outside contractors carry out work on Site, details of which can be located in the Activity Centre.

1.3.1.7 Partner Organisations

Tees Forest (CBWP was a primary gateway site for the Tees Forest), English Nature, Countryside Agency, Environment Agency, DEFRA, RSPB and the Forestry Commission all have policies and strategies that affect the management of the park. See Bibliography.

1.3.1.8 Water Safety Policy

With 12 ponds, 2 waterways, ditches and a lake on the site it is impossible to constantly monitor these areas. However this is a Local Nature Reserve and no swimming or use of ponds for recreational use such as boating or fishing is allowed on site under the byelaws. Safety rings are unfeasible as it would be impossible and unpractical to cover all water bodies. These would also become targets for vandalism. The rangers have a throw line, which is kept in the site office in case of emergency and they are trained in its use. Water Testing of the ponds and lake were carried out in 2009, the results can be seen in the appendix.

1.3.2 Wider Environmental and Ethical Issues

Cowpen Bewley Woodland Park is just one small part of planet earth and thus a wide range of external factors have an impact on the park. Contaminated land and leachate run off from previous landfill operations, atmospheric pollution, global warming, sea level changes, agricultural practices and many more can affect individual species or whole ecosystems.

The management of Cowpen Bewley Woodland Park needs to take wider environmental and ethical issues into account. If there is management work that may be very beneficial to the site, but would be detrimental to the wider global community, the wider issues should be given a very high priority.

1.3.2.1 Local Agenda 21

This has been written in response to the Rio Earth Summit. We have national and international obligations to comply with and they should be considered of prime importance. 1.3.1.2 details the key objectives in the Stockton Borough Council Local Agenda 21 Strategy that affect operations at Cowpen Bewley Woodland Park.

1.3.2.2 Cowpen Bewley Woodland Park Sustainable Energy Policy

“Promote the use of Renewable Energy Sources through setting a good example”

The centre is equipped with a solar panel and wind turbine, and a photovoltaic array which all power directly into the National Grid. These make huge savings on electricity costs. The building also provides information for the public on the benefits of renewable energy. Routine maintenance and use of proper heating controls (such as the thermostatic valves on the radiators) is essential to ensure the efficient running of the buildings heating system. The yearly service/maintenance of the wind turbine is approx £550.

The visitor centre underwent an SBC Buildings Environmental Audit, the result being that several new heating control measures were introduced; frost stat, new boiler timers and new building thermostats were put in place in 2009.



Fig 5 : Wind Turbine at Cowpen Bewley Woodland Park

A wider view of the issues concerning 'Climate Change' will need to be looked at. The Woodland Park has started to address the problems of over use of burning fossil fuels by installing a new more efficient heating system.

A policy of changing the present light bulbs and updating to a greener version should be incorporated.

The Site Rangers have become 'Carbon Savers'.

Carbon Savers

Employer: Stockton-on-Tees Borough Council (Mike Chicken)

Location: Your Building

Salary: Voluntary (with benefits)

Job Description

Changes in building regulations and an increase in legislation and European directives on emissions and energy efficiency have increased the need for organisations to employ energy conservation staff. The overall aim is to assist the UK to meet its environmental commitments on the reduction of carbon dioxide emissions.

We are looking for an outgoing individual with knowledge of both carbon and energy saving methods, to increase energy and carbon awareness within their existing department. This is achieved by: Applying cost effective solutions to reduce department/buildings consumption of energy. Raising the profile of energy conservation. Encouraging the use of renewable/sustainable energy resources, both within the Authority and in the home. Typical work activities Duties will vary according to the setting in which the work is being carried out and can range from encouraging people to turn off lights, through to feeding back any energy saving suggestion received from staff members. Typical work activities generally include:

*Distributing Carbon/energy saving materials throughout your building/department
Offering practical advice to staff members on the efficient use of energy.
Contributing to our monthly Carbon Management Team meetings. Collecting staff member's energy saving suggestions. Developing Carbon/energy saving promotional activities to suit your department/building. Conduct short energy awareness audits on your department/building throughout the programme.*

Benefits :

Benefits to be given to everyone who contributed to the success of the program, with extra bonuses given to the departments/buildings who reach their annual energy saving targets.

1.3.2.3 Cowpen Bewley Woodland Park Sustainable Transport Policy

“Promote walking, cycling and public transport as ways of accessing the site.”

Promoted through specific events such as guided walks and cycle events. Maintain a good network of accessible paths and also maintain cycleways through the site. Work alongside Sustrans on this.

1.3.2.4 Cowpen Bewley Woodland Park Purchasing Policy

“Aim to purchase products that are environmentally and ethically sound.”

A mini audit system is used to assess products purchased for use on site, or for sale in the shop. Factors used to assess suitability include the following: use of renewable resources, fair trade, organic production, local production, educational value, minimal packaging, relevant to the site, fit for purpose, reusable, use of recycled materials, transport costs (environmental not financial), amount of processing, ease of recycling, ease of disposal, harmful to environment.

It is not always possible to satisfy all the factors listed above, but through this process educated decisions can be made over the most appropriate product.

Within the Centre there is a small shop area, where some Fairtrade or Traidcraft items are for sale.

1.3.2.5 Cowpen Bewley Woodland Park Waste Management Policy

Implement the 4 R's of waste management.

Reduce amount of waste produced on site

Reuse items where possible

Recycle if neither of the previous options is possible then it may be necessary to recycle

Refuse as a last resort use the bin

Waste paper, tin cans and glass recycling bins have now been placed in the Sites car park for use by the general public, these are emptied monthly, or when they become full..

1.3.2.6 Activity Centre Sewage Treatment System

The Activity Centre has its own sewage treatment system. The green tank located at the front of the Activity Centre. This is a Biotec P45.

This unit requires servicing and de-sludging once or twice a year depending on useage. At present it is once a year in August. The service costs about £162.25 +VAT (2002 prices) and the de-sludging a similar price. These two operations should happen at the same time. The servicing is carried out by S&S Installations 01706 813733. The de-sludging has in the past been carried out by Gee Dee Plant from Hartlepool, although there are other companies available. The Plant and the blower (next to it) should both be strimmed around twice a year to prevent vegetation penetrating the units, particularly the blower.

Due to the biological nature of the Plant it is important to be careful about the type of chemicals that are put down the toilets and sinks. See Sewage Plant file in Site Office for more detail on how it works and the chemical restrictions.

1.3.2.7 Pesticide Policy

‘No pesticides are used on site unless there is no alternative non-chemical method of control, and the non-use would cause more danger to public or wildlife than the use of. ‘An example of a case when chemical treatment had to be used was in the control of Australian swamp stonecrop. A non-native invasive water plant, that had caused extreme damage to other sites and had to be brought under control. Research was carried out into alternative control methods but none were found to be successful. Thankfully the chemicals were non toxic to other water life. If like in this case there is no alternative then an appropriate contractor is brought in to carry out works and thus no pesticide chemicals have to be stored on site.

New Zealand Stonecrop appeared again in the ponds between the car park and the visitor centre in the summer 2009, the Environment Agency were approached for advice on how to deal with the problem, before it spread. They recommend that if we are going to spray, to spray in spring. Another option was to fill in this pond and create another elsewhere.

1.3.3 Staffing

1.3.3.1 Countryside Rangers

There are two full time Rangers responsible for looking after Cowpen Bewley Woodland Park. Periodically other ranger staff can be brought in from other sites to help, but this is generally only under special circumstances. In 2009 the Countryside Staff team will be going through a Council wide restructure plan.

The Parks and Countryside staffing department is under review, with a view to restructure in 2010.

1.3.3.2 Countryside Recreation Officer

Line Manager of the Site Rangers and responsible for all Stockton Borough Council Countryside sites. Regular monthly meeting held at Cowpen Bewley Woodland Park with Countryside Recreation Officer.

1.3.3.3 Shop Staff

There is a Visitor Centre Co-ordinator responsible for managing the shops at Cowpen Bewley Woodland Park, Billingham Beck Valley and Wynyard Woodland Park who takes care of the stock ordering and banking.

During official opening times the shop is staffed by casual staff.

1.3.3.4 Volunteers

There is a dedicated team of volunteers who work closely with the two site rangers and assist in caring for the park. They carry out a huge amount of valuable work on the site. This includes site patrols, security, customer relations, enforcement of byelaws, and conservation management work. A number of the regular visitors who visit on a daily basis have keys for the car park gates, which they unlock in a morning, and lock at night.

We hope to expand the volunteer team, both in numbers and the types of assistance they provide. In the future we hope the volunteer team will lead to an increased presence on site and assistance with office/administrative work, events and educational projects.

Volunteer work days have now changed from Sunday afternoon to Wednesday mornings

Volunteering attendance monitoring forms are now sent to a 'Care For Your Area' Dept for payment (travel expenses). Each year there is a Christmas social get together between several of the volunteer groups, SBC provide a free buffet.

1.3.3.5 Trainees

Long term trainees can provide valuable support to the ranger staff. None work with the team on long term placement at present but it is hoped that this may resume in the future.

1.3.3.6 Staff Training

In order to maintain high levels of professional, competence and staff moral among such a small team, regular professional training should be offered to the Ranger staff.

At least one professional training course per year by a recognised Countryside Training Organisation.

Stockton Borough Council also offers a wide range of short training courses, which are available to the Site Rangers. Many of these courses would be of benefit to volunteers and should be offered. In house training is another important and often overlooked opportunity for staff and volunteers to develop their skills.

1.3.3.7 NVQs

As part of the development of staff and trainees, Stockton Borough Council Countryside Team in the past actively pursued a number of NVQ programmes. Staff were offered training towards their assessor awards (A1) While there is no internal training of staff for NVQ. Other full time staffs are working towards NVQ III landscapes and Ecosystems.

1.3.3.8 Cowpen Bewley Environmental Trust

Set up initially to help with fundraising and the development of the activity centre in 1998. It now also has a management committee role. It has its own constitution, and membership is representatives from partner organisations and park visitors. The Trust at present has 8 people present on its committee, with the hope of encouraging more people to join. It plays a valuable role in fundraising, and helps formulate general policy for the management of the park. Its main aims as set out in the constitution are; (copies are kept in Site Office)

Promote the benefit of the inhabitants of Billingham and surrounding area without distinction of sex, sexual orientation, race or of political, religious or other opinions, by associating together the said inhabitants and the local authorities, voluntary and other organisations in a common effort to advance education and to provide facilities for recreation and leisure-time occupation, with the object of improving the conditions of life for the said inhabitants.

To promote the conservation, protection and improvement of the physical and natural environment.

The Trust produces an annual report and its accounts are verified externally on a annual basis. The Trust is currently applying for charity status. Much work is being carried out to promote the Trust via regular summer events and fund raising such as a Fete.

1.3.3.9 Work Teams

Several Training for Work Teams have been used in the past to carry out works around the Site, one was the Tees Forest (North East Community Forest) work team which ran training course for a work until 2008. Prior to the Tees Forest work team, most work was carried out by the Community group NACRO.

Since we the Parks and Countryside division moved into a new department (2008) ‘Care for your area’ site staff can call upon manpower from other departments.

There are also two roving practical countryside operatives (2008 onwards), on temporary employment from an agency; they carry out strimming and cutting back on footpaths.

The East Durham Community College has also worked on Site carrying out large practical conservation management tasks.

Work Teams from private companies on workdays have been involved with tasks such as pond digging, tree removal and meadow management.

1.3.4 Links to other Conservation Organisations

1.3.4.1 Stockton Borough Council Countryside Team

Responsible for managing a range of sites across Stockton Borough. The sites have in the past worked closely together in the sharing of ideas and expertise. While this does still happen, the loss of the monthly team meetings that were once held has meant less contact between staff and thus less cohesion as a team.

1.3.4.2 Tees Forest

Cowpen Bewley Woodland Park was part of The Tees Forest; this organisation though went into administration in November 2008. It is hoped that the organisation will resurrect at a later date. The Park still acts as a primary gateway site to the wider Tees Valley countryside.

1.3.4.3 Hartlepool Borough Council

Cowpen Bewley Woodland Park lies on the boundary of Stockton Borough Council and Hartlepool Borough Council. Part of the site actually lies within Hartlepool Borough Council. Close links exist between staff at Cowpen Bewley Woodland Park and the Hartlepool Wardens Service based at the Power Station, the public rights of way team, and Summerhill Country Park. Issues such as the Sustrans Route 14, Brickworks Trail and Celtic role-play sessions all work through close links.

1.3.4.4 Wardens Forum

Meetings are held occasionally bringing together countryside staff from local authorities in the Tees Valley, including Redcar and Cleveland, Middlesbrough, Stockton, Hartlepool and Darlington.

1.3.4.5 Tees Valley Wildlife Trust

Provide a strategic wildlife overview for the Tees Valley, and have produced a local Biodiversity Action Plan that has influenced this management plan.

1.3.4.6 Teesside International Nature Reserve

A new International Nature Reserve that would cover large areas of marshes to the north of the River Tees is to be opened 2009. The reserve would come very close to Cowpen Bewley Woodland Park. Strong links with the new reserve should be established. This reserve is to be managed by RSPB with a new visitor centre to be constructed by 2009. . Strong links with the new RSPB reserve have been established. This reserve is managed by RSPB with a new visitor centre constructed by 2009.

1.3.4.7 INCA – Industry and Nature Conservation

This is a group funded by local industry that uses its resources to promote nature conservation management in the Tees Valley area. At present there is limited contact between Cowpen Bewley Woodland Park and INCA. This link needs strengthening.

1.3.4.8 The Woodland Trust

The Woodland Trust own Faith Wood, which is managed as an integral part of the woodland park but has its own separate management plan. The ranger staff work closely with the local woodland trust officer to implement the management plan for this area. The Woodland Trust pay the park £500/year to carry out the basic maintenance of path mowing, the annual hay cut, sign cleaning and litter picking. This is arranged by contract. SBC invoice the Trust 3 times a year for this work. This agreement is due to come to a conclusion soon, and as a replacement the Woodland Trust have approached the Woodland Park about taking full responsibility for the management of Faith Wood. See Faith Wood file on computer. The acquisition of this land is still ongoing (January 2010)

1.3.5 Management Plan Review

This five-year management plan is intended to be a working document. As situations change on site and policies are updated, the plan will need to be modified and reviewed.

1.3.5.1 Annual Review

The plan is intended to be a rolling programme that can be regularly updated and modified. The annual review should be a fairly quick and straightforward process. The annual review will provide an opportunity not just to create the annual plan for the forthcoming year, but also to evaluate successes and failures over the previous twelve-month period.

The five year work plan will need revision and extending so that the vision behind the plan is always considering the long term.

- Habitat and species management will need to be reviewed in light of changes of status, legislation and guidance especially through the BAP process.

- Recreational Management should continue with regular public consultation over site management.
- Education Management and provision will need to keep pace with changes in national curriculum and other guidance notes.

In the main a major rewrite should not be necessary until the end of the plan period in 2013.

1.3.5.2 GIS

Much of the information making up the bulk of this plan has been converted onto the Stockton Borough Council GIS system. Maps, keys and tables of information can all easily be stored electronically. Much of the body text can also be assigned to the appropriate maps as extended keys. This process should make updates and changes to the plan quicker and simpler to implement.

1.3.6 Finance and Administration

1.3.6.1 Finance

The site budget allocated by Stockton Borough Council currently stands at around £5,294 per year. This figure needs to cover all purchases made for day to day running costs, maintenance of the activity centre, habitat, species, education, interpretation and recreation management. Purchases for the shop also come from this budget although the shop is now self-financing with additional stock being purchased from the shop profits. Similarly schools make a contribution towards the cost of materials used in the programmes (although staff time is effectively given for free).

Since the Parks and Countryside Department transferred to the 'Care for your area' section of SBC, a new way of budgeting has been proposed, where all Sites budgets are placed in one pot, so the Site can apply for larger amounts of money. This is proposed to start in 2009.

Site Budgets are secure, but as a result of our Departmental move we can tap into greater resources within the 'care for your area' team.

Items such as salaries, works van (shared between 3 sites), electricity, rates, telephone and computer come from a central budget.

Actual site spending is far higher than this, just over £24,000 in 2001-2002. Additional finance has to be found other than internal and external sources such as grants, awards, partnerships with local industry and other departments in Stockton Borough Council.

Accurate records of financial turnover need to be maintained. See site finances file on computer.

1.3.6.2 Fundraising

In order to find the finances to carry out many of the items detailed within this management plan, it will be necessary to seek financial assistance. The Cowpen Bewley Environmental Trust are extremely useful in this respect as they can apply for a large number of grants that would not be available to Stockton Borough Council.

Grant applications need to be submitted 6-12 months before an activity is scheduled to occur. The completion of grant application forms, negotiations over specifications, submission of project reports, and auditing of the accounts often takes up more time than the actual project itself. This time needs to be included for in project programmes.

Useful sources of grant aid in the past have included ENWET and other landfill tax money, Local Heritage Initiative, Awards for All, Philips Petroleum, Air Products, Stockton Borough Council Small Arts Awards and Northern Arts. Other awards that need to be explored include EN-LNR monies and Biodiversity Grant Scheme, INCA and other local industries. Need to keep up to date on what grants are available and tailor projects to meet the grants objectives.

1.3.6.3 Best Value

During 2000-2002 considerable work has been put into the development of a Best Value of the countryside service. Although the bulk of this work has now been completed, it will be an ongoing process with regular routine reviews. Time needs to be allowed for this process.

1.3.6.4 Administration

Considerable time is spent processing administrative matters. Stockton Borough Council has its own systems and procedures that the ranger staff are expected to follow.

Routine administration includes dealing with post and telephone messages on a daily basis.

Best Value and Job Appraisal have been major administrative exercises over the past three years.

The Parks and Countryside Department was awarded Charter Mark in 2003, in recognition of its hard work and customer focus.

Part 2 Conservation Management

2.1 Habitat Management

2.1.1 Habitat Types

The broad habitat types to be found in the park are shown on Map10. More detailed maps of individual habitat types are found on Maps 12-17 (woodlands), 18 (hedgerows), 19-21 (grasslands), 22-23 (aquatic).

2.1.2 Biodiversity Action Plans

Biodiversity Action Plans (BAP's) provide a framework for achieving the conservation of biodiversity based on the targeting of resources towards priority habitats and species. BAPs also provide a means for the involvement in conservation of a wide range of organisations and members of local communities.

Three types of Action Plans have been developed which set priorities for nationally important and locally important habitats and wildlife - Species Action Plans, Habitat Action Plans and Local Biodiversity Action Plans. These are described further below. Section 2.2 details the species present at CBWP that are covered by these action plans.

There are 200 National Indicators that monitor how the UK is performing against a range of criteria. National Indicator 197 refers to Biodiversity and the reporting / monitoring of this is subject to review by a regional partnership board. Within the Tees Valley this is the Local Biodiversity Steering Group with delegates from Local Authorities, The Wildlife Trust, Natural England, RSPB, Northumbrian Water, Wildflower Ark, Teesmouth Bird Club etc.

There are 53 designated Local Wildlife Sites within Stockton Borough plus 5 Local Geological Sites. This designation supersedes the old Site of Nature Conservation Importance (SNCI) designation, but not the Local Nature Reserve designation which also contains an acknowledgement of the site as used for educational purposes.

A recording of the sites under positive management can be made by means of a site managed under a Management Plan or by a standards award such as Green Flag. All three of Stockton Borough Council's Country Parks are Local Wildlife Sites and all are recorded as being under positive Management in the annual returns to the local board.

2.1.2.1 Broad Habitat Statements and Priority Habitat Action Plans

Two types of documents have been produced about the habitats within the UK:

- Broad Habitat Statements provide summary descriptions of all habitats found within the UK and are identified in the Broad Habitat Classification. For example, natural habitat types such as broadleaved woodlands and rivers and streams, through to urban settings. In addition to a general description of the

habitat type these Statements identify the current issues affecting the habitat and the broad policies, which can be put in place to address these.

- Priority Habitat Action Plans provide more detailed descriptions for 45 specific types of habitats such as native pine woodlands, upland oak woods and lowland wood pasture and parkland. They set out detailed actions that can be taken by a number of agencies in order to safeguard and enhance these habitats.

The remainder of Section 2.1 details the habitats present at CBWP that are covered by these action plans.

2.1.2.2 Local Action Plans

Around 160 Local Action Plans are in preparation or being implemented across Great Britain. Each Action Plan works on the basis of partnership to identify local priorities and to determine the contribution they can make to the delivery of the national Species and Habitat Action Plan targets.

The Tees Valley Biodiversity Action Plan was published in June 1999 and identified habitats and species in the area that require priority treatment.

Details of local habitats present at CBWP are found in the remainder of section 2.1, and local species present at CBWP are found in section 2.2.

2.1.2.3 B.A.P Habitats at CBWP

The Tees Valley Wildlife Trust classifies a number of habitats found in CBWP as BAP Habitats. These are listed below.

Local Habitats	Condition
Improved grass land / Arable	Reasonable
Ponds	Reasonable to good
Roadside Verges	poor - enter negotiations with highways contractors
Broad Habitats	
Boundary and linear features	immature
Broadleaved, mixed and Yew woodland	immature
Fen, marsh and swamp	scattered, reasonable
Improved grasslands	improving conditions
Rivers and Streams	poor to reasonable
Standing open water and canals	
Priority habitats	
Ancient and for species rich hedgerows	developing
Reedbeds	scattered/reasonable

Some of these habitats are currently in a reasonable state, others require considerable work and/or time for them to develop into prime habitats. This is not surprising as until recently the whole area was being used for agricultural or industrial purposes. With time and effort, each of these habitat types could develop into good habitat types that will make a valuable contribution towards the Tees Valley Biodiversity Action Plan.

Local BAP's from the Yorkshire Dales National Park, North York Moors National Park, Northumbrian Water, and Durham have also been examined, and point to a number of other habitats considered important on a wider regional basis that can be associated with CBWP and should be considered as a contribution to Biodiversity projects on a wider scale. These habitats include:

Local habitats

Buildings	A number exist on site. Install bat boxes.
-----------	--

Non-native broadleaved and immature but developing Mixed plantations	
---	--

Scrub	extensive in patches
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Cereal fields	many in surrounding lands
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Urban habitats	much on boundary of site
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Priority habitats	
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Lowland meadows	developing
-----------------	------------

Cereal field margins	implement during plan period
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Wet woodland	developing
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Full details on the Broad Habitat Statements and Priority Habitat Action Plans and Local BAP Habitats can be found in the site office or on the Internet. The local BAP's and BAP habitats are taken into account in the development of management prescriptions at CBWP and where possible incorporated into them.

2.1.3 Woodlands

All details of management in individual areas can be found in the Action Plan.

2.1.3.1 Semi Mature Woodlands

The extent of the mature woodland and scrub on the site covers a total of 2 ha (approximately). This can be divided into four main areas - Pigeon Wood, Cowbridge Copse, area around the lake and the copses on Northumbrian Water land. Although all of these areas are small and, on their own, are not particularly viable, they do add

significant value to the site. Their existence provides nesting and feeding sites for a number of birds, sparrow hawk have nested in one of the areas. The large amount of hawthorn within these areas attracts redwing and fieldfare to the site in the winter. The cover provided by the scrub shelters mammals such as Roe Deer, hares and foxes which are resident on the site. In time these areas will be complemented by the young woodland growing up around them.

None of these areas are large enough to be treated as woodland in their own right. Currently there are few mature trees on the site these areas should be left to naturally develop and any deadwood left were it stands or falls.

2.1.3.2 New Woodland

The key objective of the new woodland is to create an extensive block of semi-natural mixed broad leaves woodland.

This five-year management plan (2003/2008) covered the completion of the establishment phase and introduces a start to removal of the nursery crops and tree thinning towards the end of the five-year period. The updated woodland management plan 2008-2013 focuses on the thinning of the nursery crop trees and selective thinning of the broadleaved trees. It covers years seven to thirteen of the fifty-year management plan and gives a more details analysis of work to be carried out to meet the objectives laid out in the fifty-year management plan for the creation of a semi-natural mixed broad leaf woodland at Cowpen Bewley Woodland Park.

The area of young woodland on the site is approximately seventy hectares (70.05Ha). At the time of planting, the area of Cleveland covered by the Community Forest Plan was divided into 11 zones.



Fig 6 : Plantation Woodland at Cowpen Bewley Woodland Park

Cowpen Bewley Woodland Park was within zone 2 - Greatham Corridor. The total area of this zone is 1580 ha. Prior to the woodland planting at the Park the existing woodland cover in this zone was 0.2%, i.e. only 3.16ha. In the surrounding zones the total area the corresponding percentage of tree cover which exists is as follows:-

- Zone 1 - 3720ha, 0.8% tree cover

- Zone 3 - 1500ha, 35.6% tree cover
- Zone 4 - 1920ha, 0.6% tree cover

With the exception of zone 3, woodland cover in this area is minimal. The aim of the Community Forest project is to increase cover in the above areas to 20 - 40% with over 40% in some areas. Within Zone 2 the Woodland Park plantings increase the cover to just over 5% - a significant contribution to the overall project. The Woodland Park is, at present, the only single large block of woodland in this area. The Woodland Park is a plantation and therefore lacks naturalness. Over time semi natural characteristics associated with a mixed broadleaved woodland should develop with appropriate long term management (see Bibliography 16).

Typical woodland cover for this area would be NVC type W10 - oak, ash and hazel dominant due to the heavy, poorly drained clay soils - typical woodland cover of the English lowlands.

The original planting specification contained a high proportion of these trees but did not follow NVC type closely for the following reasons:-

- 1. The woodland is a high profile site close to a large urban population. Species which would grow relatively quickly such as sycamore and cherry were chosen so that there would be is a certain amount of tree cover in a relatively short time.*
- 2. Due to the exposed nature of the site a shelter crop of corsican pine and larch was planted. The pine will also provide some winter colour.*
- 3. Small numbers of ornamental trees were planted for their aesthetic value - maple for its autumn colour for example.*
- 4. It was recognised that once the trees were established, thinning work would be necessary in line with a management regime which favours species typical of this area and soil type.*

Many of these areas were planted under woodland grant scheme and were maintained at commercial stocking densities until the end of the ten-year grant scheme period March 2005. Ten years after planting the trees suckers are well-established and thinning operations have started without prejudicing the grant money paid.

The trees have been planted at very close spacing, in semi-natural mature woodland, tree spacing averages around 6m. To meet this more natural spacing density, extensive thinning of trees will need to be carried out. Such thinning, if carried out, in small numbers over a forty-year period should result in the area gaining a woodland feel long before it reaches maturity. Thinning will also help to produce the appearance of a more diverse age structure as many of the broadleaved species will re-sprout if left untreated and the new shoot would held to create an under storey among the trees.

Some areas could be over thinned to allow nature regeneration, again helping to create a more diverse age structure. Some areas on the edge of the woodland plantings are

being left for the same purpose. By doing this, glades and open areas will be made, creating microclimates, adding more diverse habitats for flora and fauna

Corsican Pine was planted as a nursery crop with the intention that most would be removed through early thinning starting from March 2005. Sycamore should also be targeted in the early years of the thinning programme (See Bibliography 16 for Rationale). The original planting plan showed a large number of open glades. Most of these are inaccessible to mowing machinery and are being allowed to undergo natural succession. Stockton Borough Councils Arboricultural Department are sourcing funds to get contractors in to clear 90% of Corsican pines in the Woodland Park (Jan 2009).

2.1.3.2.1 Grant funding for Felling

In 2009 SBC Arboriculture Dept and the Parks and Countryside section completed a joint application for funding to carry out woodland improvement works at Cowpen Bewley Woodland Park. The funding was available from the Forestry Commission's Woodland Improvement Grant (5), the theme of this particular grant is stopping the decline in British woodland birds, and focused on several bird species whose population numbers are falling.

A representative of the Forestry Commission called at the Park to advise us on the best way to apply for the funding, and what category to apply in. The grant funding we were told could be up to £40,000. The works could be on a four (or five) year time scale, and would involve a 90% thin of the Corsican pines on site over two years and, then a further two years of broadleaved thinning, at a ratio of removing 2 out of 5 trees. The rangers would mark Corsican Pines to be left on site with a green spot of paint, and would mark the broadleaves to be removed with a red spot of paint.

All trees removed are to be chipped and spread on site. The works would increase glade areas within the woodland, thin out trees that line footpaths, and remove 90% of the Corsican Pines, leaving some standing for aesthetics and wildlife value.

(Prior to the Forestry Commission grant application the Arboriculture dept had been successful in obtaining £10,000 for the SBC Parks Improvement Plan to carry out the Corsican Pine removal over two years. Under this funding tenders were encouraged, with the Tillhill company being the successful applicant. Giving a quote of £12,000 to carry out the Corsican Pine removal over two years. Extra funding to pay for the work would come from the Arboriculture dept budget).

Work is scheduled to start in January 2010.

New woodland glades have been created since March 2005.

Scots Pine should be introduced as outlined in Bibliography 16.

Full details on composition of woodland blocks, management and thinning operations can be found in table 1.

2.1.3.3 Faith Wood

This area at present (September 2007) is owned and managed by the Woodland Trust in co-operation with Cowpen Bewley Woodland Park and the Tees Forest (as was). It has its own management plan (see Bibliography 17), which takes account of its wider contexts as a constituent of Cowpen Bewley Woodland Park. The management agreement of this area is up for renewal, and as such Cowpen Bewley Woodland Park could become the sole manager of this area.



Fig 7 : Faith Wood Entrance Sign

2.1.3.4 Standard Trees

There are few standard trees on site. Those that are present are mostly on the site boundaries. Map 14 shows their locations. Some trees on roadside may need periodic work to ensure they pose no risk of falling across the highway (liase with Stockton Borough Council Arboriculture Officers). Other trees should be watched to ensure they do not constitute a health and safety hazard to the public. With these two exceptions standard trees should be left to mature, die and degenerate where they stand or fall.

2.1.3.5 Deadwood

There is very little standing or lying deadwood to be found on the site at the present time. Deadwood is a very important component of any woodland eco-system and an increase of deadwood on the site would be very beneficial for the over all ecological balance. Many in-vertebras and birds are heavily reliant upon deadwood and would benefit from its presence. The larger the diameter and length of the deadwood the better.

- Wherever possible leave standing and lying deadwood in the woodland area.
- Tree thinning should be stacked in deadwood piles and smaller amounts left scattered around. In areas where fires from vandalism may be a problem, the deadwood should be moved and stacked elsewhere on site.
- Import large tree trunks to provide some large diameter deadwood.
- Remove some of the dead Elms at the entrance to the Site off the Seal Sands Link Rood, to improve the first impression of the Site to first time visitor.

2.1.3.6 Square Trees

The area know as Square Trees needs to have the fence boundary between the Site and Northumbrian Water replaced, it is green plastic chain link fence that has been cut in many places to allow illegal access top the Northumbrian Water area. A hedge is to be planted along the Parks inside boundary of this fence line. This should act as a barrier and a wildlife corridor.

2.1.3.7 Scrub

Many species thrive in scrub habitats. As the woodland block develops the woodland edge would provide much habitat for these species. However there are some scattered patches of young trees within the grass and habitat that would be better managed as scrub..

An area know as the Conservation Area, which is really an area of scrub south of the lake will need fencing off in the future, it has good habitat potential and both visitors and dogs will need to be diverted away from this area. The fence needs to be of stock proof mesh with a field gate to allow entrance and exit to the area (see map 17)

An orchard is to be planted in the amenity area adjacent to the Activity Centre (see map 19A)

2.1.3.8 Climate Change

Concerns over future Climate Change weather patterns may have a dramatic effect upon future Woodland species and management. Drought, floods, prevailing winds and snow will all affect the growth rate of trees and shrubs. Different tree species are more susceptible to internal damage of the heartwoods, root systems and branch decay at different rates due to the changing climate. New and more aggressive organisms encouraged by a changing climate may also affect the growth rate of the trees, or may hasten decay.

2.1.3.9 TRANSCO

TRANSCO put in a new gas main in 2003, this cut through several areas of planted woodland. These areas were planted up upon completion of their works. This has now taken place and the replanting of this area has become well established. During 2006 Transco carried out some tree felling operations in Beanwell Plantation and Pigeon Wood where the trees have been planted over a pipeline. This should not have been allowed to happen and must continue to be kept at 0% tree cover directly over the pipeline. (the willows in Pigeon wood are likely to need to be watched for re-growth)

2.1.4 Hedgerows

Remnants of hedgerow exist throughout the site, 1600m in total. In a few areas reasonable stretches remain. These are typically dominated by hawthorn and blackthorn. Hedgerows are an important feature within an ecological unit such as

this. The hedges provide nesting and feeding sites for birds, small mammals and invertebrates. They also act as corridors, which animals can move along relatively safely, in an open landscape such as that which exists in this area at present. There are hedgerows outside the park in the farmland to the north. These provide vital corridors for wildlife coming to and from the park. Unfortunately many of the hedgerows outside of the park tend to be managed severely by regular flailing rather than by traditional hedge laying practices. Flailing creates ‘mushroom’ shaped trees and hedgerows managed in this way eventually become full of gaps and decrepit. There is great scope within the park for re-establishing hedgerows and managing these, along with the existing hedgerows in a sensitive manner. Attempts could also be made to encourage surrounding landowners to do the same. As the woodland develops the hedges will provide an important edge - a buffer zone between the woodland and the surrounding environment.

Around the southern edges of the Lake an area of scrub has grown up, providing a much needed area for nesting birds, this area should be fenced off (and hedged) to reduce intrusion from visitors and their dogs (see map 6A)

A large number of hedges were planted around the park between 1996 and 1999. Plantings were carried out under the Countryside Stewardship Scheme (managed by DEFRA) and gapping up works are required to continue on some hedge lines until 2004 under the auspices of the scheme.



Fig 8 : Hedgerow at Cowpen Bewley Woodland Park

In general mature hedges on the site should be left unmanaged as they represent the main component of mature trees on the site at the present time. Some hedges especially those that are along footpaths and roadsides will need to be managed. The hedges that are along side busy roads will need to be machine managed using a tractor mounted flail for safety reasons. Those that can be, should be managed using volunteers using hand tools as this will do less harm to the visual impact of the hedge. In the future as the planted trees develop this regime could be revised. New hedges should be maintained and gapped up where necessary. Full details on individual hedgerow composition and future management requirements can be found in table 2. Location of hedges is shown on map 18. All hedges on the site are numbered. Some numbers carry the suffix S e.g., 9S, 19S. This indicates that these hedges are under Countryside Stewardship grants (paperwork held in Rangers Office filed under

Countryside Stewardship). Some numbers carry the suffix T as in 1T to 4T these are the hedges around Tot Fennies Field and are covered by a separate stewardship agreement (paperwork in Rangers Office filed under Tot Fennies Field). Numbers without suffixes are not under any form of management agreement.

Note not all hedges shown on the map are owned by Stockton Borough Council. Check details before carrying out work. All roadside hedges need to be trimmed every few years to prevent encroachment onto the roads. Last carried out in October 2008

2.1.5 Grasslands

See Maps 19-21

2.1.5.1 North of A1185

Approximately 36 ha of the site is covered by open grassland. Locally this is a significant amount as much of the surrounding land is either arable fields or urban. Botanically the majority of the grassland is generally species poor (see Bibliography 63, 64, 66) but it provides a good habitat for small mammals such as field voles and shrews and, in turn, provides prey for birds such as kestrels and short-eared owls, which visit the site regularly. The grassland is also used by ground nesting birds. These include skylark - numbers of which are in decline nationally. Habitat for a number of moths, butterflies and other invertebrates is also provided.



Fig 9 : Grassland at Cowpen Bewley Woodland Park

The majority of the grassland was created as part of the reclamation process of the former landfill site. Areas of the former I.C.I land were seeded with grass and wildflower mixtures, in the main this has been relatively unsuccessful due to lack of appropriate meadow management techniques in the years immediately following the planting. Annual hay meadow cuts across the site were initiated in 1999, and have dramatically improved the floristic diversity of these areas.

Many of the BAP species associated with the site are dependent upon the grassland habitats, as are many of the butterfly species currently found on site. Butterfly numbers and diversity have improved with the introduction of hay meadow management on the site.

For these reasons it is vitally important to retain extensive areas of grassland habitats. Hay meadow management is to be expanded in some areas. Rank grassland is also an important habitat for ground nesting birds and small mammals (including harvest mice), and extensive areas will be retained.

2.1.5.2 South of A1185

Much of the land on the south side of the Site, although planted with young trees, is predominantly a rank grass habitat, supporting large numbers of ground nesting birds especially skylarks – a bird undergoing a considerable decline and of great conservation concern. As the woodland matures these areas will be shaded out and this valuable habitat would be lost. If we do not wish to lose our skylarks from the site it is imperative that large areas of rank grassland are retained elsewhere around the site. See management for BAP species (Skylark) Table 3

These factors also explain why certain areas of the newly planted woodland are to be opened up as woodland glades.

2.1.5.3 Woodland Glades

The establishment of successful woodland glades in these locations is however dependant upon the access of appropriate cutting machinery. It will be necessary to either find a contractor with appropriate equipment for the cutting and clearance of small grassland glades, or through the purchase of our own reciprocating Cutter Bar Mower or similar.

2.1.5.4 Hay Meadows

The large grassland meadows are cut each year in late August. They are cut by a local farmer, who in return for cutting the hay meadows and baling the cut grass, removes the bales from Site for his own use. This is of mutual benefit to the Park, the removal of the cut grass removes the nutrient that would leach back into the soil, by doing this the subsoil become of poorer quality and better for wild flowers.



Fig 10 : Hay collection at Cowpen Bewley Woodland Park

2.1.5.5 Footpath Cutting and Amenity Grassland Areas

These areas are currently cut under contract by Service Stockton. Contractors are provided with up-to-date maps on an annual basis. Currently most paths are cut monthly. The largest area of amenity grassland on Site is from the Car Park, leading up the road to the Activity Centre (see map 19A), and continues around the Centre onto the amphitheatre area. At present the old tip site meadows are cut annually by a local farmer (Richard Atkinson) on a casual arrangement where he keeps the bales.

Some areas that footpaths run through may need to have the paths widened to remove vegetation such as thistles; they can bend in wet weather or in their dying stages to block the footpaths.

2.1.5.6 Faith Wood

Footpaths are mown by Service Stockton. Grassland areas are cut each summer as part of the hay cutting regime see map 19 by Richard Atkinson.

2.1.5.7 Butterfly Glades

See map 19 and key.

2.1.5.8 Rank Grassland

See map 19 and key.

2.1.5.9 Chalk Banks

The banks of the lake which are composed of gypsum are another man made feature of Cowpen Bewley Woodland Park. The grass/low herb covered gypsum covers an area of approximately 600 square metres. The flora supported by this substrate is botanically more interesting than any other part of the former landfill site. There are areas of calcareous grassland and a large number of common spotted orchids grow here along with other calcium loving plants such as cowslip and creeping cinquefoil.

In order to maintain this feature it may be necessary to protect it from invasion by brambles and scrub and remove brambles and scrub from certain areas. There is a considerable erosion problem here, both from the lake and the feet of visitors and their dogs.



Fig 11 : Banks of Lake at Cowpen Bewley Woodland Park

To reduce undercutting of the bank sides by wave action it has been proposed to place either coir rolls planted with native wetland flora as a buffer along the bank sides at water level, another option would be to place small round hay bales (cut on site) along the water level line and plant them using wetland flora removed from around the Site, this should act as a buffer zone (see map 22A).

Reducing visitor trampling erosion may not be that simple, as the areas are under constant pressure by people wanting to feed the waterfowl.

Benches are also present in these areas. Some of the benches next to lake are to be moved away from the banksias, this should hopefully reduce the numbers of people walking to close to the edge, and reduce the trampling effect on the vegetation.

By selectively fencing off the delicate habitat zones around the lakeside and moving the benches to other areas, this may reduce trampling on the ground fauna and flora of the area.

A representative from Wildflower Ark surveyed the Lake Chalk Banks (summer 2009) stating that they were an important habitat for the Park (area/region), his instructions were to remove scrub hawthorn and bramble from the bank side area to allow calcareous vegetation to return.

Barley Straw may be added to the Lake from time to time to try and combat the algal growth that often appears in the summer months.

2.1.5.10 Tot Fennies Field

For a full botanical description see Bibliography 63,64

Continue with annual hay cut in late summer as shown on map 19.

Note Tot Fennies Field is covered under countryside stewardship that gives guides lines on eligible management, see file in Rangers Office.

Keep an eye on scrub, leave a few of the larger hawthorns at the edge of damp grassland, but remove other scrub on an occasional basis as required. Extend the mowing regime to include the South West edge of the field by constructing a bridge or similar to allow machinery access. Alternatively cut and rake by pedestrian machine and hand.

Countryside stewardship payment has been claimed for this area until 2005 on an annual basis.

Northumbrian Water closed off a section of Tot Fennies field and Faith Wood in 2007 to lay a new underground water pipe, taking effluent away from their Billingham works to Seaton Carew.

2.1.5.11 Grazing

There is an option to graze Tot Fennies Field, and if it is possible to acquire additional land from Northumbrian Water these would be ideal locations for the establishment of grazing regimes as well. See map 21. Each location would need fencing works to ensure livestock, are effectively contained. The Community Farm should be able to assist with livestock management. Tot Fennies Field, was traditionally grazed by horses. This is excluded under the current countryside stewardship agreement. If horses were to be grazed on Tot Fennies Field again countryside stewardship would need to be re-negotiated.

Investigate this item more fully if land is acquired from Northumbrian Water.

The introduction of a grazing regime in several areas of the Woodland Park was investigated in 2007 and found to be unfeasible. The reasons given are, visitor's access to some areas, dogs on site, the cost fencing off the land and finding a grazier willing to put livestock in the fields and look after them on a daily basis.

2.1.5.12 Road Verges

The site is intersected by a number of major and minor roads around the area. Road verges are identified within the Tees Valley Diversity Action Plan. Consequently Cowpen Bewley Woodland Park could make a valuable contribution. Work with Tees Valley Wildlife Trust and Stockton Borough Councils Highways Department to enhance road verges as grassland habitats.

Note part of the route alongside the A1185 Seal Sands Link Road has been classified as Greenways track. Stockton Borough Council Environmental Development has planted areas with shrub species and would be managed as woodland fringe rather than grassland. The track was last re-surfaced in 2004 (paid for by SBC Highways Dept.)

2.1.6 Watercourses

There are a number of watercourses that pass through the park. Refer to map 22 for locations. They form important links between various pond and wetland habitats. They also play an important role as green corridors within the site for wetland species. They are important for water voles and bat species, and could be very important for harvest mouse dispersal around the site.

At present many are becoming filled up with vegetation, some of this will need to be removed either by hand pulling or by machine to maintain an open flow channel for the water to escape in times of flood.

2.1.6.1 – Cowbridge Beck West

A section of good quality stream between the Low Grange Estate and Billingham Sewage Treatment Works. This area contains water- voles. It is designated as a Main River. This means that although the responsibility for the watercourse and ownership lies with SBC, the Environment Agency are empowered to enter the land to carry out works for land drainage and flood defence. Similarly any actions undertaken by SBC that may effect the land drainage or flood defences would require consultation and may require written permission. This watercourse is routinely cleared by the Environment Agency on an annual basis. Last cleaned out Jan 2006. Water Vole survey carried out Aug 05 with many signs found but no burrows.

Management

- Liase with Environment Agency to ensure management is inline with current recommendations with water-vole management.
- Discuss management of North South Drain running into the Beck for adjacent farmland with local farmer.
- Discuss with Environment Agency and Highways possibility of installation of reed filter beds to clear and control run off from the A1185.

2.1.6.2 – Cowbridge Beck East

This is the section of the waterway that passes through Billingham Sewage Treatment Works and continues on to join Claxton Beck. This stream appears to be badly polluted at times, with a very strong detergent smell being present on frequent basis. Refurbishment of the Billingham Sewage Treatment Works will hopefully lead to an improvement in water quality in this section. The Environment Agency carry out regular water quality tests along this beck.

The stream is wider and deeper than the West section, and has good stands of reed, reed sweet grass and reed canary grass, both in the stream and on the adjacent banks.

Management

- Carry out water-vole survey. (carried out 2005)

- Liaise with Environment Agency re management of stream, path and maintenance of reeds.
- Manage bank edges to encourage habitat for water voles.
- Manage reed sweet grass for harvest mice.
- The reed on this section is the most extensive in the park and its importance to maintain and possible extends this reed habitat.

2.1.6.3 Drain

The drain rises from a pipeline in Richards Folly and joins the Cowbridge Beck below the Billingham Sewage Treatment Works. In high rainfall the water level it regularly rises until it and the car park ponds become a single water body. Water quality appears to be ok. The drain is filled with large stands of reed sweet grass and reedmace. Clearance of vegetation was attempted in Autumn 2000 but it rapidly re-colonised during Spring 2001.

Management

- Clear rubbish from drains south of A1185.
- Monitor fly tipping into drain and raise fence if necessary.
- Periodically clear vegetation from drain on north side of A1185 during Autumn. Low priority.

2.1.6.4 Claxton Beck

This watercourse was formally tidal until the establishment of a weir down stream of Cowpen Bewley Woodland Park. It is a sizeable stream, with deep banks, sandbars, and small islands along its length. Due to the fluctuating water levels little grows on these features. In places there are earth cliffs that make good kingfisher habitat, nesting was recorded here in 2001. The lower end of the stream is used by wading birds. About halfway along its length Cowbridge Beck joins it and this could give rise to pollution from Billingham Sewage Treatment Works.

North of the site Claxton Beck continues up stream under Cloff Bridge and into arable farmland. The banks contain lots of trees and shrubs, in far larger concentration than are found along the banks of the beck through Cowpen Bewley Woodland Park.

Management

- Survey for water voles.
- Monitor suitability for kingfishers.
- Construct kingfisher nest boxes.
- Allow stream course to make its own route.
- Liaise with local landowners over management of watercourse on north side and up stream of Cowpen Bewley Woodland Park.

Note regarding Northumbrian Water Wayleave

Northumbrian Water have installed a new pipe (2007) under Faith Wood and Tot Fennies field. It is hoped that this pipe will remove some of the detritus that flows along the becks. While investigating a disused pipeline a contractor for Northumbrian water located several large eels in an abandoned pipe running under Faith Wood into Claxton Beck.

2.1.7 Ponds

There are currently twelve ponds on the site. Some are heavily overgrown, and a few are subject to extreme seasonal fluctuations. Several of the ponds are fairly recent additions to the site. All the ponds however are playing an increasingly valuable role that providing habitat for wide range of fresh water invertebrates. Dragonflies are doing especially well. Only five species were sighted as using the Park in 1998. There are currently records of fifteen species of dragonfly and damselfly using the pond and other wetland habitat at Cowpen Bewley Woodland Park; many of these are resident and breeding on the site. This makes Cowpen Bewley Woodland Park one of the top three dragonfly sites in County Durham. Great crested newt, smooth newt, and common toad all regularly breed in the ponds.

The ponds are therefore managed as a high priority habitat within the park. New ponds will be constructed to ensure the continuing success for dragonflies. See map 22 for pond locations and names.

2.1.7.1 Car Park Ponds

These have important recreational, educational, and landscaping value in the park. Two of these are of a healthy condition see survey work (Bibliography 63, 65, 67,68). The first pond however has been invaded by New Zealand Swamp Stonecrop. Over 300 fish were removed from these ponds during the summer of 2005 to try and improve their value for dragonflies. All these fish were put in the ponds by members of the public. Fish were relocated to the lake.

Management First Pond

- Treat with herbicides (reglone (diquat)) to kill New Zealand Swamp Stonecrop during 2002 to 2003. This procedure was stopped in 2005. The New Zealand Stonecrop is still present in the ponds but in a small amount.
- Allow pond to recover through natural regeneration.
- Management Middle/End Pond
- Maintain dipping platforms for use by school groups and other visitors. Maintain signage on pond dipping good practice.
- Clear vegetation from around the margins of the pond to prevent encroachment into the pond clear up to one third of vegetation in any one year. Frequency of clearance work will be determined by rates of re-growth and encroachment, probably every second year.
- Remove fish when the need arises.



Fig 12 : Car Park Pond at Cowpen Bewley Woodland Park

2.1.7.2 Corner Pond

Separated from the Car Park Ponds by the Seal Sands Link Road, but linked due to the proximity of the drain. Floristically different from the Car Park Ponds, with abundant pond weeds. Reasonable levels of dragonflies. Large quantities of reed maze are starting to dominant fifty percent of the pond. Great Crested Newts found in pond 2007-08

Management

- Monitor vegetation growth.
- Pond clearance as for the Car Park Ponds, but probably every three to four years.
- Clear reed mace back to twenty percent of pond in winter 2003.

2.1.7.3 St Michael's Pond

This pond has been in existence for over one hundred years. Its vegetative makeup is different from other ponds in the park being dominated by branched bur reed,

Management

- Conducting vegetative survey work 2002/2003 (Student Project).
- Clearance as for Car Park Ponds
- Clear litter on regular basis.

2.1.7.4 Newt Ponds

Probably the most important ponds from a nature conservation viewpoint as they carry good populations of great crested newt and a large range of dragonfly species. These are a sweep of ponds which fluctuate in water levels, and some of the smaller pools dry up in summer. There are surrounded by large areas of bare soil, which make good basking areas for dragonflies.

Management

- Maintain the existing character of this area.
- Maintain value for great crested newt by maintaining areas of open water, with periodic removal of vegetation from the major water bodies. (Last done sept 2008)
- Licences are required from English Nature before carrying out clearance work in this area.
- Maintain large area of bare soil for basking dragonflies.
- Extend the scrape around the boardwalk pond to allow more shallow water.
- Create some new ponds in the adjacent areas to enhance the habitat for dragonflies and great crested newts.
- Maintain a deadwood area for habitats on adjacent areas as hibernation sites for great crested newts.

2.1.7.5 Cowpen Pond

A mature pond, deep with a good mix of plant species. No data on aquatic life at present. Surrounded by wet grassland that is under water much of the winter. In places standing water all year. Very good marginal habitat developing. This area regularly floods, blocking the road and flooding homes in Cowpen Village. It is surrounded by very unsuccessful tree planting (although some Alder and Willow have taken). Regularly attracts snipe in winter months.



Fig 13 : Cowpen Bewley 'Village' Pond

Access to pond is from Wolviston Back Lane. A new hard surfaced footpath would be good, circulating from the gateway around the pond. A picnic bench could also be situated at this venue.

Short-term Management

- Keep pathways cut and clear of obstruction.
- Cut back hedge to improve visibility.

Long-term Management

- Keep some open water by removing some of the vegetation from the pond.

2.1.7.6 Pigeon Wood Pond

A sweep of three ponds. The largest lies outside Pigeon Wood, the two small ponds one very overgrown, are located inside the woodland. The large pond is very good dragonfly habitat with areas of marginal vegetation bare soil banks that provide excellent basking areas for invertebrates. The other two ponds are undergoing different levels of succession. The southern one is almost totally filled in with silt and dominated by Willows and very shaded. The northern one is more open and receives some direct sunlight. It will with time become completely overgrown. This area has had some of the larger trees removed by Network Gas, these have been allowed to grow on top of underground gas pipelines. Great Crested Newts found here in a survey 2007-08

Management Large Pond

- Maintain bare ground.
- Monitor dragonfly activity.
- Install perch for dragonflies.
- Keep area clear of tree re-growth.

Management Smaller Ponds

- Allow succession process to continue unhindered.

2.1.7.6.1 Permanent Ponds

Open water areas play a vital role in the Parks Biodiversity and therefore need to be managed accordingly. When vegetation becomes the dominant feature some work will be required to remove some of the vegetation to create open water areas.

2.1.7.7 New Ponds

Map 22 shows a number of possible locations for new ponds. The construction of any/all of these ponds would greatly enhance the site for dragonflies and other aquatic organisms. By staggering the construction of new ponds, a range of different stages of pond development could be represented on the site.

Note check for location of services and underground leeway's before attempting to dig ponds.

2.1.8 The Lake

The lake at Cowpen Bewley Woodland Park covers an area of approximately 1 hectare, the majority of which is open water. Water bodies of this size and larger are not uncommon in this area with other lakes in Billingham (Charlton's Pond and Belasis) and at Haverton Hill.



Fig 14 : The Lake at Cowpen Bewley Woodland Park

The lake lies within 4 km of the Tees Estuary which supports a number of wildfowl and wader species. The species diversity of the lake, although less than that found on the lakes nearer to the estuary is significant with nine breeding species of wildfowl in 1996, seven in 1997 and 23 species recorded on the lake in total. Several species of bird are found on the lake throughout the year. Waders occasionally visit the area to feed. Some wildfowling takes place on the land to the east of the railway so the lake also acts as refuge for birds.

Little is known about the diversity of the aquatic plant and invertebrate life, which supports the wildfowl population and attract other birds such as swallows, housemartins and herons to feed.

The lake is a wholly man made feature although colonisation by plant and animal life has occurred naturally. There is some marginal vegetation - mainly reed mace, and there is potential for improving the extent of this vegetation to increase the amount of cover for the birds and to deter people and dogs from swimming in the water.

The bank sides of the lake are becoming increasingly undercut, by several erosive actions by both pressures from the water and of the amount of people walking on the bank sides. One area has had a bench removed and being fenced off to prevent visitors going too near to the bank edge.

The lake is known in many bird watching circles and has been known to draw a large crowd of them to view rare visitors such as the Little Egrets that roosted the whole of 2005 winter months on the lake, or Red Necked Grebe, a rarity that brought people from near and far. Other noted visitors have been Bearded Tits.

There are several islands within the lake; these have proven to be good nesting areas for waterfowl in the past, in future nest boxes/houses for the waterfowl would be a good idea to reduce predation by Great Black Backed Gulls. This may reduce the amount of young birds and eggs taken.

Management

- Construction of new sluice to control fluctuation in water level.

- Monitor bird populations.
- Install nest sites for swans and ducks as appropriate.
- Supplementary feed wildfowl in severe weather conditions.
- Monitor and control mink.
- Investigate ways of re enforcing chalk banks.
- Two new signs were erected at each end of the lake on the hard track warning of deep water. They also state no boating, fishing or swimming for either human or dogs, and may need to be maintained.

2.1.9 Wetland Areas

A range of wet grasslands and wet woodlands (carrs) are developing on the site. Snipe and other wading birds occasionally visit the site but rarely stay long. It could be argued that they are provided for by the surrounding marshland estuary habitat between Cowpen Bewley Woodland Park and the Tees/Sea. However some wetland and marsh habitat within the site would help to provide physical and political links between Cowpen Bewley Woodland Park and surrounding areas that are also managed for wildlife.

2.1.9.1 Tot Fennies Field

Contains extensive areas of wet grassland. The end of the field sinks into a depression that extends into Faith Wood. This depression is dominated by reed sweet and reed canary grass with patches of open water. The south west side of the field regularly holds up to twelve inches of water in winter. In summer it dries out and becomes wet grassland. A full description of the field can be found in bibliography 63, 64.

Management

- Control scrub invasion.
- Investigate grazing management.
- Continue with mowing regime as layout in 2.1.5.

2.1.9.2 Car Park Pond Wetlands

Excessive stands of reed and sweet canary grass dominate the areas around these ponds. See bibliography 63, for full botanical description. This could be an important area for the harvest mouse reintroduction programme. It is periodically waterlogged, especially in winter.

Management

- Prevent scrub from encroaching.
- May need mowing at some point in future to prevent too much thatching of the sward. Mowing would need to take account of harvest mouse activity.
- Remove some of the excessive stands reed.

2.1.9.3 Bottom Marsh

One of the largest stands of reed sweet grass in the site and the location of the harvest mouse release cage. Other tall growing wetland grass is also thriving in this area. Parts are in standing water for much of the year. There is one small pond within the area that seems to retain its open character despite the dense marginal grasses all around it. Some of the area is owned by Northumbrian Water (see section 2.1.9.12 land acquisition). There is also a patch of mature willow carr.

Management

- Periodically cut and clear small areas in rotation if required to preventing excessive thatching in the sward. Cuts should be timed with several years between each cut in the area. Cutting should be conducted by hand to reduce the risk of damage to harvest mice present in the area.
- Control scrub invasions maintain wet grass and habitat.
- Leave trees in Willow carr to mature, die and decompose where they are unless they represent a health and safety hazard to the public.
- Survey area for Harvest Mice in this release area,

2.1.9.4 Rose Wood

This area was formally a clay extraction pit (as was Pigeon Wood), and the location of the former Rose's Cottage the pit has been planted with trees. It is however very wet and should be left to develop as a wet woodland. It will require thinning operations see table 1.

2.1.9.5 Willow Scrape

A low-lying area of wet grassland with extensive re growth. Trees have been planted in this area. With the exception of Willow all the trees are in full health and all show full growth.

Management

- Remove trees and cut back Willows, treat stumps to prevent re growth.
- Allow regeneration so that the area recovers its wetland character.

2.1.9.6 Hurworth Swamp

A small corner of land at the far north end of Calf Copse beside Cowbridge Beck. The area is regularly wet and occasionally floods, it contains many reeds and other wetland species. The area has been planted with trees that are drying out the area and destroying its wetland character.

Management

- Remove trees as soon as possible.
- Monitor re growth and treat stumps as necessary.

- Allow the area to recover its wetland character.

2.1.9.7 Sustrans Swamp

A small area of wet grassland close by corner pond. It regularly floods during the winter months. The Sustrans route passes through here on a long concrete ramp up to the bridge over the drain.

Management

- Construction of the new Sustrans route, the concrete ramp will divide this area, pipe work should be laid in base of the ramp to allow water and small mammals to migrate through both sides of the area.

2.1.9.8 Cowpen Scrape

See 2.1.7.5 for description, map 22 & 23.

After investigation by a hydro-geologist it was decided not to continue with this project (2005)

2.1.9.9 Cowpen Carr

A wet area to the west of Cowpen Crossing. The ditch is often full of water and the grassland frequently flooded. The area was to be left as an unplanted glade in the original Woodland Planting Plan see bibliography 20 Tillhill Report. However the area is inaccessible to mowing machinery and very wet.

Management

- Allow natural succession to occur and let the area develop with time into the wet carr woodland.
- Put in field gate for easy access.

2.1.9.10 St Michael's Swamp

Land around St Michael's Pond regularly floods especially in winter on both sides of the Sustrans Track. Some areas of newly planted trees regularly flood. Alder and Willow are doing well in these areas but other species are failing.

Management

- Allow the planted areas to develop as woodland carr and manage as rest of St Michael's Wood. See 2.1.3. & Table 1.
- Non planted areas to be treated as wet rank grassland, control scrubbing invasion when necessary.

2.1.9.11 Faith Wood

The low-lying land close to the old bridge into Faith Wood regularly floods during the winter. It is adjacent to Cowbridge Beck. There is considerable scope for wetland creation in this area. New ponds would be close enough to the new ponds to be of benefit to dragonflies.

Management

- Reed beds a limited on the site and could be established in a much wider band along the banks of the beck.
- Great care must be taken to ensure operation do not interfere with services and way leaves that pass under Faith Wood.

Several seasonal ponds / wetland areas need require monitoring for succession by vegetation and, whenever possible some of the invading vegetation removed to allow for some open water areas.

2.1.10 Arable Seed Margins

Background

Many species of traditional farmland birds have gone through dramatic declines since the 1940s and with many species these declines are continuing. CBWP has important populations of many of these birds. The provision of Arable Seed Margins would provide an over winter and early spring source of food for these birds and support countryside conservation measures.

Rational

- Arable field margins would be strips of land on adjacent farmland where the crop would be managed more sympathetic to the needs of the native conservation. Such measured could include:
- No herbicide application to a strip of land 2-6m wide, to allow weeds to grow and provide a food source for wild birds
- Leave a 2-6m wide strip of the crop un-harvested to stand over winter, providing a food source for wild birds.
- Spring sowing a mix of different crops such as kale, grains and flax in a 2-6m wide strip and left un-harvested to provide wide range of plant sources for wild birds.
- Over sow spring crop seeds and leave on the surface of the land in a 2-5m wide strip to provide a food source for wild birds in the important spring breeding season.
- Retain some harvested grain for spreading on the land during the spring breeding season to act as a food source for wild birds.
- Any combination of the above

Management

Establish contacts with local farmers and try to negotiate the introduction of some of the management measures above

Note: these measures would also greatly enhance the habitat value of the area for game species such as partridge and pheasant. This could have financial or sporting benefits for the land occupier.

With the reduction in subsidies to farmers to continue to use Set Aside farmland for wildlife taking place in 2008, the Woodland Park will become an even more important area for flora and fauna in the local area. Areas that were once used as Set Aside may be taken into production as arable fields producing a crop for Bio Fuels. This is another example of concerns over Climate Change. One aspect of this could be wind blown seeds from the cash crop and colonisation of the crop within the Park.

2.1.11 Land Acquisition

Existing Northumbrian Water land managed as part of Cowpen Bewley Woodland Park is under a ten-year management agreement that runs until 2004. This was renegotiated in 2003. Contract is being looked at by SBC legal 2009

Negotiations with the Woodland Trust for sole management rights to Faith Wood are being looked in to by SBC Acquisitions department 2009 and on going

CBWP (SBC) has entered into discussion with Northumbrian Water in order to take on the management of the field opposite the main Sewage Treatment Works. See map 25 of all land acquisition areas once agreed. This is being looked at by SBC legal dept 2008.

Historically these fields have been grazed by cattle and horses. The history of grazing Low Bridge Beck Field continued with beef cattle up to the summer of 2001 when foot and mouth impacted on livestock keeping in the area.

2.2 Species Management

2.2.1 Introduction

There have been massive extinctions of species over the last few centuries, and much of this loss is as a result of human activities. All species are valuable and interdependent, each making their own contribution to the delicate balance of nature. The loss of one species will have implications for numerous others, including ourselves.

Species at risk are assessed under a number of systems including BAPs, Red List and Amber List species. Each of these is examined in this section, as are a number of other species and groups that are of particular importance within Cowpen Bewley Woodland Park.

In general, there is little specific management for individual species. Most of the species covered in this section are being catered for through careful management of their habitats. This approach means that several species in the lists, and other more common species all benefit from conservation measures implemented on the site. The lists below explain the actions being taken and cross reference to relevant parts of the habitat management section.

2.2.2 Biodiversity Action Plans (BAP's)

2.2.2.1 Priority Species Action Plans, Grouped Species Action Plans and Species Statements

Three types of documents have been produced about the species within the UK:

- The Priority Species Action Plans provide more detailed information on the threats facing 391 species and the opportunities for maintaining and enhancing their populations.
- Detailed actions are set out for a number of organisations to achieve the targets for these species.
- 'Grouped' Species Action Plans have also been produced where a range of common policies and actions are required for a number of similar species, for example marine turtles or commercial fish.
- The last of these are Species Statements. These provide an overview of the status of the species and set out the broad policies that can be developed to conserve them.

2.2.2.2 Species at CBWP

BAPs set out actions to be carried out to protect and enhance biodiversity. Within this, the species are prioritised into three lists on a national basis. The short and medium lists represent the priority species, those most at risk on a national level. The long list represents other species of conservation concern. There are also a number of species

that do not appear on the national list, but are of local conservation concern as identified by the Tees Valley Wildlife Trust. Within the Tees Valley area this makes a total of 170 species. The production of Action Plans for each of these species would be very time consuming. TVWT have therefore prioritised these species to produce an initial priority list of fifty species known as the Tees Valley 50. Cowpen Bewley Woodland Park has some speciality species of its own, and these are identified within the table as being of site based priority.

See table3 for a full list of BAP species present at Cowpen Bewley Woodland Park and actions to be taken at Cowpen Bewley Woodland Park for each.

The list of BAP species keeps growing, several species have been added to the list due to farming practice changes such as the Red Legged Partridge, some have become victims to the problems of climate change, such as the Wall Brown butterfly, once numerous, but now due to changing climates in the south of the country a rarity. The north (York northwards) being now the southerly tip of its population range. Some have been added due to urban housing sprawl, one species readily thought of is the Great Crested Newt, as ponds and wetlands are drained for housing, the habitat it lives in becomes lost. Otters are another species found rarely in the Woodland Park that are on the BAP list, an artificial holt has been made to hopefully entice them to stay.

2.2.3 Birds of Conservation Concern

A system of Red and Amber lists are available (See Bibliography 51, 52, 47). Many of these species are also BAP species but there are some exceptions. The list is updated every five years and is currently under review, due to be published in late 2002. The new list is predicted to have quite an increase in woodland birds appearing on the Amber list. Consequently it will be necessary to update this section of the management plan as details become available. See table 3 for details on red and amber list species present at Cowpen Bewley Woodland Park and actions being taken for each.

2.2.4 Other Red/Amber Species

Red and Amber species lists exist for a wide range of floral and faunal groups. There are no known vascular plants a Cowpen Bewley Woodland Park that appears on the list.

Other faunal groups need more detailed examination to determine the presence of Red/Amber list species on the site.

2.2.5 Explanation of Terms used in Table 3

- Species Name - The common name of the species.
- List Short, middle and long refer to the three BAP lists.
- Red/Amber refer to birds of conservation concern, Red and Amber data book lists.

- Local means it has been identified by the Tees Valley Wildlife Trust as a species of local conservation concern.
- Regional means it has been identified in one of the local BAPs referred to in the bibliography, as a species of local conservation concern.
- Tees Valley 50, Means it is one of the 50 priority species listed in the Tees Valley Wildlife Trust local BAP.

Cowpen Bewley Woodland Park

Species of Conservation Importance

Means the species is of particular significance when considered at a site based level. Status at Cowpen Bewley Woodland Park indicates how common it is, whether resident, visitor breeding or only an occasional or even rare occurrence on the site.

Some species will decline as the new woodland develops. In some cases this will be compensated for elsewhere in the local area or by specific management for that species elsewhere on the site. As the new woodland develops other species will expand their populations or move into the area.

2.2.6 Single Species Management

In general there is little single species management on the site. Most of the species listed in Table 3 are accommodated in the habitat management prescriptions outlined in Part 2.1. However there are a number of additional items covered in Table 3 and outlined here.

2.2.6.1 Bats

Bat sightings over the park are increasing. Introduce bat boxes extensively around the site. Manage site for invertebrates to provide food. Leave standing deadwood where possible and ring bark trees as part of thinning operations.

2.2.6.2 Birds

Introduce bird boxes, particularly for tree sparrows. Work with local farmers for the benefit of farmland birds that feed on a diet of grass, wildflower and cereal seeds and also feed their young on insects.

Arable seed margins, field margin set aside and rotational set aside would all be beneficial.

A more cautious and targeted use of pesticides and fertilisers on farmland would reduce impacts of food sources for these birds.

Promote a change in perception of wild plants on farmland as essential food sources for seed eating birds, rather than as 'weeds'. Feeding of birds at existing bird tables during winter months to continue. Extend feeding of birds to cover spring and summer while they are trying to rear young. Extend bird feeding so that wider areas of

the park are covered; this could be through bird tables or by simply distributing grain and seed within short grassy areas close by scrub/hedge habitats. During severe winter weather conditions it is advisable to provide supplementary feed at the lake for the wild fowl. In an area opposite the car park in Square Trees there is bird feeding station for visitor use, birds are fed on tables and hangers from Oct – April. There is a wooden screen to prevent the birds seeing the observer. Kingfishers nested on the Lake for the first time in 2009. Provision of nest boxes and platforms for wild fowl on the lake. Sparrow Hawk have nested on two consecutive years in the Conservation Area next to the Lake in 2008 and 09. Little Owl nested in Faith Wood's mature Crack Willow trees in 2009

2.2.6.3 Harvest Mice

Harvest Mice were once common in the British countryside. Although they are commoner in southern counties, they have been recorded as far north as Aberdeen. Due partly to changes in land use, they have now disappeared from many of the places where they used to be found. They were found at several places throughout Cleveland and Durham, however there are no known records of this species between the Tees and the Tyne since the 1980s.



Fig 15 : Soft Release Pen at Cowpen Bewley Woodland Park

Harvest Mice were known from at least two sites in the borough of Stockton-on-Tees in the early 1980s. Since then, there have been habitat changes at both those sites that are likely to be responsible for the extinction of those populations. In the intervening period, work by Stockton Borough Council's countryside team has resulted in the restoration of habitat that would seem to be suitable for the mice. Unfortunately, being poor dispersers, harvest mice would not be able to re-colonise these areas naturally. Consequently, staff from the Council's countryside team, are undertaking a captive breeding programme with a view to reintroducing them.

Harvest Mice do well in captivity and we now have around 150 mice (with the breeding season about to start). These were bred from an initial stock of twenty mice, which were kindly donated by Chester Zoo. Another eight mice from a breeder in Lincolnshire were obtained to increase genetic diversity. A soft release was carried out in May 2002. A survey of the surrounding area in Nov 02 found 4 harvest mouse nests within 100m of the release cage. Plan to add to the population in spring 2003.

After 2 years of releases at Cowpen, consequent surveys have shown that it is unlikely that the mice have survived. Release programme now focusing on other areas such as land near Tioxide. Surveys are ongoing.

Sightings were recorded in summer 2008, survey carried out sept 2008, nothing found.

2.2.6.4 Mink

Work is underway on the north side of the Tees between the sea and Stockton to control mink populations in a strategic way. Local authorities, major landowners, environment agency, INCA and English nature are involved in the project. Cowpen Bewley Woodland Park is within the control area and is an active participant in the project (co-ordinated by INCA). A mink was caught and dispatched (SBC Animal Welfare) on the Car Park Ponds 2009

Otter have been seen swimming on the beck's within the Park, to encourage further visits and, hopefully future breeding an artificial holt will be constructed on Claxton beck.

Sightings of mink were reported in Jan 09, on the Car Park Ponds and the Lake area.

A Terrapin has been seen (summer 2009) in the Car Park ponds and will be removed as soon as possible.

2.2.6.5 Invertebrates

There are a number of good practice manuals that give guidance on how better to encourage invertebrates through sensitive habitat management (see bibliography 34, 35). These should be referred to while carrying out habitat management within the site.

Species Removal

Several non-native vegetation species are present on Site and their removal will need to be considered, or at least their presence monitored. The removal of the nursery crop of Corsican Pines is a must to allow native tree species to become the dominant species. The removal of Sycamore and some Horse chestnut trees will also be of benefit in years to come, as they are quick to colonise any area left unmanaged.

There are also several species that need monitoring, Himalayan Balsam along Claxton beck, Japanese Knotweed next to Cowbridge Back Lane, next to the Sustrans cycle track diversion. Giant Hogweed must be kept off the Site. There are also several native species that will need future management, such as Thistles and Hemlock that may overgrow footpaths.

A spraying licence was applied for to remove the Japanese Knotweed from site. This was granted in 2009, spraying commenced spring 2010. The Knotweed is situated in a

hedge next to Cowpen Back Lane, in an area of the S bends, where the road merges with the Seal Sands Link Road.

Part 3 Education Management

3.1 Education Provision

3.1.1 Introduction

A fundamental role of the SBC Countryside Team is seen to be the provision of an environmental education service. This is far wider ranging than merely providing activities for school groups. The construction of the Activity Centre at CBWP, provides a venue for use for a wide range of educational activities. This section outlines the approaches that have been used successfully in the past and options for expansion in the future.

3.1.2 Education Policy

Educational activities at CBWP should meet a number of criteria.

- Activities should be enjoyable, and offer educational value.
- They should always carry a clear environmental message. If an activity doesn't carry this message the ranger staff should seriously ask the questions – what is this about? And why are we doing it? If these cannot be satisfactorily answered then the activity may be unsuitable for the site and the aims of the ranger service, and should stop.
- Where possible activities should involve the arts in some form. This will be the thing that makes this site different from others in the area.

3.1.3 Competition

There are a large number of facilities currently operating in the Tees Valley region that offer school facilities. Each of the five local authorities has a countryside team that offers educational programmes in one from or another, and most local authorities have some kind of education centre that they use. In the immediate vicinity of CBWP there are also environmental education facilities at Summerhill (HBC), Teesmouth Field Study Centre, Billingham Beck Valley, Wynyard Woodland Park, Clarence's Community Farm, Preston Park, RSPB Saltholme.

With so much competition there is a need for a strategic approach to the provision of environmental education within the area. This would enable the varying groups to complement each other rather than work in competition.

Action

- -Monitor environmental education programmes at other facilities.
- -Target and market programmes that are not covered by the other facilities.
- -Establish a forum for environmental provisions in the local area.

Action

- -Maintain education room in centre as a large open uncluttered space for use by groups ie no table and chairs.

3.1.4 Facilities

3.1.4.1 Activity Centre

The Visitor Centre was completed in March 2000 and opened in June 2000. The centre has toilet facilities, a ranger's office, storage for educational materials, a large education room and a small shop facility. The roof has had lead replacement material fitted after the lead was stolen in 2008. The Centre's external wooden shutters etc were painted at this time.

The education room is deliberately left as empty as possible to allow plenty of space for the school groups and allow the continuation of the environmental programmes in case of bad weather preventing activities from taking place outdoors.

Develop a strategic approach to environmental education in the local area.

3.1.4.2 Amphitheatre



Fig 16 :Amphitheatre at Cowpen Bewley Woodland Park

The ranger staff constructed an amphitheatre, using spoil left over from the construction of the Visitor Centre. The area acts as an outdoor classroom and facility for events in the past.

Action

- -Maintain mulch on floor of amphitheatre.
- -Strim slope and clear-cut material monthly from April to October.
- -Maintain planting of willow maze into tunnel.
- -Run event to extend. -Construct giant musical instruments in amphitheatre.
- -Promote the use of amphitheatre for performance arts through organising events and encouraging drama groups and colleges to use the facility.

3.1.4.2.1 Playbuilder

SBC Countryside and Greenspace team chose Cowpen Bewley Woodland Park as one of the sites to construct a new play area, with funding from the Playbuild Scheme. 2008. £30,000 was spent on the new area in phase 1, phase 2 is to be carried out in 2010.

This area has a hard surfaced footpath, with extended willow tunnels planted, play areas with bespoke play equipment and some ornamental trees planted.

3.1.4.3 Staff

The Visitor Centre and the Woodland Park provide an ideal facility for the provision of environmental activities throughout the year. Currently most educational use by schools and other organised groups takes place during the summer months.

The centre could theoretically be used every weekday in the spring and summer terms by visiting school groups. This would be the most cost-effective use of the new building. Unfortunately, current staffing levels do not allow anything close to this level of use. This means SBC are not receiving the full cost benefit from the expense of building the centre.

Action

- -Promote the use of the centre by school groups during the winter and spring terms. (2008 onwards)
- -Campaign for a full time education officer to manage the school activities in the park and ensure cost-effective use of the Visitor Centre. (On going)

3.1.5 Schools Education Programmes

The programmes aimed at schools come in a number of different formats. From informal school visits, to self guided activities using equipment from the ranger service, through to organised programmes. Activities are available for a wide range of school ages. The term 'school' is used throughout this section, but is also true of other youth groups such as scouts etc. who wish to use the site. The prices charged for schools programmes are as follows;

- £1.50 /child/visit for a full day
- £2/child for the Camp programme (such as Celtic Camp)
- Equipment can be loaned free of charge for self led activities.

Stockton Borough Council is producing a new updated environmental education pack advertising all of its Countryside Sites and the activities they offer. The pack should be available from 2009 after the proposed staff restructure.

3.1.5.1 Informal Visits

This is when schools turn up and use the park as a base for their operations. Bookings are required for this type of activity to avoid clashes with other groups. Where several groups wish to use the site at the same time, they can be steered to different areas of the park to avoid overcrowding.

Action

- -Facilitate schools and other groups to use the park for appropriate informal visits.
- -Operate a booking procedure to prevent clashes and inappropriate activities.

3.1.5.2 Self Guided Programmes

At present activities such as pond dipping and mini beasts can be offered to primary schools as self guided activities. These activities are cited in National Curriculum guidance and are consequently very popular with schools. The session is, predominantly, one of wonder and excitement for the children and as such is hugely important for their development of a sense of love for the natural world. It is, however, rather limited educationally and does not always require the specialist knowledge of the ranger staff. Thus it is offered as a self guided (thus free) activity. If schools wish to have the presence of ranger staff, this can be provided for a fee, but the available dates for visiting may be more restrictive.

In an ideal situation, the ranger staff would rarely need to carry out pond dipping or mini beast activities, as they can be satisfactorily carried out in the school grounds if schools create their own small ponds and wildlife areas. This would be beneficial to the schools, it would free the schools up for more involved education programmes when they do visit natural areas, and it would have benefits for wildlife through the creation of new habitats.

Action

- -Offer pond dipping and mini beasts as a self guided, or if required, ranger led activity.
- -Promote it as self guided and try to discourage it as a ranger lead activity.
- -Promote and advise on the creation of ponds and wildlife habitats in school grounds.
- -Go into schools to help with the creation of habitats

3.1.5.3 Guided Programmes

A series of programmes have been designed to meet various aspects of the school Curriculum. A far greater range of packages is available for primary schools than any other group as it is far easier logistically for primary schools to organise visits to the park. Secondary schools require far more co-ordination between various teachers and visits can disrupt other subjects, consequently frequency of secondary school visits is

and will continue to be lower than those from primaries. However a number of secondary programmes are available and should remain so.



Fig 17 : Environmental Education at Cowpen Bewley Woodland Park

Programmes have been designed in cooperation with teachers and need to clearly show how they meet the National Curriculum. Programmes currently available include:

The school education programmes were re-launched in spring 2001 and then all activities had to be cancelled due to the closure of the park through foot and mouth precautions. It was decided not to push the schools programmes in 2002, as staff time would be dominated by public consultation and the production of the new management plan.

See Appendix 9 for copies of Education Programmes

Action

- -Offer a range of day and half-day programmes for primary and secondary schools.
- -Update the programmes to fit any changes in the National Curriculum 2007-2013.
- -Re-launch the schools programmes in spring 2008.
- -Monitor the success of the programmes and modify where necessary.
- -Continue the successful programmes and drop the unsuccessful ones.
- -Work closely with teachers to develop new programmes for both primary and secondary schools.

3.1.5.4 Camps Programmes

During 2000 - 2006 a series of 'Celtic Camps' were held in the park for school groups. These were full day programmes with attendance double that of the normal guided programmes and they are more intense in nature. They are centred on a Celtic roundhouse, with staff in costume, role-playing characters from 2500 years ago. These are very successful and popular with the schools. In 2000 they were run for top year primary school students. In 2001 the camp was modified and run in September for year 7 pupils at secondary schools as a team building programme to help pupils from different catchment schools get to know one another. The camp ran for 4 weeks

with nearly 1000 children attending. The camps require a minimum of three staff; preferably more and can only continue if sufficient staffing is available.

Action

- -If staffing levels allow, run the Celtic camps for two weeks as a teambuilding programme for secondary students.
- -Assess programme and run Celtic camp as appropriate.
- -Maintain the roundhouse, equipment and costumes
- -Develop new camp programmes such as 'Alien Camps'.

3.1.5.5 New Programmes on Offer

Sustainability

As part of Stockton Borough Councils Climate Change Action Plan 2007, a new schools programme will be launched in 2009. The new programme will involve the use of the windturbine, photovoltaic cells, the bio digester and the local natural environment, such as the importance of trees and water in sustainability in the future. The programme will be offered to school visits, community groups and any other interested organisation.

A Walk Through Time

In one area of the Park a local sculptor has recreated a time line of sculptures that represent the evolution of life on planet Earth. He used local children to design some of the sculptures, and then using recycled materials wherever possible, they created the organism. Several different types of interpretation accompany this activity.

3.1.5.6 Student Placements

CBWP can act as a facility for school and college students wishing to take on extended work experience placements or undertake research work on nature conservation, biological sciences, and other fields. We should encourage where such work will be beneficial to the woodland park. Many previous pieces of work have allowed valuable data regarding the park to be collected, work that the ranger staff would have struggled to do through time pressures.

Action

- -Continue to encourage students to undertake extended work experience placements and research projects in the park where such projects are beneficial to the woodland park.

3.1.5.7 Work Experience Placements

CBWP receives requests from schools for help with work experience placements. Where possible we encourage these as an ideal opportunity to provide secondary

school and college students with an insight into the work of countryside rangers and help them decide whether it is a career path they would like to follow.

Action

- -Continue to provide opportunities for work experience placements at CBWP.

3.1.6 Community Programmes

3.1.6.1 Community User and Other Groups

Good relations are being established with residents from Low Grange, Billingham, Greatham and Cowpen, as well as those with regular park visitors. There are other user groups with whom we currently have less contact. The community consultation over this management plan has helped to fortify these links and continuing involvement will hopefully foster further links.

Action

- -Maintain database of local groups who use or are affected by the park.
- -Continue to maintain good relationships with those groups through newsletters and personal contact.
- -Develop links with new groups through talks, events, leaflets, and SBC's Great Outdoors magazine.
- -Ensure all staff and representatives of CBWP are trained in good customer care procedures.

In 2009-10 CBWP Environmental Trust group is proposed to be converted in to a Friends of Group to allow for a more dynamic role in staging events etc.

3.1.6.2 Management Plan Consultation

The process of producing this plan has revolved around two central themes, those of consultation and education. We wished our stakeholders to be involved in the decision making process at the park, but in order to do that effectively, people need to be aware of what the ranger service has been doing up to that point, why we were doing things, and the constraints that existed. The consultation process could not take place efficiently without an education/awareness process occurring at the same time.

This combined consultation/education process proved to be a huge success with around 250 individuals and organisations making their feelings known. The issues raised through the consultations have been taken into careful consideration in the development of this management plan and have hugely influenced its content. We felt that awareness had been raised about the workings of the park and the ranger service and close relations developed between our stakeholders and ourselves

3.2 Interpretation

3.2.1 Interpretation and Its Purpose

Environmental Interpretation is a process of communicating with people about the environment in a fun and interactive way to promote positive action for environmental protection. Signage is a more simple approach and provides factual information. A range of different interpretation and signage strategies have been adopted within the Park covering culture/social/environmental history of the Site. Interpretation should be colourful, educational and have information pertinent to the area, the person is visiting.

3.2.2 On Site Interpretation

3.2.2.1 Entrance Gates

The main entrance has a large welcome board with site and car park opening times and staff contact details.

Smaller welcome boards are located at other entrances to the park. These are small panels, approximately 30 cm x 30 cm, containing a site map, and contact details. This helps people orient themselves on the site, see what is where, and plan routes through the park. People know who to contact if they experience/witness any problems or wish to find out more about the site.

New car park gates were put in place in 2009, funding was from the SBC Parks Improvement Fund.

Nature Watch Panels

These have been installed around the site. On the north side of the site they have been installed to create a nature trail. On the south side of the site they are distributed on a more random basis. (See map 26) The boards are to be changed on a seasonal basis, so that they represent the wildlife to be found in the park at different times of the year. The trail has been way marked.

There is also the scope to produce our own information panels regarding site management work, what we are doing and why. These panels can be produced in house using publisher on the computer and laminating. They will consequently be cheap (financially) but will take staff time and will be fairly short lived.

Additional boards on species found on site are best bought in from a company called Osprey. The panels cost £40.00 each, are hardwearing and interesting. Although generic and not specific to the site, their cost and savings on staff time make them very viable financially. Using the same style also helps maintain a 'house style' for the park.



Fig 18 : Nature Watch Panel at Cowpen Bewley Woodland Park

3.2.2.3 Road Signage

The site is signposted from all the local roads surrounding the park. These signs are tourism style, white on brown background.

More road signage is needed to direct people to the Site, people should be made aware of the Site with directions from the A19, and from the Seaton Carew / Haverton Hill road.

3.2.2.4 Notice Boards

There are two notice boards close by the car park. They are regularly updated with newsletters, information on events etc. One also contains a pair of leaflet dispensers.

3.2.2.5 Sculpture Trail

Sculpture is a form of art that can help people to interpret the environment and also add to their experience. The trail is currently being built. The trail will be a journey through time, with the distance between each sculpture denoting a period of time during the development of life on the earth. Each sculpture would then represent a stage in the development of life on earth. The trail will start with the creation of the earth, and then progress to the first single cell life forms, simple multi-cellular organisms, aquatic life, the first land plants, invertebrates and animals, going through to prehistoric creatures and onwards to the present day. An education programme has been designed to go with the trail.

3.2.3 In Centre Interpretation

3.2.3.1 Scope for Provision of Interpretation in the Activity Centre

There is a very limited space for the provision of environmental interpretation within the Visitor Centre. Much of the wall space is unsuitable for displays as corridors are narrow and any obstructions could represent a fire hazard. The limited space means that there is only room for 20 display boards, and more imaginative interpretation techniques are not possible. The education room could have interpretation materials

and displays installed. However, this would take up space within the room and mean it is less suitable for use with school groups – see 3.1.3.5

3.2.3.2 Roller Blinds

One way of dealing with limited space has been to print interpretation panels onto roller blinds. This means that four panels can be placed on the same piece of wall with people deciding which panel to view. This works well if the panels are all related. The current set of roller blinds cover the history of the site with roller blinds on ancient history, recent history, the present day and vision for the future see appendix 11. These cost about £200 each to print. Graphic work can be carried out in-house and is billed centrally to Parks and Countryside so has not affected the site budget to date. They do however take a considerable amount of time to design the text, and the production of artwork has been a considerable problem.

3.2.3.3 A1 Display Panels

There is space for sixteen flat panels in the centre. Additional panels are stored in the centre. The panels are periodically changed to create variety. Currently sixteen panels have been produced.



Fig 19 : Display Panels inside VC at Cowpen Bewley Woodland Park

The 6 new A1 nature panels were made in 2006 and are now placed around the building, with another 1 added in 2006 to advertise the Sculpture Trail. 2 more A1 panels are being created to inform the visitor of the sustainability project, one will be placed internally in the Activity Centre, the other will be placed on the building externally.

3.2.3.4 Notice Boards

There are two notice boards in the centre. One is used for recording wildlife in the park. The other is for posters on events etc.

3.2.3.5 Nature Watch Panels

There are 3 nature watch panels in the centre. They act as an extension of the nature trail and include details on additional species to be found in the park. They are changed seasonally.

3.2.3.6 Identification Posters

A range of identification posters for birds, invertebrates and plants are distributed around the centre and in the education room and the toilets.

3.2.3.7 Mobile Displays

By using collapsible display boards it is possible to extend displays into the education room to make more efficient use of the space at weekends when there are no groups using the facility.

One idea that is to be looked into at the Park is that of making up a mobile display, this display will advertise coming events, school activities and the Park in general, it will then be moved around the boroughs libraries, supermarkets, tourist information centres and other interested places. This display may be carried in a specially adapted bus, to be used by the Countryside department.

3.2.3.8 Scope for Future Interpretation

The original plan with the roller blinds and A1 display panels was to regularly replace them with new information. The rationale on this was as follows. Most visitors to the site visit on a regular basis. Once they have seen the displays there is no further incentives to visit the centre. If the information regularly changed people would repeat their visit to the centre.

The rationale has not worked out. Most of the regular (especially daily) visitors rarely visit the centre. Visitor numbers to the centre are low. Additionally, the panels take considerable time to produce. It has become apparent that its priority is lower than we thought it would be.

3.3 Publications

3.3.1 Leaflets

A number of leaflets have been produced. The Cowpen Bewley Woodland Park Site Leaflet gives information about the park, facilities and wildlife to be found in the park. The Brickworks Trail is a walk using local footpaths that take people into the wider countryside around the park. There are also biannual events programmes and a Discover Stockton's Countryside leaflet that covers all the Stockton Borough Council sites. A Brickworks Revisited leaflet has also been produced with a trail of poetry and sculpture around the site. A further leaflet will be produced for the new sculpture trough time trail.

There are plans to produce a second walk and leaflet covering the areas around Cowpen Village. It may be appropriate to produce information on the national cycle route that passes through the park in co-operation with Sustrans.

3.3.2 Cowpen Bewley Woodland Park Newsletter

This is an important tool for keeping stakeholders informed over developments on site.

The newsletter commenced in September 2001 as a single sheet added into the Greatham Village Newsletter. It rapidly developed into a separate publication and is produced four times a year. Its current format is usually four pages with latest information on what is happening on site. It is produced and distributed by the Rangers around Cowpen Village, Greatham Village and people on the mailing list. (currently 350 people) Special editions are occasionally published.

3.3.3 Stockton News

This is the magazine of Stockton Borough Countryside Team with news and information on all sites managed by the Council. It is produced twice a year in a glossy format. It is distributed to all houses in the borough. Most editions require an article from Cowpen Bewley Woodland Park.

3.3.4 Other Publications

The Tees Forest used to produce a Tees Forest Wide Events leaflet. Cowpen Bewley Woodland Park contributed information to this and other publications as required, this stopped in 2008/2009 when the Tees Forest went into administration.

3.4 Events

3.4.1 Events Provision

A range of events are organised within the park. Events need to be relevant to the park, promote environmental or nature conservation values, and promote the park. There is a presumption that events are non-profit making and in many cases should be free ensuring social inclusion. There is one event per month.

Most events are fairly small scale. Unfortunately attendances are poor, despite extensive advertising. Attendance figures on these events need to be increased or review the purpose of carrying out small-scale events.

There are a number of large events that do draw in large numbers of visitors. The year 2001 saw the first storytelling festival on the site with around 500 people attending.

There will also be an annual open day on site each year at which visitors and other stakeholders will be asked to contribute their thoughts on the management of Cowpen Bewley Woodland Park.

A new event that was introduced in 2005 and has grown is the village type fete we hold at the Park annually. Local scout groups run the activity stalls, local WI makes and run the cake stalls; local entrepreneurs sell goods from stalls. The fete has grown in visitor attendance since it started; it now attracts approximately 500 people from the surrounding area. In 2009 over 600 people attended the CBWP Fete event.

3.4.2 Publicity

Events are publicised through press, other options are as leaflets, posters and word of mouth. Thousands of events leaflets and hundreds of posters are distributed every year and yet people are still unaware of events or even the existence of the site. Word of mouth is the only effective publicity mechanism, unfortunately it is slow. Within time, increasing numbers of people will discover about the park and events that we provide.

3.4.3 Press

Good relationships have been established with reporters on local newspapers and radio. By going direct to the press and producing our own press releases we have a very high success rate, gaining positive news stories on a regular basis. Events and management works on site can be promoted in this way. Press releases have to be approved by SBC public relations team.

Part 4 Recreation Management

4.1 Introduction

The site has an important role to play as a facility for a range of informal recreational pursuits. The following sections deal with access issues, facilities, community involvement, dogs, the activity centre and staffing.

4.2 Access

4.2.1 Footpaths

There is a network of footpaths through the site. Most are on grass, with a few hard surfaced routes. Some of the sections are surfaced with woodchip. Mowing Management is covered in 2.1.5.4 & map 19 and locations are shown on Map 27. There several way-marked posts placed around the Park.



Fig 20 : Footpath at Cowpen Bewley Woodland Park

4.2.2 Public Rights of Way

There is one public footpath and one byway that passes through the site at the locations shown on Map 27.

4.2.3 Cycling

4.2.3.1 National Cycle Network

In co-operation with Sustrans, Route 14 (The Three Rivers Route) of the National Cycle Network passes through the park on route between Billingham and Hartlepool. Part of the route is along the byway, other sections have been specially installed to complete links on the route. See Map 27 for route.

The Sustrans cycle route 14 that runs through the Park from Greatham to the Seal Sands Link Road is Byway Open to All Traffic (BOAT).

4.2.3.2 Bicycles

Apart from the Sustrans 14 route there is no cycling on site. There have been requests to open up the site for cycling. This poses a number of issues. An open cycling policy would result in damage to the footpath network and wildlife habitats. It also poses a health and safety risk as a mix of user groups are present on the site.

4.2.3.3 Cycle Parking

Cycle parking facilities have been installed on the edge of the car park and next to the activity centre.

4.2.4 Disability Access

4.2.4.1 Legal

Under the new Disability Discrimination Act we are obliged to take various measures towards inclusive use. We are working closely with Stockton Access Group in order to ensure that the site is as accessible as possible. Site meetings and discussions have raised the following issues.

4.2.4.2 Access for People With Disabilities

This section has been written as a consequence of a site visit with (Jenny Rodway At present there is minimal provision for people with disabilities in the park.



Fig 21 : Wheelchair access gateway at Cowpen Bewley Woodland Park

There are three routes that are accessible for wheelchair users. These all originate from the car park, either going to the lake and back along the hard surfaced track, going to Cloff bridge and back along the Greatham cycle track or going up to the Visitor Centre and back. (see map 27 hard surfaced routes) These routes could all be improved and a list of works has been drawn up for this, see below. The pond dipping platforms are also accessible from the track to the Activity Centre, but only in dry weather as a small area of grass must be covered to reach them.

