Verde-ecology Consultancy

ECOLOGY REPORT FOR SKERNINGHAM AREA

April 2021

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[Date]

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Ecology Report for the Skerningham Area

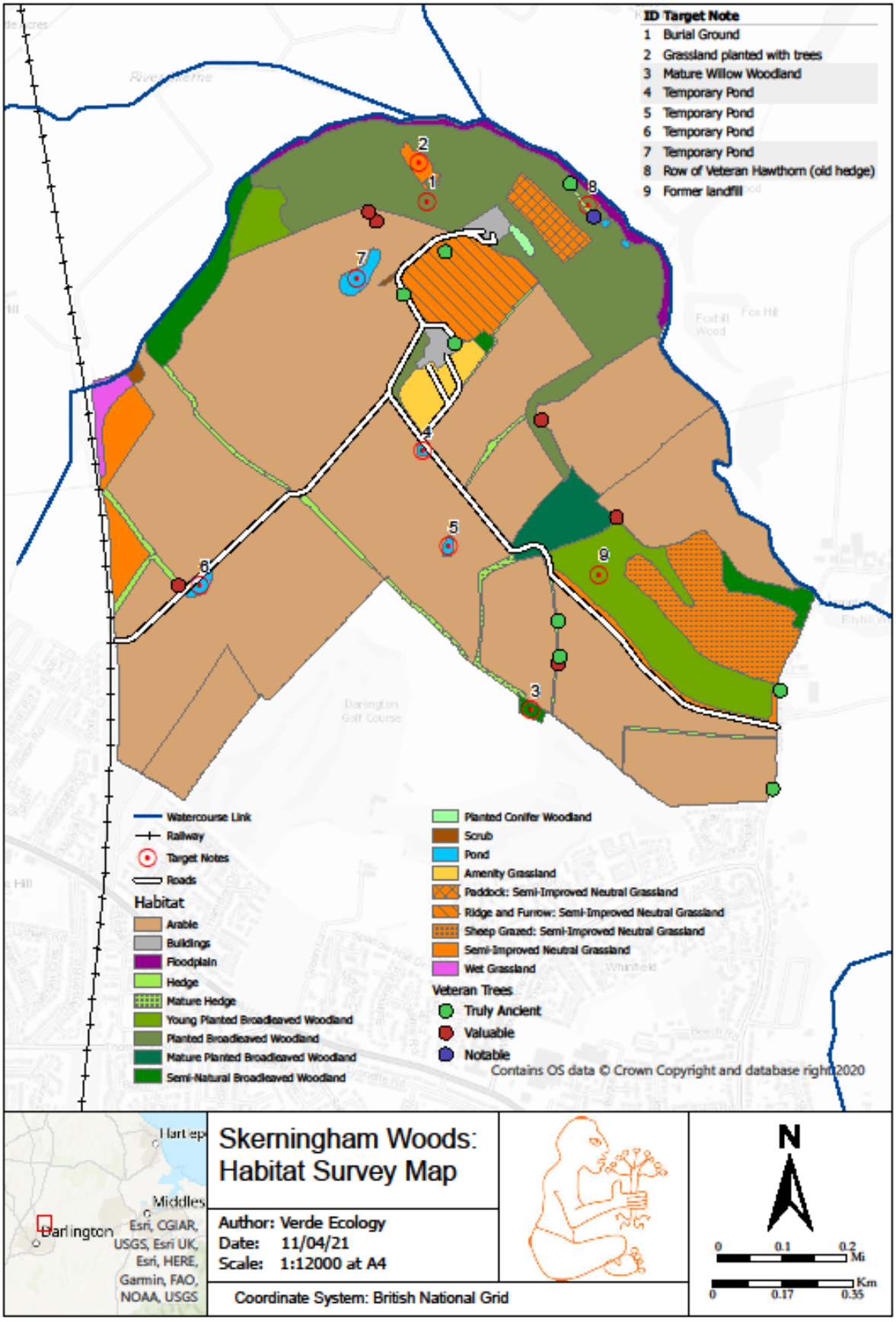
1.0 Introduction

1.1 Summary

Verde Ecology Consultancy was commissioned by Friends of the Earth, Darlington Branch, to undertake an Environmental Assessment of an area of land to the north east of Darlington around the Skerningham area. The area is the proposed site for the North Darlington Skerningham Garden Community which will comprise, among other things, 4,500 new houses, a community hub, cafes, schools, shops and a new golf course with club house and facilities for Darlington Golf Club.

A number of habitat types were recorded within the site during the Phase 1 Survey, which formed part of the basic tool with the habitats' descriptions following a more organic flow:

1. Planted broadleaved woodland
2. Arable
3. Hedgerows with veteran trees
4. Ponds both temporary and permanent
5. River
6. Floodplain
7. Semi-natural woodland
8. Semi-improved neutral grassland with ridge and furrow features of historical interest


ID Target Note
1 Burial Ground
2 Grassland planted with trees
3 Mature Willow Woodland
4 Temporary Pond
5 Temporary Pond
6 Temporary Pond
7 Temporary Pond
8 Row of Veteran Hawthorn (old hedge)
9 Former landfill
Watercourse Link
Railway
Target Notes
Roads
Habitat
Arable
Buildings
Floodplain
Hedge
Mature Hedge
Young Planted Broadleaved Woodland
Planted Broadleaved Woodland
Mature Planted Broadleaved Woodland
Semi-Natural Broadleaved Woodland
Planted Conifer Woodland
Scrub
Pond
Amenity Grassland
Paddock: Semi-Improved Neutral Grassland
Ridge and Furrow: Semi-Improved Neutral Grassland
Sheep Grazed: Semi-Improved Neutral Grassland
Semi-Improved Neutral Grassland
Wet Grassland
Veteran Trees
Truly Ancient
Valuable
Notable
Contains OS data © Crown Copyright and database right 2020
Darlington
Middles
Esri, CGIAR, USGS, Esri UK, Esri, HERE, Garmin, FAO, NOAA, USGS
Skerningham Woods: Habitat Survey Map
Author: Verde Ecology
Date: 11/04/21
Scale: 1:12000 at A4
Coordinate System: British National Grid
N
0 0.1 0.2 Mi
0 0.17 0.35 Km

A number of these mapped habitats form part of the priority habitats as per JNCC UK Biodiversity Action Plan (Revised 2011); broadleaved woodland, ponds and hedgerows, arable field margins, veteran trees.

The central farmland area of the site offers open countryside, accessible via a network of paths. The connectivity provided by the field margins provides a valuable link to the wider environment.

The proposals may result in the following potential impacts:

- Loss of connectivity through the landscape for a range of mammal and bird species
- Loss of extent of areas of carbon capture
- Expansion of the urban area into a "high quality" countryside area
- Loss of extent of priority habitats and priority species, including veteran and ancient trees
- Disturbance of commuting and/or foraging bats due to light spillage
- Degradation of priority habitats due to surface runoff
- Potential flooding effects in Darlington due to floodplain loss

1.2 Background

It is important when studying the defined area not to take the area reviewed in isolation but how it 'fits into' the landscape as a whole. The Skerningham area may not be comprised of Sites of Special Scientific Interest in terms of its fauna, flora, geology or natural features or 'designated' nature reserves or habitats, but it provides an important link or corridor between other outlying habitats. Removing these habitats from the overall landscape halts this linked up structure. Imagine driving down a motorway of smoothly laid tarmac only to come to a dead end and being able to see the road a few kilometres away but having no way of getting to it.

In the past we have concentrated on conserving 'pockets' of habitats. Designated sites like Local Wildlife Sites and Local Nature Reserves (LNR) have been focused on but this has resulted in producing an isolated oasis of habitats which are in a favourable condition for wildlife but with no link between them. Areas between, like the Skerningham area, may not have been prioritised for conservation or 'ticked' all the boxes in order to fit into any designation, but it plays an important part overall by supporting wildlife and does provide habitats that are prioritised under the Local Biodiversity Action Plan. The area provides an essential refuge for wildlife in its own right, acting as a stepping stone, corridor and buffer zone. It links and protects other open spaces around the Darlington area.

Darlington Rights of Way Improvement Plan (ROWIP) comprises many agendas, among others:

- The new emphasis on healthy lifestyles: The countryside can have a big pull on people's willingness to engage in healthy activities.
- A new focus on the importance of local distinctiveness and its important role in securing a sense of identity: Being aware of where you live, and how and why it is special, is closely linked with where a place 'sits' in the environment.
- The importance for people to understand the vital link with the natural world, brought about through concerns over climate change and many other environmental issues.

The Skerningham area offers accessible countryside right on the edge of the north east of Darlington urbanised area allowing access from the doorstep for many people to explore their countryside.

The vision for Darlington's Rights of Way network as stated in the plan is to 'create a facility that allows all of the public to have sustainable access to quality countryside. Countryside where they may experience the full richness of an unpolluted and biodiverse environment, as well as one that encourages healthy and safe travel.'

Darlington ROWIP highlights the increased 'uptake' of countryside usage and thus the ecosystem services it provides. The definition of ecosystem services being 'the outputs, conditions or processes of natural systems that benefit humans or enhance social welfare**.'**

Skerningham Community Woodland, despite having had minimal publicity, is beginning the process of becoming a part of the cultural landscape of Darlington, as well as being a desirable physical feature, loved by a few at present, but soon to be a very popular location. Its endearing features can be listed:

1. It is an area of Open Access.

2. The paths that run through it provide a clear sense of direction, but not by simply providing a single route through; once in Skerningham, people can wander through the woodlands following a whole selection of different paths.

3. It is a large expanse of Open Access land (Nearly 100 acres in total).

4. People have a sense of confidence in knowing that they are allowed to be there.

5. This woodland is an area important for landscape and biodiversity reasons.

As a recently planted woodland, close to two older areas of woodland, and being near to the banks of the Skerne, this new area of Open Access land is fundamentally attractive, giving people a sense of tranquillity. This recently created area of public open space is only a ten-minute walk from housing on Darlington's northern fringe! Thus reiterating the need for an on the 'doorstep' approach to accessibility to the countryside in comparison with driving outside of your local area.

One of the key issues for the Darlington ROWIP is 'the need to increase constantly the tree cover and hence percentage of accessible woodland around Darlington, given that the Borough has ¼ of the average national tree cover percentage, which is in itself, one of the lowest in Europe.' The planting of the Skerningham Community Woodland has moved towards fulfilling this objective.

The pathways in the Skerningham area also link up with the outlying Ketton Country with its more extensive criss-crossing of old byways and highways and allowing further connections between town and countryside and thus breaking down barriers. Ketton Country provides a wonderful extension for exploring further afield from Skerningham and has historical links with the county's coal mining history with its ancient ways - Salters Lane and Coal Street - and historical features like the Ketton Packhorse Bridge.

The Skerne Walk according to 'Darlington Field Paths, Ketton Footpaths' by CP Nicholson (A paper read to the Darlington and Teesdale Naturalists' Field Club) is much used ''going around by the Welsh Mountains''. Again this forms part of the extension of the Skerningham Community Woodland area.

View towards the Welsh Mountains

Ketton Packhorse Bridge

This report seeks to identify baseline conditions at the site and thereby assess potential impacts of the proposals on priority habitats, protected and priority species sites within the zone of influence and demonstrate biodiversity changes. The UK Government has announced new English developments will be required to demonstrate a 10% increase in biodiversity on or near development sites. The Chancellor's 2019 spring statement indicated it will be mandatory for all development in England to deliver a 'Biodiversity Net Gain'.

The site is located in a rural location, north east of the Harrowgate Hill area of Darlington and east of Beaumont Hill and west of Barmpton in the borough of Darlington.

The OS National Grid reference for the centre of the site is NZ305185. The site is bordered to the north by compartments of plantation woodland. Wider land use is predominantly agricultural. The nearest watercourse is the River Skerne to the north which is a major tributary of the River Tees. Several vernal ponds are scattered throughout the farmland and within the margins of the woodland and River Skerne. Figure 1 shows the site location and surrounding area.

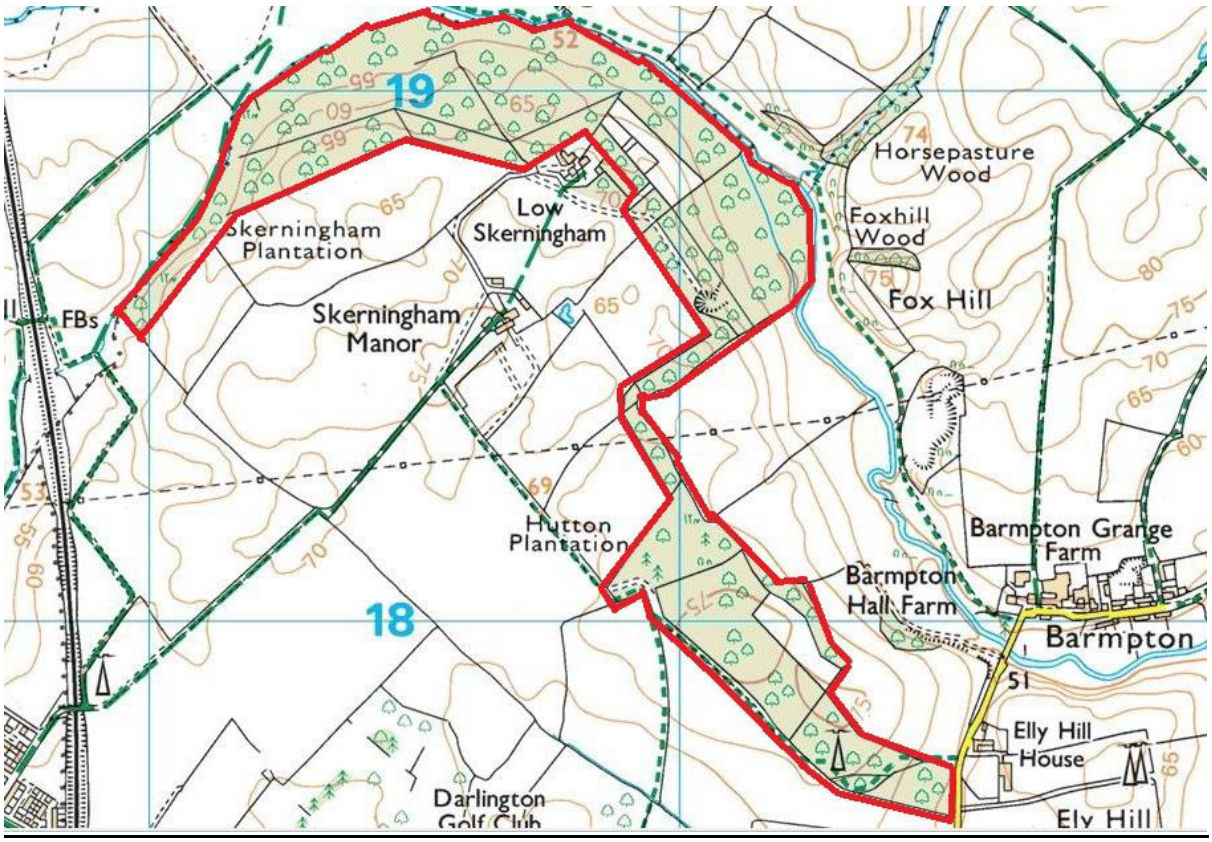


Figure 1

2.0 Methodology and Legislation

2.1 Supporting Sources

The Environmental Records Information Centre (ERIC) North East was contacted for information regarding protected species and nature conservation sites within 2km of the proposed development site. Google Earth and the Multi Agency Geographic Information for the Countryside (MAGIC) website were accessed to study aerial imagery of the site and the surrounding area and to access further habitat and species information respectively. 'Darlington Field Paths, Ketton Footpaths' by CP Nicholson (A paper read to the Darlington and Teesdale Naturalists' Field Club) and Darlington Rights of Way Improvement Plan and Countryside and Rights of Way Act 2000 for information regarding accessibility and vision for the future of access. Habitat and species information from JNCC UK Biodiversity Action Plan (Revised 2011), Durham Biodiversity Action Plan, Hedgelink UK, Ancient Tree Forum, data collected in the field and informal data from members of Friends of Skerningham Woods, Friends of the Earth, Darlington Branch. Overall background of the area gathered from informal interviews with former Darlington Borough Council Greenspaces Officer. Floodplain information from Flood Risk Sequential & Exception Tests, Darlington Borough Council December 2020 and Environment Agency

2.2 Field Survey Methodology, Timing

In order to map the habitats and landscape features of Skerningham Woods and the surrounding area several visits were undertaken. These habitats and features were mapped using the Phase 1 Habitat Survey method with a more organic approach used for habitats such as woodlands and hedgerows.