Most other areas of the site are at present unsuitable for wheelchairs due to the path condition, generally grass which is uneven and slippery when damp or wet. Faith

Wood area is to have a hard surfaced footpath made in it, the path will weave through the area, and should be build in 2008 as an easement by Northumbrian Water, for allowing them access to Faith wood to place a new underground pipeline. This shows type and location of benches, gates and stiles and also gives detail of path surfaces and gradients.

Other facilities for people with disabilities;

- There are parking spaces next to Visitor Centre
- Accessible via ramps to the Visitor Centre with disabled toilet
- A radar key has been fitted to the gate leading away from the Car Park, following the hard surfaced track around to the lake.

It is felt that at this time there is very low demand for increased access for wheelchair users, which would also be very costly. As a country park and wildlife area we are adverse to putting in too much hard surface track as it is felt that this distracts from the countryside feel. Rather it is better to leave as much as possible to grassland. For people with other disabilities it would be necessary to have individual site visits to assess their needs more accurately. A new scheme that was introduced by the Tees Forest involves 2 trampers (electric all terrain style wheelchairs), which are available to hire at any time to visit the country park. This scheme is managed by shop mobility in Stockton and is now run as an event by the site rangers.

4.2.4.3 Improvements To Be Made On Existing Routes

- Clear kissing gate turning circle as grown up and uneven (gate from car park along grey track to leachate plant)
- Add rope loop to kissing gates in car park to make it easier to grab from behind when in wheelchair
- Improve current hard surface track surfaces when finances allow (remove weed growth short term)
- Monitor all stiles, change to gates when possible.
- Put a small wooden lip around edge of the base of the pond dipping platforms to prevent wheels going over edge and clear weeds from between paving slabs on slope down to platform to make it less bumpy.
- Remove kerbstone that hinders access to the pond-dipping platform from the road up to the Visitor Centre.
- Complete a hard surfaced circular loop from the car park, around the lake, following the footpath through Faith Wood and, leading onto the existing hard surfaced Sustrans cycle route.

4.2.4.4 Possible future improvements/extension to existing route

Improve path surface from track to Newt Ponds to make this area accessible. The path would need to be levelled out and a low fence placed along the edge with the steep drop to prevent wheels from going over the edge and increasing users confidence in safety. Care should be taken on placing stakes/posts into the edge of the bank to prevent slippage/crumbling and destabilisation of the bank. The hedge that forms one

side of this footpath will need to cut back and maintained to stop people straying to close to the edge where the drop is.

4.2.4.5 General Improvements

Monitor pathways and hard surfaced paths.

Make styled entrances into kissing gates.

4.2.5 Motorcycles

Motorcycles are not permitted anywhere on the site. This is for Health and Safety reasons and to prevent damage to the footpath network and wildlife inhabitants on site. There is very occasional use of the site by youngsters on motorcycles. Measures are in place to enable site staff to take action where necessary to remove motorcyclists from site. The police are aware of the situation and should be called if arrests are necessary. Good fencing around the site helps to prevent use of the site by motorcycles.

There have been requests to provide facilities on the site for motorcycling. This would be an inappropriate use of the site with its high nature conservation status. It would result in serious damage to the footpath network and wildlife inhabitants. It also poses a serious health and safety risk to other visitors to the site.

4.2.6 Horse riding

Horse riding is permitted upon byways, greenway and bridleways but they are required to give way to pedestrian users.

There have been requests to open up the site for horse riding. This poses a number of issues. An open horse riding policy would result in serious damage to the footpath network and wildlife inhabitants. It would also create a health and safety risk, as a mix of user groups are present on the site.

The issue of horse riding provision in the area is one requiring a more strategic approach than that available within the confines of this management plan. The Countryside Recreation Officer, The Tees Forest and PROW Officer will investigate implementing Borough wide horse riding routes.

Horses will be able to access sections of the National Cycle Route 14. Horse riders are expected to give way to other users. Riders should not permit their horses to foul on the route. Horses are not permitted elsewhere on the site.

Horse riders were given a key to access the footpath going through the Bean Well Plantation, removing them from the twisting of Cowpen Back Lane. This access was removed due to riders cantering along the footpaths without regard for other users, and the footpath surfaces being churned up. This will be reviewed in the near future.

4.2.7 Greenways

There is one greenway running parallel with the A1185. This is a multi user trail installed by the Tees Forest and SBC Environmental Development. Some tree planting was carried out along the road verge adjacent to the greenways route. This has now become an adopted highway and the responsibility of the SBC Rights of Way Officer.

4.2.8 Bridges

The bridges need to be maintained in a safe and usable condition. Bridges 1-3 need regular inspection in winter and wire mesh applied to reduce risk of slipping. Bridges 4 and 5 are installed with a textured surface to prevent slipping.



Fig 22 : Cowbridge Copse Footbridge

4.2.9 Boardwalks

A boardwalk has been installed helping to provide a new access route into Faith Wood. Following comments from visitors, other wet sections of the footpath networks have been examined during the winter months and boardwalking installed where feasible.

4.2.10 Access to Wider Countryside

Access to the wider countryside can be gained from the park along public rights way maintained by local landowners, SBC, PROW Section and Hartlepool BC PROW Section. All routes are well way marked and easy to follow. A walks guide has been produced for the area between Cowpen Bewley Woodland Park and Greatham Village. Other routes are planned. Rangers organise guided walks around the area as part of the events programme.

4.2.11 Health Walks

These are being implemented as part of SBC commitment to creating a healthier community. A number of walks and other activities have been held at Cowpen Bewley Woodland Park. This initiative is likely to increase in importance during the life of this plan.

The Parks two members of staff will be trained as Health Walk Leaders, and Support the Health Walks Officer appointed by Stockton Borough Council.

4.2.12 Sustainable Transport Issues

A large number of park users currently access the park by car. Even those living within a few minutes walk of the south side of the site drive to the car park in order to access the north side of the site. There is a contradiction here as people are contributing to the destruction of our environment while trying to access and enjoy it. We will continue to support alternative forms of travel by ensuring the footpath networks are well maintained, improving signage on routes in the park, promoting cycling and walking and promoting the public transport system.

4.2.13 Public Transport

In past years the countryside bus has called at Cowpen Bewley Woodland Park during the summer months, however this has now ceased due to route problems (as CBWP is rather a detour off the normal route). We hope that these problems can be resolved over the coming years. All year the site is accessible via buses that run along Low Grange Avenue in Billingham.

Countryside staff will promote the use of the public transport system by advertising services in leaflets and timetables on site.

4.2.14 Site Vehicle

There is a small van shared between Cowpen Bewley Woodland Park, Billingham Beck Valley and Wynyard Woodland Park. Vehicle use has been reduced over the last few years in line with the SBC LA 21 Strategy on reducing the use of Council and staff vehicles for SBC business. The Countryside vehicle runs on Bio fuels.

4.3 Facilities

4.3.1 Fencing

Many of the fields and hedges around and within the park are fenced. These fences need to be maintained in a safe and tidy condition. As the site and hedgerows develop it will be possible to remove much of the fencing around the site. They do however form a good barrier to prevent litter blowing onto the park from surrounding housing areas.

4.3.2 Picnic Tables

These are located as shown on Map 28 These facilities are mostly on the north side of the site as this has traditionally been less susceptible to vandalism.

It may be appropriate to install some benches on the south side of the site, but there was little demand for this at the public consultation.

The existing picnic benches (2008) are now showing the signs of their age and new ones need to be installed. The 5 wooden benches are to be replaced by 12 new benches made from metal. 5 benches will automatically replace the wooden benches present, 6 of the remaining new benches will be placed on the amenity grassland adjacent to both sides of the track leading up to the Activity Centre, taken this area out of the hay cutting regime. The 1 remaining bench will be placed at Town End Carr next to the pond (see map 5A). All benches are either treated with wood preserve or paint to reduce weathering.

More sitting benches in Faith Wood and other areas of the Site will be considered, but with a more rural approach to their construction.

In 2009 five new picnic benches were put in place around the car park and car park ponds, funding for this came from the SBC Parks Improvement Plan..

One bench was removed from the Lake side to stop further trampling of vegetation, and for Health and Safety reasons as it was perched next to the banks/lake sides. Removal would also stop erosion of the bank sides. This area was fenced off to stop visitor incursion.

Any new benches on site will need to follow the new SBC style guide, due to be introduced 2010

4.3.3 View Point

The top of the large mound is a significant landscape feature and one of the highest points on Teesside. It is also the only place on Teesside from which the general public can view the whole of the area. There appreciate the view while adding protection from the elements. This seat is part of a longer Industrial Trail around the park.

4.3.4 Bird Hide

There is a bird hide next to the lake. This was inspected by SBC Health and Safety representatives in 2009, the hide was past fit for public use in autumn 2009, keys to enter the hide can be obtained from the Rangers.

4.3.5 Litter Policy

There are no Litterbins provided anywhere on site. Extensive research at countryside sites has shown that on sites with litterbins, more litter is left than on sites without. There is some complex psychological explanation for this strange behavioural trait in humans. We have experienced this first hand at a number of sites in Stockton where litterbins have been removed and the amount of litter has decreased. With no bins on site, people take their litter with them. There are no plans to install litterbins on site. Ranger's litter pick the site daily to maintain a litter free environment.

At the entrance to the car park a large red bin has been installed for use by the Rangers to put rubbish in from the Centre, the general visitor is also allowed to use this bin to place any rubbish they have.

3 recycling bins have been placed in the car park, one for waste paper, another tin cans, and the last for glass. These bins are in great demand and need emptying on a regular basis.

Any flytipping on the surrounding roads is reported to Stockton Borough Council's Care for Your Area team who will come and remove it. They are generally good at responding to calls about flytipping, and rubbish is removed very quickly, often within the hour of the call.

4.3.6 Orienteering

There are orienteering points on both the north and south side of the park. Maps are available for loan from the activity centre. Cleveland Orienteering Club has produced these maps and helped with the layout of the course, and organise regular events on the site. The south side has however suffered from vandalism and it cannot be relied on that all markers are present at this time. The North side course has been re-mapped in 2005, in line with the many changes to infrastructure on site and the fast developing woodland.

4.3.7 Play Area

Through use of the imagination and creative play, the whole of the Woodland Park is one giant informal play area.

The amphitheatre represents a contained, safe, dog free area in which children can play. There is currently a tunnel and willow maze attached to the amphitheatre, and we plan to construct some giant musical instruments in the area.

The wood chip surfacing needs to be topped up and weeded on a regular basis.

The tyre sculptures in the car park, although not a piece of play equipment it is used by youngsters.

The construction of a new play area in the park cost £30,000. It was built next to the amphitheatre and Visitor Centre; it will be completed over two years at a cost of £30,000.

The SBC Parks Asset Inspection team inspects the Amphitheatre and play area.

4.3.8 Security

At present crime levels in the park are low. The main target seems to be theft from cars on an occasional basis. There are also occasional incidents of wildlife crime and drug abuse. Vigilance on the part of park staff and visitors helps to keep crime incidents low. The police maintain a regular presence around the site and relationship with Billingham Police Station and its officers is good. Crime incidents are recorded by the Countryside Rangers as they occur, but not all crimes are reported to us. There are no plans at the present time to increase security measures on site.

4.3.9 Car Parks

There is a large tarmac surfaced car park just off the A1185 that provides an access point to the north side of the site and the activity centre. The car park is locked at night for security reasons. Regular visitors to the site have keys to the car park gates and help to open and close it. There is also a small parking area close by the centre used for staff vehicles, deliveries and disabled access. There are plans to install new gates to the car park, ones that will add to the visual impact of the Sites Entrance.

The car parking provision is more than adequate for the site at present.

A new lockup compound is needed to store tools, hazardous substances etc, this will be located at the car park entrance. The green flagpole has also been erected at the car park entrance. A new set of entrance gates is required to the car park

A salt bin is provided in the car park.

New gates were placed at the car park entrance in 2009, there are also several other items at the entrance to the car park, a flag pole and a sculpture. Several signs indicating opening and closing times are also located in this area.

Paper, Bottles and tin can recycling bins can be found in the car park.

4.3.10 Car Park Flower Beds

The car parks are broken up with grassed islands. They are maintained on the grass cutting programme and on occasions, community service teams.

4.3.11 Vandalism Policy

Any vandalism, including graffiti is treated as urgent priority and dealt with immediately where possible.

The site is lucky in that at present it doesn't suffer from too much vandalism. Most common incidents are grass fires in the summer and dens in the woodland. Action is taken to reduce the occurrence of this by thinning out trees to make them less desirable for dens. Thinning of trees and also feathering of trees also reduces the risk of the woodland catching fire and allows grass fires to burn out quickly. Signs are made from tough vandal resistant materials, which are also easy to remove graffiti from.

4.4 Community Involvement

4.4.1 Oral History Project.

During the summer of 2001 an oral history project was conducted in order to explore the history of the local area, and to establish better links with the local community. Stories were gathered in Cowpen and Greatham Villages prior to a Storytelling Festival, on 2nd September was a great success with over 400 people attending. A huge number of stories were collected, with over 10 Dictaphone tapes being filled, and information from over 40 people recorded onto maps and notes. A large number of old photographs of the area have also been uncovered.



Fig 23 : Cowpen Bewley Oral History Project consultation

We met people who worked in the old brickyard, saltworks and on the railways, families who have lived and farmed the fields for many generations. The tales they told us were many and varied. Some funny, some sad, but all of the memories told us something of the way in which people lived and used the land in the early days of Teesside. People walked a great distance to work without the aid of cars, and steam power was used to transport the bricks from Carters yard for use in the construction of houses.

We wondered at the strange and ancient celebrations of Greatham village, from sword dancing, to the feast day of Saint John the Baptist, to maypole dancing (now sadly defunct), to the boxing day mummers play, still very much alive. To discover such a wealth of local traditions on our own doorstep has been an eye opening experience,

The information gathered has been used to produce panels in the Activity Centre so visitors could learn something of the history of the park. Transcripts and notes are kept in the site office. See also appendix 11.

This project was funded through a Local Heritage Initiative Grant.

The Storytelling project that started at Cowpen Bewley Woodland Park has now gone Tees Valley wide with Tees Forest taking control of this event and sourcing funding in 2007, the storytelling event is now run by Groundwork Trust (2009)

4.4.2 Management Plan Consultations

During the Spring of 2002 a series of public consultations were carried out in order to gain a clearer idea of how local people would like to see the park managed.

A series of sessions were arranged around the area, with information taken into the local community, and with people invited to visit sessions in the park, in order to air their views. In order to simplify the process a list of what were thought to be some of the key issues was produced. At meetings through the May people were asked for their opinions on the following items:

- Should we be removing trees from the site?
- Should we be planting more trees in Faith Wood?
- How do we manage dogs on the site?
- How do we prevent dog fouling on the site?
- If we create a new wetland area near Cowpen Village will it effect the flooding in the village?
- Are you happy with the way the rangers spend their time?
- Are you happy with the way we manage our finances?
- When should we be open to the public?
- Do you want to see a sculpture trail or a tree avenue in the site?
- How can you help look after the park?

People were also able to raise any other issues they felt were important.

255 people came to the consultation sessions, and voted on the proposals, and in each case the majority view has been adopted in this Management Plan.

A quarter of the people who came also put forward additional suggestions, 94 suggestions in total. These ranged from ideas of new facilities we should have, management changes we should make and general comments on ways to improve the park for wildlife and/or people. All comments were carefully examined and many of the suggestions have been incorporated into this Management Plan. However, we also need to consider the voices of all those who did not vote at the sessions, namely the plants, animals, birds and insects who inhabit the site, suggestions that could be detrimental to the wildlife or would contravene our legal and policy obligations will not be implemented. All those who made suggestions received a letter explaining the likely outcome of their suggestions.

The results of the consultation have heavily influenced the contents of this Management Plan.

Copies of the newsletters explaining the process and results plus details of the issues raised at the consultation are included in appendix 10

4.4.3 Ongoing Community Involvement

The oral history project and the public consultations over this plan have both helped to forge strong links between park staff, volunteers and local residents. People are becoming more aware of the park, its value and the challenges faced in protecting the area for people and wildlife. Evaluations of the consultation process are ongoing. Links with the community should be maintained, the following measures will assist this process. Presence of staff on site, events, site newsletter, annual open day, story telling festival, school programmes, walks and talks.

Village fete

To replace the storytelling event the Park has started to run a Village Fete, inviting people from around the local area to attend. The local scout troops run the activities and games, plus the BBQ. Low Grange WI makes and runs the cake stall. Local people run stalls, selling many different items. (Teesforest 3 Parks cycle ride is ran in conjunction with the fete, so that they could stop off to enjoy the refreshments and the activities). Hartlepool Rangers run a guided walk on the day, bringing their party over to the fete. The fete is advertised in the local free paper and the radio. Over 5000 fliers are sent out to people in the local area that is adjacent to the Park. The number of visitors attending grows yearly.

4.4.4 Open Day

It has been suggested that each SBC Countryside site have an annual open day. This suggestion is being embraced at Cowpen Bewley Woodland Park.

These open days would enable people to meet the Countryside Rangers, discuss issues of importance to them in the park, see the plans for forthcoming work over the next 12 months and contribute to the annual review of the management plan. It gives park staff the chance to assess how well we are managing the park in the eyes of our visitors.

4.5 Dogs

4.5.1 Dog Walking and Byelaws

Dog walking is a popular recreational activity at Cowpen Bewley Woodland Park. Many of these are regular visitors who visit the site on a daily basis. These regular visitors play an important role within the park, acting as extra eyes and ears around the park, reporting problems and incidents to the Site Rangers.



Fig 24 : Regular Dog Walker at Cowpen Bewley Woodland Park

The site byelaws state that dogs must be kept under proper control and restraint. Dogs must not cause annoyance to other people, nor may they worry birds or animals on the site. Furthermore dogs are not permitted in the lake. There is also an area close by the activity centre that is a no dog zone, as this area is used regularly by school groups.

Unfortunately a few irresponsible dog walkers do not keep their dogs under control. There have been incidents on the site of dogs attacking other dogs, chasing wildlife, disturbing birds on their nests, and attacking visitors to the park.

These problems were put to park visitors during the public consultations in May 2002. The majority of people attending were in favour of some kind of zoning policy.

4.5.2 Dog Zoning

In order to protect wildlife in some of the more sensitive areas of the site, and provide a safer environment for families and children, a dog zoning policy has been introduced to the site from the spring of 2004. See Map 29. The area around the lake becomes a 'Dogs on leads zone' from march-sept. Faith Wood becomes a 'Dog Running Zone'. And the rest of the park remains 'dogs under close control' This means that dog owners will be able to exercise their animals in Faith Wood, before putting them on a lead to enter the old tip site and lake area. All these areas are well signed to explain the zoning during march-sept.

Tot Fennies field currently has no paths or access. It is hoped that grazing can be re-established in this field. When grazing is introduced the area will need to become a no dog zone. For the present time continue the policy of no access provision into the field.

A new dog's policy was introduced in 2009 allowing guide dogs only into the Visitor Centre. Dog tethering rings were placed outside the Centre for visitor use.

4.5.3 Dog Fouling

Under the 'Dog Fouling of Land Act' owners of dogs now have a legal responsibility to clean up after their dogs in public places. Local Authorities are obliged to enforce this legislation. The whole of Cowpen Bewley Woodland Park is covered by this legislation and fixed penalty tickets of £50 can be issued. The Stockton Borough Council Dog Wardens regularly patrol the site, both in uniform and under cover in order to apprehend irresponsible dog owners. The Countryside Rangers will be reporting anyone allowing their dog to foul in the park to the dog wardens, who can issue tickets on our behalf, even if they do not personally witness the incident. We are investigating training Countryside Rangers in the 'Police and Criminal Evidence Act' so they can also issue fixed penalty tickets. There are currently fourteen dog bins on site and a free poop scoop bag dispenser provided in the park.

See map 29 for locations. The locations of the bins have been chosen with reference to the most favoured locations chosen by dog walkers at the public consultations. The locations have to be accessible so that they can be easily emptied.

With the Park becoming ever more popular with new dog-walking visitors, it has become important to point out to a small minority the byelaws regarding dog fouling. Many new visitors are unaware of this policy and need to be educated so that they do not spoil it for everybody. Dog wardens have been asked to patrol the Park at times throughout the day to chat with dog walkers.

Emptying of the 14 dog bins located around the Woodland Park has been put on a service level agreement with SBC 'Care For Your Area'.

4.6 Visitor Centre

4.6.1 Introduction

The Visitor Centre was constructed during late 1999/early 2000. It was not open to the public or school groups for much of the summer 2000, as upon completion of the building works there were fears raised that gases from the adjacent landfill site could permeate the building and lead to an explosion. Consultants were brought in and extensive surveys carried out before the building was opened.



Fig 25 : Visitor Centre at Cowpen Bewley Woodland Park

The general public and school groups were not able to use the site or centre during the summer of 2001 due to foot and mouth disease in Cowpen Village which meant the park and all surrounding footpaths were closed off.

Publicity materials were sent out to schools in Spring 2000 (before the gas scare was announced) and then apologies sent out, and again in Spring 2001 (the day before foot and mouth was announced) and further apologies sent out. This has severely hampered the uptake of both schools and the general public using the site.

In 2006 a new solar array and wind turbine were placed around the Activity Centre, an interpretation panel has been fitted inside the Activity centre indicating how much energy has been saved.

The Centre needs annually maintaining to keep it open to the public, a new boiler heating system was installed in 2007. Smashed windows need to be replaced as quickly as possible.

Maintenance of the building is carried out by Stockton Borough Council departments or designated contractors who are called in on their behalf.

The track leading up to the Centre from the car park was lined by an interpretation display and trees that were closely aligned to the old Celtic alphabet the Ogham. This was put in 2006, and replaced in 2009 with a new tree avenue of standard sized Red Oaks planted along both sides of the track up to the Visitor Centre. Funding for this project was from the SBC Parks Improvement Fund.

The track that leads up to the Centre from the car park was laid with tarmac in 2005, prior to that it was an old potholed track. Funding to tarmac the track came from Highways SBC. SBC Highways have put 3 salt bins :adjacent to the VC;on track entrance and in the car park.

4.6.2 Facilities

The centre has toilet facilities, a rangers office, storage for educational materials, a large education room and a small shop.

4.6.3 Opening Hours

The centre is normally open to the general public at the following times.

- All Year Sunday 10am-4pm

Additionally during the school summer holidays it is open;

- Mid July – end August Fri, Sun, and Mon 10am - 4pm

These hours were chosen to try and keep the centre open at times when there are high numbers of people in the park and yet take account of the limited staffing at Cowpen Bewley Woodland Park. These hours will be reviewed on an annual basis. Staff numbers and, past visitor numbers to the Centre are the controlling factors. More emphasis is being placed on encouraging people to visit the Centre.

4.6.4 Educational Use

The centre was commissioned to act as primarily an educational facility for school and other groups. It has been used for a number of wildlife conferences. There is a large activity room that is kept as clear as possible so that the room can be used for activities and large groups. It has been suggested in the past that the room should contain more interpretation facilities. This however would severely hamper the use of the room with school groups and as a conference facility. A full description of educational and interpretation facilities in the centre is to be found in Part 3.

4.6.5 Other Uses

The Centre has been used on a number of occasions for wildlife conferences and is a good facility seating up to 40 delegates. Cleveland Orienteering group (CLOK) uses the centre when they are running orienteering events around the Park.

The use of the centre by non-environmental groups could be encouraged. This would bring new visitors into the park and would have an indirect/informal educational impact with such groups. This was also voted for by the public at the community consultation.

On several occasions local people have used the Centre to hold private birthday parties.

The general public also use the centre as an information point (see 3.1.3.1 and 3.2.3)

4.6.6 Shop

There is a small shop in the centre. The shop stocks a range of refreshments, educational items, guides and souvenirs. Shop stock is purchased in accordance with the wider environmental and ethical issues outlined in 1.3.1 & 1.3.2 in particular the Purchasing Policy (1.3.2.4) and Stockton Borough Council Healthy Lifestyles Initiative (1.3.1.3). The shop is run as a facility and is not intended to be a major profit maker.

Cowpen Bewley Woodland Park

Action Plan

April 2008 - March 2013

Summary Of Projects During The Plan Period

Aims	Objectives	Plan Section	Budget	Time Zone
Selective Tree Thinning	Create new woodland glades	2.1.3.2	Site	Seasonally
Newsletter	Send out Sites newsletter		Site	Seasonally
Nature Trail	Change information boards			Seasonally
Habitat Management	Create areas of habitat diversification to increase Bio Diversity.	2.1.6	Site	On going
Remove Non Native Flora	Remove non native invasive species	2.2.6.5	Site	On going
Events	Create an Events programme			On going
Footpath Width	Remove obstructing vegetation	2..5.5		On going
Site Furniture Maintenance.	Paint benches, nature trail panels, replace/repair fencing and gates.	2.1.6	Site	On going
Trails	Maintain Trails around Park		Site	On going
Grant Funding	Forestry Commission Woodland Improvement Grant.		Grant	2010-2014
Waterways/Wetlands	Maintain waterway channels/ponds etc	2.2.6.5	Site	On going
Amphitheatre	Maintain the appearance for Health and Safety	4.3.7		On going
Recycling	Maintain the recycling bins in the car park	4.3.5	Site	On going
Surfaced Paths	Maintain surfaced paths	2.1.7.5	Site	On going
Awards	Continue to go for awards for the Site, such as Green Flag, and Northumbria in Bloom.			On going
Hedges	Trim hedges as required	2.1.4	Site	winter
Environmental Trust	Maintain good communications within the Trust and extend out into the community, Change from a Trust to a Friends of Group.			On going
Expand Education Programmes	Create a new educational activity booklet based on the schools curriculum.	3.1.4	Site	Ongoing
New Grass Cutting Programme	Negotiate new cutting contract for amenity grasslands and footpaths	2.1.5.5	Site	Ongoing

Sustainability Project	Maintain, windturbine, photovoltaic cells and bio digester, interpretation.	3.1.5.5	Site	Annually
Bird Feeding Area	Clear and maintain area, buy birdseed.		Site	Annually
Lake Bank Side Erosion	Stabilise the bank sides, Fence of unstable areas, chip undercut bankside with spades, cut invasive flora on banksides to encourage alkali flora.	2.1.5.9	Grant	Annually
Replace tree avenue trees with maples.	To produce a more colourful display.	4.6.1	SBC	2009
Faith Wood Pathway	Create a hard surfaced footpath, circular loop from the car park, around lake, across faith wood, back via Sustrans track to car park, for wheelchair access	2.1.5.6	Grant/easement.	Ongoing
Land Acquisition & Update Leases	Extend Parks size, these are at land acq, and legal at present 2009	1.3.4.8		2010
Update Management Plan	Convert Management Plan maps onto GIS	4.3.7	Site	2010
Visitor Centre	Maintain, paint and obtain large new sign	4.6.1	Site	2010
Mobile display	Create and advertise a travelling mobile display	3.2.3.7	Site	2010
Playbuild	Create a new play area next to amphitheatre		SBC	2009
Conservation Area	Fence off area from intrusion by people and dogs.	2.1.3.7	SBC	2011
Entrance trees	Selectively thin trees at entrance	2.1.3.5	Site	2010
Car Park Gates	Replace existing gates	3.2.2.1	SBC	2009
Compound	Purchase a new lockup compound.	1.1.4	Site	2010
New Interpretation	New panels informing the visitors of the wildlife on view, both internal and external.	3.2.3.3	SBC	2010
New Picnic Benches	Purchase 12 new metal picnic benches. 5 new picnic benches were placed in the park in 2009	4.3.2	SBC	2010
Road Signs	Increase the number of brown road signs advertising the Park	3.2.2.3	SBC	2011

Bird Boxes	Replace existing bird boxes and put waterfowl boxes on lake islands. (Bat boxes)	2.1.8	Site	2011
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Action Plan
April 2008 - March 2013

General

PLAN SECTION: GENERAL

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Maintain up to date Wayleaves Map.	1.1.3	Ongoing but very occasional		SR	H&S	Ensure site safety.	1
Photographic surveys: <ul style="list-style-type: none"> • Every four years fixed point photo-survey to be carried out spring and summer, autumn and winter. • Maintain photographic records of activities and projects on site for use in publications and achieve file. 	1.1.5	2012 2016 Ongoing	Site Site	SR SR	POS10 CS1o8	Monitor changes on site over time.	2 2 2
Hazardous Substances: <ul style="list-style-type: none"> • Monitor site for leachate leaks, liase with SBC Waste Management Team if necessary. 	1.2.1.6	Ongoing		SR	H&S	Maintain site in a safe condition.	1
Maintain LNR status.	1.2.3.4	Ongoing		SR/CRO Planning Officer	POS10 LA7o1 LA7o2 CS1o8	Maintain conservation status on site.	2

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Update strategic links as new or revised strategies are issued across the Borough, e.g., New Parks and Countryside Strategy in 2005. Climate change Action Plan 2007	1.3.1.3	As required		SR/CRO		Ensure site management is broadly in line with SBC objectives (Green Infrastructure Plan)	3
Provide Health Walks and other related activities.	1.3.1.3	Ongoing		SR/CRO	POS8 POS12 LA2o4 LA4o7 HWS CS3	Compliance with SBC Healthy Life Styles Initiative.	2
Implement SBC LA21 Strategy	1.3.2.1	Ongoing	Site	SR	LA	Working towards UK Compliance with R10 Earth Summit.	1
Maintain sustainable energy use.	1.3.2.2	Ongoing	Site	SBC Climate Change Officer	LA1o2	Set good practice in energy usage and work towards UK Compliance with R10 Earth Summit.	2
Encourage use of sustainable transport.	1.3.2.3	Ongoing	?	SBC Initiatives.	LA2	Set good practice in energy usage and work towards UK Compliance with R10 Earth Summit and SBC Local Transport Plan on sustainable travel.	2
Implement Purchasing Policy.	1.3.2.4	Ongoing	?	SBC Purchase and Payment dept		Meet SBC LA21 objectives.	1
Implement Waste Management Policy, reuse of old materials, use of composting etc.	1.3.2.5	Ongoing	?	SBC Recycling dept	LA3	Meet SBC LA21 objectives.	2
Maintain Bio digester Sewage Plant. Annual service + de-sludge and strim round Plant	1.3.2.6	Annually	SBC	SR		Ensure safe and efficient operation of sewage system	1

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Rangers: <ul style="list-style-type: none"> Maintain existing staffing levels of two full time Ranges. Campaign for Education Officer to be based at CBWP full time. 	1.3.3.1	Ongoing	CBWP ?	CRO/SR SR	POS	2010 SBC Parks and Countryside personnel restructure taking place More efficient delivery of education programmes and daily use of activity centre with groups.	1
Volunteers: Expand volunteer team in numbers. Recruit volunteers to help with Site Admin.	1.3.3.4 1.3.3.4 and 1.3.6.4	Ongoing Ongoing	Site Site	SR SR	POS9 LA6o2	Involve local community in the management of the park. Volunteer work day changed to Wednesday 2009. Expand the ranger team.	
<u>Trainees</u> Continue working with trainees to expand the staffing on site.	1.3.3.5	Ongoing	?	CRO		Provide training for work opportunities. Expand the ranger team.	
<u>Playbuild</u> Play Area next to the Visitor Centre	4.3.7	2009	SBC	Tony Raine/SR		A play area was constructed adjacent to the Visitor Centre 2009 (completed phase 2 2010).	
<u>Tree Avenue</u> A new tree avenue trees leading up to the Centre.	4.6.1	2009	SBC	Stuart Hibbert/SR		A £4,000 Payment from the SBC Parks Improvement Fund in 2009 paid for a new tree avenue to be put of red oaks.	

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Cowpen Bewley Environment Trust: <ul style="list-style-type: none"> Regular quarterly meetings. Annual AGM. Support site staff in implementing Management Plan. Support site staff through fund raising. Expand membership of trust. In 2009 the Trust was changed in to a 'Friends of Group' 	1.3.3.8	Quarterly Annual Ongoing Ongoing 2009-10	Obtain funding from grants etc.	CRO CRO/CL SR/Trust Trust/SR SR	POS9 LA6o2 LA6o3	Involve local community in management of the park. Obtain finances to implement Management Plan. A Friends of Group will be more active in the Park.	1 1 1
Maintain links with other local conservation organisations.	1.3.4	Ongoing		SR/CRO/ Other organisations	POS7	A new joint educational programme with the RSPB has been implemented.	2
Annual review of Management Plan and production of Annual Work Plan.	1.3.5.1	Annually in Feb/Mar for financial year starting in April	Calculated for the years projects	SR		The annual objectives for the site. Review previous year's successes and failures.	1

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Convert Management Plan onto GIS System.	1.3.5.2	Dec 2009 or Dec 2010		SR	POS10	Simplify annual review process.	
Finance <ul style="list-style-type: none"> Ensure site budget rises in line with inflation as a minimum requirement. Campaign for an increase in site budget. Maintain accurate accounts. 	1.3.6.1	Feb-Mar each year. Ongoing Daily and weekly	Site Site All	SR/CRO SR SS/SR	ALL	To enable implementation of Management Plan. The SBC Parks Improvement Fund can be called upon to help with large projects. Meet Audit requirements.	1*
Fundraising <ul style="list-style-type: none"> Raise funds for site work through grants, awards, and partnerships with local industry and partnerships with other departments in SBC. 	1.3.6.2	Ongoing	Site	SR	ALL	Enable implementation of Management Plan. A Forestry Commission Woodland Grant was applied for in 2009.	1*
Partake in Best Value review process.	1.3.6.3	As required	?	CRO/SR			2
Administration: <ul style="list-style-type: none"> Routine Admin work. Recruit volunteers to assist with Admin work. 	1.3.6.4	Daily Ongoing	Site Site	SR/V SR		Comply with Best Value and other SBC Procedures and Policies. Free up SR for work elsewhere on site.	1

PLAN SECTION: HABITAT MANAGEMENT

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>BAPs</u> <ul style="list-style-type: none"> Maintain up to date files on BAPs. (see page) 	2.1.2	Ongoing		SR	BAP POS10 LA7o2	Maintenance and improvement to BAP habitats in line with national objectives.	2 1
<u>Woodland Management</u> <ul style="list-style-type: none"> Start thinning operations in areas as shown on Map 17, year by year thinning operations and table 1. <p>Clear fell woodland glades as shown in Map 17 and table 1</p> <p>Create Glades and Scallop the edges to create microclimates.</p>	2.1.3.2	<p>Winter each year.</p> <p>Winter Programme of works</p>	<p>Site and EN Bio Grant.</p> <p>Site and EN Bio Grant.</p>	<p>SR/V (Later C?)</p> <p>SR/V</p>	<p>BAP POS7 POS10 LA7o1 LA7o2 SC1o8</p>	<p>Work towards the creation of a semi-natural mixed broad-leaved woodland as part of the Tees Forest.</p> <p>SBC Arbour dept and the Parks and Countryside were successful in applying (2009) for a Forestry Commission grant, to clear 90% of the nursery crop (Corsican Pines) and selectively thin broadleaves on site over a 4 year period. The grant was obtained under the grant of 'Reducing the Decline in Woodland Birds'.</p>	1 1

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>Faith Wood</u> Thinning operations in Faith Wood, negotiate with Woodland Trust. CBWP full management control of this land is still ongoing 2009)	2.1.3.3	2010– 2011	Woodland Trust	Woodland Trust	BAP POS10 LA7o1 LA7o2 SC1o8	Implement thinning operations in Faith Wood where necessary as part of the work towards the creation of a semi-natural broad-leaved woodland, woodland Trust approval is required prior to any work.	
<u>Mature Trees</u> <ul style="list-style-type: none"> Leave mature dead trees wherever possible, fell and leave on site if they constitute an H & S risk. 	2.1.3.4	Ongoing	Site or Arboriculture	SR/ Arboriculture	BAP POS10 LA7o1 LA7o2 SC1o8	Deadwood habitats on site. H & s compliance.	
<u>Deadwood</u> <ul style="list-style-type: none"> Wherever possible leave standing and lying deadwood in the woodland areas. Create deadwood habitat pile using brash from thinning operations. Ring bark some standard tree in new woodland areas to create standing deadwood habitats. Import large diameter trunks onto site. 	2.1.3.5	Winter – Ongoing Each Winter Each Winter Ongoing as opportunities arises.	Site Site Site Site	SR	BAP POS10 LA7o1 LA7o2 SC1o8	Create deadwood habitats on site and increase microhabitats for invertebrates.	

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>Hedges</u> (Continued) <ul style="list-style-type: none"> Hedge trimming near road/PROW. Gap up hedge Remove litter and rubbish. Establish links with local farmer 	Winter as required. Winter As appropriate.	On going As required Future works	Site Site Site	SR/V SR SR SR		Successful establishment of new hedgerows and development of species rich mature hedges of high wildlife value. Promote more sympathetic hedgerow management in the farmed landscape.	1 2 2 2 2
<u>Grassland</u> <ul style="list-style-type: none"> Establish grass-cutting requirements in the newly opened woodland glades. Submit grant applications for purchase of reciprocating cutter bar, mower or similar. Continue hay cutting in existing areas. Initiate hay cuts in new areas. 	2.1.5.2. 2.1.5.3 2.1.5.3	 Annually July – Sept Annually July - Sept	Site Grant from EN Bio-diversity Grant Farmer takes crop in payment Farmer takes crop in payment	SR SR/CRO SR/Farmer SR/Farmer	BAP POS10 LA7o1 LA7o2 SC1o8	Establish variety and interest into the new woodland areas. Increase variety and diversity in grassland sward.	1 1 1 2

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>Grassland</u> (Continued) <ul style="list-style-type: none"> Negotiate new contract for footpath and amenity grass cutting on the site. Initiate management of butterfly glades. Routinely remove invading scrub from rank grassland areas. Maintain stands at scrub within grassland mosaic. Periodically make cuts into rank grassland areas during hay cut. Clear bramble and other scrub from chalk banks. Initiate chipping of Lake bank side for Health and Safety to reduce undercutting. Investigate methods to prevent erosion to chalk banks from visitor pressure. 	2.1.5.4. 2.1.5.6 2.1.5.7 2.1.5.7 2.1.3.6 2.1.5.7 2.1.5.8 2.1.5.8 2.1.5.8	Ongoing 2008 Onwards As necessary Ongoing Small areas annually July – Sept Winter /autumn Summer 2008 onwards Summer 2008 onwards	 Site Site Site Site New cutting machinery required EN Grant Bid Grant	SR/CRO Service Stockton SR SR SR SR SR SR		A new contractor and up to date contract. Improved performance and efficiently from contractor. Create wider diversity of microhabitats for invertebrates. Prevent loss of rank grassland to invading scrub. Diversity of habitats within the grassland areas of benefit to small mammals and birds. Create wider diversity of microhabitats in grassland communities for invertebrates. Create more calcareous grassland on site. Health and Safety Preserve calcareous grassland.	1 2 2 1 2 1 1 3

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Grassland (Continued)							
<ul style="list-style-type: none"> Monitor erosion of chalk banks by lake. Take measures to control if necessary. 	2.1.5.8	2009	?	SR		Preserve calcareous grassland. The bench next to the lake has been removed 2009. SBC Health and Safety Officer visited area and recommended fencing of the worst areas 2009	1
<ul style="list-style-type: none"> Continue with annual hay cut. 	2.1.5.10	Annually July – Sept	Farmer takes crop in payment.	SR/Farmer		Maintain variety and diversity in grassland sward.	1
<ul style="list-style-type: none"> Remove hay cut in southwest edge of tot fennies field 	2.1.5.10	Summer	Depends on method chosen.	SR		Improve variety and diversity in grassland sward.	2
<ul style="list-style-type: none"> Control scrub invasion into damp grassland areas in tot fennies. 	2.1.5.10	As necessary	Site	SR		Improve variety and diversity in grassland sward.	2
<ul style="list-style-type: none"> Claim Countryside Stewardship payments on an annual basis. 	2.1.5.10	While still in stewardship	Into Site	SR		Assist with budget. This grant is due to terminate in 2010.	2

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Grassland (Continued)							
<ul style="list-style-type: none"> Investigate possibility of Northumbrian Water Lands if required. 	2.1.5.11	2009-10	Investigate Funding Sources	SR/CRO/CCF/COS		Reinstatement of traditional management practice. Improve variety and diversity of grassland sward and creation of microhabitats for invertebrates.	2
<ul style="list-style-type: none"> Negotiate with SBC Highways over management of grass verges. 	2.1.5.12	Ongoing	Unknown at present	SR/SBCM		More sympathetic management of local BAP habitat type.	3
<u>Watercourses</u> <ul style="list-style-type: none"> Carry out water vole survey on all watercourses in the park. 	2.1.6 Table 3	Summer, ongoing	Site	SR/Mammal Groups	BAP POS10 LA7o1 LA7o2 SC1o8 LA4o4	Establish presence or absence of water voles along each watercourse.	2
<ul style="list-style-type: none"> Negotiate with Environment Agency over sympathetic management of watercourses for water voles. 	2.1.6 Table 3	Ongoing	Site	SR/EA		Ensure expansion of water vole population on the site.	1
<ul style="list-style-type: none"> Routinely monitor known water vole populations. 	2.1.6 Table 3	Ongoing	Site	SR/Mammal Groups		Monitor extent of population and success of management measures.	2
<ul style="list-style-type: none"> Liase with local farmers over management of NS drain into Cowbridge Beck. 	2.1.6.1.	Ongoing		SR		More sympathetic management of adjacent farmland for wildlife.	3
<ul style="list-style-type: none"> Discuss with Env. Agency and SBC Highways the installation of reed filter beds to catch run off from A1185 into Cowbridge Beck. 	2.1.6.1	Ongoing	Unknown at present	SR		Improve water quality in Cowbridge Beck. Create reed bed habitat on site.	3

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
Watercourses (Continued) <ul style="list-style-type: none"> •)Manage stands of reed canary grass for harvest mice. • Extend areas of reed bed on Cowbridge Beck into Faith Wood through creation of new low-lying areas. • Clear rubbish/fly-tipping etc., from drain. • Clear vegetation from drain. • Provision of otter habitat and artificial holt. Liase with local farmer over management of north side of Claxton Beck and upstream.	2.1.6.2.	2008	Site	SR		Successful establishment of wild population of harvest mice on site.	1
	2.2.5.3 Table 3	Onwards					
	2.1.6.2	2008	Investigate Funding Sources £10,000	SR		Expansion of BAP habitat – reed beds.	2
	2.1.6.3.	As required	Site	SR		Maintain clean and safe watercourses.	2
	2.1.6.3.	As required	Site	SR		Maintain clean and safe watercourses.	2
	2.1.6.4			V			2
	2.1.6.4	ongoing		SR		More sympathetic management of adjacent farmland for wildlife.	2
Ponds <ul style="list-style-type: none"> • Treat first car park pond with herbicide to remove NZ swamp stonecrop. • Maintain dipping platforms and signage on good practice. • Clear vegetation from margin of car park ponds on a three-yearly rotation. One pond per year. 	2.1.7.1.	As required	£450 PA	SR/C	BAP POS10 LA7o1 LA7o2 SC1o8 LA4o4	Prevent invasion of alien species to other ponds. Enable effected pond to restore. Crassula Helmslia reappeared in the ponds in 2009, advice was sought from the Environment Agency on how to eradicate the problem.	1
	2.1.7.1.	Ongoing	Site	SR		Maintain site provision for school groups.	2
	2.1.7.1.	Annually Autumn	Site	SR		Mix of open water and marginal vegetation enhancing quality of ponds.	2

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>Ponds</u> (Continued)	2.1.7.2	Autumn	Site	SR/V		Mix of open water and marginal vegetation enhancing quality of pond.	1
• Clear reed mace back to 20% of corner pond.							
• Routine vegetation clearance of corner pond.	2.1.7.2.	Autumn	Site	SR/V		Mix of open water and marginal vegetation enhancing quality of pond.	2
• Routine vegetation clearance at Pigeon Wood Pond and Cowpen Pond.	2.1.7.5.	Autumn					1
• Routine vegetation clearance of St Michael's Pond and Newt Ponds.	2.1.7.6 2.1.7.3 2.1.7.4	Autumn	Site	SR/V		More detailed up to date knowledge of species present	1
• Clear litter fly-tipping from St Michael's Pond.	2.1.7.3	As required	Site	SR/V		Maintain clean and tidy site.	1
• Update Newt Licences for work on Newt Ponds.	2.1.7.4	As required	Site	SR		Legal requirements	1
• Maintain bare soil areas around Newt Ponds and large Pigeon Wood Pond by scraping of vegetation.	2.1.7.4 2.1.7.6	As required	Site	SR		Basking areas for dragonfly, damselfly and other invertebrates.	2
• Monitor scrape near boardwalk at Newt Ponds.	2.1.7.4	Annually	Site	SR		More areas of shallow water.	2
• Monitor new ponds close by Newt Ponds.	2.1.7.4	Annually	Site	SR		Extended habitat for Great Crested Newts and dragonflies.	2

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>Ponds</u> (Continued) <ul style="list-style-type: none"> Create deadwood habitats on adjacent areas as hibernation sites for Great Crested Newts. Improvement to existing entrance to Cowpen Pond. Install perching posts for dragonflies around newt ponds and large Pigeon Wood Pond. Allow success ional changes to provide smaller ponds in Pigeon Wood. Create new ponds periodically around the site. 	2.1.7.4	Top up as required	Site	SR		Extended hibernation sites for Great Crested Newts.	2
	2.1.7.5	Summer 2010	Site	SR/V		Create safer entrance.	1
	2.1.7.4 2.1.7.6	Summer 2009	Site	SR		Improved habitat-boosting numbers.	2
	2.1.7.6	Ongoing		SR		Wider range of wetland habitats.	3
	2.1.7.7	Ongoing:	£300 per pond site or investigate other sources £750 to concrete line each	SR/C		Wider range of pond habitats.	2 2
<u>Lake.</u> Monitor bird populations on lake.	2.1.8	Ongoing		V	BAP POS10 LA7o1 LA7o2 SC1o8 LA4o4	Improved knowledge of species on site.	2

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>Lake</u> (continued) <ul style="list-style-type: none"> Install nest sites on lake. 	2.1.8	2008	£400	V		Improved breeding rates of waterfowl.	3
<ul style="list-style-type: none"> Supplementary feed in lake in winter. 	2.1.8	Ongoing	£150	V		Survival of waterfowl during severe weather.	2
<u>Wetlands</u> <ul style="list-style-type: none"> Prevent scrub encroaching into wetland areas around car park ponds, leachate plant. 	2.1.9.2	Ongoing	Site	SR	BAP POS10 LA7o1 LA7o2 SC1o8 LA4o4	Prevent loss of wetland habitats to scrub invasion.	2
<ul style="list-style-type: none"> Occasional cuts of wet grassland/stands of reed, sweet and canary grass and rushes. Winter cuts will adversely effect many species. Areas around car park ponds, leachate plant. 	2.1.9.2. 2.1.9.3	Occasional summer cuts, small areas only	Mowing machinery required	SR		Prevent scrub encroachment and over thatching. Create mosaic of microhabitats.	2
<ul style="list-style-type: none"> Maintain harvest mouse cage and release programme and monitor release. 	2.1.9.3	Ongoing surveys	Site/CEW	SR/ CEW Staff		Breeding population of harvest mice established.	1

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<u>Wetlands (continued)</u> <ul style="list-style-type: none"> Monitor scrub and planted trees from Hurworth Swamp, Cowpen Lows and St Michael's Swamp. Create new reed beds in Faith Wood adjacent to Cowbridge Beck. 	2.1.9.6 2.1.9.9 2.1.9.10	Winter 2008 – 20009	Site	SR/V		Wetland areas restored.	1
	2.1.9.11		Investigate funding sources £10,000	SR/WT		Expand area of reed beds in the park and BAP habitat. Await clarification that we can do this work 2010 from the Woodland Trust.	2
<u>Local Acquisition</u> <ul style="list-style-type: none"> Renew agreements with NW over land use and extend areas in agreement. Investigate renting field opposite the NW works Reopen negotiations with St Cuthbert's Parish Church Council over lease for Tot Fennies Field. Vegetation surveys on new NW lands brought into park. Investigate renting field opposite Northumbria Works. Liase with local farmers to establish seed margins and/or set aside field margins. 	2.1.11	2009-10		SR/NW		Ensure continuity of CBWP as a whole unit.	1
	2.1.11	2009-10	£1 per year	SR/ St Cuthbert's Church Council		Meet legal obligations.	1
	2.1.11	Ongoing	£100 per day	SR/C		Knowledge of SPP present.	1
	2.1.11	2009-10	Site	SR/CCF		Appropriate management introduced to improve habitat for wildlife.	1
	2.1.10	Ongoing	Unknown at this stage	SR/FWAG/ Local Farms		Improved conditions for a range of seed eating farmland birds that feed on site, many of which are BAP species.	1

PLAN SECTION: SPECIES MANAGEMENT

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Update file on BAPs as they become available both nationally and from Tees Valley Wildlife Trust. Remove kerbstones on Track 	2.2.2	As required	Site	EN/JNCC/ TVWT/SR	BAP POS10 LA7o1 LA7o2 SC1o8 LA4o4	Implementation of most up to date species management data. See National Indicator 197.	1
		2008	Site	SR		Reduced mortality of young frogs and toads	
<ul style="list-style-type: none"> Update details on red/amber data book birds. 	2.2.3	As new list becomes available	Site	RSPB SR		Implementation of most up to date species management data.	1
<ul style="list-style-type: none"> Detailed survey work on invertebrates to ascertain existence of BAP/red/amber species on site. 	2.2.4	As experts become available	£100 per day for expert survey work	?		Improved knowledge of species found on site.	3
<ul style="list-style-type: none"> Installation of bat boxes around the site. 	2.2.5.1	2008	Site Budget	SR		Improvement in line with BAP's.	2
<ul style="list-style-type: none"> Install bird boxes around site and along Greatham Cycle Track. 	2.2.5.2	2008	Site Budget	SR		Improvements in line with BAP's for a wide range of birds.	2
<ul style="list-style-type: none"> Feeding of birds at existing tables and expand to other locations and into summer months. 	2.2.5.2	2008	Site Budget	SR		Supplementary feeding of BAP birds to increase over survival rates.	1
<ul style="list-style-type: none"> Monitor and control mink populations. 	2.2.5.5	Ongoing	Site	Mink working group/SR		Safeguard water vole populations.	1
<ul style="list-style-type: none"> Implement policies laid out in table 3. 	Table 3	Ongoing		SR		Work towards national BAP targets.	1

PLAN SECTION: EDUCATION MANAGEMENT/EDUCATION PROVISION

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Promote use of Centre with schools and other user groups. 	3.1	Ongoing	Site and charges for programmes	SR	POS11 POS12 CS1o10	Encourage a love of the wild places in residents of SBC.	1
<ul style="list-style-type: none"> Provide a range of education programmes for informal visits, self guided, guided and camp programmes. 	3.1.4.	Ongoing	Site and charges for programmes	SR	POS11 POS12 CS1o10	Education programmes up to date and relevant to National Curriculum requirements.	1
<ul style="list-style-type: none"> Provide opportunities to Pupils and Students for work experience placements. 	3.1.4	Ongoing	Site	SR	POS11 POS12 CS1o10	Encourage youngsters into the profession of countryside management.	2
<ul style="list-style-type: none"> Promote the use of the facility by local community groups. 	3.1.5	Ongoing	Site	SR	POS9 POS11 POS12 CS1o10	Encourage a love of the wild places in residents at SBC.	2
<ul style="list-style-type: none"> Continue consultations with local community over management of the park. 	3.1.5	Ongoing	Site	SR	POS9 POS11 POS12 CS1o10	Create a sense of ownership for the park and increased caring for the site.	1
<ul style="list-style-type: none"> Organise monthly activities for the Junior Ranger Group. 	3.1.5	Ongoing	Site	SR	LA6 POS9 LA4	Create a sense of ownership for the park and increased caring for the site.	1

PLAN SECTION: INTERPRETATION PROVISION

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
• Design, produce and install entrance signs at each entrance site.	3.2.2.1	2008	£2000 obtain funding from landfill tax	SR	POS7 POS11 POS10 LA7o1 CS1o9 CS1o10 CS6	Better awareness of existence of park. Improved way marking around site.	1
• Install new panels in nature watch boards.	3.2.2.2	Every quarter		SR		Visitors more aware of what they can find on site and value of CBWP.	1
• Obtain new panels for nature watch boards.	3.2.2.2	2008	£1000 obtain funding from landfill tax	SR		Visitors more aware of what they can find on site and value of CBWP.	1
• New road sign off A1185 (A19)	3.2.2.3	2008 – 2009	£500 Site or landfill tax or Tees Forest	SR		Better awareness of existence of site.	1
• Regularly update nature boards around site.	3.2.2.4	Ongoing as required		SR		Better awareness of latest news and what is happening on site.	1
• Creation of educational sculpture trail following story of life on earth.	3.2.2.5	Several pieces constructed each year	Completed 2008	SR/local environment artists		Better awareness of our place in the Cosmos.	2
• Create new roller blinds every two-years.	3.2.3.2	2008 – 2010	Site	SR		Better awareness of value of CBWP.	2
• Create three new A1 panels each year.	3.2.3.3	Ongoing till 2009	Site	SR		Better awareness of value of CBWP.	2
• Update other In-Centre interpretation as required.	3.2.3	As required	?	SR		Better awareness of value of CBWP.	2
• Update site leaflet.	3.3.1	2008	SBC Parks Improvement Plan	SR/CRO		Better awareness of value of CBWP.	2

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
• Produce quarterly newsletter.	3.3.2	Ongoing every quarter	Site	SR		Better awareness of latest news, what is happening and what is on site.	1
• Write articles for Great Outdoors Magazine.	3.3.3	Quarterly each year	CRO	CRO/SR		Better awareness of latest news, what is happening and what is on site.	1
• Assist with other publications as required.	3.3.4	As required	Unknown	SR/CRO		Better awareness of latest news, what is happening and what is on site.	3
• Contribute to twice yearly events programme and leaflet.	3.4.1	June and Dec each year	CRO	CRO		Promote value of CBWP to a wider range of users.	1
• Evaluate purpose of events and provision at CBWP.	3.4.1	Ongoing		CRO		More cost-effective use of Rangers time.	2
• Preserve run and evaluate regular events.	3.4.1	Ongoing monthly	Site and charges for activities	SR		Promote value of CBWP to a wider range of users.	1

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Organise an annual fete. 	3.4.1	Annually	Site	SR		Promote value of CBWP to a wider range of users. Create a sense of ownership for the park and increased caring for the site. Awareness of value of CBWP, latest news and what is happening.	1
<ul style="list-style-type: none"> Publicise the site and events through a variety of methods. 	3.4.2	Ongoing	Site £150 per year	V/SR		Public more aware of site and activities.	2
<ul style="list-style-type: none"> Regular press contact. 	3.4.3	Ongoing as required	Site	SR		Public more aware of site and activities.	2

PLAN SECTION: RECREATION MANAGEMENT

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Maintain footpath network through site 	4.2.1	Ongoing	Grass cutting Contract	SR/CRO	POS8 POS10 POS12 LA2 LA4	Easy access around site for general public.	1
<ul style="list-style-type: none"> Maintain Public Rights of Way 	4.2.2	Ongoing	Grass cutting Contract and Highways	SR/SBCH		Meet legal requirements.	1
<ul style="list-style-type: none"> Maintain National Cycle Network, routinely resurface tracks – every five years. 	4.2.3	2010	£10,000 obtain funding from Sustains/ Highways	SR/SBCH/ Sustains		Maintain cycle route in a safe and usable condition to encourage cycling.	2
<ul style="list-style-type: none"> Maintain cycle parking facilities and replace/repair as required. 	4.2.3	As required	Site	SR		Maintain cycle route in a safe and usable condition to encourage cycling.	2
<ul style="list-style-type: none"> Maintain policy of no cycling on site. 	4.2.3	As required		SR/V		H & S obligations met.	1
<ul style="list-style-type: none"> Carry out works to ensure site is accessible to users with special needs. 	4.2.4	2008 and ongoing as required	Site	SR Stockton Access Group		Meet legal requirements under Disability Discrimination Act.	1
<ul style="list-style-type: none"> Maintain policy of no motor cycles on site. 	4.2.5	Ongoing		SR		H & S obligations met.	1

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Produce a strategic plan for horse riding provision across the SBC region. Update site furniture, and increase the amount around the Site Allow horses to utilise sections of the Sustrans 14 route as long as conflicts do not arise. Monitor policy of no horse riding or horses on site. Resurfacing of green way 	4.2.6	Ongoing	?	CRO/ SBCH		Provision of horse riding facilities borough wide.	2
		Ongoing	SBC Parks Improvement Grant	SR		Increased Visitor numbers and Increased Access to Activity Centre and	
	4.2.6	Ongoing		SR		Safe access to Greatham Cycle Track.	1
	4.2.6	Ongoing		SR		Maintain site safety for other users. Prevent damage to footpaths and habitats.	1
	4.2.7	20010	SBC Parks Improvement Grant	SBC Env. Dev./ Tees Forest/ SR/CRO		Maintain green way as safe and suitable to use.	2
	4.2.8	Annual inspection each summer. Action as required	Site	SR		Maintain bridges as safe and suitable for use.	1

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Take part in health walk programme, leading occasional walks. 	4.2.11	Ongoing	Health walks budgets	Sports Dev/ Health Walks Co-ordinator/ CRO/SR/V		Improve health of residents of SBC.	
<ul style="list-style-type: none"> Promote sustainable transport methods. 	4.2.12	Ongoing		SR/CRO		Improve health and work towards R10 Earth Summit Commitments.	
<ul style="list-style-type: none"> Display timetables on site. 	4.2.13	Ongoing		SR/CRO		Improve health and work towards R10 Earth Summit Commitments.	
<ul style="list-style-type: none"> Reduce usage of site vehicle. 	4.2.14	Ongoing		SR		Improve health and work towards R10 Earth Summit Commitments.	
<ul style="list-style-type: none"> Maintain benches/picnic tables on site and install new benches on south side of site. 	4.3.1	Ongoing	SBC Parks Improvement Grant	SR/C		Improved facilities for users.	
<ul style="list-style-type: none"> Maintain view point 	4.3.2	Ongoing		SR		Improved facilities for users.	
<ul style="list-style-type: none"> Use bird hide by the lake for surveys. 	4.3.3	Ongoing		SR		Improved facilities for users.	
<ul style="list-style-type: none"> Maintain policy of no litter-bins. 	4.3.4			SR		Maintain low levels of littering on site.	
<ul style="list-style-type: none"> Maintain orienteering course on site. 	4.3.5	Ongoing	Site and clock	SR/Clok		Recreational facilities for site users.	
<ul style="list-style-type: none"> Produce new orienteering maps as site develops. 	4.3.5	As required	Clok	Clok		Recreational facilities for site users.	

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Maintain willow maze and amphitheatre Playbuild Play area constructed adjacent to Centre 	4.3.6	2009-10	Playbuild Grant Scheme	SR/C		Informal play facilities for children. Outdoor classroom for educational use. Outdoor classroom for educational use.	
<ul style="list-style-type: none"> Install soft surface (wood chip) beneath tyre sculpture in car park and maintain. 	4.3.6	2008 and ongoing	Site	SR/V		Informal play facilities for children. Outdoor classroom for educational use.	
<ul style="list-style-type: none"> Monitor crime on site, work with police as required. 	4.3.7	Ongoing	Site	SR/Blue		Maintain site safety and security.	
<ul style="list-style-type: none"> Maintain good relationships with Billingham Police Officers. 	4.3.7	Ongoing	Site	SR/Blue		Maintain site safety and security.	
<ul style="list-style-type: none"> Increase site patrols from both volunteers and Site Rangers. 	4.3.7 4.5.1 4.5.2	Ongoing	Site	SR/V		Maintain site safety and security.	
<ul style="list-style-type: none"> Maintain car park flowerbeds. 	4.3.9	Ongoing		V		Creates pleasing environment.	

PLAN SECTION: COMMUNITY INVOLVEMENT

Project	Plan Section	Timescale	Budget	Lead Officer	Strategic Objective	Outcome	Priority
<ul style="list-style-type: none"> Continue to consult with local community over management of site. 	4.4.3	Ongoing	Site	SR	POS9 LA6 CS1 POS10 LA7	Sense of ownership and increased caring for site. Trust to become 'Friends of Group 2009-10.	
<ul style="list-style-type: none"> Work with dog wardens to prevent dog fouling on site. Uniformed and undercover patrols and train Rangers in PACE. 	4.5.3	Ongoing	Site and SBC ??	SR		Meet legal obligations.	
<ul style="list-style-type: none"> Install new dog bins on site. 	4.5.3	2008-2010	SBC Parks Improvement Grant	SR/ Dog wardens		Assist dog owners in meeting their legal obligations. 2009 14 new dog bins installed on site.	
<ul style="list-style-type: none"> Monitor success of Activity Centre opening hours and review if necessary. 	4.6.3	2008 – 2009		SR/CRO		Provide a service when needed by users yet maintaining a life/work balance for staff.	
<ul style="list-style-type: none"> Manage shop in line with purchasing policy and SBC Healthy Living Initiatives. 	4.6.6	Ongoing	Self sustaining from profits	SS		Provide a service when needed by users yet maintaining a life/work balance for staff.	

Key to abbreviations used in Action Plan

<u>LEAD OFFICER</u>	
SR	Site Ranger
CRO	Countryside Recreational Officer
V	Volunteers
CCF	Clarences Community Farm
Nacro	Co-ordinated By NACRO
WM	Waste Management
SS	Shop Staff
Ch	Chair (Cowpen Bewley Environmental Trust)
SBCH	Stockton Borough Council Highways
Tr	Treasurer (Cowpen Bewley Environmental Trust)
C	Contractor
ArbO	Arboriculture Officer(s)
CS	Community Service
CC	Cricket Club
<u>BUDGET</u>	
Site	£5500 budget controlled by Site Rangers
CBWP	Other controlled by CRO
COS	Countryside Stewardship
Trn	Training Dept
Cside	General Countryside Fund.
WT	Woodland Trust
Arb	Arboriculture
All figures are estimates, accurate costs will need to be calculated closer to implementation/grant seeking period.	
<u>PRIORITY</u>	
1*	Vital – much of management plan will not be feasible without successful completion of these elements.
1	High
2	Medium
3	Low

Table 1

Descriptions And Management Prescriptions For Woodland Blocks And Standard Trees.

For future thinning programme refer to map 17.

A nursery crop of Corsican Pines were planted at the initial setting up of the Woodland Park, these now need to be removed to open up areas for native vegetation to flourish, create microclimates for invertebrate, glades for vegetation diversity, reduce risk of fire and stop the building of dens.

Wildlife Value Current Potentials		Location	SPP	Age	Height	Form	Health	SULE	Env	S.T.L	Amen. Value	Pub. Freq	Insp.	Wk Req. Priority
L	M	AA	AW	Y	F	A	S	L	S	A	H	H	N	Continue thinning to remove Corsican Pines, open up glades, reduce risk of fire and stop the building of dens.
L	M	BB	MW	Y	F	A	A	L	S	A	H	H	N	Continue thinning to remove Corsican Pines, open up glades, reduce risk of fire and stop the building of dens.
L	M	CC	MW	Y	F	A	A	L	S	A	H	H	N	Continue thinning to remove Corsican Pines, open up glades, reduce risk of fire and stop the building of dens.
L	M	DD	MW	Y	F	A	A	L	S	A	H	H	N	Start thinning to reduce Corsican Pines
L	M	EE	MW	Y	F	A	A	L	S	A	H	H	N	Monitor this area
L	M	FF	MW	Y	F	A	A	L	S	A	H	H	N	Continue thinning to remove Corsican Pines, open up glades, reduce risk of fire and stop the building of dens
M	H	GG Faith Wood	MD	Y	E/F	A	A	L	S	H	H	H	N	Maintain planting density. Then negotiate with Woodland Trust. See WT Management Plan
L	M	A	MW	Y	F	A	A	L	S	A	H	H	N	Selective thinning of conifers, maintain open way over gas pipeline
L	M	B	MD	Y	F	A	A	L	S	A	H	H	N	Maintain newly planted trees
L	M	C	Willow & others	Y	F	A	A	L	S	A	H	H	N	Thinning needed at some point
L	M	D	Willow & other	Y	F	A	A	L	S	A	M	H	N	Decent spacing, no need to thin
H	H	E												Remove large willows over gas pipeline
L	M	F	Willow Poplar	Y	F	A	A	L	S	A	H	H	N	Selective thin and plant under storey, monitor dead elms.
L	M	G	MW	Y	E/F	A	A	L	S	A	H	H	N	Non at present

Wildlife Current	Value	Location	SPP	Age	Height	Form	Health	SULE	Env	S.T.L	Amen. Value	Pub. Freq	Insp.	Wk Req. Priority
L	M	H	Willow Poplar`	Y	F	A	A	L	S	A	H	H	N	Selective thin and plant under storey
L	M	I	MD	Y	F	A	A	L	S	A	H	H	N	Monitor this area
L	M	J	MD	Y	F/E	A	A	L	S	A	H	H	N	Selective thin
L	M	K	Willow Alder	Y	F	A	A	L	S	P	M	H	N	Monitor

Wildlife Value		Location	SPP	Age	Height	Form	Health	SULE	Env	S.T.L	Amen. Value	Pub. Freq	Insp.	Wk Req. Priority
Current	Potentials													
M	M	L	Conifers											Leave in the main, However may need to remove fall in future if to much shadow
M	M	M	Birch Ash Hall	Y	E	A	A	L	S	A	M	H	N	Monitor
M	M	N	Blackthorn Elder	SM	E	A	G	M	S	A	M	L	N	Non
M	H	O	MD & Elm	Y	E	A	A	L	S	A	H	H	N	Non
M	H	P	MD	Y	E	A	A	L	S	P/A	H	M/H	N	Selective thinning
M	M	R	Willow, Alder, Birch Oak, Larch, Elm, Cherry, Aspen	Y	E	A	A	M	S	P/A	M/H	M	N	Selective thinning
L	M	S	Willow Alder Oak Ash	Y	F	A	A	L	S	A	H	H	N	Start thinning
L	M	T	MD	Y	F	A	A	L	S	P	P	L	N	Remove trees & restore as wetland habitat
H	H	U	Willow Alder Birch	Y	F	A	A	L	S	H	H	H	N	Periodically coppice few trees at a time to maintain scrub as grasshopper warbler habitat
H	H	W	Willow Alder Birch	Y	F	A	A	L	S	H	H	H	N	Periodically coppice few trees at a time to maintain scrub as grasshopper warbler habitat
M	H	X	MD	Y	F	A	A	L	S	M	M	L	N	Thin and allow woodland carr to develop
M	M	Z	Alder Birch	Y	E	A	A	L	S	H	M	M	N	Open up path Start thinning
H	H	a	Willow Carr	M	C-B	P	P	S	S	H	H	H	N	Monitor to ensure no hazard to general public on path
M	M	b	Alder, Birch, Willow	Y	F	A	A	L	S	M	M	M	N	None at present

Wildlife Value Current Potentials		Location	SPP	Age	Height	Form	Health	SULE	Env	S.T.L	Amen. Value	Pub. Freq	Insp.	Wk Req. Priority
M	M	c	Birch, Alder	Y	E	A	A	L	S	G	H	M	N	None at present, look at thinning from 2012 →
M	M	d	Birch, Alder Willow	Y	F	A	A	L	S	G	M	M	N	Non at present
H	H	e	Willow, Carr	M	B	A	A	S/M	S	H	M	L→H	N	None at present, monitor for safety when new path in place that fall, leave as deadwood
M	M	f	Alder, Birch	Y	F	A	A	L	S	M	M	M	N	None at present
M	M	g	Alder, Birch Willow	Y	F	A	A	L	S	M	M	M	N	Periodically coppice for trees at a provide shrub habitat
M	M	h	5 x Birch	Y	F	P	A	L	S	M	H	H	N	Close together, this down to 2 trees by 2012
M	M	j	Willow, Birch, Alder	Y	F/E	A	A	L	S	M	M	M	N	Periodically coppice few trees at a time to provide scrub habitat
M	M	k	Birch, , Conifers	Y	F	A	A	L	S	M	M	M	N	Thin out conifers
H	H	l	Scattered Thorn	SM	F	A	A	L	S	H	M	L	N	None at present
H	H	m	Thorns	M	F	G	G	H	S	H	M	L	N	None at present
M	H	n	Haw	SM	F	P	A	L/M	S	H	H	M	N	Leave two mature thorns but stop scrub invasion near newt pond – remove all young thorns
M	H	q	MD	Y	E	A	A	L	S	H	M	L	N	Fire in summer 2001 effected lower parts of bank. Monitor, start thinning
H	H	r	Course Broom, MD	SM/Y	E/F	A	A	L	S	H	H	M/L	N	Encourage Broom, alter structure to develop selective thin 2008 →
H	H	t	MD	SM	F-D	A	A	L	S	H	H	H	N	Clear rubbish from thicket
M	M	w	Bramble/M D	Y	E/F	A	A	L	S	M	M	H	N	Clear as necessary to monitor sight lines into lake
H	H	y	Thorn, Thicket	SM	E/F	A	A	M/L	S	H	H	M	N	Leave to develop into thicket
M	H	α	MD	Y/SM	E	A	A	L	S	M	H	M	N	Selective thinning started in

Wildlife Value		Location	SPP	Age	Height	Form	Health	SULE	Env	S.T.L	Amen. Value	Pub. Freq	Insp.	Wk Req. Priority	
Current	Potentials														
														2001, continue	
M	M	β	MD	SM	E	A	A	L	S	M	H	M	N	None at present, consider thinning from 2012	
M	H	γ	MD/Thorn	Y/SM	F-D	A	A	L	S	H	M	L	N	Conservation area no access, minimal intervention	
M	H	δ	MD/Thorn/ Occ Conifers Hard	SM/Y	E/F	A	A	L	S	H	H	H	N	Some areas of natural regeneration looks very good, other areas in regimental rows, good spacing but may need thinning trees 2007 →. Keep clear around new ponds once dug	
M	H	λ	Bramble, Birch, Alder, Broom, Willow	Y	E	A	A	L	S	H	H	H	N	Keep under control, prevent further encouragement into meadows and chalk banks by cleaning where necessary. Open up areas of chalk banks already taken over by scrub and allow herbaceous vegetation to re-establish	
M	M	Ψ	Thorn dominated	Y	F	A	A	L	S	H	L	L	N	None at present	
H	H	θ	Willow	SM	A/B	A	A	M	S	H	M	L	N	None at present, leave any trees that die or fall	
Individual Trees															
		No													
M	M	T1	Edge of Cowbridge Beck	Sycamore	M	C	A	G	L	S	G	G	L	N	None
H	H	T2	Site Boundary 45m East of Stream	Ash	M	C	P	P	S	S	G	G	L	N	Leave to fall and breakdown as deadwood. Base badly burnt and hollow
H	H	T3	Site Boundary 100m West of field corner	Ash	M	C	A	A	M/L	S	G	L	L	N	None

Wildlife Value Current Potentials			Location	SPP	Age	Height	Form	Health	SULE	Env	S.T.L	Amen. Value	Pub. Freq	Insp.	Wk Req. Priority
H	H	T4	Site Boundary 90m West of field corner	Willow	Dead	D	P	Dead	AA	S	G	L	L	N	Leave as standing deadwood
M	H	T5	Site Boundary 10m West of field corner	Ash	M	C	A	A	M/L	S	G	L	L	N	None
M	H	T6	Site Boundary on field corner	Ash	SM	C	A	P	M/L	S	G	L	L	N	Split trunk due to lightning strike in distance past. Leave to rot
M	H	T7	Site Boundary on field corner	Ash	M	C	A	A	M/L	S	G	L	L	N	None
M	H	T8	5m into site in line with field corner	Ash	SM	D	A	A	L	S	A	M	M	N	None
M	H	T9	Site Boundary 25m from gate	Willow	M	C	A	G	M/L	S	G	H	H	N	Trim back branches overhanging path. Occasions as needed
H	H	T10	Bewley School entrance	Oak	M	D	P	P	M	S	M	H	H	N	Crown removed in 2002, rotting trunk, leave as standing
L	H	T11	45m South of Bewley School entrance	Ash	M	F	P	A	M	S	M/S	M	M	N	Crown removed in 2002, trunk left and some vegetation leave
H	H	T12	Edge of lake in hedge line	Ash	M	B	A	A	M	S	H	H	M	N	
H	H	T13	Edge of lake in hedge line	Ash	M	B	A	A	M	S	H	H	M	N	
M	M	T14	New creak by bridge to faith wood	Willow	SM	C	A	A	M/L	S	H	M	M	N	Close to path, monitor for safety as it matures
H	H	T15	Farms side of creak	Willow	M	C	P	A	M	S	H	M	L	N	May shed limbs into creek, clear if necessary
M		T16	Side of creek in park	Willow	O	A	A	M	S	H	M	L	N	N	None

Wildlife Value Current Potentials			Location	SPP	Age	Height	Form	Health	SULE	Env	S.T.L	Amen. Value	Pub. Freq	Insp.	Wk Req. Priority
H		T17	Farms side of creek	Willow	M	C	A	S	M	S	H	M	L	N	None
H		T18	Farms side of creek	3 x Willows	SM	D	A	A	M	S	H	M	L	N	None
H		T19	Both sides of creek	2 x Willows	SM	D	A	A	M	S	H	M	L	N	None
H	H	T20	Clump of trees on Island below weir	Willows	SM	D	A	A	M	S	H	M	L	N	Helping to stabilise small Island in stream, leave as valuable habitat
		T21	Both sides of creek	3 x Willows, 1x Alder	SM	D	A	A	M	S	H	M	L	N	None
		T22	In hedge line	Willow	M	A	P	A	S	S	H	H	H	N	Cracked at base, monitor as next to PROW
		T23	Hedge line on BE of Tot Ferries on edge of wet area	Clump Willows	SM	C	A	A	M	S	H	M	L	N	None

Table 2
Descriptions And Management Prescriptions For Hedgerows

Hedge Number	Condition	Previous Work Completed and Date	Final Stewardship Payment	Ownership	Management Required 2008-2012
1s	Mature hedge, some new planting. South section was laid mid 90's.	Hedge gapping & sheep fencing. 1996. gapped up 2000	30.11.01	SBC	Monitor hedge trimming to ensure highway maintenance does not adversely effect nesting birds. Cut using SBC tractor mounted side arm flail for Health and Safety reason on road side.
2s	Remnant mature hedge & new planting.	Hedge gapping & rabbit guards 1996 gapped up 2000	30.11.01	SBC	Monitor.
3s	New Hedge, well established	Planted & sheep fencing 1996, gapped up 2000	30.11.01	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on road side
4s	New Hedge, well established	Planted & sheep fencing 1996, gapped up 2000	30.11.01	SBC	Thick Blackthorn hedge, Remove Suckering on roadside verge
5s	New Hedge, well established	Planted & sheep fencing 1996, gapped up 2000	30.11.01	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on road side.
6s	Mature Hedge, good condition.	Gapped up 1996.	30.11.01	SBC	Trim back overhanging branches from cricket club lane on annual basis. Monitor on Park Side, Cut using Flail for Health and Safety reason on road side.
7s	New Hedge, well established	Planted & sheep fencing 1996, gapped up 2000	30.11.01	SBC	Trim back overhanging branches from cricket club lane on annual basis. Monitor on Park Side, Cut using Flail for Health and Safety reason on road side.
8s	New Hedge, well established	Planted & sheep fencing 1996, gapped up 2000	30.11.01	SBC	Monitor/ Cricket Club will cut there side.
9s	Remnant mature hedge & new planting.	Hedge gapped & sheep fencing. 1996. Gapped up 2001/2	30.11.01	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on road side

Hedge Number	Condition	Previous Work Completed and Date	Final Stewardship Payment	Ownership	Management Required 2008-2012
10s	Remnant mature hedge & new planting.	Hedge gapped & sheep fencing. 1996. Gapped up 2001/2	30.11.01	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on road side.
11s	New Hedge, well established	Planted 1997, Gapped up 2001/2	30.11.02	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on railway Side by Network Rail.
12s	New Hedge, well established	Planted 1997, Gapped up 2001/2	30.11.02	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on railway Side by Network Rail
13s	New Hedge, well established	Planted 1997, Gapped up 2001/2	30.11.02	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on railway Side by Network Rail.
14s	New Hedge, well established	Planted & sheep fencing 1997, Gapped up 2001/2	30.11.02	SBC	Monitor / Cut by hand / Make new entrance.
15s	Remnant mature hedge & new planting.	Hedge gapping & rabbit guards 1997 & 2001/2.	30.11.02	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on road side.
16s	New Hedge, well established	Planted 1997, Gapped up 2001/2	30.11.02	SBC	Monitor
17s	New Hedge, well established, some newly planted stretches.	Hedge gapping & sheep fencing. 1997. Gapped up 2001/2	30.11.02	SBC	Monitor
18s	New Hedge, well established	Old fence removed, planting & sheep fencing 1998,	30.11.03	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on road side.
19s	New Hedge, well established	Planted 1998,	30.11.03	SBC	Monitor on Park Side, Cut using Flail for Health and Safety reason on railway Side by Network Rail
20s	New Hedge, well established	Planted 1998,	30.11.03	SBC	Monitor
	Mature Hedge, good condition.	Gapped up 1998	30.11.03	SBC	Monitor

Hedge Number	Condition	Previous Work Completed and Date	Final Stewardship Payment	Ownership	Management Required 2008-2012
21s					
1t	New hedge	Planted 1999, gapped up 2001	31.10.08	St. Cuthbert's Parochial Church Council, Billingham. Leased to SBC until	Monitor
2t	New hedge	Planted 1999, gapped up 2001	31.10.08	St. Cuthbert's Parochial Church Council, Billingham. Leased to SBC until	Monitor
3t	New hedge	Planted 1999, gapped up 2001	31.10.08	St. Cuthbert's Parochial Church Council, Billingham. Leased to SBC until	Monitor.
4t	Mature Hedge, good condition.			St. Cuthbert's Parochial Church Council, Billingham. Leased to SBC until	Monitor
22	Mature Hedge, Horticultural in nature with garden species			SBC Cemeteries	Cemetery Personnel maintain hedge.
23	Mature Hedge, good condition.			Northumbrian Water leased to SBC	Monitor

Hedge Number	Condition	Previous Work Completed and Date	Final Stewardship Payment	Ownership	Management Required 2008-2012
24	Mature Hedge, good condition.			SBC	Monitor / spray Japanese Knotweed in hedgeline 2010
25	Mature Hedge, good condition.	Cut back branches overhanging road in winter 2001/2		Northumbrian Water leased to SBC	Cut back branches overhanging road every 3 years. This hedge was continued around all of Northumbrian Water

Hedge Number	Condition	Previous Work Completed and Date	Final Stewardship Payment	Ownership	Management Required 2008-2012
					palisade fencing in 2009
26	New hedge	Planted mid 90's, gapped up 2001		SBC	Monitor
27	Mature Hedge, good condition.			SBC Highways/ Northumbrian Water?	Cut back branches overhanging road as required.
28	Mature Hedge, good condition.			Northumbrian Water	Cut back branches overhanging PROW as required.
29	Mature Hedge, good condition.			Northumbrian Water	Cut back branches overhanging PROW as required.
30	Mature Hedge, good condition.			Woodland Trust	Cut back branches overhanging PROW as required.
31	Mature Hedge,	Farmer routinely flails hedge square topped, 1.2m high.		Local Farmer	Establish links with farmer and try to negotiate a management regime that is more sympathetic to nature conservation needs.
32	Mature Hedge with good range of mature standard trees.			?	?
33	Mature tree line with shrubby understorey			St. Michaels RC School	Monitor
34	Semi mature hedge			SBC Parks/CBWP?	Monitor for rubbish and vandalism, measures as needed.

Table 3
Biodiversity Action Plan Species, Their Status And Management at
Cowpen Bewley Woodland Park

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Water Vole	Short	✓	✓	Resident	Cowbridge Beck West	Manage Cowbridge Beck West in co-operation with Environment Agency in accordance with best practice guidance in Water Vole Conservation Handbook – see bibliography. Carryout surveys of other watercourses on site to assess status. Species Action Plan held in office.
Brown Hare	Short	✓	✓	Resident	Grassland and New Woodland Areas. Also on adjacent Farmland	Management of Rank Grassland habitat. Conduct surveys of Brown Hare numbers. Research habitat requirements and modify management if necessary. Work with local farmers to encourage Brown Hare numbers. Species Action Plan held in office.
Otter	Short			None at present		Otters are present as close as the Tees Barrage and are found along some becks in Middlesbrough. It is feasible that as their status improves they may enter the site via Greatham Creak. Species Action Plan held in office.
Pipistrelle Bat	Short	✓		Regularly seen flying/hunting over site	Unknown	No obvious roost sites within CBWP. Grassland and wetland habitat management will encourage insect rich feeding habitats. Install large numbers of bat boxes on trees and buildings around the site. Leaving standing deadwood on site and creating standing deadwood habitats by ring barking some trees as part of tree thinning operations will help create roost sites. Carryout survey work. Species Action Plan held in office.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Skylark	Short and Red List	✓	✓	Resident Common	Rank Grassland and New Woodland Areas	Development of the new woodland will lead to loss of suitable Skylark habitat. Sympathetic grassland management, in particular rank grassland will be an important refuge for the Skylark as the woodlands develop. Work with local farmers, arable seed margins and field margins is set, as side would benefit Skylarks. Species Action Plan held in Site Office. See the Ecology and Conservation of Skylarks (bibliography).
Grey Partridge	Short and Red List	✓	✓	Few Grassland and New Woodland Areas and Surrounding Farmland		Management of rank grassland and hedge bottoms will ensure suitable locations for nest sites. Hay meadow cuts late in season after young have fledged. Liase with local farmers over arable seed margins and field margins is set as side to provide winter feed, nest sites and cover. Monitor populations.
Song Thrush	Short and Red List	✓		Resident	Whole Site	As the woodland develops it will provide an improving habitat for Song Thrush. Arable seed margins would assist with winter food supplies. Species Action Plan held in office.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Great Crested Newt	Short	✓	✓	Resident	Newt Ponds	Great Crested Newts are important on a European as well as site basis, the UK population being the largest. Great Crested Newts are threatened in several countries. Regular surveys of numbers are conducted during spring. Management of Newt Ponds to encourage the population. Management of adjacent land and provision of deadwood habitats to provide hibernation sites. Creation of new ponds in vicinity of Newt Ponds and in Faith Wood to encourage spread of population. Carryout all operations in accordance with best practice guide EN - bibliography. Check Pigeon Wood Ponds, population was recorded here in mid 1990's. Contact Planning Department and notify them of presence of Great Crested Newts for inclusion in future local plans as outlined in Species Action Plan. Species Action Plan held in site office.
Linnet	Middle and Red List	✓	✓	Resident Low Numbers – Summer Visitor	Grassland and Scrub Hedges	Development of the new woodland will lead to a loss of scrub type habitat and young Conifers to the possible detriment of the Linnet on the site. Management of grassland to produce range of wildflower and grass seeds through the year as food crops. Young are dependent upon seed to a greater extent than other seed eating birds. Arable seed margins and field margins set, as side would benefit. Management of hedges, scrub and gorse/broom will help provide nesting sites. Supplementary feeding on site winter and summer would be beneficial. Liase with local farmers over arable seed margins/set as side. Species Action Plan held in office.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Reed Bunting	Middle and Red List	✓	✓	Resident	Wet Grassland, Scrub, Reed Hedges	Management of wetland habitats and creation of additional wet grassland, ponds and marginal habitats will be beneficial, especially reed beds. Arable seed margins and rotational set as side would be beneficial, liase with local farmers. Promote change in perception of wild plants on farmland as essential food sources for seed eating farmland birds rather than weeds. Supplementary feeding on site winter and summer would be beneficial. Species Action Plan held in office.
Corn Bunting	Middle and Red List	✓		?	In adjacent arable fields	Liase with local farmers over management & provision of arable seed margins. Species Action Plan held in site office.
Trees Sparrow	Middle and Red List	✓	✓	Resident	Scrub, Hedges, adjacent Farmland and Greatham Cycle Track	The population at CBWP one of very few in the local area and is of considerable local importance. Liase with Teesmouth Bird Club to ascertain size and location of breeding population. Install large number of nest boxes close by existing nesting locations to expand opportunities for nesting. Leave standing deadwood and ring barking of trees as part of tree thinning operations will help provide future nest sites. Management of grasslands to provide range of wildflower and grass seeds through the year. Liase with local farmers over arable seed margins, rotational set as side, hedgerow and tree management and installation of nest boxes along Cowpen Cycle Lane. Promote wild plants etc. Supplementary feeding during winter and summer at locations frequented by Tree Sparrows. Species Action Plan held in site office.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Bullfinch	Middle and Red List	✓	✓	Winter Visitor	Hedge, Scrub, New Woodland	Starting to appear in increasing numbers. They feed on seeds and buds during the winter months. When seeds are low they become increasingly dependent upon buds with hawthorn, ash and fruit trees being favoured. As the woodland habitat develops at CBWP, the site will become increasingly favourable for Bullfinch. Management of mature hedges habitat will be beneficial. Arable seed margins/field margins set, as side would be beneficial – liase with local farmers. Species Action Plan held in site office.
Shoveler	Long	✓	✓	Regular Winter Visitor	Lake	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions.
Pochard	Long and Amber List	✓	✓	Regular Winter Visitor	Lake	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions.
Shelduck	Long and Amber List	✓	✓	Occasional Winter Visitor	Lake	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions.
Greylag Goose	Long and Amber List	✓		Very Occasional – Winter Visitor	Lake	Very occasional visitor, usually odd individuals associating with Canadian Geese. No action.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Snipe	Long and Amber List	✓	✓	Occasional Winter Visitor	Cowpen Pond	Development of a scrape around Cowpen Pond will greatly enhance the site for this species. Much prime habitat in wetlands and grazing marsh around Teesmouth. Liase with proposed International Nature Reserve.
Curlew	Long and Amber List	✓		Rare Visitor	Wet Grassland	Development of a scrape around Cowpen Pond will greatly enhance the site for this species. Much prime habitat in wetlands and grazing marsh around Teesmouth. Liase with proposed International Nature Reserve.
Redshank	Long and Amber List	✓		Winter Visitor	Greatham Creak on edge of Marsh	Development of a scrape around Cowpen Pond will greatly enhance the site for this species. Much prime habitat in wetlands and grazing marsh around Teesmouth. Liase with proposed International Nature Reserve.
Yellow Wagtail	Long	✓		Occasional Summer Visitor	Wet Meadows	Wet grassland management will benefit.
Kingfisher	Long and Amber List		✓	Resident	Lake, Newt Ponds, Claxton Beck	Management of lake. Management of earth banks on Claxton Beck. Provision of Kingfisher nest boxes could be considered.
Mute Swan	Long		✓	One Pair Permanently Resident Other Pairs Occasionally Resident	Lake, Ponds	Lake Management. Manage islands on lake to provide suitable next sites. Manage marginal vegetation around ponds. Monitor Swan populations. Mount nest watch to protect Swans from egg collectors.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Grasshopper Warbler	Long and Amber List		✓	Six Pairs and Breeding	Whole Site in Scrub/Hedges and Grassland areas	The CBWP population is of considerable local importance. Management and maintenance of stands of scrub/mature hedges in rank grassland areas. Monitor population.
Water Rail	Long and Amber List		✓	Unknown	Isolated Wetland/Ponds	Reports of calls over recent years. Survey site to establish extent and size of population. Manage reed beds, marginal vegetation, watercourses and ponds.
Common Toad	Long		✓	Common Breeding	Watercourses and Ponds across Site	Management of ponds and watercourse. Creation of new ponds.
Common Frog	Long		✓	Uncommon Breeder	Watercourses and Ponds across Site	Management of ponds and watercourse. Creation of new ponds.
Smooth Newt	Long		✓	Breeding	Newt Ponds	Management of ponds and watercourse. Creation of new ponds. Monitor ponds around site to establish extent of population.
Roe Deer	Long			Small Resident Population	Both Sides of Site. Semi-Mature Woodland	Development of new woodlands with open glades will be beneficial.
Hedgehog	Long			Occasional Sitting	Whole Site	Hedgerow, woodland and rank grassland management. Deadwood habitat piles would be beneficial as hibernation sites.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Weasel	Long			Resident	Seen on centre field and near car park ponds	Live in a wide range of habitats, the only requirements being cover and prey, both of which are abundant at Cowpen and will continue to be so as the new woodlands develop. Carryout surveys in co-operation with Northumbria Mammal Group to audit populations.
Common Shrew	Long			Resident	Unknown	Lives in rank grassland and scrub. Nest under logs or grassy tussocks and burrows at other species. All these requirements are met at Cowpen and will continue to be present as the woodland develops. Carryout surveys in co-operation with Northumbria Mammal Group to audit population.
Sparrow Hawk	Long			Resident	Whole Site	Thrive in wooded areas and becoming increasingly suburban in their habitat requirements. Development of the new woodland and hedgerow management will benefit.
Sedge Warbler	Long			Summer Visitor Breeding	Dense Wetland and Reed Beds. Scrub in Wet areas	Reed bed, marginal and watercourse management will benefit.
Wigeon	Long and Amber List			Occasional Winter Visitor	Lake	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Mallard	Long and Amber List			Resident Breeding Population	Lake and Ponds	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions. Provision of nest boxes and platforms for waterfowl.
Gadwall	Long and Amber List			Resident Breeding	Lake	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions. Provision of nest boxes and platforms for waterfowl.
Tufted Duck	Long			Resident Breeding	Lake and Ponds	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions. Provision of nest boxes and platforms for waterfowl.
Teal	Long			Occasional Winter Visitor	Lake	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions.
Goldeneye	Long and Amber List			Winter Visitor	Lake	Management of lake. Much prime habitat in Teesmouth Estuary and surrounding area. Liase with proposed International Nature reserve. Supplementary feed in extreme weather conditions.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Meadow Pipit	Long			Resident	Open Habitats Whole Site	Development of new woodland will be detrimental to species. Imperative that grassland areas are managed. Liase with local farmers over arable seed margins/field margin set as side.
Goldfinch	Long and Amber List			Resident Large Winter Flocks	Semi-Mature Woodland, New Woodland, Rank Grassland, Bird Tables in Winter	Development of new woodland will be beneficial. Liase with local farmers over arable seed margins/field margin set as side. Winter feeding at bird tables.
Greenfinch	Long			Resident	Semi-Mature Woodland, New Woodland, Rank Grassland, Bird Tables in Winter	Development of new woodland will be beneficial. Liase with local farmers over arable seed margins/field margin set as side. Winter feeding at bird tables.
Siskin	Long			Winter Influx	Alder Stands	Mature Alder on site of benefit during winter months.
Yellow Hammer	Long			Resident Breeder	Rank Grassland, Hedges and Scrubs	Management of grassland to produce range of wildflower and grass seeds through the year as food crops. Young are dependent upon seed to a greater extent than other seed eating birds. Arable seed margins and field margins set, as side would benefit. Management of hedges, scrub and gorse/broom will help provide nesting sites. Supplementary feeding on site winter and summer would be beneficial.
Chiff Chaff	Long			Summer Visitor	Much of Site	Development of new woodland will benefit.
Willow Warbler	Long			Summer Visitor	Tall Trees/ Bushes, much of Site	Development of new woodland (especially wet woodland) will benefit.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Blackcap	Long			Occasional Summer Visitor	Semi-Mature Woodland	Development of new woodland will benefit.
Whitethroat	Long			Summer Visitor	Scrubby areas/ Hedges, New Rank Grassland	Woodland edge and open glades in development of new woodland will benefit. Management of grassland to retain scrub clumps and hedges will benefit. Liase with local farmers over arable seed margins/field margin/rotational set as side.
Lesser Whitethroat	Long			Occasional Summer Visitor	Scrubby area/Hedges near Rank Grassland or Farmland	Woodland edge and open glades in development of new woodland will benefit. Management of grassland to retain scrub clumps and hedges will benefit. Liase with local farmers over arable seed margins/field margin/rotational set as side.
Goldcrest	Long			Winter Visitor	Hedge lines/ Semi-Mature Woodland	Development of new woodlands will benefit.
Dunnoch	Long and Amber List			Resident	Scrub/Hedge/ Semi-Mature Woodland	Development of new woodland (especially edge and scrub) will benefit.
Grey Wagtail	Long			Occasional Visitor		Habitat preference in fast moving rocky watercourses. Little scope on site. No action taken.
Pied Wagtail	Long			Resident Breeder	Grassland and Wetlands	Amenity grassland areas beneficial as part of a mixed grassland. Wet grassland and pond management of benefit.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Coal Tit	Long			Resident	New Woodlands Bird Tables	Favours Conifers woods. Development of Conifers in new woodlands will benefit. Important to leave some Conifers to mature – see thinning winter programmes and spring feeding at bird tables.
Blue Tit	Long			Resident	All Woodlands Hedges, Scrub and Bird Tables	Development of new woodland will benefit. Winter and Spring feeding at bird tables.
Great Tit	Long			Resident	All Woodland Hedges, Scrub and Bird Tables	Development of new woodland will benefit. Winter and Spring feeding at bird tables.
Redwing	Long and Amber List			Winter Visitor	Rank Grassland, Woodland Edge and Farmland	Mix of rank grassland, scrub and hedges of benefit. Development of new woodland edge and open glades of benefit. Liase with local farmers over arable seed margins/field margins/rotational set as side.
Fieldfare	Long and Amber List			Winter Visitor in Harsh Conditions	Rank Grassland, Woodland Edge and Neighbouring Farmland	Mix of rank grassland, scrub and hedges of benefit. Development of new woodland edge and open glades of benefit. Liase with local farmers over arable seed margins/field margins/rotational set as side.
Kestrel	Long and Amber List			Resident	Whole Site	Development of new woodland will be detrimental. Management of Grassland and marginal habitats is essential. Encourage small mammals.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Swallow	Long and Amber List			Summer Visitor Few Breed	Lake, Whole Site	Management of grassland and marginal habitats to promote invertebrate populations. Lake and pond management. Encourage use of site buildings as nesting habitats. Liase with local farmers and villages over nest sites in barns and other local buildings.
Great Spotted Woodpecker	Long			Occasional Visitor	Semi-Mature Woodland and Bird Tables	Development of new woodland will benefit. Ring Barking of trees during thinning operations to create standing deadwood will benefit in future. Leave standing deadwood wherever possible. Winter and Spring feeding at bird tables.
Noctule Bat	Long			Some Possible Sighting	Lake	Undertake surveys with local bat workers. Provision of nest boxes. Development of new woodland will be of benefit.
Cuckoo	Local	✓		Summer Visitor for each year	Semi-Mature Woodland or Farmland/open Grassland	Development of new woodland will benefit.
Common Hawker	Local	✓		Breeding Population	Sheltered Pond	Pond Management. Pond Creation. Development of woodland with open glades and rides will provide sheltered sunny locations of benefit.
Emerald Damselfly	Local	✓		Common Breeding Population	Most Ponds	Pond Management. Pond Creation.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Ringlet	Local		✓	Common Breeding Population	Hay Meadows and other Grassland Habitats	Management of hay meadows. Management of butterfly glades. Management of other grassland habitats and scrub/woodland edge in grassland.
Field Maple	Local			Component of New Woodland Planting Scheme	New Woodland and Hedges	New woodland and hedgerow management.
Short Eared Owl	Amber List		✓	Occasionally hunting over Park	Grassland and other open areas and Scrub	Much habitat on nearby marshes and Teesmouth. Liase with proposed International Bird Reserve.
Blackbird	Amber List			Resident Breeding	Whole Site	Development of new woodland in a mosaic of grassland, scrub and wetland habitats will benefit. Winter feeding at bird tables. Arable seed margins set as side beneficial.
Starling	Amber List			Resident Breeding	Whole Site	Grassland, scrub and hedge management. Development of woodland edge and glades beneficial. Arable seed margins set as side beneficial. Winter feeding at bird tables.
Great Crested Grebe			✓	Occasional Breeder	Lake	Lake management for edge vegetation.
Little Grebe			✓	Resident Breeder	Lake	Lake management for edge vegetation.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Stonechat	Long and Amber List			Occasional Visitor	Open Areas	None.
Wheatear	Long			Occasional Visitor	Open areas	None.
Goosander			✓	Winter Visitor	Lake	Increasing in numbers over recent winters. Lake management and maintenance of a healthy fish population.
Purple Loosestrife			✓	One Clump	Tot Fennies Field	Hay cutting in Tot Fennies Field.
Barn Owl	Long and Amber List	✓		Rare Visitor	Breeding locally however	None
Tawny Owl				Occasional Visitor		Management of open grassland and wetland habitats of benefit.
Little Owl				Breeding ?	Along cycle track between Cloff Bridge and Greatham Village among old trees	Liase with local farmers to achieve sensitive management
Badger	Long			Occasional Sighting in vicinity none known on Site		Development of Butterfly Glade management.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Large Heath	Regional			Common Breeding		Grassland and Butterfly Grade management.
Dingy Skipper	Regional			None at Present		No records to date, but found in the region, may well appear on site before too long.
Honey Bee	Regional			Unknown		Listed in Durham BAP.
Lady's Mantle	Regional			Present		Listed in Durham BAP.
Black Poplar	Regional			None		Listed in Durham BAP. Darlington Borough Council are working with Tees Forest on reinstating Black Poplar in the Borough, with targets for planting. Investigate whether plan should extend into Stockton Borough and CBWP.
Generic Group Dragonflies and Damselflies			✓	Sixteen Species most Breeding See appendix X	Ponds, Wetland areas and Lake	Manage ponds and wetlands to encourage population increases and diversity. Create ponds to assist expansion of populations.
Generic Group of Butterflies			✓	Seventeen Species many Breeding	Grassland and Woodland edge	Manage extensive areas of open grassland as both hay meadows, butterfly glades and rank grassland. Manage rides and open glades in developing woodland.
Generic Group of Small Mammals			✓	Many Small Mammals on Site	Whole Site	Encourage a diverse range of small mammals through creation of microhabitats in all main habitat types across the site.