A Veteran and Ancient Tree survey was undertaken measuring the diameter at breast height to calculate each species' age and categorise their status.

Field surveys were carried out between January and March 2021.

2.3 Legislation

This assessment focuses on those species afforded full protection under the Conservation of Habitats and Species Regulations 2019, the Wildlife and Countryside Act 1981 (as amended) and the Protection of Badgers Act 1992. Also included within this assessment are those species considered to be of local and/or national importance through their designation as a Durham Biodiversity Action Plan (BAP) species or via their listing within Section 41 of the Natural Environment and Rural Communities Act 2006.

In addition to this included are species considered to be listed species within the Convention on International Trade in Endangered Species (CITES) entered into force on 1 July 1975 and International Union for Conservation of Nature's 2020 Red List. UK species are assigned conservation designations overseen and collated by the JNCC using the internationally accepted Red List guidelines developed by the International Union for Conservation of Nature.

A very brief summary of the protection that the current legislation provides is as follows.

The Conservation of Habitats and Species Regulations 2019 make it illegal to:

- Deliberately capture, injure or kill a European Protected Species (EPS)
- Deliberately disturb an EPS
- Damage or destroy a resting place used by an EPS

Disturbance of includes in particular any disturbance which is likely to:

- Impair their ability to survive, breed, reproduce, rear or nurture their young, hibernate or migrate
- Affect significantly the local distribution or abundance of the species to which they belong

The Wildlife and Countryside Act 1981 makes it illegal to:

- Intentionally kill, injure or take any wild bird
- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built
- Intentionally take or destroy the egg of any wild bird
- Intentionally capture, kill or injure animals listed on Schedule 5 of the Act (e.g. red squirrel, water vole)
- Damage, destroy or obstruct any structure or place used for shelter by animals listed on Schedule 5 of the Act
- Disturb animals listed on Schedule 5 when occupying a place used for shelter

The Protection of Badgers Act 1992 makes it illegal to:

- Kill, injure or take a badger
- Cruelly ill-treat a badger
- Interfere with a badger sett

Under the Natural Environment and Rural Communities (NERC) Act (2006), all local authorities have a statutory obligation to conserve and enhance biodiversity when exercising their functions, including planning and development decisions. As such, this assessment also considers those priority species listed under Section 41 of the Act.

Under Countryside and Rights of Way Act 2000 you have the right to walk, ride, cycle and drive on public rights of way in the countryside. Public rights of way include footpaths, byways and bridleways. Public rights of way are listed and described in Definitive Maps and Statements (legal records of public rights of way).

2.4 Limitations

Due to the deadline for the submission of this report to Friends of the Earth (Darlington) the Phase 1 Habitat Survey was undertaken outside of the optimal survey period of late April to mid-October (JNCC, 2010) and therefore some species, particularly vascular plants, may be under-recorded. There was no constraint in recording or identifying trees in the field.

Some of the records from ERIC NE were 10 years old or more with no new records corroborated. For these records, in some instances, we relied on members of Friends of the Earth (Darlington) or members of the public.

3.0 SITE SURVEY AND ASSESSMENT

3.1 Protected and Priority Species Records (Desk Study)

Data received from ERIC NE revealed a relatively wide dataset of protected and notable species within 2km of the development site. Data was filtered to dates from 2010 to 2020. The figures below show records of protected and notable species separated into birds (Fig 1), mammals (Fig 2) and Lepidoptera (Fig 3).

Figure 1

	Correct and Considered Correct Sightings of Protected and Notable Species Date: From 2010 to 2020 Birds				
Species -Common Name	Latin Name	DBAP[1]	S41[2]	CITES[3]	UK RED List[4]
Barn Owl	*Tyto alba*	x		x	
Bewick's Swan	*Cygnus columbianus*				
Blackbird	*Turdus merula*				
Black-headed Gull	*Chroicocephalus ridibundus*				
Blue Tit	*Cyanistes caeruleus*				
Bullfinch	*Pyrrhula pyrrhula*				
Buzzard	*Buteo buteo*			x	
Carrion Crow	*Corvus corone*				
Coal Tit	*Periparus ater*				
Collared Dove	*Streptopelia decaocto*				
Common Gull	*Larus canus*				
Crane	*Grus grus*			x	
Cuckoo #	*Cuculus canorus*				
Dipper	*Cinclus cinclus*				
Dunnock	*Prunella modularis*				
Fieldfare #	*Turdus pilaris*				
Grasshopper Warbler #	*Carduelis carduelis*				
Golden Plover	*Pluvialis apricaria*	x			
Goldfinch	*Carduelis carduelis*				
Goosander	*Mergus merganser*				
Great Black-backed Gull	*Larus marinus*				
Great Spotted Woodpecker	*Dendrocopos major*				
Great Tit	*Parus major*				
Green Sandpiper	*Tringa ochropus*				
Green Woodpecker	*Picus viridis*				
Greenfinch	*Carduelis chloris*				
Grey Heron	*Ardea cinerea*				
Grey Partridge	*Perdix perdix*	x	x		
Grey Wagtail	*Motacilla cinerea*	x			
House Martin	*Delichon urbicum*	x			
House Sparrow	*Passer domesticus*	x	x		
Jackdaw	*Corvus monedula*				
Kestrel	*Falco tinnunculus*	x		x	
Kingfisher	*Alcedo atthis*				

Lapwing	*Vanellus vanellus*	x	x		
Lesser Redpoll #	*Acanthis cabaret*				
Linnet	*Linaria cannabina*	x			
Magpie	*Pica pica*				
Mallard	*Anas platyrhynchos*				
Marsh Harrier	Circus aeruginosus			x	
Meadow Pipit	Anthus pratensis				
Mistle Thrush #	Turdus viscivorus				
Mute Swan #	Cygnus olor				
Moorhen	Gallinula chloropus				
Nuthatch	Sitta europaea				
Osprey	Pandion haliaetus			x	
Oystercatcher	Haematopus ostralegus				
Pheasant	Phasianus colchicus				
Pied Wagtail	Motacilla alba				
Red Kite	Milvus milvus	x		x	
Redwing #	Turdus iliacus				
Reed Bunting	Emberiza schoeniclus	x	x		
Robin	Erithacus rubecula				
Rock Dove	Columba livia			x	
Rook	*Corvus frugilegus*				
Rose-coloured Starling	*Pastor roseus*				
Rough-legged Buzzard	*Buteo lagopus*			x	
Skylark	*Alauda arvensis*	x	x		
Smew	*Mergellus albellus*				
Snipe	*Gallinago gallinago*	x			
Song Thrush	*Turdus philomelos*	x			
Sparrowhawk	*Accipiter nisus*			x	
Starling	*Sturnus vulgaris*	x			
Stock Dove	*Columba oenas*				
Swallow	*Hirundo rustica*	x			
Swift	*Apus apus*	x			
Tawny Owl	*Strix aluco*			x	
Teal #	*Anas crecca*				
Tree Sparrow	*Passer montanus*	x	x		
Treecreeper	*Certhia familiaris*				
Water Rail	*Rallus aquaticus*				
Waxwing	*Bombycilla garrulus*				
Wheatear	*Oenanthe oenanthe*				
Whinchat	*Saxicola rubetra*				
Whooper Swan	*Cygnus cygnus*				
Willow Tit #	*Poecile montanus*				
Willow Warbler	*Phylloscopus trochilus*	x			
Woodpigeon	*Columba palumbus*				
Wren	*Troglodytes troglodytes*				
Yellowhammer	*Emberiza citrinella*	x	x		
Yellow-legged Gull	*Larus michahellis*				
Yellow Wagtail #	*Motacilla flava*				

Unconfirmed sightings from member of the public

Figure 2

	Correct and Considered Correct Sightings of Protected and Notable Species **Date: From 2010 to 2020** **Mammal**					
Species -Common Name	Latin Name	DBAP[1]	S41[2]	CITES[3]	UK RED List[4]	UK BAP[5]
European Water Vole	*Arvicola amphibius*	x	x			x
Brown Hare	*Lepus europaeus*	x	x			x
Brown Long-eared Bat	*Plecotus auritus*	x	x			x
Common Pipistrelle	*Pipistrellus pipistrellus*					
Eurasian Badger	*Meles meles*	x				
European Otter	*Lutra lutra*	x	x	x		x
Harvest Mouse	*Micromys minutus*	x	x			x
Noctule	*Nyctalus noctula*	x	x			x
Roe Deer	*Capreolus capreolus*					
Soprano Pipistrelle	*Pipistrellus pygmaeus*	x	x			x
Weasel	*Mustela nivalis*					
West European Hedgehog	*Erinaceus europaeus*	x	x			x

Figure 3

	Correct and Considered Correct Sightings of Protected and Notable Species Date: From 2010 to 2020 Lepidoptera		
Species -Common Name	Latin Name	UKBAP[1]	S41[2]
Wall Brown	*Lasiommata megera*	*x*	*x*
Mouse Moth	*Amphipyra tragopoginis*	*x*	*x*
Small Square-spot	*Diarsia rubi*	*x*	*x*
Cinnabar	*Tyria jacobaeae*	*x*	*x*

[1] Durham Biodiversity Action Plan priority species

[2] In England many of our rarest and most threatened species are listed under Section 41 (S41) of the 2006 Natural Environment and Rural Communities (NERC) Act. Outcome 3 of the Government's Biodiversity 2020 strategy contains an ambition to ensure that *'By 2020, we will see an overall improvement in the status of our wildlife and will have prevented further human-induced extinctions of known threatened species.'* Protecting and enhancing England's S41 species is key to delivering this outcome.

[3] Listed species within the Convention on International Trade in Endangered Species

[4] International Union for Conservation of Nature's Red List – Species recognised on the UK Red List. Red lists are a globally recognised way of identifying the threat of extinction to species, using the internationally accepted Red List guidelines developed by the International Union for Conservation of Nature
Red - Critically Endangered
Amber - Endangered
Yellow - Vulnerable
Green - Least Concern

[5]UK Biodiversity Action Plan priority species

Statutory and Non-Statutory Nature Conservation Species (Desk Study).

Data received from ERIC NE revealed a relatively wide dataset of non-protected and notable species within 2km of the development site. Data was filtered to dates from 2010 to 2020. The figures below show recorded of protected and notable species separated into birds (Fig 4), mammals (Fig 5) and Lepidoptera (Fig 6).

Figure 4

Correct and Considered Correct Sightings of Non - Protected and Notable Species **Date: From 2010 to 2020** **Birds**	
Species -Common Name	Latin Name
Blackcap	Sylvia atricapilla
Chaffinch	Fringilla coelebs
Chiffchaff	Phylloscopus collybita
Long-tailed Tit	Aegithalos caudatus
Reed Warbler	Acrocephalus scirpaceus
Sedge Warbler	Acrocephalus schoenobaenus

Figure 5

Correct and Considered Correct Sightings of Non - Protected and Notable Species **Date: From 2010 to 2020** **Mammal**	
Species - Common Name	Latin Name
Wood Mouse	*Apodemus sylvaticus*
Bank Vole	*Myodes glareolus*
European Rabbit	*Oryctolagus cuniculus*
Brown Rat	*Rattus norvegicus*
European Mole	*Talpa europea*
Red Fox	*Vulpes vulpes*
Chinese Muntjac	*Muntiacus reevesi*
Eastern Grey Squirrel	*Sciurus carolinensis*
American Mink	*Neovison*

Figure 6

Correct and Considered Correct Sightings of Non - Protected and Notable Species **Date: From 2010 to 2020** **Lepidoptera**	
Species - Common Name	Latin Name
Small Tortoiseshell	*Aglais urticae*
Orange Tip	*Anthocharis cardamines*
Ringlet	*Aphantopus hyperantus*
Holly Blue	*Celastrina argiolus*
Peacock	*Inachis io*
Small Copper	*Lycaena phlaeas*
Meadow Brown	*Maniola jurtina*
Speckled Wood	*Pararge aegeria*
Large White	*Pieris brassicae*
Green-veined White	*Pieris napi*
Small White	*Pieris rapae*
Comma	*Polygonia c-album*
Small Skipper	*Thymelicus sylvestris*

Red Admiral	*Vanessa atalanta*
Painted Lady	*Vanessa cardui*
Maple Button	*Acleris forsskaleana*
Heart & Dart	*Agrotis exclamationis*
Twenty-plume Moth	*Alucita hexadactyla*
Shoulder Stripe	*Anticlea badiata*
Light Arches	*Apamea lithoxylaea*
Dark Arches	*Apamea monoglypha*
Bee Moth	*Aphomia sociella*
Silver Y	*Autographa gamma*
Common White Wave	*Cabera pusaria*
Long-horned Flat-body	*Carcina quercana*
Common Marbled Carpet	*Chloroclysta truncata*
Scalloped Oak	*Crocallis elinguaria*
Marbled Beauty	*Cryphia domestica*
Common Plume	*Emmelina monodactyla*
White-shouldered House-moth	*Endrosis sarcitrella*
Light Brown Apple-moth	*Epiphyas postvittana*
Common Carpet	*Epirrhoe alternata*
Mottled Pug	*Eupithecia exiguata*
Toadflax Pug	*Eupithecia linariata*
Small Magpie	*Eurrhypara hortulata*
Garden Pebble	*Evergestis forficalis*
Riband Wave	*Idaea aversata*
Small Dusty Wave	*Idaea seriata*
Humming-bird Hawk-moth	*Macroglossum stellatarum*
Lesser Yellow Underwing	*Noctua comes*
Lesser Broad-bordered Yellow Underwing	*Noctua janthe*
Large Yellow Underwing	*Noctua pronuba*
Common Quaker	*Orthosia cerasi*
Hebrew Character	*Orthosia gothica*
Swallow-tailed Moth	*Ourapteryx sambucaria*
Small Yellow Underwing	*Panemeria tenebrata*
Willow Beauty	*Peribatodes rhomboidaria*
Angle Shades	*Phlogophora meticulosa*
Common Grey	*Scoparia ambigualis*
Early Thorn	*Selenia dentaria*
Straw Underwing	*Thalpophila matura*
Juniper Carpet	*Thera juniperata*
Pale Straw Pearl	*Udea lutealis*
Garden Carpet	*Xanthorhoe fluctuata*
Silver-ground Carpet	*Xanthorhoe montanata*
Double-square Spot	*Xestia triangulum*
Early Grey	*Xylocampa areola*
Fan-foot	*Zanclognatha tarsipennalis*

3.2 Statutory and Non-Statutory Protected and Priority Species

The Durham Biodiversity Action Plan (DBAP) builds on the UK National Biodiversity Action Plan and contains action plans for a wide range of species and habitats, delivered through the Durham Biodiversity Action Plan Partnership.