Species	List	Tees Valley 50	CBWP Species of Conservation Importance	Status at CBWP	Location on Site	Action
Harvest Mouse			✓	Reintroduction Programme	Wet Grassland	Continue captive breeding programme. Maintain release cage. Regular release of captive breed mice. Manage wet grassland in particular the reed canary grass stands as habitat suitable for harvest mice. Survey for nest during Autumn months to monitor success of reintroduction programme.

5 Year Action Plan

2009- 1013

	Section Number in Plan
Beck	2.1.6
Permenet Pond / Lake	2.1.7
Wetland Scrape / Seasonal Pond / Ditch / Flushes / Drain	2.1.6.3
Meadow Grassland	2.1.5
Amenity Grassland	2.1.5.5
Woodland	2.1.3
Hedge	2.1.4
Paths, Furniture, Structures and Interpretation	4.1
Environmental Monitoring, Research and Data sharing.	2.1.5
Education, Countryside Events, Training and Promotion of Site and Ranger Service.	3.1

Outline Perscription; Maintain and improve the freshwater section of Cowpen Bewley Woodland Park..

The Beck's

North Side of A1185 Road	Name	Plan Section	Management	Who	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
	Cowbridge Beck (east & west)	2.1.6.2 2.1.6.1	Monitor bank sides for erosion. look for debris in the waterway, Survey for native and non-native flora and fauna.	Envi Ag	SBC	No	1, 2, 3		X	X	X	X	X
	Claxton Beck.	2.2.6.4	Monitor bank sides for erosion. look for Debris in the waterway, Survey for native and non-native flora and fauna	Envi Ag	SBC	No	1, 2, 3		X	X	X	X	X

Notes

1. Environment Agency are responsible for management of Cowpen Bewley becks main stream area. They must be consulted on issues regarding abstraction, or activities, which will potentially alter the watercourse..

2 Monitor / Manage / Remove all non-native flora and fauna (Giant Hogweed, Himalayan Balsam, Japanese Knotweed, Azola - Water Fern, Mink, North American Signal Crayfish, Terrapin, etc).

3 Continue to monitor for Water Vole activity

Outline Prescription: Maintain and improve the condition of all pond.

Permanent Ponds and Lake

North Side of A1185 Road	Name	Plan Section	Management	Who	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
	Car Park Ponds (x2)	2.1.7.1	Treat with Barley straw. Survey.	Ranger Staff and Volunteers	SBC	No	2, 3, 4		X	X	X	X	X
	Corner Pond	2.1.7.2	Treat with Barley straw. Survey.	Ranger Staff and Volunteers	SBC	No	2,3,4		X	X	X	X	X
	Bottom Marsh Pond (Leachate Works Pond)	2.1.7.6.2	Remove some vegetation to allow some open water. Survey	Ranger Staff and Volunteers	SBC	No	1,		X				X
	Newt ponds (x3)	2.1.7.4	Remove some vegetation from ponds. Survey	Ranger Staff and Volunteers	SBC	No	1,		X	X		X	
	Lake	2.1.8	Treat with Barley straw. Survey. Plant vegetation along water line / at chalk bank	Ranger Staff and Volunteers	SBC	No	2,		X	X	X	X	X

			areas to prevent further erosion.										
South Side of A1185 Road													
	Pigeon wood / Beanwell Plantation (x3)	2.1.7.5	Survey/ Monitor	Ranger Staff and Volunteers	SBC	No	3,4		X	X	X	X	X
	Town end Carr (opp Cowpen village)	2.1.7.6.	Survey / Monitor. Remove vegetation to keep open water.	Ranger Staff and Volunteers	SBC	No			X	X	X	X	X
	St Michael's Wood	2.1.7.3	Survey / Monitor. Remove vegetation to keep open water.	Ranger Staff and Volunteers	SBC	No			X	X	X	X	X

Notes

1. Bottom Marsh (Leachate Works Pond) & Newt Ponds vegetation removal 2007 and 2009
2. Barley straw placed in lake and Car Park ponds – 2008 and 2009
3. Monitor/Manage/Remove all non-native flora and fauna.
4. Water Vole activity witnessed in these areas 2008

Outline Prescription: Maintain vegetation types for Biodiversity
Seasonal Ponds, Ditches, Wetlands and Flushes

North of A1185 Road	Name	Plan Section	Management	Who	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
	Car Park Wetlands	2.1.9.2	Remove some vegetation to leave open water. Survey	Ranger Staff and Volunteers	SBC	No	1, 3		X	X	X	X	X
	Rose Carr	2.1.9.4	Survey	Ranger Staff and Volunteers	SBC	No	1		X	X	X	X	X
	Bottom Marsh (Leachate works pond area)	2.1.9.3	Survey	Ranger Staff and Volunteers	SBC	No	1, 2, 3		X	X	X	X	X
	Faith Ditch	2.1.9.11	Survey	Ranger Staff and Volunteers	Woodland Trust	No	1, 3		X	X	X	X	X
	Tot Fennies	2.1.9.1	Survey	Ranger Staff and Volunteers	Church of God	No	1, 3		X	X	X	X	X
	Cowbridge Copse	2.1.9.11.3	Survey	Ranger Staff and Volunteers	SBC	No	1		X	X	X	X	X
South Side of A1185 Road.										X	X	X	X
	Bean Well Plantation / Sustrans swamp	2.1.9.7	Survey	Ranger Staff and Volunteers	SBC	No	1, 2, 3			X	X	X	X
	Drain	2.1.6.3	Survey	Ranger Staff and Volunteers	SBC	No	1, 2		X	X	X	X	X
	Hurworth Swamp	2.1.9.6	Survey	Ranger	SBC	No	1, 2		X	X	X	X	X

				Staff and Volunteers									
	Pigeon Wood		Survey	Ranger Staff and Volunteers		No	1,2		X	X	X	X	X
	Town End Carr	2.1.9.11.1	Survey	Ranger Staff and Volunteers	SBC	No	1		X	X	X	X	X
	Lane Close Carr	2.1.9.11.2	Survey	Ranger Staff and Volunteers		No	1,2		X	X	X	X	X
	St Michaels Wood Swamp	2.1.9.10	Survey	Ranger Staff and Volunteers	SBC	No	1, 2		X	X	X	X	X

Notes

1. Monitor/Manage/Remove all non-native flora and fauna.
2. Remove debris/ litter.
3. Monitor for Water Vole activity.

Outline Prescription: Maintain rank grassland on rotation where access conditions allow.

Outline Prescription: Restrict access where practicable to promote ground-nesting birds.

Meadow Grassland

Area North of A1185 Road	Name	Plan Section	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
	Activity Centre (surrounds)	2.1.5.4	Cut and rake	Ranger Service / Vols	Feb/March	SBC	No			X	X	X	X	X
	New Meadow	2.1.5.4	Cut, bale and remove bales. Dogs on lead area to allow for ground nesting birds and hares. Remove scrub incursion.	Farmer	Aug / Sept		No			X	X	X	X	X
	Chalk Bank Sides on Lake	2.1.5.9	Remove bramble and Hawthorn top allow for chalk loving flora species to develop.	Ranger Service / Vols	Sept & Feb	SBC	No			X	X	X	X	X
	Large Mound	2.1.5.1	Monitor / keep cut grass on top of mound.	Ranger Service / Vols	All	SBC	No			X	X	X	X	X
	Faith wood	2.1.5.6	Cut, bale and remove bales.	Farmer	July / Sept	Woodland Trust / Hospital of God at Greatham	No			X	X	X	X	X
	Tot Fennies	2.1.5.1	Cut, bale and	Farmer	July / Sept	St Cuthbert's	Yes			X	X	X	X	X

		10	remove bales.			Parish Church Council								
	Cowbridge Copse	2.1.5.8.1	Monitor	Ranger Service / Vols	All	SBC	No				X	X	X	X
Area South of A1185 Road														
	Richards Folly	2.1.5.4	Cut, bale and remove bales	Farmer	July / Sept	SBC	No				X	X	X	X
	Centre Field	2.1.5.4	Cut, bale and remove bales. Scallop edges next to Wolviston Back road by cutting and raking.	Farmer / rangers / vols	July / Sept	SBC	No				X	X	X	X
	Bean well Plantation	2.1.5.8.2	Remove some scrub to keep open grassland area	Ranger Service / Vols	Winter	SBC	No						X	X
	Lane Close Carr	2.1.5.8.3	Remove some scrub to keep open grassland area	Ranger Service / Vols	Winter	SBC	No						X	
	Town End Carr	2.1.5.8.4	Remove some scrub to keep open grassland area	Ranger Service / Vols	Winter	SBC	No						X	X
	Moor woods	2.1.5.8.5	Remove some scrub to keep open grassland area	Ranger Service / Vols	Winter	SBC	No						X	
	St Michaels Wood	2.1.5.8.6	Monitor	Ranger Service / Vols	winter	SBC	No				X	X	X	X

Outline Prescription: Maintain amenity grassland to provide safe easy access for visitors.

Amenity Grassland

Area North of A1185 Road	Name	Plan Section	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
	Car Park	2.1.5.3	7 cuts annually	Under Contract	Apr - Oct	SBC	No	1		X	X	X	X	X
	The activity Centre area	2.1.5.3	7 cuts annually	Under Contract	Apr - Oct	SBC	No	1		X	X	X	X	X
	All Site Footpaths.	2.1.5.3	7 cuts annually	Under Contract	Apr - Oct	SBC	No	1		X	X	X	X	X
Area south OF a1185 Road														
	All Site Footpaths.	2.1.5.3	7 cuts annually	Under Contract	Apr - Oct	SBC	No	1		X	X	X	X	X

Notes

1 Cut by SBC Horticultural Dept on Service Level Agreement

Outline Prescriptions: Maintain current extent of woodland cover and work towards removing non indigenous species and increasing the diversity of native flora. Assume all woodland work as winter.

Branches overhanging footpaths and trees in dangerous positions to be removed.

Prescriptions for thinning assume - 90% of Corsican Pines - 2 in 5 broadleaves to be cleared.

The SBC Arboriculture Dept number relates to a Borough wide data base.

Woodland and Plantations

Area South of A1185 Road	Name	Plan section	Management	Who	Size	Ownership	Forestry Commission Grant (WIG5)	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
SBC Arboriculture Dept number 36a	Centre Field	2.1.3	Remove 95% Corsican Pines, Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	20.6ha	SBC	Yes	1		X	X	X	X	X
36b/c	Beanwell Plantation (section 1)	2.1.3	Remove 95% Corsican Pines, Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	5.41ha	SBC	Yes	1			X	X	X	X
36d	Beanwell Plantation (section 2)	2.1.3	Remove 95% Corsican Pines, Selectively Thin	Rangers/ Volunteers / Contractors	4.88ha	SBC	Yes	1			X	X	X	X

			Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.											
36g	Moor Woods	2.1.3	Remove 95% Corsican Pines, Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	6.8ha	SBC	Yes	2			X	X	X	X
36e	Lane Close Carr	2.1.3	Remove 95% Corsican Pines, Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	3.08ha	SBC	Yes				X	X	X	X
36f	Town End Carr	2.1.3	Remove 95% Corsican Pines, Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	4.34ha	SBC	Yes				X	X	X	X
36j	St Michaels Wood	2.1.3	Remove 95% Corsican Pines, Selectively Thin Broadleaved trees 2 out of 5,	Rangers/ Volunteers / Contractors	5.78ha	SBC	Yes	2			X	X	X	X

			make glades. Leave chipped wood on site.											
36k	Countryside and Greenspace area	2.1.3	Remove 95% Corsican Pines, Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	1.05ha	SBC	Yes							
Area North of A1185 Road														
35A	Cowbridge Copse	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	7.85ha	SBC	Yes	3					X	X
35b	Track next to road / Sustrans track / NW Road	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.38ha	Northumbrian Water / SBC	Yes						X	X
35C	Area next to NW works	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.33ha	Northumbrian Water / SBC	Yes						X	X
35d	Trees at beginning of	2.1.3	Selectively Thin	Rangers/ Volunteers /	0.27ha	SBC	Yes	4		X	X	X	X	X

	track up to VC		Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Contractors										
X35e	Trees behind mound next to Claxton Beck	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	2.17ha	SBC	Yes	5		X	X	X	X	X
35f	Trees at the bottom of the mound where becks meet	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.4ha	SBC	Yes	5				X	X	X
36g	Trees at bottom of mound between lake	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.14ha	SBC	Yes					X	X	X
35h	Trees at old bridge area	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.95ha	SBC	Yes	6				X	X	X
35i	Trees in conservation area	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades.	Rangers/ Volunteers / Contractors	0.83ha	SBC	Yes	7				X	X	X

			Leave chipped wood on site.											
35j	Trees at front of conservation area / next to meadow	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.55ha	SBC	Yes	8				X	X	X
35k	Trees next to track to lake	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.68ha	SBC	Yes	9				X	X	X
35l	Trees next to railway track	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	2.08ha	SBC	Yes	9				X	X	X
35m	Trees in front of VC	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.22ha	SBC	Yes	10				X	X	X
35n	Trees behind VC	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors	0.63HA	SBC	Yes	11			X	X	X	X
	Tree Avenue		Monitor	Rangers		SBC		15			X	X	X	X

	outside VC													
	Faith Wood	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors		Woodland Trust	Yes	16				X	X	X
	Tot Fennies	2.1.3	Selectively Thin Broadleaved trees 2 out of 5, make glades. Leave chipped wood on site.	Rangers/ Volunteers / Contractors		St Cuthberts Parochial Church, Billingham	Yes	16				X	X	X
	Mature trees	2.1.3	Monitor	Rangers / SBC Arbour Dept		SBC		12			X	X	X	X
	Deadwood	2.1.3	Monitor	Rangers / SBC Arbour Dept		SBC		13			X	X	X	X
	Scrub	2.1.3	Monitor	Rangers / Volunteers		SBC		14			X	X	X	X

Notes

- 1 Some Corsican Pines removed by Ranger/ Volunteer Groups and SBC Hort work team 07, 08 and 09
- 2 Some Corsican Pines removed by Ranger/ Volunteer Groups 07 and 08
- 3 Some Broad leaved trees selectively thinned by Volunteer groups 07 and 08.
- 4 Some Ash/Oak trees thinned by Rangers 06 and 08. Dead Elms removed by Tillhill contractors 08 and 09 at entrance to Park from Seal Sands Link Road.
- 5 Some Broad leaved Trees thinned 07 and 08 by Rangers
- 6 Some Trees selectively thinned 09 by rangers and volunteers
- 7 Area closed off to public access in summer months due to sparrowhawk nesting 08 and 09
- 8 Trees thinned by Nat Grid 05 and 09
- 9 New saplings planted to join two areas of trees together 2005 by rangers
- 10 Trees thinned by Volunteer groups and Rangers 2007 and 2009
- 11 Ash poles thinned 06 and 09, some trees in dip (behind vc) area ring barked 2009
- 12 Monitor mature trees as they are mainly Crack Willow, watch for dangerous limbs.
- 13 Leave as much dead wood on site as possible for Biodiversity
- 14 Remove invasive scrub from meadow / grassland areas
- 15 A new Tree Avenue was planted with Red Oaks (2009) Trees were also planted at this time in the new playarea, and around the car park pond picnic tables.
- 16 Continue to work with SBC Legal to acquire these areas, and bring them in to the Parks full management.

Outline Prescription: Maintain features as listed in a safe and good condition.

Paths, Furniture, Structures and Interpretation.

Unit	Name	Plan Section	Management	Who	Seasons	Ownership	S' ship	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
	Main Car Park	4.3.9	Trim trees back as required	Ranger Services / Vols	Autumn	SBC				X	X	X	X	X
	Bridges	4.2.8	Treat wood / silt / monitor	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Pond Dipping Platforms	2.1.7.1	Maintain, Monitor	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Bird Screen in feeding area	2.2.6.2	Maintain	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Stiles	4.2.4.3	Maintain	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Picnic Benches	4.3.2	Replace benches as required with style guide benches.	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Seating Benches	4.3.2	Replace as required	Ranger Services / Vols	As req	SBC		1		X	X	X	X	X
	Boardwalk (Bottom Marsh)	4.2.9	Monitor/ Replace anti-slip material as required	Ranger Services / Vols	Summer	SBC				X	X	X	X	X
	Gates	4.2.4.3	Monitor, replace as required	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Entrance Signage	4.3.9	Maintain		As req	SBC				X	X	X	X	X

			entrance signs /Flagpole											
	Hard Track Path to Lake	1.1.4	Monitor / Maintain	Rangers	As req	SBC				X	X	X	X	X
	Tool Store / Car Park Container	1.1.4 4.3.9	Keep tidy / Stocked	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Visitors Centre	4.6 3.1.4.1	Open as scheduled	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Monitor Interpretation Panels external	3.2.1	Replace/ clean when required	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Monitor Sculptures on Trail	3.2.2.5	Replace/ clean when required	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Country Park Leaflet	3.3.1	Update as required	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Visitor Center Main Display intern	3.2.3	Monitor	Ranger Services / Vols	As req	SBC				X	X	X	X	X
	Playbuild Area	4.3.7	Monitor	Ranger Services / SBC Play area dept	As req	SBC		4		X	X	X	X	X
	Amphitheatre	4.3.7 3.1.4.2	Monitor, Trim	Ranger Services / SBC Play area dept	Autumn	SBC				X	X	X	X	X
	Waymarks	4.2.1	Ranger Services / Vols	Ranger Services / Vols	As Req	SBC				X	X	X	X	X
	Fences	4.3.1	Ranger Services / Vols	Ranger Services / Vols	As Req	SBC				X	X	X	X	X
	Dog Bins	4.5.3	Monitor / Empty	Ranger Service /	As Req	SBC		2		X	X	X	X	X

				SBC Refuse										
	Tree Avenue	4.6.1	Monitor	Ranger Services	As req	SBC		3		X	X	X	X	X
	Bird Hide	4.3.4	Monitor	Ranger Services	As req	SBC				X	X	X	X	X
	Wayleaves map	1.1.6	Maintain up to date Wayleaves map in office	Ranger Services	Annually	SBC				X	X	X	X	X
	Site Photographs	1.1.5	Take site photos to see how it developing	Ranger Service	Every 4 years / seasonally	SBC						X		
	Leachate Plant	1.2.1.6	Monitor	Ranger Service / SBC Landfill Dept	As req	SBC				X	X	X	X	X
	Sustainable Energy	1.3.2.2 3.1.5.5	Monitor / service photovoltaic's and wind turbine	Ranger Service / SBC Sustainable	Annually	SBC				X	X	X	X	X
	Recycling Bins		Monitor	Ranger Service	On going	SBC				X	X	X	X	X
	Greenway Track	4.2.7	Monitor/resurface	Ranger Service / SBC Highways	On going	SBC				X	X	X	X	X
	Orienteering Trail	4.3.6	Maintain	Ranger Service	On going	SBC				X	X	X	X	X
	Salt Bins	4.6.1 4.3.9	Maintain / Monitor	Ranger Service	Winter	SBC				X	X	X	X	X

Notes

- 1 One seating bench removed from next to Lake Bank side for H & S reasons 2009 (new fence erected to stop incursion into this area also 2009)
- 2 14 dog bins on site, emptied on a service level agreement with SBC Refuse dept.
- 3 A new tree avenue was planted in 2009 using Red oaks, to replace the Ogham Tree Avenue planted in 2005.
- 4 The new play area was build using a Playbuild Grant (Parks and Greenspace Team) spring 2009

Outline Prescription: Monitor significant communities and visitor numbers and make data widely available as appropriate. Act appropriately on any significant data trends. Surveys on Site depend upon the knowledge of the Rangers or those people/organisations prepared to offer their services to the Park.

Environmental Monitoring, Research and Data sharing

Survey	Partners	Who	When	Notes	Years	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
Mammals	TVWT	Assistant Ranger	Summer	1			X	X	X	X
Butterflies	B. Cons Soc.	Assistant Ranger	Apr-Sept	2		X	X	X	X	X
Birds	BTO	Assistant Ranger	Summer	3		X	X	X	X	X
Dragonflies	Inst Ecology	Assistant Ranger	Summer			X	X	X	X	X
Amphibians	Inst Ecology	Assistant Ranger	Spring			X	X	X	X	X
Fish	EA	Environment Agency	Summer			X	X	X	X	X
Events	SBC	Assistant Ranger	On going			X	X	X	X	X
Visitors	SBC	SBC Countryside dept	On going			X	X	X	X	X

Notes

- 1 Mink caught on site 2002 and 2009
- 2 Butterfly Transect survey materials in Activity Centre
- 3 Bird monitoring survey reports in Visitor Centre

Outline Prescription: Maintain and promote community involvement in /use of CBWP

Outline Prescription : Maintain and promote environmental Education provision

Outline Prescription : Maintain and promote programme of Countryside Events

Outline Prescription : Provide advice and assistance in other local conservation initiatives

Education, Countryside Events, Training and Promotion of Site and Ranger Service.

Activity	Example / target	Who	Seasons	Promotion	Notes	Year	08 - 09	09 - 10	10 - 11	11 - 12	12 - 13
Continue Existing Programme of Environmental Education to Schools	Respond to demand and tailor activities to National Curriculum Target 500 pupil days per year	For all providers	On going	Word of mouth, reputation and tradition. SBC's Learning Opportunities Pack	1		X	X	X	X	X
Produce formal Education pack for CBWP Country Park	In keeping with Education Packs at other SBC Countryside Sites	Ranger Staff	On going	Via SBC web site, 'train' website, direct contact and other Council publications				X			X
Countryside Events	Provide at least 15 themed Countryside Events annually	Whole Community	On going	Posters, Radio, direct media contact			X	X	X	X	X
Community and Uniformed groups	Lead sessions with local groups such as cubs, scouts etc and record as appropriate	All Groups	On going	Word of mouth, reputation and tradition			X	X	X	X	X
Facilitate other Events as appropriate	E.g. Cross Country Runs, Joint events with TVWT, RSPB.	All groups	On going	Word of mouth, reputation and tradition			X	X	X	X	X
Environmental Trust	Continue to use the trust as a forum for local people	Environmental Trust	On going	The Trust will change to a friends of Group 2009-10			X	X	X	X	X

	Involvement. Expand membership if possible.										
Maintain Community Involvement	Regular programme of varied conservation tasks for volunteers	Open to all	Wednesdays	Leaflet, Site leaflet, events programme and SBC website			X	X	X	X	X
Volunteer Social Activities	Walks, Meals and Speakers etc and by request	All active vols	On going	Internally			X	X	X	X	X
Volunteer Site Newsletter	Produce informative material and distribute on quarterly basis	All active vols and display in VC	On going	Refer to at recruitment of vols			X	X	X	X	X
Talks	Eg: Billingham Low Grange WI	All groups	On going	Word of mouth, reputation and tradition.			X	X	X	X	X
Promotion / campaigns e.g. National Volunteering Week	Annual Student Recruitment Drive at Middles borough University	Whole community	On request	All relevant media			X	X	X	X	X
Aid local groups where possible and as appropriate	Provide hall for meetings	Schools	Routinely	Routinely and in proposed Education Pack			X	X	X	X	X
Act as donor site	Reed donation as part of LBAP etc	Relevant organisations	On request	Word of mouth and reputation			X	X	X	X	X
Act as 'think tank' and advisory service	Act in advisory role e.g. For wetland restoration.	Site Staff	On request	Through representation on various groups or committees e.g. LBAP steering Group and Action Group			X	X	X	X	X
Maintain commitment to LBAP partnership	Representation on Wetland and Coastal Action Team	Site Staff	On going	Undertaken by TVWT			X	X	X	X	X

Maintain commitment to Health Walks Initiative	Act in partnership with Health Walks Co coordinator	All users as appropriate	On going	Undertaken externally			X	X	X	X	X
Undertake training as appropriate	CMA, Loosehill Hall etc.	Site Staff	Employee Development interviews and 6months review	N/A			X	X	X	X	X
Monitor bird species on bird tables and Ecology ponds	Feed up tables and ecology ponds.	Rangers	Autumn and winter months	N/A			X	X	X	X	X
Maintain green Flag application	Continue to strive for this prestigious award.	Site Staff	Annually				X	X	X	X	X

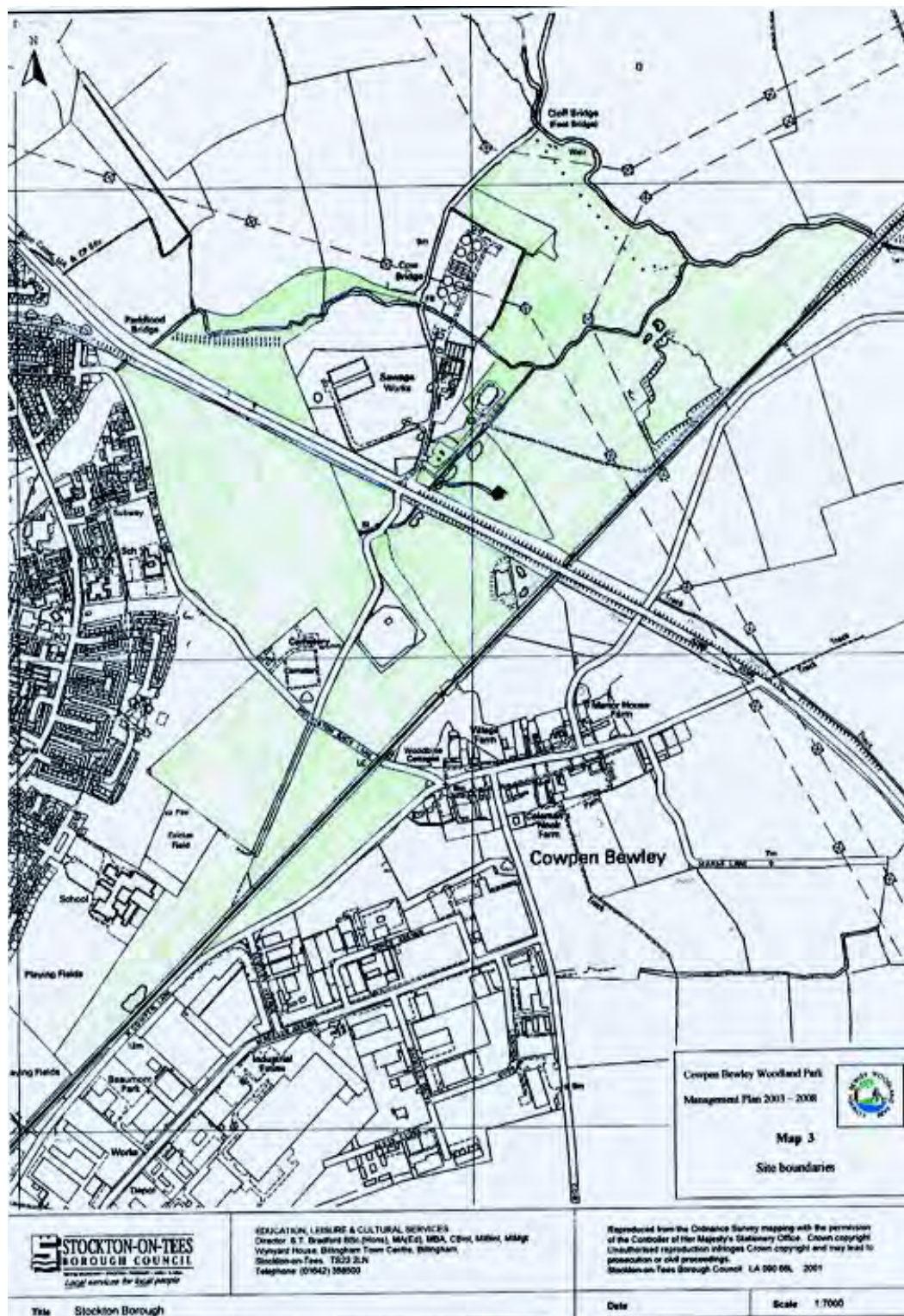
Notes

1 Generally schools request habitats, adaptations and seasons, although other activities are provided such as biological classification, lifecycles etc



Map 1 : Location of Cowpen Bewley Woodland Park in the North East

208



Map 3 : Cowpen Bewley Woodland Park Site Boundaries

Key To Map 4 Land Tenure



Land formally owned and managed by Cleveland County Council as a countryside site since the late 1980's. After Local Government Reorganisation in 1996 this was all passed into the ownership of Stockton Borough Council.



120 acres of land given to Cleveland County Council by I.C.I. in 1994 and leased back to I.C.I. and managed on their behalf by Tillhill Economic Forestry until 2001 under the Woodland Grant Scheme. A copy of the lease agreement with I.C.I. is archived in the site office. After Local Government Reorganisation in 1996 this was all passed into the ownership of Stockton Borough Council.



In 1994 a 10 year management agreement was signed with Northumbrian Water allowing access and tree planting alongside Billingham sewage treatment works. This land provides access links within the Woodland Park and with Greatham Cycleway. A copy of this agreement is held in the wardens office. In 1997 a similar agreement was made with regard to the Corner Field. A copy of this is held in the wardens office.



The area now known as Faith Wood was acquired by the Woodland Trust in 1993. The field was planted through a Woodland Grant Scheme in 1994/95. 5 acres of this field is owned by Greatham Hospital Estates who have undertaken planting through the Woodland Grant Scheme, complementing the Woodland Trust Project.



Tot Fennies field is owned by St. Cuthberts Church. Stockton Borough Council manage this area, but negotiations over the lease of this field were never completed. The land is managed under two countryside stewardship agreements.



Land controlled by
SBC Highways



SBC Cemetery



SBC Waste Management
(Leachate Treatment Plant)



SBC Parks Department
land incorporated into
CBWP and managed
as part of the site.



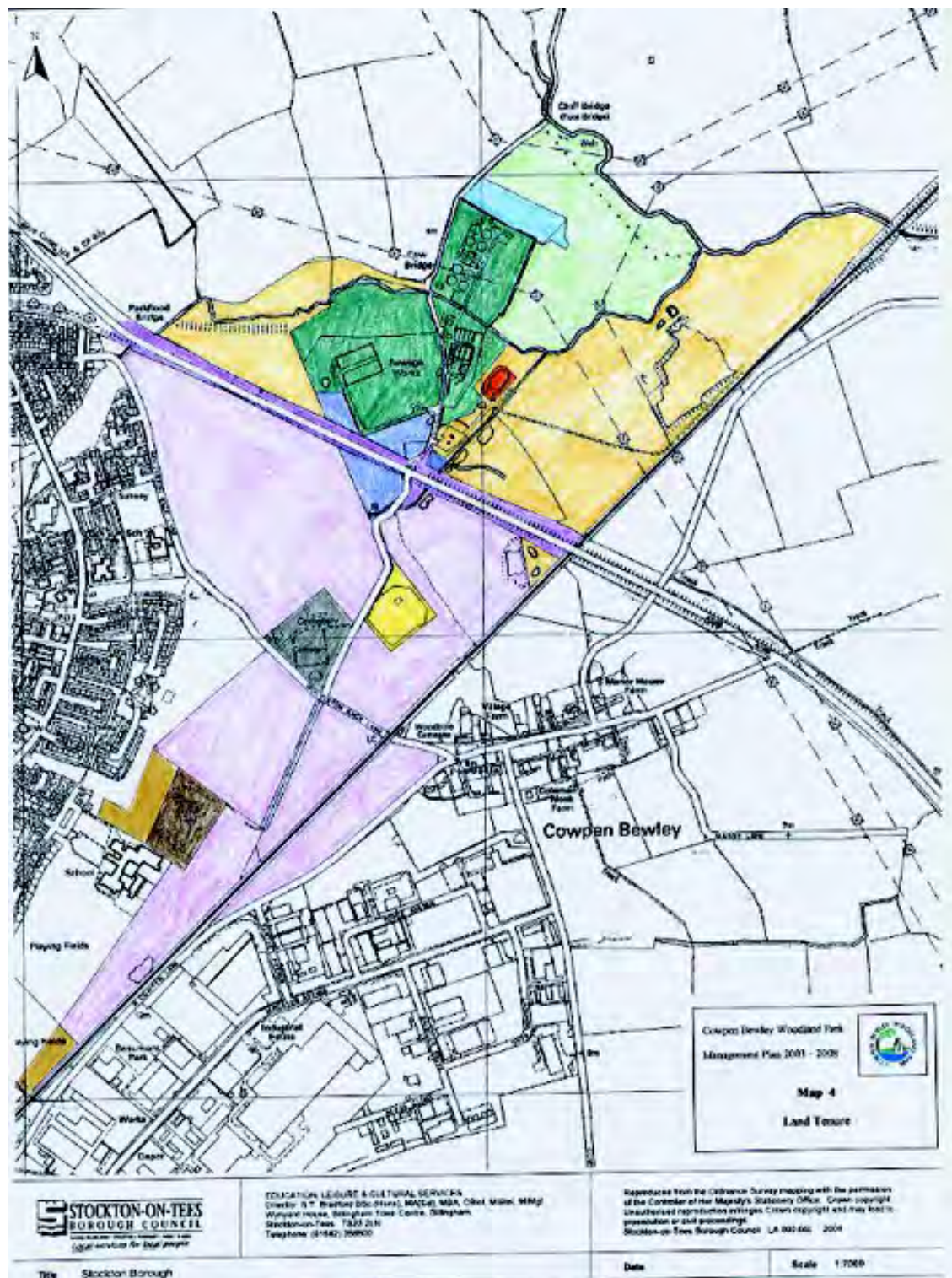
Transco Gas Plant



Cowpen Cricket Club



Northumbrian Water Land (Billingham Sewage Treatment Plant)



Map 4 : Land Tenure at Cowpen Bewley Woodland Park

Key To Map 5 Site Infrastructure



Surfaced track-Sustrans 14 Route



Other Surfaced Tracks



Activity Centre



Lock up Cabin



Bridges



Private Bird Hide



Benches



Picnic Tables



View Point



Ampitheatre



Map 5 Site Infrastructure

Key To Map 6

Footpaths, Stiles and Gates



Permissive Footpaths



Public Footpaths



Byeway



Stile



Field Gate



Kissing Gate

Map 8 Fixed Photographic Survey Points



Key To Map 9 Compartments



The Lake



St Michaels Wood



Lane Close Carr



Bean Well Plantation



Richards Folly



Cowbridge Copse



Bottom Marsh



Square Trees



Tot Fennies



Rose Carr



Ponds



Moor Woods



Town End Carr



Calf Copse



Pigeon Wood



Faith Wood



Chalk Banks



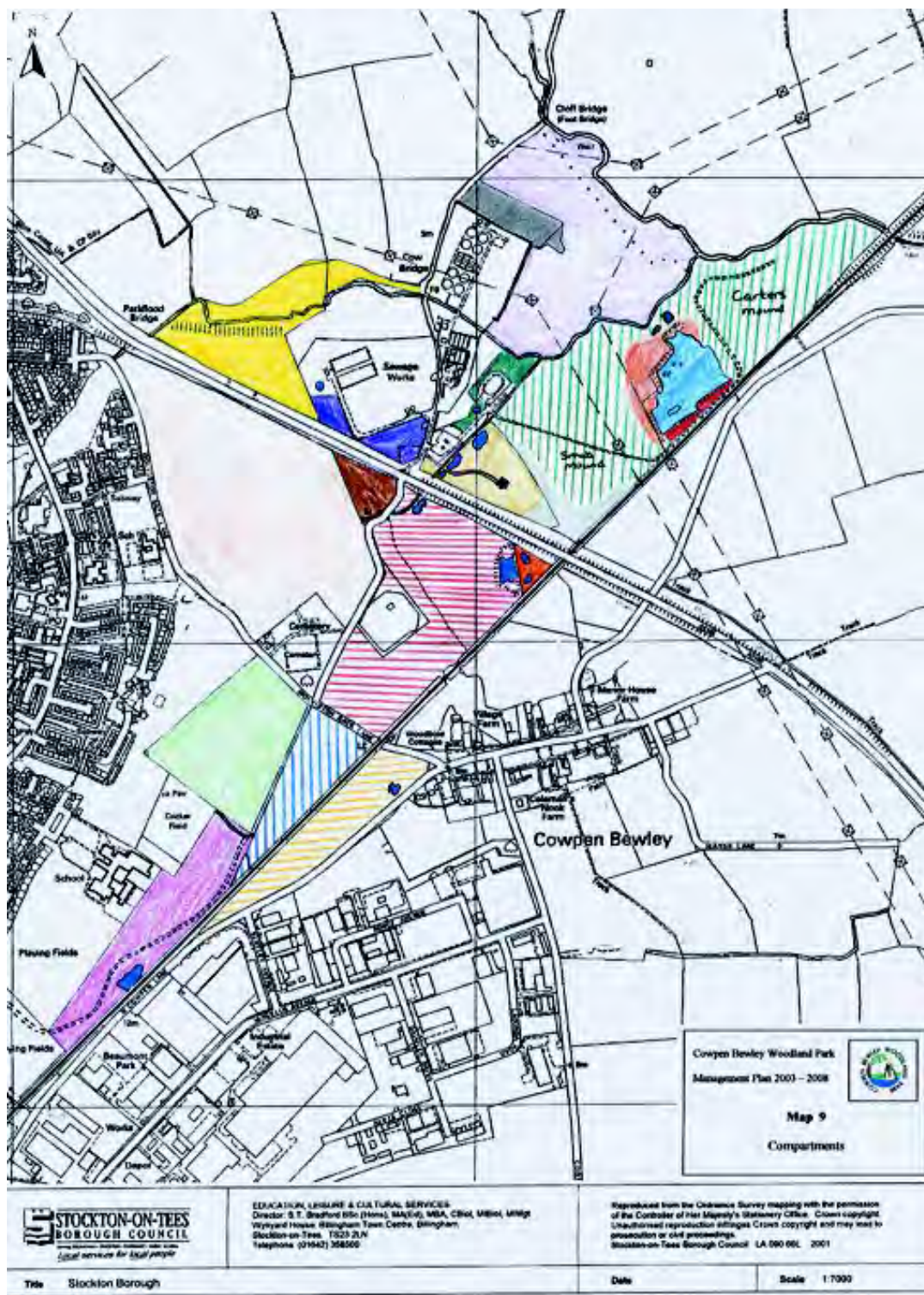
Centre Field



New Meadow



The Cut



Map 9 : Management Compartments

Key To Map 10

Broad Habitat Types



Mature and semi mature woodland



New woodlands



Hay Meadows



Rank Grassland



Wet Grassland



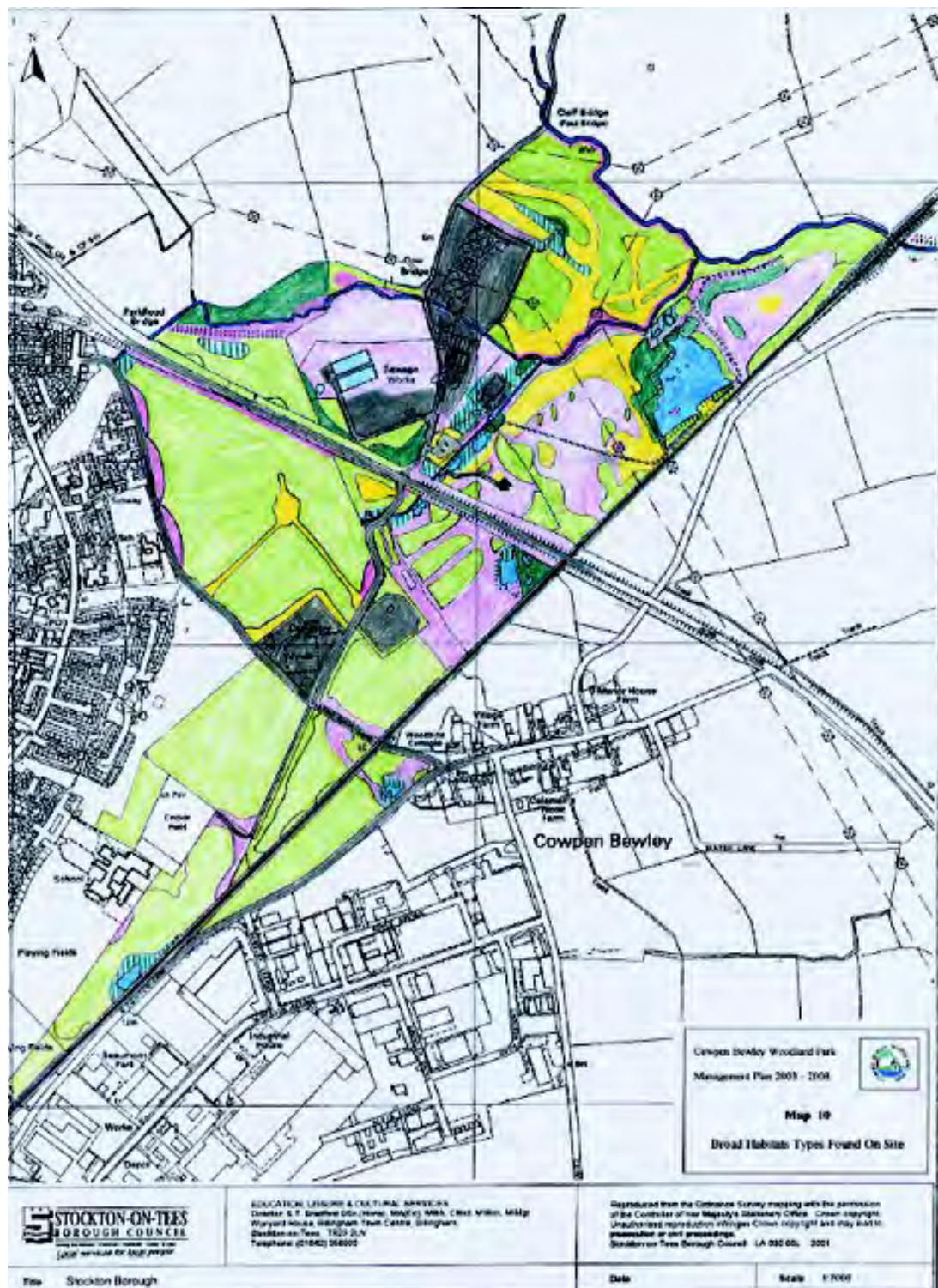
Waterbodies



Watercourses



Hard surfaces such as, tracks, roads, industrial & spoilt land, and Billingham Cemetery



Map 10 : Broad Habitat Types

NB : Map 11 is kept in Site Office

Key To Map 12 Broad Woodland Types



Mature Woodland



Semi Mature Woodland



New Woodland



Faith Wood



Scrub

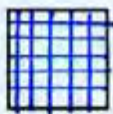


Scattered Scrub

Key To Map 13

Woodland Blocks

Cross reference letters to Table 1 for descriptions of individual blocks and management prescriptions.



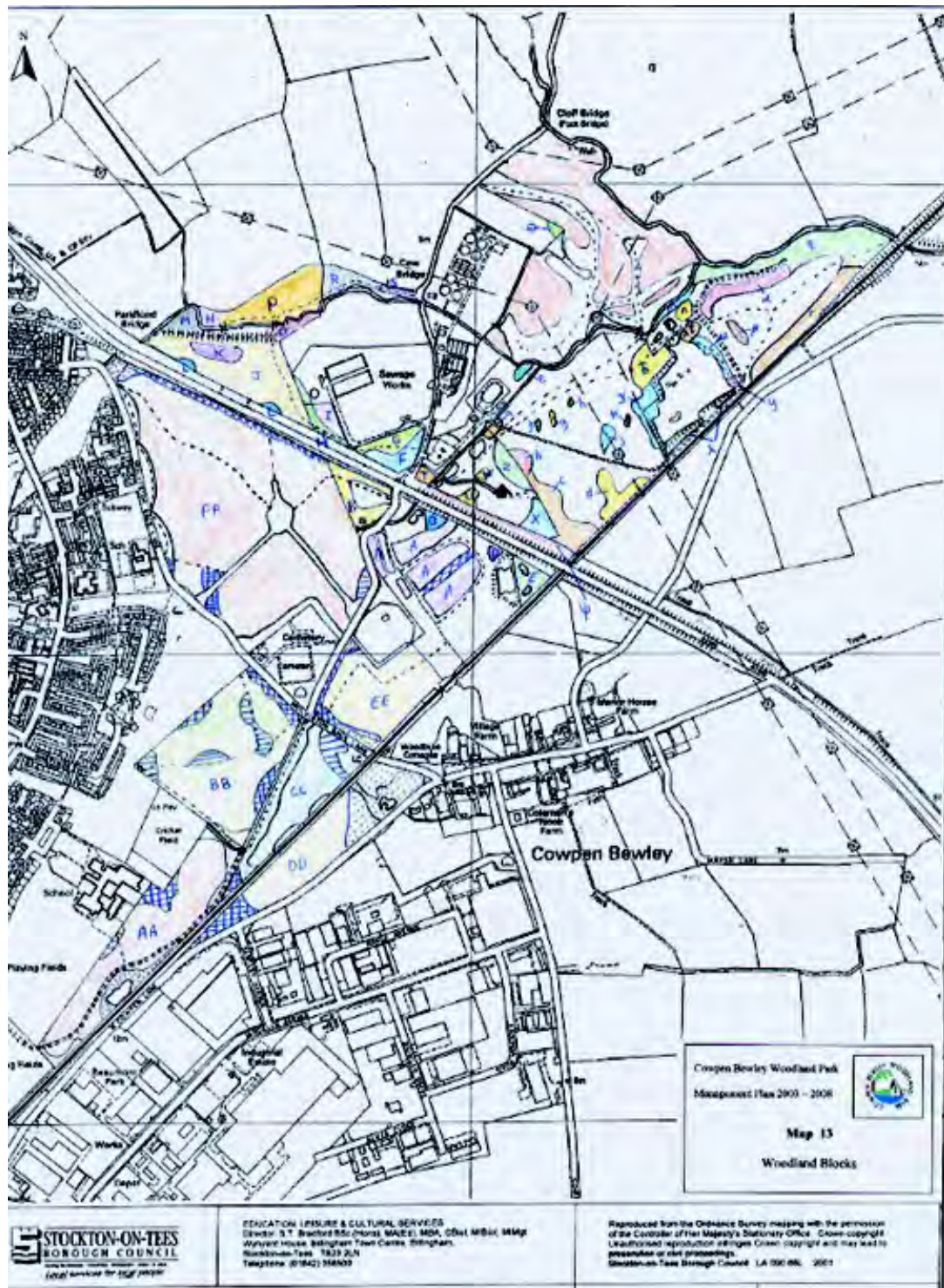
Areas originally left as woodland glades but inaccessible to mowing machinery so being left to undergo natural regeneration.



Areas to open up as new glades



Areas to open up as new marsh areas



Map 13 : Woodland Blocks

Key To Map 15 Land Under Woodland Grant Schemes



WGS from 26/2/93 – 31/3/98. Agreement with Cleveland County Council.
See WGS Former Landfill Site File in site office.



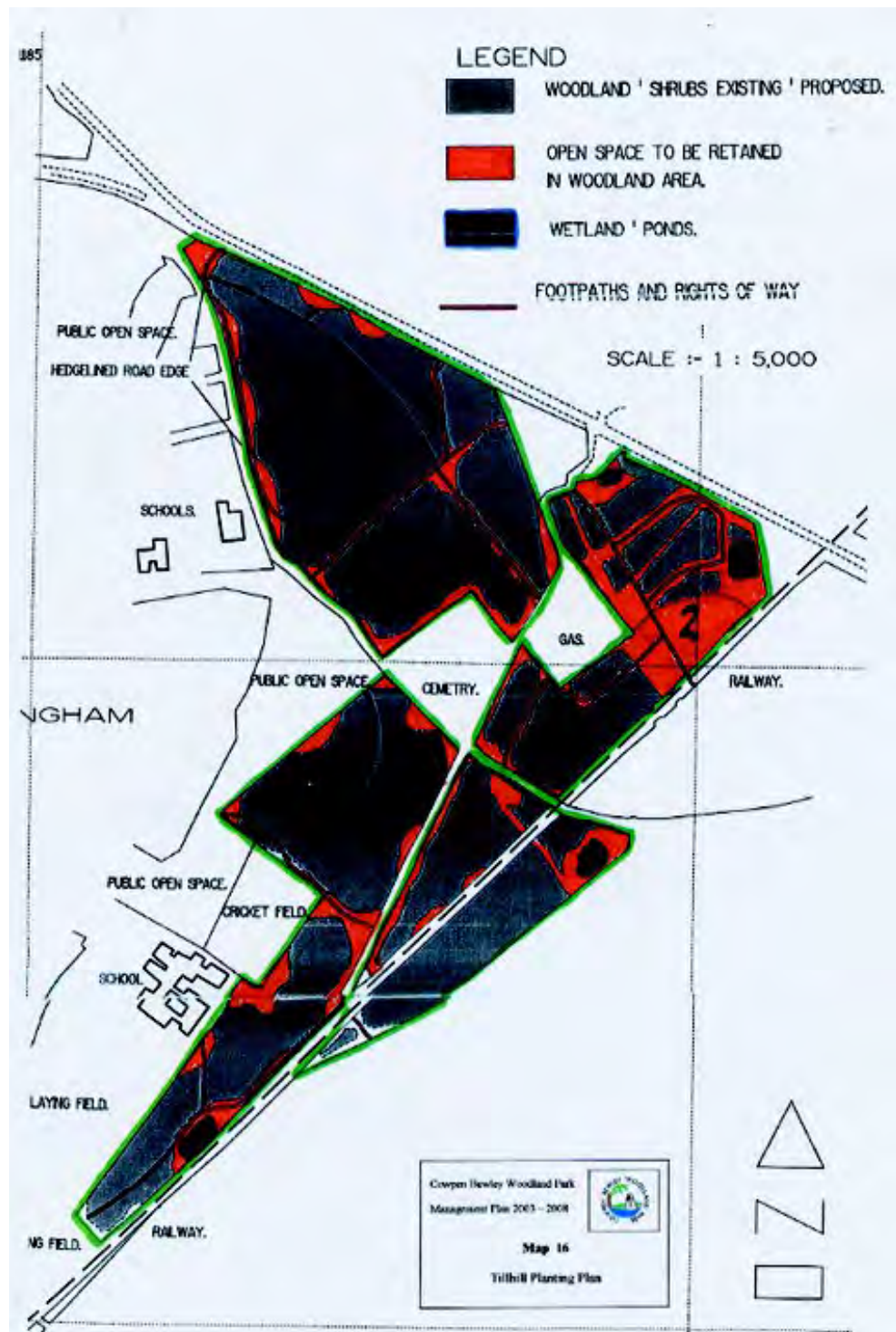
WGS from 18/1/94 – 31/3/99. Agreement with Northumbrian Water
See WGS Sewage Treatment Works File in site office.



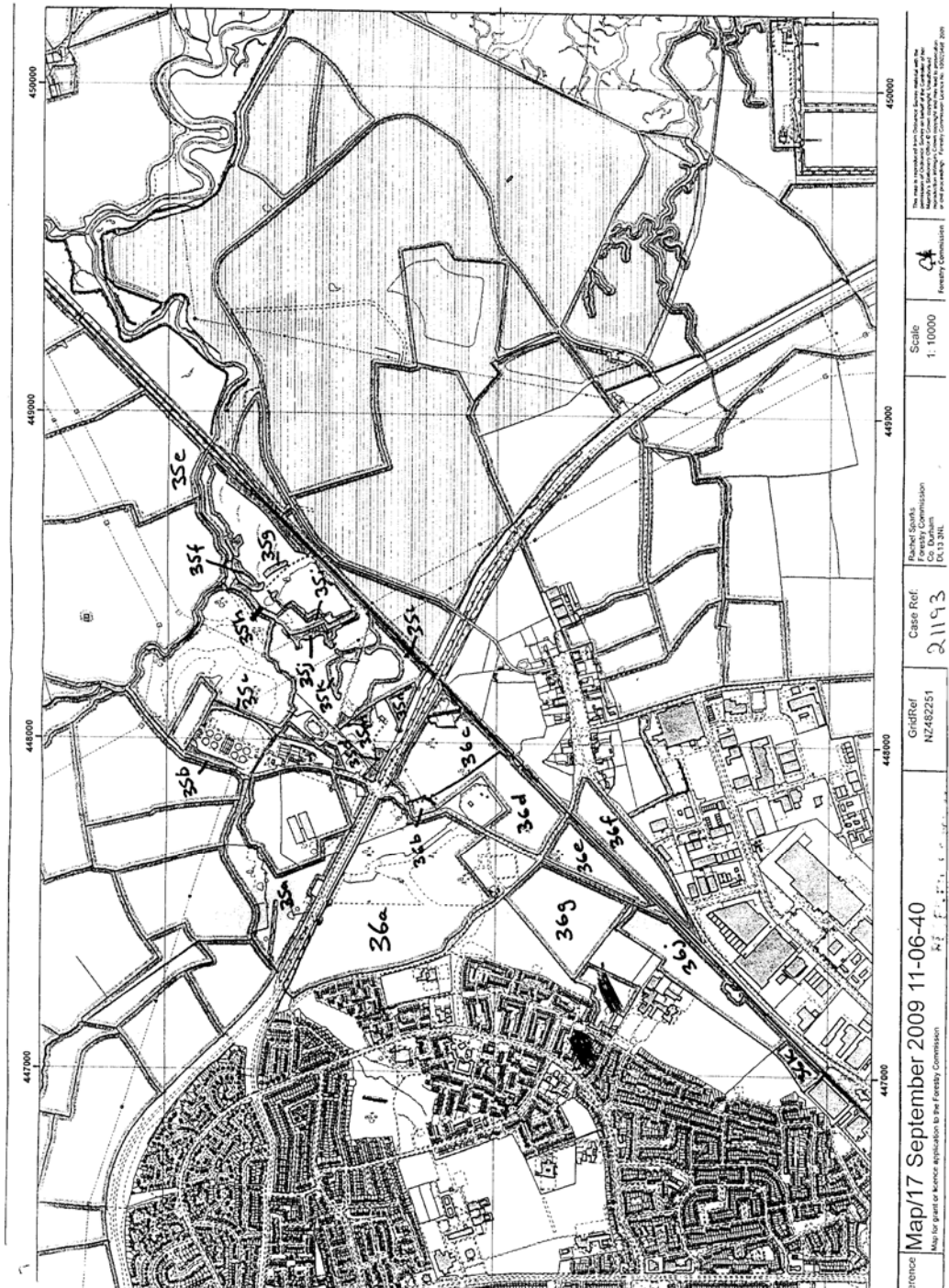
WGS from March 95 – April 2000. Agreement with ICI, managed by
Tillhill Economic Forestry. See Bibliography 20.



WGS from 12/12/97 – 31/3/03. Agreement with Stockton Borough
Council. See WGS Corner Field File in site office.



Map 16 : Planting Schemes



Map 17a : Woodland Grant Scheme Thinning



Key To Map 19

Grassland & Footpaths

descriptions and management prescriptions



Paths, monthly cut April to October. Leave cuttings. Contract to include strimming round all gates and benches.



Amenity grassland areas. Monthly cut April to October leave cutting.



Amenity grassland (lawn in front of Centre) fortnightly box cut April to October cuttings removed.



Amenity grassland (Amphitheatre and rear of Centre) monthly cut and removes cuttings April to October.



Annual Hay Cut between late July and end of August. Cut material to be left a few days to drop seed, then turned and baled and removed from site. Hedge locations can be varied each year to allow a greater diversity of hedge habitat to develop. It is perfectly acceptable to make small cuts into the rank grass and habitats on a periodic basis. Likewise it is acceptable periodically to leave small areas from the hay cut. This will ensure a wider diversity of microhabitats for in-vertebrates. The surface should be scarified or churned up a little in places in order to expose bare soil, allowing increase germination in microhabitats. Cuttings from flower rich areas could be distributed across poor areas, and removed once seed had dropped.



Areas to be brought into the hay management regime outlined above through mowing, although in Tot Fennies Field would require construction of access for machinery.



Areas to be brought into the hay management regime outlined above but requiring bramble and scrub control before mowing. Periwinkle in hedge line on Wolviston Back Lane needs watching to ensure it does not invade.



Areas to be brought into the hay management regime outlined above but requiring the clearance of tree saplings and stump treatment after March 2004 before efficient mowing can be introduced.



Rank grassland may require occasional scrub clearance to retain grassland character. Periodic mowing of small areas would help create habitats and reduce the pressures of successional change.



Butterfly glades cut and clear early April. Additional cuts through the year may be beneficial in creating a suite of microhabitats. Final cuts in September.





Map 20 : Hay Cutting

Key To Map 21

Fields With Grazing Potential & Grassland Under Countryside Stewardship



Currently under Countryside Stewardship, managed with an annual hay cut. Potential for grazing. Would need stock fencing. Will need to renegotiate or pull out of CS if horses are put on the land. Liase with the community farm over stock.



Land currently owned by Northumberland Water, but with grazing potential if incorporated into the park.



Map 21 : Stewardship Agreement and grazing potential

Key To Map 22 Aquatic Habitats



Ponds	1	St. Michaels Pond	See 2.1.7.3
	2	Cowpen Pond	See 2.1.7.5
	3	Pigeon Wood Pond	}
	4	Small Pigeon Wood Pond North	} See 2.1.7.6
	5	Small Pigeon Wood Pond South	}
	6	Corner Pond	See 2.1.7.2
	7	}	First Pond
	8	} Car Park Ponds	Middle Pond See 2.1.7.1
	9	}	End Pond
	10	Bottom Marsh Pond	See 2.1
	11	Newt Ponds	See 2.1.7.4
	12	Fennies Pond	See 2.1.



Lake see 2.1.7.8



Proposed Locations of new Ponds See 2.1.7.7



Claxton Beck See 2.1.6.4



Cowbridge Beck East See 2.1.6.2



Cowbridge Beck West See 2.1.6.1



Drain See 2.1.6.3



Short Drain



Wetland Areas See 2.1.9



Wetlands needing scrub clearance



Stands of Reeds

- a Tot Fennies
- b Car park ponds
- c Bottom Marsh
- d Rose Wood
- e Willow Scrape
- f Hurworth Swamp
- g Sustrans Swamp
- h Cowpen Scrape
- j Lane Close Low
- k St Michaels Swamp
- l Faith Wood Marsh



Map 22 : Aquatic Habitats

Key To Map 23

Proposals For Cowpen Scrape



Existing tree blocks, good establishment rate



Existing tree blocks, poor establishment rate.



Existing cowpen pond



Extent of new scrape



New ponds



Earth banks constructed between existing hedgelines & new scrape using spoil from excavations



Viewing screen or hide



New access route (possibly boardwalk)



Map 24 : Arable Seed Margins

Key To Map 25 Land Acquisition



Land owned by Northumbrian Water and under a 10 year management agreement until 2004.



Land owned by Northumbrian Water to be added into a new 10 year management agreement.



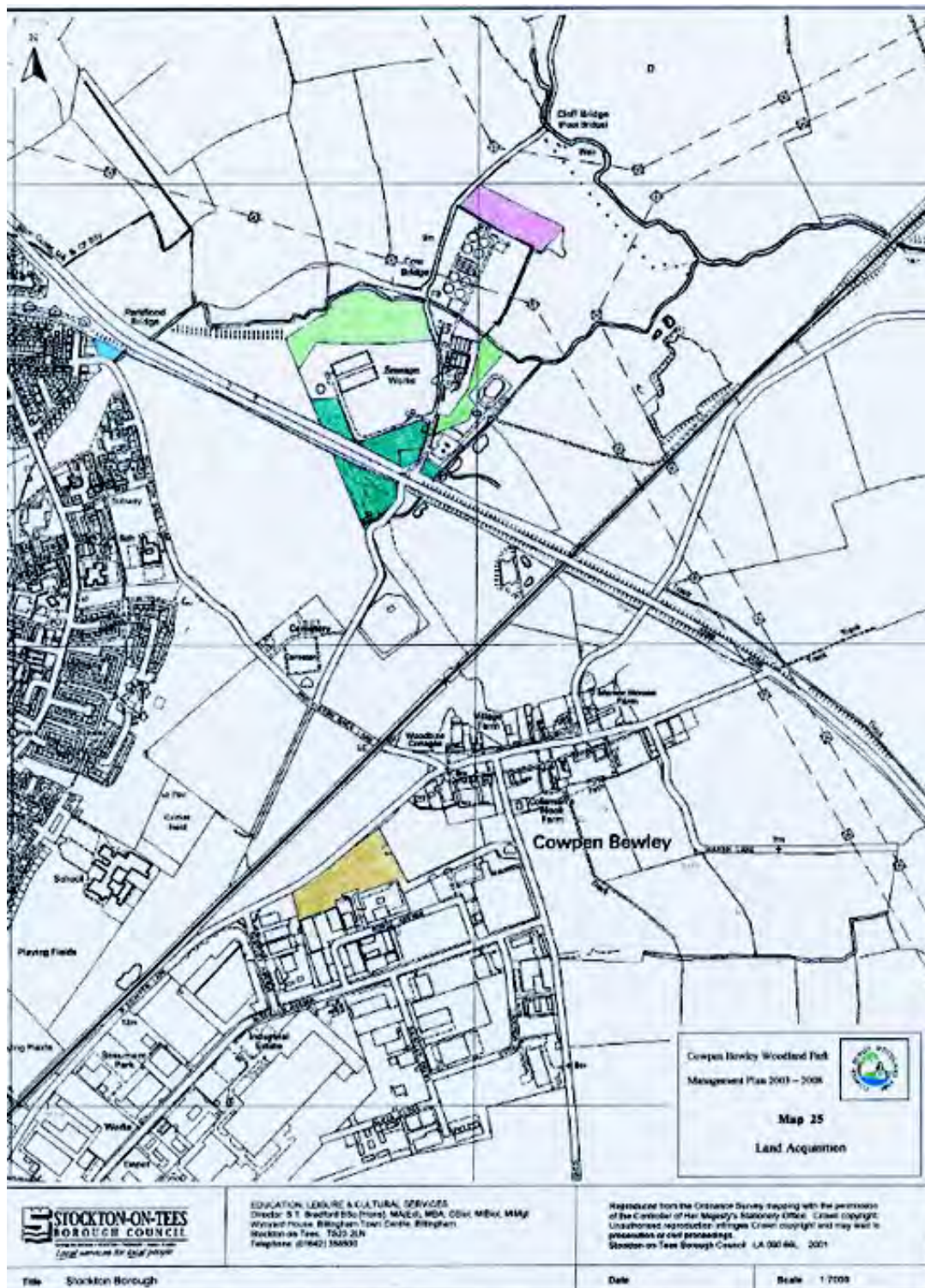
Small mature woodland area. Ownership unknown. Discover who owns and incorporate into park



Tot Fennies Field. Lease needs clarifying with St Cuthberts Church Billingham.



Land owned by Stockton Borough Council and up for sale as development land. Investigate possibility of incorporating into the site.








Map 25 : Land Aquisition

Key To Map 26 Location Of Interpretation

-  Locations of Entrance Gate Signs
-  Nature Watch Panels
-  Sculptures As Part of 'Walk Through Time' Trail
-  Notice Boards In Car Park
-  Industrial Trail Stone Markers

Key To Map 27 Footpaths and PROW

	Permissive footpaths on site		
	Public footpath		
	Public Byway		
	National Cycle Route 14		
	Greenway		
	Surfaced Tracks		
	Kissing Gate		
	Field Gate		
	Stile		
	Cycle Parking		
	Bridges	1	Cowbridge Beck Top Bridge
		2	Cowbridge Beck Bottom Bridge
		3	Faith Wood Bridge
		4	Newt Pond Bridge
		5	Betty's Bridge
		6	Corner Bridge
		7	Claxton View Bridge
	Boardwalk (Taylors Trail)		



Map 27 : Public Rights of Way

Key To Map 28

Recreational Facilities



Benches



Picnic Tables



View Point



Private Bird Hide



Ampitheatre



Tyre Sculpture



Proposed Sculpture Trail Route



Activity Centre














Lock Up Store

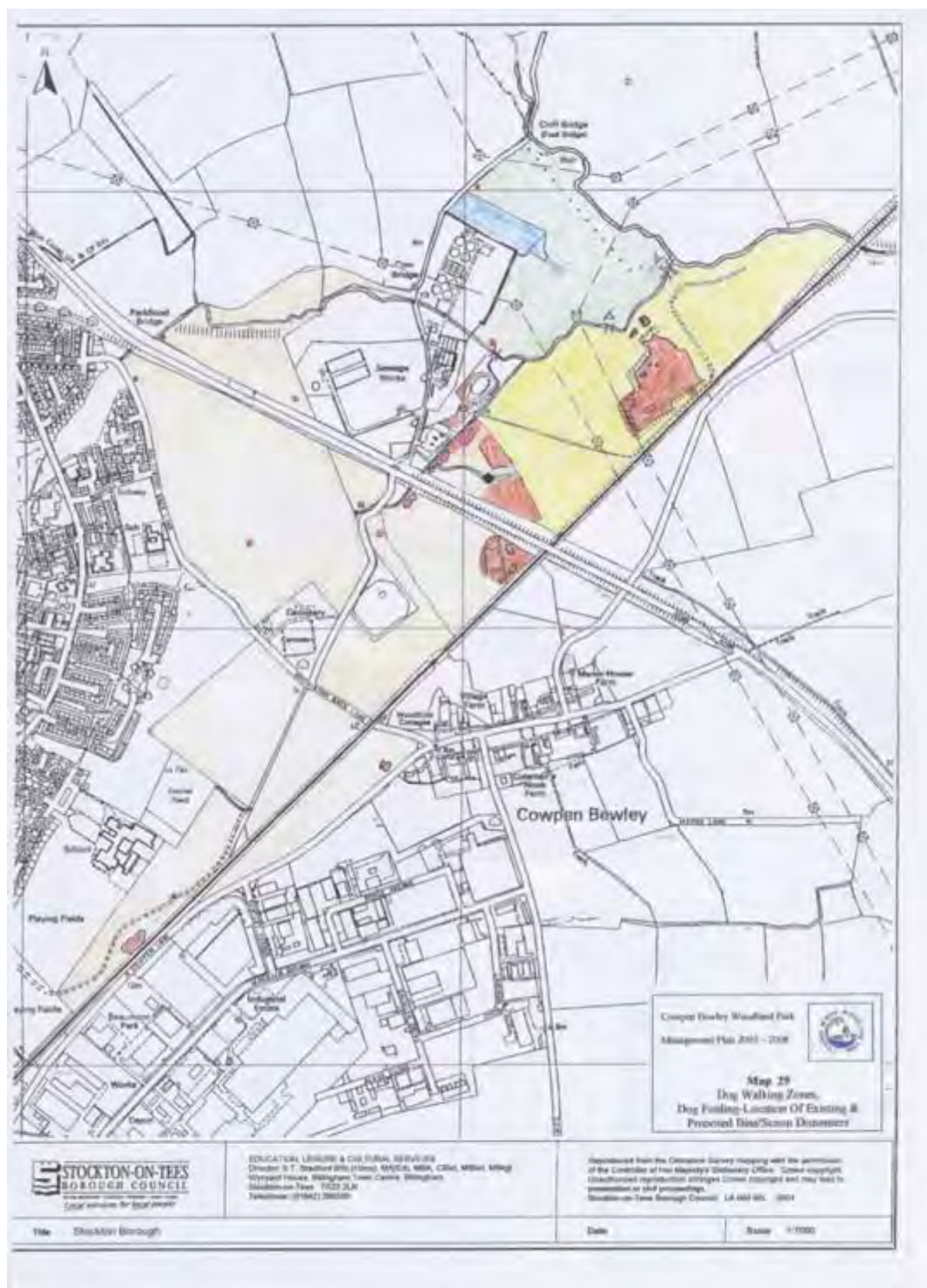


Map 28 : Recreation Facilities

Key To Map 29

Dog Walking Zones, Dog Fouling- Location of Existing & Proposed Bins / Scoop Dispensers

	No Dog Areas	areas used by school groups and waterbodies
	No Access Areas	conservation area by lake, harvest mouse reintroduction area, pigeon wood.
	Dogs on Leads Zone March-September	
	Dog Running Zone	the general public will be made aware that dogs are roaming free in this part of the park.
	Dogs Under Close Control standard byelaws apply	
	Tot Fennies Field	continue with no access provision.
	Old dog bins	
	New dog bins	
	New path and Boardwalk	
	New Bridges Into Faith Wood	
	New Gates Into Faith Wood (on ends of bridges)	



Map 29 : Dog Walking Zones and Bins

Appendices

Species Lists

Species List – Flora/Plants
Species List – Mammals
Species List – Birds
Species List – Amphibians
Species List – Dragonflies and Damselflies – Odonata
Species List – Butterflies
Species List – Moths
Species List – Freshwater Invertebrates
Education Programmes
Management Plan Consultation – Newsletters and boards
Interpretation Panels – History of the Site

Appendix 1 : Flora

Terrestrial

Angelica	<i>Angelica sylvestris</i>
Betony	<i>Stachys officinalis</i>
Birdsfoot Trefoil	<i>Lotus corniculatus</i>
Bittersweet	<i>Solanum dulcamara</i>
Black Knapweed	<i>Centaurea nigra</i>
Black Medick	<i>Medicago lupulina</i>
Black Mustard	<i>Brassica nigra</i>
Bramble	<i>Rubus fruticosus</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Cleavers	<i>Galium aparine</i>
Clustered Dock	<i>Rumex conglomeratus</i>
Coltsfoot	<i>Tussilago farfara</i>
Common Catsear	<i>Hypochaeris radicata</i>
Common Century	<i>Centaureum erythraea</i>
Common Field Speedwell	<i>Veronica persica</i>
Common Fleabane	<i>Pulicaria dysenterica</i>
Common Mouse-ear	<i>Cerastium fontanum</i>
Common Spotted Orchid	<i>Dactylorhiza fuchsii</i>
Common Vetch	<i>Vicia sativa</i>
Cowslip	<i>Primula veris</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Cinuefoil	<i>Potentilla reptans</i>
Creeping Thistle	<i>Cirsium arvense</i>
Crosswort	<i>Cruciata laevipes</i>
Daisy	<i>Bellis prennis</i>
Dogwood	<i>Cornus sanguinea</i>
Eyebright	<i>Euphrasia officinalis</i>
Field Bindweed	<i>Calystegia sepium</i>

Great Burnet	<i>Sanguisorba officinalis</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Greater Plantain	<i>Plantago major</i>
Groundsel	<i>Senecio vulgaris</i>
Harebell	<i>Campanula rotundifolia</i>
Hedge Bindweed	<i>Calystegia sepium</i>
Hemlock	<i>Conium maculatum</i>
Herb Robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum sphondylium</i>
Lady`s Bedstraw	<i>Galium verum</i>
Lesser Century	<i>Centaureum pulchellum</i>
Lesser Skullcap	<i>Scutellana galericulata</i>
Lesser Stitchwort	<i>Stellaria graminea</i>
Lucerne	<i>Medicago sativa</i>
Marsh Cinquefoil	<i>Potentilla palustris</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Meadow Cranesbill	<i>Geranium pratense</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Mugwort	<i>Artemisia vulgaris</i>
Nettle	<i>Urtica dioica</i>
Ox-eye Daisy	<i>Leucanthemum vulgare</i>
Perennial Sow Thistle	<i>Sonchus arvensis</i>
Purging Flax	<i>Linum catharticum</i>
Ragwort	<i>Senecio jacobae</i>
Red Clover	<i>Trifolium pratense</i>
Ribbed Melilot	<i>Melilotus officinalis</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Rosebay Willowherb	<i>Chamaenerion angustifolium</i>
Scentless Mayweed	<i>Matricaria perforata</i>
Scentless Mayweed	<i>Tripleurospermum inodorum</i>
Self-heal	<i>Prunella vulgaris</i>
Small flowered Cranesbill	<i>Geranium pusillum</i>
Smooth Sow Thistle	<i>Sonchus oleraceus</i>
Spear Thistle	<i>Cirsium vulgare</i>
Teasel	<i>Dipsacus fullonum</i>
Tufted Vetch	<i>Vicia cracca</i>
Upright Hedge Parsley	<i>Torilis japonica</i>
Water-cress	<i>Rorippa nasturtium-aquaticum</i>
Weld	<i>Reseda luteola</i>
White Clover	<i>Trifolium repens</i>
White Dead-nettle	<i>Urtica galeopsitolia</i>
Wild Carrot	<i>Daucus carota</i>
Wild Mignonette	<i>Reseda lutea</i>
Wild Radish	<i>Raphanus raphanistrum</i>
Yarrow	<i>Achillea millefolium</i>

Common Chickweed	<i>Stellaria media</i>
Red Campion	<i>Silene vulgaris</i>
Ragged Robin	<i>Silene dioica</i>
Proliferous Pink	<i>Lychnis flos-cuculi</i>
Winter Aconite	<i>Petrorhagia prolifera</i>
Bladder Campion	<i>Eranthis hyemalis</i>
Marsh Marigold	<i>Caltha palustris</i>
Lesser Celandine	<i>Ranunculus ficaria</i>
Wood Anemone	<i>Anemone nemorosa</i>
Common Fumitory	<i>Fumaria officinalis</i> agg
Common Poppy	<i>Papaver rhoeas</i>
Prickly Poppy	<i>Papaver argemone</i>
Hedge Mustard	<i>Sisymbrium officinale</i>
Cuckoo Flower	<i>Cadamine pratensis</i>
Shepherd's Purse	<i>Capsella bursa-pastoris</i> agg
Agrimony	<i>Agrimonia eupatoria</i>
Great Burnet	<i>Sanguisorba officinalis</i>
Raspberry	<i>Rubus idaeus</i>
Wild Strawberry	<i>Fragaria vesca</i>
Herb Bennet	<i>Geum umbanum</i>
Silverweed	<i>Potentilla anserina</i>
Purple Milk-Vetch	<i>Stragalus frigidus</i>
Rest-Harrow	<i>Ononisrepens</i>
Kidney Vetch	<i>Anthylis vulneraria</i>
Pineapple Mayweed	<i>Chamomilla suaveolens</i>
Feverfew	<i>Tanacetum parthenium</i>
Cornflower	<i>Centaurea cyanus</i>
Goatsbeard	<i>Tragopogon pratensis</i>
Nipplewort	<i>Lapsana communis</i>
Wall Lettuce	<i>Mycelis muralis</i>
Dandelion	<i>Taraxacum</i> Sect
Common Catsear	<i>Hypochaeris radicata</i>
Rough Hawkbit	<i>Leontodon hispidus</i>
Ramsons	<i>Allium ursinum</i>
Bluebell	<i>Endymion non-scriptus</i>
Daffodil	<i>Narcissus spp</i>
Snowdrop	<i>Galanthus nivalis</i>
Lords And Ladies	<i>Arum maculatum</i>
Early Purple Orchid	<i>Orchis Masculula</i>
Fat Hen	<i>Chenopodium album</i>
Common Sorrel	<i>Rumex acetosa</i>
Japanese Knotweed	<i>Reynoutria japonica</i>
Perennial Flax	<i>Linmun Perenne</i> agg
Himalayan Balsam	<i>Impatiens glandulifera</i>
Common Mallow	<i>Malva sylvestris</i>
Common Dog Violet	<i>Viola riviniana</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Cow Parsley	<i>Anthriscus sylvestris</i>

Pignut	<i>Conopodium majus</i>
Burnet Saxifrage	<i>Pimpinella saxifraga</i>
Wild Carrot	<i>Daucus carota</i>
Wild Parsnip	<i>Pastinaca sativa</i>
Alexander's	<i>Smyrniololus atrum</i>
Primrose	<i>Primula vulgaris</i>
Wood Forget-me-not	<i>Myosotis sylvatica</i>
Bugle	<i>Ajuga reptans</i>
Red Dead-Nettle	<i>Lamium purpureum</i>
Hedge Woundwort	<i>Stachys sylvatica</i>
Common Toadflax	<i>Linaria vulgaris</i>
Foxglove	<i>Digitalis purpurea</i>
Germanders Speedwall	<i>Veronica chamaedrys</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Golden-Rod	<i>Solidago virgaurea</i>
Michaelmas Daisy	<i>Aster novi-belgii</i>
Butterbur	<i>Petasites hybridus</i>

Grasses, Rushes and Sedges

Branched Burr Reed	<i>Sparganium erectum</i>
Brown Sedge	<i>Carex disticha</i>
Bulbus Rush	<i>Juncus bulbosus</i>
Cocksfoot	<i>Dactylis glomerata</i>
Common Bent	<i>Agrostis capillaris</i>
Common Club rush	<i>Shoenoplectus lacustris</i>
Common Couch Grass	<i>Elymus repens</i>
Common Quaking-grass	<i>Briza media</i> - on chalk banks.
Common spike Rush	<i>Eleocharis palustris</i>
Compact Rush	<i>Juncus conglomeratus</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Crested Dogstail	<i>Cynosaurus cristatus</i>
False Fox Sedge	<i>Carex Otrubae</i>
False Oat Grass	<i>Arrhenatherum elatius</i>
Floating Sweet Grass	<i>Glyceria fluitans</i>
Flote	<i>Glyceria fluitans</i>
Great reed mace	<i>Typha latifolia</i>
Glaucous sedge	<i>Carex flacca</i>
Hairy Sedge	<i>Carex hirta</i>
Hard Rush	<i>Juncus inflexus</i>
Jointed Rush	<i>Juncus articulatus</i>
Lesser pond sedge	<i>Carex acutiformis</i>
Marsh Foxtail	<i>Alopecurus geniculatus</i>
Meadow Foxtail	<i>Alopecurus pratensis</i>
Meadow Grasses	<i>Poa trivialis</i> and other <i>Poa</i> spp.
Perennial Rye-grass	<i>Lolium perenne</i>
Red Fescue	<i>Festuca rubra</i>
Reed Canary Grass	<i>Phalaris arundinacea</i>
Reed Sweet Grass	<i>Glyceria maxima</i>
Sea Club Rush	<i>Scirpus maritimus</i>
Sharp flowered Rush	<i>Juncus acutiflorus</i>

Soft Rush	<i>Juncus effuses</i>
Sweet Flag	<i>Acorus calamus</i>
Sweet Vernal Grass	<i>Anthoxantum odoratum</i>
Tall Fescue	<i>Festuca arundinacea</i>
Timothy	<i>Phleum pratense</i>
Tufted Hairgrass	<i>Deschampsia cespitosa</i>
Yorkshire Fog	<i>Holcus lanatus</i>

Marginal and Aquatic Plants

Amphibious Bistort	<i>Polygonum amphibium</i>
Bitter Sweet	<i>Solanum dulcamara</i>
Broad-leaved Pondweed	<i>Potamogeton natans</i>
Canadian Pond Weed	<i>Elodea canadensis</i>
Celery-leaved Buttercup	<i>Ranunculus scleratus</i>
Clustered Dock	<i>Rumex conglomeratus</i>
Common Duckweed	<i>Lemna minor</i>
Common Water Crowfoot	<i>Ranunculus aquatilis</i>
Curled Pondweed	<i>Potamogeton crispus</i>
Floating Pondweed	<i>Potamogeton natans</i>
Frogbit	<i>Hydrocharis morus-ranae</i>
Greater Spearwort	<i>Ranunculus lingua</i>
Hogweed	<i>Heracleum sphondylium</i>
Ivy-leaved duckweed	<i>Lemna triscula</i>
Lesser Pondweed	<i>Potamogeton pusillus</i>
Marestail	<i>Hippuris vulgaris</i>
Marsh Bedstraw	<i>Galium palustre</i>
Marsh Horsetail	<i>Equisetum palustre</i>
Marsh Marigold	<i>Caltha palustris</i>
Marsh Speedwell	<i>Veronica scutellata</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Spiked water-milfoil	<i>Myriophyllum spicatum</i>
Tufted Vetch	<i>Vicia cracca</i>
Water Cress	<i>Rorippa nasturtium aquaticum</i>
Water Fern	<i>Azolla filiculoides</i>
Water Forget-me-not	<i>Myosotis scorpioides</i>
Water Mint	<i>Mentha aquatica</i>
Water speedwell	<i>Veronica anagallis aquatica</i>
Water Starwort	<i>Callitriche stagnalis</i>
Watercress	<i>Rorippa nasturtium aquaticum</i>
Yellow Flag	<i>Iris pseudacorus</i>

Shrubs/Trees

Alder	<i>Alnus glutinosa</i>
Grey Alder	<i>Alnus Incana</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Downy Birch	<i>Betula Pubescens</i>
Silver Birch	<i>betula pendula</i>
Blackthorn	<i>Prunus spinosa</i>
Cherry	<i>Prunus avium</i>
Dog Rose	<i>Rosa canina</i>
Guelder Rose	<i>Viburnum opulus</i>
Dogwood	<i>Cornus Sanguinea</i>
Elder	<i>Sambucus nigra</i>
Field Maple	<i>Acer campestre</i>
Sycamore	<i>Acer pseudoplatanus</i>
Aspen	<i>Populus tremula</i>
Crab apple	<i>Malus sylvestris</i>
Apple	
Pear	
Plum	
Damson	
Broom	<i>Cystus scorparius</i>
Gorse	<i>Ulex europaeus</i>
Hawthorn	<i>Crateagus monogyna</i>
Hazel	<i>Corylus avellana</i>
Larch	<i>Larix decidua</i>
Oak	<i>Quercus robur</i>
Rowan	<i>Sorbus aucuparia</i>
Scots Pine	<i>Pinus sylvestris</i>
Corsican Pine	<i>Pinus Nigra Subsp. Larico</i>
Horse Chestnut	<i>Aesculus hippocastanum</i>
Sweet Chestnut	<i>Castanea sativa</i>
Willow - Crack	<i>Salix fragilis</i>
Willow - Grey	<i>Salix cinerea</i>
Willow – White	<i>Salix alba</i>
Osier	<i>Salix viminalis</i>
White Poplar	<i>Populus alba</i>

Appendix 2 : Mammals

Records have been kept of any mammal sightings. These records can be found on file in the Rangers office.

Fox - *Vulpes vulpes cruciger*
Hare - *Lepus europaeus occidentalis*
Common Shrew - *Sorex araneus castaneus*
Rabbit - *Oryctolagus cuniculus*
Field Vole - *Microtus agrestis hirtus*
Short –Tailed Field Vole – *Microtus agrestis*
Water Vole - *Arvicola terrestris amphibius*
Pipistrelle Bat - *Pipistrellus pipistrellus*
Noctule Bat – *Nyctalus noctula*
Dorbentons Bat – *Myotis daubenton*
Weasel - *Mustela nivalis*
Hedgehog - *Erinaceus europaeus*
Mole - *Talpa europa*
Mink (American) - *Mustela vison*
Stoat – *Mustela erminea*
Roe Deer – *Capreolus capreolus*
Otter – *Lutra lutra*
Grey Squirrel – *Sciurus Carolinensis*

Appendix 3 : Birds

Status :- RB - Resident Breeder R - Resident in area (breeding unconfirmed)
 OV - Occasional Visitor SV - Summer Visitor
 WV - Winter Visitor V - Vagrant

Great Crested Grebe	<i>Podiceps cristatus</i>	OV
Little Grebe	<i>Tachy bapetus ruficollis</i>	RB
Red Necked Grebe	<i>Podiceps grisegena</i>	OV
Cormorant	<i>Phalacrocorax carbo</i>	OV
Grey Heron	<i>Ardea cinerea</i>	R
Little Egret	<i>Egretta garzetta</i>	OV
Mute Swan	<i>Cygnus olor</i>	RB
Greylag Goose	<i>Anser anser</i>	RB/OV
Canada Goose	<i>Branta canadensis</i>	RB/OV
Shelduck	<i>Tadoma tadoma</i>	RB/OV
Ruddy Duck	<i>Oxyura jamaicensis</i>	OV
Widgeon	<i>Anas penelope</i>	OV
Gadwall	<i>Anas strepera</i>	RB
Teal	<i>Anas crecca</i>	OV
Mallard	<i>Anas platyrhynchos</i>	RB
Shoveler	<i>Anas clypeata</i>	WV
Pochard	<i>Aythya ferina</i>	WV
Tufted Duck	<i>Aythya fuligula</i>	RB
Goldeneye	<i>Bucephala clangula</i>	WV
Goosander	<i>mergus merganser</i>	WV
Pintail	<i>Anas acuta</i>	WV
Smew	<i>Mergus albellus</i>	WV
Muscovoy Duck		R
Scaup	<i>Aythya Marila</i>	WV
Sparrowhawk	<i>Accipiter nisus</i>	R
Kestrel	<i>Falco tinnunculus</i>	R
Peregrine	<i>Falco Peregrinus</i>	R
Hobby	<i>Falco subbuteo</i>	R
Grey Partridge	<i>Perdix perdix</i>	RB
Pheasant	<i>Phasianus colchicus</i>	R
Moorhen	<i>Gallinula chloropus</i>	RB
Coot	<i>Fulica atra</i>	RB
Water Rail	<i>Rallus aquaticus</i>	R
Lapwing	<i>Vanellus vanellus</i>	OV
Snipe	<i>Gallinago gallinago</i>	WV
Dunlin	<i>Calidns alpina</i>	OV
Woodcock	<i>Scolopax rusticola</i>	OV
Redshank	<i>Tringa tutanus</i>	OV
Greenshank	<i>Tringa nebularia</i>	OV
Common Sandpiper	<i>Actitis hypoleucas</i>	OV
Black Headed Gull	<i>Lanus ribibunclus</i>	OV
Common Gull	<i>Larus canus</i>	OV

Herring Gull	<i>Larus argentatus</i>	R/OV
Greater Black Backed Gull	<i>Larus marinus</i>	OV
Lesser Black Backed Gull	<i>Larus fuscus</i>	V
Turtle Dove	<i>Streptopelia turtur</i>	RB
Feral Pigeon	<i>Columba spp</i>	R
Wood Pigeon	<i>Columba palumbus</i>	R
Collared Dove	<i>Streptopelia decaocto</i>	R
Cuckoo	<i>Cuculus canorus</i>	SV
Parakeet	<i>Psittacula spp</i>	V
Short Eared Owl	<i>Asio flammeus</i>	WV
Long Eared Owl	<i>Asio otus</i>	WV
Barn Owl	<i>Tyto alba</i>	RB
Little Owl	<i>Athene noctua</i>	RB
Tawny Owl	<i>Strix aluco</i>	V
Kingfisher	<i>Alcedo atthis</i>	R
Great Spotted Woodpecker	<i>Pendrocopus major</i>	OV
Skylark	<i>Alauda arvensis</i>	RB
Swift	<i>Apus apus</i>	SV
Sand Martin	<i>Riparia riparia</i>	OV
Swallow	<i>Hirundo rustica</i>	SV
House Martin	<i>Delictor urbica</i>	SV
Meadow Pipit	<i>Anthus pratensis</i>	R
Yellow Wagtail	<i>Motacilla flava</i>	OV
Grey Wagtail	<i>Motacilla cinerea</i>	OV
Pied Wagtail	<i>Motacilla alba</i>	SV
Wren	<i>Troglodytes troglodytes</i>	RB
Dunnock	<i>Prunella modularis</i>	RB
Robin	<i>Erithacus rubecula</i>	RB
Stonechat	<i>Saxicola torquata</i>	OV
Wheatear	<i>Oenanthe oenanthe</i>	OV
Fieldfare	<i>Turdus pilaris</i>	WV
Blackbird	<i>Turdus merula</i>	RB
Ring Ouzel	<i>Turdus torquatus</i>	R
Waxwing	<i>Bombycilla garrulous</i>	WV
Song Thrush	<i>Turdus philomelos</i>	RB/WV
Redwing	<i>Turdus iliacus</i>	WV
Mistle Thrush	<i>Turdus viscivorus</i>	WV
Grasshopper Warbler	<i>Locustella naevia</i>	SV
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	SV
Lesser Whitethroat	<i>Sylvia curruca</i>	SV
Whitethroat	<i>Sylvia communis</i>	SV
Blackcap	<i>Sylvia atricapilla</i>	SV
Chiffchaff	<i>Phylloscopus collybita</i>	SV
Willow Warbler	<i>Phylloscopus trochilus</i>	SV
Goldcrest	<i>Regulus regulus</i>	OV
Long Tailed Tit	<i>Aegithalos caudatus</i>	OV
Blue Tit	<i>Parus caeruleus</i>	RB

Great Tit	<i>Parus major</i>	RB
Marsh Tit	<i>Parus Palustris</i>	WV
Willow Tit	<i>Parus Montanus</i>	WV
Coal Tit	<i>Parus ater</i>	WV
Bearded Tit	<i>Panurus biarmicus</i>	R
Tree Creeper	<i>Certhia familians</i>	OV
Magpie	<i>Pica pica</i>	RB
Jackdaw	<i>Corvus mondedula</i>	R
Rook	<i>Corvus frugilegus</i>	OV
Carriion Crow	<i>Corvus corone</i>	RB
Jay	<i>Garrulus glandarius</i>	WV
Starling	<i>Sturru vulgans</i>	RB
House Sparrow	<i>Passer domesticus</i>	RB
Tree Sparrow	<i>Passer montanus</i>	RB
Chaffinch	<i>Fringilla coelebs</i>	RB
Siskin	<i>Carduelis spinus</i>	WV
Greenfinch	<i>Carduelis chlons</i>	RB
Goldfinch	<i>Carduelis carduelis</i>	R
Twite	<i>Acanthis flavirostris</i>	WV
Lesser Redpoll	<i>Acanthis flavirostris cabaret</i>	WV
Redpoll	<i>Acanthis flammea</i>	WV
Brambling	<i>Fringilla montifringilla</i>	WV
Linnet	<i>Carduelis cannabina</i>	R
Bullfinch	<i>Pyrrhula pyrrhula</i>	OV
Yellowhammer	<i>Emberiza citrinella</i>	RB
Reed Bunting	<i>Emberiza schoeniclus</i>	RB
Corn bunting	<i>Emberiza calandra</i>	R
Snow bunting	<i>Plectrophenax nivalis</i>	WV

Detailed records of bird sightings since 1995 are held on file in the Rangers Office

Appendix 4 : Amphibians

Amphibian counts have been made annually since 1994. The results of these counts and of other amphibian activity are held on file in the Rangers' office.