Biodiversity

'Biodiversity means the biological diversity of life. It includes a wide range of living things from flowering plants to mammals, birds, insects and bacteria. It includes common species, those that are under threat, and the habitats that humans, plants and animals depend on. The character and biodiversity of the landscape are closely linked. Many of the features that contribute most to our appreciation of the landscape - trees and hedges, ancient woodlands, the flowers of old meadows, pastures and heaths - are an essential part of its biodiversity.'

http://www.durhamlandscape.info

Data collected from the Skerningham area show that there are many species of birds and mammals and plant species that are considered as priority species with the DBAP.

3.2.1 Birds

The barn owl (*Tyto alba)* has been recorded in this area and is one of our iconic farmland species.

Threats:

- Loss of rough grassland habitat – this would include semi-improved neutral grasslands such as the ones in the Skerningham area
- Loss of suitable nest sites due to decline in the number of hedgerow trees, and the re-development of farm buildings. Also with the removal of veteran and ancient trees from within hedgerows
- Increased deaths of barn owls from road accidents due to increase on road building
- Harsh winter weather

Durham BAP Target and overall vision:

'Vision Statement: For barn owls to occupy a larger range and in increased numbers.'

Farmland birds such as the linnet (*Linaria cannabina)*, tree sparrow (*Passer montanus)*, skylark (*Alauda arvensis)*, reed bunting (*Emberiza schoeniclus)*, yellow wagtail (*Motacilla flava)*, lapwing (*Vanellus vanellus)*, curlew (*Numenius arquata)*, snipe (*Gallinago gallinago)*, cuckoo (*Cuculus canorus)*, grey partridge (*Perdix perdix)*, kestrel (*Falco tinnunculus)*, mistle thrush (*Turdus viscivorus)*, swallow (*Hirundo rustica)*, grasshopper warbler (*Locustella naevia)* have been recorded. They are again priority species within the DBAP. These species have been declining nationally since the early '60s due to intensified farming and loss of nesting habitat. Targets have been set to halt and reverse this decline by 2020.

The more 'urban and garden wildlife' bird category priority species include the recorded house sparrow *(Passer domesticus)*, starling (*Sturnus vulgaris)*, song thrush (*Turdus philomelos)*, house martin (*Delichon urbicum)*, swift (*Apus apus)* but are not confined to urban areas. In County Durham the song thrush**,** starling and house sparrow populations are fairly stable at low numbers and again are iconic species which can be recognised in our gardens.

Priority species that are associated with scrub and woodland include lesser redpoll *(Acanthis cabaret),* red kite *(Milvus milvus),* willow warbler *(Phylloscopus trochilus),* willow tit *(Poecile*

montanus). Without management and conservation of these habitats in the Skerningham area a decline may be seen in these species.

3.2.2 Mammals

The DBAP Priority Species recorded in the area include badger (*Meles meles)*, a number of bat species, brown hare (*Lepus europaeus)*, hedgehog (*Erinaceus europaeus),* otter (*Lutra lutra)* and water vole (*Arvicola amphibious)*.

Threats:

The main threats to farmland birds and mammals as stated by NE England Nature Partnership, DBAP are:

- **Shortage of winter food:** Seed-rich stubbles have been replaced by winter planting, and mixed farming by monocultures. This is a particular problem for corn bunting, linnet, tree sparrow and brown hare.
- **Shortage of spring food for chicks:** Pesticides have removed insect life from many farms, silage production has replaced flower-rich meadows, and drainage has reduced wet areas for insect breeding.
- **Loss of nesting habitat:** Silage cutting makes grassland unsuitable for ground-nesting birds and disturbs brown hare during the breeding season. Winter cereals are too tall and dense to allow access by ground nesting birds after May, and field boundaries are less available and less suitable. This affects skylark, curlew, redshank, snipe, lapwing and brown hare.
- **Nest destruction**: Increased stocking rates and increased spraying, rolling and harrowing can all destroy nests and reduce chick survival for the ground nesting birds.
- Removal of scrub and loss of rank vegetation reduces suitable breeding areas for some species like reed bunting.
- **Drainage** is a particular problem, reducing the availability of invertebrate food, and thereby the availability of suitable nesting sites. Curlew, snipe, redshank, lapwing and yellow wagtail are particularly affected.
- **Hedgerow loss**, in particular the loss of mature hedgerow trees, has reduced natural nesting sites for species such as tree sparrow.
- **Habitat isolation** has a big effect on corn bunting, which is a fairly sedentary bird, and is increasingly isolated by surrounding unfavourable habitat.'

(Some of the species noted above within 'Threats' have not been recorded in the Skerningham area but are part of the DBAP Priority Species)

3.2.3 Amphibians

There have been several unconfirmed recordings of great crested newts (*Tritusus cristatus)* in the Skerningham area. These reports should not be discounted. Unfortunately a survey could not be completed due to the time of year. The DPAP also notes an extensive population has been recorded in the lowlands around Darlington.

Threats:

- Habitat loss due to development, despite legal protection
- Loss of unrecorded populations - Skerningham area Introduction of fish to ponds and removal of ponds

3.2.4 Plants

Priority Species: Black Poplar (*Populus nigra).*

Black poplar trees are found in two main locations in Skerningham. A mature black poplar tree is found next to the existing golf course adjacent to the arable land, access to the tree is difficult due to flooding. Cuttings from that tree were taken and planted in Skerningham Woods as part of a community project with David Bellamy, which involved children helping to plant the tree cuttings. Those black poplars are now mature trees forming a circle around a burial site at the top of Skerningham Woods.

The black poplar is a priority species with the DBAP for its status as an endangered and rare native timber tree. There are thought to be less than 3000 individuals remaining. It prefers wet woodland and streams and lowland floodplains so fits well into the Skerningham floodplain landscape.

Records dating over the last 20 years are almost entirely from the Darlington area. Some of the black poplars in this area were planted up as part of the Black Poplar Project with more mature existing examples in Skerningham in the hedgerow just over Glebe Road railway bridge. The project was a collaboration between The Countryside Agency, Darlington Borough Council and Durham Wildlife Trust and worked with schools and community groups to record location and numbers and collect cuttings. It was backed by Professor David Bellamy.

Black poplar (Courtesy of David Clark)

Taken from the https://www.gazettelive.co.uk/news/local-news/planting-to-halt-poplars-decline-3825675 it was noted:

‘‘Skerningham Community Woodland covers more than ten hectares of former farmland on the banks of the River Skerne near Barmpton and is now home to more than 12,000 trees - including a number of black poplars grown from cuttings taken by schoolchildren in Darlington.

Clive Davies, regional director of North East Community Forests, said: "We would like to thank Thompson's of Prudhoe and County Durham Environmental Trust (CDENT) landfill tax scheme, for jointly funding this initiative that will benefit the local environment and the people who live, work and visit Darlington."

Threats:

- Black Poplar scab appears to be a serious threat and there has also been one report in Newton Aycliffe
- The majority of trees are at the end of their life, since there has been no new planting of natives since the introduction of hybrid varieties in the 19th century and the Black Poplar Project planting
- Genetic isolation
- Poor natural regeneration due to location not being in natural habitat
- Both flooding and drought are fatal to the seedlings and they are unable to develop in competition with other vegetation
- Shortage of female trees. Male trees were preferentially planted over female trees, since the latter produce copious amounts of fluffy seed
- Loss of suitable habitat for the native black poplar through agricultural improvement, riverbank development resulted in fewer suitable places for successful natural regeneration
- Difficulties in distinguishing native from introduced black poplars may lead to under or over recording of the native species.

Durham BAP Target and overall vision:

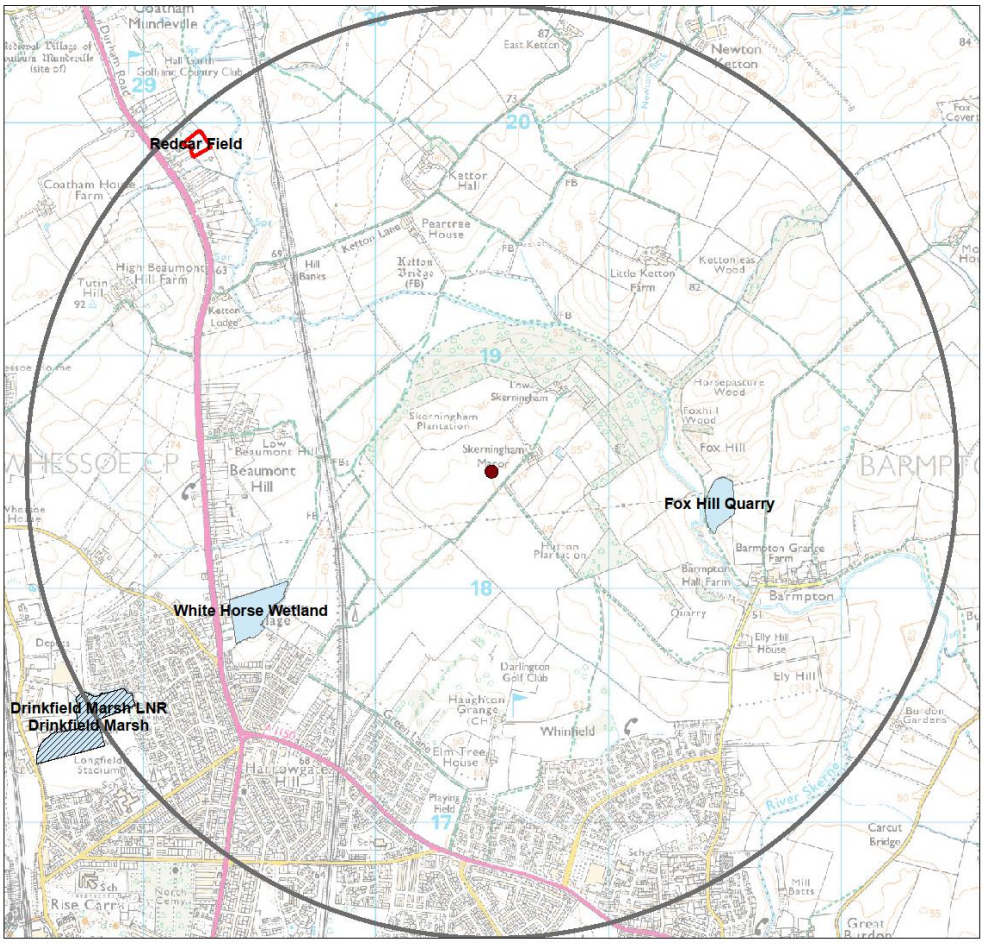
'*Vision Statement:* For increased populations of native black poplar of both sexes in appropriate floodplain locations, sufficient to regenerate naturally.'

4.0 Statutory and Non-Statutory Nature Conservation Sites (Desk Study)

There are several statutory and non-statutory nature conservation sites within the Skerningham area boundary. The habitats within the Skerningham area 'link up' and form part of the habitat corridor.

Fig 7

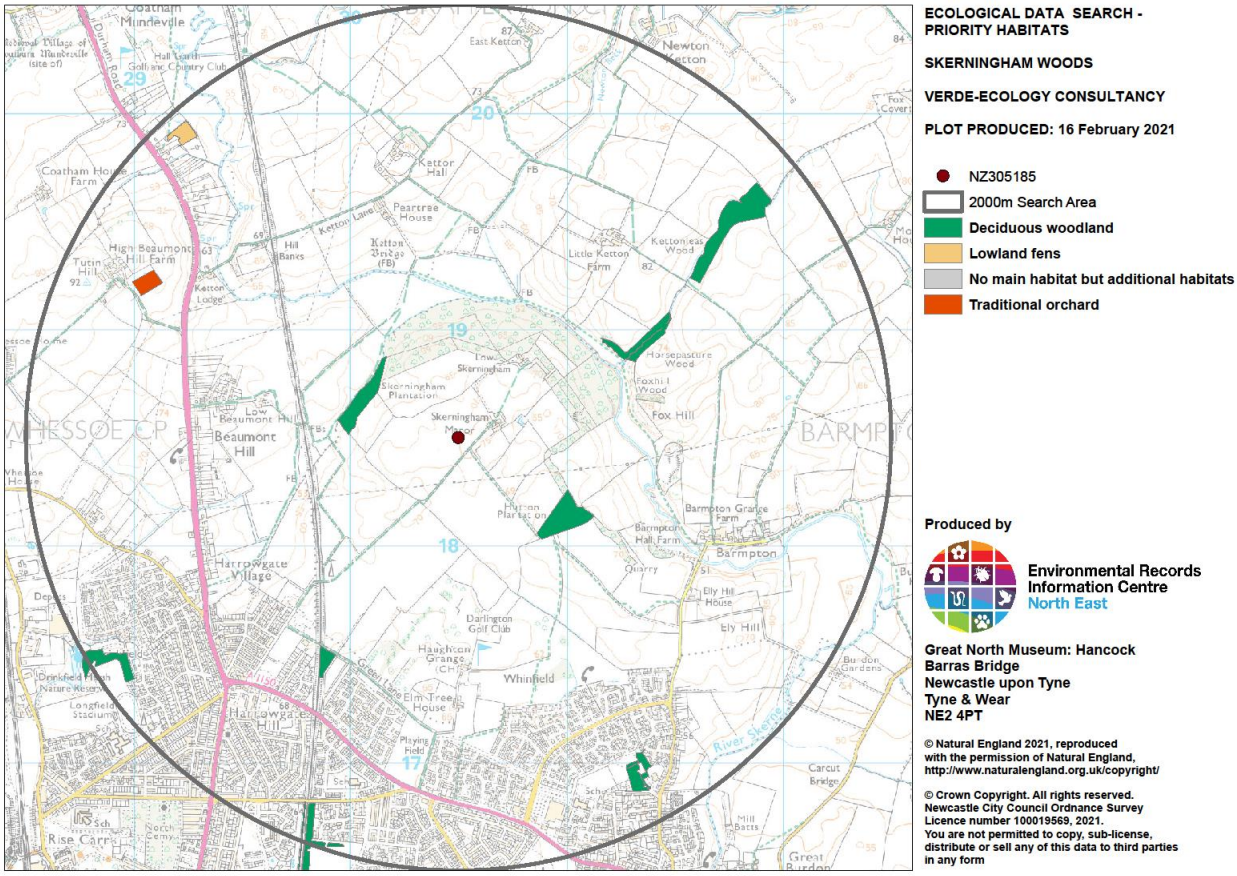
Designated Wildlife Site	Status
Redcar Field	Site of Special Scientific Interest
White Horse Wetland	Local Wildlife Site
Fox Hill Quarry	Local Wildlife Site
Drinkfield Marsh	Local Nature Reserve



5.0 Statutory and Non-Statutory Nature Conservation Habitats

5.1 Habitats including Durham BAP Priority Habitats

The site contains a number of priority habitats which are within the Durham BAP and UK BAP among which are ponds and hedgerows and veteran trees.



5.1.1 Woodland

Skerningham Woods comprises areas of semi-natural woodland, mature planted woodland, and plantation woodland (broadleaved) of different ages.

SEMI-NATURAL WOODLAND

This habitat runs along the River Skerne, see map for detailed location. This mature woodland is dominated mainly by mature oak (*Quercus sp.)* trees and natural regeneration of sycamore *(Acer pseudoplatanus)*. The understory has holly (*Ilex aquifolium),* hawthorn *(Crataegus monogyna),* some mature hawthorns (*Crataegus monogyna*) were recorded, wych elm *(Ulmus glabra),* as well as young sycamore *(Acer pseudoplatanus)*.