Common Frog - *Rana temporaria*

Common Toad - *Bufo bufo*

Smooth / Common Newt - *Triturus vulgaris*

Great Crested Newt - *Triturus cristatus*

Appendix 5 : Odonata

Sightings of odonata around the site have been recorded since 1995. Full details can be found on file in the Rangers office.

Family Lestidae

Green Lestes - *Lestes sponsa*

Family Coenagrionidae

Large Red Damselfly – *Pyrrhosoma nymphula*

Blue-tailed Damselfly - *Ischnura elegans*

Common Blue Damselfly - *Enallagma cyathigera*

Azure Damselfly – *Coenagrion puella*

Family Calopterygidae

Banded Demoiselle – <i>Calopteryx splendens</i>	08/08/2000	27/07/2002
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Family Aeshnidae

Southern Hawker – *Aeshna Cyanae*

Brown Hawker – *Aeshna grandis* 05/09/1999

Migrant Hawker – *Aeshna mixta*

Common Hawker - *Aeshna juncea*

Emperor Dragonfly – *Anax imperator*

Family Libellulidae

Black Darter – *Sympetrum danae* September 1999

Ruddy Darter – *Sympetrum sanguineum*

Common Darter - *Sympetrum striolatum*

Four-spotted Chaser – *Libellula quadrimaculata*

Family Cordulegastridae

Golden ringed Dragonfly - *Cordulegaster boltonii* (Vagrant)

Appendix 6 : Lepidoptera

Annual butterfly counts have been made since 1996. The results of these are on file in the Rangers office.

Family Hesperidae

Small Skipper - *Thymelius sylvestris*

Large Skipper – *Ochlodes venata*

Family Pieridae

Clouded Yellow - *Colias croceus*

Large White - *Pieris brassicae*

Small White - *Pieris rapae*

Green Veined White - *Pieris napi*

Orange Tip - *Anthocharis cardamines*

Family Lycaenidae

Small Copper - *Lycaena phlaeas*

Common Blue - *Polyommatus icanus*

Holly Blue -

Family Nymphalidae

Red Admiral - *Vanessa atalanta*

Painted Lady - *Cynthia cardui*

Small Tortoiseshell - *Aglais urticae*

Peacock - *Inachis io*

Comma - *Polytonia c-album*

Family Satyridae

Wall Brown - *Lasiommata megera*

Meadow Brown - *Mariola jurtina*

Ringlet - *Aphantopus hyperantus*

Small Heath - *Coenonympha pamphilus*

Speckled Wood – *pararge aegeria*

Appendix 7 : Moths

MOTH SPECIES LIST 1996 + 1997

Moth trapping was carried out on a regular basis during 1996 and 1997. Details of the dates trapping took place and the species caught can be found on file in the Wardens office.

FAMILY NOCTUIDAE

Small Square Spot (*Diarsia rubi*)
Clouded Drab (*Orthosia incerta*)
Heart and Dart (*Agrostis exclamationis*)
Beautiful Golden Y (*Autographa pulchrina*)
Dark Arches (*Apamea monoglypta*)
Hebrew Character (*Orthosia incerta*)
Dusky Brocade (*Apamea remissa*)
Large Yellow Underwing (*Noctua orbona*)
Lesser Yellow Underwing (*Noctua comes*)
Common Rustic (*Mesapamea secalis*)
The Snout (*Hypena proboscidalis*)
Flounced Rustic (*Luperina testacea*)
Common Quaker (*Orthosia populeti*)
Double Dart (*Graphiphora augur*)
Double Square Spot (*Xestia triangulum*)
The Mouse (*Amphipyra tragopoginis*)
The Gothic (*Naenia typica*)
Square Spot Rustic (*Xestia xanthographa*)
Dusky Sallow (*Eremobia ochroleuca*)
Ingrailed Clay (*Diarsia mendica*)
The Sallow (*Xanthia icteritia*)
The Herald (*Scoliopteryx libatrix*)
Bulrush Wainscot (*Nonagria typha*)
Silver Y (*Autographa gamma*)
Small Clouded Brindle (*Apamea unanimitis*)
Mottled Rustic (*Caradrina morpheus*)
Setaceous Hebrew Character (*Xestia c-nigrum*)
The Clay (*Mythimna ferrago*)
Smoky Wainscot (*Mythimna impura impura*)
Brown Line Bright Eye (*Mythimna furca*)

FAMILY ARCTIIDAE

White Ermine (*Spilosoma lubricipeda*)
Garden Tiger (*Arctia caja*)

FAMILY HEPIALIDAE

Common Swift (*Hepialus lupulinus*)

FAMILY GEOMETRIDAE

Shaded Broad Bar (*Scotopteryx chenopidiata*)

Clouded Border (*Lomaspilis marginata*)

Barred Straw (*Eulithis pyraliata*)

Yellow Shell (*Costaconvexa bilineata bilineata*)

The Magpie (*Abraxus grossulariata*)

Shoulder Stripe (*Anticlea badiata*)

Common White Wave (*Cabera pusaria*)

Early Thorn (*Selenia dentaria*)

Ribband Wave (*Idea avarsata ab. remutata*)

Mottled Beauty (*Alcis repandata repandata*)

Willow Beauty (*Peribatodes rhomboidaria*)

Tawny Speckled Pug (*Eupithecia icterata subfulvata*)

Small Rivulet (*Perizoma alchemillata*)

Silver Ground Carpet (*Xanthorhoe montanata montanata*)

Garden Carpet (*Xanthorhoe fluctuata*)

FAMILY LASIOCAMPIDAE

The Drinker (*Philudoria potatoria*)

FAMILY SPHINGIDAE

Poplar Hawk Moth (*Laothoe populi*)

FAMILY ZYGAENIDAE

Five-spot Burnet (*Zygaena trifolii*)

FAMILY PYRALIDIAE

Mother of Pearl (*Pleuroptya ruralis*)

Crambus lathoniellus

Agrophila tristella

FAMILY COCHYLIDAE

Agapeta hamana

The total number of moths recorded on this site now stands at 55.

APPENDIX EIGHT-FRESHWATER INVERTEBRATES

Alderfly larva	<i>Sialidae</i>
Beetle larva	<i>Haliplidae</i>
Biting midge larva	<i>Ceratopogonidae</i>
Caddis fly larvae	<i>Leptoceridae</i>
Cased Caddis fly Larvae	
Crane fly larva (and relatives)	<i>Tipulidae</i>
Damselfly Nymphs	<i>Lesidae</i>
Diving beetle	<i>Dytiscidea</i>

Dragonfly Nymphs

Migrant Hawker	<i>Aeshnidae</i>
Common Hawker	<i>Aeshnidae</i>
Common Darter	<i>Corduliidae</i>
Emperor	<i>Aeshnidae</i>
Flattened mayfly nymph	<i>Ecdyonuridae</i>
Fresh Water hoglouse	<i>Asellidae</i>
Ghost larva	<i>Chaoboridae</i>
Great Diving Beetle Larvae	
Greater waterboatman	<i>Notonectidae</i>
Leech	<i>Glossiphonidae</i>
Leech	<i>Piscicolidae</i>
Leech	<i>Erpobdillidae</i>
Leech	<i>Hirudinidae</i>
Lesser waterboatman	<i>Corixidae</i>
Mayfly nymph	<i>Siphonuridae</i>
Mayfly nymph	<i>Ephemerellidae</i>
Mosquito larva	<i>Cuicidae</i>
Non-biting midge pupa (Blood worm variation)	<i>Chironomidae</i>
Opposum shrimp	<i>Mysidea</i>
Orb cockle/Pea mussle	<i>Sphaeriidae</i>
Phantom midge larvae	
Pond skater	<i>Gerridae</i>
Pond snail	<i>Lymnaeidae</i>
Ramshorn snail	<i>Planorbiidae</i>
Red spider mite	
Spire shell	<i>Hydrobiidae</i>
Still water mite	
Swimming mayfly nymph	<i>Baetidae</i>
True fly (red)	<i>Diptera</i>
True fly (straw)	<i>Diptera</i>
True worm	
Water mite	
Water Cockles	
Water Hoglouse	
Water scorpion	<i>Nepidae</i>
Water spider	<i>Agelenidae</i>

Whirligig beetle

Gyrinidae

Appendix 9 MATURE TREES/COMPOSITION OF COPSES - 1997

1 Cowbridge Copse

Composition: Hawthorn - Dominant
Elder
Goat Willow - 1
Ash - 1 large, damaged
Blackthorn - present in hedge on boundary
Sycamore - 1 large one by beckside

Young trees around: Oak (*Q. Robur*), Cherry, Aspen, Dog Rose, Alder, Ash, copse Birch

2 Around Lake

Composition: Hawthorn - Dominant
Cherry - abundant
Ash - abundant
Elder - abundant
Hazel - few
Oak - 2
Dogrose - few
Blackthorn - few

3 Northumbrian Water Land

Willow (various), Poplar

4 Pigeon Wood

Hawthorn - along edge and some within the woodland
Crack Willow
Elder

Understrory: Dog Rose, Nettles, Cleavers, Hedge Woundwort,
Bramble, Thistle, False Fox Sedge, Reed Sweet
Grass, Butterbur.

Appendix 10 Water Testing of CBWP Ponds / Lake carried out Sumer 2009

Analytical Report	CBWP Pond Water Testing 2009						
Client:	STOCKTON BC						
Contract:	STOCKTONBC - 17144						
	Effluent analysis						
Carrierd out by	Analytical & Environmental Services						
	Northumberland Dock Road						
	Wallsend, Tyne & Wear, NE28 0QD				Method	H031	HO42
	tel 0191 2968500						
Sample ID Number	Description	Date Taken	Time Taken	Date Received	Date Started	pH	BOD (ATU)5 Day
						pH units	mg/l
3371958	Cowpen Bewley Woodaland Park - Lake	18/05/2009	11:40	20/05/2009	20/05/2009	7.4	2.1
3371959	CBWP - Leachate Plant Pond	18/05/2009	12:00	20/05/2009	20/05/2009	7.9	20
3371960	CBWP - Swan Pond	18/05/2009	13:10	20/05/2009	20/05/2009	7.8	2.4
3371961	CBWP - Small Car Park Pond	18/05/2009	13:30	20/05/2009	20/05/2009	7.5	4.2
3371962	CBWP - Large car park pond Pond	18/05/2009	13:50	20/05/2009	20/05/2009	8	2.4
3371963	CBWP - Pigeon Wood Pond	18/05/2009	15:00	20/05/2009	20/05/2009	7.5	4.5
3371964	Wynyard Woodland Park - Large Pickard's Meadow pond	18/05/2009	02:55	20/05/2009	20/05/2009	7.6	4.1
3371965	WWP - Pickard's Meadow Newt Pond	18/05/2009	02:55	20/05/2009	20/05/2009	7.6	26
3371966	WWP - Thorpe Wood Pond	18/05/2009	03:40	20/05/2009	20/05/2009	8.1	2.4
3371967	WWP - New Tilery Wood Pond	18/05/2009	15:10	20/05/2009	20/05/2009	7.4	4.7
3371968	Charltons Pond - Anglers' pond	18/05/2009	11:10	20/05/2009	20/05/2009	8.1	4.1
3371969	Charltons Pond - Lake	18/05/2009	11:15	20/05/2009	20/05/2009	8.5	1.4
3371970	Billingham Beck Valley Country Park Frognell Pond	18/05/2009	09:25	20/05/2009	20/05/2009	7.3	7.1
3371971	BBV - Ecology Park Pond	18/05/2009	10:25	20/05/2009	20/05/2009	7.5	3.2
3371972	BBV - Willowgarth Pond	18/05/2009	10:15	20/05/2009	20/05/2009	7.4	4.4
3371973	Ropner Park Lake	19/05/2009	13:50	20/05/2009	20/05/2009	9.3	1.2
3371974	Preston Park, Quarry Wood	19/05/2009	14:25	20/05/2009	20/05/2009	7.2	390
3371975	The Brickpond	19/05/2009	14:05	20/05/2009	20/05/2009	8	2.7
3371976	Barwick Pond	19/05/2009	14:45	20/05/2009	20/05/2009	7.5	>26
3371977	Stillington Forest Park Lake	19/05/2009	13:30	20/05/2009	20/05/2009	7.8	3.3

Appendix 11 : Sample from Newsletter

COWPEN BEWLEY WOODLAND PARK

Local Nature Reserve (Stockton Borough Council)

Location: Off the Seal Sands Link Road on the edge of Billingham

Cowpen Bewley Woodland Park is a new area of woodland within the Tees Forest. The site consists of a former brickworks and landfill site and also ex-agricultural land. This land has been reclaimed for wildlife and about a quarter of a million trees have since been planted on the site. Although still in the early stages of growth, the site already hosts a variety of habitats. Areas of grassland, a lake, a series of ponds and a beck flows around the boundary. Wildlife is already abundant with, waterfowl on the lake, toads, newts and dragonflies in and around the ponds and hares, foxes and small mammals in the grassland. A new Activity Centre provides educational resources, toilets and wet weather facilities for visiting groups. We also have an amphitheatre and a Sculpture Trail is currently under construction.

We have a range of environmental education programmes available to meet different needs, such as Adaptation & Survival, Wild Journal, Minibeasts & Habitats, Webs of Life & Nature Spies. These are full day programmes but can be adapted. All can be viewed on our website (see below). Most activities are aimed at primary age but we are happy to work with secondary schools and will tailor programmes to your needs. Our Celtic Camp is specifically for 2ndary Schools.

All our activities are flexible to suit teacher's requirements. If there is an area of work you need to cover that we have not included, please ring to discuss and we will try and meet your needs.

All our activities are flexible to suit teacher's requirements. If there is an area of work you need to cover that we have not included, please ring to discuss and we will try and meet your requirements.

Booking Procedure

You must pre-book all visits, even self-led ones.

1. Decide upon a suitable date for your visit and think about alternative dates.
2. Phone Cowpen Bewley Woodland Park 01642 371633 to check that your preferred date is available and confirm the activity you wish to do. Let us know if there will be any special needs requirements, or allergy concerns.
3. The Rangers will make a provisional booking for you and fill out a booking form over the phone.
4. Then send a deposit of £10 (for Ranger-led activities) within seven days to make this a firm booking.
5. On receipt of your cheque the Rangers will write to confirm the date of your visit and send you a receipt and risk assessment for your visit.

Note: We expect groups to have a minimum adult to child ratio of 1:10.

Charges

A charge of £1 per child is made per visit

Celtic Camp is £2/child. No charge is made if the activity is self-led.

Cheques should be made payable to 'Stockton Borough Council'

Send to: The Activity Centre, Cowpen Bewley Woodland Park, Seal Sands Link Road, Billingham, TS23 3NF

Appendix 12 – Educational Programmes

Adaptation & Survival

Aim Introduce children to the idea that all living creatures are interconnected and adapt to the environment in which they live. Children learn to recognise adaptations in form (eg camouflage, size, body structure, feeding habits) and to understand the reason for these adaptations and how it increases survival rates.

Summary This Ranger lead activity uses games, and design skills to explore how & why animals are different, and individually designed to optimise their survival skills. Groups will use presentation skills to demonstrate their adaptations to the other groups and discuss the effectiveness of their designs.

Time	Activity
9.30- 9.45	Welcome to the park, introduction to the Wardens, and the days activities.
9.45 – 10.30	Series of games to explore animal needs for survival and ways of adapting to maximise survival rates. - Beak game (thirsty butterflies), camouflage straws, stone hunt , animal needs foodchain game
10.30-11.15	Animal adaptation costumes & discussion on different adaptations
11.15-12.00	In small groups make bird body parts based on a design brief such as; able to walk across deep mud, hunt at night, tear apart raw meat, etc. Display finished birds and explain their designs and how they work to achieve the brief given.
12.00 – 1.00	Lunch (use shop/optional)
1.00 –2.00	Oh Dear! activity showing environmental and man made factors effecting survival rates of populations of animals within an ecosystem. Population examples tabulated on a large graph.
2.00 –2.15	Discussion on boom & bust cycles, interdependence of different species and adaptations (daily, & seasonal) of animals to increase survival rates.
2.15-2.30	Foodchain energy transfer game to look at the effect of energy efficiency and how adaptations could increase survival.

Curriculum areas covered:

KS2

Sc2 Life Processes & Living Things

1 c & 5 a,b,c,d,e

KS3

Sc2 Life Processes & Living Things

Living things in their environment 5a-f

KS4 (double science) Sc2 Life Processes & Living Things

Living things in their environment 5 a,b,c,d,e,g

Minibeasts & Habitats

This can be a self-led activity (we can provide full instructions and loan of equipment upon request)

Or as a ranger-led activity, see below.

Aim. To introduce children to the world of minibeasts both on land and in water. Have a go at using identification keys and understand Habitats.

Summary. Children will carry out survey and identification field work of aquatic and terrestrial habitats. Also look at habitats and survival needs of animals.

The programme can be modified to suit a variety of age groups. Water quality analysis or hypothesis testing are examples of higher-level studies that could be done.

Can be Morning or Afternoon Activity

Time	Activity
9.30-9.45	Welcome to the park, introductions to the wardens, and the days activities
9.45-10.00	Split class into 2 groups. One group go do bug hunting, the other pond dipping.
10.00-10.45	Introduction to each activity before they begin and talk about habitats
10.45-11.30	Then after 45mins swap groups.
11.30-12.30	Pond dipping plus use of identification keys. Bug hunt plus identification of bugs found (compare habitats)
	Groups meet back at Activity Centre for Insect Misfits Game creating their own new species and Animal Needs Game. (food water shelter)
	(Suggested additional afternoon activity ‘ Wild Journal’)

Curriculum areas covered:

Science KS1 Sc2 1b,c 2b,e,g 5a,b,c

Science KS2 Sc2 1c 4a,b,c 5,b,c

Nature Spies

Aim. Introduce children to the world of minibeasts both on land and in water. While learning how to use identification keys and understand Habitats and what creatures need to survive.

Summary. Children will carry out survey and identification field work of aquatic and terrestrial habitats. . Looking at habitats and the survival needs of animals, and interaction between species.

The programme can be modified to suit a variety of age groups. Water quality analysis or hypothesis testing are examples of higher-level studies that could be done

Time	Activity
9.30-9.45	Welcome to the park, introductions to the wardens, and the days activities
9.45-10.00	Split class into 2 groups. One group ready to go bug hunting, the other pond dipping.
10.00-10.45	Introduction to each activity before they begin and talk about habitats Group 1 bug hunting and Group 2 pond dipping Pond dipping uses identification keys and bug hunting involves recording information about each bug found from different habitats.
10.45-11.30	Groups 1 and 2 swap activities
11.30-12.00	Both groups combined for session. Animal/plant needs activity, an introduction for the pupils to the elements needed to sustain life.
12.00-13.00	Lunch (optional use of shop)
13.00-13.30	‘Oh Deer’ activity to introduce the pupils to populations of species and, the controlling environmental factors of a habitat on these populations.
13.30-14.15	Dressing up role-play adaptation activity, looking at how animals have different physical adaptations to their habitats. An alternative to this activity is a walk around the Woodland Park completing the Wild Journal. Or a session of insect misfits could be used to underline the requirements an animal needs to adapt to its preferred habitat. This involves learning the different body parts and creating their own new species, deciding on where it lives, what it eats etc.
14.15-14.30	

Curriculum areas covered. Science KS1 Sc2 1b,c 2b,e,g 5a,b,c **Science KS2 Sc2 1c 4a,b,c 5a,b,c,d**

Orienteering

This is a self-led activity

Aim

To introduce children to maps and how to read them while gaining fresh air and exercise in a Country Park setting

Summary

Orienteering at Cowpen Bewley consists of a set of numbered markers set around the country park. Each marker has a number and a letter on it. The number of each corresponding marker has its location marked on a map. The idea is to find your way from one marker to another using map reading skills and at each marker you record the letter to prove that you have been there. All the letters are checked at the end to check that the course has been completed correctly.

This self-led activity allows children to learn and practice map work, using an existing orienteering course around the north side of the woodland park. This activity can easily be tailored to different age groups/abilities and can also be run as a competition. Many different activities can be done using the same course, thus allowing for repeat visits and gradual development of skills. Below is an outline of a possible morning session. This would of course change as groups became more proficient.

Time	Activity
9.15-9.30	Welcome by rangers and equipment handed out and guidance given on safety on-site.
9.30-10.30	Introduction to basic skills such as setting the map, thumbing the map and understanding the symbols and colours on a map
10.30-11.30	Set off on a simple route in small groups at 2 min intervals
11.30-12.00	Check results of each group and feedback

Ideas of the type of activities that you could use the course for:

- Pupils start in a central location and are given a numbered marker to go to in turn. Each time returning to report the information before being given another marker to get to.
- Pupils could be set a short loop of numbered points to visit in sequence before returning to the start.

- Pupils are set a short course visiting for example 8 markers in a preset order but not sequential. The number of markers set can be varied to adjust the length/time of the course.
- A timed event where pupils have to visit as many markers as possible in a set time and score points for each marker they visit and suffer penalty points if they return late.
- Pupils are given a points score that they must reach by visiting markers. Pupils then quickly plan their route to achieve this score and set off.
- Pupils visit a set route of markers recording the letters as usual, but at the end they have to turn those letters into a word, which the teacher has previously devised.

Points to Remember Before Your Visit

Before arriving at the woodland park phone ahead to book your day with the Rangers to ensure there are no clashes with other groups. Arrange a suitable date and time.

Make sure pupils will be dressed appropriately. The site can be very wet and muddy in winter.

We can provide ideas for different activities you can do with the course. Please contact us in advance and we will send out some details.

For professional teaching of orienteering and competitions in the area, please contact Cleveland Orienteering Club (CLOK) We can provide contact details.

Have you completed a risk assessment for the activity? We can provide advice if necessary.

The Activity Centre can be booked for use if you require but you must inform us in advance if you require this. Please also let us know if you would like to have access to the toilets.

Pupils will require a sheet & pencil for recording the letter at each marker.

On Arrival

When you arrive on site visit the Activity Centre to collect the maps and let the Rangers know that you are on site

There are first aid kits and phones available in the Activity Centre for use if required in an emergency.

Seeds, Needs, Trees & Leaves

Aim Learn about the interdependence of living things within an ecosystem

Summary This day is aimed at groups wanting to learn about seeds and what they need to survive. Seed dispersal methods, trees, leaves, fruits, woodlands and plant pollination will all be looked at within the concept of an ecosystem. It can also be used to describe the elements that make up a habitat and what organisms need to survive there.

Time	Activity
9.30am	the children arrive
9.45am	Interactive activity to introduce, habitats, how a tree works, what organisms depend on a tree, a brief introduction to food chains, seed dispersal, how a flower attracts pollinators, and the dispersal of their seeds.
10.30am	seeds needs activity to look at what a seed requires to survive
10.35am	a walk around a section of the woodland park, looking at seeds and how they are dispersed, while also collecting examples of the different types of seeds they find. Leaves are collected for identification purposes later.
11.15am	In the Activity Centre the children identify the species of tree, and wildflower or grass they collected their seeds from, using the leaves and seed they collected, with the aid of identification charts.
11.45am	Build a Tree Activity where all the children are formed into the working parts of a tree.
12midday	Lunch
12.45pm	the children accompanied by the Countryside Rangers will take a habitat walk around a different part of the site, looking at the different habitats they come across, hedges, meadows, woodlands, ponds. They will also carry out several activities on route to look at foodchains and energy transfer and animal survival.
2pm	Discuss the habitats they observed and in groups complete large drawings of these including all of the living things that may live within
2.20pm	children leave for their buses.

Webs of Life

Aim Introduce children to some key ecological concepts of the interdependence of nature.

Summary Using a variety of games and interactive activities, important ecological concepts are demonstrated in a very clear and memorable manner.

This is a 1 hour session designed to fit into a lesson. It can however be joined with other sessions to fill a day visit. We recommend combining it with the morning of our Adaptation & Survival Session.

It works well with Years 6/7 but can be simplified for younger groups.

Time	Activity
15mins	Introduction to foodchains game, building a foodchain involving plants, herbivores, carnivores and omnivores.
10mins	Energy transfer through foodchains activity (children may get slightly wet!) This also looks at loss of energy and energy efficiency.
10mins	Create a food Pyramid and look at biomass, energy transfer, and issues surrounding accumulation of toxins in food pyramids
5 mins	Discussion on Ecosystems
15mins	Oh Dear! Activity showing environmental and man made factors effecting survival rates of populations of animals within an ecosystem. Population examples tabulated on a large graph.
5 mins	Discussion on boom & bust cycles, interdependence of different species and adaptations (daily, & seasonal) of animals to increase survival rates.

Curriculum areas covered:

KS2

Sc2 Life Processes & Living Things

1 c & 5 b,c,d,e

KS4 (double science)

Sc2 Life Processes & Living Things

Living things in their environment 5 d-g

KS3

Sc2 Life Processes & Living Things

Living things in their environment 5a-f

Wild Journal

Aim To involve as many senses as possible whilst using different recording methods to create a nature journal. Aiming to enhance a child's seeing and thinking about the wildlife around them.

Summary Start to create a nature journal that involves using all of your senses. This can be a morning only session as shown below with space for extra recording/further development of the journal to be carried out later in school or in the child's own time. There is also the option of making this a day long activity with the afternoon using further activities from the list below, allowing time for the child to add more of their own ideas, designs and personality to their journal.

This activity can also be run with our minibeast programme, with minibeast hunting taking place in the morning and, with the Ranger-led guided walk using the Wild Journal in the afternoon.

Time	Activity
9.30-9.45	Welcome to the park, introductions to the wardens, and the morning activity. Handing out of blank journals.
9.45-12.00	<p>Site walk with various stops carrying out some of the following activities all involving using different senses to explore wildlife. Each stop will also involve a different recording method which will be recorded on different pages of the nature journal. Approx 20mins per method which includes walk between stops.</p> <p> Colour palatte Leaf rubbing Sound map Bird survey (by lake) Line drawing (from mound) Nature Poem Tree Interview (5 questions and answers) Bug collect and scientific analysis of (shape, no. of legs eyes etc.) Smell recording Squirrel nut hunt </p>
Optional morning/afternoon	Adaptations activities, bat and moth, dressing up role play, oh deer. Seeds/animal needs. Insect misfits, Wild journal.

Curriculum areas covered:

KS1Science Sc1 1 2e,f,

Sc2 2g 5a,b,c

Journeys Through Time

Aim To gain a physical perspective of the earth's development over time, and understand where we as *homo sapiens* fit into this and the scale of our impact on the planet.

Summary The children are issued with passports to travel through time. They then walk around a specially designed sculpture trail where the distance travelled between sculptures directly relates to the periods of time passed through from the creation of the planet earth to the 22nd century. Each sculpture they pass represents a different period of time during this development. In the afternoon we look in more detail at the period since the advent of agriculture up to the present day, using the Cowpen Bewley Woodland Park and surrounding industrial heritage as an example of the changes

Time	Activity
9.30-10.15	Welcome to the park, introductions to the Sculptor and Rangers, and the days activities. Issue of passports and groups depart at five minute intervals.
10.15 – 12.30	Groups walk round the trail, collecting visa stamps and, completing quiz forms at each sculpture before progressing to the next sculpture, reporting back to passport control (activity centre) in order to re-enter the 22 nd Century at the end of the walk.
12.30 – 1.30	Lunch
1.30-2.30	A more detailed look at the last 5mm of the mornings walk, exploring peoples impact on the planet and in particular the way in which human activity has changed the Cowpen Bewley landscape in the last 5000 years.
2.30 – 2.45	Creative writing, write a letter to yourself or a poem about what you have identified as the greatest changes in the local landscape.

Curriculum areas covered:

History 1a,b 4a

Geography 3c 5a,b 7a,b

KS2

History 1a,b 4a 7 Geography 3d,e 5a,b

Sustainable Energy

Title – Renewable at Cowpen

Year – Year 6, 7

Duration – half day

Objectives –

National Curriculum links – Key Stage 2 Science, Unit 6, Key Stage 3 Science, Key Stage 3 Geography

Lesson Content –

A quiz about renewables and recycling, using a map.

1. Split the class into groups. Give each of them the map and the questions.
2. Tell them that they must stick together, and stay with the teacher/assistant assigned to them.
3. The map will send them to a few locations around the park where they will be asked to answer some questions, some of which will need to be multiple choices, about what they can see.
4. The locations for the questions are likely to be – The Mound (What type of view is this? Can you see any forms of electricity generation? Can you see any other things that can be used for generating electricity? The Lake (Can you see anything here that has been recycled? Can you see anything that can't be recycled?), The Car Park (Can you see anything that can't be recycled? Is there anything here that is producing electricity? Can it be reused?) One of the bridges over Cowbridge Beck (Can you see where the water goes when it leaves the sewage works?, Is the water reused once it leaves the sewage works? Would it be reused if it were to be put into the river? Is there anywhere downstream that uses this water?) One of the bridges over Claxton Beck (Can you see where the water has changed the course of the Beck? Can you see where man has changed the course of the Beck? How does this differ? Can these changes be reversed? How?)

5.

Risk Assessment - Yes

Equipment – Maps, Clipboards, Pencils

Health and safety –

Links - www.standards.dfes.gov.uk/schemes2/sciences,
www.teachernet.gov.uk

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Charlton's Pond Local Nature Reserve Management Plan 2008 - 2012



(2010 Review)

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Service Vision

“To enhance the natural environment and cultural heritage of Stockton Borough by providing areas for healthy leisure pursuits and lifelong learning, which at the same time will attract inward investment, in balance with the need to improve biodiversity”

Introduction

This Management Plan for Charlton's Pond was initially prepared by Stockton-on-Tees Borough Council in October 2007 and has the following key aims:

- To demonstrate a structured, methodical and professional approach to the management, maintenance and stewardship of Charlton's Pond
- To ensure that Charlton's Pond provides opportunities for recreation and the promotion of healthy lifestyles.
- To develop educational use of Charlton's Pond
- To conserve wildlife in Charlton's Pond and increase biodiversity.
- To manage Charlton's Pond for conservation and recreation in keeping with policies prescribed by the Environment Agency and other external organisations.
- To encourage community involvement and define common objectives.
- To inform and guide present and future managers and their staff and ensure continuity
- To monitor and assess change on site.
- To assist in bidding for funds.

The Role of the Plan

This plan describes Charlton's Pond and evaluates it as a Local Nature Reserve (LNR). It sets out objectives for management and identifies a five-year work programme.

With appropriate management the value of the site as a nature reserve will be maximised while still allowing recreational pursuits to take place.

1. Background information and Site Description

Local Nature Reserves (LNRs) form a key component to Stockton's green infrastructure network and as such are of vital importance in relation to biodiversity and the movement of species from one area to another.

The area of the Charlton's pond is predominantly water and is made up of two water bodies, a large and a small pond covering approximately 8 ha in total. The remaining area comprises approximately 3.6 ha of woodland, scrub and grassland. All of the land is owned by Stockton on Tees Borough Council and is under the jurisdiction of Development and Neighbourhood Services. Fig.1 shows the location of Charlton's Pond and its boundary.

The site is important in a local context as it is used for informal recreation and angling. Part of the site (approximately quarter of an acre) has been fenced off and designated a bird sanctuary since 15th April 1968 and all of the area was declared a Local Nature Reserve on February 20th 2004.

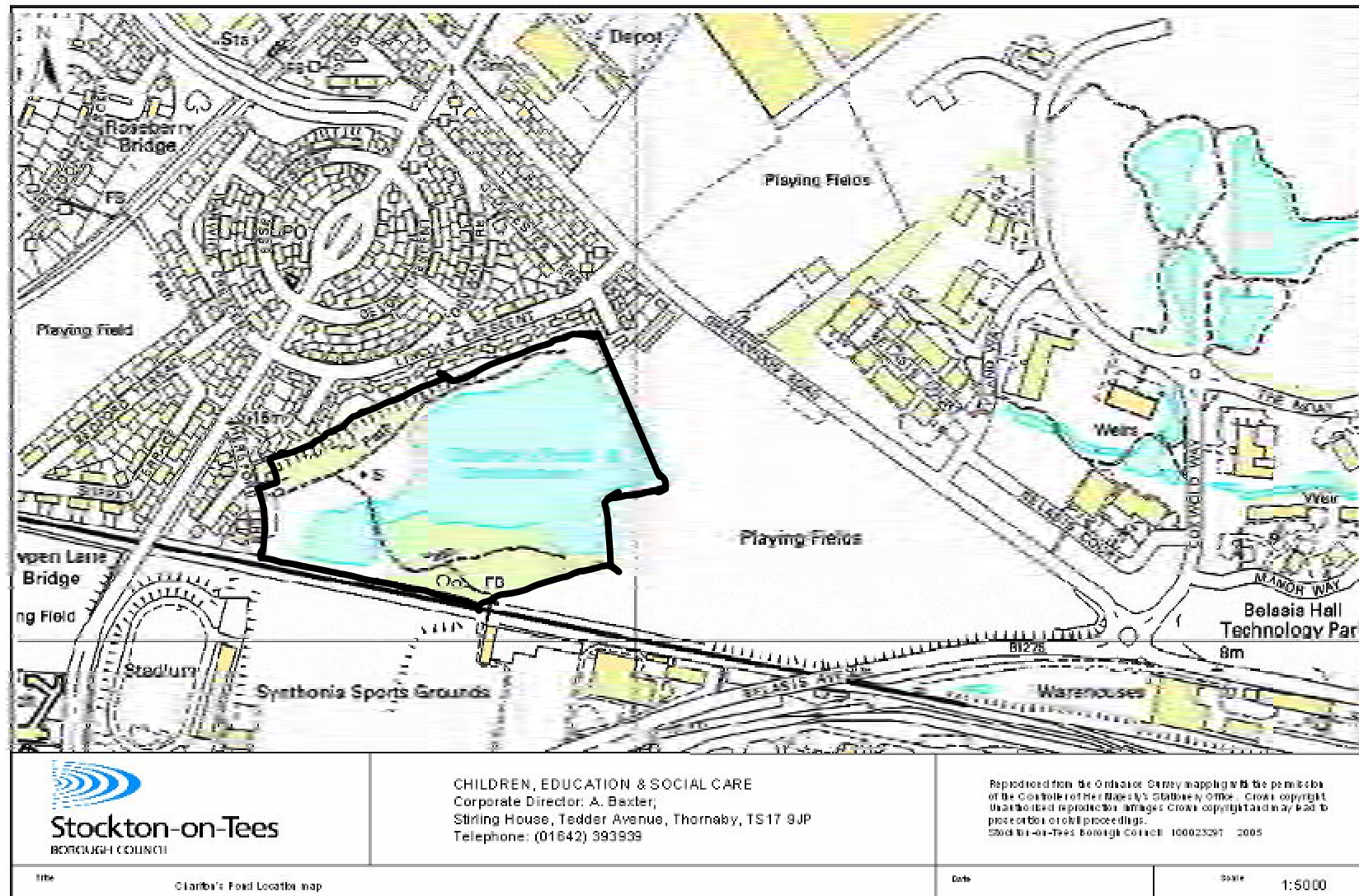
1.1 Location and Access

Charlton's Pond is situated between the B1275 Belasis Avenue road and Cowpen Lane, Billingham (OS Grid Ref. NZ 467 232). Access to the site by car and also by foot can be gained by following Hereford Terrace from Cowpen Lane.

Lincoln Crescent and Hereford Terrace form boundaries to the west and north respectively. To the south is a rail line that was used to transport materials from Haverton Hill shipyard and from the neighbouring chemical plant. To the east of the site is an area that was formerly used as a golf course and is the subject of a proposed park development.

A series of surfaced and un-surfaced paths can be found around the site; benches and bins are also provided. The recent resurfacing of the car park area and some of the path network has enhanced these facilities.

Fig 1. Charlton's Pond Location Map and Boundary



1.2 History

Mr Nial Charlton described the first recorded history of the area known as Charlton's Pond in 1969. This was an article for the newsletter of The Northumberland and Durham Naturalist Trust. This article described the land being leased from the Dean and Chapter of Durham for the purpose of clay extraction for local brick manufacture. However, springs flooded the workings and they were subsequently abandoned early in the 20th Century.

In 1912 Mr. Nial Charlton's father leased the land from the Dean and Chapter of Durham for 20 years at a cost of 10 shillings per year principally to pursue angling as the large pond had been stocked, by Mr. Charlton and his associate, Major Tristram, with 250 2-year old Loch Leven trout.

In 1930 Billingham Urban Council began to build the neighbouring Cowpen housing estate and in 1938 asked the Dean and Chapter of Durham to erect a perimeter fence around the ponds to prevent any child from potentially falling into the water bodies. At this point the land was offered to the council who accepted it as an amenity.

The land was again left to the local wildlife and during the Second World War stale bread from the Circle Bakery in Haverton Hill was used to feed the birds. In 1964-65 the council fenced off the eastern end of the large pond so that it would restrict access in order to keep it free from disturbance.

On April 3rd 1968 the then Home Secretary made a statutory order declaring Charlton's Pond a bird sanctuary and the area became the first nature reserve of any description on Teesside. On February 20th 2004 Charlton's Pond was given its designation as a Local Nature Reserve.

In more recent times a substantial amount of funding has been achieved to develop the features and facilities of the site. In 2004 the small pond was drained and de-silted and restocked with fish. In 2006 floating islands were placed in both ponds that have the dual purpose of providing vegetative cover above the water surface and a cage with small openings for juvenile fish to enter below the water surface.

1.3 Management Structure

The management of the Reserve is undertaken by Direct Services, a division within Development and Neighbourhood services department.

The strategic management of the reserve is the responsibility of the Countryside and Greenspace Officer whilst the daily management of the site falls under the remit of the Care For Your Area (CFYA) Officer for Parks and Countryside.

The council's team of Rangers undertakes daily management operations at the site, including regular maintenance, community liaison, school visits etc. Water bailiffs also patrol the area on a daily basis and have incorporated general site maintenance, e.g. litter picking, into their duties.

The strategy team works in partnership on how to develop the site, raise funding etc.

1.4 Strategies Relevant to the Management Plan

Stockton-on-Tees Local Agenda 21 Strategy

Environmental Objective No.2	To protect and enhance the wildlife habitats and the diversity of species throughout the Borough'
------------------------------	---

Stockton-on-Tees Local Plan/Local Development Framework

Objective 1	Policy EN2 states that, Development in LNRs will not be permitted if it would be harmful to the elements giving rise to their designation.
-------------	--

Tees Valley Green Infrastructure Plan	Sets out the intention of linking up areas of greenspace of which LNRs are a component of this vision.
---------------------------------------	--

Stockton-on-Tees Key Service Improvement Objectives

Objective 2	Improve the health of children in the borough
-------------	---

Objective 10	Improve the health of the borough
Objective 13	Respond to residents concerns and fears of crime and anti-social behaviour.
Objective 21	Maintain cleanliness and improve quality of open spaces.
Objective 23	Improve the quality of life for future generations through environmental sustainability.
Objective 27	Promote more cohesive communities

Stockton Renaissance Community Strategy

Liveability Theme 3	Create a better environment
Liveability Theme 4	Maintain the cleanliness of streets and open spaces.
Liveability Theme 5	Promote inclusive communities.
Safer Communities Theme 1	Reduce deliberate fires
Safer Communities Theme 3	Reduce anti-social behaviour
Children and Young People Theme 4	Increase opportunities for young people to participate in activities outside of school
Healthy Communities Theme 1	Reduce health inequalities within the borough

Tees Valley and UK Biodiversity Action Plans

Natural England For People, Places and Nature

2. CURRENT MANAGEMENT

2.1 Administrative Details

Angling is allowed on the site, with the exception of the bird sanctuary, the fishing rights being held by The Billingham Sportsman Angling Club with the duration of their lease being ten years and from year to year thereafter. A copy of the lease is held in the Cowpen Bewley Woodland Park site office and is operational from 1st April 2005.

Presently there are no byelaws associated with the site although there is protection for the bird sanctuary in the form of The Wild Birds (Charlton's Pond Sanctuary) Order 1968. A copy of the order is held in the Cowpen Bewley Woodland Park site office. However, byelaws are currently being drafted for all of Stockton Borough Council's LNRs and will be incorporated into the management plan once they have been adopted.

There are no constraints on management, e.g. soil contamination, tenancies or separately owned mineral rights.

2.2 Grounds Maintenance and Cleansing

All grounds maintenance in the borough of Stockton is now undertaken through an in-house service provider situated in the Direct Services section of the Development and Neighbourhood Services Department.

Grass Cutting Regimes

Prior to the commencement of grass cutting on any site operators collect and remove from site items of glass, paper, cardboard, stones, tins and any other debris. Large accumulations of litter, fly tipping etc, are reported at the end of each working day to the cleansing office and removed accordingly.

Any cuttings, which fly or are carried onto paths, roads or other hard surfaces, are brushed off the surface back onto the grassed area by the end of every working day.

In general, all grass cutting is carried out from the third week in March to the second week in October - approximately every 14 calendar days, or as weather permits.

All machines engaged in grass cutting operations are sharp and properly set, so as to produce a true and even cut.

During the period of the contract, no growth regulators of any form are applied to any grassed area.

Mowing is carried out as close as possible to fixed obstructions, movable obstructions are removed to facilitate cutting and replaced before the leaving the site.

Mowing / strimming around obstructions and in the proximity of margins is undertaken at the same standard and frequency as that applied to the main area using methods, tools and machines as appropriate. The cutting of such areas is undertaken within 1 working day of the cutting of main areas.

In certain areas, where flowering bulbs have been planted or have become naturalized. The grass is left uncut until the fourth week in May or as recent weather conditions dictate.

Cleansing

All staff responsible for the daily management, maintenance and development of Charlton's Pond accepts that removing litter is their common responsibility. It is the aim of the Care For Your Area team to remove instances of fly tipping within 24 hours

Presently there are 2 dog bins and 4 litterbins on site and these facilities will be added to and improved upon with the installation of picnic tables for both able bodied and disabled users. It is envisaged that recycle bins will be installed at the site in the near future. This will encourage greater use of the area and create a safer and cleaner environment for all users.

Under the Dogs fouling of Land Act 1996, it is an offence for the owner or keeper of a dog to allow it to foul in a public place. Stockton Borough Council's Animal Welfare Officers are empowered to give out spot fines to people allowing their dogs to foul in public areas. When their duties allow, the officers patrol Charlton's Pond in an enforcement role.

Reports of graffiti will be removed within 5 working days, however Care For Your Area will endeavour to remove racially abusive graffiti within 24 hours of reporting.

2.3 Inspection and Maintenance of Tree Stock

Objectives

The main objective of the Council's tree management is to undertake regular inspections of all tree stock within its ownership and to undertake an ongoing programme of essential maintenance works.

This will include systematically inspecting trees and programming arboricultural works that ensure trees are maintained in satisfactory health and condition and do not incur an unreasonable level of nuisance to members of the public and local community.

Arboricultural operations will also be aimed at maintaining and enhancing the amenity value of the local 'Urban forest' for the benefit of the local community and area.

Tree work recommendations

Work prescriptions will be given for individual trees to ensure they are maintained in satisfactory health and condition and do not cause unreasonable interference with adjoining land use or cause legal nuisances, e.g. trees will be pruned to maintain adequate clearance from built structures, highways and rights of way, road signage etc and in such a way as to minimise or prevent unreasonable interference with private property, access, utilities etc.

Consideration will also be given to the long term management of trees in their location in respect of the tree species and its suitability for long term retention (e.g. potential size/characteristics of the type of tree/maintenance requirements).

(Where trees are removed for arboricultural purposes they will normally be replaced on a 1 for 1 basis – see separate document/s).

Tree work recommendations will be given in accord with all legal duties and requirements and in accord with up to date research and arboricultural best practices.

All arboricultural works will be undertaken competently and safely through the Council's Arboricultural Contract - all operations will be undertaken in accord with up to date recognised best practices and legislation, (e.g. Health

and Safety at Work Act 1974; BS 3998; ISA European Tree Pruning Guide; AFAG).

Completed works will be monitored/assessed by the Arboricultural Staff to ensure compliance with the contract specification.

2.4 Health and Safety

The site follows the Health And Safety Policies of Stockton Borough Council. This includes following the Health and Safety at Work Act. There are also policies specifically for:

- Risk assessments (staff trained in writing and assessing)
- COSHH Assessments (staff trained in writing and assessing)
- First Aid (staff trained in first aid at work, and first aid facilities kept in building and taken out on site when working with volunteers)
- Incident reporting (Department procedures followed)
- Lone working (Risk Assessments carried out for this)

Stockton Borough Council staff are provided with all appropriate Personal Protective Equipment (PPE) to carry out their work. These include basic items such as waterproof coats, fluorescent tabards, safety footwear, Wellingtons and safety helmets. Site-based volunteers are able to utilise the lock up situated at Charlton's Pond. This is used for storing tools and provides the volunteers with shelter, if required, during bad weather.

Volunteers are instructed to tackle basic duties only, e.g. litter-picking, painting and cutting back vegetation adjacent to paths. They are trained in the proper use and maintenance of any hand tools. SBC's site-based volunteers have also been trained in basic First Aid duties. In no way is it expected of volunteers to tackle more serious issues such as fallen tree limbs, rescuing wildlife from ponds etc. In such circumstances they are instructed to contact a member of the Parks and Countryside team who will then deal with the issue themselves or will contact the appropriate SBC personnel.

Should any anti-social behaviour occur from members of the angling club, they will be warned about their behaviour and barred from the club should such behaviour persist.

All angling members are given a copy of the club's rules and any breaches of these will incur action pertinent to the level of behaviour reported.

The Ponds risk assessment can be found in the appendix - with others, such as lone working, horticultural operations etc held at the CFYA office.

2.5 Usage

The area is used by local residents who make use of the existing path network and additionally to walk their dogs. The area's open space is used for recreational purposes whilst a number of fishing bays have been created around the small and large ponds, as these areas are popular with local anglers.

The Angling Club run approximately 17 fishing competitions each year. The competitions are for all age ranges including children, juniors and adults. Angling classes for young children are also provided via the Environment Agency's Hooked on Fishing initiative. In addition to providing tuition in the correct procedures for angling, this initiative is also very useful with regards to teaching youngsters to respect their environment.

3. SITE DESCRIPTION

3.1. Charlton's Pond

For management purposes the area has been divided into several different compartments, which are identified on Fig.2. The following section investigates the character of the area in more detail.

Charlton's Pond contains components of woodland, scrub, amenity grassland and aquatic environments. The small pond is circular in shape and is approximately 64 metres at its widest point. The large pond is also roughly circular in shape and is approximately 198 metres at its widest point.

Many surveys have taken place at the site over the years mainly by the Cleveland Naturalists Field Club. These have included plants, both terrestrial and aquatic, birds (primarily waterfowl) and invertebrates. A list of flora and fauna that has been recorded at the site is available in the appendices.

3.2 Compartments

To retain some order of continuity with previous management plans, the compartments noted here (see Fig.2) are as they have been previously. From a management perspective the main areas of the site are as follows: -

- The paths, car park and public facilities on the site.
- The amenity grassland (Compartment A), woodland areas (Compartments B & D), scrub area (Compartment C).
- The bird sanctuary (Compartment E).
- The small (Compartment F) and large ponds (Compartment G).

The flora for each compartment has been noted and can be found in Appendix

4. Physical Attributes

4.1 Climate

The Billingham area experiences a relatively cool climate due in main to its close proximity to the east coast and the cooling nature of its onshore winds. Charlton's Pond however, is afforded some shelter by nearby housing, therefore, making the cooling conditions slightly less noticeable. Due to the close proximity of various chemical manufacturing industries, and the general industrial nature of the nearby area, it is expected that higher than average levels of atmospheric pollutants will be evident.

4.2 Hydrology

The lake and adjoining pond on the site are largely rain fed with the heavy clay soil acting as a natural liner. There is also a natural spring that caused the quarrying operations to cease.

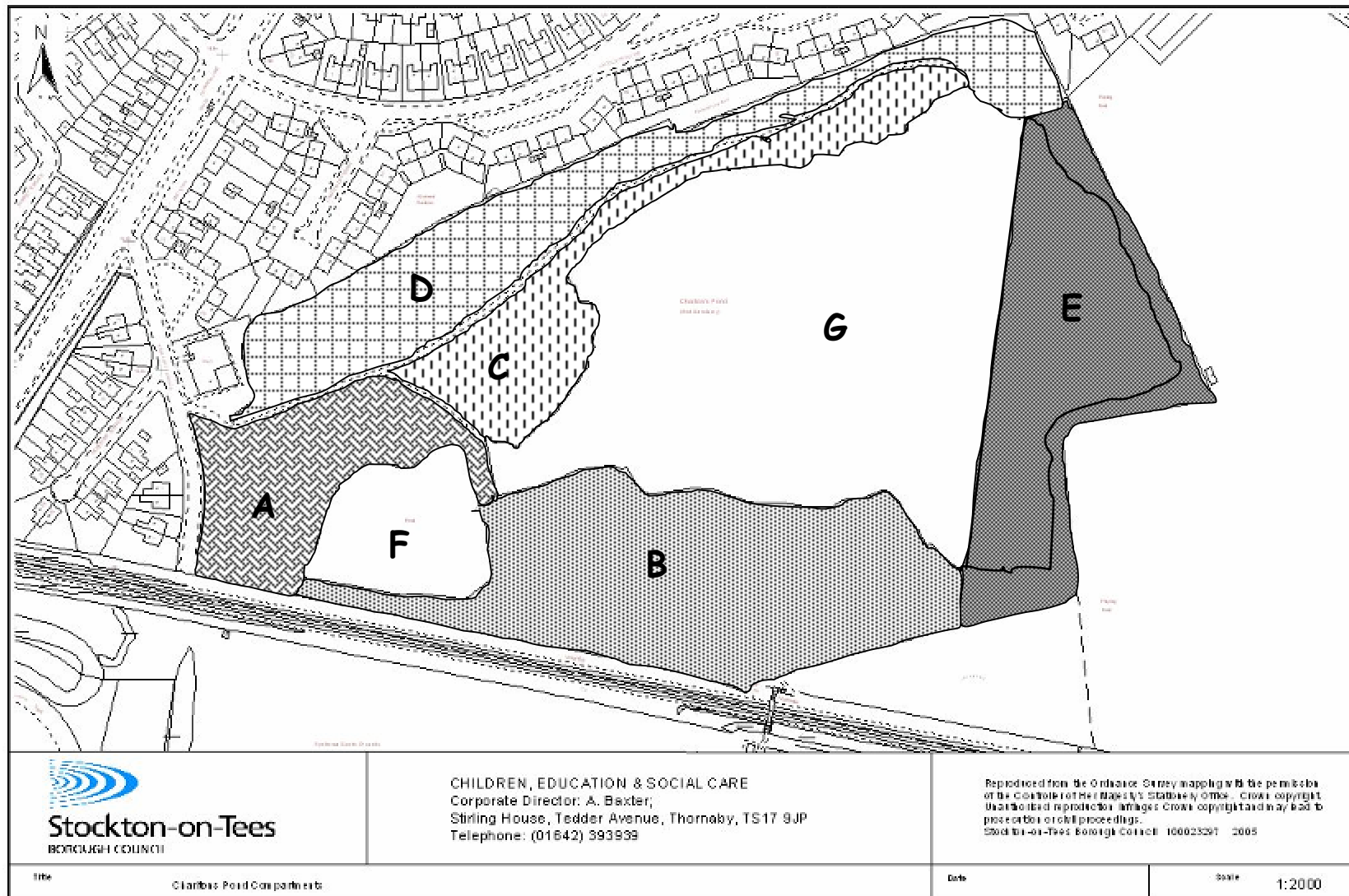
4.3 Geology

The solid geology that underlies this area is Sherwood Sandstone. This is heavily masked by glacial deposits of laminated clay laid down during the advance of ice sheets approximately 20-30,000 years ago. (Information from the B.G.S solid and drift geology map 1987, 1:50 000).

4.4 Soils/substrates

The soil is generally heavy clay in composition due to the glacial deposits detailed above.

Fig.2. Charlton's Pond Compartments



5. Biological

5.1. Flora

Survey work has been carried out on the flora of this area, identifying 145 species of trees, plants and grasses. Although no great rarities were found a good diversity of flora is present. Mosses and Fungi have also been studied with ten and nine species being recorded respectively. The most significant find was *Pottia bryoides*, a type of moss which, when first noted in January 1992, was the only known record for the plant in Cleveland and Co. Durham. However, this has since been noted in fields in the Wolviston area. A list of the flora can be found in Appendix 1.

5.2. Fauna

Mammals

A number of mammals have been sighted around the site although none of these could be considered noteworthy.

Water vole has been reported from the site in the past, but there are no recent records of their presence on the site. Any presence of water voles would be significant, as numbers of this species have declined throughout the country. Water Vole is also a UK Biodiversity Action Plan Priority Species. See Appendix 2 for species list.

Birds

Bird records have been made for at least 23 years on site. Systematic recording was carried out by the Teemouth Bird Club from 1981 until 1990. Since then record keeping has been on a more informal basis. A bird survey of the woodland and scrub areas of the site was undertaken in 2006 as many of the previous surveys have concentrated on the pond areas.

121 species have been recorded in total. The most unusual record being a Double Crested Cormorant in 1989 (the first recorded in Europe). Great Crested Grebes have produced regular young since 1980. Up to 40 Common Terns use a raft on the large pond and usually produce about 18 young between them annually. Mute Swans are also regular breeders on the lake. See Appendix 2 for species lists and details of Red Data Book and Biodiversity Action Plan species.

Amphibians

Common Frog and Common Toad regularly breed on the site. Smooth newt has also been seen in Compartment D.

Fish

A wide variety of coarse fish have been introduced over the years. See Appendix 2 and 3 for details.

Lepidoptera

No in depth butterfly and moth surveys have taken place but a steady increase in diversity has been recorded. See Appendix 2 for species list.

Odonata

Four species of dragonfly and damselfly have been recorded, see Appendix 2 for species list.

Other Invertebrates

In July 1993 Dr. A.A. Wardaugh from the then Cleveland Wildlife Trust conducted a specialist survey of molluscs and recorded 15 species. No other terrestrial invertebrate surveys have taken place. An aquatic invertebrate survey (May 1998) identified 14 species. See Appendix 2 for species list.

6. Public Benefit and Use

6.1. Recreation

Charlton's Pond is used for both informal and formal recreation. The former, principally bird watching and dog walking. Angling represents a more formal use of the site with a local angling club controlling the rights to both ponds. Local school groups occasionally use the area as an educational resource.

6.2. Community Involvement

Regular liaison with Cowpen Residents Association on management issues is undertaken. Additionally, members of the local community operate as bailiffs and help maintain the site to a very good standard. In the past such work has been recognised by Stockton Borough Council with the presentation of awards from the Care For Your Area section.

There have been many, well attended events organised by Stockton Borough Council's Parks and Countryside section and this will continue into the foreseeable future. The angling club also hosts many fishing competitions throughout the year that always prove popular (see section 2.5).

Billingham in Partnership are working with Stockton Borough Council to formulate the Billingham Environmental Link Project (BELK) that will enable children from the area to visit Charlton's Pond and other nearby countryside sites to compare the habitats of the different areas and the wildlife they attract. The BELK project also hopes to link up these various sites by means of a footpath/cycleway. Thereby contributing to healthier, more sustainable modes of transport for local residents.

Billingham in Partnership are also working alongside Stockton Borough Council with regard to the installation of fishing pegs for wheelchair users on the large pond. Students have been approached from Stockton Riverside College with the purpose of the students designing these fishing pegs. These pegs will, of course, satisfy all Health & Safety legislation and will be based on all relevant Health & Safety criteria.

7. Management Objectives

Due to the conflict of interests of some parties that use the site, e.g. fishing and conservation, it is important that all needs are catered for wherever possible. With this in mind the following objectives have been identified and will assist in the site realising more of its potential.

- Maintain good access to the site and, wherever possible, improve upon the existing path network and facilities available on site.
- Provide a safe environment for the public.
- Protect the area as a haven for wildlife.
- Raise biodiversity in the area.
- Increase the number and variety of native tree species.
- Continue to create and improve links with the local community.
- Manage the area sympathetically to accommodate the requirements of the neighbouring residents wherever possible.
- Maximise opportunities for schools and other groups to use the area as an environmental resource.
- Eradicate Japanese Knotweed from Compartment C
- Take into consideration the potential impact of climate change on flora and fauna.

8. Implementation

8.1 Improving access

At present there is a linear path network that would benefit from being made into a circular footpath. Therefore enabling a complete walk around the large pond and indeed around the whole site. At present this is not possible due to areas at the northeast and southeast of the site being fenced off because of the bird sanctuary. However, in the near future it is envisaged that additional land to the east of the site will become available and at which point a footpath could be created to go around the perimeter of the bird sanctuary without encroaching into the sanctuary itself.

Encroaching vegetation along all footpaths should be cut back throughout the growing period particularly where the vegetation consists of thistles, thorns and nettles and is in the vicinity of seating.

Vegetation in Compartment B is principally of the above mentioned plant species and would benefit from their eradication. Planting with under canopy and woodland species, such as Red Valerian and Wood Anemone would greatly improve access in this area of the site.

8.2 Provide a safe environment.

Any trees in a dangerous condition will be inspected and if necessary cut back or felled by either Stockton Borough Council's countryside rangers or arboricultural service. Any trees that are replaced will be native species only, in order to help increase biodiversity at the site. Dead trees will be allowed to remain in position unless they pose a danger to members of the public. This is to create a potential habitat for invertebrates, bats and birds such as woodpeckers, owls etc.

8.3 Protect the area as a haven for wildlife.

Having attained Local Nature Reserve status in 2004, Stockton Borough Council is demonstrating its commitment to protecting this area for future generations to enjoy. The Council is also demonstrating that no inappropriate development or uses will take place at the site and that it is committed to managing the land in an appropriate manner for the benefit to wildlife and the local community.

8.4 Raise biodiversity in the area

In addition to examples mentioned above, e.g. the planting of native trees and eradicating invasive plant species, biodiversity of the area can be further enhanced by the installation of bird, bat and insect boxes. This would also provide opportunities for community involvement and environmental education for local schools.

An up to date flora and fauna survey would also be beneficial and would provide indicators as to the ecology of the area and whether or not any specific management is required for any species of note.

The tern raft is an artificial structure but it has served its purpose - it was launched in 1985 (although a raft was first introduced in 1970) and up to 40 common terns use the raft and produce around 18 young each year. It was anticipated that the Tern raft would be starting to disintegrate due to the length of time of its operation and so a new raft was constructed to replace this in 2007.

Cages have been incorporated into floating eco-islands that are present in both the large and small ponds and have achieved great success. The cages serve the purpose of providing refuge for small fish if they are being predated.

The ponds will need to be maintained in a condition that is favourable to both the angling club and to the wildlife they support. With this in mind, invasive aquatic plant species such as Spiked Water-milfoil (*Myriophyllum spicatum*) and blanket weed will need to be monitored and controlled if required as this species causes silting up of the water body. If herbicide applications are deemed appropriate for such control then the Environment Agency will need to be informed and associated approval sought before commencement of such action. If the vegetation is removed with hand tools, e.g. chromes, the vegetation will need to be left in place by the side of the water for at least 24 hours so that any organisms that are present in the vegetation will be able to return to the water.

Bird cover around the pond edges can be achieved by encouraging sedges and rushes to flourish with the exception of Common Reedmace which can become very invasive if allowed to grow unchecked.

Vegetation in the bird sanctuary is to be allowed to grow unhindered, as this will provide more suitable cover for the bird species that utilise this area. The fencing that restricts access to the bird sanctuary will also need to be

monitored to ensure it is in a safe and well-maintained condition as public access to this area is restricted.

8.5 Increase the number and variety of native tree species

The number and variety of native tree species can be improved on by identifying areas that are both suitable and have the necessary space for tree planting activities to occur. There are quite a few Poplar species present at Charlton's Pond (see species list in Appendix 1) and this species tends to be prone to falling due to its shallow roots and susceptibility to drought. When this occurs a sturdier species should be planted that is more beneficial to wildlife such as Oak and Ash.

Under-planting the main tree canopy with scrub species will also be beneficial to wildlife and give the woodland areas more structure. This can be achieved by planting species such as Hawthorn, Elder and Hazel all of which provide food for bird and mammal species.

8.6 Create and improve links with the local community

Links with the local community has already occurred to some degree although there is always scope for this to be enhanced. School visits have already taken place as has community-based events both here and at other Local Nature Reserves in Stockton. The eradication of rank vegetation and the enhancement of compartment B will also provide opportunities for community participation, e.g. the planting of wildflowers and the making of bird boxes etc.

Some activities are somewhat restricted in that the lack of toilet facilities and shelter from wet weather at Charlton's Pond mean that only very local schools and people are able to access them. With two other countryside sites nearby (Billingham Beck Valley Country Park and Cowpen Bewley Woodland Park) with similar features and more facilities available, merely compounds the situation. When community-based events have occurred in the past, portable toilets have been employed to overcome this barrier.

As the site is situated in an urban area the need to accommodate the wishes of the neighbouring community is important. It is evident that the local community enjoy having a facility such as Charlton's Pond nearby with many people coming into the LNR to enjoy a leisurely stroll or to come into contact with nature. This relationship needs to be continued so that the experience visitors receive from their visit is maximised.

8.7 Manage the area sympathetically to accommodate the requirements of the neighbouring residents.

As the site is situated in an urban setting, the needs of the local community should be taken into consideration whenever possible. This is especially relevant to members of the public whose property is adjacent to Charlton's Pond. Therefore, any vegetation that is encroaching onto boundary fences should be cut back so as not to push against the fence and potentially compromises the fence's purpose. A certain amount of vegetation left in place would be desirable, as this would prevent anti-social behaviour taking place at the rear of properties.

8.8 Educational/Environmental value of the site.

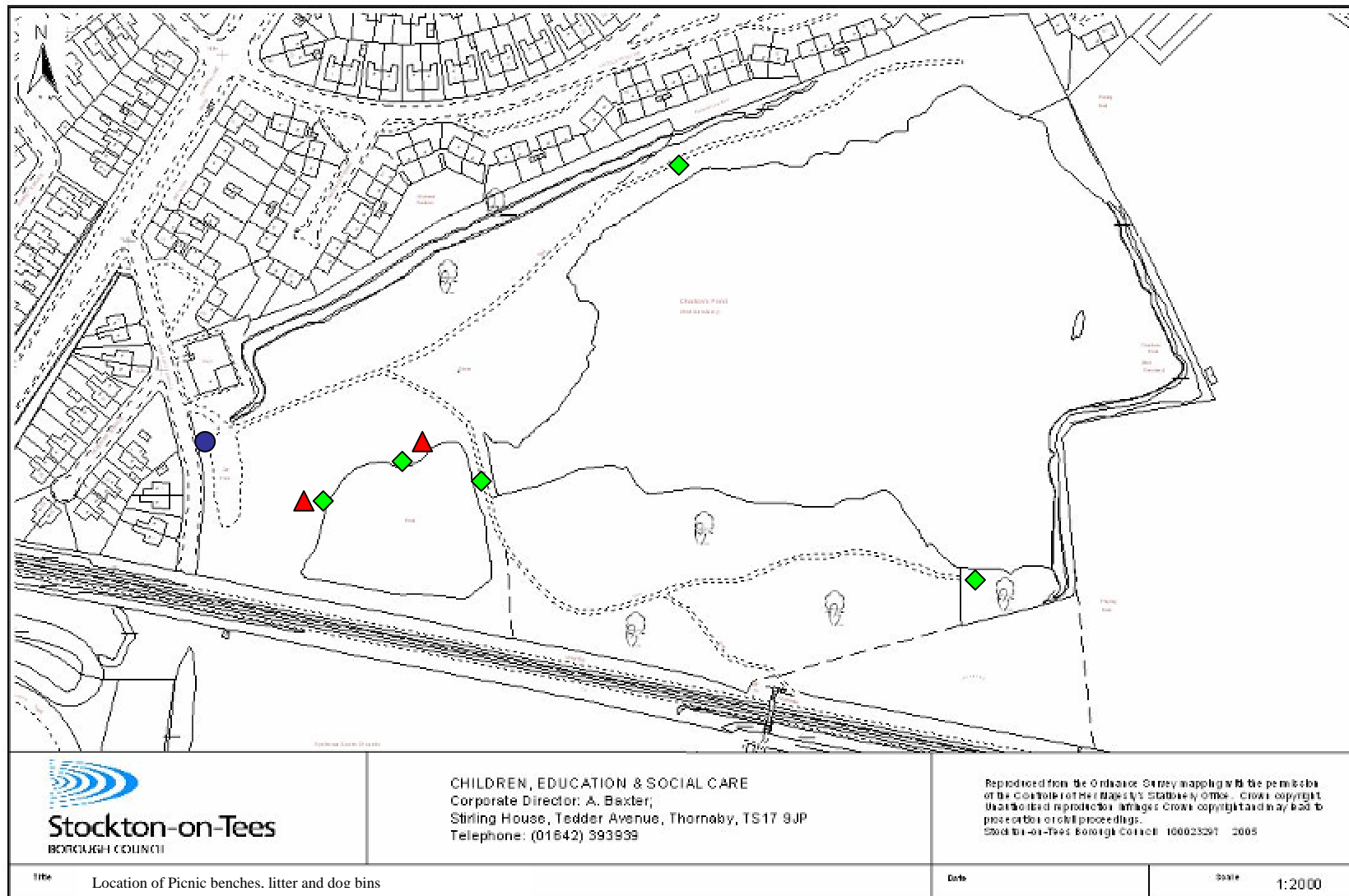
As previously noted, the value of the site with regard to its natural features is incontestable. There is also much value with regard to the sites historical element. There is plenty of scope for students to tailor research opportunities to any area of the natural environment that interests them.

Younger students may benefit from an education pack being produced that will direct them to particular areas of interest and will assist in achieving targets in the national curriculum and in particular Key Stages 1, 2 and 3.

An Interpretation panel will also be installed in a notice board in Compartment A to explain to visitors a little about the sites history and how it has developed over the years.

A site leaflet will be produced that will encourage people to visit and experience the site and effectively raise the profile of Charlton's Pond to the wider community.

Fig.3. Location of Recycling Bins and picnic tables etc



● = Recycling Bins ▲ = Picnic Benches ◆ = Bench

8.9 Eradicate Japanese Knotweed from Compartment C

The growth of Japanese Knotweed in this compartment needs to be eradicated before further spread occurs. This non-native species grows in dense stands that make it very difficult for native species to grow amongst it. Additionally the plant is of little benefit to macro-invertebrates and other organisms that are unable to utilise its cover or nutrients. It is worth mentioning that it is an offence under the Wildlife and Countryside Act (Part II Schedule 9) to plant Japanese Knotweed (Pic1.) or cause it to grow in the wild. Therefore, knowledge of the plant's habit in this country gives hints as to how to tackle this species.



Pic.1 Japanese Knotweed in flower

The seeds of Japanese Knotweed are not viable in the UK; all plants recorded so far have been female whilst all male plants are hybrids with

species such as Giant Knotweed. The plant is spread vegetatively and as little as 10mm or 0.7g of the rhizome (Pics2 and 3.) will produce a new plant.



Pic.2 Lateral view of Knotweed rhizome



Pic.3 Cross-section of rhizome

Identification of this plant both during the growth and dormant stages are of the utmost importance and a few tests can be employed to assist with this. Older rhizome tends to break quite readily and one method to determine if a rhizome is Japanese Knotweed or not is to perform a snap test. The rhizome of Japanese Knotweed snaps like a carrot and has a very similar colour to this vegetable when first broken. This is in contrast to species such as dock, which has a tendency to tear along its length and is slightly paler.

Eradication can be achieved via numerous methods both chemical and mechanical and at Charlton's Pond it is thought a combination of both techniques will achieve more positive and rapid results (see Appendix 4 for guidelines).

Reference: Environment Agency (2006) Managing Japanese Knotweed on Development Sites. The Knotweed code of practice. Environment Agency Publications

8.10. Take into consideration the potential impact of climate change on flora and fauna.

Climate change will undoubtedly have some form of impact on species composition and therefore also needs to be taken into consideration. More drought resistant native tree species may need to be planted or the location of species with particular requirements may be altered, e.g. particular species of trees could be planted closer to waterways so that they receive an adequate water supply all year round etc.

As mentioned above, a full ongoing ecological survey would help to identify shifts in species assemblage and the northerly migration of historically southern species that are linked to climate change. Butterflies are a useful tool in this respect and both the Comma and, more recently, the Speckled Wood butterflies are now resident in this area as a consequence of a warmer climate.

8.11 Work Programme

Charlton's Pond Work Programme 2008 - 2012

	2008					2009					2010					2011					2012				
Compartment	Spring	Summer	Autumn	Winter	Completed	Spring	Summer	Autumn	Winter	Completed	Spring	Summer	Autumn	Winter	Completed	Spring	Summer	Autumn	Winter	Completed	Spring	Summer	Autumn	Winter	Completed
Ponds (Compartments F and G)																									
Control excessive growth of Spiked Water-milfoil and other invasive species as required	✓		✓			✓		✓			✓		✓			✓		✓			✓		✓		
Remove blanket weed from large pond as required	✓	✓	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓		
Remove reedmace <i>Typha latifolia</i> from stands of bur reed <i>Sparganium erectum</i> as required			✓					✓					✓					✓					✓		

	2008					2009					2010					2011					2012				
	S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W	
Woodlands (Compartments B, C and D)																									
Remove broken branches from damaged poplars as required	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	
Cut back willow from around fishing pegs as necessary				✓					✓				✓					✓					✓		
Remove small trees/saplings from around the edge of the small pond				✓					✓				✓					✓					✓		
Allow seasonal pond to infill to demonstrate pond succession (comp D)											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Eradicate nettles from Comp B and introduce other woodland plants, e.g. Red Campion, Foxglove etc						✓	✓	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓		
Plant woodland bulbs in Compartment B								✓					✓					✓					✓		

	2008					2009					2010					2011					2012				
	S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W	
Begin coppice rotation of hawthorn hedge				2-3 trees										2-3 trees										2-3 trees	
Grassland/Other Vegetation (Compartments A, B and C)																									
Cut amenity grassland on fortnightly basis	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓		
Strim along footpaths	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓		
Eradicate Japanese Hogweed	Cut	Spray	Cut			Cut	Spray	Cut			Cut	Spray	Cut			Cut	Spray	Cut			Cut	Spray	Cut		
Bird Sanctuary (Compartment E)																									
Monitor condition of Tern Raft and repair/replace as necessary				✓	✓	✓			✓		✓			✓		✓			✓		✓			✓	
Monitor numbers of Terns using raft and their breeding success	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓		
Maintain fence in good repair	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	
Public Access																									

	2008					2009					2010					2011					2012				
	S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W	
Maintain footpaths and car park to a good standard	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	
Ensure no obstacles hinder footpath use	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	
Install picnic tables in Compartments A and B		✓	✓		✓																				
Install litter and dog bins in Compartments A and C		✓	✓		✓																				
General Maintenance																									
Infrastructure to be inspected and repaired as and when necessary, e.g. seating, bins, gates and fencing	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	
Litter-picking to be carried out on a continual basis and rubbish taken away	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	

	2008					2009					2010					2011					2012				
Events																									
	S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W		S	S	A	W	
Provide 3 public events throughout course of the year	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓			✓	✓	✓			✓	✓	✓		

APPENDIX LIST

APPENDIX ONE

CHARLTON'S POND – FLORA

TABLE 1 Vascular Plants

TABLE 2 Fungi

TABLE 3 Mosses

APPENDIX TWO

CHARLTON'S POND – FAUNA

TABLE 1 Mammals

TABLE 2 Terrestrial Molluscs

TABLE 3 Amphibians

TABLE 4 Lepidoptera

TABLE 5 Dragonflies

TABLE 6 Fish

TABLE 7 Freshwater Invertebrates

TABLE 8 Birds

APPENDIX THREE

FISH STOCKING RECORDS

APPENDIX FOUR

TREATMENT OF JAPANESE KNOTWEED

APPENDIX FIVE

POND RISK ASSESSMENT

APPENDIX ONE CHARLTON'S POND FLORA

TABLE 1 Vascular Plants

Common Name	Scientific Name	Compartment location
ALDER COMMON	<i>Alnus glutinosa</i>	A C D
ALDER GREY	<i>Alnus incana</i>	C D
ALDER ITALIAN	<i>Alnus cordata</i>	C D
AMPHIBIOUS BISTORT	<i>Persicaria amphibia</i>	D
ASH	<i>Fraxinus excelsior</i>	B C D
BARLEY WILD	<i>Hordeum murinum</i>	A B C D
BEECH	<i>Fagus sylvatica</i>	A D
BENT CREEPING	<i>Agrostis stolonifera</i>	A B C D
BINDWEED	<i>Calystegia sepium</i>	C
BINDWEED GREATER	<i>Calystegia silvatica</i>	B C D
BITTERSWEET	<i>Solanum dulcamara</i>	D
BLACKTHORN	<i>Prunus spinosa</i>	B D
BLUEBELL	<i>Hyacinthoides non-scripta</i> and <i>H. hispanica</i>	C
BRAMBLE	<i>Rubus fruticosus</i> agg.	A B C D
BRANCHED BUR-REED	<i>Sparganium erectum</i>	C
BROME BARREN	<i>Bromus sterilis</i>	A C D
BROME SOFT	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	A
BULRUSH	<i>Typha latifolia</i>	A B E F G
BURDOCK LESSER	<i>Arctium minus</i>	A B D
BUTTERCUP CREEPING	<i>Ranunculus repens</i>	A C D
CAMPION RED	<i>Silene dioica</i>	D
CAMPION WHITE	<i>Silene alba</i>	B
CANADIAN PONDWEED	<i>Elodea canadensis</i>	F G
CAT'S EAR COMMON	<i>Hypochaeris radicata</i>	A
CAT'S-TAIL SMALLER	<i>Phleum bertolonii</i>	C
CELANDINE LESSER	<i>Ranunculus ficaria</i>	D
CHERRY WILD	<i>Prunus avium</i>	B
CHICKWEED COMMON	<i>Stellaria media</i>	A
CICELY SWEET	<i>Myrrhis odorata</i>	D
CINQUEFOIL CREEPING	<i>Potentilla reptans</i>	D
CLEAVERS	<i>Galium aparine</i>	A B C D
CLOVER WHITE	<i>Trifolium repens</i>	A B C D
COCKS-FOOT	<i>Dactylis glomerata</i>	A B C D
COLT'S FOOT	<i>Tussilago farfara</i>	B C D
COTONEASTER TREE	<i>Cotoneaster frigidus</i>	A B
COUCH COMMON	<i>Elymus repens</i>	C D
COW PARSLEY	<i>Anthriscus sylvestris</i>	A B D
CRAB APPLE	<i>Malus sylvestris</i>	A
CRANE'S-BILL CUT-LEAVED	<i>Geranium dissectum</i>	C
CRANE'S-BILL DOVES FOOT	<i>Geranium molle</i>	D
CURRENT ALPINE	<i>Ribes alpinum</i>	A
DAISY	<i>Bellis perennis</i>	A B C D

Common Name	Scientific Name	Compartment location
DANDELION	<i>Taraxacum officinale</i> agg.	A B C D
DEAD-NETTLE WHITE	<i>Lamium album</i>	A
DOCK BROAD-LEAVED	<i>Rumex obtusifolius</i>	A B D
DOCK CURLED	<i>Rumex crispus</i>	B C D
DOG-ROSE	<i>Rosa canina</i>	D E
DOGS-TAIL CRESTED	<i>Cynosurus cristatus</i>	C D
ELDER	<i>Sambucus nigra</i>	A B C D E
ELM JERSEY	<i>Ulmus minor</i> ssp.sarniensis	D
ELM WYCH	<i>Ulmus glabra</i>	D
FESCUE HYBRID	<i>Festulolium loliaceum</i>	C D
FESCUE RED	<i>Festuca rubra</i>	C
FIELD HORSETAIL	<i>Equisetum arvense</i>	C D
FLOWERING CURRANT	<i>Ribes sanguineum</i>	A
FOXGLOVE	<i>Digitalis purpurea</i>	D
FOX-SEDGE FALSE	<i>Carex otrubae</i>	C
FOXTAIL MEADOW	<i>Alopecurus pratensis</i>	A C D
GARLIC MUSTARD	<i>Alliaria petiolata</i>	A C D
GOAT'S-BEARD	<i>Tragopogon pratensis</i>	C
GUELDER-ROSE	<i>Viburnum opulus</i>	D
HAIR-GRASS TUFTED	<i>Deschamsia cespitosa</i>	C D
HARD RUSH	<i>Juncus inflexus</i>	C
HAWKS-BEARD SMOOTH	<i>Crepis capillaris</i>	C D
HAWTHORN	<i>Crataegus monogyna</i>	A B D
HAZEL	<i>Corylus avellana</i>	B
HEMP-AGRIMONY	<i>Eupatorium cannabinum</i>	D
HEMP-NETTLE COMMON	<i>Galeopsis tetrahit</i>	C
HOGWEED	<i>Heracleum sphondylium</i>	A B C D E
HOLLY	<i>Ilex aquifolium</i>	D
HONEYSUCKLE	<i>Lonicera periclymenum</i>	D
HOREHOUND BLACK	<i>Ballota nigra</i>	A B D
HORNBEAM	<i>Carpinus betulus</i>	A
HORNED PONDWEED	<i>Zannichellia palustris</i>	G
HORNWORT RIGID	<i>Ceratophyllum demersum</i>	F
HORSE-RADDISH	<i>Armoracia rusticana</i>	C
KNOTGRASS COMMON	<i>Polygonum aviculare</i>	A
KNOTWEED JAPANESE	<i>Polygonum cuspidatum</i>	C
LOMBARDY POPLAR	<i>Populus nigra</i> var. <i>italica</i>	D E
LOOSESTRIFE PURPLE	<i>Lythrum salicaria</i>	F
LORDS-AND-LADIES	<i>Arum maculatum</i>	D
MALLOW COMMON	<i>Malva sylvestris</i>	C D
MAPLE NORWAY	<i>Acer platanoides</i>	A B
MEADOW GRASS ANNUAL	<i>Poa annua</i>	A D
MEADOW GRASS ROUGH	<i>Poa trivialis</i>	A C D
MIGNONETTE WILD	<i>Reseda luteola</i>	B
MUGWORT	<i>Artemisia vulgaris</i>	A C D
MUSTARD HEDGE	<i>Sisymbrium officinale</i>	A D
NETTLE STINGING	<i>Urtica dioica</i>	A B C D

Common Name	Scientific Name	Compartment location
OAK COMMON	<i>Quercus robur</i>	A C
OAT-GRASS	<i>Arrhenatherum elatius</i>	A C D
OSIER	<i>Salix viminalis</i>	C D
PIMPERNEL SCARLET	<i>Anagallis arvensis</i>	C
PINEAPPLEWEED	<i>Matricaria matricarioides</i>	A
PLANTAIN GREATER	<i>Plantago major</i>	A B C D
PLANTAIN RIBWORT	<i>Plantago lanceolata</i>	C D
POND-SEDGE GREATER	<i>Carex riparia</i>	E G
PONDWEED BROAD-LEAVED	<i>Potamogeton natans</i>	G
PONDWEED CURLED	<i>Potamogeton crispus</i>	G
PONDWEED FENNEL LIKE	<i>Potamogeton pectinatus</i>	G
PONDWEED SMALL	<i>Potamogeton berchtoldii</i>	G
POPLAR BLACK	<i>Populus nigra ssp.betuiifolia</i>	A B
POPLAR ITALIAN	<i>Populus canadensis</i>	D
POPLAR WESTERN BALSAM	<i>Populus trichocarpa</i>	B
PRIVET GARDEN	<i>Ligustrum ovalifolium</i>	A B
RAGWORT COMMON	<i>Senecio jacobaea</i>	D
REED COMMON	<i>Phragmites australis</i>	E
ROWAN	<i>Sorbus aucuparia</i>	B C D E
RUSH JOINTED	<i>Juncus articulatus</i>	C
RUSH SHARP FLOWERED	<i>Juncus acutiflorus</i>	C
RUSH SOFT	<i>Juncus effusus</i>	C
RYE-GRASS PERENNIAL	<i>Lolium perenne</i>	A C D
SCOTS PINE	<i>Pinus sylvestris</i>	B D
SELF-HEAL	<i>Prunella vulgaris</i>	D
SHEPHERDS PURSE	<i>Capsella bursa-pastoris</i>	A C D
SILVER BIRCH	<i>Betula pendula</i>	D
SILVERWEED	<i>Potentilla anserina</i>	D
SOW-THISTLE PRICKLY	<i>Sonchus asper</i>	C
SOW-THISTLE SMOOTH	<i>Sonchus oleraceus</i>	A
SPEEDWELL WALL	<i>Veronica arvensis</i>	B D
SPIKE-RUSH COMMON	<i>Eleocharis palustris</i>	C
STORKS-BILL COMMON	<i>Erodium cicutarium</i>	A
SYCAMORE	<i>Acer pseudoplatanus</i>	A
THISTLE CREEPING	<i>Cirsium arvense</i>	A C D
THISTLE SPEAR	<i>Cirsium vulgare</i>	B C D
TIMOTHY GRASS	<i>Phleum pratense</i>	C
TOADFLAX COMMON	<i>Linaria vulgaris</i>	D
TREFOIL YELLOW LESSER	<i>Trifolium dubium</i>	A
VETCH COMMON	<i>Vicia sativa</i>	C D
VETCHLING YELLOW MEADOW	<i>Lathyrus pratensis</i>	C
WATER FERN	<i>Azolla filiculoides</i>	G
WATER FORGET-ME-NOT	<i>Myosotis scorpioides</i>	G
WATER-MILFOIL SPIKED	<i>Myriophyllum spicatum</i>	F
WATER-PLANTAIN	<i>Alisma plantago-aquatica</i>	C
WELD	<i>Reseda luteola</i>	D
WHITEBEAM SWEDISH	<i>Sorbus intermedia</i>	B C D

Common Name	Scientific Name	Compartment location
WILLOW WEEPING	<i>Salix x sepulcralis</i>	A
WILLOW CRACK	<i>Salix fragilis</i>	A C E
WILLOW GOAT	<i>Salix caprea</i>	B
WILLOW GREY	<i>Salix cinerea ssp.cinerea</i>	B
WILLOWHERB BROAD LEAVED	<i>Epilobium montanum</i>	A
WILLOWHERB GREATER	<i>Epilobium hirsutum</i>	A B C D E
WILLOWHERB ROSEBAY	<i>Chamaenerion angustifolium</i>	A B D E
YARROW	<i>Achillia millefolium</i>	B C D
YORKSHIRE FOG	<i>Holcus lanatus</i>	C D

TABLE 2 Fungi

Recorded by M.M.Hallam 1992

Common Name	Scientific Name
BRANCHED OYSTER MUSHROOM	<i>Pleurotus cornucopiae</i>
COMMON INK CAP	<i>Coprinus atramentarius</i>
COMMON PUFFBALL	<i>Lycoperdon perlatum</i>
GIANT PUFFBALL	<i>Langermannia gigantea</i>
JEW'S EAR	<i>Hirneola auricular judae</i>
POISON PIE	<i>Hebeloma crustuliniforme</i>
PUFFBALL	<i>Calvatia utriformis / exipuliformis ?</i>
SHAGGY INK CAP	<i>Coprinus comatus</i>
WOOD BLEWIT	<i>Lepista nuda</i>

TABLE 3 Mosses

Recorded by M.M.Hallam 1992

Calliergon cuspidatum & *Drepanocladus aduncus* spp. of marshy ground growing round the ponds. All others are common species of grassland and bare ground.

Scientific Name
<i>Barbula unguiculata</i>
<i>Brachythecium albicans</i>
<i>Brachythecium rutabulum</i>
<i>Bruum bicolor</i>
<i>Calliergon cuspidatum</i>
<i>Drepanocladus aduncus</i>
<i>Phascum cuspidatum</i>
<i>Pottia bruoides</i>
<i>Rhynchostegium confertum</i>
<i>Tortula muralis</i>

APPENDIX TWO : CHARLTON'S POND FAUNA

TABLE 1 MAMMALS

Survey conducted by M.M. Hallam 1992

Common Name	Scientific Name	BAP
BROWN RAT	<i>Rattus norvegicus</i>	
COMMON SHREW	<i>Sorex araneus</i>	
FOX	<i>Vulpes vulpes</i>	
HEDGEHOG	<i>Erinaceus europaeus</i>	
LONG-TAILED FIELD MOUSE	<i>Apodemus sylvaticus</i>	
MINK (now eliminated)	<i>Mustela vison</i>	
MOLE	<i>Talpa europaea</i>	
PIPISTRELLE BAT	<i>Pipistrellus pipistrellus</i>	Priority species
RABBIT	<i>Oryctolagus cuniculus</i>	
SHORT-TAILED VOLE	<i>Microtus agrestis</i>	
STOAT	<i>Mustela erminea</i>	
WEASEL	<i>Mustela nivalis</i>	

TABLE 2 TERRESTRIAL MOLLUSCS

Survey conducted by A.A. Wardaugh 21st July 1993

Common Name	Scientific Name
	<i>Arion circumscriptus</i>
	<i>Deroceras caruanae</i>
BLACK SLUG	<i>Arion ater</i>
BROWN-LIPPED BANDED	<i>Cavaea nemoralis</i>
COMMON SNAIL	<i>Helix aspersa</i>
GARLIC SNAIL	<i>Oxuchilus alliarius</i>
HAIRY SNAIL	<i>Trichia hispida</i>
HEDGEHOG SLUG	<i>Arion intermedius</i>
NETTED SLUG	<i>Deroceras reticulatum</i>
PELLUCID SLUG	<i>Vitrina pellucida</i>
RAYED SNAIL	<i>Nesovitrea hammonis</i>
ROUNDED SNAIL	<i>Discus rotundatus</i>
SLIPPERY SNAIL	<i>Cochlicopa lubrica</i>
SMOOTH SNAIL	<i>Aegopinella nitidula</i>
STRAWBERRY SNAIL	<i>Trichia striolata</i>

TABLE 3 AMPHIBIANS

Common Name	Scientific Name
COMMON TOAD	<i>Bufo bufo</i>
COMMON FROG	<i>Rana temporaria</i>
SMOOTH NEWT	<i>Triturus vulgaris</i>

TABLE 4 LEPIDOPTERA

Survey conducted by M.M. Hallam 1992

Common Name	Scientific Name
ANGLE SHADES	<i>Phlogophora meticulosa</i>
COMMA	<i>Polygona c-album</i>
GARDEN CARPET	<i>Xanthorhoe fluctuata</i>
GARDEN TIGER	<i>Arctia caja</i>
GREEN VEINED WHITE	<i>Artogeia navi</i>
LARGE WHITE	<i>Pieris brassicae</i>
LARGE WHITE PLUME MOTH	<i>Pterophorus</i>
LARGE YELLOW UNDERWING	<i>Noctua pronuba</i>
MEADOW BROWN	<i>Maniola iurtina</i>
ORANGE TIP	<i>Anthocaris cardamine</i>
PEACOCK	<i>Inachis io</i>
PUSS MOTH	<i>Cerura vinula</i>
RED ADMIRAL	<i>Vanessa atalanta</i>
SMALL COPPER	<i>Lucaena phlaeas</i>
SMALL HEATH	<i>Coenonympha</i>
SMALL TORTOISESHELL	<i>Aglais urticae</i>
SMALL WHITE	<i>Pieris rapae</i>
SPECKLED WOOD	<i>Pararge aegeria</i>
WALL	<i>Lasiommata megera</i>
WILLOW BEAUTY	<i>Peribatodes</i>
YELLOW SHELL	<i>Camptogramma</i>

TABLE 5 DRAGONFLIES

Survey conducted by M.M. Hallam 1992

Common Name	Scientific Name
GOLDEN RINGED DRAGONFLY	<i>Cordulegaster boltonii (visitor)</i>
COMMON BLUE DAMSELFLY	<i>Enallagma cyathigerum</i>
BLUE-TAILED DAMSELFLY	<i>Ishnura elegans</i>
COMMON DARTER	<i>Sympetrum striolatum</i>

TABLE 6 FISH

Data supplied by Billingham Sportsmens Angling Club

Common Name	Scientific Name
COMMON BREAM	<i>Abramis brama</i>
EEL	<i>Anguilla anguilla</i>
CRUCIAN CARP	<i>Carassius carassius</i>
COMMON CARP	<i>Cyprinus carpio</i>
MIRROR CARP	<i>Cyprinus carpio</i>
GUDGEON	<i>Gobio gobio</i>
PERCH	<i>Perca fluviatilis</i>
ROACH	<i>Rutilus rutilus</i>
RUDD	<i>Scardinius erythrophthalmus</i>
CHUB	<i>Squalius cephalus</i>
TENCH	<i>Tinca tinca</i>

TABLE 7 FRESHWATER INVERTEBRATES

Survey conducted by D. Heath May 1998

Large Pond

Common Name	
Caddisfly Larvae	Order <i>Trichoptera</i>
Damselfly nymph	Suborder <i>Zygoptera</i>
Flat worm	Subclass <i>Oligochaeta</i>
Freshwater Hoglouse	Family <i>Asellus</i>
Greater water boatman	Family <i>Notonectidae</i>
Leech	Subclass <i>Hirudinae</i>
Lesser water boatman	Family <i>Corixidae</i>
Mayfly nymph	Order <i>Ephemeroptera</i>
Pond skater	Family <i>Gerridae</i>
Pond Snail	Family <i>Lymnaea</i>
Ramshorn Snail	Family <i>Planorbidae</i>
Water flea	Order <i>Cladocera</i>
Water mite	Order <i>Hydracarina</i>
Whirligig beetle	Family <i>Gyrinidae</i>

Small Pond

Common Name	
Damselfly nymph	Suborder <i>Zygoptera</i>
Mayfly nymph	Order <i>Ephemeroptera</i>
Pond Snail	Family <i>Lymnaea</i>
Water flea	Order <i>Cladocera</i>
Water mite	Order <i>Hydracarina</i>

TABLE 8 BIRDS

Common Name	Scientific Name	Status on Site	Red List Species	Amber List Species	BAP Listed
BLACKBIRD	<i>Turdus merula</i>	breeding resident		*	
BLACKCAP	<i>Sylvia atricapilla</i>	breeding regular visitor			
BRAMBLING	<i>Fringila montifringilla</i>	irregular visitor			
BULLFINCH	<i>Pyrrhula pyrrhula</i>	regular visitor	*		
BUNTING REED	<i>Emberiza schoeniclus</i>	breeding resident			
CARRION CROW	<i>Corvus corone corone</i>	regular visitor			
CHAFFINCH	<i>Fringilla coelebs</i>	breeding resident			
CHIFFCHAFF	<i>Phylloscopus collybita</i>	breeding regular visitor			
CHIFFCHAFF SIBERIAN		vagrant			
COOT	<i>Fulica atra</i>	breeding resident			
CORMORANT	<i>Phalacrocarex carbo</i>	regular visitor			
CORMORANT DOUBLE CRESTED	<i>Phalacrocorax auritus</i>	vagrant			
CUCKOO	<i>Cuculus canorus</i>	vagrant			
DIVER BLACK THROATED	<i>Gavia arctica</i>	vagrant			
DOVE COLLARED	<i>Streptopelia decaocto</i>	breeding resident			
DUCK LONG TAILED	<i>Clangula hyemalis</i>	vagrant			
DUCK RING NECKED	<i>Aythya collaris</i>	vagrant			
DUCK RUDDY	<i>Oxyura jamaicensis</i>	regular visitor			
DUCK TUFTED	<i>Aythya fuligula</i>	regular visitor			
DUNNOCK	<i>Prunella modularis</i>	breeding resident		*	
FIELDFARE	<i>Turdus pilaris</i>	regular visitor		*	
FLYCATCHER PIED	<i>Ficedula hypoleuca</i>	irregular passage migrant			
FLYCATCHER SPOTTED	<i>Musciapa striata</i>	passage migrant			
GADWALL	<i>Anas strepera</i>	irregular visitor			

Common Name	Scientific Name	Status on Site	Red List Species	Amber List Species	BAP Listed
GOLDCREST	<i>Regulus regulus</i>	regular visitor			
GOLDENEYE	<i>Bucephala clangula</i>	regular visitor		*	
GOLDFINCH	<i>Carduelis carduelis</i>	breeding resident		*	
GOOSANDER	<i>Mergus merganser</i>	vagrant			
GOOSE CANADA	<i>Branta canadensis</i>	irregular visitor			
GOOSE GREYLAG	<i>Anser anser</i>	irregular visitor		*	
GREBE GREAT CRESTED	<i>Podiceps cristatus</i>	breeding regular visitor			
GREBE LITTLE	<i>Tachybaptus ruficollis</i>	breeding regular visitor			
GREENFINCH	<i>Carduelis chloris</i>	breeding resident			
GREENSHANK	<i>Tringa nebularia</i>	vagrant			
GULL BLACK-HEADED	<i>Larus ridibundus</i>	regular visitor			
GULL COMMON	<i>Larus Canus</i>	regular visitor		*	
GULL GREAT BLACK-BACKED	<i>Larus marinus</i>	regular visitor			
GULL HERRING	<i>Larus argentatus</i>	regular visitor		*	
GULL LESSER BLACK BACKED	<i>Larus fuscus</i>	irregular visitor			
HERON GREY	<i>Ardea cinerea</i>	regular visitor			
HOBBY	<i>Falco subbuteo</i>	vagrant			
JACKDAW	<i>Corvus monedula</i>	regular visitor			
KESTREL	<i>Falco tinnunculus</i>	regular visitor		*	
KINGFISHER	<i>Alcedo atthis</i>	regular visitor		*	
LINNET	<i>Carduelis cannabina</i>	breeding regular visitor	*		
MAGPIE	<i>Pica Pica</i>	breeding resident			
MALLARD	<i>Anas platyrhynchos</i>	breeding resident			
MARTIN HOUSE	<i>Delichon urbica</i>	regular visitor			
MARTIN SAND	<i>Riparia riparia</i>	regular visitor		*	
MERGANSEER RED BREASTED	<i>Mergus serrator</i>	vagrant			

Common Name	Scientific Name	Status on Site	Red List Species	Amber List Species	BAP Listed
MERLIN	<i>Falco colombarius</i>	irregular visitor			
MOORHEN	<i>Gallinula chloropus</i>	breeding resident			
OWL LONG-EARED	<i>Asio otus</i>	vagrant			
OWL SHORT EARED	<i>Asio flammeus</i>	vagrant			
OYSTERCATCHER	<i>Haematopus ostralegus</i>	vagrant			
PARTRIDGE GREY	<i>Perdix perdix</i>	vagrant	*		*
PHEASANT	<i>Phasianus colchicus</i>	vagrant			
PIGEON WOOD	<i>Columba palumbus</i>	breeding resident			
PINTAIL	<i>Anas acuta</i>	irregular visitor			
PIPIT MEADOW	<i>Anthus pratensis</i>	vagrant			
PIPIT TREE	<i>Anthus trivialis</i>	irregular visitor			
POCHARD	<i>Aythya ferina</i>	regular visitor		*	
POCHARD RED CRESTED	<i>Netta rufina</i>	vagrant			
REDPOLE	<i>Carduelis flammea</i>	irregular visitor			
REDSHANK	<i>Tringa totanus</i>	vagrant		*	
REDSTART	<i>Phoenicurus phoenicurus</i>	irregular passage migrant			
REDWING	<i>Turdus iliacus</i>	regular visitor		*	
RING OUZEL	<i>Turdus torquatus</i>	passage migrant			
ROBIN	<i>Erithacus rubecula</i>	breeding resident			
ROOK	<i>Corvus frugilus</i>	regular visitor			
ROSEFINCH SCARLET	<i>Carpodacus erythrinus</i>	vagrant			
SANDPIPER COMMON	<i>Actitis hypoleucos</i>	regular visitor			
SANDPIPER GREEN	<i>Tringa ochropus</i>	vagrant			
SCAUP	<i>Aythya marila</i>	vagrant			
SCOTER COMMON	<i>Melanitta nigra</i>	vagrant			
SHELDUCK	<i>Tadoma tadoma</i>	irregular visitor		*	

Common Name	Scientific Name	Status on Site	Red List Species	Amber List Species	BAP Listed
SHOVELER	<i>Anas clypeata</i>	irregular visitor		*	
SHRIKE GREAT GREY	<i>Lanius excubitor</i>	vagrant			
SHRIKE RED BACKED	<i>Lanius collurio</i>	vagrant			
SISKIN	<i>Carduelis spinus</i>	regular visitor			
SKY LARK	<i>Alauda arvensis</i>	irregular visitor			
SMEW	<i>Mergus albellus</i>	vagrant			
SNIFE	<i>Gallinago gallinago</i>	regular visitor		*	
SNIFE JACK	<i>Lymnocyptes minimus</i>	vagrant			
SPARROW HOUSE	<i>Passer domesticus</i>	breeding resident			
SPARROWHAWK	<i>Accipiter nisus</i>	regular visitor			
STARLING	<i>Sturnus vulgaris</i>	regular visitor		*	
STOCK DOVE	<i>Columba oenas</i>	irregular visitor			
SWALLOW	<i>Hirundo rustica</i>	regular visitor		*	
SWAN BEWICKS	<i>Cygnus bewickii</i>	irregular visitor			
SWAN MUTE	<i>Cygnus olor</i>	breeding regular visitor			
SWAN WHOOPER	<i>Cygnus cygnus</i>	irregular visitor			
SWIFT	<i>Apus apus</i>	regular visitor			
TEAL	<i>Anas crecca</i>	regular visitor		*	
THRUSH MISTLE	<i>Turdus viscivorus</i>	breeding resident			
THRUSH SONG	<i>Turdus philomelos</i>	breeding resident			
TIT BEARDED	<i>Panurus biarmicus</i>	vagrant			
TIT BLUE	<i>Parus caeruleus</i>	breeding resident			
TIT COAL	<i>Parus ater</i>	irregular visitor			
TIT GREAT	<i>Parus major</i>	breeding resident			
TIT LONG-TAILED	<i>Aegithalos caudatus</i>	irregular visitor			
TIT WILLOW	<i>Parus montanus</i>	irregular visitor			

Common Name	Scientific Name	Status on Site	Red List Species	Amber List Species	BAP Listed
TREECREEPER	<i>Certhia familiaris</i>	irregular visitor			
TERN BLACK	<i>Chlidonias niger</i>	passage migrant			
TERN COMMON	<i>Sterna hirundo</i>	breeding regular visitor			
TERN SANDWICH	<i>Sterna sandvicensis</i>	irregular visitor			
WAGTAIL GREY	<i>motacilla cinerea</i>	regular visitor			
WAGTAIL PIED	<i>Motacilla alba yarrellii</i>	regular visitor			
WAGTAIL YELLOW	<i>Motacilla flava</i>	regular visitor			
WARBLER GARDEN	<i>Sylvia borin</i>	passage migrant			
WARBLER SEDGE	<i>Acrocephalus schoenobaenus</i>	irregular visitor			
WARBLER WILLOW	<i>Phylloscopus trochilus</i>	breeding regular visitor			
WATER RAIL	<i>Rallus aquaticus</i>	irregular visitor			
WAXWING	<i>Bombycilla garrulus</i>	vagrant			
WHIMBRIL	<i>Numenius phaeopus</i>	irregular visitor			
WHITETHROAT	<i>Sylvia communis</i>	breeding regular visitor			
WHITETHROAT LESSER	<i>Sylvia curruca</i>	passage migrant			
WIGEON	<i>Anas penelope</i>	regular visitor		*	
WOODCOCK	<i>Scolopax rusticola</i>	regular visitor		*	
WOODPECKER GREAT SPOTTED	<i>Dendrocopos Major</i>	irregular visitor			
WREN	<i>Troglodytes troglodytes</i>	breeding resident			
YELLOWHAMMER	<i>Emberiza citrinella</i>	vagrant			

APPENDIX THREE : FISH STOCKING RECORDS

Fish Stock Introductions into Charlton's Large Pond

Date	Species	Quantity and Size	Fishery
1979	Roach	1000 @ 4 – 8"	Bondike
1981	Crucian Carp	200 @ 2 – 4" 800 @ 4 – 6"	Humberside Fisheries
	Roach	2500 @ 3 – 4"	
	Bream	500 @ 3 – 4"	
	Rudd	490 @ 4 – 6"	
1981	Mixed bag Roach, Perch, Bream.	200-250	Lartington Pond
1982	Roach	3000 @ mixed	Wynard Lake
1982	Roach	1300 @ mixed	Wynard Lake
1986	Bream	1000 @ 6 – 8"	Humberside Fisheries
		250 @ 8 – 9"	
1992	Crucian Carp	5000 @ 4 – 10"	Framlingham Fisheries
1993	Bream	650lb some hybrids 2-4lb	Framlingham Fisheries
1994	Mixed Bag mainly Roach and a few Perch	30lb	Ropner Park
1995	Bream some hybrids	533lb @ 3 – 6lb	Framlingham Fisheries
1996	Bream	1500 @ 4 – 10"	Framlingham Fisheries
		315 @ 8 – 10"	
1999	Mixed Bags	?	Environment Agency

Fish Stock introduced to Charlton's small pond

2006	Carp	984 @ 6 – 8"	Humberside Fisheries
	Ide	500 @ 6 – 8"	
	Bream	350 @ 6 - 8"	
	Gudgeon	100	

Appendix Four

METHODS TO ERADICATE JAPANESE KNOTWEED

CUTTING

2 Cuts per year are required for effective treatment. The first cut should take place when the first shoots appear and the last cut when the plant is at its most luxuriant in late summer but before die back in the autumn (September/October). Annual cutting is required from thereafter as it usually takes a number of years before the plant dies.

Although there may be no signs of regrowth, it has been suggested that rhizomes can remain viable for up to 20 years.

Do not flail Japanese Knotweed, as this will cause the plant to spread. Cutting with mowers, sharp hooks and slashers etc is recommended.

Disturbance of the rhizome is likely to result in substantial regrowth and much more legislation will then come into effect, e.g. Environmental Protection Act's Duty of Care and legislation relating to the disposal of hazardous waste etc and so is not recommended if the time frame for eradication by cutting permits.

HERBICIDE SPRAYING

If Glyphosate is to be used, the most effective time for application is during the plant's growth phase from July to September and before cold weather causes leaves to discolour. Spring applications are also suitable but generally considered less effective. Herbicide spraying during the flowering phase should be avoided due to the potential to cause harm to beneficial pollinating insects such as bees.

If spraying near or next to water, Environment Agency approval will be required under the Control of Pesticides Regulations 1986 as only certain herbicides are allowed to be used near a water course/body. Only a qualified person or contractor that holds the appropriate National Proficiency Test Council (NPTC) certification is allowed to carry out this task.

Spraying will have to continue on an annual basis for at least 3 years due to the depth and length of the rhizome matrix and before growth stops. As mentioned above, this situation will need to be monitored due to the length of time the rhizomes can remain dormant.

COMBINING BOTH OF THE ABOVE METHODS

If using both methods of control it is best to, firstly, cut back the vegetation and then let it regrow to approximately 1 metre in height before applying herbicides. The initial cut reduces the height of the plant making it easier for herbicide application. The cut will also encourage leaf growth that will make it more effective for the herbicide to be absorbed through the leaf and into the plant's root system.

APPENDIX FIVE – Sample Risk Assessment

Risk Assessment

Task or activity to be assessed ;- Charlton's Ponds	Ref No
	Date November 2009
	Prepared by Tony Raine

Step 1

Hazards associated with Charlton's Ponds

Consideration – The general public are allowed access to the waters edge, thus creating an element of risk to all users who spend time adjacent to the water

Possibility of Falling into ponds (exacerbated in icy conditions)

Weils Disease contracted from contact with contaminated water

Step 2

People Identified as Being at Risk

Members of the General public, ranging from infants and toddlers to the elderly and infirm.

Members of the Angling Club

Council management and maintenance staff.

Step 3

Risk Evaluation

Risk Rating is high, as potentially falling into the water could be fatal.

At present the following mitigating measures are in place

Regular site visits by Charlton's pond Bailiffs

Appropriate fishing Pegs are located around both ponds, ensuring good level access

In most locations around the Ponds there are other physical barriers between the footpath and the water ie- shrubs

Evaluation – Risk factors need to be reduced further.

Step 4

Action Taken to Reduce Risk Further	By	Target date
The LNR Officer and on-site staff require appropriate first aid training		September 2009
Undertake regular patrols to the Ponds by PCSO's, the enforcement team, Bailiffs, maintenance staff to ensure public is behaving in a safe manner around the Ponds, and train staff on how to respond to situations.		Ongoing
Undertake appropriate community liaison and awareness		Ongoing
Monitor rat population and implement necessary measures to reduce numbers therefore reducing likelihood of infection.		On going
Install appropriate warning signs		June 2008
Implementation of above measures will reduce risk to a 'reasonably practicable' level.		Nov 2008

Step 5

Keep the assessment under review :
 For a new procedure, review in 6 weeks.
 If satisfactory review again at least annually, subject to details overleaf.

Review 1 By TR.....Date...10th September 2009.....Any Action Necessary...

Review 2 ByDate.....Any Action Necessary.....

Review 3 ByDate.....Any Action Necessary.....

Appendix 6 : Site Inspection Report Form

SITE INSPECTION REPORT					
SITE:			ZONE:		
INSPECTED BY:			INSP DATE:		
CONTACT NO:			JOB NO:	20578	
Zone and Location	Description of Defect Action/Works Required	Priority	Passed To and Date	Date Sched.	Date Comp. and initial
Inspectors Notes:					

Index:

- Priority 1** 24 or 48 Hour Response (Urgent)
- Priority 2** 28 Day Response (Medium)
- Priority 3** 99 Day Response (Low)



Greenvale

Local Nature Reserve Management Plan

2008 – 2012



Small Copper Butterfly (*Lycaena phlaeas*)
© northeastwildlife.co.uk



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1. Introduction

- 1.1 Local Nature Reserves (LNRs) form a key component to Stockton's green infrastructure network and as such are of vital importance in relation to biodiversity and the movement of species from one area to another.
- 1.2 Fig 1 shows the location of Greenvale Local Nature Reserve (LNR) and its boundary. An initial survey by the Wildflower Ark Project, based at Nature's World, Middlesbrough found that the site contains wildflower species of which many are deemed to be locally rare and that one in particular, Lady's Mantle (*Alchemilla filicaulis* ssp *filicaulis*), was thought to be extinct in the former county of Cleveland.
- 1.3 The area is located approximately 3km to the west of Stockton Town Centre and is surrounded on all sides by urban housing development. Some of the land forms part of the floodplain to a beck, which runs through the centre of the site.



Fig.1 Location map of Greenvale and its boundary



2. Strategies Relevant to the Management Plan

2.1 Stockton-on-Tees Local Agenda 21 Strategy

Environmental Objective No.2 'To protect and enhance the wildlife habitats and the diversity of species throughout the Borough'.

2.2 Stockton-on-Tees Local Plan/Local Development Framework

Objective 1 section 2.15 relating to Local Nature Reserves states that 'The council will continue to protect existing LNRs within the Borough from inappropriate development'

Objective 1 Policy EN2 states that, 'Development in LNRs will not be permitted if it would be harmful to the elements giving rise to their designation.

2.3 Tees Valley Green Infrastructure Plan

Sets out the intention of linking up areas of greenspace of which LNRs are a component of this vision.

2.4 Stockton-on-Tees Key Service Improvement Objectives.

Objective 2 – Improve the health of children in the borough.

Objective 10 – Improve the health of the borough.

Objective 13 – Respond to residents concerns and fears of crime and anti-social behaviour.

Objective 21 – Maintain cleanliness and improve quality of open spaces.

Objective 23 – Improve the quality of life for future generations through environmental sustainability.

Objective 27 – Promote more cohesive communities.

2.5 Stockton Renaissance Community Strategy

Liveability Theme 3 – Create a better environment.

Liveability Theme 4 – Maintain the cleanliness of streets and open spaces.

Liveability Theme 5 – Promote inclusive communities.



Agrimony (*Agrimonia eupatoria*)
© northeastwildlife.co.uk

Safer Communities Theme 1 – Reduce deliberate fires.

Safer Communities Theme 3 – Reduce anti-social behaviour

Children and Young People Theme 4 – Increase opportunities for young people to participate in activities outside of school.

Healthy Communities Theme 1 – Reduce health inequalities within the borough



2.6 Tees Valley and UK Biodiversity Action Plans (BAPs)

Tees Valley BAP - Section 3 (Habitat Action Plans) states that among its local objectives for unimproved grassland it will;

‘Maintain the extent and quality of species-rich neutral grassland sites in the Tees Valley’ and ‘Protect and enhance existing areas of species-rich neutral grassland’.

2.7 Natural England For People, Places and Nature

3. Site Details

3.1 Area

- 3.1.1 The area of Greenvale covers approximately 6.3 hectares with the topography of the site being similar to that of many beck valleys in the area, e.g. gentle sloping sides on either side of the watercourse. The area comprises unimproved grassland, amenity grassland and small compartments of woodland.

3.2 Surrounding Environment

- 3.2.1 The grassland is located on the boundary of Fairfield and Hartburn, urban housing developments that are situated in the west of the borough, with the beck acting as a natural boundary between the two wards.

3.3 Administrative Details

- 3.3.1 The whole of the area is within the ownership of Stockton-on-Tees Borough Council.
- 3.3.2 There are no current byelaws in operation at the site or constraints on management, e.g. soil contamination, tenancies and separately owned mineral rights. However, byelaws are currently being drafted for all of Stockton Borough Council’s LNRs and will be incorporated into the management plan once they have been adopted.

3.4 Management Infrastructure

- 3.4.1 Stockton Borough Council's Development and Neighbourhood Services have adopted responsibility for the management of the area.

3.5 History

- 3.5.1 Based on OS maps it appears that before the Second World War the area was farmland and owned by William Gibbon (a farmer). Stockton-on-Tees Borough Council acquired the majority of the area on 26th August 1949. The council acquired the outlined area shown on Fig. 1 on 17th March 1961 from Moorehouse and Barker Ltd., who had acquired the land from a Robert Pickrell on 24th October 1955.
- 3.5.2 It would seem that the area was a field margin (due to the presence of the beck) and never farmed intensively. This resulted in an area of unimproved grassland that has allowed a diverse range of plants to flourish despite being mown on a regular basis by the council.



3.6 Access

- 3.6.1 Two public footpaths are currently in use at the site (Fig. 2). At the southern end of the site Footpath 1 runs in an east-west direction from Upsall Grove to Aiskew Grove. Footpath 2 runs in a northeast direction from the northern end of Aiskew Grove to Limbrick Avenue. Other informal paths and desire lines were evident in Compartments A and D. Due to the open nature of much of the site, access is also possible from land adjacent to Limbrick Avenue

3.7 Boundaries

- 3.7.1 The field is bounded to the south and east by Upsall Grove (OS Grid Ref. NZ 441518) and Limbrick Avenue (OS Grid Ref. NZ 441519) respectively. To the north and west, urban housing edge the site. The beck forms a natural boundary to the wards of Hartburn and Fairfield.

3.8 Usage

- 3.8.1 The area is used by local residents who make use of the existing path network and additionally to walk their dogs. The area's open space is used for recreational games such as football, whilst other play facilities, such as climbing apparatus, offer recreational activities to younger age groups.

4 Site Description

4.1 Greenvale

- 4.1.1 For management purposes the grassland has been divided into several different compartments, which are identified on Fig. 3. To enable continuity with previous management plans the compartments have remained the same. The following section investigates the character of the area in more detail.

4.2 General

- 4.2.1 Greenvale contains components of meadow, grassland and marginal woodland, with a loosely meandering beck running through the centre of the site. The immediate areas to either side of the beck are on a slope of approximately 15-20°. The gradient on the west bank of the beck does become slightly steeper in places with slopes of approximately 25-30°.
- 4.2.2 The beck is 1 – 1.5m wide during periods of normal discharge, though this is obviously increased at times of high rainfall. Occasionally water builds-up due to stretches of the beck becoming dammed with the accumulation of organic debris.
- 4.2.3 Little is known about the fauna of the area as no major surveys have been undertaken. However, the area does have a significant Rabbit (*Oryctolagus cuniculus*) population. Fox (*Vulpes vulpes*) has also been observed in the area.

4.3 Compartments

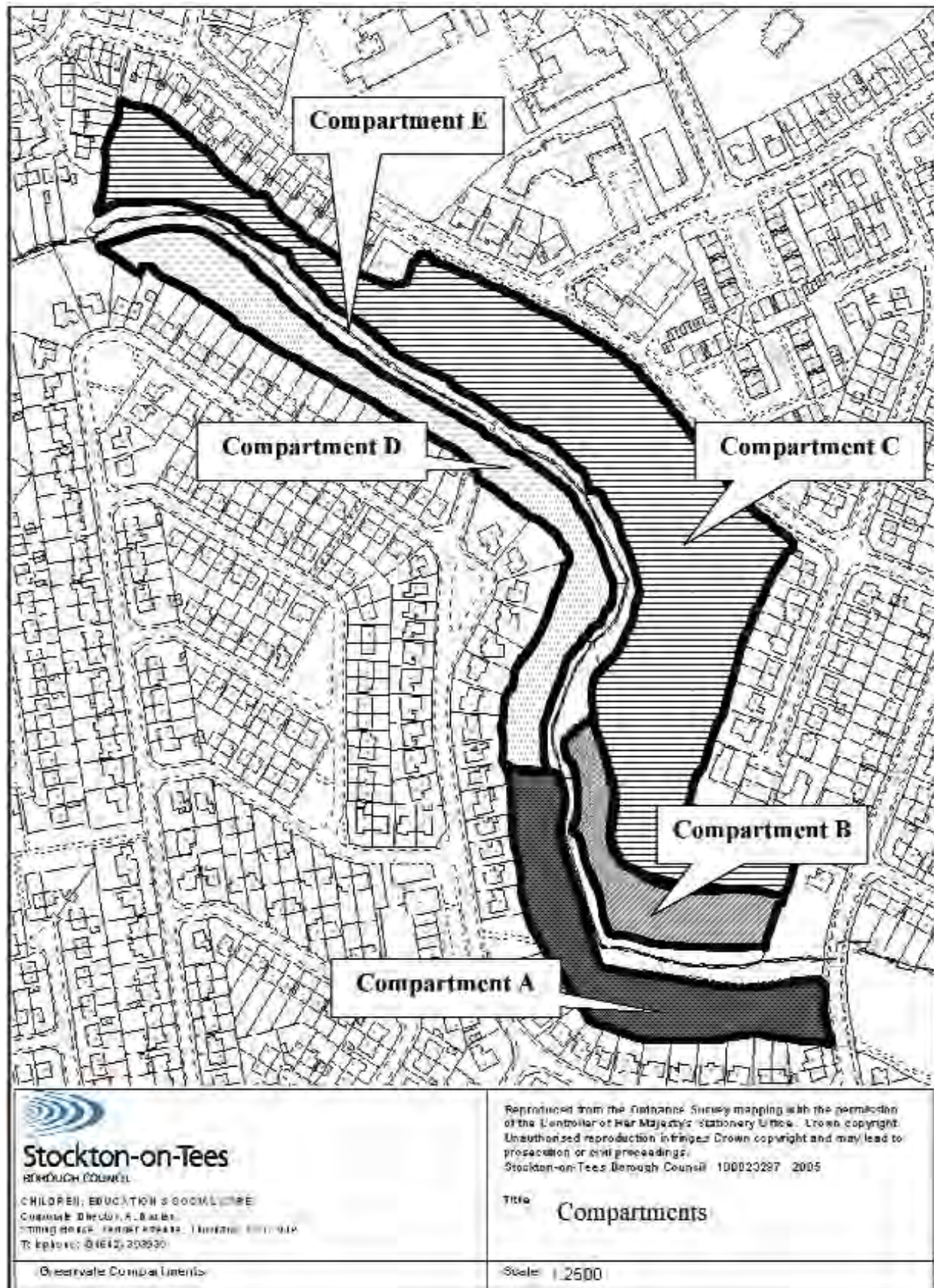
- 4.3.1 From a management perspective the main areas of the site are as follows
- Unimproved grassland
 - Amenity grassland
 - Woodland and scrub
 - The beck



Fig.2 Public Footpaths at Greenvale LNR



Fig 3. Management Compartments



4.3.2 Compartment A

At the southern end of the site, heading west from Upsall Grove, the area is rich in meadowland/unimproved grassland flora species (See Appendix 1). This compartment continues north of Footpath 1 towards Footpath 2 on the west embankment of the beck.

Many of the wildflower species noted in this compartment are locally rare and indicative of mesotrophic (neutral) grassland species. However, they are not restricted to this particular habitat type and can tolerate a wide range of environmental conditions.

There are also some plant species present in this compartment that are indicative of calcareous grassland, e.g. *Carex flacca*, *Primula veris* and *Sanguisorba minor*. Again, these plant species are tolerant of a wide range of soil types.

What makes this area significant is the combination of plants found within it, though the following are of particular interest:

- Lady's Mantle (*Alchemilla filicaulis ssp filicaulis*) – This is the first record of this plant being found in the former Cleveland area.
- Betony (*Stachys officinalis*) – An indicator of long established grassland.
- Common Spotted Orchid (*Dactylorhiza fuchsii*) – Survives in relict grasslands such as this.
- Red Clover (*Trifolium pratense*) – This native variety is in danger from genetic variation from introduced, larger varieties.
- Cowslip (*Primula veris*) – Limited to areas of grassland such as this in its true native form.
- Bulbous Buttercup (*Ranunculus bulbosus*) – Relict grassland species that will require management to withstand competition.

Hawthorn (*Crataegus monogyna*) is the main tree species evident in this compartment although Elder (*Sambucus nigra*), Bird Cherry (*Prunus padus*) and Smooth Leaved Elm (*Ulmus carpinifolia*) were noted north of Footpath 1 at the rear of properties along Aiskew Grove. Scrub type species such as Bramble (*Rubus fruticosus*) and Gorse (*Ulex europaeus*) were also noted along the same boundary. At the centre of this compartment stands of Yellow Flag Iris (*Iris pseudacorus*) are evident by the beck margin, as are clumps of Bramble

4.3.3 Compartment B

At the southern end of the site but on the east bank of the lower floodplain, the area

is predominantly grassland with improvement potential. Similar floral species to those in Compartment A were noted but at much reduced densities. The scattering of Hawthorn and Bramble is similar to that in Compartment A.

4.3.4 Compartment C

This compartment extends from the Compartment B boundary to the site boundary at Limbrick Avenue along the whole east bank of the beck. The area is predominantly amenity grassland with only a few tree species present, e.g. Crack Willow and Hawthorn.

At approximately the mid-point of this compartment a row of trees, representative of an old field boundary, runs in a northeast direction from the beck to the eastern boundary at Limbrick Avenue. These tree species include Hawthorn, Crack Willow (*Salix fragilis*) and Ash (*Fraxinus excelsior*).

Some recreational facilities are in use here, e.g. a slide and climbing apparatus.

4.3.5. Compartment D

This Compartment is situated on the west embankment of the beck and runs from the mid-point of the two formal footpaths and continues north to the northern field boundary. The area differs from the other compartments due to a slightly higher tree density, a greater variety of tree species and a denser understorey of Bramble, Rose (*Rosa rigosa*. var) and tall grass species. The density of the understorey vegetation is such that the area never gets mown and is more representative of marginal woodland. Tree species evident in this compartment include, White Willow (*Salix alba*), Weeping Willow (*Salix x. pendulina*), Hornbeam (*Carpinus betulus*), Whitebeam (*Sorbus aria*), Smooth Leaved Elm, Ash, Beech (*Fagus sp.*) and Blackthorn (*Prunus spinosa*).

4.3.6. Compartment E

Compartment E is along the length of the beck itself and in particular the banks of the beck. The management of this compartment is different from that of Compartments A-D due to the presence of a watercourse and the need to retain the bank's stability and the flow of the watercourse through the site. Trees that were noted in this compartment include Willow, Crack Willow, Ash and Hawthorn. Scrub species include Bramble and Rose.



4.4 Physical

4.4.1 Climate

- 4.4.1.1 The climate at the site is generally of a temperate nature. There is a lot of protection afforded by the houses that surround the site. Only Compartment C is exposed in relation to the rest of the area.

4.4.2 Hydrology

- 4.4.2.1 The beck is predominantly rain-fed but also acts as a drainage point from the slopes of the beck valleys. This is intensified because of the physical qualities of the soil and substrate.
- 4.4.2.2 During periods of heavy rainfall the beck is prone to flooding. This is, in part, due to the beck's capacity to discharge water reaching saturation point and also because of the flow being impeded by organic debris and the funnelling effect that the culvert on Upsall Grove has upon it.



Common Spotted Orchid (*Dactylorhiza fuchsii*)
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4.4.3 Geology

- 4.4.3.1 The whole of the area is composed of glacial till. This is a mixture of unconsolidated clay and rock material that would have been deposited during the advance of ice sheets approximately 20 – 30,000 years ago.
- 4.4.3.2 Along the length of the beck the material differs from the above. This is fine alluvial sediment that would have been deposited since the retreat of the ice sheets. Alluvium is also deposited on the floodplain when water levels are high, e.g. during floods. The alluvium is more even textured and siltier than the glacial till due to attrition and erosion.

4.4.4 Soils and substrates

- 4.4.4.1 The soil is generally heavy clay due to the glacial deposits mentioned earlier. It is evident that certain areas of the reserve are more fertile than in other areas due to the difficulty that plants appear to have in colonising Compartment B.

4.5 Biological

4.5.1 Flora

- 4.5.1.1 A definitive survey has not taken place as yet although a provisional list is available in the Appendices (see Appendix 1). As mentioned above, the site does contain species that are rare to the area and it is these species that should be actively encouraged to spread and to colonise other parts of the site if possible.

4.5.2 Fauna

4.5.2.1 Mammals

Several mammals, or signs of their activity, have been observed, e.g. foxes, bats and moles. The clearest signs of mammal activity belong to rabbits. Not only in their droppings but also because of their feeding habits, e.g. bark stripped off young trees etc (see Appendix 2).

- 4.5.2.2 Mammal trapping with Longworth traps will take place to determine the presence of smaller mammal species and it would also prove beneficial if a water vole survey was undertaken along the length of the beck.

4.5.2.3 Birds

No historical bird records are available for the area although a bird survey of the area will be undertaken to gain baseline data. A good population of songbirds and woodland bird species have been noted whilst patrols around the site have taken place (see Appendix 2).

4.5.2.4 Amphibians

There are no records of any amphibians being present on site.

4.5.2.5 Lepidoptera

Several species of butterfly have been noted on site (see Appendix 2). Their presence is due primarily to the species of wildflowers that act as a nectar source. Red Admiral caterpillars have also been observed on leaves of stinging nettle that line parts of the watercourse.

5 Management Objectives

The area requires sensitive management to retain its primary characteristics whilst encouraging educational benefits to the public. The following eleven objectives have therefore been identified:

- 5.1 . Maintain good access

- 5.2 Maintain and improve the characteristics of the meadowland to ensure its future longevity.
- 5.3 Provide a safe environment for the public.
- 5.4 Protect the area as a haven for wildlife.
- 5.5 Raise biodiversity in the area.
- 5.6 Ensure the beck maintains a good flow through the site.
- 5.7 Maximise opportunities for schools and other groups to use the area as an environmental, educational and recreational resource.
- 5.8 Manage the area sympathetically to accommodate the requirements of neighbouring residents.
- 5.9 Continue to create and improve links with the local community
- 5.10 Undertake a full ecological survey
- 5.11 Take into consideration the potential impact of climate change on flora and fauna



6 Implementation

6.1 Maintain good access

- 6.1.1 Good access will be maintained by regular strimming along desire lines and the cutting back of any obstructive or overgrown vegetation. Access to the site will be monitored on a continual basis in order to determine that the path network is effective and in a safe condition.

6.2 Vegetation Structure.

The following details the measures to be undertaken in each compartment that will ensure the structure and character of each compartment is retained or allowed to develop as appropriate.

6.2.1 Compartment A.

This meadow compartment should be cut at the following times:

- Once in late summer (late July/early August) when the rakings should be left to dry before they are removed.
- Cut grass regularly (every two weeks) after first cut until the end of October. At all other times the grass should be left unmown.

The length of time the rakings will be left on the ground is dependant upon weather conditions, however, this period of time must be sufficient for seeds to filter back to the ground. After this time the cuttings should be removed by raking or baling. This will enable wildflowers to benefit from as much sunlight as possible by preventing coarse grass species, thistles, docks, brambles and scrub from invading into the area. It will also cause the amount of nutrients returning back into the soil to be kept to a minimum, as these are the soil conditions wildflowers prefer.

The purpose of managing the grassland in such a manner is to imitate the traditional farming methods employed in the area when it was a meadow. After the late summer cut, the grass and wildflowers would have been utilised as a hay crop to help feed the livestock over winter. After the hay crop was removed, the livestock on the farm would have grazed the field, therefore, the need for regular mowing until the end of October is in order to mimic this grazing regime.

It is of the utmost importance that Compartment A is not mown with heavy machinery, particularly after rainfall as this will create compression in the soil profile and churn up the ground from machinery tyres. This action makes it more difficult for wildflowers to compete against more aggressive grasses and ruderal species.

Areas adjacent to the existing footpaths will be cut regularly (approx. 1m strip) throughout the growing season

The rabbits on the site could play an important role as grazing animals as they can help keep aggressive, dominant grasses in check and allow a greater diversity of plants to exist. This situation will need to be monitored in order to ascertain that overgrazing or non-selective feeding by the rabbits is not to the detriment of the wildflower species present.

It would also be advisable to leave small strips of grass (around the compartment boundary) uncut, as this will ensure that invertebrates still have a food source and also potential cover to lay eggs. Supplementary seeding should be avoided as it could introduce agricultural grass seeds or contaminate the existing genetic stock of the site. As mentioned above, many of the species in this compartment are rare and specific to the area.

6.2.2 Compartment B.

The percentage of cover from floral species is relatively poor in this compartment but is improving. As it is part of the management objective to maintain and improve the characteristics



of the meadow to ensure its future longevity, the following course of management has been deemed the most appropriate.

Compartment B will be managed in a similar manner to that of Compartment A, however, in years 1 and 2 the rakings from Compartment A should be spread here to encourage a greater diversity of plants to develop. From year 3 onwards Compartment B will be cut in an identical manner to Compartment A.

6.2.3 Compartment C.

This compartment is grassland that is used primarily for recreational purposes. The recreational aspects of this compartment can consequently be extended by the construction of a dipping platform on the west bank of the beck (See Fig. 4).

The planting of groups of native tree species would also improve this area by pulling the components of recreation and conservation closer together. At present the recreation and conservation facets of the site appear to be operating as separate units. Therefore, it is hoped that by planting fruit bearing native tree species, as shown in Fig. 5, that the two areas will blend together and provide more nesting and food opportunities for local bird populations.

It is proposed that the tree stock will consist of 1 + 1, 40-60cm, cell grown tree whips which will be planted at 2m spacings. As the planting is divided into block structures, larger growing specimens will be planted into the centre of each block with smaller species planted around the block's periphery.

Appendix 3 lists the total number of individuals and the number of tree species to be planted in their respective compartments. The tree planting proposals will result in an area of 3500m² being planted with 875 trees.

The existing row of trees that cut across the compartment will be managed by the removal of dead or dangerous tree limbs to ensure compliance with health and safety regulations.

The grass-cutting regime in this compartment will remain the same as it has in previous years. It is hoped that the recreational aspect of this compartment will encourage people onto the site at most times of the year and as a consequence become familiar with the wildlife in the area.

6.2.4 Compartment D.

This area would also be improved by the planting of more native tree species. Once initial tree planting has occurred this area will be managed so as to conserve the area as a habitat for wildlife. The trees would have to be planted a suitable distance away from neighbouring properties and of a height that is not detrimental to the existing tree canopy. The planting of scrub species such as Bramble and Rose would also

benefit this area as it would provide additional understorey protection to birds and mammals as well as provide a food source.

6.2.5 Compartment E.

The trees that align the beck should be periodically inspected for broken and diseased tree limbs. These should be cut back or removed if they appear dangerous to public safety. Tree branches that overhang the beck and cause deadwood to dam sections of the river will also be cut back.

The planting of marginal aquatic plants such as Marsh Marigold, Water Forget-me-not, Marsh Cinquefoil and Purple Loosestrife will offer the banks of the watercourse some stability and increase biodiversity in the area. The flow of water in and around the aquatic plants will be slower than the main watercourse, which will hopefully encourage insects and other macroinvertebrates into the area.

These marginal aquatic plants can be sourced from existing local stock, ensuring that the environment from which the plants are sourced is similar to that where they will be allocated.

The flow of water will also be reduced in small stretches of the beck by excavating small sections into the embankment (Fig.6), resulting in a more meandering watercourse. Aquatic plants will need to be planted in these excavated sections in order to prevent further erosion of the banks. The dipping platform can, potentially, be positioned in between the excavations, thereby offering a greater educational and recreational resource to local schools and people.

After the initial period of activity, the banks of the beck will remain relatively undisturbed with trees and other vegetation allowed to develop naturally. It is assumed that scrub and woody species will ultimately provide cover for wildlife, allowing mammals to use the vegetation as a corridor to get from one part of the site to another.



Cowslip (*Primula veris*)
© northeastwildlife.co.uk

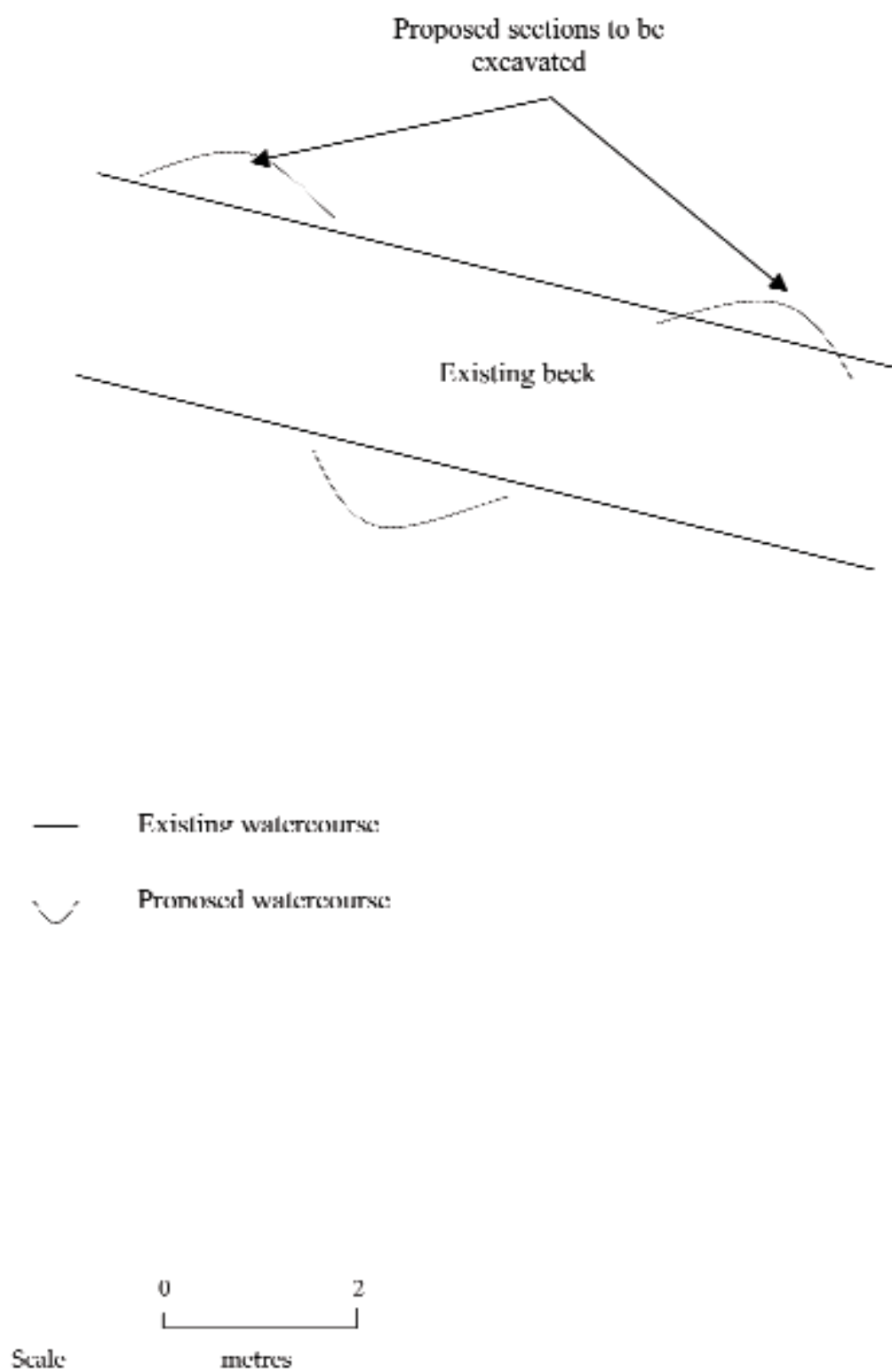
Fig 4. Location of dipping platform



Fig. 5 Proposed Tree Planting at Greenvale



Fig.6 Proposed meandering of watercourse at Greenvale.



6.3 Safety.

- 6.3.1 As mentioned earlier, trees that may pose a health and safety threat will be inspected and managed appropriately. This is particularly relevant to adjacent footpaths and properties that border the area. The planting of marginal aquatic plants and the revegetation of the beck's embankments will steer people away from the length of the beck and towards the dipping platform where access to the beck will be easier and safer.
- 6.3.2 The beck does contain some deadwood that has had its exit from the site hindered by overhanging tree limbs. Tree limbs that overhang the Beck and hinder the flow of material out of the site will be cut back as required. This will ensure that blocked organic debris does not act as a bridge for members of the public to cross the watercourse.
- 6.3.3 The dropping of litter is mainly confined to Compartment A where Footpath 1 leads to and from shops on Aiskew Grove. Litterbins are already provided in Compartment A and regular contact should be kept with Stockton Borough Council's Care For Your Area section in order that the bins are emptied on a regular basis.
- 6.3.4 Dog fouling is an additional aspect that needs consideration and the situation is currently under review by Stockton Borough Council. It is hoped that by bringing the issues of litter and dog fouling to the public's attention via the adoption of byelaws and the installation of dog bins, that the area will become self-policing.

6.4. Wildlife Habitat Protection.

- 6.4.1 By designating the area as a Local Nature Reserve, Stockton Borough Council is demonstrating its commitment to protecting this area for future generations to enjoy. The Council is also demonstrating that no inappropriate development or uses will take place at the site and that Stockton Borough Council is accepting a commitment to manage the land as a nature reserve.
- 6.4.2 Where footpaths pass through the area, their routes have been chosen, as far as possible, to cause the minimum amount of disturbance to the existing environment and wildlife.

6.5 Raising Biodiversity

- 6.5.1 In addition to the examples mentioned earlier in this Management Plan, e.g. the planting of more native tree species and marginal aquatic plants, the biodiversity of the area could be further enhanced by the installation of bird boxes and bat boxes. This would have the additional benefit of providing opportunities for community involvement/education and development. The continual monitoring of the site will provide indicators as to the ecology of the area and to which species the area is

important for. This is of equal relevance to invertebrates as it is to flower and bird species. It is expected that by putting in place a strategy that will assist species on every trophic level, that the health of the site shall be maintained and improved.

6.6 Maintaining the beck's flow through the site.

- 6.6.1 Any debris, both organic and inorganic, will be periodically cleaned from the beck to ensure the flow of water through the site won't be impeded. In addition to the Parks and Countryside Section, Stockton's Youth Offending Service and the Probation's Community Service could also be used to clear up this stretch of water. It is also worth mentioning that organic debris in water does provide a habitat for many species of invertebrate and should be taken into consideration if debris removal is to take place.

6.7 Maximise opportunities to use the area as an environmental, educational and recreational resource.

- 6.7.1 There are a number of schools close to the vicinity of the site. Not only would the area be useful in a botanical sense, it now offers potential as a geographical and biological resource, e.g. anthropogenic land usage, relationships between land and water and woodland education. Additionally, the relationship between the flora and fauna of the site and how they interact can be studied.
- 6.7.2 Education packages will be produced to promote the area as a resource for achieving targets in national curriculum and Key Stages 1, 2 and 3. An interpretation board is sited in Compartment A to assist the public in their knowledge of the area and to gain a better understanding of the historical and environmental management that has occurred. An additional interpretation panel could also be installed somewhere along Footpath 2 so that members of the public that only use the northern end of the site will benefit from such information.
- 6.7.3 As the location of the site is situated in an urban area, the value to local people to enjoy and come into contact with wildlife is incontestable. It is clear to see that the vast majority of local people prefer to walk through the area as opposed to the routes available to them via the road network.

6.8 Manage the area sympathetically to accommodate the requirements of neighbouring residents

- 6.8.1 The needs of the local community that are immediately adjacent to the LNR should be addressed whenever possible. This may be in relation to trees whose overhanging branches could be considered potentially dangerous in windblown situations. Therefore no tree planting will take place at the rear of properties adjacent to the LNR.

- 6.8.2 As much scrub as possible will be allowed to grow at the rear of properties adjacent to the LNR to afford some form of protection against anti-social behaviour. However, this will not be to the detriment of flora already present.

6.9 Continue to create and improve links with the local community

- 6.9.1 A good base has been created with the local community in the form of events such as tree planting and guided walks etc. However, there is room for further development in the form of a local volunteer group for the site. Events will continue to be promoted at the site and, in addition to leaflet drops, placing posters in local shops have proved beneficial in notifying people when these are taking place.

6.10 Undertake a full ecological survey

- 6.10.1 A full ecological survey is essential to determine a baseline to work from and to feedback information with regards to future management plans. The site's primary interest is in the assemblage of plants that occur here and an ongoing ecological survey will provide useful information in relation to species that are flourishing and those that are under threat or in decline.
- 6.10.2 Although the flora at the site is reasonably well documented other components of its ecological status are notably lacking, e.g. bird, mammal and invertebrate species. A continual survey will enable changes in species composition to be identified and for the appropriate management to be implemented as a consequence.

6.11 Take into consideration the potential impact of climate change on flora and fauna

- 6.11.1 Climate change will undoubtedly have some form of impact on species composition and therefore needs to be taken into consideration. More drought resistant native tree species may need to be planted or the location of species with particular requirements may be altered, e.g. trees could be planted closer to waterways so that they receive an adequate water supply all year round.
- 6.11.2 The grass cutting season may be extended due to warmer weather and will need to be taken into consideration, particularly in relation to the wildflower meadow area and adjacent to metalled footpaths.
- 6.11.2 As mentioned above, a continual ecological survey would also help to identify shifts in species assemblage and the northerly migration of historically southern species that are linked to climate change. Butterflies are a useful tool in this respect and both the Comma and, more recently, the Speckled Wood butterflies are now resident in this area as a consequence of a warmer climate.

Appendices

Appendix List

Appendix One	Greenvale Flora (Provisional List)
Table 1	Vascular Plants
Appendix Two	Greenvale Fauna (Provisional List)
	Table 1 Mammals
	Table 2 Lepidoptera
	Table 3 Birds
Appendix Three	Proposed Tree Planting
Appendix Four	Work Programme 2008 – 2012

Appendix 1

Greenvale Flora (Provisional List)

Table 1 Vascular Plants

Common Name	Latin Name
Agrimony	<i>Agrimonia eupatoria</i>
Betony	<i>Stachys officinalis</i>
Bird's Foot Trefoil	<i>Lotus corniculatus</i>
Black Knapweed	<i>Centaurea nigra</i>
Black Medick	<i>Medicago lupulina</i>
Bulbous Buttercup	<i>Ranunculus bulbosus</i>
Bush Vetch	<i>Vicia sepium</i>
Common Centaury	<i>Centaureum erythraea</i>
Common Daisy	<i>Bellis perennis</i>
Common Spotted Orchid	<i>Dactylorhiza fuchsii</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Cowslip	<i>Primula veris</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Crosswort	<i>Cruciata laevipes</i>
Dandelion	<i>Taraxacum officinale</i>
Dog Violet	<i>Viola riviniana</i>
Germander Speedwell	<i>Veronica chamaedrys</i>
Glaucous Sedge	<i>Carex flacca</i>
Greater Stitchwort	<i>Stellaria holostea</i>
Hawkbeard	<i>Hieracium spp.</i>
Hawkbit	<i>Leontodon spp.</i>
Lady's mantle	<i>Alchemilla filicaulis ssp filicaulis</i>
Lady's Smock/Cuckooflower	<i>Cardamine pratensis</i>
Lesser Celandine	<i>Ranunculus ficaria</i>
Lesser Dandelion	<i>Taraxacum sect. 'Erythrospenna'</i>
Marsh Marigold	<i>Caltha palustris</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Mouse-ear Chickweed	<i>Cerastium fontanum</i>
Pepper Saxifrage	<i>Silaum silaus</i>
Pignut	<i>Conopodium majus</i>
Red Clover	<i>Trifolium pratense</i>

Common Name	Latin Name
Ribwort Plantain	<i>Plantago lanceolata</i>
Salad Burnet	<i>Sanguisorba minor</i>
Slender Speedwell	<i>Veronica filiformis</i>
Sorrel	<i>Rumex acetosa</i>
Stinging Nettle	<i>Urtica dioica</i>
Sweet Vernal Grass	<i>Anthoxanthum odoratum</i>
Thyme Leaved Speedwell	<i>Veronica serpyllifolia</i>
Trailing Tormentil	<i>Potentilla anglica</i>
Wintercress	<i>Barbaris vulgaris</i>

Appendix 2

Greenvale Fauna (Provisional List)

Table 1 Mammals

Common Name	Latin Name
Fox	<i>Vulpes vulpes</i>
Rabbit	<i>Oryctolagus cuniculus</i>
Mole	<i>Talpa europaeus</i>
Pipistrelle Bat	<i>Pipistrellus pipistrellus</i>

Table 2 Lepidoptera

Common Name	Latin Name
Common Blue	<i>Polyommatus icarus</i>
Large White	<i>Pieris brassicae</i>
Peacock	<i>Inachis io</i>
Red Admiral	<i>Vanessa atalanta</i>
Small Copper	<i>Lycaena phlaeas</i>
Small Skipper	<i>Thymelicus sylvestris</i>
Small Tortoiseshell	<i>Aglais urticae</i>

Table 3 Birds

Common Name	Latin Name
Blackbird	<i>Turdus merula</i>
Magpie	<i>Pica pica</i>
Wood Pigeon	<i>Columba palumbus</i>
Carrion Crow	<i>Corvus corone corone</i>
Robin	<i>Erithacus rubecula</i>
Blue Tit	<i>Parus caeruleus</i>
Wren	<i>Troglodytes troglodytes</i>
Goldfinch	<i>Carduelis carduelis</i>
Sparrow	<i>Passer domesticus</i>
Greenfinch	<i>Carduelis chloris</i>
Jackdaw	<i>Corvus monedula</i>

Appendix 3 - Proposed tree planting blocks at Greenvale Local Nature Reserve

Tree species	Number of individual trees per block (m2)						
	Common name	Block A (700 m ²)	Block B (900m ²)	Block C (500 m ²)	Block D (500 m ²)	Block E (900 m ²)	Total
<i>Acer Campestre</i>	Field Maple	30	20	20	30		100
<i>Betula pendula</i>	Silver Birch	30	35	25	10		100
<i>Corylus avellana</i>	Hazel	25	30	25	20		100
<i>Fraxinus excelsior</i>	Common Ash	10	10			5	25
<i>Quercus robur</i>	English Oak	25	20	10	25	20	100
<i>Salix cinerea</i>	Grey Willow	5	10			10	25
<i>Salix fragilis</i>	Crack Willow	25	25	10		40	100
<i>Malus sylvestris</i>	Crab Apple	10	35	20	25	10	100
<i>Ilex aquifolium</i>	Holly	5	10		10		25
<i>Alnus glutinosa</i>	Alder	30	20	25		25	100
<i>Sorbus aucuparia</i>	Rowan	20	20	20	30	10	100
	Total	215	235	155	150	120	875

Appendix 4. Greenvale Work Programme 2008 - 2012

	2008				2009				2010				2011				2012			
	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter
Unimproved grassland (Compartment A)																				
Cut and bale grassland		✓				✓				✓				✓				✓		
Strim along footpaths and desire lines		✓				✓				✓				✓				✓		
Crown lift/prune hawthorn as necessary			✓				✓				✓				✓				✓	
Stop scrub at rear of properties					✓	✓			✓	✓			✓	✓			✓	✓		
becoming too invasive																				
Monitor any invasive species and remove as necessary	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Unimproved grassland (Compartment B)																				
Cut and bale grassland		✓				✓				✓				✓				✓		
Monitor any invasive species and remove as necessary	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Crown lift/prune hawthorn as necessary			✓				✓				✓				✓				✓	
Amenity grassland (Compartment C)																				
Cut grassland	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cut back and spray Japanese Knotweed																				
Plant native tree species in suitable locations				✓				✓				✓				✓				✓
Woodland and scrub (Compartment D)																				
Monitor trees/scrub adjacent to properties		✓	✓			✓				✓				✓				✓		
Plant native tree species in suitable locations				✓				✓				✓				✓				✓
Beck (Compartment E)																				
Cut back vegetation along beck on a rotational basis	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Create scrapes along sections of beck in compartments C & D								✓												
Create education study area including platform for dipping					✓															
Monitor debris in beck and remove when water flow is restricted	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
General																				
Litter pick on a continual basis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Survey woodland area for small mammals		✓	✓			✓				✓				✓				✓		
Survey grassed area for small mammals		✓	✓			✓				✓				✓				✓		
Undertake full ecological survey on a continual basis to add to fauna and																				

Norton Grange Local Nature Reserve Management Plan 2008 –2012



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1. INTRODUCTION

1.1. Local Nature Reserves (LNRs) form a key component to Stockton's green infrastructure network and as such are of vital importance in relation to biodiversity and the movement of species from one area to another.

1.2. Fig.1 shows the location of Norton Grange LNR in the borough of Stockton-on-Tees and its boundary. The area has previously been an allotment site for local community use.

1.3. The site is situated adjacent to a stretch of the old North Eastern Railway Branch Line approximately 2 miles from Stockton town centre (OS Grid Ref. NZ443 207).

1.4. This plan describes Norton Grange and evaluates it as a LNR. The plan sets out objectives for management and identifies a five-year work programme. With appropriate management the site will continue to be a locally important area for species that use the area as a corridor thus enabling the movement of species around Norton Grange and its surrounding areas.

2. STRATEGIES RELEVANT TO THE MANAGEMENT PLAN

2.1. Stockton-on-Tees Local Agenda 21 Strategy

Environmental Objective No.2 'To protect and enhance the wildlife habitats and the diversity of species throughout the Borough'.

2.2. Stockton-on-Tees Local Plan

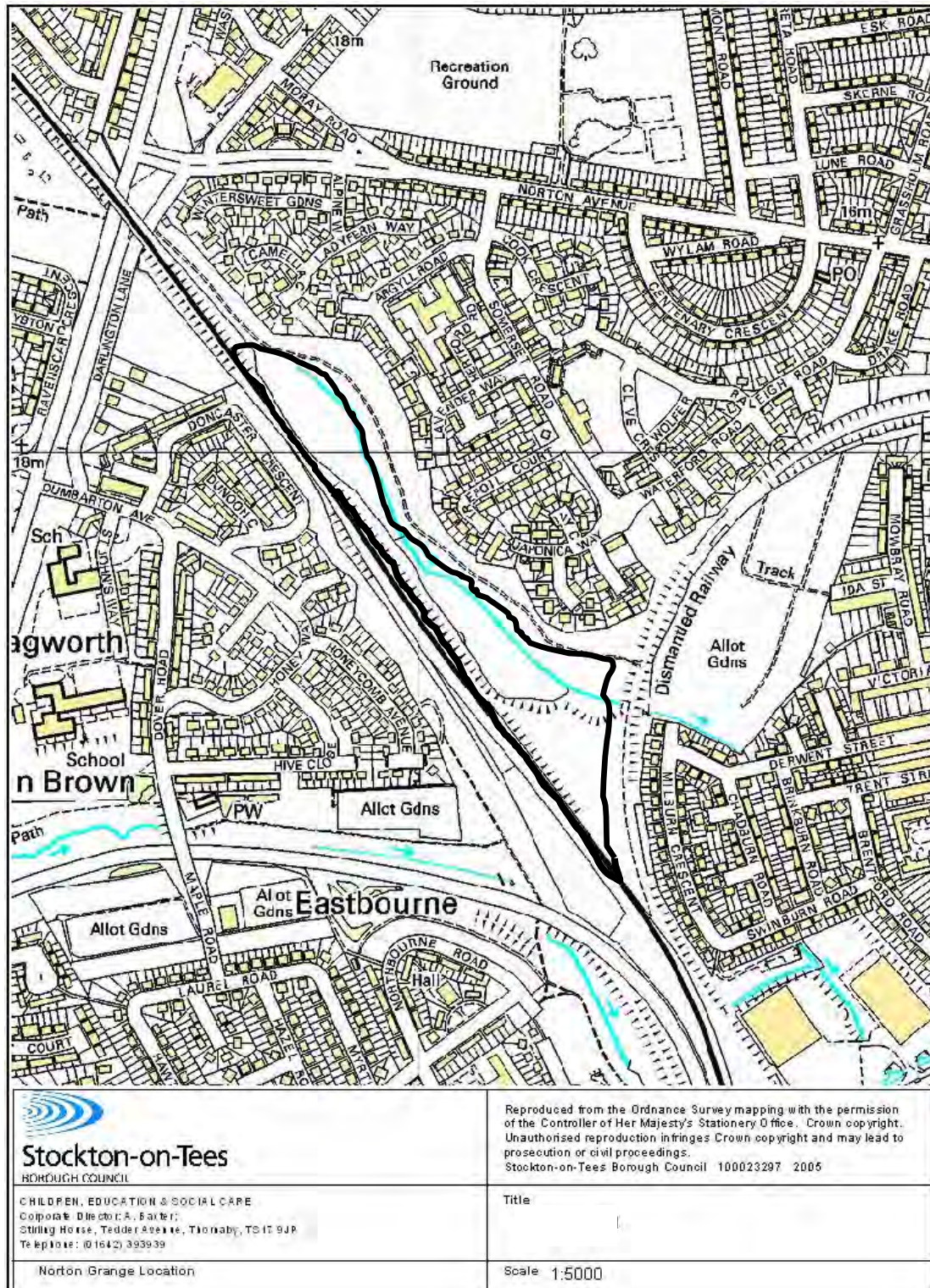
Objective 1 section 2.15 relating to Local Nature Reserves states that 'The council will continue to protect existing LNRs within the Borough from inappropriate development'

Objective 1 Policy EN2 states that, 'Development in LNRs will not be permitted if it would be harmful to the elements giving rise to their designation.

2.3 Tees Valley Green Infrastructure Plan

Sets out the intention of linking up areas of greenspace of which LNRs are a component of this vision.

Fig.1 Location Map of Norton Grange and its boundary



3. SITE DETAILS

3.1. Area

3.1.1. The area of the LNR is 3 hectares and comprises a wetland area with a beck that runs through the centre of the site, a wildflower meadow, scrub and long grassland. The area is situated in the Norton Grange ward within Stockton-on-Tees.

3.2. Surrounding Environment

3.2.1. The area is located in an urban setting and is surrounded by residential housing.

3.3. Administrative Details

3.3.1. The whole of the area is within the ownership of Stockton-on-Tees Borough Council. The land is under the jurisdiction of Development and Neighbourhood Services and the Countryside section have adopted responsibility for the site.

3.3.2. There are no current byelaws in operation at the site although these are in the process of going to cabinet and will be incorporated into the management plan once adopted.

3.3.3. There are currently no constraints on management, e.g. tenancies, separately owned mineral rights or soil contamination.

3.4. Management Infrastructure

3.4.1. There is a regular, but not permanent, presence on site by Stockton Borough Council's Urban Ranger and occasional presence by the Local Nature Reserves Officer who are responsible for site maintenance, management, development and promotion.

3.5. History

3.5.1. Before housing was built in this area it was farmland. Stockton Borough Council acquired part of the area in 1935. Residential housing began to be built

nearby in 1938 and during this time the site was allotments where records show that horses and cattle grazed the area and pigs were kept in basic sties until the early 1960s. In time the allotments became dilapidated and unused. The area was left unmanaged for over twenty-five years and during this time it developed naturally.

3.5.2. The rail line through this area was known colloquially as the Fuzzy Line and the Cuckoo Line. The Fuzzy Line comes from the fact that a Mr. Fussick was the engineer who designed the adjacent Fussick Bridge. The Cuckoo Line comes from when there was a large expanse of woodland stretching from Norton Grange to Junction Road in Norton and where the local community would hear cuckoos calling.

3.5.3. The area was first utilised as open space in 1996 with Norton Grange being designated a LNR in February 2004.

3.6. Access

3.6.1. The area has open access to the public with a series of metalled footpaths and adopted Sustrans cycle paths running throughout the site. Access points are available at Ida Street, Bolsover Road, Somerset Road, Milburn Crescent and Darlington Lane.

3.6.2. Controlled access via lockable gates is found at Darlington Lane allowing maintenance vehicles in to the area. Railtrack, the Environment Agency and the Water Authority have a right to bring vehicles on site for maintenance purposes.

3.6.3. Because of the metalled path network the site is open to all users including wheelchairs and pushchairs. Although due to the topography of the area certain sections of the site are inaccessible.

3.6.4. There are a series of desire lines that are apparent on site. These are especially evident in the marsh and wildflower areas.

3.7. Boundaries

3.7.1. To the west of the area lies a railway embankment with residential housing situated to the east and south of the site. Darlington Lane forms the boundary to the north. To the southwest of the site is an area of open space that compliments Norton Grange but is not part of the LNR.

3.8. Public benefit and usage

3.8.1. The area is predominantly used by the local community and on occasion there will be small-scale events that take place here such as guided walks, tree planting and wildflower planting.

3.8.2. Links have already been made with nearby schools, such as St. John's the Baptist and Norton Primary, who utilise the area as an outdoor classroom and have been involved with Stockton Borough Council's Parks and Countryside Section in relation to environmental activities and studies such as wildflower planting.

3.8.3. The user groups that most frequents the area are walkers, cyclists and dog walkers. Orienteering groups have, on occasion, utilised the orienteering course that runs through Norton Grange.

4. SITE DESCRIPTION

4.1. Norton Grange

4.1.1. For management purposes the site has been split into compartments, which are identified on Fig.2. The following section investigates the character of the area in more detail and to enable continuity with previous management plans the compartments have remained the same.

4.2. General

4.2.1. Norton Grange is an area that contains components of marshland, scrub, wildflower meadow and grassland with a beck that runs centrally throughout most of the site.

4.2.2. Some formal and informal surveys have been undertaken over the years with birds and a botanical survey being the most prominent amongst these. The results of these surveys are shown in Appendices 1 and 2.

4.3. Compartments

4.3.1. From a management perspective the main areas of the site are as follows (see Fig.2):

- Marshland
- Wildflower Meadow
- Scrub
- Beck

4.3.2. Marshland

4.3.2.1. The marshland compartment has distinct zones within itself and measures approximately 2.5 hectares in size. Plant species in this compartment include Reed Sweet-grass, Reedmace, Meadowsweet, Greater Willowherb and Water Avens. Many grasses are also present including Smooth Meadow-grass, Creeping Bent-grass and Tufted Hair-grass.

4.3.2.2. It has been suggested that some event in the past has raised the soil water table in this area because of the dying off of parts of the established hawthorn hedge. There is more evidence to support this when observing the plant communities that are present as these species have differing tolerances to the water content of the soil.

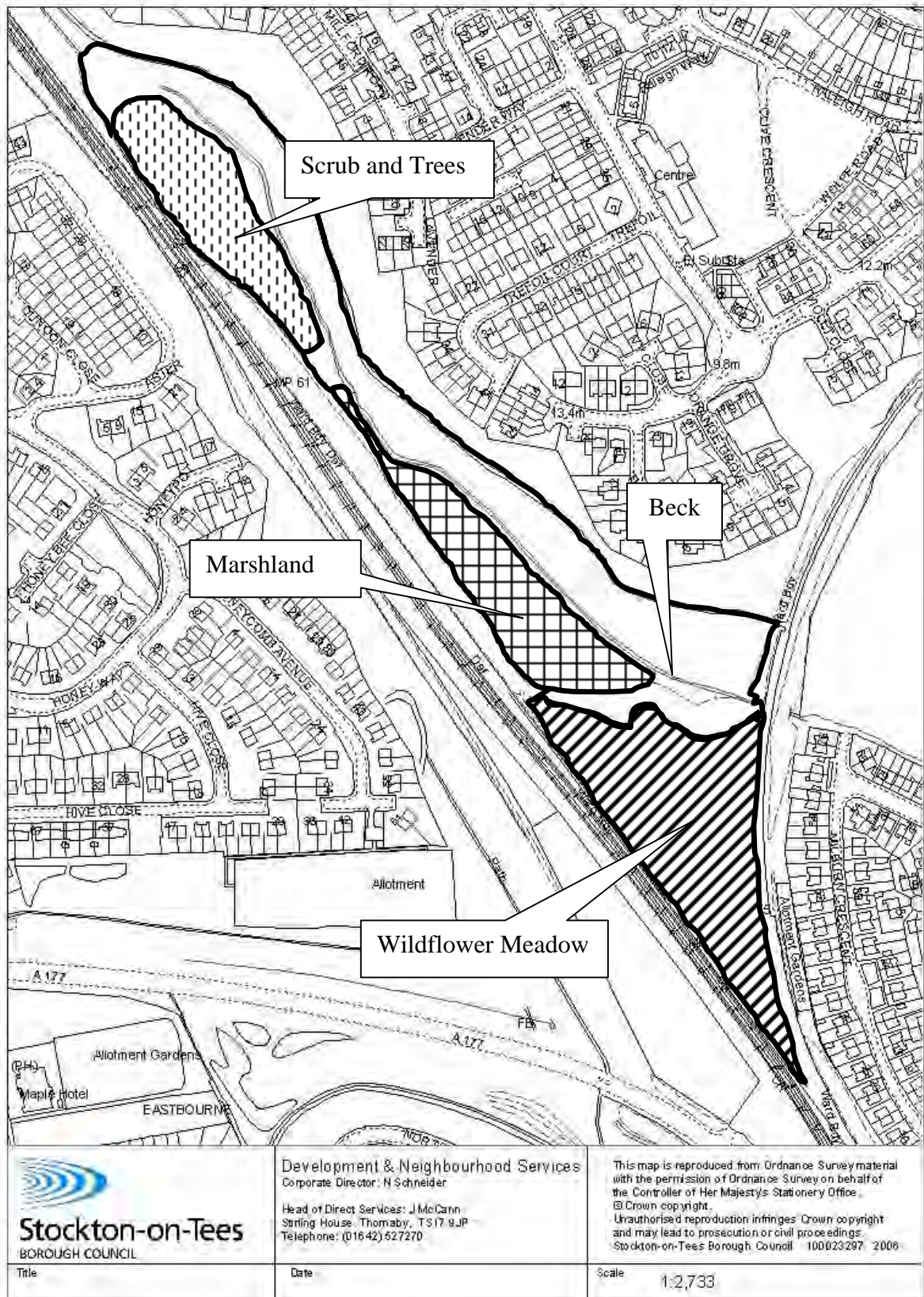
4.3.2.3. It is also clear that the railway embankment is playing an active role in the restriction of water to some degree and therefore any associated water content of the soil profile. It is possible that the aggregates used in the embankment construction are leaching nutrients into the adjacent soil profile and that plant species have colonised the area dependant upon their growth requirements.

4.3.3. Wildflower meadow

4.3.3.1. The wildflower meadow lies to the south of the site and covers approximately 0.5 hectare. Plant species in this compartment include Knapweed, Yellow Rattle, Bird's foot-trefoil and Yarrow.

4.3.3.2. The meadow area has returned to its original use as historically it was a wildflower meadow that was grazed until such a time that it was left unmanaged.

Fig.2 Norton Grange Compartments



4.3.3.3. An attempt was made in the late 1990s to reinstate the area to its original condition but without much success. However, since that time the area has been cut and baled to mimic traditional grazing patterns used by farmers many years ago, e.g. after the late summer cut, the grass and wildflowers would have been utilised as a hay crop to help feed the livestock over winter. After the hay crop was removed, the livestock on the farm would have grazed the field, therefore, the need for regular mowing until the end of October is in order to mimic this grazing regime.

4.3.3.4. The meadow area was sown with 1.3Kg of a wildflower seed mix on 21st March 2002 and contained Wild Carrot, Meadow Buttercup, Lesser Knapweed, Ribwort Plantain, Musk Mallow, Red Campion, Ox eye Daisy, White Campion, Yellow Rattle and Cowslip. During the Spring of 2007 several meadow species were planted as wildflower plugs including 175 Common Knapweed, 80 Yarrow, 225 Bird's foot-trefoil and 20 Meadow Cranesbill.

4.3.3.5. Art features are in place in this compartment and were installed on 15th March 2002 (see picture left). These features are well used by the local community and include seats and a table.



4.3.4. Scrub

4.3.4.1. The area of scrub is located at the northern end of the site and runs adjacent to the railway embankment. This is a valuable habitat for birds and mammals as it offers a multitude of nesting sites, food sources and cover.

4.3.4.2. This compartment is dominated by bramble and hawthorn with other occasional species such as Guelder Rose, Privet and Elder. The scrub is interspersed with tree species such as Willow and Sycamore.

4.3.5. Beck

4.3.5.1. The beck enters the site from a culvert to the north and runs in a south westerly direction. It is situated at the centre of the site and the beck channel is approximately 1 metre wide. Obviously the width of the beck increases after heavy rainfall but at most times of the year the flow of the beck is relatively constant and quite shallow.

4.3.5.2. Much of the beck's length is choked with vegetation. However, it does support species such as Stickleback and the Water Vole has been recorded at this location in the past although it is unclear if this species is still present on site.

4.4. PHYSICAL

4.4.1. Climate

4.4.1.1. The site is quite exposed but receives some shelter from the adjacent housing and railway embankment. This can also have the effect of funnelling winds etc along the length of the site.

4.4.2. Hydrology

4.4.2.1. Norton Grange is typical of many beck valleys in the area, e.g. gently sloping banks on either side of the watercourse. As a result rainfall replenishes the beck not only from further upstream but from the surrounding landscape too.

4.4.3. Soils and Substrates

4.4.3.1. The soil is predominantly clay. The whole of the area is covered with glacial till that would have been laid down during the advance of the ice sheets approximately 10,000 years ago.

4.4.3.2. Along the length of the beck a finer, alluvial sediment is evident. This sediment will also be deposited along the length of the beck's floodplain during times of heavy rainfall when the channel of the beck is breached.

4.5. BIOLOGICAL

4.5.1. Flora

4.5.1.1. A survey was undertaken by Wildflower Ark in 2001. These results are incorporated into Appendix 1. The survey concentrated on the area along the length of the beck and so species from the remainder of the site were recorded at a later date. In total 74 species of plant have been recorded at the site although this would undoubtedly be expanded if a more in-depth survey was carried out.

4.5.1.2. Generally there are no species of real conservation importance although several species are of note especially in a local context. *xFestulolium loliaceum*, a hybrid Fescue grass is a rare record for the former Cleveland County and *Carex otrubae*, generally found closer to the coast and as such quite rare in a setting so far inland.

4.5.1.3. What the survey undertaken by Wildflower Ark did highlight was the clear zonation of plants that are evident on site. It would appear as though the zonation of plant communities is in relation to soil moisture content and nutrient availability as discussed above.

4.5.2. Fauna

4.5.2.1. A provisional fauna list is shown in Appendix 2. No in-depth ecological surveys have been undertaken at the site. However, recordings of bird and butterfly species have been carried out for a number of years. At present the number of bird species recorded on site totals 29.

4.5.2.2. Due to the amount of disturbance on site many species of mammal will be transient visitors. A more in-depth mammal survey would be of benefit to determine if those species recorded historically on site are still resident here. This is especially relevant to the Water Vole, which is a protected and threatened species that is listed in local and national Biodiversity Action Plans.

5. MANAGEMENT OBJECTIVES

The following eleven objectives have been identified to fulfil the site's potential as an area for education, recreation and conservation.

5.1 Maintain good access

5.2 Maintain the characteristics of the area to ensure its future longevity.

5.3 Provide a safe environment for the public

5.4 Protect the area as a haven for wildlife

5.5 Raise biodiversity in the area

5.6 Maintain the beck's flow through the site

5.7 Maximise opportunities for schools and other groups to use the area as an environmental, educational and recreational resource.

5.8 Manage the area sympathetically to accommodate the requirements of neighbouring residents wherever possible

5.9 Continue to create and improve links with the local community

5.10 Undertake ecological surveys.

5.11 Take into consideration the potential impact of climate change on flora and fauna.

6. IMPLEMENTATION

6.1. Maintain good access

6.1.1. Good access will be maintained by cutting back any overhanging vegetation, where applicable, adjacent to the footpath network. This is especially relevant along desire lines where a less open aspect to the site is experienced. This will include shrubs and branches that are at head height and nettles and thistles etc at ground level. Access will be monitored on a continual basis to ensure that the path network is in a safe and effective condition.

6.1.2. Wherever possible the vegetation either side of the metalled path network will be cut back approximately 1 meter from the edge of the path.

6.2. Maintain the characteristics of the area to ensure its future longevity.

6.2.1. The marshland will be allowed to develop naturally and requires little in the way of other forms of intervention. This area holds many opportunities for educational exploration such as determining factors that influence plant zonation. Sediment cores may also prove useful in determining the sites' historical characteristics.

6.2.2. Sections of the beck could be cleared of vegetation on an annual basis to prevent the watercourse becoming totally choked. This would be best achieved by staggering the removal of vegetation on either side of the beck. By doing this,

if Water Vole is still present, they will be able to move along the length of the beck whilst retaining some cover from predators.

6.2.3. The wildflower meadow needs to be cut and baled on an annual basis so that the soil becomes impoverished and nutrients are not allowed to return to the soil profile. Wildflower species can be added to the area providing that they are able to compete with tall grass species. Ideally, any plants used in this manner will be of local provenance so that growth success rates will be as high as possible. Seeds can also be collected from existing plant stock such as Yellow Rattle and spread to other areas of the site. This will help to create a mosaic of wildflower communities in the area.

6.3. Provide a safe environment for the public.

6.3.1. The area will be regularly patrolled in order to ensure that the site is not in a dangerous condition. Any dead or damaged trees will be cut back accordingly and either disposed of or stored on site. Should any fly-tipping be discovered or litter that could be construed as dangerous, e.g. broken glass, it will be cleared immediately.

6.3.2. All site infrastructure, including paths, lighting, seating, gates, steps, fencing, boardwalks, and interpretation etc, will be monitored and maintained on a continual basis to ensure it is in a safe and effective condition.

6.4. Protect the area as a haven for wildlife

6.4.1. By designating the area as a Local Nature Reserve, Stockton Borough Council is demonstrating its commitment to protecting this area for future generations to enjoy. The Council is also demonstrating that no inappropriate development or uses will take place at the site and that Stockton Borough Council is accepting a commitment to manage the land as a nature reserve

6.5. Raise biodiversity in the area

6.5.1. There are areas at Norton Grange that would benefit from the planting of native tree species. Not only would this increase biodiversity it would also offer existing species more food sources, shelter and potential nesting sites. The potential for Water Vole reintroduction should be investigated, as this area has been a habitat to the creature in the past.

6.5.2. Wildflower seeds and plugs can be continued to be planted in the meadow area. As already mentioned, these should be of local provenance to enable the best chance of survival.

6.5.3. A small thicket of trees at the northern end of the site could prove useful with regard to installing bird and bat boxes in the area. This could be carried out with members of the local community and/or local schools.

6.6. Maintain the beck's flow through the site.

6.6.1. The flow of the beck through the site can be maintained by regular inspection around the culverts to ensure no debris is building up in these areas.

6.6.2. As mentioned above, the vegetation that lines the beck channel needs to be kept in check to prevent the silting up of the channel.

6.7. Maximise opportunities for schools and other groups to use the area as an environmental, educational and recreational resource.

6.7.1. The involvement of school groups at the site is hindered by the fact that there are few facilities on site, e.g. toilets and only 1 – 2 schools are located in the immediate vicinity.

However, the area makes an excellent outdoor classroom as it does have a dipping platform, a concrete base for children to work off for any exploratory work and a boardwalk for children to investigate other areas of the site. An education pack will be produced to promote the area as a resource for achieving targets in national curriculum and Key Stages 1, 2 and 3

6.7.2. Not only would the area be useful in a botanical sense, it now offers potential as a geographical and biological resource, e.g. anthropogenic land usage and relationships between plants and water. Additionally, the relationship between the flora and fauna of the site and how they interact can be studied.

6.7.3. An interpretation panel is sited close to a footbridge to assist the public in their knowledge of the area and to gain a better understanding of the historical and environmental management that has occurred.

6.8. Manage the area sympathetically to accommodate the requirements of neighbouring residents wherever possible.

6.8.1. The needs of the local community that are immediately adjacent to the LNR should be addressed whenever possible. No tree planting will take place near to properties adjacent to the LNR. This is to ensure that trees or tree limbs do not pose any danger or threat in windblown situations and so that tree roots do not impact on neighbouring properties or their gardens.

6.9. Continue to create and improve links with the local community.



6.9.1. Small-scale events that encourage community involvement have proved very successful at this location and it is envisaged that these will continue. Guided walks, tree, hedgerow and wildflower planting have all been well attended in the past (see picture left).

6.9.2. Several organisations that represent some aspect of community involvement/liaison have shown considerable interest when any event that can involve the local community has taken place. All organisations are keen to retain some form of momentum with local residents and it is this partnership working that makes the events as popular as they have become.

6.10. Undertake ecological surveys.

6.10.1 A full ecological survey should be continually undertaken to determine any trends in species moving in to or migrating from the area. This data will also provide a baseline for the future management of Norton Grange.

6.10.2. Although many aspects of the site's flora and fauna are well documented, other areas such as the beck's fauna is sadly lacking. A mammal trapping exercise using Longworth traps would also prove beneficial to determine those species that are currently resident on site.

6.11. Take into consideration the potential impact of climate change on flora and fauna

6.11.1. Climate change will undoubtedly have some form of impact on species composition and therefore needs to be taken into consideration. More drought resistant native tree species may need to be planted or the location of species with certain requirements may be altered, e.g. particular species of trees may need to be planted closer to watercourses to ensure they have an adequate water supply all year round.

6.11.2. The grass cutting season may be extended due to warmer weather and will need to be taken into consideration, particularly in relation to the wildflower meadow area and adjacent to metalled footpaths.

6.11.3. As mentioned above, a continual ecological survey would also help to identify shifts in species assemblage and the northerly migration of historically southern species that are linked to climate change.

APPENDICES

Appendix List

APPENDIX ONE

NORTON GRANGE FLORA (Provisional List)

TABLE 1 Vascular Plants

APPENDIX TWO

NORTON GRANGE FAUNA (Provisional List)

TABLE 1 Birds

TABLE 2 Mammals

TABLE 3 Butterflies

APPENDIX THREE

WORK PROGRAMME 2008 – 2012

Provisional Flora and Fauna list for Norton Grange Local Nature Reserve

APPENDIX 1

Table 1. Vascular plants

Common Name	Latin Name
Alder	<i>Alnus glutinosa</i>
Amphibious Bistort	<i>Polygonum amphibian</i>
Ash	<i>Fraxinus excelsior</i>
Bird's foot-trefoil	<i>Lotus corniculatus</i>
Bramble	<i>Rubus fruticosus</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Brooklime	<i>Veronica beccabunga</i>
Bush Vetch	<i>Vicia sepium</i>
Cocksfoot	<i>Dactylis glomerata</i>
Common Knapweed	<i>Centaurea nigra</i>
Common Mouse-ear	<i>Cerastium fontanum</i>
Common Sorrel	<i>Rumex acetosa</i>
Common Vetch	<i>Vicia sativa ssp. segitalis</i>
Couch Grass	<i>Elymus repens</i>
Comfrey	<i>Symphytum officinale</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Cowslip	<i>Primula veris</i>
Creeping Bent-grass	<i>Agrostis stolonifera</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Thistle	<i>Cirsium arvense</i>
Cuckoo Flower	<i>Cardamine pratensis</i>
Dandelion	<i>Taraxacum officinale</i>
Elder	<i>Sambucus nigra</i>
False Fox Sedge	<i>Carex otrubae</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Field Maple	<i>Acer campestre</i>
Greater Willowherb	<i>Epilobium hirsutum</i>
Guelder Rose	<i>Viburnum opulus</i>
Hairy Sedge	<i>Carex hirta</i>
Hard Rush	<i>Juncus inflexus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hoary Ragwort	<i>Senecio erucifolius</i>
Hogweed	<i>Heracleum sphondylium</i>
Horsetail	<i>Equisetum sp.</i>

Common Name	Latin Name
Hybrid Fescue	<i>xFestulolium loliaceum</i>
Marsh Foxtail	<i>Alopecurus geniculatus</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Meadow Cranesbill	<i>Geranium pratense</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Mountain Ash	<i>Sorbus aucuparia</i>
Musk Mallow	<i>Malva moschata</i>
Oak	<i>Quercus sp</i>
Oxeye Daisy	<i>Leucanthemum vulgare</i>
Perennial Rye-grass	<i>Lolium perenne</i>
Plicate Sweet-grass	<i>Glyceria plicata</i>
Privet	<i>Ligustrum vulgare</i>
Red Campion	<i>Silene dioica</i>
Red Clover	<i>Trifolium pratense</i>
Red Fescue	<i>Fetuca rubra</i>
Reed Sweet-grass	<i>Glyceria maxima</i>
Reedmace	<i>Typha latifolia</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Rosebay Willowherb	<i>Epilobium angustifolium</i>
Rough Meadow-grass	<i>Poa trivialis</i>
Scentless Mayweed	<i>Tripleurospermum inodorum</i>
Silver Birch	<i>Betula pendula</i>
Silverweed	<i>Potentilla anserina</i>
Smooth Meadow-grass	<i>Poa pratensis</i>
Snowberry	<i>Symphoricarpos albus</i>
Soft Rush	<i>Juncus effuses</i>
Teasel	<i>Dipsacus fullonum</i>
Tufted Hair-grass	<i>Deschampsia cespitosa</i>
Tufted Vetch	<i>Vicia cracca</i>
Water Avens	<i>Geum rivale</i>
White Campion	<i>Silene alba</i>
White Clover	<i>Trifolium repens</i>
White Dead Nettle	<i>Lamium album</i>
Wild Carrot	<i>Daucus carota</i>
Willow	<i>Salix sp.</i>
Wood Dock	<i>Rumex sanguineus</i>
Yarrow	<i>Achillea millefolium</i>
Yellow Rattle	<i>Rhinanthus minor</i>
Yorkshire Fog	<i>Holcus lanatus</i>

Provisional Fauna List

APPENDIX 2

Table 1. Birds

Common Name	Latin Name
Blackbird	<i>Turdus merula</i>
Blackcap	<i>Sylvia atricapilla</i>
Blue Tit	<i>Parus caeruleus</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Carrion Crow	<i>Corvus corone corone</i>
Collared Dove	<i>Streptopelia decaocto</i>
Dunnock	<i>Prunella modularis</i>
Goldfinch	<i>Carduelis carduelis</i>
Great Tit	<i>Parus major</i>
Greenfinch	<i>Carduelis chloris</i>
Heron	<i>Ardea cinerea</i>
House Martin	<i>Delichon urbica</i>
House Sparrow	<i>Passer domesticus</i>
Kestrel	<i>Falco tinnunculus</i>
Long Tailed Tit	<i>Aegithalos caudatus</i>
Magpie	<i>Pica pica</i>
Mallard	<i>Anas platyrhynchos</i>
Moorhen	<i>Gallinula chloropus</i>
Pied Wagtail	<i>Motacilla alba</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Robin	<i>Erithacus rubecula</i>
Song Thrush	<i>Turdus philomelos</i>
Sparrowhawk	<i>Accipiter nisus</i>
Swallow	<i>Hirundo rustica</i>
Swift	<i>Apus apus</i>
Whitethroat	<i>Sylvia communis</i>
Willow Warbler	<i>Phylloscopus trochilus</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>

Table 2. Mammals

Common Name	Latin Name
Bank Vole	<i>Clethrionomys glareolus</i>
Common Shrew	<i>Sorex araneus</i>
Field Vole	<i>Microtus agrestis</i>
Fox	<i>Vulpes vulpes</i>
Hedgehog	<i>Erinaceus europaeus</i>
Pipistrelle Bat	<i>Pipistrellus pipistrellus</i>
Pygmy Shrew	<i>Sorex minutus</i>
Water Vole	<i>Arvicola terrestris</i>
Wood Mouse	<i>Apodemus sylvaticus</i>

Table 3. Butterflies

Common Name	Latin Name
Comma	<i>Polygonia alba</i>
Common Blue	<i>Polyommatus icarus</i>
Green-veined White	<i>Pieris napi</i>
Large Skipper	<i>Ochlodes venatus</i>
Large White	<i>Pieris brassicae</i>
Meadow Brown	<i>Maniola jurtina</i>
Orange-tip	<i>Anthocharis cardamines</i>
Painted Lady	<i>Cynthia cardui</i>
Peacock	<i>Inachis io</i>
Red Admiral	<i>Vanessa atalanta</i>
Ringlet	<i>Aphantopus hyperanthus</i>
Small Copper	<i>Lycaena phlaeas</i>
Small Tortoiseshell	<i>Aglais urticae</i>
Small White	<i>Pieris rapae</i>
Wall Brown	<i>Lasiommata megera</i>

Norton Grange Work Programme 2008 - 2012																				
	2008				2009				2010				2011				2012			
	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter
Marsh Area																				
Allow vegetation to develop naturally	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Maintain desire lines	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Monitor and maintain boardwalk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitor and maintain dipping platform	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wildflower Meadow																				
Cut and bale vegetation		✓				✓				✓				✓				✓		
Collect seed from existing stock and spread to other areas of the meadow		✓				✓				✓				✓				✓		
Maintain desire lines	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Monitor and restrict any invasive scrub species	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Scrub Area																				
Cut back any overhanging vegetation adjacent to desire lines	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓	
Cut back vegetation at ground level adjacent to desire lines	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓	
Monitor area for breeding bird species	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Beck																				
Clear debris from culvert areas so water flow is not restricted	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Clear invasive vegetation from beck channel			✓				✓				✓				✓				✓	
General																				
Litter pick on a continual basis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Inspect and rectify any damage to infrastructure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Undertake a full ecological survey	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitor orienteering course and reinstate if necessary	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Eliminate Japanese Knotweed from site	Cut	Spray	Cut		Cut	Spray	Cut		Cut	Spray	Cut		Cut	Spray	Cut		Cut	Spray	Cut	

Quarry Wood Local Nature Reserve Management Plan 2008-2012



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1. INTRODUCTION

1.1. Local Nature Reserves (LNRs) form a key component to Stockton's green infrastructure network and as such are of vital importance in relation to biodiversity and the movement of species from one area to another.

1.2. Fig.1 shows the location of Quarry Wood Local Nature Reserve in the borough of Stockton-on-Tees and its boundary. As its name suggests, the site was previously a Victorian quarry that was mined for Whinstone, a rock of volcanic origin, to be used as a roadstone in expanding cities of the time such as Leeds and London.

1.3. The site is situated adjacent to a stretch of the River Tees in Eaglescliffe approximately 2 miles from Stockton Town Centre (OS Grid Ref. NZ428153).

1.4. This plan describes Quarry Wood and evaluates it as a LNR. It is not intended to be a woodland management plan, although it does have components of this, but will reinforce any such plan that may be written by Stockton Borough Council's Arboricultural Section. This plan sets out objectives for management and identifies a five-year work programme. With appropriate management the site will continue to be a locally important area for woodland birds and as a corridor for the movement of species around the adjacent Preston Park and surrounding area.

2. STRATEGIES RELEVANT TO THE MANAGEMENT PLAN

2.1. Stockton-on-Tees Local Agenda 21 Strategy

Environmental Objective No.2 'To protect and enhance the wildlife habitats and the diversity of species throughout the Borough'.

2.2. Stockton-on-Tees Local Plan

Objective 1 section 2.15 relating to Local Nature Reserves states that 'The council will continue to protect existing LNRs within the Borough from inappropriate development'

Objective 1 Policy EN2 states that, 'Development in LNRs will not be permitted if it would be harmful to the elements giving rise to their designation.

2.3 Tees Valley Green Infrastructure Plan

Sets out the intention of linking up areas of greenspace of which LNRs are a component of this vision.

Fig.1 Location map of Quarry Wood and its boundary



3. SITE DETAILS

3.1. Area

3.1.1. The area of the LNR is 4 hectares and comprises new and mature woodland and a pond at its centre.

3.2. Surrounding Environment

3.2.1. To the north of the site is Preston Park, a 119 acre public open space. Residential housing, allotments and the River Tees are features that encompass the area. The site is situated in an urban location although on the opposite bank of the River Tees farming is still practised.

3.3. Administrative Details

3.3.1. The whole of the area is within the ownership of Stockton-on-Tees Borough Council. The land is under the jurisdiction of Development and Neighbourhood Services and the Countryside section have adopted responsibility for the site.

3.3.2. There are no current byelaws in operation at the site although these are in the process of going to cabinet and will be incorporated into the management plan once adopted.

3.3.3. There are currently no constraints on management, e.g. tenancies, separately owned mineral rights or soil contamination.

3.4. Management Infrastructure

3.4.1. There is a regular presence on site by rangers based at Preston Park and also from the LNR Officer who are responsible for site maintenance, management, development and promotion.

3.5. History

3.5.1. The first mention of Preston Park and its surrounding environment comes from the Bolden Book in 1184. The land changed hands many times before being bought by David Burton Fowler, a local merchant who lived in

Yarm. He built Preston Hall in 1825 when the associated land measured over 1000 acres.

3.5.2. It was during this time (1820s – 1850s) that Quarry Wood was being quarried for Whinstone, a basaltic andesite rock that derived from volcanic activity during the Tertiary period some 58 million years ago. This volcanic intrusion forms part of what is known as the Cleveland Dyke and stretches from Eaglescliffe to the North York Moors.

3.5.3. During the quarrying period, the stone would be worked in the same way as flint, i.e. with glancing blows, to create 5cm square blocks of stone (setts). These setts were then transported along the length of the River Tees via barge and exported to expanding cities of the time including Leeds and London. Once the Stockton-Darlington rail line was in place the then estate owner erected a steam engine for facilitating the working of the quarry and formed a railway from the site to the Stockton-Darlington railway which ran adjacent to the present Preston Park boundary on Yarm Road.