Ground flora at the time of the survey (20 February 2021) was ivy (*Hedera sp.),* bramble (Rubus fruticosus), Herb Robert (*Geranium robertianum)*.

Semi-natural woodland with an understory of holly (*Ilex aquifolium)*

MATURE PLANTED WOODLAND

This section of Skerningham Woods has a well-developed mature planted woodland dominated by broadleaved species, such as oak (*Quercus sp.)*, white poplar *(Populus alba)* and others. The woodland has an understory with holly (*Ilex aquifolium)*, hawthorn *(Crataegus monogyna)* and dead wood. The ground layer is dominated by bramble *(Rubus fruticosus).*

Scot's pine *(Pinus sylvestris)* is also found here.

PLANTATION WOODLAND - BROADLEAVED

This part of the Skerningham Woods is called the Skerningham Community Forest and was part of a bigger project called the Tees Forest. This project was funded by County Durham Environmental Trust (CDENT), this trust doesn't exist anymore.

The first, a narrow strip higher up the bank, was planted around the year 2000, then the rest, about 30 acres down to the river, about 4 years later, in 2004.

Skerningham Community Woodland stretches over 10 hectares along the banks of the River Skerne, near Barmpton, Darlington. The woodland has been developed by North East Community Forests Development Company to provide woodland walks and places for picnics. It is an addition to the Tees Forest and the second to be bought and developed by North East Community Forests Development Company. Planting of more than 12,000 trees was completed in March 2004 and includes oak, ash, birch, willow and hazel.

Skerningham Community Woodland

The woodland will also provide a home for the rare black poplar, which has been grown from cuttings by pupils in Darlington. This adds to another 9.5 hectares planted by a neighbouring landowner.

Importance to Wildlife

Many species rely on a mixed woodland as part of their life cycle. The wych elm *(Ulmus glabra)* is the caterpillar food source for the white-letter hairstreak butterfly *(Satyrium w-album).* Flowering trees are a nectar source for foraging, flying invertebrates - bees and moths - which in turn are the food of many bird and bat species. Dead and rotting wood provides habitat for ground beetles. Many Durham BAP Priority Bird Species which have been noted in this area are associated with woodland – Lesser Redpoll *(Acanthis cabaret),* Willow Tit *(Poecile montanus)* and Willow Warbler *(Phylloscopus trochilus).*

Threats:

- Extent of woodland reduced by intensive farming
- Pesticide/herbicide spray drift is particularly threatening to small isolated woodland in the agricultural landscape
- Road-building and development
- Fragmentation of habitat through road building, development or agricultural change - decrease in biodiversity
- Browsing by deer and rabbits reduces ground flora and natural regeneration
- Hard boundaries between woodland and other land-uses such as housing decreases a valuable ecotone and protection of a woodland boundary
- Non-native tree species within woodland can eventually spread and replace the native structure of a woodland through natural regeneration

Durham BAP Target and overall vision:

'Vision Statement: For new native woodland planting to be used to buffer & connect our existing mature woodland resource, and for all mature broadleaf woodlands to have protection and appropriate management.'

5.1.2 Ponds

Ponds are standing open waterbodies and come in a range of types and sizes, some formed naturally and some man-made. The site comprises a number of ponds of various sizes and in differing states of succession. Some are within the arable farmland and appear to be vernal or seasonal ponds, filling up in winter and occasionally drying out in summer.

These temporary pools and scrapes hold water for periods of the year but dry out in most years. Prior to extensive land drainage, it is likely that temporary ponds were a much more common part of the landscape, particularly in semi-natural habitats such as grassland.

Temporary ponds are often overlooked within the farmed landscape but are an important and highly threatened habitat type. They have declined significantly in the landscape due to drainage activities; temporary ponds persist in semi-natural habitats such as grassland and heathland, but the feature can also be extremely valuable for wildlife in arable fields too.

A huge variety of wildlife uses temporary ponds and they often support rare and scarce species which thrive in the unique combination of periodic flooding and drying. Many scarce plants and insects are associated with the damp muddy margins exposed as temporary ponds dry out. These margins provide a foraging site for black-headed gulls *(Chroicocephalus ridibundus)*, oyster catchers

(Haematopus ostralegus), yellow wagtail *(Motacilla flava)* and common shelduck *(Tadorna tadorna)* that have been recorded in the area.

The regular drying out of temporary ponds prevents fish from establishing. Free from predators, tadpoles and aquatic insects (such as water beetles) can often thrive. In fact, many species of aquatic insect, and some amphibians such as great crested newts *(Tritusus cristatus),* are seldom found in ponds where fish are present.

There are two distinctive permanent ponds in the north of the site situated in between the woodland edge and River Skerne. These ponds potentially provide the water body required for amphibians to complete their breeding cycle in spring and summer, with the adjacent woodland providing good foraging land and areas where they can hibernate and shelter.

Invertebrate and amphibian surveys were not undertaken as part of this assessment however ERIC NE records indicate the presence of great crested newts *(Tritusus cristatus*) within the 2km search area.

The majority of open water in County Durham comprises mainly of manmade artificial water bodies like reservoirs. Ponds are thinly spread throughout the county.

Importance to Wildlife

- Around 3500 of the UK's invertebrate species live in fresh water and up to half of these in ponds - Caddis flies, damselflies, dragonflies, mayflies, pond skaters, snails and water beetles breed in water
- Amphibians require waterbodies to complete the breeding cycle in spring and summer
- Over two thirds of Red Data Book of 300 species of vascular plants, including half the UK's wetland plants, occur in ponds
- Support foraging birds - Birds such as swallows and house martins will pick off insects from above the water surface and use muddy areas for nest building

Black-headed Gulls *(Chroicocephalus ridibundus)* on temporary ponds

Threats:

- Lack of data about pond locations
- Isolation through the loss of surrounding semi-natural habitat
- Natural succession of ponds to dry land and lack of replacement with ponds of differing states within the succession
- Over-zealous clearance of ponds to maintain open water communities - too much removal of marginal vegetation thus limiting the differential in habitats
- Diffuse pollution and increase in nutrient levels
- Invasion or introduction of invasive plant species - out-compete all other plants locally, leading to a loss of plant diversity
- Introduced species of animals
- Fish stocking of ponds can affect wildlife through competition, introduction of diseases and invasive plant species
- Loss of ponds to development
- Increases in recreational use can lead to pressure to control aquatic plants, increased littering and degradation of banks

Durham BAP Target and overall vision:

'Vision Statement: For there to be sufficient new pond creation to both replace ponds undergoing natural succession to fen and scrub, and to increase overall pond numbers. For ponds to exist in complexes with wetlands of different ages and type. To protect all ponds through protection and management of surrounding land.'

5.1.3 Hedgerows

The site comprises a network of hedgerows of various ages forming boundaries between the arable fields. Most of the hedgerows in SW have three species: hawthorn ***(****Crataegus monogyna)****,*** blackthorn *(Prunus Spinosa)* and ash. Hawthorn *(Crataegus monogyna)* bushes are small, up to 2 metres tall. The blackthorn *(Prunus Spinosa)* bushes are small, but in some sections of the hedgerow can reach up to 4 metres tall. The ash trees are mature ones, some of them are veteran trees. Other species found mixed with the hedgerow are gorse *(Ulex europaeus)*, bramble *(Rubus fruticosus)*, field maple *(Acer campestre)* and crab apple ***(****Malus sylvestris)****.***

There is a row of ancient hawthorn trees at the bottom of Skerningham Woods, very close to the River Skerne. There are 14 hawthorn trees, all falling in the category of Ancient Trees which perfectly align in what might have been an old hedgerow.

It has to be noted that amongst the hedgerows there are mature trees that will fall in the category of Valuable to Truly Ancient trees, two trees in particular have been recorded in SW hedgerows - field maple *(Acer campestre)* and crab apple ***(****Malus sylvestris)* which are truly ancient trees.