3.5.4. No historical evidence can be found in relation to what happened at the site after quarrying ceased. It is not clear if the woodland was planted, left to nature to colonise the area or if the area was already wooded prior to mining activity taking place.

3.5.5. Quarry Wood was declared a LNR in February 2004.

3.6 Access

3.6.1. Access to Quarry Wood can be obtained by a kissing gate where the site runs adjacent to Preston Park, close to the park's southern boundary and from a path in the southeast that runs along the eastern side of the park's boundary adjacent to the River Tees (see Fig.1). There are also entrances into Quarry Wood via a gateway in Tees Bank Avenue and from a pathway that runs alongside the northern boundary of the wood.

3.6.2. There is a metalled path network running throughout the woodland area and as such the site is accessible to everyone including pushchairs and wheelchairs. However, at certain sections of the path network steps and inclines are encountered that may make it unfeasible to navigate for the aforementioned user groups.

3.7 Boundaries

3.7.1. To the north, Preston Park forms a boundary to the site. Allotments create a boundary to the west with the River Tees and residential housing forming boundaries to the east and south respectively.

3.8. Public benefit and usage

3.8.1. The area is predominantly used by the local community and on occasion there will be small-scale events that take place here such as guided walks, tree planting and story telling sessions.

3.8.2. Good links have already been made with neighbouring schools, such as Preston Primary, who utilise the area as an outdoor classroom and have been involved with Stockton Borough Council's Parks and Countryside Section in relation to environmental activities and studies such as tree planting.

3.8.3. The user groups that most frequents the area are walkers, joggers, cyclists and dog walkers. Although the area is also popular with naturalists and people who enjoy spending time in a woodland environment. Orienteering groups regularly utilise Preston Park's orienteering course, some of which runs through Quarry Wood.

4. SITE DESCRIPTION

4.1. Quarry Wood

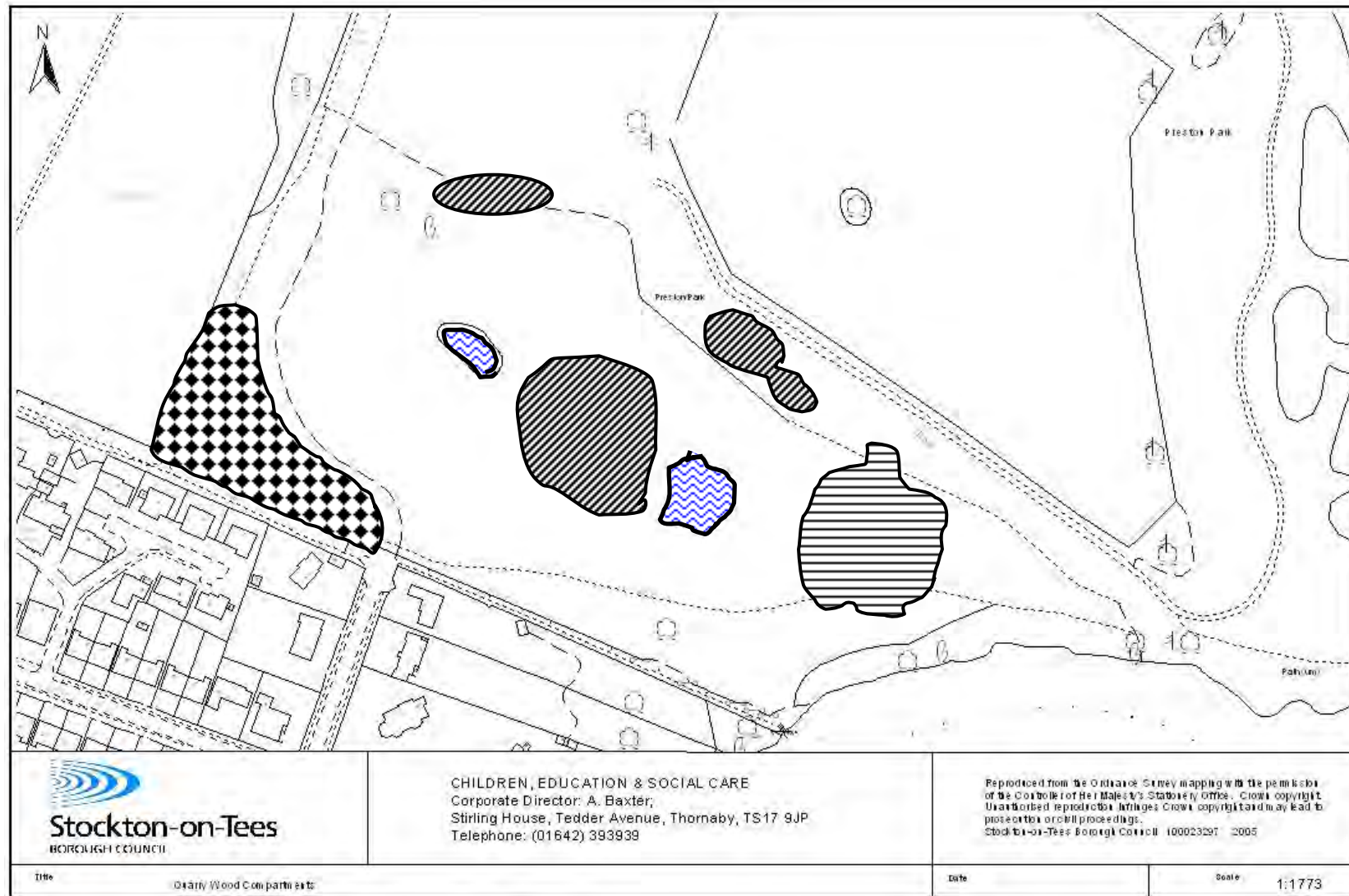
4.1.1. For management purposes the site has been split into compartments, which are identified on Fig.2. The following section investigates the character of the area in more detail and to enable continuity with previous management plans the compartments have remained the same.

4.2. General

4.2.1. Quarry Wood is the largest wooded area within Preston Park that contains components of new and mature mainly broadleaf woodland and has 2 ponds. A larger pond that is situated at the centre of the area and a smaller concrete lined pond.

4.2.2. Some informal surveys have taken place over the years although a full ecological survey would be advantageous for management purposes. A provisional flora and fauna survey was undertaken in 2007 and is shown in Appendices 1 and 2.

Fig.2 Quarry Wood Compartments



Key:  Areas of Snowberry  Beech Compartment  TOTAP  Ponds

4.3. Compartments

4.3.1. From a management perspective the main areas of the site are as follows (see Fig.2).

- New woodland (Trees of Time and Place – TOTAP)
- Mature Woodland
- Pond
- Access

4.3.2. Trees of Time and Place – TOTAP

4.3.2.1. The TOTAP compartment is a small area of Quarry Wood that resulted from the Trees of Time and Place tree planting initiative. All the trees planted in this area are native species and have mostly been successful in their growth. Initially, some vandalism occurred to several specimens although these were later replaced. This area is now in need of some thinning out as there is some overcrowding taking place.

4.3.2.2. With appropriate management this compartment will continue to show signs of good structure with many facets of a healthy woodland already on display, e.g. ground and herb flora with shrub and canopy layers.

4.3.3. Mature Woodland

4.3.3.1. Most of the woodland area consists of mature specimens although it should be stressed that these specimens are not necessarily in a good and healthy condition.

4.3.3.2. There is a good assemblage of tree species evident which are included in Appendix 1. However, many trees in Quarry Wood are showing signs of fragility due to a lack of appropriate management from the time the wood was first created. It would appear as though the wood has been left to its own devices with the result that many trees are showing growth only in the canopy areas. The ground flora in many areas is non-existent as a consequence of this and any subsequent tree regeneration is at a distinct disadvantage because of the growing conditions that prevail.

4.3.3.3. Some areas of the woodland floor are suffering from ground compaction and erosion. This has been created in the most part by people pressure and in particular cyclists using the undulating topography of the area. This is having a negative impact on many areas of the woodland and in

particular the Beech compartment due to the shallow roots that are characteristic of Beech trees.

4.3.3.4. Many areas of Quarry Wood have also been planted with Snowberry. This shrub has no conservation value whatsoever for native fauna. It is an invasive plant that blocks out sunlight to the detriment of species growing beneath it. A programme of Snowberry control and removal is, therefore, essential.

4.3.4. Pond Areas

4.3.4.1. The largest of the 2 ponds is circular and measures approximately 5 – 6 metres. It is located approximately in the centre of Quarry Wood and is known as the Shaft Pond as this was the location that much of the mining activity took place. It is not known how deep the pond is but records suggest that most shafts wouldn't be any deeper than 10 metres due to the technology available at the time and the financial implications that mining any deeper would entail.

4.3.4.2. The shaft pond is replenished by rainfall and the surrounding landscape. It has a carpet of duckweed over its surface for much of the year that detracts from its aesthetic value. As whinstone is an impervious rock it holds water and is unable to drain away. This, along with the annual influx of leaves during the autumn can make the pond stagnant and unsightly. However, the pond is home to many creatures including toads, moorhen and mallard in addition to many aquatic invertebrates.

4.3.3.3. The second of the ponds is a smaller, oval shaped concrete lined pond that is also replenished by rainfall and the surrounding landscape and is located approximately 50 metres to the west of the shaft pond.

4.3.5. Access

4.3.5.1. Due to the number of paths throughout Quarry Wood, the management of overhanging and low level vegetation needs to be taken into consideration so that accessibility and a safe environment is maintained for the general public.

4.3.5.2. Improper usage of access provision also needs addressing. In particular the speeding of cycles across the footpath network. This is especially prevalent in the Beech compartment.

4.3.5.3. There are a series of steps that lead from the upper tier of the woodland to the woodland basin. The condition of these steps and all associated handrails should be inspected on a regular basis to ensure they are safe and secure.

4.4. PHYSICAL

4.4.1. Climate

4.4.1.1. The amount of shade offered by the tree canopy within Quarry Wood has a cooling effect even on the hottest of summer days. The trees also offer protection against winds and as such Quarry Wood retains a damp and moist environment throughout the year.

4.4.2. Hydrology

4.4.2.1. Because of the topography of the surrounding landscape water drains into the ponds which effectively act as collection points for any rainwater falling on to the site.

4.4.2.2. The ponds are not connected to each other and are not connected to the adjacent River Tees. As mentioned above, the ponds act as holding vessels due to the impermeability of the underlying rock. In essence, no water is released into the surrounding areas from the pond and water enters the pond via surface runoff as opposed to any method of filtration from the surrounding substrate.

4.4.3. Soils and Substrates

4.4.3.1. The soils in the area are predominantly clay, probably as a result of the advance of ice sheets during the last ice age. Much of the substrate and the undulating landform of the area owes a great deal to mining activity and its resultant spoil heaps.

4.4.3.2. In many areas of the woods the substrate is very poor due to the brittle nature of the underlying rock and as a consequence of this tree growth can, at times, be impeded.

4.5. BIOLOGICAL

4.5.1. Flora

4.5.1.1. A provisional flora survey was undertaken at Quarry Wood during 2007 and is shown in Appendix 1 with over 70 species being recorded. Most species in the list are indicative of woodlands and hedgerows, e.g. Lords and Ladies, Ramsons and Forget-me-not. There are no species of any great conservation note although there is a varied assemblage of species present.

4.5.2. Fauna

4.5.2.1. A provisional fauna list is shown in Appendix 2 and as would be expected birds feature prominently. 22 species of bird have been recorded at the site through casual observation including several species of Owl.

4.5.2.2. Several species of mammal utilise the area although this will only be on a transient basis due to the small area of the woodland and because of disturbance from people. Only the species able to escape from human activity, e.g. Grey Squirrel, Mole and Rabbit are resident in Quarry Wood.

4.5.2.3. It would be useful to undertake an invertebrate survey, particularly aquatic invertebrates to determine water quality in the ponds and to record species that are resident in this habitat.

5. MANAGEMENT OBJECTIVES

The following ten objectives have been identified to fulfil the site's potential as an area for education, recreation and conservation.

5.1 Maintain good access

5.2 Maintain the characteristics of the area to ensure its future longevity.

5.3 Provide a safe environment for the public

5.4 Protect the area as a haven for wildlife

5.5 Raise biodiversity in the area

5.6 Maximise opportunities for schools and other groups to use the area as an environmental, educational and recreational resource.

5.7 Manage the area sympathetically to accommodate the requirements of neighbouring residents wherever possible

5.8 Continue to create and improve links with the local community

5.9 Undertake ecological surveys.

5.10 Take into consideration the potential impact of climate change on flora and fauna.

6. IMPLEMENTATION

6.1. Maintain good access

6.1.1. Good access will be maintained by cutting back any overhanging vegetation adjacent to the footpath network. This will include shrubs and branches that are at head height and nettles and thistles etc at ground level. Access will be monitored on a continual basis to ensure that the path network is in a safe and effective condition.

6.2. Maintain the characteristics of the area to ensure its future longevity.

6.2.1. Quarry Wood is in urgent need of remediation work to ensure that the characteristics of the woodland are not lost for generations to come. In addition to clearance work being undertaken in areas where trees are too compact and resulting in drawn up specimens with only a small portion of live crown, tree planting needs to occur in other areas whilst shrub clearance needs undertaking where Snowberry is present.

6.2.2. The removal of Snowberry and Himalayan Balsam from Quarry Wood would be of benefit not only to native flora but fauna too. Most of the snowberry removal will occur along the northern edge of and around the shaft pond area of Quarry Wood (see Fig.2). The area that this will create means that more suitable species can then be planted with under storey species that are more beneficial to wildlife, e.g. hazel, hawthorn, holly, yew and bramble. Himalayan Balsam is predominantly based around the shaft pond area and also needs to be eliminated.

6.2.3. It would also make sense when planting new trees to observe what species are currently doing well in Quarry Wood as these species will be compatible with the ground conditions that exist, e.g. Alder, Oak and Ash.

6.2.4. The area that makes up the Beech compartment needs urgent attention. Not only is the ground too compact for any regeneration to occur but also the ground has a polished surface so that any vegetation falling to the woodland floor during the autumn is simply blown away rather than these nutrients being returned to the soil to make it more fertile. It would be beneficial for another cyclist area to be created in a different location of the park so that the pressure in this compartment is reduced and a programme of remediation work can commence.

6.3. Provide a safe environment for the public.

6.3.1. Any trees that pose a risk to the public will be inspected and managed appropriately. This is especially pertinent to damaged trees that are adjacent to footpaths around the site. Wherever possible any felled trees can be placed on the woodland floor to act as a deterrent against unauthorised cycle use and for conservation purposes, e.g. to create habitats for invertebrates.

6.3.2. Any dead tree that is not adjacent to a footpath and poses no risk to the public can be left as a standing specimen for conservation reasons. This will not only be beneficial to invertebrates but will also benefit birds and bats.

6.3.3. As mentioned earlier, all steps, handrails and footpaths will need continual monitoring to ensure that they are in a safe and satisfactory condition.

6.4. Protect the area as a haven for wildlife.

6.4.1. By designating the area as a Local Nature Reserve, Stockton Borough Council is demonstrating its commitment to protecting this area for future generations to enjoy. The Council is also demonstrating that no inappropriate development or uses will take place at the site and that Stockton Borough Council is accepting a commitment to manage the land as a nature reserve

6.4.2. If the site is to fulfil its potential as an area for conservation, a dogs on leads policy may have to be introduced. This is a point that will apply to all LNRs once byelaws are approved and adopted. In particular, this will benefit ground-nesting birds such as Wrens from any such disturbance.

6.5. Raise biodiversity in the area.

6.5.1. By implementing the work suggested above, biodiversity will inevitably be improved. The removal of snowberry will allow native tree and shrub

species that are more beneficial to wildlife to be planted. This will not only provide more nesting sites but will also act as a food source in many instances.

6.5.2. The removal of people pressure from the Beech compartment will allow ground flora to flourish, thereby adding to the number of herbaceous species in the woodland.

6.5.3. Bird and Bat boxes could also be installed in many areas of Quarry Wood. This could also create opportunities for community involvement. Similarly, tree and wildflower planting could also be incorporated into the events programme for this location.

6.6. Maximise opportunities for schools and other groups to use the area as an environmental, educational and recreational resource.

6.6.1. There are several schools close to Quarry Wood that could utilise the area for educational purposes. In addition to an education pack that can be used in this area, there is also the possibility of setting up a study area where many aspects of habitat management could be explored.

6.6.2. Not only does the site offer opportunities to act as an outdoor classroom but will also prove useful with regards to aspects of social history for any visitors who are possibly undertaking a guided walk.

6.6.3. An interpretation panel will be installed at one of the entrances that will detail the site's history and some of the species that currently reside here.

6.7. Manage the area sympathetically to accommodate the requirements of neighbouring residents wherever possible.

6.7.1. Residential housing occurs along Quarry Woods' southern boundary on Tees Bank Avenue, therefore the needs of the local community that are immediately adjacent to the LNR should be addressed wherever possible.

6.8. Continue to create and improve links with the local community.

6.8.1. Good links have already been created with the local community by involving schools in activities such as tree planting. The general public have been encouraged to be involved in their Local Nature Reserve by taking part in events such as the planting of native woodland wildflowers and other small-scale events such as storytelling and drumming workshops.

6.8.2. Other small-scale events at this location will continue to be held and promoted via Stockton Borough Council's Countryside events programme.

6.8.3. Opportunities will exist for any community groups to be involved in the development of Quarry Wood through practical conservation tasks. It may be that these groups are actively sourced to determine what, if any, the uptake would be and if a particular group's needs can be met.

6.9. Undertake ecological surveys.

6.9.1. Undertaking ecological surveys will enable better management of the area due to a better knowledge of the species that are found at the site. This will also lead to an improved understanding of plant/animal interactions and will act as baseline data for subsequent management plans.

6.9.2. Although many aspects of the park's flora and fauna have been recorded, there are still gaps in the species inventory for the site with many groups under represented, e.g. small mammals and aquatic invertebrates. A continual survey will enable changes in species composition to be identified and for the appropriate management to be implemented as a consequence.

6.10. Take into consideration the potential impact of climate change on flora and fauna.

6.10.1. Climate change will undoubtedly have some form of impact on species composition and therefore needs to be taken into consideration. More drought resistant native tree species may need to be planted or the location of species with particular requirements may be altered.

6.10.2. As mentioned above, a continual ecological survey would help to identify shifts in species assemblage and the northerly migration of historically southern species that are linked to climate change.

APPENDICES

Appendix List

APPENDIX ONE

QUARRY WOOD FLORA (Provisional List)

TABLE 1 Vascular Plants

APPENDIX TWO

QUARRY WOOD FAUNA (Provisional List)

TABLE 1 Birds

TABLE 2 Mammals

TABLE 3 Butterflies

APPENDIX THREE

WORK PROGRAMME 2008 – 2012

Provisional Flora and Fauna list for Quarry Wood
Local Nature Reserve
(Survey undertaken by T.Douthwaite 2007)

APPENDIX 1

Table 1. Vascular plants

Common name	Latin name
Alder	<i>Alnus glutinosa</i>
Apple Tree spp.	<i>Malus spp.</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Hedge Bindweed	<i>Calystegia sepium</i>
Bird's-foot-trefoil	<i>Lotus corniculatus</i>
Black Medick	<i>Medicago lupulina</i>
Blackthorn	<i>Prunus spinosa</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Bramble	<i>Rubus fruticosus</i>
Buddleia	<i>Buddleia davidii</i>
Greater Burdock	<i>Arctium lappa</i>
Bush Vetch	<i>Vicia sepium</i>
Common Chickweed	<i>Stellaria media</i>
Common Knotgrass	<i>Polygonum aviculare</i>
Common Melilot	<i>Melilotus officinalis</i>
Common Ragwort	<i>Senecio jacobaea</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Thistle	<i>Cirsium arvense</i>
Crocus	<i>Crocus sp.</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum officinale</i>
Dock sp.	<i>Rumex sp.</i>
Common Duckweed	<i>Lemna minor</i>
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus sp.</i>
Enchanter's-nightshade	<i>Circaea lutetiana</i>
Garlic Mustard	<i>Alliaria petiolata</i>
Giant Hogweed	<i>Heracleum mantegazzianum</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Greater Burnet-saxifrage	<i>Pimpinella major</i>
Greater Plantain	<i>Plantago major</i>
Ground Elder	<i>Aegopodium podagraria</i>
Groundsel	<i>Senecio vulgaris</i>
Hawthorn	<i>Crataegus monogyna</i>

Common Name	Latin Name
Hedge Woundwort	<i>Stachys sylvatica</i>
Herb Robert	<i>Geranium robertianum</i>
Himalayan Balsam	<i>Impatiens glandulifera</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex aquifolium</i>
Hornbeam	<i>Carpinus betulus</i>
Horse Chestnut	<i>Aesculus hippocastanum</i>
Ivy	<i>Hedera helix</i>
Lady Fern	<i>Athyrium filix-femina</i>
Larch	<i>Larix sp.</i>
Lesser Celandine	<i>Ranunculus ficaria</i>
Lords and Ladies	<i>Arum maculatum</i>
Mugwort	<i>Artemisia vulgaris</i>
Narrow-leaved Everlasting Pea	<i>Lathyrus sylvestris</i>
Nipplewort	<i>Lapsana communis</i>
Oak	<i>Quercus sp.</i>
Ramsons	<i>Allium ursinum</i>
Red Campion	<i>Silene dioica</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Rose sp.	<i>Rosa sp.</i>
Rosebay Willowherb	<i>Epilobium angustifolium</i>
Rowan	<i>Sorbus aucuparia</i>
Scots Pine	<i>Pinus sylvestris</i>
Silver Birch	<i>Betula pendula</i>
Smooth Sowthistle	<i>Sonchus oleraceus</i>
Snowberry	<i>Symphoricarpos albus</i>
Snowdrop	<i>Gaanthus nivalis</i>
Spruce sp.	<i>Picea sp.</i>
Stinging Nettle	<i>Urtica dioica</i>
Sycamore	<i>Acer pseudoplatanus</i>
Tansy	<i>Tanacetum vulgare</i>
White Clover	<i>Trifolium repens</i>
White Dead Nettle	<i>Lamium album</i>
Wood Avens	<i>Geum urbanum</i>
Wood Forget-me-not	<i>Myosotis sylvatica</i>
Yarrow	<i>Achillea millefolium</i>
Yellow Flag Iris	<i>Iris pseudacorus</i>
Yew	<i>Taxus baccata</i>

Provisional Fauna List

APPENDIX 2

Table 1. Birds

Common Name	Latin Name
Blackbird	<i>Turdus merula</i>
Blue Tit	<i>Parus caeruleus</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Chaffinch	<i>Fringilla coelebs</i>
Coal Tit	<i>Parus ater</i>
Collared Dove	<i>Streptopelia decaocto</i>
Great Spotted Woodpecker	<i>Dendrocopos major</i>
Great Tit	<i>Parus major</i>
Greenfinch	<i>Carduelis chloris</i>
Little Owl	<i>Athene noctua</i>
Long-Tailed Tit	<i>Aegithalos caudatus</i>
Magpie	<i>Pica pica</i>
Mallard	<i>Anas platyrhynchos</i>
Moorhen	<i>Gallinula chloropus</i>
Nuthatch	<i>Sitta europaea</i>
Robin	<i>Erithacus rubecula</i>
Sparrowhawk	<i>Accipiter nisus</i>
Tawny Owl	<i>Strix aluco</i>
Song Thrush	<i>Turdus philomelos</i>
Treecreeper	<i>Certhia familiaris</i>
Wood Pigeon	<i>Columba palmbus</i>
Wren	<i>Troglodytes troglodytes</i>

Table 2. Mammals

Common Name	Latin Name
Fox	<i>Vulpes vulpes</i>
Grey Squirrel	<i>Sciurus carolinensis</i>
Mole	<i>Talpa europaea</i>
Rabbit	<i>Oryctolagus cuniculis</i>
Roe Deer	<i>Capreolus capreolus</i>

Table 3. Butterflies

Common Name	Latin Name
Large White	<i>Pieris brassicae</i>
Orange tip	<i>Anthocharis cardamines</i>
Peacock	<i>Inachis io</i>
Red Admiral	<i>Vanessa atalanta</i>
Small Tortoiseshell	<i>Aglais urticae</i>
Speckled Wood	<i>Pararge aegeria</i>

Appendix 3. Quarry Wood Work Programme 2008 - 2012

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Stillington Forest Park Local Nature Reserve Management Plan 2008 – 2012



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1. INTRODUCTION

1.1. Local Nature Reserves (LNRs) form a key component to Stockton's green infrastructure network and as such are of vital importance in relation to biodiversity and the movement of species from one area to another.

1.2. Fig.1 shows the location of Stillington Forest Park Local Nature Reserve in the borough of Stockton-on-Tees and its boundary. It occupies the site of a former slag heap from a neighbouring iron works..

1.3. An ecological survey was undertaken by the then Cleveland Wildlife Trust (now Tees Valley Wildlife Trust) in 1989 on behalf of Cleveland County Council with a view to reclamation of the tip. During 1995/96 Cleveland Environmental Consultants designed and implemented the Stillington Forest Park Scheme and the area underwent major reprofiling and was capped with a layer of clay over any remaining slag.

1.4. In April 1995, the management of Stillington Forest Park transferred to the newly established unitary council of Stockton-on-Tees Borough Council.

1.5. The site is situated on the northern edge of Stillington (OS Grid Ref. NZ375237) on the northern boundary of Stockton approximately four kilometres north west from Stockton centre.

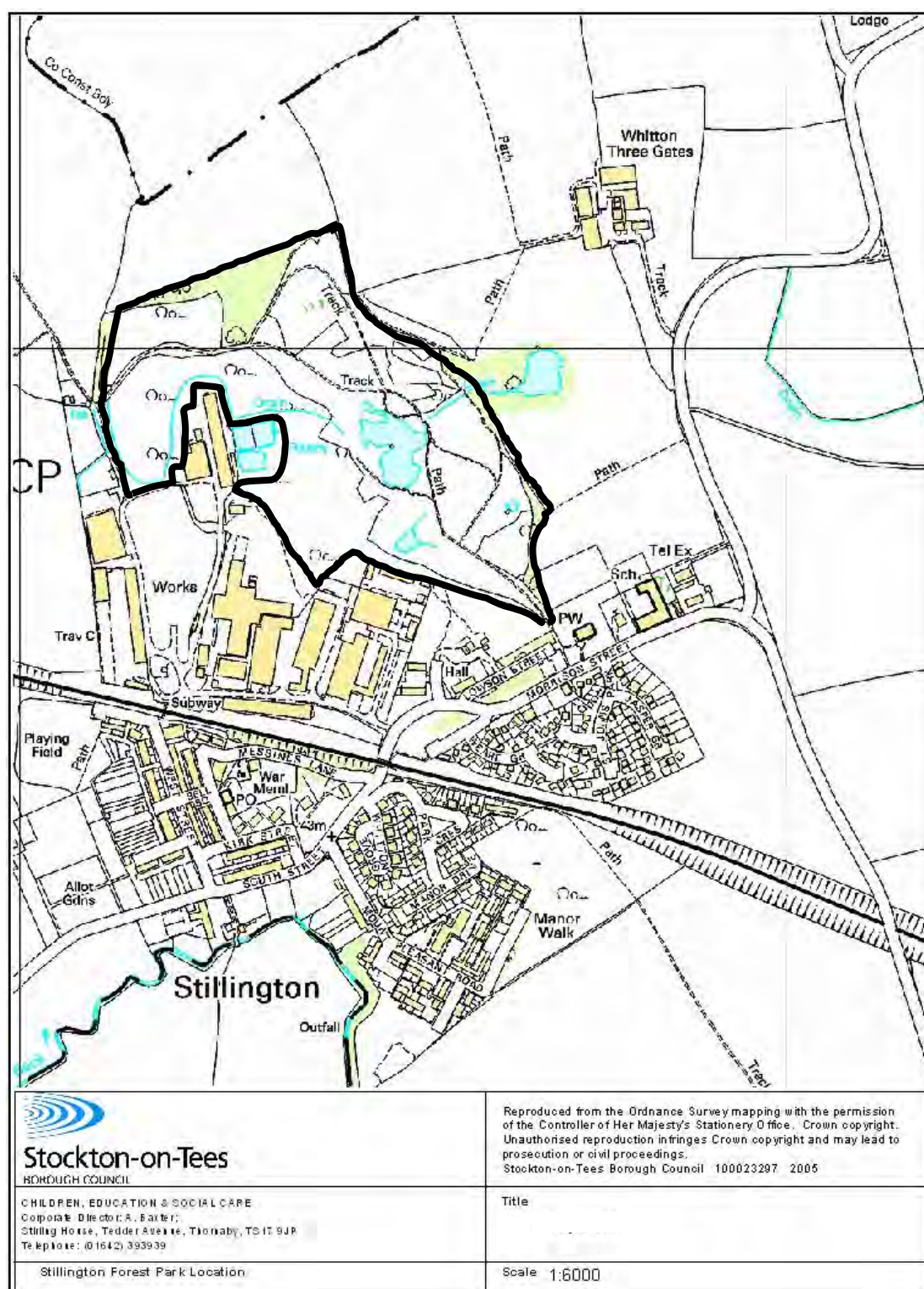
1.6. This plan describes Stillington Forest Park and evaluates it as a LNR. It sets out objectives for management and identifies a five-year work programme. With appropriate management the site will continue to be a locally important area for butterflies, dragonflies and damselflies and for additional species that are known to be utilising the area and will continue to migrate into the area as the woodland matures.

2. STRATEGIES RELEVANT TO THE MANAGEMENT PLAN

2.1. Stockton-on-Tees Local Agenda 21 Strategy
Environmental Objective No.2 'To protect and enhance the wildlife habitats and the diversity of species throughout the Borough'.

2.2. Stockton-on-Tees Local Plan
Objective 1 section 2.15 relating to Local Nature Reserves states that 'The council will continue to protect existing LNRs within the Borough from inappropriate development'

Fig.1 Location Plan of Stillington Forest Park and its boundary



Objective 1 Policy EN2 states that, 'Development in LNRs will not be permitted if it would be harmful to the elements giving rise to their designation.

2.3 Tees Valley Green Infrastructure Plan

Sets out the intention of linking up areas of greenspace of which LNRs are a component of this vision.

3. SITE DETAILS

3.1 Area

3.1.1 The area of the LNR is 8.7 hectares and comprises new woodland, scrubland, two main ponds, two seasonal ponds, wet grassland and long, short and calcareous grassland.

3.2. Surrounding Environment

3.2.1. The area surrounding much of Stillington Forest Park is farmland. However, there is an industrial estate that is adjacent to the site on its southern and western fringes. A new housing development is currently being constructed on land to the rear of Lowson Street at the southern boundary of the site.

3.3. Administrative Details

3.3.1. The whole of the area is within the ownership of Stockton-on-Tees Borough Council. The land is under the jurisdiction of Development and Neighbourhood Services and the Parks and Countryside Section have adopted responsibility for the site.

3.3.2. There are no current byelaws in operation at the site although these are in the process of going to cabinet and will be incorporated into the management plan once adopted.

3.3.3. There are currently no constraints on management, e.g. tenancies, separately owned mineral rights or soil contamination. However, the legacy of the iron and Stillite industries are still evident in the soil in some areas of the site, most notably adjacent to the existing iron processing works. Therefore restricting the range of vegetation that can tolerate such conditions in comparison to the rest of the area.

3.4. Management Infrastructure

3.4.1. There is a regular, but not permanent, presence on site by Rangers based at Wynyard Woodland Park and the Local Nature Reserves Officer who are responsible for site maintenance, management, development and promotion.

3.4.2. This situation may change in the future as the site is currently undergoing public consultation with regard to 1 or 2 wind turbines being erected on site. If successful, a permanent member of staff could be employed to manage and promote the area.

3.5. History

3.5.1. Prior to the 1830s Stillington was farmland. A short time after the Clarence Railway line opened in 1833 houses and industry in the shape of brickworks and an iron works began to be built.

3.5.2. From the onset of iron production in the area (1865), iron slag was being dumped at the northern boundary of the site. This commenced for more than 50 years with the result of an iron slag mountain that dominated the skyline.

3.5.2. In 1914 a slag crushing plant known locally as 'The Cracker' (due to the cracking of the slag with explosives) was opened by the Stillington Slag Company. This company recycled the iron slag by removing it from the tip, crushing it in their factory and selling it as a road making material. The hole that was created via this process became known as the 'Cracker Hole'.

3.5.3. As technology progressed it became evident that other products could be obtained via the slag mountain. In 1939 Stillite Products Ltd set up a factory that would utilise the iron slag in the manufacturing of slag wool, an efficient insulating material. Stillite Products used the same Cracker Hole created by the Stillington Slag Company.

3.5.4. It has been noted that even during these times that colonies of Jackdaws roosted amongst the iron slag remains and remained there until the tip was totally removed in 1970.

3.5.5. The land was later reclaimed and reprofiled, capped with a layer of clay and opened as a Country Park in 1995 to benefit both wildlife and visitors. Stillington Forest Park gained its Local Nature Reserve status in February 2004.

3.6 Access

3.6.1. The main access is via an ornamental feature gateway in front of St John's Church on Lowson Street. Access is also available at the northern boundary to the site along a public right of way and via the Stillington to Shotton footpath that crosses arable land to the east.

3.6.2. A network of well-surfaced footpaths are accessible to most visitors including wheelchairs and pushchairs. One or two of the paths have steeper inclines but not as to require any footsteps.

3.7 Boundaries

3.7.1. The site is bounded to the south and west by Darchem Engineering Company and an industrial estate. To the south is residential housing and to the north and east is farmland.

3.8 Public benefit and usage

3.8.1. The area will be predominantly used by the local community and on occasion there will be small-scale events that take place here such as guided walks and pond-dipping sessions.

3.8.2. Good links have already been made with neighbouring schools, such as William Cassidi, who utilise the area as an outdoor classroom and have been involved with Stockton Borough Council's Parks and Countryside Section in relation to environmental activities and studies.

3.8.3. The user group that is most frequent to the site is anglers. The main pond was created to be a recreational resource for local fishermen and was stocked with Carp, Tench and Perch. However, this has since led to some conflict with the pond's potential value as an education and wildlife resource and to act as a magnet for anti-social behaviour.

4. SITE DESCRIPTION

4.1 Stillington Forest Park

4.1.1. For management purposes the site has been split into compartments, which are identified on Fig.2. The following section investigates the character

of the area in more detail and to enable continuity with previous management plans the compartments have remained the same.

4.2 General

4.2.1. Stillington Forest Park contains components of established scrubland, long, short and wet grassland areas immature woodland and wetland areas.

4.2.2. Some surveys have taken place over the years with a butterfly transect being the most consistent of these. A list of flora and fauna that is known to use the site appears in Appendices 1 & 2.

4.3. Compartments

4.3.1. From a management perspective the main areas of the site are as follows:

- The wetlands
- The grasslands
- Woodlands
- Scrub


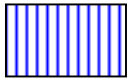
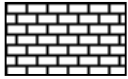


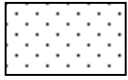

4.3.2. Wetlands

4.3.2.1. There are currently four wetland areas in Stillington Forest Park. Two of these hold water all year round, whereas the other two are seasonal and as such are of importance from a conservation perspective. The main pond is approximately 0.5m deep with a few deeper sections and covers an area of approx 0.5 hectare.

4.3.2.2. The pond margins have been planted with Reedmace, *Typha latifolia*, which is starting to colonise open aspects of this area. The Reedmace requires removal on a rotational basis so as not to choke up the water body and needs to be done in the autumn when there will be less impact to wildlife. Coarse fish are present in this pond and local anglers regularly frequent the area. The neighbouring, smaller pond also has some fish species present but these are much smaller in size and density than the large pond, consisting of species such as Stickleback. This pond also holds water throughout the year

Fig.2 Stillington Forest Park Compartments



<p>Key</p> 	Short Grassland		Wetland
	Long Grassland		
	Wet Grassland		
	Calcareous Grassland		
	Immature Woodland		
	Scrub		

4.3.2.3. The small pond at the rear of the school is approximately 10m in diameter but is very shallow due mainly to the drainage of the surrounding land into the larger ponds. This does not detract from its importance in any way as it does benefit those species such as amphibians and invertebrates whose life cycle is partially, but not totally, aquatic. From a conservation perspective, the impact from fish is much less of a problem with these seasonal ponds than it could be if only the larger ponds existed.

4.3.2.4. Because of the national decline in this kind of habitat the wetlands at Stillington Forest Park have an important role to play in an educational, recreational and conservational context. The ponds at this location contain a wide range of invertebrate species of which dragonflies are of particular note.

4.3.3. Flora

4.3.3.1. As mentioned earlier, as part of the reclamation process most of the flora present at the time of Stillington Forest Park's inception was removed except for the area of scrub to the north of the site. Any species now currently at the site are as a result of planting programmes or due to colonisation. Over 100 vascular species have been recorded at the site and are shown in Appendix 1.

4.3.3.2. Most of the species present are of little conservation value although that doesn't detract from their value as a food source for invertebrates.

4.3.3.3. The grassland habitats can be divided into four distinct categories; long, short, seasonally wet and an experimental area of calcareous grassland. The seeds sown at each of these compartments are representative of their habitats and as such will have the best chance of survival. The seed mix for the short grassland compartment contain a large proportion of wild flowers such as Wild Carrot (*Daucus carota*), Salad Burnet (*Sanguisorba minor*) and Bird's-foot-trefoil (*Lotus corniculatus*). The longer grass compartments are dominated by taller grass species but also contain a good proportion of wild flowers that can compete with the grass species present. The area of calcareous grassland suffers from soil compaction due to the quantities of dolomite. The areas is dominated by species such as Common Melilot and a survey was completed in 2007 to determine if the species present are indicative of a lime substrate. These species are also shown in Appendix 1.

4.3.4. Woodlands

4.3.4.1. Due to the soil comapction over much of the site, many tree species have performed quite poorly. Willow (*Salix spp*), Birch (*Betula pendula*) and

Alder (*Alnus glutinosa*) are exceptions to this. Although most trees are not growing at the rate they would normally, some trees are now several metres high and the aesthetic appeal of the Forest Park is incontestable.

4.3.5. Scrub

4.3.5.1. This area is very important both in a historical and natural context. This area is the only remaining compartment of semi-natural habitat at Stillington and as such is the only relatively mature habitat on site. This area also allows the movement and colonisation of species from this area in to other areas of the site.

4.3.5.2. A visit from Wildflower Ark in 2006 suggested that the path through this scrub area is thought to be an old drovers' road of some description due to the banking of the soil on either side of the path. Much of the ground flora in this compartment has been reduced due to the closure of the scrub canopy and will need opening up every few years.

4.4 PHYSICAL

4.4.1 Climate

4.4.1.1. Some aspects of the site are exposed and subject to prevailing winds, thus making the area seem colder than it is. Indeed it is the wind factor that has made the site attractive to the potential of harnessing wind power via wind turbines.

4.4.2. Hydrology

4.4.2.1. The main pond was created when the site was reclaimed. In 1999, a drainage channel from the neighbouring farm was installed with permission from Stockton Borough Council's Engineers Department. This drainage channel linked the pond to adjacent agricultural land and as a consequence has resulted in a larger body of standing water throughout the year.

4.4.2.2. In addition to receiving water from rainfall and the surrounding landscape, the wetland area also receives water from overflow from the two ponds.

4.4.3. Soils and substrates

4.4.3.1. The soils in the Stillington area are predominantly gleyed soils which tend to be seasonally waterlogged and only slightly permeable.

4.4.3.2. As mentioned earlier, the underlying substrate on site is the industrial slag that was deposited when the site was an industrial tip. Additionally, it has been noted that in elevated sections at the north of the site, large quantities of rockwool have been buried.

4.4.3.3. During reclamation the site was capped with clay to a depth of 0.5 – 1.0 metres, with a further covering of 0.15 – 0.5 metres of subsoil.

4.5. BIOLOGICAL

4.5.1. Flora

4.5.1.1. The areas of short grassland have great aesthetic appeal with many species of wildflowers present. The grasses in these locations are naturally short and as such do not out compete the flowers that are present. Therefore the need for grass cutting and baling is not necessary in these compartments.

4.5.1.2. The areas of longer grasslands would benefit from the occasional cutting and raking to introduce greater diversity of wildflowers in to the grass sward. However, management of any description in these compartments need to consider species that will utilise such areas such as butterflies and other invertebrates, mammals and ground-nesting birds.

4.5.1.3. The area of seasonally wet grassland covers a relatively small area and is dominated by Reed Canary Grass, *Phalaris arundinacea*. As this area has had little or no surveying take place at all it would be beneficial so that any future management is of benefit to any invertebrates, birds and mammals that utilise the area.

4.5.1.4. Some areas of the site need replenishing with more trees due to the low density present and because of vandalism whilst other areas need to be thinned out. Any species that are incorporated will need to be tolerant of clay and the possibility that traces of metals may be in the soil profile. Where tree cover is adequate there is the possibility of planting scrub and shrub species so that good woodland structure takes place with the formation of ground, herb, shrub and canopy layers.

4.5.2. Fauna

4.5.2.1. As already mentioned, Stillington Forest Park is a very good site for invertebrates and in particular, Butterflies, Dragonflies and Damselflies (see Appendix 2). It is approaching Site of Special Scientific Interest (SSSI) status with regard to its dragonfly fauna due to the number of species recorded. The site is also regularly monitored for butterflies with some 20 species having been recorded there over the past few years including the locally rare Dingy Skipper (*Erynnis tages*).

4.5.2.2. Several UK Biodiversity Action Plan (UKBAP) species have been recorded at the site in recent years including Skylark (*Aluada arvensis*), Song Thrush (*Turdus philomelos*), Grey Partridge (*Perdix perdix*), Pipistrelle Bat (*Pipistrellus* sp.) and Brown Hare (*Lepus capensis*) although due to the amount of disturbance on site the Grey Partridge and Brown Hare are only ever likely to be visitors.

4.5.2.3. As the vegetation on site matures it is envisaged that more species will become attracted to the area. This is especially relevant to woodland bird species that will be attracted by an increase in vegetation cover and the associated availability of nesting sites.

4.5.2.4. Mammal surveys incorporating trapping with Longworth mammal traps would be beneficial to determine the number and species of small mammals that are resident at the site. A bird survey would also prove very beneficial as this would provide baseline data with regard to numbers and species but would also prove a useful exercise to see how populations change over the course of the Forest Park's lifetime.

4.5.2.5. Amphibians have been well represented over the past years with the Common Frog (*Rana temporaria*) and Common Toad (*Bufo bufo*) having been recorded. Historically the Great Crested Newt (*Triturus cristatus*) was recorded at locations near to the Forest Park although these have not been recorded for many years and are assumed to be extinct in this locality. However, the Smooth Newt does still exist on site and has been recorded in the seasonal ponds adjacent to the rear of the primary school.

5. MANAGEMENT OBJECTIVES

The following objectives have been identified to fulfil the site's potential as an area for education, recreation and conservation.

5.1 Maintain good access

- 5.2 Maintain the characteristics of the area to ensure its future longevity.
- 5.3 Provide a safe environment for the public
- 5.4 Protect the area as a haven for wildlife
- 5.5 Raise biodiversity in the area
- 5.6 Maximise opportunities for schools and other groups to use the area as an environmental, educational and recreational resource.
- 5.7 Manage the area sympathetically to accommodate the requirements of neighbouring residents wherever possible
- 5.8 Continue to create and improve links with the local community
- 5.9 Undertake ecological surveys.
- 5.10 Take into consideration the potential impact of climate change on flora and fauna.

6. IMPLEMENTATION

6.1. Maintain good access

6.1.1. Good access will be maintained by regular strimming along desire lines and the cutting back of any obstructive and overgrown vegetation. Access on site will be monitored on a continual basis in order to determine that the path network is effective and in a safe condition.

6.2. Maintain the characteristics of the woodland to ensure its future longevity

6.2.1. As time progresses the characteristics of the woodland will become more obvious and distinctive woodland areas more readily defined. In the interim period it is important that the grassland and pond areas retain their character not only from an aesthetic perspective but from a wildlife perspective also. As already mentioned, tree planting and thinning needs to take place in some areas so that a better density and structure occurs. As the woodland develops underplanting with shade tolerant species will be beneficial to wildlife and for the public visiting these areas.

6.3. Provide a safe environment for the public

6.3.1. Any trees that pose a risk to the public will be inspected and managed appropriately. This is especially pertinent to damaged trees that are adjacent to footpaths around the site.

6.3.2. The dropping of litter is mainly confined to areas around the large pond. Litterbins are already provided at the entrances and regular contact with Stockton Borough Council's Care For Your Area section should be maintained in order that the bins are emptied on a frequent basis. Regular patrols should be undertaken around this area and any litter should be bagged ready for collection whenever patrols occur.

6.3.3. Dog fouling is an additional aspect that needs consideration and the situation is currently under review by Stockton Borough Council. It is hoped that by bringing the issues of litter and dog fouling to the public's attention via the adoption of byelaws, that the area will become self-policing.

6.4. Protect the area as a haven for wildlife

6.4.1. By designating the area as a Local Nature Reserve, Stockton Borough Council is demonstrating its commitment to protecting this area for future generations to enjoy. The Council is also demonstrating that no inappropriate development or uses will take place at the site and that Stockton Borough Council is accepting a commitment to manage the land as a nature reserve.

6.5. Raise biodiversity in the area

6.5.1. In addition to recommendations made earlier in this management plan, e.g. planting more native tree species in certain locations. The biodiversity of the site will be improved as the site matures. There is some scope for the installation of bird and bat boxes with the help of the local community.

6.5.2. Continual monitoring of the site will also provide useful indicators as to which species are benefiting from the site's management programme. Monitoring needs to be completed at all trophic levels from invertebrates to flower and mammal species. In this way the health of the site will be maintained and improved.

6.6 Maximise opportunities for schools and other groups to use the area as an environmental, educational and recreational resource.

6.6.1. There is a school and a community centre adjacent to the site that have both utilised Stillington Forest Park's features in the past. The site not only offers the opportunity to act as an outdoor classroom for the school but is also useful as an exercise in social history for the residents of Stillington and for any visitors who are possibly undertaking a guided walk.

6.6.2. An education package will be produced to promote the area as a resource for achieving targets in the national curriculum. An interpretation panel will be installed explaining features and history of the site thereby assisting the public in their knowledge of the area and to gain a better understanding of the historical and environmental management that has occurred at the site.

6.6.3. It is envisaged that an angling club may be interested in overseeing the angling aspect of the park and in doing so will achieve a greater presence on site that will minimise the amount of problems that are currently evident. This will have the added benefit of attracting more responsible anglers who will self-police the pond making the fishing on site more approachable to younger people who may be intimidated by current behaviour.

6.7. Manage the area sympathetically to accommodate the requirements of neighbouring residents wherever possible.

6.7.1. The needs of the local community that are immediately adjacent to the LNR should be addressed whenever possible. This may be in relation to trees whose overhanging branches could be considered potentially dangerous in windblown situations. Therefore no tree planting will take place at the rear of properties adjacent to the LNR. Over the past decade this hasn't been an issue as industry was the only neighbour. However, in 2007 a housing development to the south of the site commenced and so this aspect needs to be taken into consideration in future management plans.

6.8. Continue to create and improve links with the local community

6.8.1. A good base has been created with the local community in the form of events such as guided walks and in the inclusion of promoting the forest park when Stillington has entered village competitions. However, there is room for further development in the form of a local volunteer group for the site. Events will continue to be promoted at the site and, as mentioned above, further links will be created once an angling club is operational.

6.9. Undertake ecological surveys

6.9.1. Undertaking ecological surveys will enable better management of the area due to a better knowledge of the species that are found at the site. This will also lead to an improved understanding of plant/animal interactions and will act as baseline data for subsequent management plans.

6.9.2. Although many aspects of the park's flora and fauna have been recorded, there are still gaps in the species inventory for the site with many groups under represented, e.g. small mammals, waterfowl and bird species. A continual survey will enable changes in species composition to be identified and for the appropriate management to be implemented as a consequence.

6.10. Take into consideration the potential impact of climate change on flora and fauna.

6.10.1. Climate change will undoubtedly have some form of impact on species composition and therefore needs to be taken into consideration. More drought resistant native tree species may need to be planted or the location of species with particular requirements may be altered.

6.10.2. As mentioned above, a continual ecological survey would help to identify shifts in species assemblage and the northerly migration of historically southern species that are linked to climate change.

APPENDICES

Appendix List

APPENDIX ONE (Provisional List)

STILLINGTON FOREST PARK FLORA

<u>TABLE 1</u>	Vascular Plants
<u>TABLE 2</u>	Plants occurring on calcareous grassland

APPENDIX TWO (Provisional List)

STILLINGTON FOREST PARK FAUNA

<u>TABLE 1</u>	Mammals
<u>TABLE 2</u>	Amphibians
<u>TABLE 3</u>	Lepidoptera
<u>TABLE 4</u>	Odonata
<u>TABLE 5</u>	Birds

APPENDIX THREE

WORK PROGRAMME 2008 – 2012

APPENDIX 1

STILLINGTON FOREST PARK FLORA (PROVISIONAL LIST)

Table 1 Vascular Plants

Common Name	Latin Name
Agrimony	<i>Agrimonia eupatoria</i>
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Bindweed	<i>Calystegia</i> sp.
Bird's-foot-trefoil	<i>Lotus corniculatus</i>
Black Grass	<i>Alopecurus myosuroides</i>
Black Medick	<i>Medicago lupulina</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Bramble	<i>Rubus fruticosus</i> agg.
Branched Bur-reed	<i>Sparganium erectum</i>
Broad Leaved Dock	<i>Rumex obtusifolius</i>
Brooklime	<i>Veronica beccabunga</i>
Burnet Rose	<i>Rosa pimpinellifolia</i>
Celery-leaved Crowfoot	<i>Ranunculus sceleratus</i>
Charlock	<i>Sinapsis arvensis</i>
Chicory	<i>Cichorium intybus</i>
Cocks Foot	<i>Dactylis glomerata</i>
Colt's-foot	<i>Tussilago farfara</i>
Common Centaury	<i>Centaureum erythraea</i>
Common Duckweed	<i>Lemna minor</i>
Common Knapweed	<i>Centaurea nigra</i>
Common Mouse-ear	<i>Cerastium fontanum</i>
Common Ragwort	<i>Senecio jacobaea</i>
Common Sorrel	<i>Rumex acetosa</i>
Common Spotted-orchid	<i>Dactylorhiza fuchsii</i>
Common Vetch	<i>Vicia sativa</i> ssp. <i>Segitalis</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Thistle	<i>Cirsium arvense</i>
Crested Dog's Tail	<i>Cynosurus cristatus</i>
Cuckoo Flower	<i>Cardamine pratensis</i>
Curled Dock	<i>Rumex crispus</i>
Cut-leaved Cranesbill	<i>Geranium dissectum</i>
Eyebright	<i>Euphrasia officinalis</i> agg.
False Fox Sedge	<i>Carex otrubae</i>

Common Name	Latin Name
Fat Hen	<i>Chenopodium album</i>
Field Forget-me-not	<i>Myosotis arvensis</i>
Field Horsetail	<i>Equisetum arvense</i>
Field Scabious	<i>Knautia arvensis</i>
Garden Privet	<i>Ligustrum ovalifolium</i>
Garlic Mustard	<i>Alliaria petiolata</i>
Goat Willow	<i>Salix caprea</i>
Goosegrass	<i>Galium aparine</i>
Gorse	<i>Ulex europaeus</i>
Great Reed-mace	<i>Typha latifolia</i>
Great Willowherb	<i>Epilobium hirsutum</i>
Greater Plantain	<i>Plantago major</i>
Hairy Tare	<i>Vicia hirsute</i>
Hard Rush	<i>Juncus inflexus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hedge Mustard	<i>Sisymbrium officinale</i>
Hedge Woundwort	<i>Stachys sylvatica</i>
Hoary Ragwort	<i>Senecio erucifolius</i>
Hogweed	<i>Heracleum sphondylium</i>
Horsetails	<i>Equisetum</i> sp.
Kidney Vetch	<i>Anthyllis vulneraria</i> ssp. polyphylla
Lady's Bedstraw	<i>Galium verum</i>
Lesser Cat's-tail	<i>Phleum bertolonii</i>
Lesser Tussock Sedge	<i>Carex diandra</i> (S)
Lucerne	<i>Medicago sativa</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Meadow Crane's-bill	<i>Geranium pratense</i>
Meadow Sweet	<i>Filipendula ulmaria</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Musk Mallow	<i>Malva moschata</i>
Nipplewort	<i>Lapsana communis</i>
Northern Marsh Orchid	<i>Dactylorhiza purpurella</i>
Oak	<i>Quercus robur</i>
Osier	<i>Salix viminalis</i>
Ox-eye Daisy	<i>Leucanthemum vulgare</i>
Quaking Grass	<i>Briza media</i>
Ragged Robin	<i>Lychnis flos cuculi</i>
Red Campion	<i>Silene dioica</i>
Red Clover	<i>Trifolium pratense</i>
Red Fescue	<i>Fetuca rubra</i>

Common Name	Latin Name
Ribbed Melilot	<i>Melilotus officinalis</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Rosebay Willowherb	<i>Chamerion angustifolium</i>
Rough Meadow Grass	<i>Poa trivialis</i>
Russian Comfrey	<i>Symphytum x uplandicum</i>
Salad Burnet	<i>Sanguisorba minor</i>
Scarlet Pimpernel	<i>Anagallis arvensis</i>
Scot's Pine	<i>Pinus sylvestris</i>
Self-heal	<i>Prunella vulgaris</i>
Soft Rush	<i>Juncus effuses</i>
Spear Thistle	<i>Cirsium vulgare</i>
Spearmint	<i>Mentha spicata</i>
Spiked Water-milfoil	<i>Myriophyllum spicatum</i>
St. John's Wort	<i>Hypericum sp</i>
Sycamore	<i>Acer pseudoplatanus</i>
Teasel	<i>Dipsacus fullonum</i>
Tufted Vetch	<i>Vicia cracca</i>
Viper's – bugloss	<i>Echium vulgare</i>
Wall Barley	<i>Hordeum murinum (G)</i>
Water Plantain	<i>Alisma Plantago-aquatica</i>
Wetted Thistle	<i>Carduus acanthoides</i>
White Clover	<i>Trifolium repens</i>
White Dead Nettle	<i>Lamium album</i>
Wild Carrot	<i>Daucus carota</i>
Wild Mignonette	<i>Reseda lutea</i>
Wild Parsnip	<i>Pastinaca sativa</i>
Wild Strawberry	<i>Fragaria vesca</i>
Wood Avens	<i>Geum urbanum</i>
Wood Dock	<i>Rumex sanguineus</i>
Yarrow	<i>Achillea millefolium</i>
Yellow Rattle	<i>Rhinanthus minor ssp.Minor</i>
Yorkshire Fog	<i>Holcus lanatus</i>

**Table 2 Flora species recorded in calcareous grassland compartment at
Stillington Forest Park 2007**

(Survey undertaken by T. Douthwaite)

English Name	Latin Name
Agrimony	<i>Agrimonia eupatoria</i>
Bird's-foot-trefoil	<i>Lotus corniculatus</i>
Black Medick	<i>Medicago lupulina</i>
Bramble	<i>Rubus fruticosus</i>
Colt's-foot	<i>Tussilago farfara</i>
Common Knapweed	<i>Centaurea nigra</i>
Common Ragwort	<i>Senecio jacobaea</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Thistle	<i>Cirsium arvense</i>
Field Scabious	<i>Knautia arvensis</i>
Horsetails	<i>Equisetum</i> sp.
Lady's Bedstraw	<i>Galium verum</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Meadow Crane's-bill	<i>Geranium pratense</i>
Musk Mallow	<i>Malva moschata</i>
Oxeye Daisy	<i>Leucanthemum vulgare</i>
Red Clover	<i>Trifolium pratense</i>
Ribbed Melilot	<i>Melilotus officinalis</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Salad Burnet	<i>Sanguisorba minor</i>
Selfheal	<i>Prunella vulgaris</i>
Spear Thistle	<i>Cirsium vulgare</i>
Tufted Vetch	<i>Vicia cracca</i>
White Clover	<i>Trifolium repens</i>
Wild Mignonette	<i>Reseda lutea</i>
Yarrow	<i>Achillea millefolium</i>

APPENDIX 2

STILLINGTON FOREST PARK FAUNA (Provisional List)

Table 1 Mammals

Common Name	Latin Name
Fox	<i>Vulpes vulpes</i>
Mole	<i>Talpa europaea</i>
Rabbit	<i>Oryctolagus cuniculus</i>

Table 2 Amphibians

Common Name	Latin Name
Common Frog	<i>Rana temporaria</i>
Common Toad	<i>Bufo bufo</i>
Smooth Newt	<i>Triturus vulgaris</i>

Table 3 Lepidoptera

Butterflies

Common Name	Latin Name
Clouded Yellow	<i>Colias crocea</i>
Comma	<i>Polygonia c-album</i>
Common Blue	<i>Polyommatus icarus</i>
Dingy Skipper	<i>Erynnis tages</i>
Green-veined White	<i>Pieris napi</i>
Large Skipper	<i>Ochlodes venata</i>
Large White	<i>Pieris Brassicae</i>
Meadow Brown	<i>Maniola jurtina</i>
Orange Tip	<i>Anthocharis cardamines</i>
Painted Lady	<i>Vanessa cardui</i>
Peacock	<i>Inachis io</i>
Red Admiral	<i>Vanessa atalanta</i>
Ringlet	<i>Aphantopus hyperantus</i>
Small Copper	<i>Lycaena phlaeas</i>
Small Heath	<i>Coenonympha pamphilus</i>
Small Skipper	<i>Thymelicus sylvestris</i>
Small Tortoiseshell	<i>Aglais urticae</i>
Small White	<i>Pieris rapae</i>
Speckled Wood	<i>Pararge aegeria</i>
Wall Brown	<i>Lasiommata megera</i>

Table 4 Odonata

Damselflies

Common Name	Latin Name
Azure	<i>Coenagrion puella</i>
Banded Demoiselle	<i>Calopteryx splendens</i>
Blue-tailed	<i>Ischnura elegans</i>
Common Blue	<i>Enallagma cyathigera</i>
Emerald	<i>Lestes sponsa</i>
Large Red	<i>Pyrrhosoma nymphula</i>

Table 5 Odonata

Dragonflies

Common Name	Latin Name
Common Hawker	<i>Aeshna juncea</i>
Southern Hawker	<i>Aeshna cyanea</i>
Brown Hawker	<i>Aeshna grandis</i>
Migrant Hawker	<i>Aeshna mixta</i>
Emperor	<i>Anax imperator</i>
Black Darter	<i>Sympetrum danae</i>
Ruddy Darter	<i>Sympetrum sanguineum</i>
Common Darter	<i>Sympetrum striolatum</i>
Four Spotted Chaser	<i>Libellula quadrinaculta</i>
Black-tailed Skimmer	<i>Orthetrum cancellatum</i>

Table 6 Birds

Common Name	Latin Name
Blackbird	<i>Turdus merula</i>
Green Woodpecker	<i>Picus viridis</i>
Grey Heron	<i>Ardea cinerea</i>
Magpie	<i>Pica pica</i>
Robin	<i>Erithacus rubecula</i>
Wren	<i>Troglodytes troglodytes</i>

Stillington Forest Park Work Programme 2008 -2012

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Wynyard Woodland Park

Management Plan 2006 – 2011



(2010 Review)

Wynyard Woodland Park Management Plan 2006 - 2011

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Introduction

Wynyard Woodland Park (WWP) is an established Country Park based around a section of the disused Castle Eden branch of the former North Eastern Railway. The railway was completed in 1880 to link the Durham coalfields with industrial Teesside. Although it was primarily a goods line, passengers used it until 1931. The line was eventually closed in 1966 and the viaduct that ran adjacent to Thorpe Thewles was demolished in 1979.

In 1982 the former Cleveland County Council opened a 3.5-mile section of the route between Thorpe Thewles and the A689 as a countryside leisure facility, known as Castle Eden Walkway. The platform and buildings of Thorpe Thewles Station were still intact and these became a feature of the site, with the former Station Master's house on the platform used as a base for rangers and volunteers.

In 1984 the site was expanded with the purchase of the 16.8 Hectare Thorpe Wood and in the late 1980's the station house was re-built to form a visitor centre. Castle Eden Walkway became a Country park in 1987. Running of the site was transferred, with the then site manager, to Stockton Borough Council in April 1996 as part of Local Government reorganisation.

In 2003 a grant from the Aggregates Levy Fund allowed Stockton Borough Council to purchase three contiguous woodland areas to the north end of the walkway known as Tilery Wood and Brierley Wood (76.15 hectares combined) and Layton Lings (12.09 hectares and now known as Alf's Wood). Also purchased was an arable field now known as Pickard's Meadow (16.62 hectares). These acquisitions brought the size of the park to 180 hectares (400 acres). As the park was expanded the visitor centre was also refurbished to create a tearoom and an expanded shop.

With purchase of the new woodlands and Pickard's meadow near to Wynyard estate and the former location of the old Wynyard Station and the refurbishment of the visitor centre, it was decided to change the name of the park to Wynyard Woodland Park. Part of the reasoning behind this decision was that traditionally the site had been confused with the nature reserve of Castle Eden Dene to the north.

Thorpe Thewles Quarry

The quarry exists 1km east of the park entrance on Wynyard Road. It is operated by RMC Aggregates (Northern) and it is the proximity of the park to this quarry that allowed the accessing of the Aggregates Levy Funding. Planning permission was granted in 1991 for sand and gravel extraction from a 20.45 hectare site to the south of the road, which was subsequently varied to allow extraction to the

north of the road. So far only the north side of the site is in operation. In 2001 permission was granted to operate for a further 5 years.

A condition of the planning permission is restoration including the creation of 3 lakes and it is likely that the subsequent reserve would fall under Wynyard Woodland Park.

Amendments

This plan was written to cover the period 2006-2011, however some amendments have been made during January 2009 and 2010. These include an annual Addendum and works programme, which serve to update the plan annually.

Green Flag

Since 2006/2007 the southern part of Wynyard Woodland Park, including the visitor centre area, Stoney field, the Arboretum Field, Thorpe Wood Local Nature Reserve and Castle Eden Walkway to the north end of Thorpe Wood, has had green flag status. It is intended to bring the rest of the site (the remainder of the Walkway, Pickard's Meadow and Tilery, Brierley and Alf's Woods) under the green flag umbrella for the application of 2010/2011.

Scope of the plan

The management regimes for Pickard's Meadow and Tilery, Brierley and Alf's Wood's are currently under review and as this is a work in progress and to keep this document manageable, they are currently in a separate document. However, for completeness their management sections are described and referred to with regard access issues in this plan.

Strategic Information

The following plans and strategies have helped to influence the development and management of the site.

Community Strategy

The Stockton-on-Tees community Strategy sets out the key priorities for the Borough from 2005-08. The strategy aims to ensure a better quality of life for everyone in the Borough of Stockton-on-Tees, now and for future generations. It has been developed by Stockton Renaissance (the Local Strategic Partnership) and reflects the main priorities of Stockton's residents and communities. The Strategy highlights the need to improve the quality and satisfaction levels with Parks and Countryside facilities, and ensure that they contribute towards the quality of local places and communities.

Council Plan

The Council Plan sets out the key objectives for Stockton-on-Tees for the next three years. It forms a business plan for achieving the Council's contribution to the Community Strategy. The Council Plan also forms the overarching framework for delivery of individual Performance Improvement Plans (PIPs) and Service Delivery Plans (SDPs), setting out in detail how the Council will provide key services and contribute to the five key Community Strategy themes.

The development of Wynyard Woodland Park is a key aim in delivering the Parks and Countryside Strategy and has links with the Liveability theme based around positive improvements to the local environment. The broad appeal of the woodland park also provides links through the Council Plan to education and health related objectives.

Stockton Local Plan

The Stockton Local Plan provides the basis for all development in the borough and contains a number of policies in relation to the environment, economy, recreation and transport. The Plan reflects a variety of policies and programmes to which the Borough Council is committed at a regional and national level.

The Local Plan makes specific reference to the creation of the Community Forest and the strong environmental and recreational benefits. Other links include the need to protect and support the positive management of areas of ancient woodland such as Thorpe Wood Local Nature Reserve.

Tees Forest Plan

The Tees Forest is a partnership involving all 5 Tees Valley Councils, Forestry Commission and Countryside Agency and the Forest Plan sets out a strategy for the long-term creation of large areas of recreational and educational woodland within the Tees Valley.

Wynyard Woodland Park is seen as a key "Forest Gateway" site and has benefited from major funding in partnership with the Tees Forest in recent years. The Plan highlights the regional value of the woodland park and its importance as a visitor attraction in the countryside around Wynyard and Thorpe Thewles.

NB. Although since the end of 2008 the Tees Forest no longer exists as an organisation its legacy of plans and its ethos are very much alive and work is still done to continue its legacy.

Parks and Countryside Strategy

The 5-year Parks and Countryside Strategy was produced in 2000 and set out a series of objectives for improvements to the parks, open spaces and countryside in the borough of Stockton. The Strategy contained a number of objectives based around countryside recreation and management focusing on improving access, environmental education, biodiversity and social inclusion.

Wynyard Woodland Park was identified as a key site for future expansion and development through the Tees Forest. The site was identified as a major facility for environmental education and location for large-scale countryside events designed to broaden the appeal of the countryside to a wide cross section of residents in the borough and visitors to the Tees Valley.

Stockton's Green Infrastructure Strategy and Plan

This is a planning document for the borough written to ensure there is a sustainable network of parks, nature reserves, greenspaces and corridors within the borough. This document feeds into the Tees Valley Green Infrastructure Plan

The Wynyard Woodland Park Project 2002-2007

This concept document was produced to drive a series of improvements and developments at the Woodland Park and has helped to secure over £500,000 of external resources to date. The Plan identified the need to build on the success of the Castle Eden Walkway Country Park, and to enhance the existing environmental educational resources to attract visitors from across the Tees Valley and North-East, demonstrating good practice in biodiversity enhancement, recreational management, restoration of the historic environment and ultimately through the provision of a "flagship" site in Stockton's countryside.

Tees Valley Biodiversity Action Plan

Local Biodiversity Action Plans (LBAPs) are plans drawn up to prioritise and direct action for locally threatened species and habitats, and to promote the locally relevant actions laid out in 'Biodiversity: the UK Action Plan'. They are the key mechanism by which the Government will meet the national biodiversity targets.

The Tees Valley Biodiversity Action Plan is coordinated by Tees Valley Wildlife Trust, and has identified a number of regionally important woodland and grassland habitats within the site. The Countryside Rangers work closely with Officers from the Trust in monitoring key target species and have successfully enhanced existing wildlife habitats.

Mission Statement

Wynyard Woodland Park is owned and managed by the Parks and Countryside section of Stockton Borough Council, the vision of which is as follows:

“To enhance the natural environment and cultural heritage of Stockton Borough by providing areas for healthy leisure pursuits and lifelong learning, which at the same time will attract inward investment, in balance with the need to improve biodiversity.”

This management plan is a guide for site managers so that the aims and objectives for the site’s conservation, leisure and educational use can be followed in a comprehensive and long-term manner according to the mission statement above. It covers the period 2006-2011 after which it will be reviewed.

Wynyard Woodland Park Development Plan

Recently money has been invested into Stockton’s parks in a strategic and borough-wide manner. In order to prioritise spending on park infrastructure a development plan has been written for Wynyard Woodland Park to identify where its requirements for funding lay. The development plan thus currently goes hand in hand with this document. A copy of which is held in the rangers’ office and is also submitted to the green flag judges as supporting evidence.

Annual Addendum

A yearly addendum is produced each January that details the work carried out to meet the aims of the plan from the previous calendar year. This is included at the end of this plan.

Section 1 : Site Description and Housekeeping

Site description

Location and boundaries

The park appears on sheet 93 of the OS Landranger series. The visitor centre is located at NZ402245.

The boundaries of the park are marked on maps 1A and 1B. The park is very linear, being based on the old railway line, with its northern boundary marked by the A689 and its southern boundary in the junction between the A177 and Wynyard Road, a length of approximately 4.9km

The land encompassed in the park is owned by Stockton Borough Council, with the exception of the northernmost part of the Walkway. At the northern edge of Black Squares Plantation the walkway crosses the boundary into the borough of Hartlepool. The next 350m is within Hartlepool and then the boundary is crossed into County Durham. The boundary of the park is the bridge over the A689 meaning the last 250m of the walkway are in Durham

Links to wider countryside

To the south of the park, the route of Castle Eden Walkway continues into the estate of Hardwick and from there into Hartburn. It is a path owned by the council, though cared for by the Highways section.

To the north of the park the Walkway crosses the road via a pedestrian bridge and continues to Station Town some 11.5km north of the visitor centre.

Geology

The underlying structure is formed from Triassic deposits (195 – 225 million years ago) forming the geological area known as the Tees Lowlands. Covered in ice from glaciers, large quantities of rock debris suspended in the ice were deposited from the Pennines, the Cheviots and from Scandinavia.

Soils/substrates

The soil type varies from one end of the site to the other. Towards the northern end of the site at Brierley and Tilery Wood the soil is heavy clay in composition. Along the railway track bed there is remnants of the railway leading to a soil/cinder mixture. At the southern end of the site is a mix of sand and gravel.

Management Sections

For ease of management the park is split into 7 sections, A-G below. However, as described in the amendments section under Green Flag above, management of sections E, F and G is under review with a view to bringing them under the green flag application for 2010/2011 and although these sections are described and referred to regarding access, their management prescriptions are not within this document.

The management sections are further subdivided where necessary for prescriptive management. The management sections are shown on maps 2A and 2B.

- A)** The visitor centre (which includes the car park, public toilets, play area, railway carriage, planetarium and observatory)
- B)** Arboretum field
- C)** Stony field (including the old car park)
- D)** Castle Eden Walkway (referred to as the walkway)
- E)** Thorpe Wood
- F)** Pickard's Meadow
- G)** Tilery Wood, Brierly Wood and Layton Lings. (Now known as Alf's Wood)

A)The Visitor Centre.

The Station House Visitor Centre as the name suggests was the former house at the Thorpe Thewles station. Refurbished during 2004 the visitor centre is a focal point for many of the visitors to the country park. Due to its historical heritage it adds a unique character to the place. The visitor centre is a key point of contact between the park's staff and the visitors. It is often used as a starting point for both public events and meeting visiting school parties.

The visitor centre comprises downstairs of a shop, a tearoom and a disabled and staff toilet. Upstairs are two offices, which are the base for the rangers, a staff kitchen and a storeroom.

The shop is managed by the visitor centre co-ordinator and staffed by information assistants. Besides selling gift items, souvenirs and refreshments, the centre has leaflets, maps and events programmes available to inform the public of the site and what's going on at Wynyard Woodland Park and other sites across the borough. Also on offer is information about other events taking place across the Teesside area. Staff are on hand to offer a friendly service giving advice and assistance to make the public feel welcome and have an enjoyable visit to the site.

Opening hours.

The park is open to pedestrians 24 hours a day, 365 days a year.
The car park is open from 8.30am daily. It closes at 9pm during British Summer Time and at 4.30pm during the remainder of the year.

The visitor centre is open to the general public at the following times.

1st April – 31st October: Seven days a week 10am till 4-30pm
31st October – 31st March: Seven days a week (excluding Christmas day, Boxing day and New Years day) 10am till 4pm, Sundays-Friday and 10am-3.30pm on Saturdays

Public Toilets

The toilet block exists within the main car park. It also has a separate disabled toilet and baby changing facility. These are cleaned daily, Monday to Friday. The toilet block was upgraded and repainted in 2008.

Car park.

The main car park has space for approximately 90 cars.

Disabled parking. There is space for 5 cars in the designated disabled car park located adjacent to the wildlife garden. (The wildlife garden is being remodelled during January/February 2008 and the car park will be back to normal after this is complete). Parking here allows those of restricted mobility easy access to the visitor centre, café, disabled toilets and the flat, surfaced route of the walkway.

Overflow. During times of exceptional visitor pressure, such as the summer craft fair, the most northern part of the arboretum field is used as an overflow.

Play area

The play area is managed and inspected weekly by the council's playground inspection team.

It is hoped that during 2009 £300,000 will be secured and spent to upgrade this facility. It is envisaged that the play area will expand into the trees bordering the walkway, making a connection between play and the natural environment.

Railway Carriage

The Railway Carriage, located on the edge of the car park and play area, was purchased in September 2004 and opened in September 2005. As well as providing indoor space for school learning it also has a 72-inch SMART

whiteboard and associated computer system and a microscope linked to the computer. It has access for disabled visitors and storage for educational materials.

The carriage allows plenty of space for school groups to enjoy and allows the continuation of the environmental programmes in case of bad weather. The use of the railway carriage is free for schools taking part in ranger led visits or joint planetarium/ranger led visits. A fee of £5 is charged for the use of the carriage to schools on self-led visits or those using the planetarium. These prices are reviewed annually.

Planetarium and Observatory

The planetarium and observatory provide a service to school groups and the public and is a joint venture between Stockton Borough Council and the Cleveland and Darlington Astronomical Society. Closely linked to the planetarium is the Celestial Kitchen sculpture in Stoney Field and a solar trail marked out along the Walkway from the visitor centre.

The 70-seat planetarium is available for school visits throughout the year. It provides a unique opportunity to explore the universe through special shows and activities.

The planetarium and observatory also provide regular free educational activities for the public during the astronomical observing season, which in this area of the UK is between the months of September and April. Every Friday evening, when the weather is clear, the observatory is opened up for public observing nights when interesting objects on view in the night sky can be seen directly through the large 19-inch Millennium reflecting telescope. When a camera is placed on this instrument a larger number of people can view the same objects from the comfort of the planetarium as the images are electronically relayed to the planetarium dome. The planetarium and observatory complex is run in collaboration with the local Cleveland and Darlington astronomical society (CaDAS) and members regularly bring their own telescopes to these evenings to augment the equipment that the public can view through.

B) Arboretum Field.

This is the grassy field to the immediate south of the car park. The field starts at a high level near the play area and gently falls away to the south, where it forms a hollow that is a natural amphitheatre.

A trail follows the perimeter of the field and is planted with specimens of native trees. The trees were planted in the late 1980's/early 1990's, by the Teesside Branch of the Parachute Regimental Association to commemorate fallen comrades. New interpretation boards will be set out along the trail in 2009 to replace the out of print leaflet that first described the trail.

There is also a trim trail laid out around the tree trail. To the south of the field is a small pond and an area of maturing tree planting that borders the site boundary (compartment 2f map 1A). A small bridge leads under Castle Eden Walkway and into Stoney Field.

Sink hole

In August 2004 a hole approximately 5m x 5m appeared in the area close to the bridge. The cause of this subsidence is unknown. A report on the subsidence is available in the rangers' office.

C) Stoney Field and old car park

Stony field was planted with native trees by the ranger service in 2001. There is also a plantation of poplar and willow in the south-west corner that was planted and harvested by Forest Enterprise as an experiment with a biomass company over a five year period. This project has now ended.

A section of tarmac that had been used as a car park when Castle Eden Walkway was first opened is included in this area. Stoney Field is also linked to Thorpe Thewles by an underpass under the A177.

A sculpture known as the Celestial Kitchen sits close to the centre of the field and is used to interpret the night sky.

D) Castle Eden Walkway

Being an old railway line the walkway is a thin linear strip 4.9kilometres of which is within the park. Either side of the walkway is a mosaic of woodland, scrub and grassland.

The walkway is the access corridor to the whole of the park and also forms part of National Cycle Route 1. A small section of it is also bridleway and some of it is permissive bridleway (see section 2, Access and Recreation)

E) Thorpe Wood

A 46-acre Local Nature Reserve, classified as Ancient Semi Natural Woodland (ASNW) and extremely valuable to both biota and visitors alike. It is a mix of native deciduous trees and plantations of both deciduous and coniferous non-native species. There is a man-made pond forming one of the main features of the wood, as well as some streams and smaller ponds.

F) Pickard's Meadow

This is a 40- acre ex-arable field, which is to be managed as a wildflower meadow with a wooded copse and for its ponds/wetlands that support, amongst other things, great crested newts.

G)Tilery Wood, Brierly Wood and Alf's Wood

There is a car park for approximately 20 so cars servicing Tilery Wood which is accessed from the A689.

There is a wooden forestry hut within Tilery Wood, which is used by various groups such as The Caravan Club, Scouts etc on an informal basis. More formal use is limited at present as there is no electricity or running water, but this issue is being looked at under the development plan for the park.

Tilery and Brierley woods are contiguous. Though there are signs that the site is ASNW the original woodland has been cleared at around the end of WWII and it became a plantation of Scots, Corsican and lodgepole pine. Alf's Wood, separated from Brierley Wood by Brierley Beck, is predominantly broad-leaved woodland. It is know known as Alf's wood rather than Layton Lings after the previous owner, who sold the wood to the council.

Housekeeping

Hierarchy and Staffing

The park is managed by a countryside ranger and one assistant ranger. The ranger service is managed by the Countryside Recreation Officer and is part of the Care For Your Area section of the department of Development and Neighbourhood Services.

The shop in the visitor centre and the shops at the other countryside centres are run by a visitor centre co-ordinator and a team of casuals, again under the Countryside Recreation Officer.

The tearoom is staffed by the council's catering section of Development and Neighbourhood Services

The planetarium is staffed by a director and volunteers. The planetarium director is managed by the Care For Your Area Service Manager.

Site services

Two high voltage power lines cross the site and there are a variety of both overhead and underground cables. These and other services such as water and CCTV cables etc are marked on map 3

Sewage bio-digester

The sewage/waste water from the visitor centre, tearooms and public toilets goes to a bio-digester which is emptied twice yearly by Bee Clear. It should be noted that chemicals such as bleach, which kill biological organisms should not be used in the waste-water. The manual for the bio-digester is held in the rangers' office.

Visitor Centre Building Vents.

The grey vents which emerge from the ground next to the visitor centre walls are there to ventilate the cellar located under the tearoom and kitchen, to prevent problems with damp.

Maintenance of equipment, buildings and landscape

The current site inventory and a list of assets and who is responsible for their maintenance and safety is attached in appendix 1. Some of these are currently under review with some maintenance regimes to be arranged. It is the responsibility of the rangers to pass on any problems to those authorities outlined on the asset register.

Day to day cleaning of the visitor centre and toilets comes under Service Stockton. The rangers are in daily contact with the cleaner and so problems can be identified and sorted out quickly.

Bridges

The bridges crossing the walkway are inspected bi-annually by the council's highway engineers. Of the five bridges to the north of the visitor centre, only two are used by traffic- those at Grindon and the access to Woodside Farm.

Security and personal safety.

Gate opening/closing.

The car park is locked in the evening throughout the year to prevent possible misuse during the hours of darkness. Stockton Borough Council's security centre lock the car park gates at 9pm during the summer. During the winter the rangers lock the gates and toilets at 4.30pm. On Saturdays, when ranger staff are not on site the gates are closed by tearoom staff in winter and by SBC security in

summer. The gates are opened by either rangers or cleaners by 8.30am Sunday-Friday and by SBC security on Saturdays.

Security lighting.

Security lighting is installed around the visitor centre that is operated by a timer system.

Intruder Alarms.

The visitor centre, railway carriage and planetarium are alarmed and monitored by Stockton Surveillance Centre.

Fire Alarms.

The visitor centre, planetarium and railway carriage are alarmed for fire.

Cyclical maintenance.

Fire extinguishers, alarms, emergency lighting and the like are all inspected on annual, quarterly, or more regular rotations. Records for these checks are held in the rangers' office.

CCTV.

The CCTV system has been upgraded and a second camera installed at the southern end of the car park.

Police Liaison

Good links have been formed with the police particularly with the local beat officer, who is a regular visitor and is on first name terms with site staff. Contact has also been established with the Wildlife Liaison Officer for Cleveland Police.

Recording of Incidents

Any incidents are recorded in a Log Book kept in the main office and passed on to those people necessary to rectify problems (see asset register appendix1), or to the local police officer.

Photographic Recording

A range of colour transparencies, prints of variable quality and digital images are held in the visitor centre office. These depict a wide range of views, species and activities from the site. To maintain records, record events and produce material for talks and displays it is essential that additions be made to the collection of

digital images on a regular basis. Images are used for publicity, displays, marketing and general records and reports.

Lone Working

The nature of a rangers' job means that there is an element of time spent lone working. The amount of lone working is minimised as far as possible by use of the rotas and work schedules, but where this is not possible a lone working policy and procedure is in place and held with the risk assessments in the rangers' office.

Site patrols

There are approximately 15km of path, cycleway and bridleway within the park. In order to ensure that the public are safe on these highways a system of site patrols has been instigated and all parts of the park accessible to the public via paths are inspected a minimum of once a fortnight. In order to facilitate inspection the park is split into areas patrolled on rotation. Checks are made for vandalism, litter, dangerous trees, flooding or landslip, etc.

Litter and Vandalism.

The rangers clear litter from the 'honey pot' areas of the park daily and remove litter on site patrol as above. Vandalism is recorded in the incident book and dealt with, either by site staff or by notifying the responsible authority as noted in the asset register.

Grounds Maintenance.

Between April and October there is a grass cutting regime for paths and grassed areas around the visitor centre. This is done 'in-house' by Service Stockton. The areas cut are shown on map 4. Any problems are ironed out directly through the machinery operatives and their manager.

Litter and dog-waste bins.

There are 6 litter-bins and 10 dog-waste bins on site. In addition two bins are placed on the platform daily and brought in at night (one of these is a can recycling bin). The litter bins are placed around the 'honey pot' area and ensure good coverage, especially by the play area.

The dog-waste bins are located so as to be close to the areas near the start of a dog's walk where it is most likely to produce waste; from the car park into the arboretum, from Thorpe Thewles into the park, from the car park up the walkway and from Tilery car park into Tilery wood.

There are deliberately no litter-bins along the walkway. There is currently no problem with litter here and those that do not remove their litter from site use the dog-waste bin as an alternative. This does not cause a problem and their occasional use as litter-bins is preferable to littering.

All bins except the two in Tilery Wood are emptied by the site rangers. Service Stockton empty the two Tilery bins, as this requires a vehicle with a separate crew-cab.

Fencing

Many of the fields and hedges around and within the park are fenced. These fences need to be maintained in a safe and tidy condition. During 2007/8 a lot of the original fencing that has become redundant due to replacement by hedging has been removed.

Fencing is repaired or installed by a mixture of rangers, volunteers and community services.

Benches and Picnic Tables

A program of replacing old benches and tables will begin in 2009.

Section 2 : Access and Recreation

General Access and Public Rights of Way (ProW).

All the paths, public footpaths, cycleways, bridleways and permissive bridleways are marked on map 5.

The spine of Wynyard Woodland Park is Castle Eden Walkway (referred to from this point as the Walkway). As it enters the south of the park by the A177 at the Thorpe Thewles junction it is a public footpath (marked FP1 on map4) just to the north of the A177 at Thorpe Thewles.

It then becomes bridleway at the bridge to the southern end of Brierley Wood (marked BW1. At this point a bridleway (BW2) heads southwest to Thorpe Larches, skirting the southern boundaries of Brierly and Alf's Woods. The bridleway BW1 runs along the walkway for a further 874m to the junction of another bridleway, BW3, that skirts the northern edge of Pickard's Meadow. This latter route cuts through Brierley Wood and exits the park boundaries. The junction of these two bridleways on the walkway marks the point at which the walkway returns to being a path rather than PROW.

A public footpath (FP2) runs through the length of Thorpe Wood from behind Fulthorpe garage to the Walkway. Together with a public footpath (FP3) that heads east from Grindon, this forms a circular 2.5mile walk from the visitor centre, known as the Grindon Loop.

All of the other paths within the park are non-statutory routes (marked on map4) and are a mix of surfaces such as compact earth, mown grass, or slag, with the exception of Brierley Drive which is a wide forest track surfaced with a dolomite-type gravel.

Access to the wider countryside

Various paths, ProW and roads link the park to the wider countryside and the parks' role in enabling leisure pursuits further afield is being increased under the development plan. As well as the site leaflet which details access on site, there are currently two leaflets describing circular walks that can be done using the park as a starting point. These are the 'Three Villages Loop Walk' (approximately 7miles) and the 'Park to Park Circular Walk' (approximately 9miles).

The council has adopted a 'Countryside Access Strategy' and the site rangers are working with the public rights of way officer and the Strategy and Development manager within the Countryside and Greenspace section. There are links via the Walkway to the likes of Hardwick Dene (a Tees Valley Wildlife

Trust Reserve), Ropner Park, the developing West Stockton Forest and the River Tees Corridor.

Cycling

National Cycle Route 1 (from Dover to Inverness) runs along parts of Castle Eden Walkway. Its route is marked on map6. Heading north from Hardwick the route leaves the walkway just after going underneath a railway (grid ref. NZ 407225). It follows a farm track and joins a minor road that goes beneath the A177. This route emerges at a staggered junction opposite the entrance drive to the park. The original route of NCR 1 went right at this junction and followed the Wolviston road for approximately 1km to then turn left onto the ProW by Fulthorpe Garage. This is the path forming the Grindon Loop Walk and rejoins the Walkway at Grindon (grid ref. NZ 401255).

Changes to NCR1

The above route was not ideal for several reasons. It required a rider to follow Wolviston road for approximately 1km, a road that is narrow and has a speed limit of 60mph. The Grindon Loop is suitable for walking, being surfaced with a dolomite-type substrate, but it is not ideal for cycling on, especially for road and touring bikes. The route is also fairly steep.

In order to negate these problems it was agreed between the Sustrans officer, SBC's road safety officer and the WWP ranger in the summer of 2007 that the route should go from the staggered junction, up the entrance drive to the park and rejoin the Walkway from the end of the visitor centre platform. This has the further advantage of allowing cyclists using the route to stop at the country park facilities. It also allows cyclists wanting to cycle part of the route to bring bikes in cars and park at the centre.

The route has been resigned and it is marked on the 'Cycling in Stockton' leaflet.

Further Rationalising Cycling

A cyclist wishing to use the park as a base can go northwards beyond the A689 to Hurworth Burn reservoir and to Station Town, a distance of some 11.5km each way. In order to make the route back more interesting and to allow a circular route at the north end of the park, Brierley Drive and the Brierley Link are now designated as open to cyclists. Although Brierley Drive is rutted it is accessible to all but racing bikes. Cyclists are also free to use the Bridleways.

Cycling restrictions

On areas where cycling is permitted, cyclists must give way to pedestrians. Cyclists must also dismount on the platform for reasons of safety.

Cycling is not permitted on the rest of the site. The two entrances to Thorpe Wood from the walkway are gated and signed to say that cycling is not permitted, as is the gate from Fulthorpe. Cycling is not permitted in Thorpe Woods because of the topography. It would be all too easy for mountain bikers to start using the valley sides as a stunt track, thereby compacting the ground and damaging ground flora and causing erosion and visual nuisance. These reasons hold for the rest of the site, such as Stoney field.

Dog walking

Dog walking is a popular recreational activity at Wynyard Woodland Park and dog walkers are welcome. Many of the dog walkers are daily visitors and as such play an important role within the park, acting as extra eyes and ears around the park and reporting problems and incidents to the Rangers.

As of January 2009 there are no restrictions on where dogs can go, or where they must be restrained, though they must be under close control.

Dog Fouling

Under the 'Dog Fouling of Land Act' owners of dogs now have a legal responsibility to clean up after their dogs in public places. Local Authorities are obliged to enforce this legislation. The Countryside Rangers liaise with Stockton Borough Councils Enforcement team to reduce this problem.

Dog Consultation:

A consultation process was undertaken during the summer of 2007 to find the views of site users on the issue and to use the exercise to draw up a new dog policy. In order to stimulate debate park users were given four options for a future dog policy, as well as being able to voice their own ideas. The methodology, reasoning, results and recommendations resulting from the consultation are held in the rangers office and a draft dogs policy is being drawn up.

Horse Riding.

As with dogs, horses are welcome on site. There is an 873m section of Bridleway on the Walkway (BW1 Map 5) bordering the east of Pickard's Meadow. The two other bridleways, BW2 and BW3 are also shown on map 5. Access by horse to BW1 is from the other two bridleways. Whilst these are pleasant routes they are not easy to access by horse. BW2 emerges at Thorpe larches directly onto the A177, which at that point is a narrow 60mph road. BW2 eventually emerges onto the A689, which is similarly single lane and 60mph.

In order to rationalise horse riding, the site manager, the council's rights of way officer and the secretary from a local riding group, have looked at the issue and have come up with a strategy for horse riding on site.

Part of the problem is accessing existing bridleways. In order to solve this problem and to give more rideable area, a permissive bridleway system is to be adopted, see map 5 Both the main visitor centre and Tilery Wood car parks will be access points for horses. After parking in the main car park a rider can go back onto Wynyard Road, turn left and follow for 1km to the public footpath at Fulthorpe garage. This was the path previously used as National Cycle Route 1 and is now to be a permissive bridleway. At the junction with the Walkway a rider will then turn right on another stretch of permissive bridleway for just over 1.25km to meet BW1 and BW2.

Brierley Drive is also designated permissive bridleway. This allows riders to access the park via Tilery Wood car park and to create a circular route taking in Pickard's Meadow. This end of the park is where the majority of the riding would take place and it is the quieter area, thus reducing the likelihood of conflict between horses and pedestrians.

It should be noted that these changes are for the benefit of those riders that already use the park. The narrow nature of the Walkway means much more horse traffic is unfeasible. Should horse traffic increase noticeably then a permit system may be introduced. The details of the secretary to a local riding club are in the rangers' office and links established with the club, who would be willing to help with such a system.

Orienteering

There is an orienteering course around the park. Maps are available for loan from the Station House Visitor Centre. Cleveland Orienteering Club (CLOK) has produced maps and helped with the layout of the course, and organise regular events on the site. The orienteering markers are regularly checked that they are visible and have not been vandalised.

Disabled access.

Under the Disability Discrimination Act the council is obliged to make the site accessible for all as far as possible. Consultation has taken place Stockton Access Group and the site is mapped under the 'Break Free' access guide.

To aid access to the building the disabled car park has been moved right next to the centre and the front door has been ramped. Glass panels have been installed in the doors to allow wheelchair users to attract the attention of staff should they have difficulty gaining entry.

Footpaths

The management of the footpaths are dealt with under each management compartment.

Public transport

Access by bus can be gained to the village of Thorpe Thewles. The number 69 bus leaves from Stockton High Street every hour and takes 12 minutes to reach Thorpe Thewles. Bus number 567 leaves Billingham town centre every other hour. A short 10 minute walk from the bus stop in the village brings you into the park.

A Rural Bus Service is also in operation and provides a service which links the park with Billingham and Sedgefield. An access point and formal bus stop have been created in the main car park as part of the route.

Access by public transport is being looked at by the Countryside and Greenspaces strategy team, with a view to making better links with the wider community.

Section 3. Conservation and Biodiversity.

Preface.

NERC Act 2006

The vision for the park has reference to 'enhancing the natural environment' and 'improving biodiversity'. Under the natural Environment and Rural Communities (NERC) Act 2006 Local Authorities have a statutory duty to have regard to the conservation of biodiversity.

Biodiversity

Biodiversity is simply a term for the number of different species in an area. To improve biodiversity we need to up the number of species within the park. It is important to note that we do not know exactly how many species there are on site at present to form a baseline from which to build. There are records for mammals, amphibians, birds, trees and wildflowers, which are reasonably comprehensive (See appendix). There are also some records for some fungi, grasses, mosses, liverworts and invertebrates. These lists are by no means exhaustive, especially the invertebrates list, which is very poor. The list of invertebrates should be much larger as over 95% of all named species are invertebrates.

There are a series of species and habitat action plans for the region laid out in the **Tees Valley Biodiversity Action Plan**.

The Tees Valley Biodiversity Action Plan was published in June 1999 and identified habitats and species in the area that require priority treatment.

The Tees Valley Wildlife Trust classifies a number of habitats found in WWP as BAP Habitats. These are listed below.

Local Habitats

Scrubland
Ponds

Condition

Good
Reasonable to good

Broad Habitats

Boundary and linear features
Broadleaved, mixed woodland
Improved Grasslands
Unimproved Grasslands
Streams

maturing
mature
reasonable to good
reasonable to good
reasonable

Priority habitats

Semi-Ancient Woodland

reasonable/secure

Most of these habitats are currently in a reasonable to good state. Mixed woodland within Brierley Woods requires regular work to continue to develop as a valuable habitat. With successful management, this habitat type could develop into good habitat that will make a valuable contribution towards the Tees Valley Biodiversity Action Plan.

BAPs set out actions to be carried out to protect and enhance biodiversity. Within this, the species are prioritised into three lists on a national basis. The short and medium lists represent the priority species, those most at risk on a national level. The long list represents other species of conservation concern. There are also a number of species that do not appear on the national list, but are of local conservation concern as identified by the Tees Valley Wildlife Trust. Within the Tees Valley area this makes a total of 170 species. The production of Action Plans for each of these species would be very time consuming. TVWT have therefore prioritised these species to produce an initial priority list of fifty species known as the Tees Valley 50. Wynyard Woodland Park has some speciality species of its own, and these are identified below as being of site based priority.

The following species present at Wynyard Woodland Park have been identified by the Tees Valley Wildlife Trust as deserving a species action plan as part of the overall Biodiversity Plan.

- Globe Flower *Trollius europaeus*
- Barn Owl *Tyto alba*
- Grey Partridge *Perdix perdix*
- Tree Sparrow *Passer montanus*
- Great Crested Newt *Triturus cristatus*
- Dingy Skipper Butterfly *Erynnis tages*
- Bats – all species
- Harvest Mouse *Micromys minutus*
- Water Vole *Arvicola amphibius*

Management of habitats

Whilst there is action taken to support limited specific species within Wynyard Woodland Park, such as great crested newts and harvest mice, large scale habitat change for the sake of an individual species will be avoided, as we do not have an adequate idea what the full community looks like and what the knock-on effects of habitat change may be.

Why Manage? A broad reasoning for habitat intervention

It is reasonably safe to assume that animals and plants were distributed differently in Britain before Neolithic man began radically changing the landscape for farming. Prior to this interference Britain would have been covered in a largely deciduous forest. Within this, there would have been various habitats such as meadows, scrub and wetlands of many types. These features would have been created, maintained and lost due to the vagaries of weather, geology, animals and plants, disease, topography, aspect, natural fires etc.

Subsequently to the arrival of humans many species have gone extinct both in the distant and recent past, whilst non-native animals and plants have been brought in, some to the detriment of what was already here. Some of the larger, more 'noticeable' species to go extinct have been the likes of the wolf, bear, lynx, bison, elk and beaver. These creatures were themselves responsible for maintaining a varied habitat. For example, beavers changed drainage patterns and formed huge ponds. Over time these silted up to form meadows that could be utilised and possibly maintained, by grazing animals.

An example of how a species can change habitats and ecosystems is shown by the return of the wolf to Yellowstone National Park in the USA. The loss of the wolf allowed elk (*Cervus elaphus*, the same species as our red deer) to loaf along river edges. This constant grazing denuded and prevented the regeneration of tree cover. On return of the wolf, elk couldn't loaf anywhere, riparian trees returned and with them nesting birds and, crucially, beaver, which altered the ecosystem.

Wynyard Woodland park is a very small piece of Britain and this tiny area does not allow the space for the natural cycles of wetlands, fires, grazing, climate etc as described above, or room for reintroducing wolves, bears, bison etc. Therefore, in order to recreate and maintain a range of habitats to improve biodiversity, management is necessary.

Management Aims

To manage Wynyard Woodland Park for the benefit of native British wildlife and to maximise biodiversity.

The management aims are to create a microcosm of wild Britain. This will include:

- 1) Deciduous Ancient Semi-Natural Woodland with a good range of growth from saplings to over-mature timber, with appropriate native flora and fauna.
- 2) Wetlands maintained and, where possible, allowed to age and disappear due to natural succession.

- 3) Areas of developing scrub/woodland.
- 4) Areas of grassland and meadow.
- 5) Removal or reduction of non-native species of flora. (It is not seen as practical or achievable to try to eliminate or reduce non-native fauna such as grey squirrel, nor is it desirable to entirely eliminate some non-native trees, which are dealt with below).

Management sections and habitat types

Although the management sections share habitat types such as ponds, grasslands and woodland, each of these habitat types may be dealt with differently in each section, as the overall aims for each section may be different.

Management Section A) Visitor Centre

The area around the visitor centre, car park, toilets, play area, railway carriage and planetarium is largely hard surfacing and mown grass. The grass-cutting regime has been described under 'housekeeping'.

Hedges

The only really significant hedge on site is that bordering the western edge of the access lane from Wynyard Road.

The first part of the hedge from the main road is owned by the adjacent landowner at 'Springfield'. Management of this part of the hedge is done along with the parks' hedge, with the consent and co-operation of the landowner. Ownership changes to that of the park with the commencement of the trees of compartment 2f on the arboretum field. (Map 2A). Between Wynyard Road and the exit from the car park the hedge has been unmanaged for a long time and is now almost a row of hawthorn, blackthorn and elder trees.

Flailing: In order to prevent encroachment over the road this first part of the hedge has come under a regime of flailing. Following DEFRA guidelines, flailing here will take place every other year. Flailing took place during the autumn of 2007, courtesy of the Horticultural Services section.

Hedge laying: from the car park exit to the end of the hedge at the car park entrance the hedge is much younger. During November and December 2007 this section of hedge was laid using traditional methods and will be maintained by hand. Management by hand is the policy for the remnants of hedges on the site boundaries where they occur.

Tree management

The trees bordering the eastern hedge of the play area were thinned during the winter of 2007/08. They were also crown lifted to maintain sight lines into the play area from the car park and picnic areas. Despite being in a wooded setting the play area needs open sight lines for safety. A further thinning will be required after the summer of 2009. As with all tree operations work is to proceed slowly to avoid huge gaps and a stark, 'clear fell' appearance.

A first thin of the block of trees by the northern CCTV pole is to take place during February 09. Again, this is to maintain an open aspect, to promote better tree growth and to prevent obscuring sight lines for the CCTV system.

The trees near the visitor centre border the Walkway and are dealt with under management section D.

Management Section B) Arboretum Field

Grassland

The field is not species rich and is also used as an overspill car park in summer and an occasional event field. Management is geared to reflect this.

Since the establishment of the country park the arboretum field itself has been cut on an annual basis and the arisings removed from site to promote wild flowers. This operation has been done by a local farmer in return for the hay crop. (Contact details for the farmer are held with the site Ranger).



Fig 1 ; Hay Cut at Wynyard Woodland Park

The timing of the cut is usually just before the summer craft fair (usually held in mid-July).

Woodland (compartment 2f)

Compartment 2f is a plantation of maturing deciduous trees. It is being thinned by the rangers and volunteers during the winter of 08/09 to promote the healthy growth of the remaining trees. Future growth needs to be monitored and a further thinning will be required.

The strip of woodland bordering to the west are along the Walkway and are dealt with under management section D.

Specimen Arboretum trees

The specimen trees of the arboretum, starting with the juniper in the north west corner of the field were originally planted in threes. The vast majority of the trees have taken and matured well, with the result that they would appear to need thinning. However, the council Arboricultural Officer has advised that as the groups are of the same species and have a good clear area around them for root plates, they should grow well together without thinning. The trees will therefore be left to grow in groups where they are healthy and only removed where disease or structural fault occur.

Pond

The small pond at the bottom of the field has been prone to drying out in summer. However, during 2009 a pipe was discovered draining out from the pond. This has now been blocked to keep the pond full. As it is buried within the bank its location has been marked with a small post to allow future remedial work. The condition of the access platform needs monitoring to ensure its continued safe use.

Footpath

Path around the field was surfaced with slag some 10-15 years ago. Much of it has returned to grass and it is in fact mown as part of the grasscutting contract. As new interpretation is being installed for the tree trail resurfacing is being costed the park improvement and development plans as part of that project. This would make access easier for those with mobility problems.

Management Section C) Stoney field

Biomass crop

The dense poplar and willow plantation has been left for a number of years since the abandonment of the biomass experiment and is now very dense and 'leggy'. However, during the winters of 07/08 and 08/09 a group of students from

Stockton Riverside College have been harvesting willow for craft materials and for weaving sculptures on site.

Further coppicing on a rotational basis may take place with rangers and volunteers as time allows. The coppiced wood will be used as firewood, fitting in with targets set in section 5 of the plan, 'Sustainability and Climate Change Policy'. Such rotational coppicing is a traditional way of managing such areas and over time provides a variety of habitats for plants and animals, thus boosting biodiversity.

Tree plantation

At present the tree blocks are growing well but are not at the stage of requiring thinning. This situation is to be monitored and thinning done as growth dictates.

The remains of the nurse crop of Corsican pines can be removed over the winters by the end of 2010.

Trees around the underpass

Some of these trees were thinned during the winter of 08/09 and others crown lifted. This is in order to keep clear sight lines around the entrance of the underpass and to prevent an oppressive feel. This underpass is a valuable connection for the park with Thorpe Thewles and many of the village residents use this route. Tree growth here needs to be carefully monitored.

The old car park

This stretch of tarmac parallel to Wynyard road was the old route of the road. It was subsequently used for car parking, but is now abandoned. It is used as an entryway into the park by residents of Thorpe Thewles, who cross over the A177. It is also used by horse riders wanting to cut out a section of Wynyard Road. Lastly, it is also a vehicle access point for Stoney Field.

As a byway and entry to Stoney Field the overhanging blackthorn is cut back annually to keep it open.

The sloping banks tend to creep onto the tarmac and there is also a heavy accumulation of leaves. Annually, usually in September/October, the accumulated debris is moved back on a rotation basis, in order to keep the tarmac from disappearing.

Footpaths

The path running diagonally across the field from the underpass to the access to the Walkway in the north east corner is surfaced with slag. The rest of the paths are grass and are mown under the grass cutting contract.

Management Section D) Castle Eden Walkway

The type of vegetation that occurs along the old railway line of the Castle Eden Walkway is strongly influenced by the presence or absence of spent ballast and upon the type of management used to clear vegetation, e.g. burning produces a different community to cutting. At the top of the embankment where the ballast is deepest, plants such as bramble *Rucus spp* and wild rose *Rosa spp* cope with burial. Grassland and is characterised by fescues and notably vipers bugloss, birdsfoot trefoil and black medic are also present. Lower down the slope the thin layer of ballast; acts as a mulch on the underlying soil, helping retain moisture but also suppressing the growth of a number of plants. Here plants such as Stinging Nettle *Urtica dioica*, Meadowsweet *Filipendula ulmaria* and clovers *Trifolium spp*. Rosebay Willowherb *Chamaenerion angustifolium*, a common railside species, establishes successfully on spent ballast with a high proportion of cinders and small particled material. Ash *Fraxinus excelsior*, frequently colonises spent ballast. The track bed has healthy populations of yellow rattle, eyebright, fairy flax and birdsfoot trefoil.



Fig 2 : Banks along Castle Eden Walkway

Also well represented are fescues, hawkweed, field scabious, knapweed and toad flax. False oat grass and white clover are also present. Also well represented are Black knapweed, coltsfoot and perforate St. Johns wort. The north eastern facing bank leading down to the A177 of the Castle Eden Walkway was planted in the 1980's with a mixture of oak, ash, alder, cherry, hazel, hawthorn and blackthorn. The grassland is characterised by cocksfoot,

couch, false oat grass and fescues. Field horsetails are very common. Other plants characteristic of this area is cow parsley, hogweed, nettles and meadow vetchling.

In the age of steam the embankments and cuttings along the railway line were managed by regular cutting, scrub clearance or burning. This was to prevent debris falling onto the rails from overhanging trees. Grassland communities developed, some being particularly species rich. With closure of the line management ceased and the verges were colonised by coarse grass and scrub

Compartments

For ease of management Castle Eden Walkway is split into compartments- these are shown on maps 7A and 7B. The compartments coming under the regime of this plan are compartments 7-12.

All of the compartments except one are developing woodland and are very narrow, existing as they do within the boundaries of the old railway line. The exception is compartment 11. This gains space as part of it lies in a deep embankment, which rather than woodland is a mix of grassland and scrub.

Surfacing

The surface of the track itself changes from grass/compact earth at the southern end, to woodchip near the observatory up to the visitor centre and then a surfaced path dressed with slag dust heading north.

Surfacing works and proposals

From the visitor centre heading north the path has deteriorated over the last decade or more to the point where it is not ideal as a national Cycle Route. Money has been identified to rectify this by new surfacing and drainage works up to the A689. This work will be done during 2009.

The short section of 'path' adjacent to the platform of the visitor centre is mown grass, cut under the grass-cutting contract. To the south of this the path was dressed in woodchip in 2008 to just beyond the observatory. Beyond this it becomes muddy during the winter. The development plan identifies this as something that needs addressing, as although it is not NCR1 at this point, it is an access route for people from Thorpe Village.

Management Aims

For all of the compartments except compartment 11 the aim is to allow the trees to develop maturity forming a 'wooded avenue'.

From the south compartment 11 begins immediately beyond the bridge. The aim here is to promote wildflowers on the embankments, tapering into scrub at the northern end, which then blends into the woodland of the next compartment, thus maintaining a variety of habitat.

Management Prescriptions

The embankments are strimmed every autumn and the cuttings removed (usually burnt on site) to prevent enrichment of the soil thus encouraging grasses.

In autumn 2008 both sides of the northern scrub were left to mature. In autumn 2009 one side should be cut back to ground level and from then on either side cut in rotation. The subsequent length of those rotations is to be judged by the site manager annually to maintain a scrubby appearance as the transition from grassland to woodland.

Subsequent cuttings of the scrub should be timed according to the re-growth.

Tree Thinning: The trees adjacent to the platform were thinned during the winter of 2007/08. As the remaining trees thicken out further thinning will be required.

The trees in the block between the railway carriage and the car park are to be thinned before February 09 with a view to promoting tree growth and maintaining sight lines for the CCTV system.

The section of trees adjacent to the west of the play area will be thinned before end of February 09. This work will be done by contractor as part of the work to expand and improve the play area. SBC's arboricultural services are involved with this work.

Management Section E) Thorpe Wood

Introduction.

Since the woodland was purchased by the council several plans have been written in succession. These are available in the rangers' office, along with records of management that has taken place.

The original management plan was prepared to ensure that the management of the wood would be in sympathy with its mixed uses and most importantly for its wildlife and environment conservation values. Subsequent plans have followed this ethos, as does this current plan. This is very much a fluid document and progress each year will be carefully monitored to establish future work programs.

Site description

Thorpe wood, a mixed woodland extending to 46 acres, lies to the east of the Castle Eden Walkway about ¼ mile north of the visitor centre at the former Thorpe Thewles railway station. It was purchased by Cleveland county council in 1984 and designated a local nature reserve in 1985 due to the scarcity of this type of habitat within Cleveland and the local rarity of some of the species it contains. The woodland now forms an important part of Wynyard Woodland Park.

The main woodland road or ride passes through the wood from north west to south east along side is Thorpe beck running through a silt trap and connected to an artificially created pond. The rides, the open areas around the ponds and the ponds themselves provide a rich and varied habitat, which is of particular wildlife value.

History and past management

It has not been possible to find written evidence of the existence of Thorpe wood earlier than 1719. However reference to published research into the history of the woodland gives an indication that it could be much older.

The woodland is classified as being 'ancient' or 'recent' (Peterken 1981) depending on the length of time which it has continuously occupied the land. Ancient woodland is either primary, i.e. it has existed continuously since the depletion of the original woodland cover or secondary, i.e. it has been cleared and put to other uses at some time. It is not always easy to distinguish between ancient primary and ancient secondary, as their characteristics are often similar. Rackman (1981) suggests that the majority of woods existing in 1500 or even 1800 occupied primary sites. He also suggests that woodland existing in 1700 might approximate to ancient woodland. Peterken further suggests that it will usually be correct to assume that any existing wood which is present in the first ordinance survey map (mid 19th Century) is ancient, particularly if obvious recent woods are excluded. Other indicators of ancient woodland are the plant species which occur-some species will take a long time to colonize recent woodland and therefore, have a strong affinity to ancient woodland.

The earliest known reference to Thorpe woods is in 1719 when a land exchange occurred involving Thorpe woods and Fulthorpe woods. The northern part of the woodland is subsequently shown in an estate map dated 1777 when it was in the ownership of John Tempest. The boundaries were as at present with the exception of the break caused by the construction of the railway. The rest of the wood would lie in the adjoining estate of Thomas Davidson. The whole of Thorpe wood is shown in the tithe map of Thorpe Thewles in 1844 and in the earliest ordinance survey map of 1859. The boundaries are consistent in all of these plans and are irregular, the woodland occupying the steep valley unsuitable for farming.

From this evidence it is reasonable to suppose that Thorpe wood is ancient woodland and this assumption is supported by a study of the flora (see subsection 1.3.1)

Management of the wood will have changed over time. The main native tree species in the wood are Oak *Quercus robur*, Ash *Fraxinus excelsior* and Wych elm *Ulmus glabra* with Hazel *Corylus avellana* in the understory. In all probably the woodland was managed during the Middle Ages as woodland of coppice with standards.

The coppiced trees would have been cut on a rotation and used for fencing, repair of farming equipment, firewood etc, and a number of trees left to grow into standard trees which would eventually be felled for timber (used in house construction etc). The trees (both coppice and standards) were normally re-grown from stools of the previous crop. Where a gap did occur it was filled by natural regeneration.

From the 17th century there was often a modification in traditional coppice management to include new planting. In fact Thorpe wood is referred to as a plantation in the tithes map of 1844, suggesting that it had at that time been planted and was being managed as high forest rather than coppice.

The timber crop was clear felled at about the time of the First World War and thus the area was neglected. Re-growth occurred but the clear felling gave opportunity for extensive invasion by sycamore *Acer pseudoplatanus*, which in parts of the wood is now the dominant tree.

The regrowth was thinned out in the 1960's and new planting took place under the forestry commission dedication scheme. The compartments of new planting consisted of a mixture of softwoods and hardwoods including beech (*Fagus sylvatica*), oak, ash, Norway spruce (*Picea abies*), larch (*Larix sp.*), grand fir (*Abies grandis*), and Corsican pine (*Pinus nigra var. maritima*).

The shading effect of these new plantations has reduced the density and variation of ground vegetation and in places it is almost non-existent apart from a few shade tolerant plants.

Cleveland county council acquired the wood in 1984. The management plan prepared in 1984 acted as a basis for woodland management work between 1984 and 1989. The major tasks undertaken involved the removal of sycamore, conifers and other non-native tree species.

Woodland structure

In the previous section, reference was made to two types of tree, the 'timber' or 'standard' trees which form the 'canopy' and the 'understory' or 'coppice'. These terms will be used throughout the management plan. The layer of herbaceous

plants and shrubs which occupies the woodland floor is referred to as the 'ground vegetation'

It has already been explained that the structure of Thorpe wood has been considerably modified in the last 200 years. However evidence still exists of coppicing and several of the tree species present could be descendants of the trees in the original wood

The main species present in the canopy of the wood are oak, ash, Wych elm and sycamore. All but the latter species could be present in the ancient wood although sycamore is now the dominant tree. Wild cherry *Prunus avium*, which is locally common in the wood might have been in the original wood or could have been introduced more recently. Most of the timber trees are about 70-80 years old, and occurred as a result of re-growth and natural regeneration from the time when the wood was clear felled.

The understory consists of the same species as the timber trees together with hazel, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, willow spp *Salix spp*, elderberry *Sambucus nigra*, together with shrubby species such as honeysuckle *Lonicera periclymenium*, rose spp *rosa spp* and bramble *rubus sp*. The hazel shows evidence of past coppicing.

The under story was cleared from substantial parts of the wood in the 1960's as part of the forestry dedication scheme. The cleared areas were replaced by plantations consisting of mixtures of softwoods (mainly Norway spruce *Picea abies* and larch *Larix* but also including grand fir *Abies grandis* and Corsican pine *Pinus nigra var maritime*) and hardwoods (mainly oak, beech *Fagus sylvatica* and ash)

Despite plantation of non-natives, the woodland retains much of its characteristic rich ground vegetation including many plants, which are typical of ancient woodland. However, the shading effect of the dense new plantations has reduced the density and variety of the ground vegetation and in places it is almost non-existent apart from a few shade tolerant wood anemones *Anemone nemorosa* in spring

Flora and fauna

Plants

The ground flora of Thorpe wood is exceptionally fine and changes considerably throughout the wood according to the underlying conditions of the soil.

Represented are carpets of wood anemones, bluebells *Endymion non-scripta*, dog's mercury *Mercurialis perennis*, ramson *Allium ursinum*, red campion *Seline dioica*, sweet woodruff *Galium odoratum* and primrose *Primula vulgaris* on rich loamy soils; bracken *Pteridium aquilinum* and tufted hair grass *Deschampsia*

cespitosa on dry and wet acid soil; in the addition to the small areas of wet flush besides the stream in compartment B which have been colonised by numerous species of rush and sedge including the unmistakable primitive looking plant great horsetail *Equisetum telmateia* which occurs in a limited number of locations in the country. Of particular note however are the small populations of great bellflower *Campanula latifolia* which is indicative of recently undisturbed semi-natural deciduous woodlands

Invertebrates

Thorpe wood support several interesting species of spiders, namely *Minyrioloides trifons*, *Tapinocyba insecta* and *Porrhomma pallidum*, which are restricted by habitat. These were previously unrecorded with in the northern region. Similarly an uncommon bug *Neophilaenus campestris* and a small isolated colony of a rare species of woodland butterfly, the white letter hairstreak at its northernmost locality in Great Britain are found within the woodland, together with the populations of *Azeca goodalli*, a mollusc with is a good indicator of old woodland.

Birds

Thorpe wood supports good breeding populations of woodland bird which include titmice *Parus spp*, warblers (namely chiffchaff *Phylloscopus collybita*, willow warbler *P. trochilus*, garden warbler *Sylvia borin*, blackcap *S. atricapilla*, and the occasional wood warbler *P. sibilatrix*, woodpeckers *Dendrocopus major*, jays *Scolopax rusticola*.

Mammals

Roe deer frequent the wood and badger, fox and several other species of small mammal including common shrew, bank vole, wood mouse and water vole are resident.

Ponds

Thorpe Pond (map 7) is a major feature in the wood and provides a rich and varied habitat of particular wildlife interest. The pond was artificially created by a previous owner of the site by damming the beck. By 1987 it was virtually dry and work was done by the ranger service to restore it. The work was highly successful with great crested newts subsequently breeding in it. Floods in 2004 washed away the dam holding back the pond. This caused a large amount of re-profiling of Thorpe Beck. Downstream of the breach the beck eroded down by up to 1 ft into its bed. It also excavated deep pools at various points, some over 4 ft deep and new sand and gravel bars appeared, in some cases re-routing the beck from its original track.

There was also a lot of damage to the riverbanks and valley sides including re-activated spring lines washing gullies in the steeper areas of the valley and also causing landslips. The dam and sluice from the pond was rebuilt in the Summer 2005 and to date this has remained solid.

The pond has sloping sides which have been colonised by a large number of aquatic herbs such as branched bur-reed *Sparganium erectum*, great willow herb *Epilobium hirsutum*, water plantain *Alisma plantago-aquatica*, celery leaved crowsfoot *Ranunculus sceleratus* and brooklime *Veronica beccabunga*. These areas are favoured by a breeding pair of moorhens and eight species of dragonfly, whilst the surrounding damp grass land supports numerous species of rush *Juncus spp* and flowering herbs such as wild angelica *Angelica sylvestris*, bugle *Ajuga reptans*, water avens *Geum rivale*, marsh willow herb *Epilobium palustre* and cuckoo flower *Cardamine praensis*. These provide food plants for numerous species of butterfly namely orange tip *Anthocaris cardamines*, common blue *Polyommatus icarus*, small heath *Coenonympha pamphilus*, large skipper *Ochlodes venatus*, green veined white *Artogeia napi*, small tortoise shell *Aglaia urticae* and wall brown *Lasiommata megera* occurring on the edge of it's northern distribution limit within the UK.

Submerged water plants such as starwort *Callitriche stagnalis*, spiked water milfoil *Myriophyllum spicatum* and floating pondweed such as *Potamogeton natans*, *Lemna minor* and *L. trisulca* provide food and shelter for large numbers of water boatmen, diving beetles and pond snails as well as many other freshwater invertebrates.

Amphibians also breed within the pond, notable of which is the great crested newt *Tritus cristatus*, a specially protected species under section 5 of the wildlife and countryside act 1981.

Pylon Pond

Named for its location near the electricity pylons (map 8) . By the autumn of 2007 the pond had almost silted up. During January 2008 the HEAT team cleared back over hanging trees and did some excavation to reinstate the pond.

It is now being used by great crested newts. Its location adjacent to the 'fingers footpath' means that the pond is possibly subject to invasion by passing dogs and to prevent disturbance it will be fenced during the autumn of 2008.

Lost Pond.

(Map 8) This is so called as by the end of 2007 it had almost silted up and disappeared. The pond was artificially created by damming the stream that drains this valley. During October 2007 volunteers from Hartlepool Environmental Action Team (HEAT) dug out part of the pond to reinstate open water.

The work done resulted in great crested newts using the pond in the following spring.

Fulthorpe pond

This pond was dug sometime in the 1990's (Map 8). It is surrounded by beech and firs and the lack of light here has prevented the growth of vegetation within it. It is not linked to the stream and its water comes from precipitation relying on its low-lying location to hold it.

G1 Pond

This pond was created by damning the beck. However, flooding of the beck and its subsequent re-profiling of its bed at some time in the past decade has bypassed the dam. Although the remains of the dam can be seen there is no longer a pond at this point and the beck has braided. There is no intention of recreating this pond to allow the natural movement of the beck.

Management Compartments:

The wood has been divided into a series of compartments and sub compartments (see map 9) based on existing tree canopy.

Compartment A1

A narrow stretch of mixed woodland adjacent to the main walkway and bordering the northern perimeter of the wood. A number of fairly mature oak and beech are present along with sycamore. Recent planting including Norway spruce, larch, Corsican pine and beech. Quite a rich under story is present including hawthorn, blackthorn, honeysuckle and coppiced hazel.

Compartment A2

A narrow compartment which originally consisted of Norway spruce inter planted with oak. The Norway spruce was cleared in 1984/85 to allow the young oaks to develop properly. The under story is mainly restricted to coppiced hazel.

Compartment A3

A south facing slope leading down to a slow running stream. The relatively flat, wide valley floor at the eastern end contains many plants associated with wet flushes. The canopy consists mainly of sycamore with the occasional oak and wych elm along with a variety of recently planted softwoods and beech. A colony of locally rare white letter hairstreak butterflies *Strymonidia w-alblem*, feed on a large wych elm located at the bottom of the steep bank.

Compartment B

A north facing slope leading down to a stream. The western half was planted up with a beech/larch mixture in the 1960's. an area at the eastern end that was dominated by sycamore extending to approximately ½ acre was block felled in 1985/86 and replaced with native hardwoods. An active badger sett is located behind the silt trap at the eastern tip of the compartment amongst a mixed block of oak and Norway spruce.

Compartment C

South facing embankment at the northern end of the wood. The canopy is exclusively sycamore which is regenerating. A sparse under story exists dominated by blackthorn along the northern perimeter

Compartment D

South facing slope. The canopy consists of ash and sycamore with the latter not quite so dominant. Both are regenerating at a prodigious rate. This compartment is noteworthy due to its complete lack of wood anemone.

Compartment E

A south facing slope. Ash, sycamore and Wych elm compromise the canopy. Two areas of pure Norway spruce have been substantially reduced since 1985. Hawthorn, elderberry, coppiced hazel and bramble making up the fairly light understory. There are a number of wet flush areas towards the lower slopes of the compartment alongside the main footpath.

Compartment F

This section has good structure and needs very little work.

Compartment G

G1

A mixed canopy of mainly oak, ash and cherry, with cherry quite prominent. A good understory dominated by hawthorn and coppiced hazel exists. An under planting of beech/grand fir is situated towards the eastern end of the compartment. Several elms killed by Dutch elm disease have been removed just beyond this planting. Several damp areas exist containing many wet flush species.

G2

This area has been planted with a mixture of beech and grand firs. Several maturing oaks and a few ash are present. The understory species present are hazel and hawthorn. The ground flora is sparse.

G3

Predominantly a spruce/larch plantation with a number of mature coppiced hazel. The ground flora is non-existent.

G4

Predominantly Norway spruce with a number of maturing oak and ash. The understory is very patchy consisting of mature coppiced hazel and hawthorn. A blackthorn thicket marks the compartment's northern boundary. A large glade has been created near the end by felling a number of Norway spruce. The ground flora is non-existent apart from within this glade, round the pond and along the path that runs through the compartment.

G5&G6

Predominantly a beech/spruce plantation with a few oak, ash and Wych elm. There are areas of mature coppiced hazel. Black thorn and elder are common in certain areas. The ground flora is being seriously damaged by the beech/softwood planting.

G7&G8

There are areas of maturing oak, cherry and ash with some mature coppiced hazel. A few re-generating Wych elm are present. The area is dominated by a beech/larch/Norway spruce mixture. The ground vegetation is poor with the exception of a glade created at the northern tip during maintenance work by NEEB to the overhead cables.

Compartment H

H1

This is a low-lying flat area. It has been planted with alder *Alnus glutinosa* and willow. The canopy is predominantly ash.

H2

This section consists of young oak. These were interplanted with a Norway spruce nurse which was removed in 1984/85. There is no understory present.

Compartment I

I1-I4

A steep side valley dominated by sycamore with sparse understory composed mainly of hawthorn. An area of approximately ½ an acre has been block felled on the north facing bank and planted with an oak/cherry/ash mix with an understory predominantly of hazel and hawthorn. Ash is regenerating strongly on this northern side. An area of oak/spruce at the eastern end had the spruce removed in 1985/86.

I4-I7

A beech/ softwood plantation on the north side of the main pond. It provides a pleasant back drop to the pond particularly in autumn.

Compartment J

This consists of the pond, its silt trap and the associated damp margins. An alder/willow mix has been planted in certain areas. Other areas rich in plants associated with the water margin have been left. The major emergent plant is branched bur-reed *Sparganium erectum*. Aquatic plants include Canadian pondweed *Elodea Canadensis*, broad-leaved pondweed *Potamogeton natans* and spiked water milfoil *Myriophyllum spicatum*.

Compartment K

An area of approximately 3 acres of arable land purchased in 1988 which was planted in 1988/89 with a hardwood mix of Cherry/oak/ash and an understory of hawthorn/hazel/blackthorn/holly. These were interplanted with a nurse of Norway spruce and Scots pine *Pinus sylvestris*. Electricity pylon located in south west corner of section.

Compartment L

Formally a piece of arable land, this area was planted up mainly with larch and beech in the 1960's. a number of guelder rose, cotoneaster and other berry bearing trees and shrubs were also planted. Although in the 1990 plan for Thorpe wood this was described very open with a strong ground vegetation predominantly of various grasses and brambles, the beech and larch have matured to the extent that there is no ground cover whatsoever in much of the compartment.

Management Of Thorpe Wood

It is the aim of this plan to provide a detailed working document for the future management of Thorpe wood for purposes of nature conservation.

The management objectives can be defined as follows:-

- **Return to predominantly semi-natural broadleaved woodland, consisting of species native to the area.**
- **Retain some good specimens of naturalised trees, such as sycamore, larch and beech, for variety.**
- **Maintain the existing ponds to provide breeding habitat for the great crested newt.**

Management Prescriptions.

The management prescriptions of the 1990 plan still broadly apply. The prescriptions for the winter of 08/09 follow. Bearing in mind that there are only two staff members to implement the whole of this plan it is unfeasible to lay out rigid targets for the next five years, as it is quite likely that the schedules will slip. Rather, it is sensible to work towards the overall aim and draw up annual work schedules in light of the previous years achievements.

Note the following provisos:

Felling to Waste.

Felling will be done by site rangers and not for commercial purposes. In this way progress will be slow and the visual impact of the work to visitors will be minimal and the damage often caused by timber extraction machinery, avoided.

Timber felled will either be used as firewood for the visitor centre, or as revetment, or left in situ as deadwood habitat. Where left as revetment it should be staked to prevent rolling.

Brash.

Excessive amounts of brash should be burned in order to negate a future risk by arson and to avoid suppressing ground flora.

Garlon 4 is no longer to be used to control sycamore stump re-growth, which is to be cut manually instead.

Underplanting.

By proceeding slowly large gaps are not created and underplanting to fill gaps should not be necessary. Only where natural regeneration fails should underplanting take place and this should be done using trees of local provenance such as those grown at Butterwick nursery.

Natural regeneration:

Where possible after timber has been removed it should be replaced by natural regeneration. This ensures seeds of local provenance and thus the continued health of the woodland. Regeneration of non- natives such as sycamore and beech should be culled to promote the likes of ash and oak.

Felling of young beech.

There are some spectacular beech trees within the wood. However, these are probably the result of plantings, as beech is not thought to be native this far north, although this is a point of contention and beech is clearly regenerating now. What is undisputed is that whilst beech trees provide mast, the dense shading of their canopy is extremely detrimental to ground flora and if beech takes over the site we will lose the ASNW flora that makes the site special. In order to maintain variety young beech should be removed, leaving older specimen trees and eliminating any regeneration.

Felling of young sycamore.

Though naturalised it is a non-native and is extremely invasive. As with beech, sycamore has advantages, such as quickly decaying, base-rich leaves and sap attractive to aphids and other invertebrates, which in turn support a subsequent food chain. As a maple its sap is highly sought by grey squirrels. Their destructive ring-barking of tree limbs in the pursuit of sap is deflected from other tree species if sycamore is present. Young sycamore should be felled leaving mature specimens for variety.

Deadwood.

Where possible, ie away from footpaths, standing dead wood should be allowed to remain in situ as it is a valuable habitat for invertebrates. Dead wood should also be allowed to accumulate on the forest floor as a habitat for fungi etc. Where felling takes place large timber should be allowed to remain in the woodland either in situ, or moved and used as revetment where it can decay on site. Where a risk of arson is adjudged to be a risk, then brash can be burned.

Broad leaved helleborines

Do not cut the path where the broad leaved Heliborines grow. This area consists of the entire path edge in section H2

Compartment A - Specific implementation

- Remove all Norway Spruce
- Remove all sycamore under 1 foot diameter
- Reduce cover of mature sycamores, leaving specimen trees.
- Strim areas of south A3(5) to try and remove bracken and brambles
- Where necessary under plant with :

Oak – some present but mainly older trees,
Ash – very few actually visible, may
just be young trees
Elm- small re growth trees present.

- Coppice hazel on rotation.
- Remove sycamore re-growth.
- Thin out small areas of blackthorn

Compartment B - Specific implementation

- Remove all sycamore
- Remove Norway spruce (apart from B1-ring trees away from path)
- Remove fencing from around B2 apart from next to path
- Extend fence from B2 4 meters into B3 to stop people going down the hill near the mature beech
- Thin areas of larch in B4 and 5
- Strim B7 in winter to control brambles
- Control areas of bracken in B6
- Underplant with Oak, Ash and Elm where necessary.

Compartment C - Specific implementation

- Remove all sycamore under 1 foot in diameter.
- Bracken control in north and east of section
- Remove large sycamores progressively
- Underplant with oak ash and elm, understory of hazel and hawthorn where needed.
- Along top edge, near farmers field block up with blackthorn and hawthorn to prevent access.
- Remove all Norway spruce and grand fir Fell 20% of the larch

Compartment D - Specific implementation

- Remove all Norway spruce
- Remove all sycamore under 1 foot in diameter
- Single the larger sycamores, remove successively

- Ring bark the larger sycamores more than 50 feet from the pathways.
- Under plant with some small oaks and hazels where necessary

Compartment E - Specific implementation

- Remove all sycamores under 1 foot in diameter
- Successively remove the larger sycamores, leaving specimen trees.
- Ring bark sycamore 50 feet away from paths – leave as standing dead wood habitat
- Thin some of the smaller ash to promote growth of remainder
- Reactivate the hazel coppices
- Under plant with oak and ash

Compartment F - Specific implementation

- Fell sycamore under 1 foot diameter
- Single large sycamores, fell in succession until all are felled
- Control re-growth of sycamores
- Reactivate hazel coppice at top of bank
- Remove Norway spruce
- Remove fencing between section F and K
- Underplant with oak, ash and elm especially under large cherries in section F2

Compartment G - Specific implementation

- Plant more Alder(by beck and around pond), Elm, Ash and Oak
- Reactivate hazel coppice between sections F1+2 and G4
- Thin out areas of scrub at top of beck valleys G5+6 and G6+7
- Lay blackthorn to restrict access
- Remove Norway spruce plantation in section G6, leave natives
- Fell 50% of small beech (under 1 foot diameter)
- Planting in section G5 (ash, oak, elm and hazel)
- Remove sycamore in section G1 near pathway
- Remove one large grand fir near gate to Fulthorpe garage
- Remove all the smaller firs and larch to promote deciduous regeneration.

Compartment H - Specific implementation

- Remove all sycamore.
- Remove all remaining Norway spruce.
- Plant oak and hazel in section 1
- Reactivate the hazel coppice in section H3
- Plant some alder in section 2
- Plant understory of holly, hazel and hawthorn

Compartment I - Specific implementation

- Remove 50% of larch from section 7
- Under plant section 5+6 with oak and ash as it is currently only sycamore
Remove all small sycamores (under 1 foot diameter) from section 3+4.
Ring bark some of the larger ones for standing dead wood (more than 100 feet away from the paths)
- Remove fence from around section 2 and thin out ash and cherry
- Strim areas in section I1 to remove brambles
- Re dig dew pond near bench in section I1
- Cut back the snow berries along path in section I1
- Replace fence along walkway. Possibly plant hedge and lay at a later date.
- Cut down sycamore along path near badger set making a dead hedge with the cuttings
- Whole area needs more oak and ash planting, some elm already re-growing from stumps.
- Leave large Scots pines, but clear around bases

Compartment J - Specific implementation

- Strim around the back of the pond during winter to stop trees growing back.
- Remove all sycamore
- Remove all Norway spruce
- Remove trees from Thorpe pond dam to stop further damage.
- Inflow to pond from walkway needs to be fixed as water is going into drainage pipes.
- Trees between silt trap and pond need thinning.
- Silt trap needs a meander digging into it for the beck to run in
- Path next to silt trap needs fence or hedge planting to stop access onto the silt trap.

Compartment K - Specific implementation

- Mostly young ash thin by digging up and transplanting to other areas (e.g. sections I5, I6 and I7 e.t.c.)
- Thin around already present oaks to two metres and crown lift.
- Fell the Norway spruce during winter
- Norway spruce that have already been partially cut down need removing to ground level.
- Remove 50% of Scots pine
- Plant more Oak, Elm, Hazel and Hawthorn.
- Use more as a tree nursery
- Clear areas for glades

- Strim current glade in winter
- Cut back trees around pylon.

Compartment L - Specific implementation

- Begin removal of beech to leave open light to the ground and encourage regeneration of native trees.
- As regeneration begins, slowly remove some of the larch until a mix of native trees with some larch is reached.
- Plant Oak, Ash and elm, understory of hazel and hawthorn, once thinning has taken place if regeneration doesn't begin after three years of beech removal.
- Ensure snowberry doesn't re-grow
- Cut back all cotoneasters and guelder roses
- Increase area of hazel
- Lay hedge at top of bank near walkway
- Block pathway leading to entrance of old bird feeding area with scrub to prevent access by the public

Prescriptions for Thorpe Wood Pond

Silt trap.

The silt trap was excavated with a JCB to the extent of the reach of its arm during January 2008. The entrance to the pond was similarly excavated and the edges re-profiled. The silt trap requires monitoring and excavating as required, this will probably be every other year. However, the summer of 2008 was extremely wet and by January 2009 the silt trap is almost full and siltation has progressed at the entry to the main pond.

Pond dipping platforms.

The revetment put in during the 1980's in order to aid pond dipping had begun to collapse and was in need of either replacement or removal. The law requires that breeding great crested newts should not be disturbed during the breeding season. Unfortunately, this coincides with the period when schools most like to investigate ponds, and so it was decided to cease pond dipping with schools and to remove the revetment to negate a hazard and the pond edge was reprofiled. These works were done in January 2008.

Algal Growth.

It is necessary to add barley straw to the pond in spring to keep down algal growth. During the spring of 2008 3 sandbags of straw were put in, but this can be judged as required each year.

Maintenance of open water.

Celery-leaved crowfoot if left to its own devices may eventually cover the pond, cutting out light and causing stagnation. In order to avoid this crowfoot is removed each autumn/winter, using a small boat according to the methods outlined in the rangers' health and safety file.

Prescriptions for Lost Pond

Lost pond requires further excavation to reinstate it to its original size and to maintain open water. As digging took place recently this should be left until winter 2009/2010

Prescriptions for Fulthorpe Pond

At present there is little vegetation in this pond. Monitor and allow natural succession.

Access Prescriptions

Footpaths

The footpath network was extended in 1989 to include a woodland edge walk following the northern boundary of the wood. This path needs strimming two or three times during the growing season as growth dictates.

Access within the wood is now more than adequate. To prevent disturbance to wildlife, no new footpaths are recommended.

Cycling: Cycling in Thorpe wood is prohibited as it causes unnecessary damage to paths and disturbance to wildlife, especially if mountain-bikers leave the designated paths and ride on the contours of the valley, compacting the soil and inhibiting ground flora.

Monitoring and Review

At the end of each five-year management plan a complete review of the condition of each of the compartments will be carried out to identify any changes that might lead to the need for a change in priorities or approach. Surveys of indicator species which reflect the state of the woodland will guide the decisions made. This review will then form the basis for determining the work programme for the next five year phase.

Targets for the next 25 years

The following have been identified to be realistic targets achievable within the next 25 years. These targets should be taken into consideration during review and work plan preparation

1. Removal of 45- 65% of the sycamore
2. Removal of all young beech except those to be retained for mast
3. Removal of 50-70% of all soft woods not allocated to be retained.
4. A strong understory should be developing from either plantings or natural regeneration
5. A dense woodland edge should be present
6. Glade communities should be established and maintained
7. Alder and willow spp should be present in all designated valley bottoms
8. The hazel coppice rotation should be in action.
9. Woodland vegetation biodiversity should be developed using planting and natural regeneration

Rate of Change

The rate of change to the composition of the woodland should be gradual for both the adaptation of existing wildlife and for the aesthetic sensibilities of visitors (block felling areas looks harsh and can spoil the ambience of the wood)
Aim to minimise the rate of change. This can be achieved by limiting the group fells to about two every five years (aim at a return to predominantly native deciduous woodland within a 100 year period)

Natural regeneration / Under planting

The aim is to return the tree cover to a more 'natural' state and this is hoped to be done by selectively promoting the regeneration of desirable species. However, where regeneration does not take place, then under-planting will be done using plants grown from seeds of local provenance. The Butterwick Nursery in Sedgefield has gathered seed from this site and grown them on, so they should be the preferred supplier.

Concluding remarks

The importance of this plan as a working document cannot be overstressed, not only as a tool for those physically carrying out the tasks within Thorpe wood, but also for those involved in its management. The carefully structured approach outlined above including monitoring and review, will ensure rigid control of the yearly tasks whilst allowing flexibility of response on an annual basis. The management log in the rangers' office and the yearly addenda provide the opportunity for those implementing the plan to feed back information on problems, improvements etc.

Section 4 : Education, Interpretation and Community involvement

Introduction

A fundamental role of the SBC Countryside Team is seen to be the provision of an environmental education service. This is far wider ranging than merely providing activities for school groups. The purchase and refurbishment of a railway carriage at WWP, provides a venue for use for a wide range of educational activities. This section outlines the approaches that have been used successfully in the past and options for expansion in the future.

Education Policy

Educational activities at WWP should meet a number of criteria.

- Activities should be enjoyable, and offer educational value.
- They should always carry a clear environmental message.
- The activities provided for school visits are individually tailored to meet the requirements of the teacher, so that the children/students leave having learned exactly what was required.

There are a large number of facilities currently operating in the Tees Forest region that offer school facilities. Each of the five local authorities have a countryside team that offers educational programmes in one form or another, and most local authorities have some kind of education centre that they use. In the immediate vicinity of WWP there are also environmental education facilities at Summerhill (HBC), Teesmouth Field Study Centre, Billingham Beck Valley, Cowpen Bewley Woodland Park, Clarence's Community Farm, Preston Park, with proposals to build a further facility as part of the Teesmouth International Nature Reserve.

With so much competition there is a need for a strategic approach to the provision of environmental education within the area. This would enable the varying groups to complement each other rather than work in competition.

Action

- Monitor environmental education programmes at other facilities.
- Target and market programmes that are not covered by the other facilities.
- Establish a forum for environmental provisions in the local area.
- Maintain education facility in the railway carriage for use by groups ie portable tables and chairs and appropriate interpretation.

Staff

The railway carriage and the Woodland Park provide an ideal facility for the provision of environmental activities throughout the year. Most educational use by schools and other organised groups has traditionally taken place during the summer months. There is also a busy period before Christmas when schools take part in a Christmas craft activity on the theme of recycled materials and natural products. However, since the opening of carriage facility there has been an increase in the number of school visits during the autumn and spring months.

Current staffing levels allow for three school visits per week in the summer months and in the period leading up to Christmas. School bookings are assessed during the remainder of the year allowing for other site work to be completed and public events to take place.

Action

Promote the use of the site by secondary school groups i.e. in conservation work and assignment work towards GCSEs.

Continually improve the educational programme to cover topics in the national curriculum

Schools Education Programmes

The programmes aimed at schools come in a number of different formats. From informal school visits, to self guided activities using equipment from the ranger service, through to organised programmes. Activities are available for a wide range of school ages. The term 'school' is used throughout this section, but is also true of other youth groups such as scouts etc. who wish to use the site. The prices charged for schools programmes are as follows;

£1/child for ranger led visit

£2.50/child for joint ranger led and planetarium visit

Equipment can be loaned free of charge for self led activities.

Informal Visits

Informal visits are those in which schools turn up and use the park as a base for their operations. Where several groups wish to use the site at the same time, they can be steered to different areas of the park to avoid overcrowding, or to other countryside sites in the Stockton area. However, pre-booking for self-led activities are requested for future visits.

Action

Facilitate schools and other groups to use the park for appropriate informal visits. Operate a booking procedure to prevent clashes and inappropriate activities.

Self Guided Programmes / Self-led Visits

At present activities such as orienteering and mini-beast hunting can be offered to schools as self guided activities. The outdoor sessions are, predominantly, full of wonder and excitement for the children and as such is hugely important for their development of a sense of appreciation for the natural world. Without ranger staff however it can be rather limited educationally. Thus staff try to encourage ranger led activities where possible. Pre-booked self-led visits are not taken on days when a ranger led visit is already booked to avoid overcrowding.

Ranger led visits

A series of programmes have been designed to meet various aspects of the school Curriculum. A far greater range of packages is available for primary schools than any other group as it is far easier logistically for primary schools to organise visits to the park. Secondary schools require more co-ordination between various teachers and visits can disrupt other subjects, consequently frequency of secondary school visits is and will continue to be lower than those from primaries. However a number of secondary programmes are available and should remain so.

Action

- Offer a range of day and half-day programmes for primary and secondary schools.
- Update the programmes to fit any changes in the National Curriculum.
- Monitor the success of the programmes and modify where necessary.
- Continue to improve joint planetarium/ranger led visits by working closely with teachers/planetarium staff.
- Work closely with teachers to develop new programmes for both primary and secondary schools.

Joint planetarium/ranger led visits

Joint planetarium/ranger led visits are also offered as part of the educational programme. This allows visiting schools to explore and learn about nature and the environment and also the universe.

The planetarium covers the National Curriculum requirements at all key stages of school progress. It also provides shows, educational resources, internet telescope link-ups and teaching back-up for post GCSE students up to and

including degree level. The prices currently charged for schools and community programmes are as follows:

£1.50/child for a planetarium show

£1.00/child for an external planetarium staff managed event

£3.00/adult for a planetarium show

Education at the planetarium.

As well as hosting organised school visits adhoc astronomical educational events are also hosted at the planetarium whenever there is an unusual or interesting astronomical event happening in the skies above us, e.g. solar eclipses. These are again free to attend and open to everyone.

Planetarium shows for the general public are held on the first and third Friday of every month from September to April and the first and third Sundays of every month from May to August. The prices currently charged for public shows are:

£3/adult

£1.50/children and concessions

£6/family (2 adults and 2 children)

Telescope Club

Planetarium staff run a Telescope Club for adults and children alike, no matter what their level of expertise, who are interested in learning about space and the universe around us. Meetings are informal and held on the last Friday of every month during the astronomical observing season (September to April). The club is run in association with volunteers from CaDAS who guide club members on a structured tour of the heavens throughout the year and show how to observe them through telescopes and other optical instruments.

Education Pack

The WWP education pack was developed in 2003 and describes many of the activities that are available at the park for visiting school groups. The pack is designed to help teachers to plan a school visit and to assist in self-led visits. It can also be used to assist in classroom-based learning, as many of the activities are suitable for use indoors or in school grounds. The education pack is charged at £5.

School Questionnaire

A questionnaire is given to all visiting schools to help ranger staff assess the quality of the educational programme they are providing. The questions include a

series of tick boxes based on the quality of the service provided. It also leaves space for teachers' suggestions on how to improve the service.

Further Education and Higher Education Establishments

Close links have been established with Stockton riverside College and students come to the park for course work on a regular basis.

Sunderland University bring a group of MSc. Students to the site every year for a tour of the site by ranger staff. Such links are valuable and to be encouraged further, not just for the educational benefit of students and community relations, but also because universities often need research placements for students, the outcomes of such research benefiting the park in return.

Ranger visits to schools

Recently schools have requested rangers to visit schools. In the main this has been to advise/assist in creating wildlife gardens within school grounds. Ranger staff are happy to continue this service. There may be opportunities to develop a programme of classroom based learning in the future.

Student Placements

WWP can, and does, act as a facility for school and college students wishing to take on extended work experience placements or undertake research work on nature conservation, biological sciences, and other fields. We should encourage where such work will be beneficial to the woodland park. Many previous pieces of work have allowed valuable data regarding the park to be collected, work which the ranger staff would have struggled to do through time pressures.

Action

Continue to encourage students to undertake extended work experience placements and research projects in the park where such projects are beneficial to the woodland park.

Work Experience Placements

WWP receives requests from schools for help with work experience placements. Where possible we encourage these as an ideal opportunity to provide secondary school and college students with an insight into the work of countryside rangers and help them decide whether it is a career path they would like to follow.

Action

Continue to provide opportunities for work experience placements at WWP.

Interpretation

Interpretation and its purpose: “Environmental Interpretation is a process of communicating with people about the environment in a fun and interactive way to promote positive action for environmental protection.” Signage is the simplest method to achieve this and provides factual information.

Entrance Gates

The main entrance has a large welcome board at the entrance to the car park. Smaller welcome boards are located around the park. Clear signs indicate the times that the gates are locked for security reasons. Other smaller signs direct visitors to the overflow car park and where disabled car parking has been designated.

Road Signage

The site is signposted from all the local roads surrounding the park. These signs are tourism style, white on brown background, some signs still describe Wynyard Woodland Park as the Castle Eden Walkway and steps should be taken to change this to avoid any confusion.

Themes:

Interpretation of the site has several themes, which need to be dealt with carefully so that overlap and confusion does not result. The main themes are, a) access-for walkers, cyclists etc, b) wildlife conservation, c) astronomy and, d) history of the railway [many artefacts relating to the former railway station are still visible or on display such as period luggage trolleys, grit bins, as well as the original platform, sidings and coal staithes].

Notice Boards

There is a notice board close by the main car park. It is regularly updated with newsletters, information on events, etc. A leaflet dispenser is present outside the visitor centre. A further notice board is situated directly outside the Visitor Centre, and again this regularly kept up to date. An opening times board is mounted near the door and a sandwich board highlights the entrance. The Planetarium has its own notice board informing visitors of forthcoming events and activities.

Visitor Orientation

Despite the signage mentioned above, during the writing of the development Plan for Wynyard Woodland Park it was recognised that orientation signage for visitors is poor. On arrival a new visitor would find little information about what to do and where to go. The remedy to this is described in the development Plan and its recommendations will be implemented during the spring of 2009.

Interpretive Sculpture

Celestial Kitchen: A unique facility known as the 'Celestial Kitchen' is to be found on Stoney Field. Its purpose is to interpret the sky, both during the day and at night. It has the distinction of being both an educational facility for visiting school groups looking at astronomy and art installation for all to view. It was produced by artist Colin Wilbourn.

Storytellers Chair: Colin Wilbourn also created a storytelling seat in Thorpe wood. This innovative and practical piece of sculpture reflects the site and its railway heritage. It is used by rangers and visiting groups. The seat within the trunk opens out providing a focal point for events.

Sculptured Benches: A series of benches made of oak and carved with a transport theme, both old and modern, are spaced along the Walkway and around Brierley Wood and Pickard's Meadow. They reflect the steam age travel as well as the modern use of the Walkway as a cycle route.

In-Centre Interpretation

Virtual Visitor Centre

The Virtual Visitor Centre provides an excellent opportunity for environmental interpretation. It is difficult to overestimate the value of this equipment and it proves interesting and valuable to be able to respond to the feedback that it generates. The Virtual Visitor Centre Experience is a touch screen system designed to make access to information about the park easier and to help visitors get the most out of their visit.

There are two large touch-screens mounted on one wall of the visitor centre tea rooms, one of which is set at a height convenient for children and wheelchair users. The screens respond to the gentle touch of a finger and help visitors to find out about: news & activities, plants & animals, local history, local facilities, walks, cycling, Wynyard Woodland Park's Environmental Trust, and lots more. The user can also interact with the system by inputting their own artwork & photos, leaving feedback, requesting leaflets, sending postcards and they can even play educational games. Interesting information and detailed pictures of

over 750 species that are found on the park are contained in the systems database.

The screens represent a virtual window out onto the Country Park that enables visitors to familiarise themselves with the site before they even venture outdoors. Alternatively, if they have been outside and want to find out more about what they have seen or heard, just touching the screens provides a whole host of further information. Virtual tours of areas of the site are particularly useful to the disabled who may not be able to physically access certain areas but can still view them and learn about their biodiversity.

A third virtual visitor centre terminal is provided in the railway carriage, for the environmental education of visiting school groups, by way of a large interactive white board, laptop and LCD projector. These facilities are also very useful for other environmental and astronomical classroom activities that utilise computer programs or digital slide shows within the railway carriage. In addition, rangers use the projector and laptop for external presentations and slide shows wherever they are invited to speak

Interpretation panels

There is a limited space for the provision of environmental interpretation within the Visitor Centre as most of the area is devoted to the gift shop. However, whilst working on the Development Plan it has been recognised that there is usable space, especially if wall space in the café is also used. To this end interpretation will be designed for the centre to cover subjects such as change through the seasons, wildlife issues, how the park is managed, access for visitors and volunteering in the park.

Mobile Displays

The use of collapsible display boards makes it possible to give talks outside the Woodland Park in places such as schools, public libraries and wherever invited to speak. They are also used for use for special displays on site.

Publications

Leaflets

A new site leaflet describes the park and its facilities and walks.

There are also a twice yearly events programme and a Discover Stockton's Countryside leaflet that cover all the Stockton Borough Council sites.

There is a sculpture trail leaflet recently produced outlining the artworks. It describes their rationale and location.

A booklet entitled 'Badgers Big Day Out' is available at a small cost. This was written and designed by Parks and Countryside staff. The project was funded by Heritage Lottery Fund.

Another booklet has recently been produced to guide visitors around the arboretum trail.

Friends of Wynyard Woodland Park Newsletter

In collaboration with the Friends of Wynyard Woodland Park, a newsletter is produced on a quarterly basis by ranger staff. This is an important communication method between staff and the friends group. It keeps members informed of all the latest developments and plans for the site.

Planetarium Publications

The planetarium and observatory contribute a large number of entertaining and educational events to the park's countryside events program. These are publicised in the parks and more general Stockton Borough Council promotional material as well as the planetariums own publications. The planetarium publishes regularly updated handouts, freely available to all visitors, of the current night sky. They also have leaflets and worksheets on:

- The Solar Walk, which runs along the Castle Eden Walkway from the visitors centre to Thorpe Wood as an illustrated scale model of our solar system.
- The Celestial Kitchen sculpture in Stoney Field and its astronomical significance.
- A general planetarium leaflet – which is in the process of being updated and reissued.
- An educational newsletter called "Link Up", that is freely circulated to all local libraries and educational establishments, detailing recent, current and future events of interest to all.

Educational resources are also published and made available for free to visiting establishments including:

- The Association for Science Education Key Stage 2 teachers pack, for follow-up work after a planetarium visit.
- A-level physics PowerPoint slides

Many of these publications are available to download from the planetarium website: www.wynyard-planetarium.net This site is currently under review and it is hoped that there will be an expansion of educational publications, resources and information available in the near future. The website also contains the pages

of the associated Cleveland and Darlington Astronomical Society and the planetarium promotes their activities with handouts and also publishes their monthly magazine "Transit". All of this material, including back issues of the Transit magazine, going back to 2001, are freely available to download from an archive on the website.

The planetarium and observatory also publish a series of three books at a cost of £1 each:

- The Bright Constellations
- The Solar System; and
- Myths and Legends of the Bright Constellations

These are available from the visitor centre gift shop.

Further books and educational publications covering Key Stages 2, 3 and 4, GCSE astronomy, A-level physics and Gifted and Talented student educational resources are planned for 2006/7.

Events Provision

By providing a comprehensive and varied programme of events, visitors are offered the opportunity to participate in a wide range of activities catering for their many needs. In compiling the programme care needs to be taken not to exclude any groups or individuals. The events should also be relevant to the conservation and environmental work that is carried out at the park.

Events are usually held twice a month, but more events are staged throughout the school summer holidays which are extremely popular with families.

Events vary in scale and attendance. Some events attract handfuls of numbers and others attract visitors in their hundreds, for example the Country Crafts Day. The events are planned in six-month blocks and at the planning stage care is taken to anticipate numbers of attendees so that issues such as parking do not become a problem. Popular events are often run with a booking system to avoid problems.

The site is available for groups and organisations to organise their own events with or without the assistance of the ranger team. The most common activities are running, cycling and orienteering.

Events are also organised in partnership with other departments within the council, other countryside organisations, neighbouring local authorities, the primary care trust etc

Publicity and Marketing

The park will continue to produce material such as events leaflets twice a year and on-site posters and advertising material for these events.

The ranger staff work closely with the council press relations department and much publicity is gained through the press and use of the Stockton News free magazine which goes to all residences in Stockton Borough.

A separate marketing strategy has been written for the Parks and Countryside section. A copy of which is available via the rangers, or Countryside recreation Officer.

Community Involvement

Wynyard Woodland Park Environmental Trust

The park has an Environmental Trust which was set up in 2003. The Trust was formed to help guide the management of the park at a strategic level and to give local people a voice in the management of the park. It is an essential link in community involvement and liaison.

The Trust meets four times a year to discuss park issues and future projects and to provide advice. It is a constituted group with their own bank account, which allows them to apply for grant funding that may not be available to the Council. The Trust helped to acquire funding for the redevelopment of the Visitor Centre and to secure funding for land acquisition. Projects such as these require community involvement as a crucial element. The group contains representatives from the local community including neighbouring landowners, Parish Councils, residents' associations, Cleveland and Darlington Astronomical Society, local police and volunteer rangers.

Community User and Other Groups

Good relations have been established with residents from Thorpe Village, Wynyard Village and local housing estates as well as those with regular park visitors. There are other user groups with whom we currently have less contact. The community consultation over this management plan has helped to fortify these links and continuing involvement will hopefully foster further links.

Action

- Maintain database of local groups who use or are affected by the park.
- Continue to maintain good relationships with those groups through newsletters and personal contact.
- Develop links with new groups through talks, events and leaflets.

- Ensure all staff and representatives of WWP are trained in good customer care procedures, (to this end all staff have been on a Customer First Course).

Consultation

The strategic decisions regarding the management of the park are taken in consultation with representatives from the local community through the Environmental Trust and Friends Group. We wish our stakeholders to be involved in the decision making process at the park, but in order to do that effectively, people need to be aware of what the ranger service has been doing up to that point, why we were doing things, and the constraints that existed. The consultation process could not take place efficiently without an education/awareness process occurring at the same time.

Other methods are also in place for consultation with users including visitor surveys), visitor comments book (available in the shop) and schools feedback forms. A visitor questionnaire is available on the touch screen terminals in the tea rooms and visitors are encouraged to forward their views and comments through the websites, publications, Friends Group and Environmental Trust.

Consultation is sought from other stakeholders and will continue existing relationships with other professional bodies such as Forestry Commission, Tees Valley Wildlife Trust and other government departments.

Visitor Survey

A visitor survey is underway and will monitor visitor numbers during the year. As well as estimating numbers it will identify where users are coming. A comments book is available in the gift shop which provides an indication of level of use and visitor feedback is possible through the touch screen terminals in the tea rooms. A record is kept of attendances at events and of participation by school children etc, is collated quarterly.

Community Groups

By maintaining and building relationships with local community groups it is expected that the Park will grow stronger in its community links. It should also be possible to forge links with the wider community for mutual benefit.

Rangers regularly work out in the local community and provide advice and talks for schools, residents associations, church groups, W.I. and clubs. These groups also visit the park for pre-arranged activities with the Rangers such as guided walks, practical conservation tasks and nature trails. The Scout & Guide movement regularly visit the site for badge related and fun activities throughout

the year. All these services are provided free of charge except for schools for which a minimal charge made.

Local Special Interest Groups

Special interest groups will continue to be targeted including birdwatchers, bat groups and those with a special interest in badgers on the conservation side as well as cycling groups, ramblers and industrial archaeologists.

Other Interested Communities

Research will have to be carried out to investigate the market for other user groups to make use of the facilities at the Park. It is expected that data collected from the visitor surveys and monitoring will prove useful in achieving this goal.



Fig 3 : Volunteers thinning trees by the Visitor Centre.

Volunteering

The Rangers regularly welcome work experience placements to work alongside them. They also work with groups such as community service teams and individual placements.

The park has an active Volunteer Ranger team who meet every week to carry out a variety of work in the park. Volunteering provides an important social activity and is a great way to keep fit and make new friends, in addition to teaching many conservation skills. It is also vital for those who wish to take up a career in countryside management. The work done towards conservation by the volunteers is immense and working with the rangers they do much of the work towards implementing the management plans.

Two special needs groups also regularly volunteer at the park to help the Rangers with maintenance tasks.

Section 5 : Sustainability and Climate Change Policy

Council policy:

Stockton Borough Council has a climate change action plan for the period 2007-2012. Wynyard Woodland Park strives to be a sustainable facility and takes regard of this policy in ways laid out below.

Cycling:

Cycling as a way of transport is to be encouraged and by providing and promoting National Cycle Route 1 Wynyard Woodland Park is in the forefront of this policy.

Site rangers are now equipped with mountain bikes in order to facilitate access to the northern end of the site without recourse to vehicles. Parts of the site patrol rota is done by bike.

Local Recreation

By providing a well equipped park with opportunities for a range of user groups the park encourages local recreation, thus cutting transport to other areas. The cycle and walking links from local communities are being examined in the development plan with a view to further improving them.

Carbon Sink:

By managing the majority of the site as forest and by promoting further tree growth, the park is acting as a carbon sink and 'green lung' for Stockton borough.

Monitoring of tree Growth

Natural regeneration on site is being monitored. It may be in future years climate change will mean some tree species will do better than those traditionally on site. In this case it would be a losing battle to try to preserve a community that is not viable. Flexibility of management will mean that change will be recognised and management altered accordingly.

Recycling

The visitor centre recycles its waste paper, glass and cans. A can recycling bin is placed on the platform every day and there is a community recycling facility adjacent to the railway carriage for clothes, paper, glass and cans.

Heating

The heating for the buildings is on a timer system so energy is not used when the building is empty.

Fireplace:

The fireplace in the shop has been renovated to come back into use. Firewood to heat the building is cut on site as part of routine thinning operations and is seasoned before burning. By using the fireplace the building generates its own heat.

Sourcing of materials

Efforts are made to source materials from the local area. This is especially true of trees planted on site which come from the Butterwick nursery in Sedgefield, which grows trees of local provenance, some of which are gathered on site.

Car Sharing

Where meetings cannot take place on site and travel is necessary staff endeavour to car share.

Raising Awareness

The educational visits run for schools on site have environmental messages within them and the planned interpretation within the centre will also have an environmental awareness content.

Renewable Energy

In 2008 a series of seven wind turbines were erect adjacent to the park on a farm immediately to the north of the A177. In the development plan for the park Tilery Wood Hut is to be looked at as a possible eco-building tying in with the wind farm and perhaps utilising features such as compost toilets.

Section 6 : Conservation Management Action Plan

This plan has laid out the long-term goals for the maintenance and improvements to Wynyard Woodland Park. Many of those aims, especially with regard to woodland management, stretch to 50 years and beyond. Previous management plans have been focused on five-year periods with regards to action planning. Whilst there is merit in considering what needs doing over a 5-year period and then reviewing, it means a lot of time can be spent planning what will happen in years 4 and 5, with no certainty over what will be achieved by, or will have happened, by years 3 and 4. To reduce the uncertainty and to make planning and responding to change more immediate the focus of this document is shifting to a greater emphasis on a yearly review (yearly addendum) and a yearly action plan.

Relevant five-year action plans are laid out below. The yearly addenda and action plans are separate documents kept with this plan and previous plans and work logs so that the development of the park can be reviewed in a systematic way without needing to refer to one huge unwieldy document.

Five Year Action Plan

1. Castle Eden Walkway

				Year				
Com	Grid Ref.	Management	When	1	2	3	4	5
1	N2410223 to NZ406224	Control scrub on eastern bank	Aut./wint.		X			
		Control scrub on western bank	Aut./wint.		X			
		Also cut grass and rake off	Sep./Oct.	X	X	X	X	X
2	NZ407223 to NZ405228	Eastern Fork: Allow scrub to mature						
		Reinstate Hedgerow	Aut./wint.			X		
		Control Rosebay Willow Herb	July	X	X	X	X	X
		Control scrub where the two forks meet			X		X	
3	KZ405228 to N2404229	No management required on wooded area.	Aut./wint.			X		
		Prevent encroachment of wooded area on to grassland	May - Sept	X	X	X	X	X
		Strimming footpath along eastern flank	Maintain Blackthorn scrub on both sides	Aut./wint.	X		X	
			Resurface footpath					
4	KZ404229 to N2403233	Maintain Blackthorn scrub on both sides and strimming annually	May - Sept	X	X	X	X	X

5	NZ403233 to NZ403234	Allow woodland to mature and thin out in 2011						X
6	NZ403234 to NZ403235	Monitor health & growth of trees	Ongoing	X	X	X	X	X
		Ragwort Pulling	July/Aug	X	X	X	X	
7	Stoney Field NZ403237 to NZ402243	Monitor encroachment of thistle and take action if necessary.	Summer	X	X	X	X	X
		Willow Biomass - Decision to be made on future management						X
		Trim grassland and control encroaching scrub	May - Sept	X		X		
		Investigate revamping interpretation for Arboretum Trail ie. Posts and new leaflet						X
8	Arboretum Field	Trim Trail - More publicity required to get the facility known	Ongoing	X	X	X	X	X

Com	Grid Ref.	Management	When	Year				
				1	2	3	4	5
9	NZ402243 to NZ402245	Monitor and amend grass cutting contracts with grounds maintenance team	ongoing	X	X	X	X	X
		Selective thinning of the wooded areas around the car park and visitor centre area	Aut./win.					X
10	Station House Visitor Centre to Station Bridge NZ402245 to NZ402248	Strimming the verges and control any scrub invasion during the summer months.	May - Sep.	X	X	X	X	X
		No management to the wooded areas						
11	Station Bridge to Thorpe Wood. NZ402248 to NZ402249	Cut and rake off meadow on the banks annually	Sep.	X	X	X	X	X
		Control the spread of Rosebay Willow Herb	July		X		X	
		Control scrub encroaching from Thorpe Wood and maintain hedge as a boundary	Aut./win.		X		X	
		Survey the flora of the meadows to monitor increase of species diversity	May - July	X				
12	NZ402249 to NZ402251	Removal of Sycamore and coppice Hazel	Aut./win.			X		
13	NZ402251 to NZ401255	No management to the wooded areas						
		Cut and rake off the grass areas on eastern bank	Sep.		X			X
14	NZ401255 to NZ401256	Clear scrub and cut grass area on three-year cycle	Sep.		X			X
15	NZ401256 to	Clear scrub but leave selected trees	Aut./win.			X		

	NZ400261	to reach maturity						
16	NZ400261 to NZ400265	Cut areas of rank grassland and any scrub			X			X
17	NZ400265 to NZ400266	Remove scrub and Rosebay Willow Herb	Scrub: Aut./Win.	X	X	X	X	X
			RBWH: July	X	X	X	X	X
18	NZ400266 to NZ400268	Clear scrub on 15 year rotation	Aut./win.		X			
19	NZ400268 to NZ401269	No management required						
20	NZ401269 to NZ402273	Lay hedge on eastern boundary and gapping up where necessary	Aut./win.			X		
		Cut grass on western side of the southern end of this compartment.	Sep.		X			X

2. Tilery Wood

Com.	Management	When	1	2	3	4	5
Tilery Wood	Under planting the area thinned out during Winter 2004/05. Native species to be planted.	Aut./wint.	X				
	Monitor the regeneration and control invasive species such as bramble as required.	ongoing	X	X	X	X	X
	Clear existing fire-break	Win.	X				
	Clear trees from around Tilery Hut Pond to maintain an open aspect.	Win.	X				
	Monitor the pond for Great Crested Newts	Sum.	X	X	X	X	X
	Erect new bat and bird boxes throughout the wood.	Win.	X				

3. Thorpe Wood Local Nature Reserve

Com.	Management	When	Year				
			1	2	3	4	5
A1	Remove all Norway Spruce	Aut./wint.		X			
	Remove all Sycamore under 1ft diameter			X			
	Under plant with native species as necessary			X			
A2	Remove all Norway Spruce	Aut./wint.			X		
	Remove all Sycamore under 1ft diameter				X		
	Under plant with native species as necessary				X		
A3	Remove all Norway Spruce	Aut./wint.				X	
	Remove all Sycamore under 1ft diameter					X	
	Under plant with native species as necessary					X	
	Coppice Hazel trees		X		X		X
	Control bramble by strimming/brushcutting			X		X	
B1	Remove all Sycamore	Aut./wint.			X		
B2	Remove all Sycamore	Aut./wint.			X		
	Extend the fence from B2 into B3 to prevent the public the public going down the hill	Aut./wint.		X			
B3	Remove all Sycamore	Aut./wint.			X		
B4	Remove Sycamore and Larch	Aut./wint.				X	
B5	Remove Sycamore and Larch	Aut./wint.				X	
B6	No Management required						
B7	No Management required						
C	Remove Sycamore and Norway Spruce then under plant with native broadleaved species as necessary.	Aut./wint.					X
	Remove 20% of larch	Aut./wint.					X
	Coppice Hazel trees	Aut./wint.	X				X
	Place felled timber for minibeast area	Spring	X				

Thorpe Wood (cont)

Com.	Management	When	Year				
			1	2	3	4	5
I1	Cut back the snowberry alongside the footpath if it becomes invasive	Aut./Win.					X
I3 & I4	Remove any small Sycamores and ring bark some of the larger ones.	Aut./Win.				X	
I5 & I6	Under plant area with Oak and Ash.	Win.			X		
I7 J - Thorpe Pond	Remove 50% larch from the area.	Aut./Win.				X	
	Remove trees from around the dam constructed Summer 2005. Kill the stumps to prevent re-growth.	Aut./Win.	X				
	Silt trap requires a 'meander' digging up stream to allow steady flow of water from the beck into the pond.	Aut./Win.		X			
	New fencing required around the pond to restrict public access. Access restricted to the area where the path passes alongside the pond.	Spr./Sum.	X				

Thorpe Wood (cont)

Com.	Management	When	Year				
			1	2	3	4	5
K	Young Ash can be transplanted to other areas of the woods, in particular sections I5, I6 & I7.	Aut./wint.		X			
	Selectively remove Norway Spruce and remove 50% of Scots Pine.	Aut./wint.			X		
	Identify and create areas as open glades	Aut./wint.				X	
	Liaise with National Grid re. trees growing under the pylons.	ongoing					
L	Remove some Larch to maintain open glade which will be used as a bird feeding area.	Win.	X				
	Strim the glade annually	Sept.	X	X	X	X	X
	Maintain hedge on top of the bank along the walkway and prevent the encroachment of scrub.	Aut./Win.		X		X	

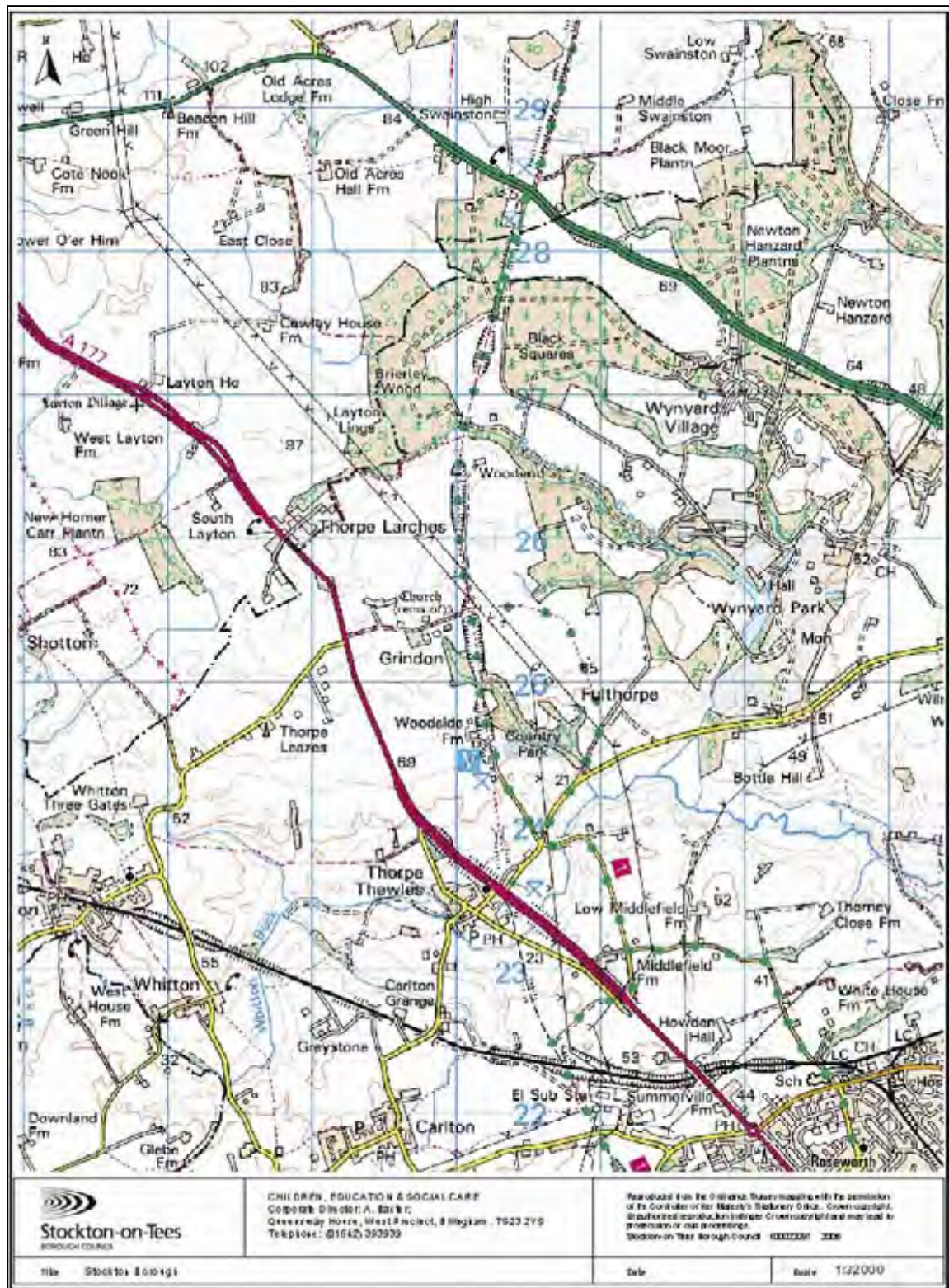
Appendices

Maps

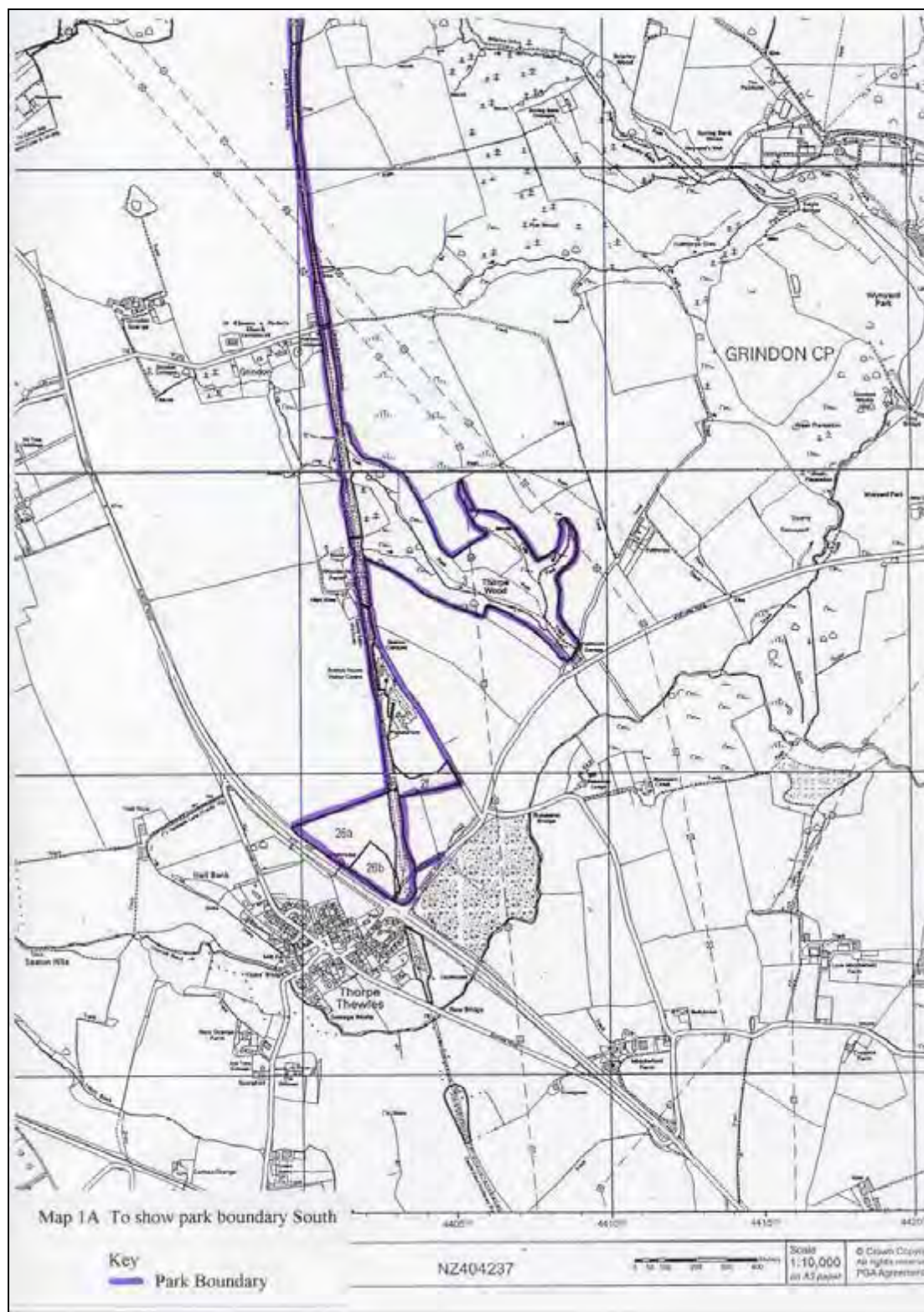
Map 1	Location Of Wynyard Woodland Park
Map 1a	Site Boundary (South)
Map 1b	Site Boundary (North)
Map 2	Showing boundaries to the Park and habitat types
Map 2a	Management Sections (South End)
Map 2b	Management Sections (North End)
Map 3a	Site Services Water
Map 3b	Site Services Electricity
Map 4	Amenity Grass Cutting
Map 5 a	Footpaths North
Map 5b	Footpaths Central
Map 5c	Footpaths South
Map 6	Public Rights of Way
Map 6a	National Cycle route 1 North
Map 6b	National Cycle Route 1 South
Map 7a	Management Compartments of Walkway South
Map 7b	Management Compartments of Walkway North
Map 8	Location of Thorpe Wood Ponds
Map 9	Management Compartments of Thorpe Wood LNR

Species Lists

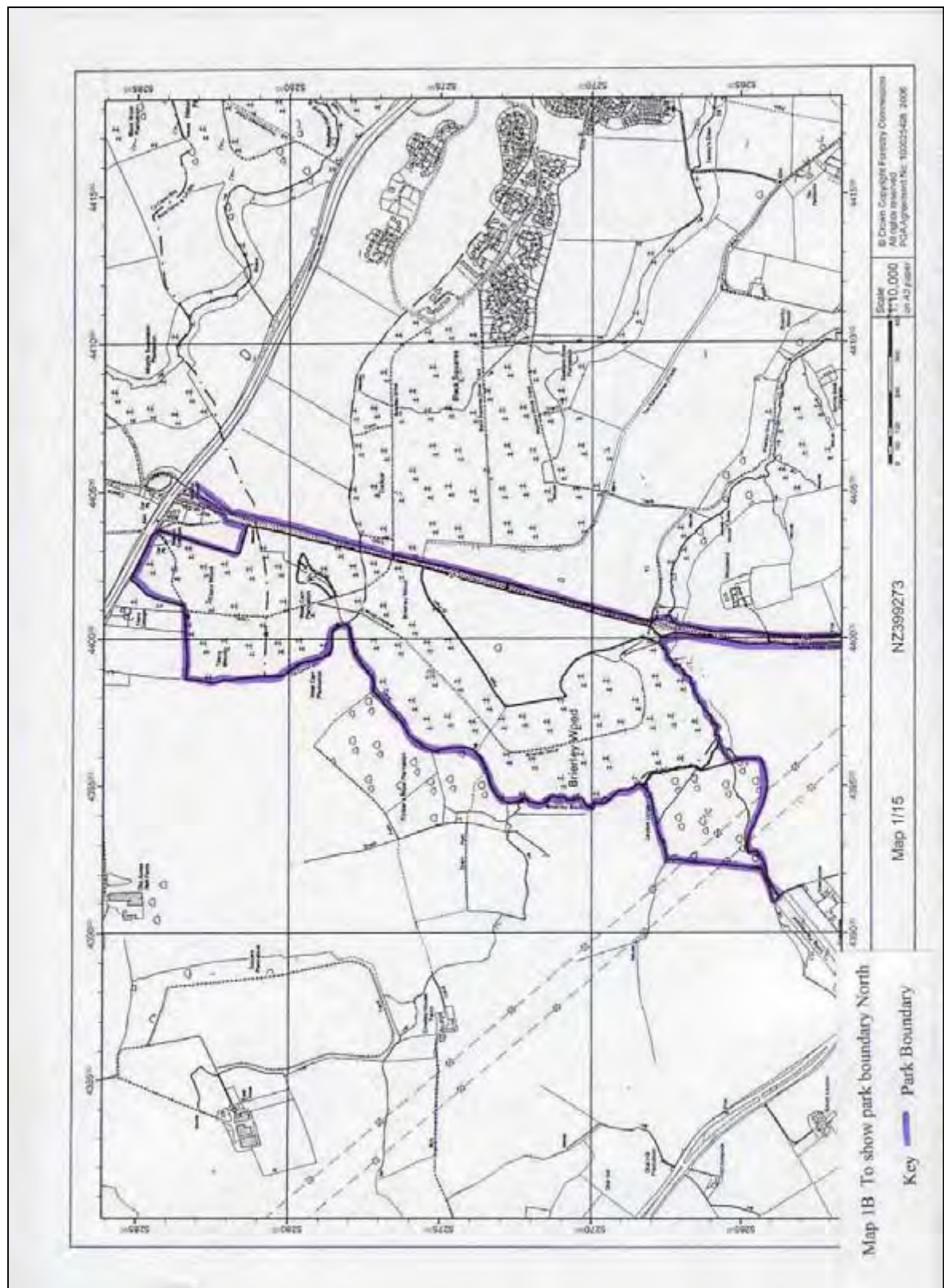
Birds
Wildflowers
Invertebrates
Mammals, Amphibians, Reptiles and Fish
Trees, Grasses, Mosses and Liverworts
Fungi



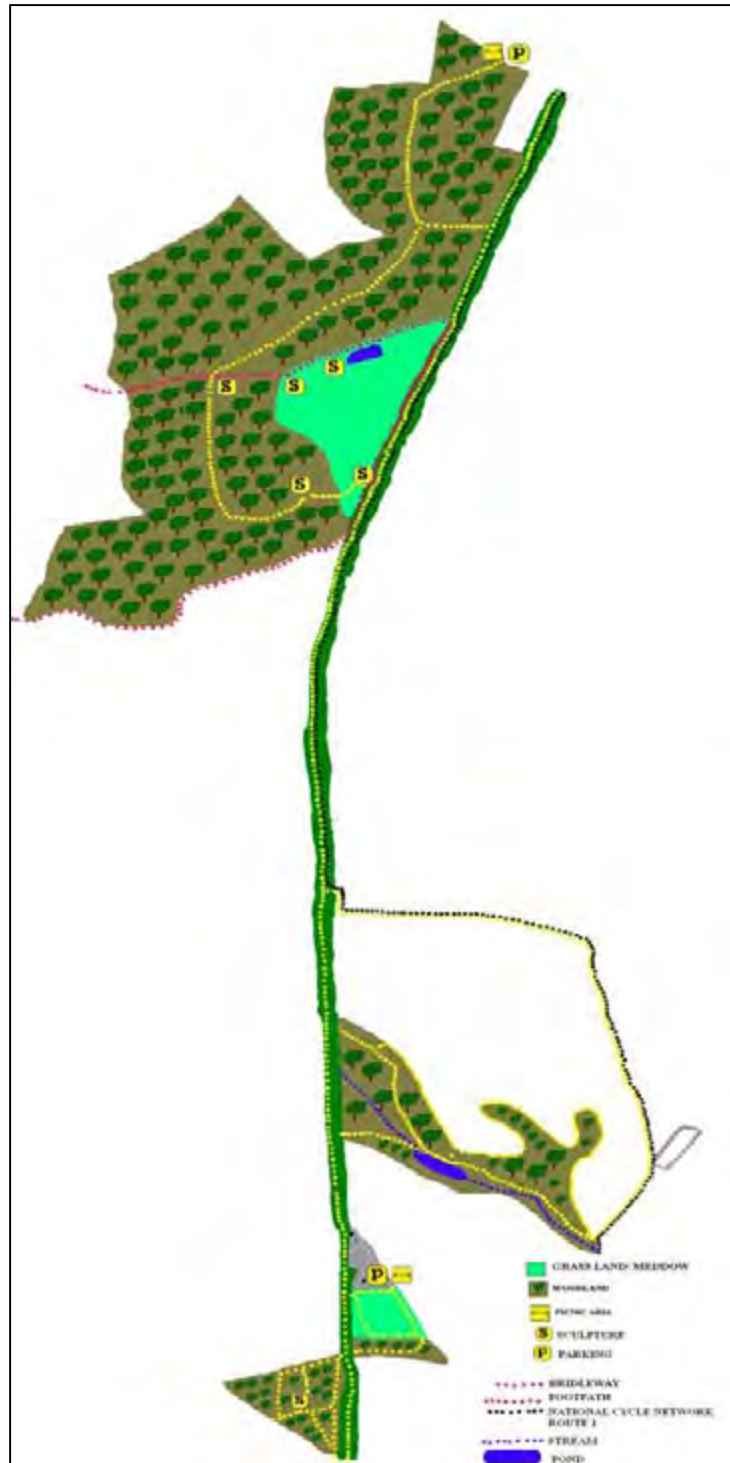
Map 1 - Location Map of Wynyard Woodland Park



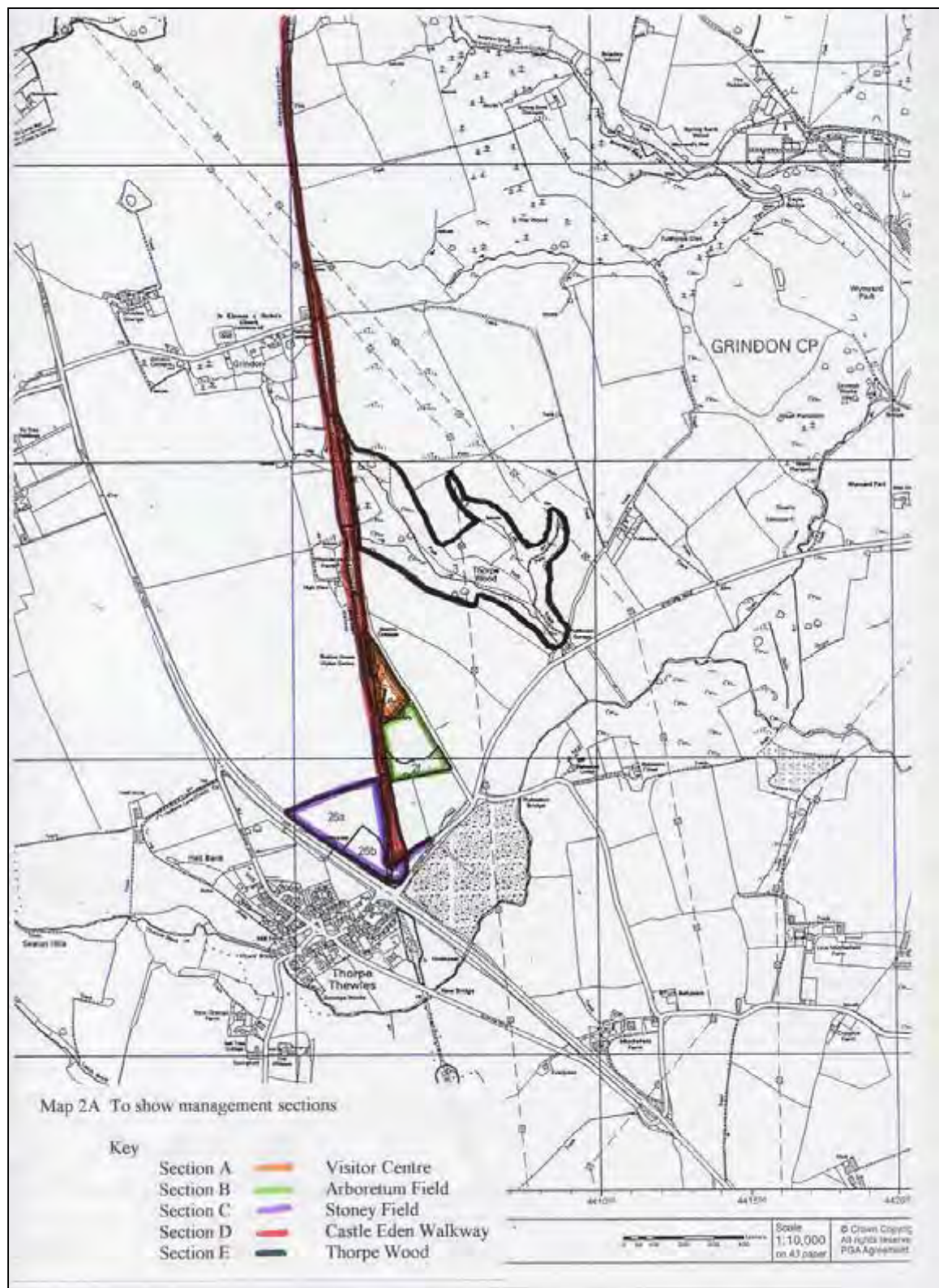
Map 1a – Site Boundary (South)



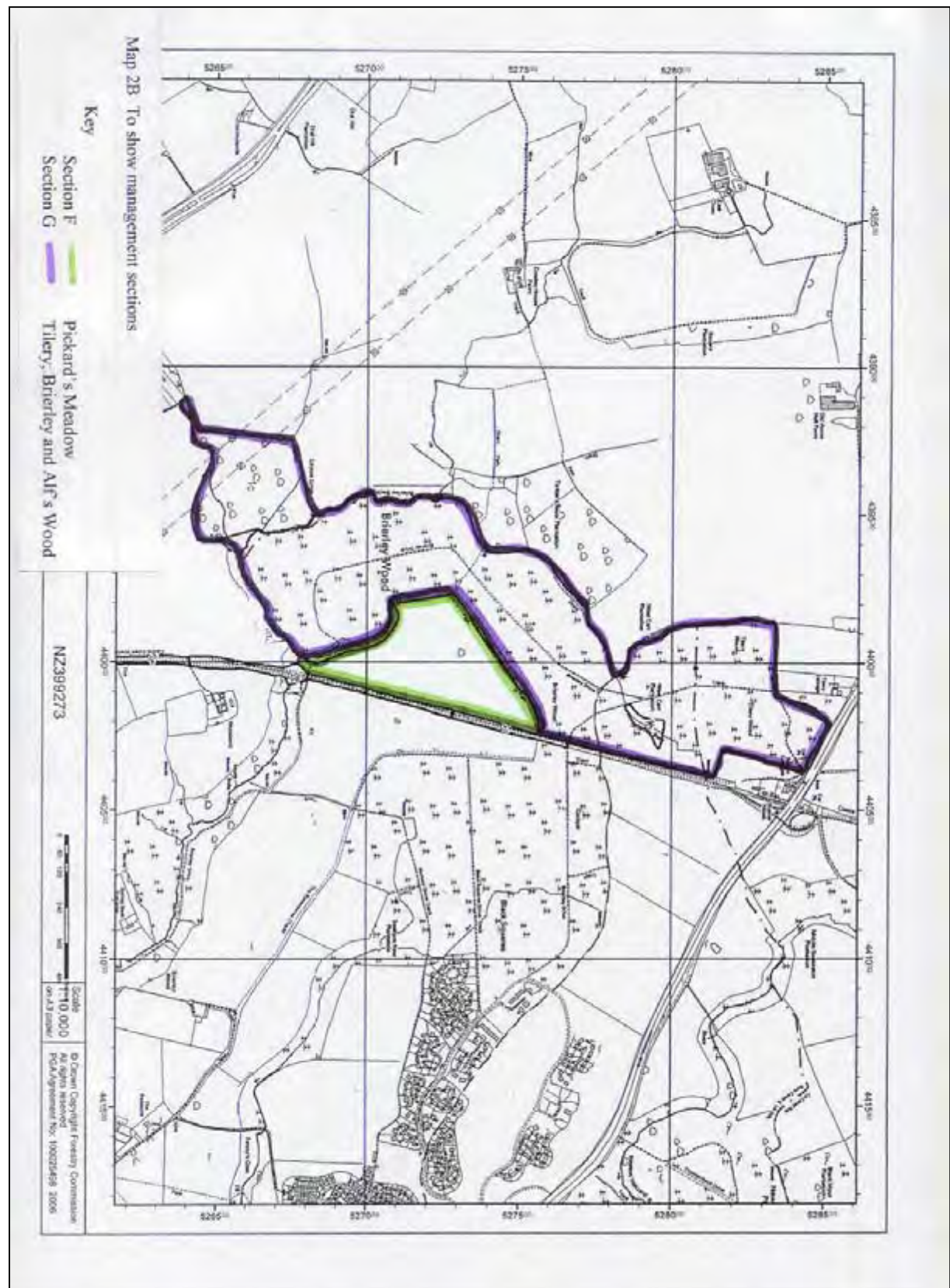
Map 1b – Site Boundary (North)



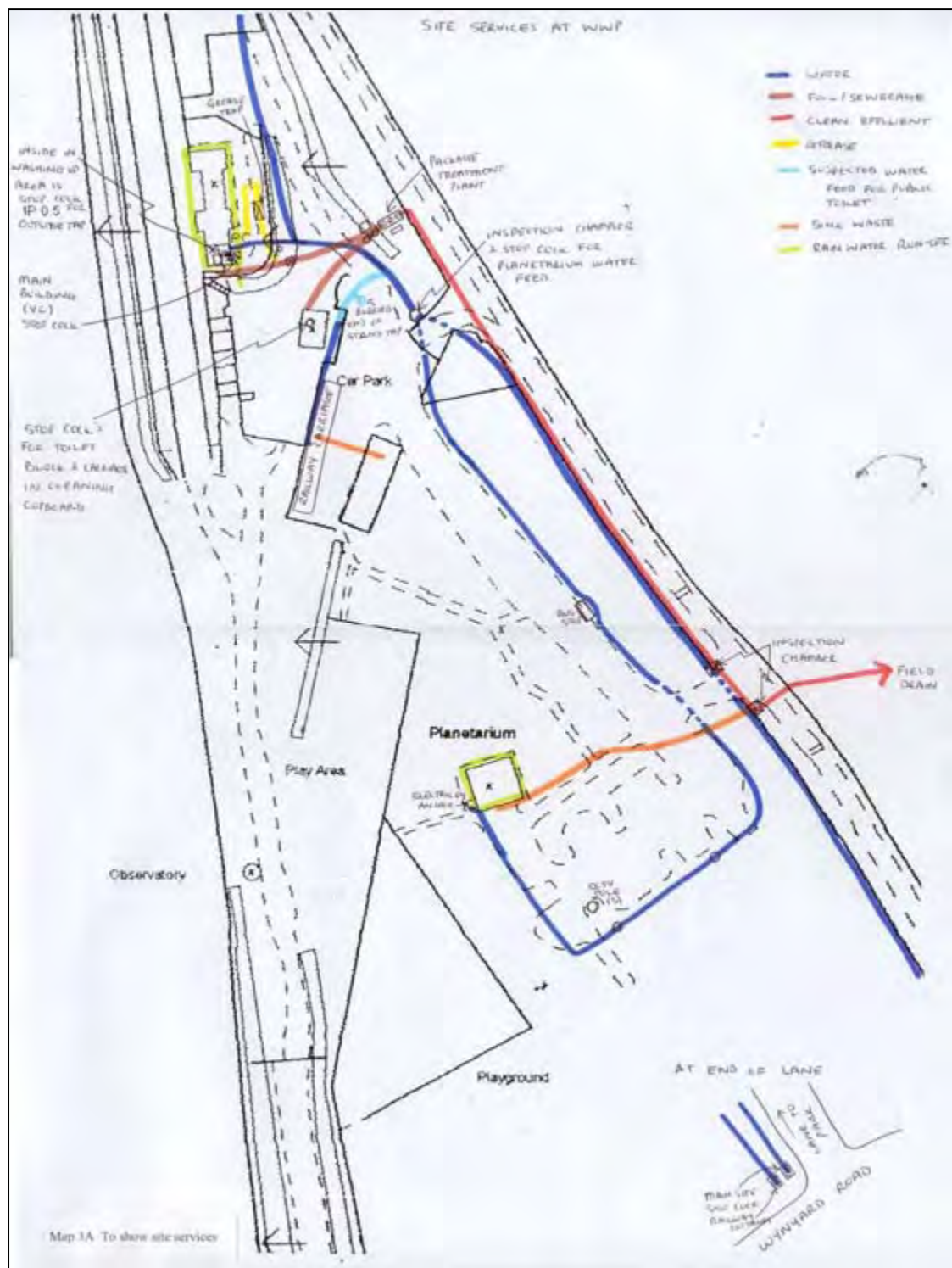
Map 2 – Showing boundaries to the park and habitat types



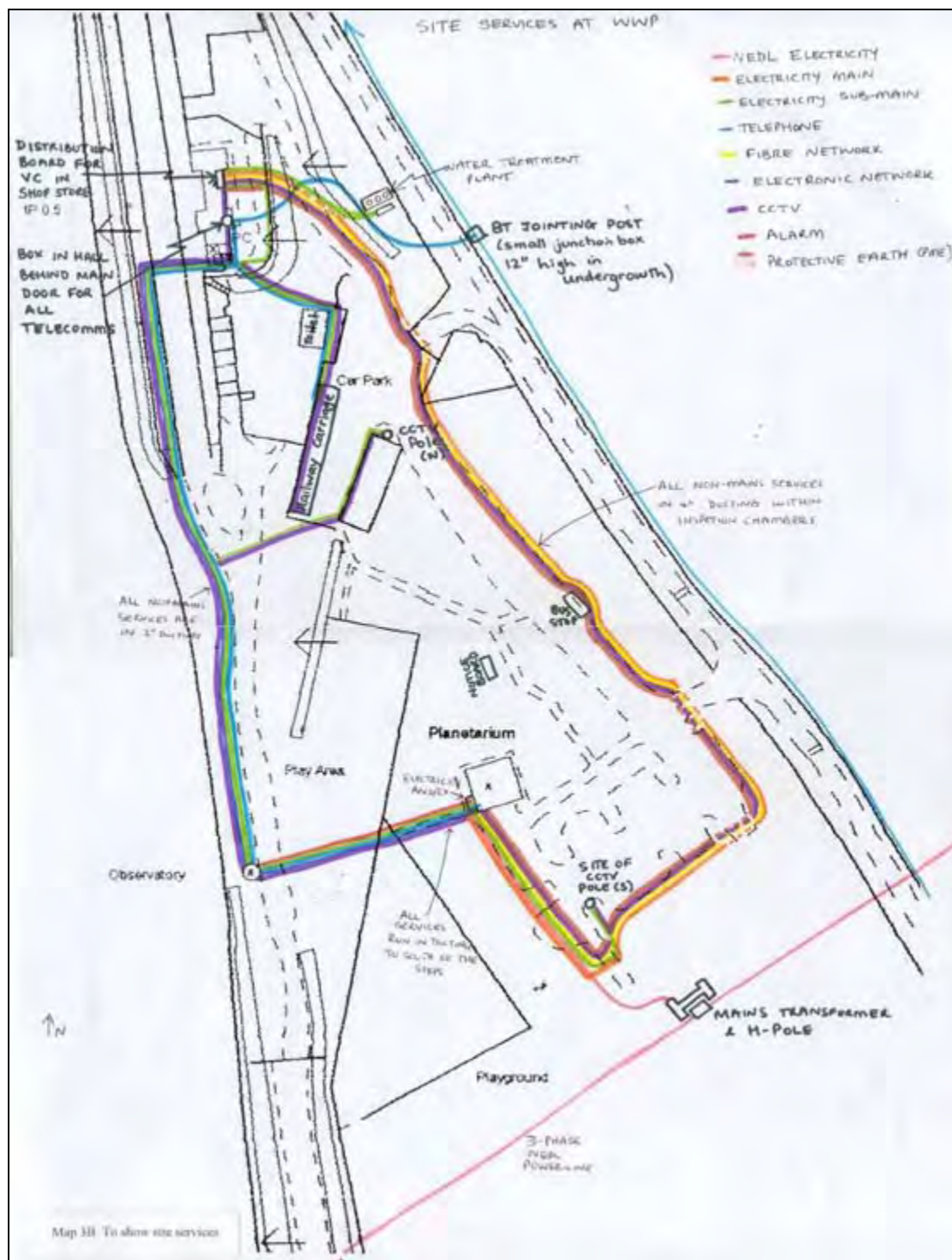
Map 2a – Management Sections (South End)



Map 2b – Management Sections (North End)



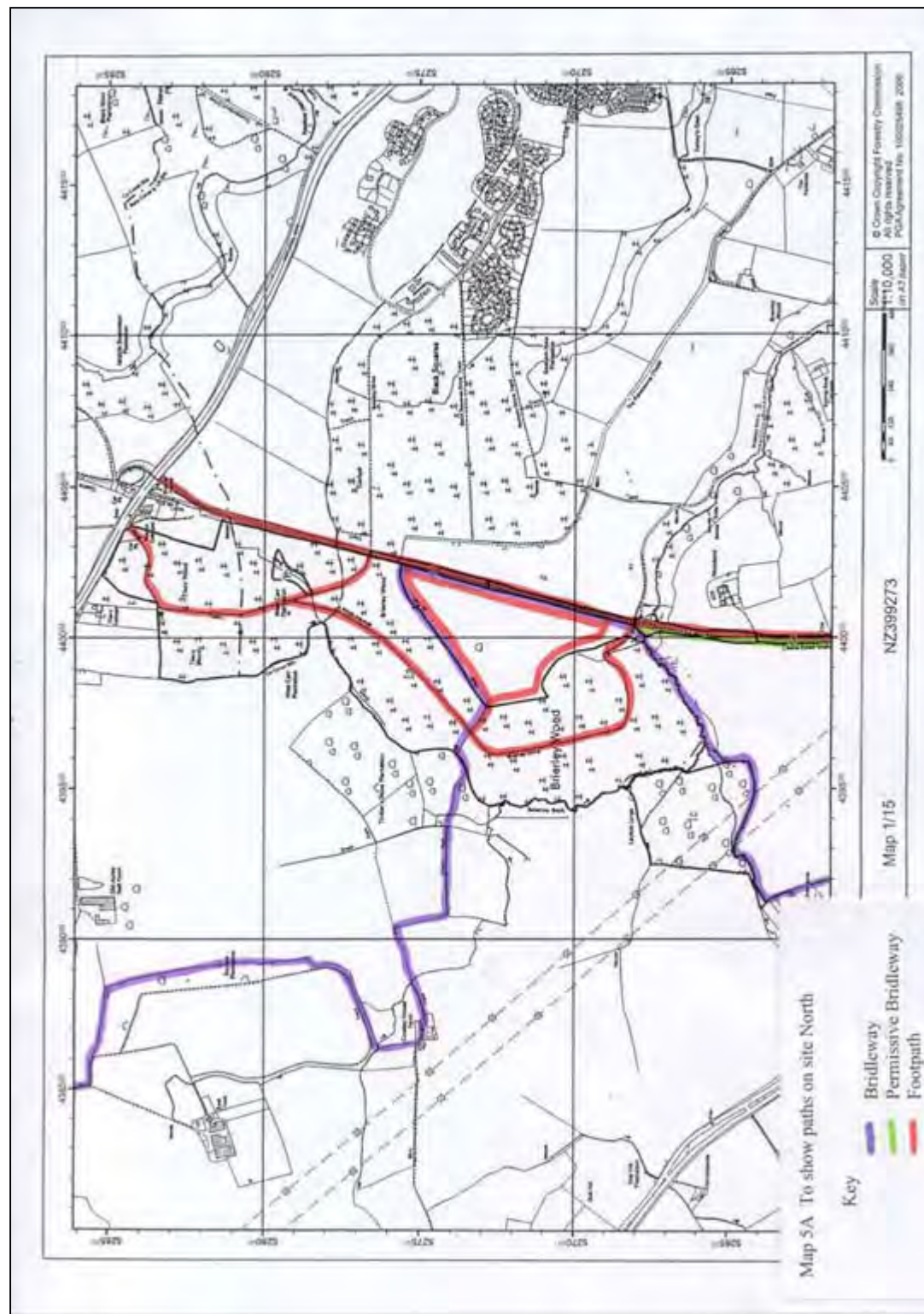
Map 3a Site Services Water



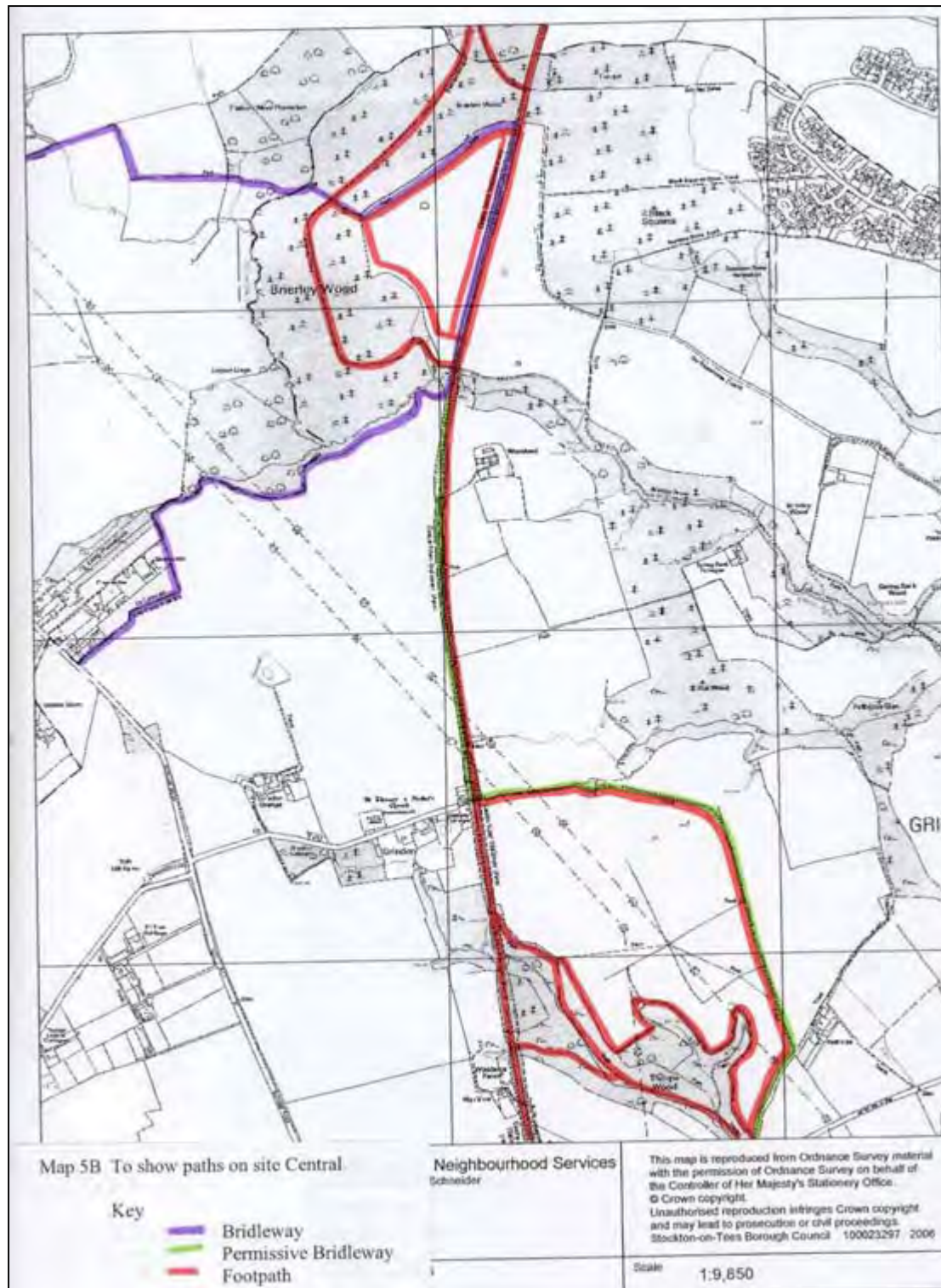
Map 3b Site Services Electricity



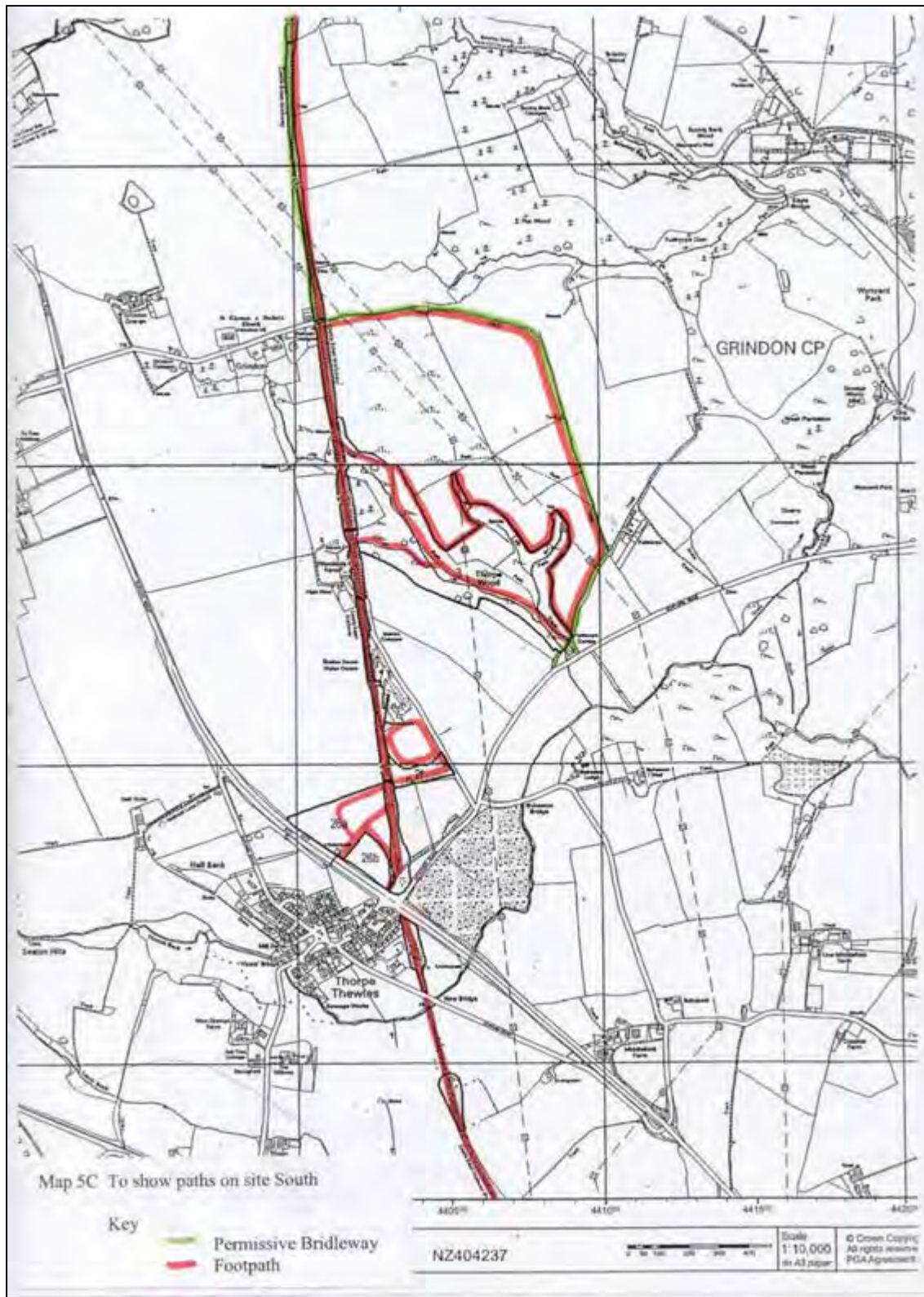
Map 4 – Amenity Grass Cutting



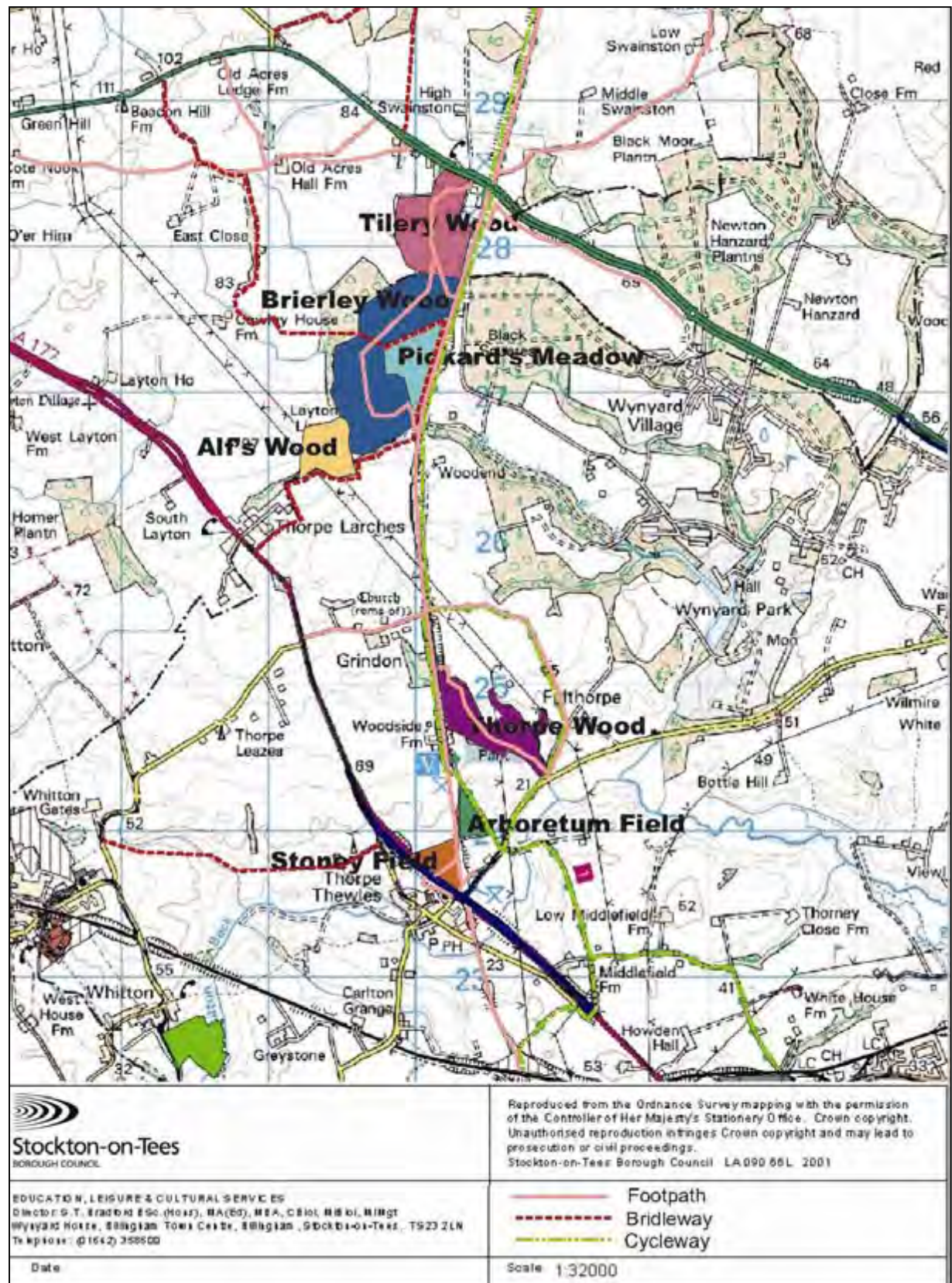
Map 5a Footpaths North



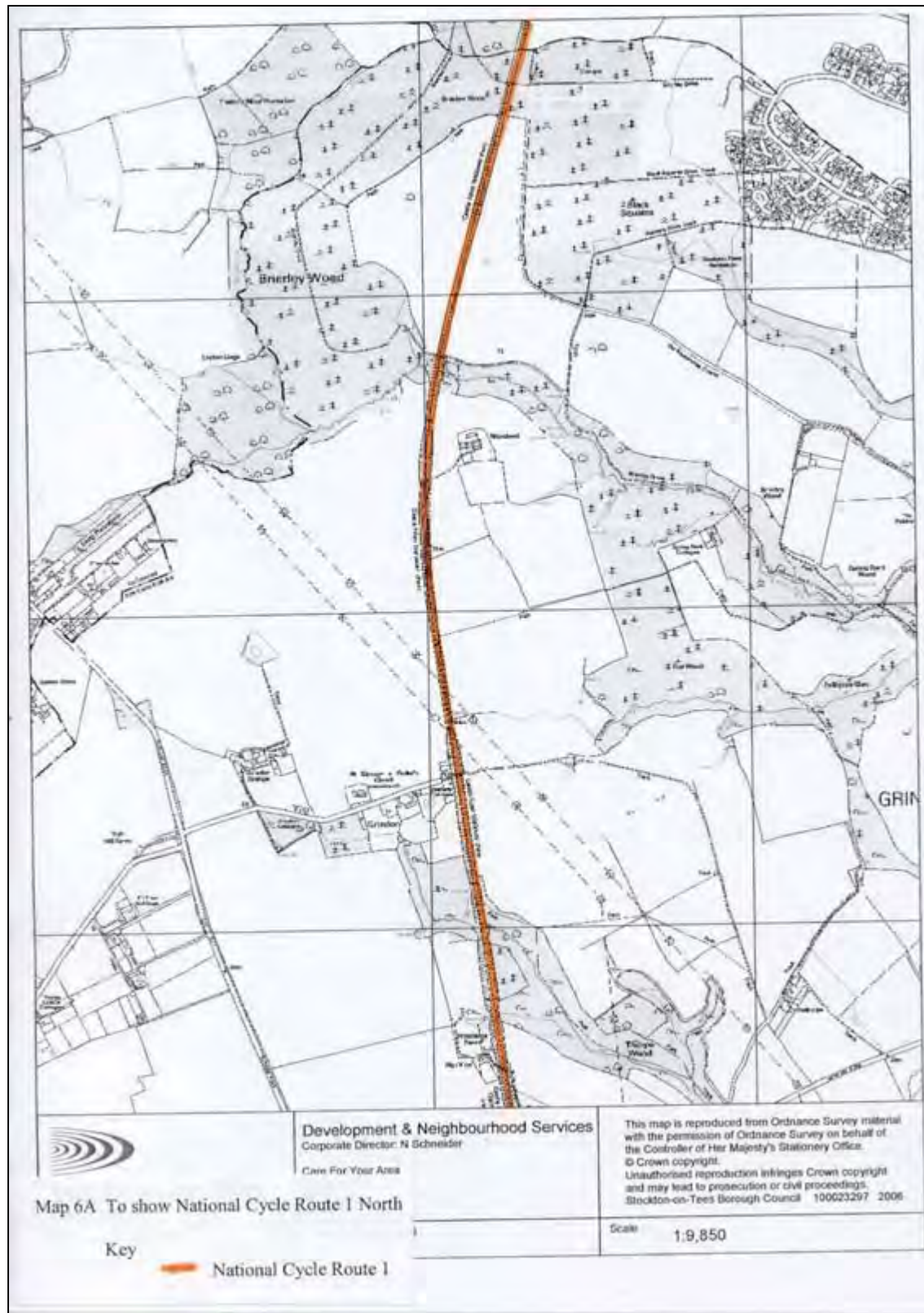
Map 5b Footpaths Central



Map 5 c Footpaths South



Map 6 Public Rights of Way



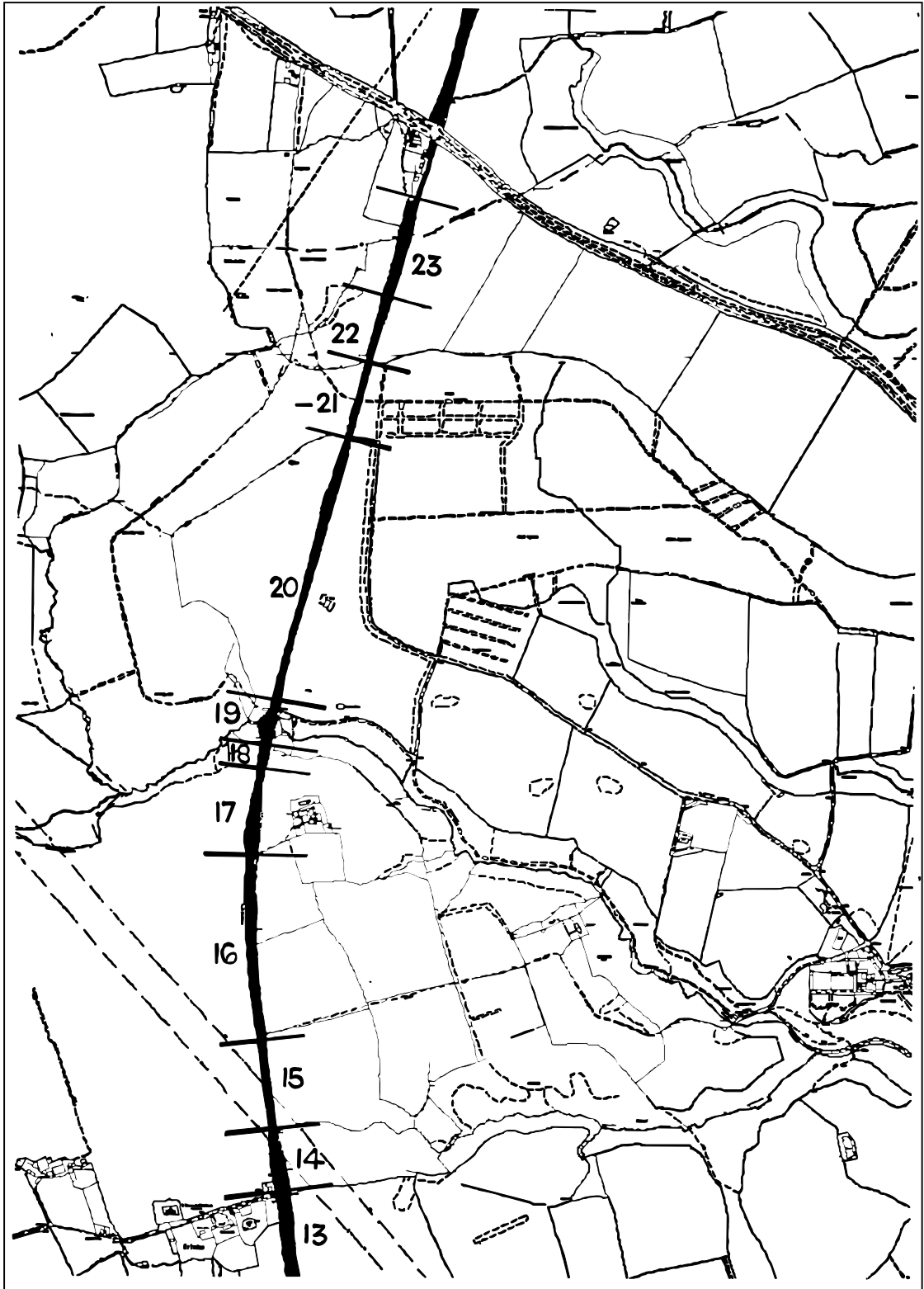
Map 6a National Cycle Route 1 North



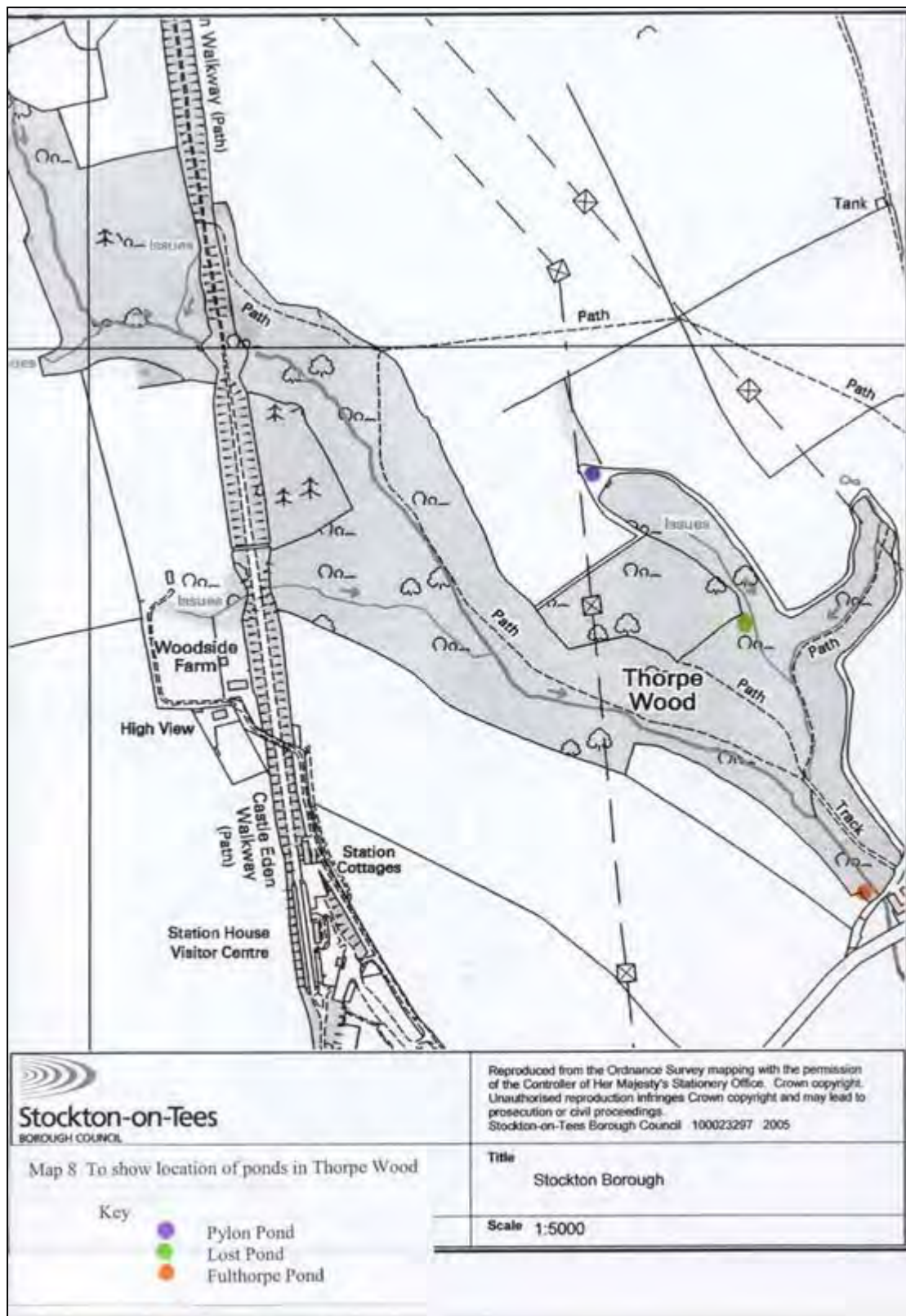
Map 6b National Cycle Route 1 South



Map 7a Management Compartments for the Castle Eden Walkway (south



Map 7b – Management Compartments for the Castle Eden Walkway (north)



Map 8 Location of Thorpe Wood Ponds



Map 9 – Management Compartments within Thorpe Wood Local Nature Reserve

Species list for Wynyard Woodland Park

Bird Species List

Species

Black Cap
Blackbird
Brambling
Buzzard
Chaffinch
Chiffchaff
Coot
Crossbill
Crow, Carrion
Cuckoo
Curlew
Dove, Collared
Dove, Turtle
Duck, Mallard
Duncock (Hedge Sparrow)
Fieldfare
Finch, Bull
Finch, Gold
Finch, Green
Goldcrest
Goose, Canada
Heron, Grey
House Martin
Jackdaw
Jay
Kestrel
Kingfisher
Lapwing
Linnet
Magpie
Moor Hen
Nut Hatch
Owl, Barn
Owl, Little
Owl, Tawny
Partridge, Grey
Pheasant
Pigeon, Wood
Pipit, Meadow
Raven

Redpoll
Redwing
Robin
Rook
Siskin
Skylark
Sparrow Hawk
Sparrow, House
Sparrow, Tree
Starling
Swallow
Swift
Thrush, Mistle
Thrush, Song
Tit, Blue
Tit, Coal
Tit, Great
Tit, Long Tailed
Tit, Marsh
Tit, Willow
Tree Creeper
Wagtail, Grey
Wagtail, Pied
Warbler, Garden
Warbler, Lesser White-throated
Warbler, Sedge
Warbler, White-throated
Warbler, Willow
Warbler, Wood
Waxwing
Woodcock
Woodpecker, Great Spotted
Woodpecker, Green
Woodpecker, Lesser Spotted
Wren
Yellow Hammer

WWP Wild Flower Species List

Species

Agrimony
Anemone, Wood
Angelica
Avens, Water
Avens, Wood
Bamboo
Bartisia, Red
Basil, Wild
Bedstraw, Common Marsh
Bedstraw, Ladies
Bedstraw, Slender Marsh
Bellflower, Giant
Bellflower, nettle-leaved
Betony
Bindweed, Field
Bindweed, Hedge
Bittercress, Hairy
Bladder Wort
Bluebell
Bracken
Bramble
Bridsfoot
Brooklime
Bryony, Black
Bugle
Bugloss, Vipers
Burdock, Lesser
Burnet, Great
Burnet, Salad
Burnet, Saxifrage
Butterburr
Buttercup, Creeping
Buttercup, Goldilocks
Buttercup, Meadow
Campion, Bladder
Campion, Red
Campion, White
Carrot, Wild
Catsear
Celandine, Lesser
Centuary, Common

Chamomile, Corn
Charlock
Chickweed, Common
Chickweed, Mouse-ear
Cinquefoil, Creeping
Cleavers (Goose Grass)
Clover, Red
Clover, White
Clover, Zig Zag
Coltsfoot
Comfrey, White
Cowslip
Cranesbill, Cut Leaved
Cranesbill, Dove's foot
Cranesbill, Hedge
Cranesbill, Meadow
Cress, Thale
Crosswort
Crowfoot, Celery Leaved
Cuckoo Flower (Lady's Smock)
Cuckoo Pint (Lords & Ladies)
Currant, Black
Currant, Red
Daffodil
Daisy, Common
Daisy, Ox-eye
Dandelion
Dock, Curled
Dock, Broadleaved
Dock, Clustered
Dock, Wood
Elder, Ground
Eyebright
Fern, Broad Buckler
Fern, Lady
Fern, Male
Figwort, Common
Flax, Fairy
Forget-Me-Not, Field
Forget-Me-Not, Wood
Foxglove
Fumitory, Common (Cult)
Globe flower
Goats Beard
Goldenrod

Gorse, Common
Groundsel
Hawkbit, Rough
Hawkweed, Leafy
Hawkweed, Mouseear
Heather
Helleborine, Broadleaved
Hemlock
Hogweed
Honeysuckle
Horehound, Black
Iris, Yellow Flag
Ivy
Ivy, Ground
Kanpweed, Greater
Kanpweed, Lesser or black/common
Knotgrass
Lady's Mantle
Lettuce, Prickly
Loosestrife, Yellow
Lucerne
Mallow, Common
Marigold, Marsh
Mayweed, Pineapple
Mayweed, Scentless
Meadowsweet
Medick, Black
Melilot, Common
Melilot, Tall
Mercury, Doq's
Mignonette, Wild
Milfoil, Spiked Water
Milkwort, Common
Mint, Water
Mouseear, Common
Mugwort
Mustard, garlic
Mustard, Hedge
Mustard, Treacle
Nettle, Common Hemp
Nettle, Common Stinging
Nettle, Red-Dead
Nettle, White-Dead
Nightshade, Enchanters
Nightshade, Woody (Bittersweet)

Nipplewort
Orchid, Common Spotted
Orchid, Early Purple
Orchid, Northern Marsh
Oxlip, Hybrid False
Oxtongue, Bristly
Parsley, Cow
Parsley, Upright Hedge
Penny Wort, Marsh
Periwinkle, Lesser
Pignut
Plantain, Great
Plantain, Ribwort
Plantain, Water
Pondweed, Broadleaved
Poppy, Field
Primrose
Ragged Robin
Ragwort, Common
Ragwort, Marsh
Ramsons
Rape, Oilseed
Raspberry
Redshank
Restharrow, Common
Restharrow, Spiny
Rhododendron
Robert, Herb
Rose, Dog
Rose, Gelder
Sanicle
Sandwort, Three Nerved
Saxifrage, Pepper
Scabious, Devils Bit
Scabious, Field
Selfheal
Shepherds Purse
Silverweed
Snapdragon, Lesser (Weasels Snout)
Sneezewort
Snowdrop
Sorrel, Common
Sorrel, Wood
Sowthistle, Perennial
Sowthistle, Prickly

Sowthistle, Smooth
Spearwort, Lesser
Speedwell, Common Field
Speedwell, Germander
Speedwell, Heath
Speedwell, Ivy Leaved
Speedwell, Thyme Leaved
Starwort, Water
St Johnswort, Hairy
St Johnswort, Perforate
St Johnswort, Slender
St Johnswort, Square Stemmed
St Johnswort, Trailing
Stitchwort, Greater
Stitchwort, Lesser
Strawberry, Barren
Strawberry, Wild
Teasel, Wild
Thistle, Creeping
Thistle, Globe
Thistle, Marsh
Thistle, Prickly Sow
Thistle, Smooth Sow
Thistle, Spear
Thistle, Weltd
Toadflax
Toothwort
Tormentil
Trefoil, Common Birdsfoot
Trefoil, Greater
Trefoil, Hop
Trefoil, Lesser
Tutsan
Twayblade, Common
Valerian, Common
Vetch, Bush
Vetch, Common
Vetch, Kidney
Vetch, Tufted
Vetchling, Meadow
Vetchling, Yellow
Violet, Common Dog
Violet, Dames
Water Soldier
Willowherb, Amercian

Willowherb, Broadleaved
Willowherb, Great
Willowherb, Marsh
Willowherb, Rosebay
Woodruff, Sweet
Woundwort, Hedge
Yarrow (or Milfoil)
Yellow Archangel
Yellow Rattle

WWP Invertebrates List

Species

<i>Butterflies</i>
Clouded Yellow
Comma
Common Blue
Green-veined White
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
Wall Brown
White-letter Hairstreak
<i>Damselflies</i>
Azure
Blue-tailed
Common Emerald
Large Red
<i>Dragon Flies</i>
Common Darter
Common Hawker
Migrant Hawker
Southern Hawker
<i>Beetles</i>
Cardinal
Diving
Ground
Ladybird

Longhorn
Pollen
Rove
Weevil
Whirligig
<i>Flies</i>
Bee Fly
Bluebottle
Cnoid Fly
Crane Fly
Greenbottle
Horse Fly
House Fly
Hover Fly
Tachinid Fly
Saint Mark's Fly
Ichneumon Fly
<i>Moths</i>
Barred Yellow
Burnet Moth
Burnished Brass
Clouded Border
Clouded Silver
Common White Wave
Dotted Border
Green Carpet
Latticed Heath
Magpie
Pebble Hook-tip
Pink-barred Sallow
Poplar Hawk-moth
Scallop Shell
Silver-ground Carpet
<i>Spiders</i>
Garden Spider
Nursery Web Spider
Zebra
<i>General Insects</i>

Ant, Red
Ant, Black
Aphid
Bee, Bumble
Bee, Honey
Bee, Tawny Mining
Centipede
Common Groundhopper
Cricket, Water
Earwig
Frog Hopper
Harvestman
Lace Wing
Leafhopper, red & black
Leech, Horse
Mayfly
Meadow Grasshopper
Millipede
Pond Skater
Sawfly
Scorpion Fly
Shield Bug
Slug
Snail, Banded
Snail, Garden
Snail, Great Pond
Snail, Ramshorn
Thunderfly
Wasp, Common
Wasp, Digger
Wasp, Wood or Horntail
Wasp, Ruby-tailed
Water boatman
Woodlouse
Worm, Earth

**WWP Mammals
Amphibians, Reptiles
and Fish List**

Species

<i>Mammals</i>
Badger
Bat, Brown Long-eared
Bat, Pipistrel
Deer, Roe
Fox, Red
Hare, Brown
Hedgehog
Mole
Mouse, Harvest
Mouse, Wood or Field
Panther, Black
Rabbit
Rat, Brown
Shrew, Common
Shrew, Water
Squirrel, Grey
Stoat
Vole, Bank
Vole, Field
Vole, Water
Weasel
<i>Amphibians</i>
Frog
Newt, Great Crested
Newt, Palmate
Newt, Smooth
Toad
<i>Fish</i>
Stickleback

WWP Trees, Grasses Mosses & Liverworts List

Species

<i>Trees</i>
Alder, Common
Alder, Grey
Alder, Italian
Apple, Crab
Ash, Common
Aspen
Beech, Common
Birch, Downy
Birch, Silver
Blackthorn
Box
Cherry, Bird
Cherry, Wild
Chestnut, Horse
Cotoneaster
Cypress
Elder
Elm, English
Elm, Wych
Fir, Grand
Hawthorn
Hawthorn, Midland
Hazel
Hemlock, Western
Holly
Hornbeam
Juniper, Common
Larch, European
Larch, Japanese
Lime, Common
Lime, Large Leaved
Lime, Small Leaved
Maple, Field
Oak, American Red
Oak, Pendunculate (Common or English)
Oak, Sessile
Pheasant Berry

Pine, Corsican
Pine, Lodgepole
Pine, Scots
Poplar, Black
Poplar, Grey
Rowan
Service Tree of Fontainebleau
Service Tree, Wild
Spruce, Norway
Spruce, Sitka
Strawberry Tree
Sycamore
Tulip Tree
Whitebeam
Willow, Bay
Willow, Crack
Willow, Goat (Great Sallow)
Willow, Golden
Willow, Grey
Willow, White
Yew
<i>Grasses</i>
Bent, Common
Bent, Creeping
Bent, Velvet
Brome, Hairy
Brome, False
Brome, Wood False
Brome, Wood
Canary Grass, Reed
Cocksfoot
Couch
Couch, Bearded
Dogs tail , Crested
Fescue, Giant
Fescue, Red
Fescue, Sheeps
Fescue, Slender red
Fox tail, Meadow
Hair grass, Tufted
Hair grass, Wavy

Horsetail, Field
Horsetail, Giant
Mace, Reed
Meadowgrass, Annual
Meadowgrass, Rough
Meadowgrass, Smooth
Meadowgrass, Wood
Oatgrass, False
Oatgrass, Yellow
Quaking, Common
Reed, Common
Reed, Branched Bur
Rush, Bull or reedmace
Rush, Common Spike
Rush, Compact
Rush, Jointed
Rush, Hard
Rush, Heath Wood
Rush, Soft
Rush, Great Wood
Rye grass, Italian
Rye grass, Perennial
Sedge, Bladder
Sedge, Common
Sedge, Glaucous
Sedge, Pendulous
Sedge, Wood
Soft grass, Creeping
Timothy
Vernal grass, Sweet
Yorkshire fog
<i>Mosses</i>
<i>Amblystegium serpens</i>
<i>Amblystegium tenax</i>
<i>Barbula convoluta</i>
<i>Barbula Fallax</i>
<i>Barbula hornschurchiana</i>
<i>Barbula unguiculata</i>
<i>Brachythecium albicans</i>
<i>Brachythecium rutabulum</i>
<i>Bryum argenteum</i>

Bryum capillare
Bryum caespitium
Bryum Gicolor
Bryum rubens
Calliergon cuspidatum
Campylopus introflexus
Ceratodon purpureus
Cirriphyllum piliferum
Ctenidium molluscum (calcicole)
Dicranella varia
Dicranoweisia cirrata
Eurhynchium praelongum
Eurhynchium striatum
Fissidens taxifolius
Grimmia pulvinata
Homalothecium lutescens
Homalothecium sericeum
Hylocomium splendens
Hypnum cupressiforme
Orthotrichum affine
Orthotrichum diaphanum
Phasium cuspidatum
Plagiomnium rostratum
Plagiomnium undulatum
Polytrichum juniperinum
Pottia truncata
Pseudoscleropodium purum
Ptychomitrium polyphyllum
Racomitrium aciculare
Racomitrium heterophyllum
Racomitrium lanuginosum
Rhynchostegiella tenella
Rhynchostegium confertum
Rhytidiadelphus squarrosus
Schistidium apocarpum
Tortula muralis
<i>Liverworts</i>
Leicolea turbinata
Lophocolea bidentata
Riccardia chamedryfolia

WWP Fungi List

Species - Latin	Species - Common
<i>aleuria aurantia</i>	orange peel fungus
<i>amanita muscaria</i>	Fly Agaric
<i>amanita rubescens</i>	The blusher
<i>armillaria mellea</i>	honey fungus
<i>ascocoryne sarcoides</i>	
<i>auricularia auricula judea</i>	jews ear
<i>bjerkandera adjusta</i>	polypore bracket fungus
<i>bolbitius vitellinus</i>	brown cow-pat toadstool
<i>bovista plumbea</i>	lead-grey bovist
<i>bulgata inquinans</i>	black jelly fungus/black bul gar
<i>calocera viscosa</i>	jelly antler fungus
<i>calocybe gambosa</i>	st. georges mushroom
<i>clavulina cinerea</i>	grey coral fungus
<i>clavulina cristata</i>	crested coral fungus
<i>clitocybe flaccida</i>	tawny funnel cap
<i>clitocybe gibba</i>	common funnel cap
<i>clitocybe nebularis</i>	clouded clitocybe or clouded agaric
<i>collybia butyracea</i>	greasy tough-shank
<i>collybia confluens</i>	clustered tough-shank
<i>collybia dryophila</i>	russet tough-shank
<i>collybia peronata</i>	wood woolly-foot
<i>coprinus atramentarius</i>	common inkcap/methodist mushroom
<i>coprinus comatus</i>	shaggy inkcap
<i>coprinus disseminatus</i>	fairies bonnet/trooping crumble cap
<i>coprinus lagopus</i>	
<i>coprinus micaceus</i>	glistening inkcap
<i>coriolus versicolor</i>	varicoloured bracket fungus
<i>cortinarias delibruitus</i>	
<i>crepidotus variabilis</i>	
<i>daldinia concentrica</i>	crampballs/king alfreds cakes
<i>entoloma sp.</i>	
<i>entoloma sp.</i>	bracket fungus
<i>gymnopilus penetrans</i>	
<i>hebeloma crustuliniforme</i>	poison pie/fairy cake hebeloma
<i>hebeloma pusillum</i>	
<i>helvella crispa</i>	common white helvella
<i>heterobasidion annosum</i>	conifer heartrot
<i>hygrophoropsis aurantiaca</i>	false chanterelle

<i>hypholoma fasciculare</i>	sulphur tuft
<i>lactarius glyciosmus</i>	coconut scented milkcap
<i>lactarius subdulcis</i>	sweet milkcap
<i>lepiota cristata</i>	stinking parasol
<i>lepista gilva</i>	
<i>lepista luda</i>	wood blewit
<i>lepista personata</i>	
<i>lepista sordida</i>	
<i>lycoperdon perlatum</i>	common puffball
<i>lycoperdon pyriforme</i>	stump puffball
<i>macrolepiota procera</i>	parasol mushroom
<i>marasmiellus ramealis</i>	twig marasmius
<i>marasmius rotula</i>	little wheel toadstool
<i>mutinus caninus</i>	dog stinkhorn
<i>mycena arcangeliana</i>	
<i>mycena filopes</i>	
<i>mycena galericulata</i>	bonnet mycena
<i>mycena galopus</i>	milk drop mycena
<i>mycena lactea</i>	
<i>mycena polygramma</i>	steely-stemmed mycena
<i>mycena rorida</i>	dripping mycena
<i>nectria cinnabarina</i>	coral spot fungus
<i>phallus impudicus</i>	common stinkhorn
<i>pluteus cervinus</i>	fawn pluteus
<i>polyporus brumalis</i>	winter polypore
<i>polyporus squamosus</i>	dryads saddle
<i>polyporus varius</i>	polypore
<i>psathyrella gracilis</i>	slender psathyrella
<i>russula nigricans</i>	blackening russula
<i>sarcoscypha coccinea</i>	scarlet elf cup
<i>schizophyllum commune</i>	split gill fungus
<i>scleroderma verrucosum</i>	scaly earthball
<i>stereum gauspatum</i>	
<i>stereum hirsutum</i>	yellow stereum
<i>suillus grevillei</i>	larch bolete
<i>tremella mesenterica</i>	yellow brain fungus
<i>tricolomopsis rutilans</i>	plums and custard
<i>tubaria furfuracea</i>	mealy tubaria
<i>tyromyces stipticus</i>	bracket fungus
<i>xylaria hypoxylon</i>	candle snuff/stagshorn
<i>xylaria longipes</i>	
<i>xylaria polymorpha</i>	dead mans fingers

Wynyard Woodland Park Management Plan Addendum 2008

In July of 2007 a new Head Ranger, Bob Brown, was appointed to manage Wynyard Woodland Park. At the time of writing this addendum (January 2008), the management plan for the site is undergoing a comprehensive rewrite. This is partly to address issues that were raised in the green flag assessment feedback for the award of 2007/2008 and partly to include information and work programs that had been overlooked. The new plan will be available before the next round of Green Flag judging in 2008.

All of the Green Flag recommendations have been addressed and they will be covered in the new management plan. Some of the recommendations and outcomes are noted as follows:

“The site management and the site management plan need to be more closely linked and recognised by staff. The production of the addendum or an annual update is strongly recommended to show the relationship between the objectives in the plan and the excellent work carried out on site.”

This addendum outlines the work that has been done on site since the last inspection. Its production in January each year from now on will show and record how work is progressing on site in relation to the management plan. For this addendum the work done will merely be listed and not necessarily referred to the plan. This is because with the plan not yet complete cross-referencing is not possible. Unfortunately, in the past, work has not been recorded in this manner, making it difficult to see how the management plan had been actioned. Monitoring of the work in relation to the management plan will now be much simpler using an annual addendum.

“The judges would like to see more emphasis on planned actions relevant to the site other than the BAP’s”.

The new plan will list actions other than BAP targets. There will be new sections looking at actions for new interpretation on site, changes to access and recreation, education and action for climate change, as well as an expansion to the actions for conservation.

Maintenance of equipment, buildings and landscape. “It was felt that this would be further improved if the plan stated where responsibility lay for inspections.”

The new plan will set out in tabular form who is responsible for routine maintenance and inspections.

Community Involvement. “The judges felt that the environment trust could benefit from the inclusion of a local landowner representative.”

An adjacent landowner, Pam Stewart, has joined the trust.

Sustainability. "The judges would encourage the installation of example renewable energy systems within the visitor centre to further enhance the site."

The new management plan will have a section covering the council's Action for Climate Change Policy. Also the fabric of the building will be inspected for energy saving measures such as improved insulation. The chimneys will also be assessed with a view to re-opening them and using them to heat the building using seasoned wood that is felled in the park during routine tree thinning operations.

Work carried out 2007

The following is a list of projects that were completed or started on site during 2007. (As mentioned above, cross-referencing to the management plan is not yet possible until the plan is complete).

Changes to Access.

National Cycle Route 1.

Prior to this year a cyclist following NCR1 when heading north emerged from Blakeston Lane onto Wynyard Road, where he/she would turn right and follow for approximately 500m before turning left onto the track near Fulthorpe garage. From there the route follows the Grindon Loop footpath rejoining the walkway at Grindon. This was not an ideal route for the following reasons:

- A) The 500m section on Wynyard road is not good from a safety point of view, as this is a narrow 60mph road.
- B) The Grindon Loop route is steep and very roughly surfaced, meaning that touring bikes, as opposed to mountain bikes, struggle.
- C) This route bypasses the visitor centre where a cyclist could use facilities such as the toilets, café and shop.
- D) Bypassing the visitor centre also bypasses the car park, where those wishing to do only sections of the route could park.

In order to rationalise the route it has been agreed with Neil Mitchell of Sustrans, Jonathan Kibble of the council's road safety unit and Rob Morrow, the council's Rights of Way officer, that the route will cross from Blakeston Lane and enter the park via the main drive and join the walkway at the visitor centre platform. Signage has gone up to indicate this and to stress that for safety reasons that cyclists dismount on the platform and give way to pedestrians on the walkway.

Motorbikes and quad bikes: There has been some unauthorised motorbike activity on the walkway near Letch Lane. The metal motorbike barrier was stolen, presumably for its scrap value, using an angle grinder and the box-housing for the padlock was removed (with the padlock) from the metal entrance gate from Letch Lane. In order to reduce the motorbike problem,

boulders were installed underneath the bridge instead of a metal barrier and the gate was repaired. (Access from the gate cannot be blocked, as it is an access route for Railtrack). This problem is being dealt with in conjunction with the motorbike section of the police.

Bridleways.

There is an 873m section of Bridleway on the Walkway (marked BW1 Map 1) bordering the eastern edge of Pickard's Meadow. The two other bridleways, BW2 and BW3 are also shown on map 1. Access by horse to BW1 is from the other two bridleways. Whilst these are pleasant routes they are not easy to access by horse. BW2 emerges at Thorpe Larches directly onto the A177, which at that point is a narrow 60mph road. BW3 eventually emerges onto the A689, which is similarly single lane and 60mph.

In order to rationalise horse riding on site and to dovetail in with the council's Access Strategy, the site manager, the council's rights of way officer and the secretary from a local riding group, have looked at the issue and have come up with a strategy for horse riding on site.

Part of the problem is accessing existing bridleways. In order to solve this problem and to give more rideable area, a **permissive bridleway** system is to be adopted, see map 1. Both the main visitor centre and Tilery Wood car parks will be access points for horses. After parking in the main car park a rider can go back onto Wynyard Road, turn left and follow for approximately 500metres to the public footpath at Fulthorpe garage. This is the Grindon Loop path and was the path previously used as National Cycle Route 1 and is now to be a permissive bridleway. At the junction with the Walkway a rider will then turn right on another stretch of permissive bridleway for just over 1.25km to meet BW1.

Brierley Drive is also now designated permissive bridleway. This allows riders to access the park via Tilery Wood car park and to create a circular route taking in Pickard's Meadow. This end of the park is where the majority of the riding would take place and is the quieter area, thus reducing possible conflicts between horses and pedestrians.

Bridges.

The vegetation was cleared from the five bridges between the visitor centre and the A689. This was to prevent damage to the structures by tree roots. The council's bridge inspector, Ian Braithwaite, has looked at the bridges and will be setting up a regular inspection regime. A further inspection will take place by the arboricultural officer to ensure that any damage by trees growing close to the structures is minimised.

Fences and gates.

Various sections of fencing that were infirm were removed along the walkway and in Thorpe Wood. New gates and fencing have been installed by the railway carriage and on the walkway just beyond the visitor centre. The

boundary fence between the park and Pam Stewart's land is to be replaced in February 2008.

New fencing, gate, revetment and a **pond dipping platform** are to be installed on Thorpe Wood Pond during winter 2007/2008.

Interpretation and recreation.

Four new interpretation boards were installed at the entrance to Thorpe Wood, the entrance to Stoney Field, Tilery Wood car park and Thorpe Wood pond. A fifth board is due to be attached to the notice board in the car park.

The flagpole to carry the Green Flag was erected in the car park.

Two picnic tables were replaced in the children's play area and one was replaced in Stoney Field.

Meetings took place with Dale Cycle hire with a view to starting a **bike hire** service from the coal staithes at Easter 2008

Conservation work.

The following is a list of conservation work done on site. It is in no order of importance and does not include the general strimming and cutting back of overhanging vegetation, which is routine to keep the paths open. The rationale behind the works is outlined in the new management plan.

Harvest mice: 60 harvest mice were released onto Pickard's meadow as part of the reintroduction program.

Globeflowers: 140 globeflowers were planted in Brierley Wood in conjunction with Tees Health volunteers and Wildflower Ark. (See map 2)

Ponds: Work was begun by the Hartlepool Environmental Action Team to dig out 'Fingers pond' in Thorpe Wood, which had almost silted up.

The ponds on Pickard's meadow were fenced off to keep dogs out, thereby protecting the great crested newts. Great crested newts were also confirmed to reside in the silt trap in Thorpe Wood and in the Bomb Crater pond on Pickard's Meadow.

Excess growth of crowfoot was taken off the surface of Thorpe Wood Pond in order to keep areas of open water.

Hedgelaying: The hedge along the drive between the entrance and exits to the car park was laid. (See map 4).

Tree works: The trees opposite the platform between the visitor centre and the agricultural field to the west, were thinned by the rangers and volunteers. (See map 4)

A section of Brierley Wood was felled to remove coniferous timber by a contractor, Alistair Ward Timber, (See map 3). This earned the park £3000 for the timber.

400 deciduous trees were underplanted in Brierley Wood after the contractors work. 1000 more trees are due to be planted before the end of February 2008.

The two firebreaks in Tilery Wood were cut to comply with the woodland grant scheme. (See map 3). One was done by the NECF work team and the other, emerging onto Pickard's Meadow, by rangers and English Martyrs pupils on their, 'Make a Difference Day'.

Two dangerous trees were felled from the boundary of the walkway for the safety of pedestrians.

Approximately 10 trees were removed from the walkway near the second entrance to Thorpe Wood. These were encroaching and narrowing the walkway. The timber and brash resulting was used to **create a dead hedge** between the walkway and our neighbour to the west.

The trees surrounding the eastern edge of the children's play area were **crown lifted** in order to let in light and to increase visibility for safety. (See map 4).

A number of trees were felled near the observatory to maintain views of the night sky. (See map 4). These will be replaced by native shrubs such as hazel.

Blackthorn that was seriously restricting access on the walkway in compartment 4 was cut back and the majority removed.

Some of the willow was cut from the biomass area on Stoney Field and used to create a screen for the bird feeding area in Thorpe Wood.

Meadows: The southern half of Pickard's Meadow was cut and baled at the end of August. (See map 2). The cut and bale is to reduce the nutrient levels in the ex-agricultural field, thereby reducing the vigour of the grass and promoting wildflowers. Only half of the field will be cut each year in order to leave a refuge for the likes of small mammals and invertebrates to complete their life cycles.

100 metres of the eastern bank and 120 metres of the western bank of the walkway, between the two entrances to Thorpe Wood (section 11 in the management plan) were cleared of invading scrub. This was for the benefit of wildflowers and to maintain a mosaic of habitat types on the walkway.

Ragwort Control: Ragwort was removed from Stoney Field by rangers and volunteers. This area is targeted annually as it is close to neighbouring livestock, to which ragwort is poisonous.

Volunteers: The park's volunteer group meet on Tuesdays and have grown in number so that there are 11 regular attendees. Work is also done by external voluntary groups, from places such as Stockton Riverside College, Tees Health and the Allensway Centre. The volunteers supplement work done by the North East Community Forest work team and the council's horticultural services.

Educational visits and Events.

There were 37 school visits led by the rangers with 1,681 pupils having structured curriculum based learning experiences in an outdoor classroom. The number of children making use of the site is boosted to over 3,000 when the Brownie and Scout visits and the 10 days of the Katy Morag event are added.

The park ran 26 events through the year with over 1,224 people attending. The figure is not exact because numbers were conservatively estimated at 525 for the annual craft fair.

Building maintenance.

In order to comply with the disabled discrimination act the door to the visitor centre had glass panels fitted so that a wheelchair user can see in and attract the attention of staff if he/she needs assistance. The external doormat was removed, as it was a hindrance to wheelchairs. It had been replaced with a boot scraper.

The flashing on the roof of the centre has been repaired, as has the glass in the canopy over the platform. The glass here is to be included in a new window-cleaning contract.

Wynyard Woodland Park management Plan Addendum

January 2009

The management plan addendums are produced every January as a supplement to the management plan. They provide a record of work accomplished in the previous 12 months so that progress towards the aims of the management plan can be monitored and reviewed.

Maintenance and improvements to the Visitor Centre (management section A)

Car park re-profiling: The main car park was re-profiled to increase its capacity. This involved the removal of several grass mounds that had previously been dividing the area into sections and their removal thus increased the capacity without loss of greenspace around the car park.

Installation of second CCTV pole for car park: A second camera was installed at the southern end of the car park to improve park security. Both of the CCTV cameras can be monitored and controlled by both site staff and the central Stockton Surveillance Centre.

Renewal of bins: All the litter and dog-waste bins on site were replaced with new.

Visitor centre painting: The exterior of the visitor centre was repainted

Refurbishment of Toilets: The toilet block underwent a comprehensive refurbishment including new sinks and surfaces, flooring, hand driers and doors. The guttering was repaired and the building re-painted.

Path Surfacing: New bark chipping were laid out on the footpaths from the visitor centre to the observatory.

Replacement of steps: The flight of narrow and uneven concrete steps that lead up to the platform from the toilet block were replaced with a wider, even stone flight complete with a steel handrail.

Window and canopy cleaning: City Clean gained a contract to clean the centres windows and glass canopy.

Fireplace renovation: The fireplace and chimney in the centre was cleared to allow use of the fireplace. It is now used during the winter to help heat the building. During tree thinning operations wood is being put aside to season for next winter. Using wood thus harvested from the site to heat the building contributes to the sustainability of the facility.

Improvements to wildlife garden: In December 2008 work began to create a new wildlife garden adjacent to the visitor centre.

Other maintenance works.

Bridge repairs: The third bridge up the walkway from the visitor centre suffered vandalism and several coping stones were pushed off onto the walkway. These were replaced and secured with steel dowel to ensure a repeat did not occur.

Revetment repair: The revetment leading down from the walkway onto Stoney was replaced. The flight of steps to the south of this were removed as they were becoming increasingly rotten. As this access route onto the field was rarely used they were not replaced to allow encroachment by scrub and thus expanding wildlife habitat.

Fence repairs: There has been a program of removal of old fencing and replacement where necessary. For example the gate by the railway carriage was replaced. Much of the fencing was erected before the trees and hedges had become established and it is now no longer required.

Old fencing is being burnt in the fireplace in the visitor centre, thus negating the need for disposal and heating the centre in a sustainable manner.

Arboretum Field (management section B)

Tree thinning: Thinning began in the autumn amongst the trees between the arboretum and the neighbouring horse pasture. So far 111 trees have been taken out, with work to progress during January and February 09.

Fencing: A section of the fence between the arboretum and the neighbouring pasture was replaced. During February 09 blackthorn will be planted along it to improve the boundary.

Stoney Field (management section C)

Ragwort control: Ragwort was cleared by hand from Stoney field to ensure it didn't spread on to surrounding livestock pastures.

Tree works: The trees around the entrance to the underpass in Stoney field were thinned and crown lifted in order to promote vigour in the trees and to make the entrance welcoming to visitors from Thorpe Thewles. An area of dense blackthorn was also cleared from the path bordering the field at the northern end of Stoney field

Castle Eden Walkway (management section D)

Tree Works: The thinning of the trees opposite the platform, bordering the field to the west was completed in March. A second phase will be required as the remaining trees fill out.

Two dangerous trees were removed from the walkway.

Grassland: The wildflower banks in compartment 11 were cut and raked in October

Thorpe Wood. (management section E)

Removal of overhanging deadwood: Site patrols had identified several areas where there was dead wood in large trees above footpaths. In order to remove this hazard the site ranger met with the council's arboricultural officer and trees were marked and a tree climbing team sent in to remove the hazard.

Thorpe Pond works: As the protected great crested newts breed in Thorpe Wood Pond it was decided not to continue to use the site for pond dipping as this could be a source of disturbance. The revetment at the pond edge, which was becoming increasingly rotten, was removed and in order to protect the pond from invasion by swimming dogs it was fenced off.

In both January and December of 08 areas of the pond were cleared of the floating celery leaved crowfoot. This is necessary to ensure there is always a good area of open water to prevent stagnation.

Tree work: Approximately 13 trees were removed from the vicinity of the pond that were either non-native or a danger due to rot.

7 fir trees were removed from compartment G3 in accordance with the management plan.

In compartment L 6 beech, 8 larch and a whitebeam were removed in accordance with the management plan, the latter in order to give space to an oak, which it was impeding.

A windblown ash was removed that fell across the path in Thorpe wood

Power lines: National grid are examining the possibility of moving the most westerly of the two power lines that cross the wood 50m to the east as part of works to update the line. The rangers have been involved with contracted ecologists and the Wildlife Trust in order to agree work and ensure minimal disturbance to the site.

Pylon Pond: Pylon pond, which is also home to great crested newts had some encroaching scrub and emergent vegetation removed to maintain it as a breeding area. Probation services were enlisted in order to fence it off to protect it from invasion by swimming dogs.

Step repairs: The flight of steps leading up into Thorpe wood from the walkway were all replaced. Several of the steps leading down to Thorpe pond from the Walkway were also repaired.

Pickard's Meadow (management section F).

Hay cut: The northern half of the meadow was due to be cut this year. However, due to the exceptionally wet summer the farmer who cuts and bales the meadow was not able to get on to do the cut. The northern half will be cut at the end of summer 09 and the southern half will be left undisturbed until 2010.

Site safety: The meadow had been used as a pasture in the past and there was a great deal of fencing topped with barbed wire that had been there to keep in livestock. In the interests of health and safety that redundant barbed wire was removed by volunteers over several days. The fence posts, many of which were rotten, were laid flat to decay back into the woods.

Access works: An area of dense blackthorn had encroached over the bridleway at the junction of Tilery wood and Pickard's meadow and this was cut back to improve access.

Although the hay crop wasn't taken this year the paths on the field were mown in order to aid public access.

Tilery Wood and Brierley Wood (management section G)

NB. Management section G is not currently under the umbrella of the current management plan as management here is being revised in order to bring it under the umbrella of future green Flag applications. However, work done is recorded here for ease of site manager.

Car park improvements: The potholes in the car park were filled by the community forest work team. Several old picnic tables were removed from the car park and these will be replaced during 2009.

Tree planting: Volunteers planted a thousand oak trees amongst the area that was cleared of conifers.

Pond creation: A new pond was created by JCB with help from the Wildlife Trust to the south of the forestry hut. This will be fenced during 2009 to prevent access by passing dogs.

The fire brigade used the wood for a week in order to practice chainsaw techniques on windblown trees.

Path maintenance: The edges of Brierley drive were mown and encroaching trees cut back in order to comply with the Forestry Commission annual management grant for the site. The fire-breaks were also cleared of encroaching vegetation.

Windblown tree: 5 windblown trees were removed from across or in the vicinity of the path during the year. Wind-blows away from the path and not

therefore judged a danger to pedestrians are left in situ as standing deadwood habitat.

Globeflower: Work was done on the first globeflower introduction area by the bridleway. This involved cutting back bracken in June and August. Overhanging trees were thinned and crown lifted to allow better light to the plants.

Education and events.

A work placement student from Stockton Riverside college spent a week with the rangers.

Hall Garth School ran a project where over 8 visits a group of 8-10 pupils took part in conservation tasks such as removal of snowberry, painting fencing, removing tree guards and cutting back vegetation.

A group of students from Stockton Riverside College is regularly working on site making use of the biomass plantation. Willow harvested from there has been used to create a screen behind the bench at Thorpe Wood pond. A project is ongoing to use willow for handicrafts.

There were approximately 27 school groups that came on ranger led visits, totalling approximately 1,213 children. In addition there were 7 days of the Katy Morag event.

There were 27 events led by the rangers for the public that attracted some 732 people.

Miscellaneous.

A mountain bike was donated to the service from a previous ranger and another one purchased so that staff can do site patrols by bike. This also cuts the need for many car journeys to the north end of the site and therefore contributes to the sustainability of the park.

A visitor survey was conducted over the August Bank Holiday weekend to estimate visitor numbers and where visitors were coming from to use the park.

Wynyard Woodland Park Action Plan for the year 2009

Interpretation improvements:

- Install 13 new interpretation boards as per the development plan
- Install 13 finger posts as additional wayfinding aids for visitors.
- Install new interpretation panels within the visitor centre including information on site management, wildlife and sustainability

Access improvements:

- Resurface the walkway between visitor centre and A689
- Create new steps up from the picnic tables to guide people to the centre through the trees at the end of the railway carriage.
- Relocate the fence in Tilery car park allowing permissive horse access, but preventing motorbikes.

Facility improvements:

- Install new play area equipment
- Install new picnic tables for Tilery car park
- Conduct feasibility study and secure funding for constructing a second astronomical observatory
- Secure funding for a full dome immersive theatre system in the existing planetarium building.
- Secure funding for a discovery centre to expand the existing planetarium
- Secure funding for new solar walk to fit in with the existing sculpture trail.
- Development of a new children's area within the visitor centre

Habitat Management:

Management Section A

- Manage the trees around the railway carriage and CCTV system to improve line of sight and after hours security.

Management Section B

- Complete the first thinning of trees in compartment 2f at the southern end of the arboretum.
- Plant blackthorn along the southern boundary of compartment 2f to prevent trespass between the park and the neighbouring landowner and to act as a visual screen.

Management section D

- Manage trees around the observatory to maintain sight lines to the night sky.
- Manage trees around the observatory to maintain sight lines to the night sky.
- Thin trees along edge of walkway from the railway carriage to the entrance to Stoney Field.
- Cut and remove arisings from the wildflower banks.

Management Section E

- Clear crowfoot from Thorpe pond in January and December.
- Remove firs from compartments G3 and G2 Thorpe Wood.
- Cut back overhanging trees on perimeter path

Management Section F

- Cut and bale northern half of Pickard's Meadow.

Management Section G

- Thin conifers around existing specimen deciduous trees in Brierley and Tilery Woods to the west of Brierley drive.
- Fence off the new pond by Tilery hut to prevent access by dogs.
- Cut back scrub from the edges of Brierley drive from the Bridleway south to Pickard's meadow as per woodland grant agreement

Miscellaneous:

- Complete visitor survey.
- Continue to monitor improvements made in 2008 for great crested newts and globeflower and manage as required.

Wynyrd Woodland Park management Plan

Addendum January 2010

The management plan addendums are produced every January as a supplement to the management plan. They provide a record of work accomplished in the previous 12 months so that progress towards the aims of the management plan can be monitored and reviewed.

GreenSTAT survey.

During 2008/9 a visitor survey has been ongoing in many of the boroughs parks and open spaces. This has been organised by the Countryside and Green Spaces section of the council in order to help with management strategies. The GreenSTAT survey is a nationally recognised format managed by GreenSpace. There are answers to quantitative questions and also qualitative data, both of which can be used to check the response of the public to management works in parks and open spaces and to help guide future work.

GreenSTAT revealed that there are requests for work to be done at WWP, which we are about to do (for example build a new play area and install new signage), or have done already (e.g. the resurfacing of the Walkway). There are also thanks for those works that have been completed.

It would appear that WWP is currently meeting the needs of its visitors very well. See below:

Asked 'How would you rate the design and appearance of the park?' 87.43% said very good or good.

Asked 'How would you rate the standard of cleanliness and maintenance of the park?' 82.84% said very good or good

Asked 'How easy it is to get around the park?' 88.03% said very good or good.

Asked 'What do you think of the range of visitor facilities that are available?' 79.75 said very good or good. A further 20.25% said fair.

Asked 'How would you rate the standard of maintenance of trees, the flowers and flower beds, shrubs and grass areas in the park?' 75.15% said very good or good.

Asked 'Thinking about the care and protection of nature and the wildlife that lives in the park, the insects, birds, and animals etc, how would you rate this aspect of park management?' 87.9% thinking it was v good or good.

Asked 'How would you rate the facilities and/or services that are provided for children and parents?' 74.83% v. good or good.

Asked, 'How what is your overall impression of the park?' 86.47% were very satisfied or satisfied.

The top 5 reasons for visiting Wynyard Woodland Park were:

To go for a walk 50%

To get some fresh air 46.63%

To walk the dog 39.89%

To see birds & wildlife 37.64%

To keep fit 37.64%

Some of the comments are interesting. Whilst the development plan is looking at improving facilities and infrastructure to improve the visitor experience and to attract more visitors, this development is balanced against the biodiversity and conservation needs of the site and the fact that many people visit the park to find peace and quiet and solitude. This issue is of high priority to the site managers, and it is interesting that it is important to the visitors as well, as some of their comments prove below:

'If it gets too busy with the new proposals I won't go at all.'

'Don't allow it to lose its wild atmosphere. If I want organised I can go to Ropner Park.'

'I hope it does not get too improved. I've used park for 9 years. I like it because it felt wild, recent maintenance has begun to make it centred.'

'The park would be better left more natural in spite of mud and puddles in bad weather. This is part of being a country walk.'

Visitor Centre and surrounds.

Improvements to the wildlife garden: In December 2008 work began to create a new wildlife garden adjacent to the visitor centre. This work was completed in 2009. A new paved area, decorated with a spider mosaic, allows wheelchair access. An interpretation panel for the garden will be installed during 2010. A leaflet is also being printed to explain the garden to visitors and to encourage others to consider the needs of wildlife in their gardens.

Environmental Trust: The park's Environmental Trust made a successful application to SITA for £75,000, which is being used with contributions from Stockton Borough Council and the Department for Children, Schools and Families, as part of the £350,000 upgrade of the play area.

Access improvements: A new set of steps was constructed to improve pedestrian access to the visitor centre from the car park and play area. A spur from the existing steps was added to take walkers past the recycling facility and up in front of the railway carriage, where orientation is easier.

An old tree stump was removed in the entryway from the car park near the toilets, making access safer.

The solar trail was re-routed in order to help shift circulation patterns towards the south of the park, as per the development plan. Instead of following the Walkway past the visitor centre and beyond Thorpe Wood, it now heads south, beyond Stoney Field and into the old car park. Not only does this help draw visitors away from the busiest part of the Walkway, but it links better with the astronomical facilities, by taking visitors past the planetarium and observatory and also the 'Celestial Kitchen' sculpture on Stoney Field.

The worst of the potholes in the car park were filled in to help facilitate vehicle and pedestrian movement.

Tree works: The trees and hedge around the play area were pruned to improve sight lines and aesthetics.

The trees in the picnic area were crown lifted to improve sight lines and to maintain an open and welcoming feel.

The birch trees in the car park were crown lifted to ensure car parking space wasn't lost to tree encroachment.

A small tree was removed by the planetarium to prevent future structural damage to the building.

A contractor, 'Tillhill,' completed a routine thinning of the trees around the play and picnic areas.

Arboretum Field.

Interpretation: A new series of interpretation signs were installed on the arboretum. There is a sign for each of the tree species in the arboretum. A further 'master sign' will be installed during 2010 to explain why the trees are planted in the order they are (they are planted in the order they are thought to have colonised Britain).

Tree work: Some of the suckers of the aspen specimens were removed to keep the main specimens clear of obstruction and to keep the area open for visitors.

Work was done to clear blackthorn and bramble from all of the specimen trees in the arboretum

Some of the blackthorn was cut back at the bridge between Stoney Field and the arboretum to maintain access and sight lines.

In January students from Stockton Riverside College planted 100 blackthorns along the fence at the south of the site, which forms our boundary with our

neighbours, the Stewarts. This will help delineate the boundary and provide a useful habitat for wildlife.

During 2008 111 trees were removed from compartment 2f (the woods at the south of the arboretum field). During January/February 2009 a further 47 trees were taken out in order to improve the form of the remainder. These thinnings included the following:

16 willow

1 dead and dangerous tree

13 alder plus 1 pruned to remove a problem limb

5 ash

3 birch

2 oak

7 cherry

Stoney Field

Thinning: During November some of the conifers that had been planted as a nurse crop were removed. It is noticeable now that thinning will soon need to take place amongst the deciduous crop.

Tree maintenance: One large twin-leader field maple, growing on the railway embankment, shed a limb. As a result, one half of the tree was coppiced as an area of rot threatened to cause failure in that portion of the tree, which was hanging out over a path.

Ragwort control: Ragwort was cleared by hand from Stoney field to ensure it didn't spread onto surrounding livestock pastures. This took place during June and July. It was noticeable this year that the amount of ragwort has been considerably reduced.

Access work: Some of the surfacing material removed from the surface of the Walkway in preparation for the resurfacing was recycled by putting it in the entrance of the underpass from Stoney Field. This has raised the ground level and reduced the level of muddiness in wet weather.

Two new open drains were installed at the northeast entrance to Stoney Field in December, where runoff from the field was causing flooding and path erosion. It is likely that further drainage pipes will need to be put in early in 2010, but the situation is being monitored.

Works on the Walkway

Resurfacing: During March and April the walkway was resurfaced with recycled road chippings for the 4km length between the visitor centre and the A689 at the northern boundary of the park.

Access works: A new metal kissing gate was installed adjacent to the field gate across the Walkway at Grindon. This gate allows cyclists through, but

excludes horses, which are not permitted south of Grindon due to the business of the track with young families.

The flight of steps from the old car park up onto the Walkway were largely replaced as some of the older steps had become rotten. Vegetation growing on the tarmac of the old car park was removed to keep this an open route and to allow vehicle access onto Stoney Field for maintenance works.

Three of the picnic tables were removed from the Walkway by the bridge at the southern tip of Pickard's Meadow. They had become rotten and will be replaced in 2010.

Tree felling: Some trees along the walkway were removed as thinnings to create space to allow the remaining trees to grow better and some were removed to prevent them becoming hazardous, as they had poor form, or were already dead. Whilst standing dead wood is a valuable habitat, it is not safe to have near footpaths. There were a total of 133 trees removed as listed below:

Felled on the walkway between the Visitor centre and Grindon:

3 Elder
5 ash plus 1 pruned
12 willow plus 1 pruned
10 dead trees
5 alder
2 hazel
2 cherry
1 oak
2 sycamore

Felled on the Walkway between the observatory and Stoney Field:

1 Norway maple
10 cherry
2 willow
5 birch
2 beech
9 oak
3 dead trees
12 aspen
11 ash
4 field maple

Felled on walkway between the platform and the observatory:

6 willow
3 field maple
3 sycamore
3 birch
1 dead tree
2 alder
1 pruned

3 Norway maple
5 ash
1 cherry

A large diseased birch was also removed at Black Squares.

Scrub removal: Encroaching blackthorn was removed from around the observatory to maintain an open aspect to the sky for observing.

Bridge maintenance: The ivy was removed from the bridge at Grindon to prevent damage to the brickwork. The vegetation on all the bridges was strimmed to prevent trees and shrubs growing which may damage them.

Wildflower Banks

Management of the wildflower banks continued in October with strimming and the removal of arisings in order to prevent scrub encroachment and to promote wildflowers.

Thorpe Wood.

Power lines: During 2008 National grid were examining the possibility of moving the most westerly of the two power lines that cross the wood 50m to the east as part of works to update the Norton to Spennymoor overhead line. However, changes have been made to this proposal. That line will stay in place over the wood. However, a new line is being constructed immediately to the west of the existing easterly line that cuts across the one of the 'fingers' and the existing line taken down. This option requires less tree removal and so is a better option for Thorpe Wood. However, some trees will still need to be removed and the rangers have worked closely with ENTEC, National Grid and Stuart Hibbert, the council arboricultural officer, to ensure there is suitable mitigation work. As a result National Grid will be providing funding to de-silt Thorpe Wood Pond and silt trap, which is a vital habitat for great crested newts. They will also be thinning the block of trees to the west of the pylon in Thorpe Wood, planting replacement shrubs and small trees under the new line and providing £15,000 worth of funding for path resurfacing in the park.

Access works: 3 finger posts were installed in Thorpe Wood to help visitors find their way around the site.

The flight of steps leading up to the perimeter path was replaced.

New wire was put over the sleeper bridge at the silt trap in order to improve grip underfoot for pedestrians.

Encroaching vegetation was cut back on the perimeter path, which had been neglected for some years. This work will be completed in 2010.

Thorpe Pond maintenance: Some of the celery leaved water crowfoot was removed from the surface of the pond in order to maintain open water and prevent stagnation.

Tree work: **Trees were felled in the following management compartments as per the management plan to reduce overcrowding and subsequent poor form and to remove non-native species.**

Compartment G3

4 firs
3 beech
2 larch

Compartment L

7 beech
1 larch

Compartment G3

10 fir
6 dead trees
2 larch

Compartment D3

A dangerous elm near the south end of the pond was removed.

Volunteer input.

Much of the practical work both above and below was done with the help of volunteers. The WWP volunteer group consists of thirteen regulars who work almost a full day every Tuesday. A group of 5-10 volunteers from Tees Health also attend fortnightly. **These two groups contributed 493 days worth of work to the site and they make a vital contribution.**

Two of the volunteers are conducting bird and butterfly surveys on site which are useful for management purposes and the butterfly survey is adding to data for a national recording scheme.

Other groups contributing time on site were two different groups from Stockton Riverside College, probation services, a day spent by staff from Santander and several visits by Stockton's Youth Services.

Education and events.

During the year the rangers led 29 school groups, comprising some 982 children, for environmental education.

A further 1500 children attended the Katy Morag trail.

There were 20 ranger led events during the year attracting around 2,391 visitors.

Many groups used the site for their own events such as sponsored walks, orienteering, running, or bike rides. There were three large community barbeques for a church group, a Chinese community group and a Sikh community group. There were also self-led events for the likes of Stockton Riverside College, the scouts and Stockton's adult education services. In total well over a thousand people attended these events.

A group of students from Stockton Riverside College is regularly working on site as part of an environmental course.

Tilery Wood and Brierley Wood.

NB. Although not part of the site currently under green Flag, works at Tilery and Brierley Woods and Pickard's Meadow are included here for completeness.

New management plan: An application to the Forestry Commission for Woodland Grant was started at the end of 2009 and will be submitted early in 2010. This will include a management regime to continue the works already done to replace the conifer plantation and return the site to primarily native deciduous woodland, via a mixture of felling and the promotion of natural regeneration. A Woodland Access Grant is also being applied for to get funding for new benches and picnic tables.

Access works: Two finger posts were installed to help visitors orient themselves.

Encroaching blackthorn was removed from the bridleway at the northwest entrance to Pickard's Meadow.

The pond created in 2008 was fenced around one side in order to discourage dogs accessing the water from Brierley Drive.

Approximately 500m of Brierley Drive was cleared of encroaching trees, heading north from the northerly bridleway. This ensures that there is a ten metre wide ride through the woods to allow woodland edge species to flourish and to ensure there is vehicular access to Pickard's meadow for maintenance work. This work will continue through 2010.

Both firebreaks were cleared and strimmed to keep open rides.

Tree Works: Deciduous trees were identified in the wood and surrounding conifers were removed to allow space for them to continue their growth and to allow open areas for them to re-seed the site. This 'haloing' of selected trees was begun by the fire brigade, who were looking for areas to practice chainsaw work in 2008 in the southern end of compartment 7 and the northern end of compartment 8. This was carried on by the rangers in 2009 who felled trees as follows:

Compartment 8 adjacent to the bridleway

3 Corsican pine

10 Scots pine

2 lodgepole pine

1 dead elm and 1 dead lodgepole pine were felled on the link path between the Walkway and Brierley Wood for safety reasons.

Tilery Hut: This was painted by probation services to keep it weatherproof.

Pickard's Meadow.

Cutting regime: The northern half of the meadow was due to be cut in 2008, however the summer was so wet that the farmer who takes the hay crop could not harvest his own fields. In 2009 the grass was so poor (the majority is creeping bent) that the farmer was not interested in taking it. The rangers consulted with Wildflower Arc with a view to a restoration project on the meadow. Soil samples were taken in December (at the time of writing the results aren't back yet) and it is hoped to apply to SITA for £24,000 to plough and restore 25 acres of the meadow. It would then be fenced and managed by grazing. A stock pond will need to be dug and money for this may come from the Pondscape project.

Although a hay crop wasn't taken the paths on the field were cut to maintain access.

Access works: An area of dense blackthorn had encroached over the bridleway at the junction of Tilery wood and Pickard's meadow and this was cut back to improve access.

Along northern edge of Pickard's meadow adjacent to the bridleway tree works were done to open the bridleway and make safe some trees. This included:

Crown lifting 4 oaks

Felling 7 dead trees (including 5 birch with polypore fungus)

Pruning 2 willow

Pruning 1 ash

Tree care: The trees that were planted by the mature trees in the middle of the meadow in memory of John Pickard were weeded in December.

Harvest mice: During the weeding mentioned above 4 nests were found which could be harvest mice nests. Harvest mice had been released on site in the summer of 2007 and it may be that they have now established themselves on site.

Wynyard Woodland Park Action Plan 2010.

Play Area:

The new £350,000 play area is to be installed by the summer.

Woodland Access grant:

An application will be made to the Forestry Commission for a woodland access grant. This will include the whole site and will look to seek funding for new picnic tables and benches. It will also cover completion of the work started in 2009 to restore the width of the Thorpe Wood perimeter path.

General access works:

Money has been secured from National Grid for improvements to footpaths in the park. Areas for work will be identified and work carried out. One area likely to be upgraded is the walkway to the south of the visitor centre.

National Cycle Route 1:

The feasibility and funding of re-routing NCR1 from Blakeston Lane and into the Park via Old Durham Lane and Thorpe Thewles will be examined. This would make the route safer and shorter for cyclists, as well as improving the links between the park and Thorpe Thewles.

Thorpe Wood:

The upgrade of the Norton-Spenmymoor overhead power line will necessitate the removal of some trees in compartments G7 and G8. On completion of the line work these areas will be replanted with suitable small trees and shrubs.

An area of compartment K will be thinned under, and to the south of, the existing pylon to keep the line clear and to promote high forest away from it.

Further thinning of beech will take place in compartment L.

Thorpe Wood Pond and silt trap will be de-silted to maintain as a good habitat for wildlife including the great crested newts.

Along the Walkway:

Tree thinning will continue from the visitor centre to the old car park to improve tree form.

The wildflower banks will be strimmed and arisings removed as per the management plan for that area.

Woodland Management Grant:

During 2009 revisions were begun on the management plan for Tilery, Brierley and Alf's Woods and Pickard's Meadow. An application to Forestry Commission will be made in 2010 for a Woodland Management Grant to continue restoration of the woods from coniferous plantation to native deciduous woodland. This will include thinning works, haloing of selected trees and promotion of natural regeneration. The grant will also cover the continued upkeep of Brierley Drive and the two fire-breaks as forest rides.

Tree works are occurring to remove trees in part of Alf's Wood as the Norton to Spennymoor electricity line is upgraded. After work is complete this area will be replanted with suitable trees and shrubs.

Two new ponds will be created in the wood as part of amelioration work.

Restoration of Pickard's Meadow:

Applications to SITA and Pondscape will be made by the partnership of Stockton Borough Council, Wildflower Arc and The Wildlife trust to restore to wildflower meadow 10ha of Pickard's Meadow and to subsequently manage it by grazing. Work will include ploughing and reseedling, fencing, the planting of a new hedgeline and the construction of a new pond, both for livestock drinking and for the benefit of wildlife.