These veteran hedgerow trees increase the biodiversity of the hedgerow. Within the site these hedgerows act as linear woodlands with scrubs of various heights and ages with scattered stands of larger, older trees. They act as corridors linking habitats in the local area. Parallel hedgerows are distinct along the green lane of Salters Lane providing sheltered corridors for wildlife.

Walkers following the hedge line

Importance to wildlife:

- Mixture of woodland, scrub and grassland, essential habitat and refuge for the majority of our farmland wildlife and species dependent on woodland margins
- Provide corridors through the landscape for a wide range of organisms to move - flying insects like butterflies which need warm sheltered conditions to be able to gain, and retain, the heat necessary to fly
- Over 125 priority BAP species are closely associated with hedgerows, very few are wholly dependent on hedgerows, the loss of hedgerows or a decline in their quality will have a significant adverse impact on their populations
- Refuge for foraging mammals including priority and protected species - hedgehogs and badgers
- A corridor for commuting and foraging bats with larger veteran hedge trees offering roosting potential
- Number of Farmland Bird Index species associated with hedgerows using them as their priority habitat
- A corridor for pollinator species, including bumble bees, moths and butterflies

Threats:

- Most of the UK's hedgerows are in poor condition, reducing their ability to deliver environmental services and putting their dependent wildlife at risk. Local hedgerow surveys suggest that only 41% of hedges are in favourable condition even without taking nutrient enrichment into account, and the true figure is likely to be lower than this. Nutrient enrichment is the single most important reason for poor condition, 38% failing on this criterion. The other main reasons for poor condition are excessive gaps and hedgerows being too low or too thin.
- A high proportion of these BAP species are widespread within the UK but have been recognised as priorities for conservation action because their populations have declined rapidly in recent decades. For example, 51 out of the 71 widespread and common moths listed as priority BAP species because they have declined hugely in recent decades feed as caterpillars in hedgerows and their associated herbaceous margins. This confirms the importance of hedgerows for wildlife as a whole, not just for rare species.
- Hedgerows are of particular importance for the conservation of farmland and woodland birds, and for mammals. As many as 16 out of the 19 birds included in the Farmland Bird Index, as used by the Government to assess the state of farmland wildlife, are associated with hedgerows, with 10 using them as a primary habitat. All 35 woodland indicator species frequently occur in hedgerows or their trees. In addition, 10 out of 18 terrestrial mammals listed as priority species in the UK BAP make significant use of hedgerows for food or to enable them to move through the landscape.
- Rare or threatened species closely associated with hedgerows include several European Protected Species, notably dormouse, most species of bat, including the greater horseshoe bat, and great crested newt. These species require well-connected networks of hedgerows rather than individual hedgerows, emphasising the importance of hedgerows at a landscape scale for biodiversity.
- A wide range of other threatened species are dependent on hedgerows, including a few that are very rare and specially-protected such as round-leaved feather-moss, starved wood-sedge, Plymouth pear and barberry carpet moth. Other species of particular conservation concern closely associated with hedgerows include five species of uncommon and rapidly declining bumble bee, two scarce butterflies, the brown and white letter hairstreaks, the rare cirl bunting and the declining turtle dove.
- Much of the biodiversity of hedgerows is associated with hedgerow trees, in particular with veteran individuals. Over half (55%) of the priority BAP species associated with hedgerows are dependent on, or partially dependent on, hedgerow trees [6]. The presence of hedgerow trees in areas targeted by agri-environment schemes increased the numbers of larger moths present by 60% and the diversity of such moths by 38%.

- The scarcity of young hedgerow trees to replace mature ones when they die is a major cause of concern: across Great Britain, the number of isolated hedgerow trees fell by as much as 3.9% just between 1997 and 2007. A further 15,000-20,000 new hedgerow trees need to be recruited to the population each year just to keep the population stable.

Durham BAP Target and overall vision:
'Vision Statement: For a greater total length of hedgerow in good condition, and increased linkage of semi-natural habitats using hedgerows and their margins.'

5.1.4 Veteran/Ancient Trees

As stated in the Ancient Tree Forum: 'According to the current distinction, a tree can be a veteran without necessarily being very old. Thus, if a tree has the physical characteristics of an ancient tree but is not ancient in years, compared with others of the same species, it is classed as veteran but not ancient.'

The term 'veteran' is used in this report to describe all trees that have markedly ancient characteristics, irrespective of chronological age. The term 'ancient' is applied specifically to trees that are ancient in years.

The definition of an Ancient Tree:

Ancient Tree Guide No. 4 (ATF, 2008) defines an ancient tree as one "that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species". Similarly, according to current guidance for use in the Ancient Tree Hunt (Owen & Alderman, 2008), an ancient tree is one that has all or most of the following characteristics:

a) biological, aesthetic or cultural interest, because of its great age**
b) a growth stage that is described as ancient or post-mature
c) a chronological age that is old relative to others of the same species

It has to be noted that amongst the hedgerows there are mature trees that will fall in the category of Valuable to Truly Ancient trees. So a more thorough survey of potential veteran trees was undertaken with the help of volunteers from Friends of the Earth (Darlington). The survey included measuring the Diameter at Breast Height of trees, taking a Grid Reference and if possible a picture. Around 30 trees were measured and mapped as Potentially Interesting, Veteran or Truly Ancient. Amongst these recorded trees, two trees in particular have been recorded in SW hedgerows. One is a field maple *(Acer campestre)* and the other crab apple ***(****Malus sylvestris)* which are truly ancient trees.

Veteran and ancient trees are mature trees with evidence of decay, are full of nooks and crannies, holes and dead and rotting wood. They provide good habitat for species of plants, animals and fungi, including many that are rare. Fungi are actually thought to prolong their life. Decaying wood is incredibly important for invertebrates. Around 1,700 invertebrate species in the UK need decaying wood at some point during their life cycles. Many birds nest inside the cavities of older trees, such as owls, kestrels and treecreepers, as well as woodpeckers and nuthatches. Finally, mammals would make use of trees for food, shelter or roosting. Examples of these are squirrels, badgers, dormice, pine martens and deer. Bats particularly like veteran trees with cracks and crevices that make good roost sites for bats. (Ancient Tree Inventory)

Veteran field maple *(Acer campestre)* along Barmpton Lane

Importance:

- Superb visual quality in their own right: Gnarly, bizarre growth patterns
- Sense of connection with something that is older: Inspire feelings of awe, reverence and fascination
- Uncommon by definition and only form part of tree population
- Contribute towards local distinctiveness. Often originated as hedgerow trees that have survived when the rest of the field boundary has been removed
- Form part of the ecosystem as they have a complex relationship between other plants, fungi and animals
- Their structure and size can influence the micro-climate providing varying habitats
- The decaying cavities provide a diverse habitat
- The bark can be vitally important for rare lichens

Veteran Tree with decaying cavities in the middle of arable fields

Durham BAP Target and overall vision:

'Vision Statement: Better protected ancient & veteran trees, managed appropriately to prolong their life. Increased recruitment of veterans from mature tree stock.'

5.1.5 Rivers and Floodplain

The River Skerne runs along the north-east part of Skerningham Woods. This river is an important feature because it is a wildlife corridor, provides food and shelter to birds, and aquatic mammals, and most important it forms a floodplain that acts as a flood defence. It has small tributaries or burns which run into the farmland around Skerningham, Barmpton and Ketton.

The River Skerne is about 25 miles (40 km) long and begins at Trimdon Grange and ends at Hurworth Place where it joins the River Tees. The Skerne passes close to Brafferton before heading for Barmpton, Great Burdon and Haughton-le-Skerne on the outskirts of Darlington. The Skerne then flows underneath 17 bridges in Darlington. To the south of Darlington the Skerne passes through South Park, and then, after flowing under the A66 bridge, leaves the town to flow through countryside. (Wikipedia)

"Marginal and bankside vegetation support an array of wildflowers and animals. Rivers and streams also provide a wildlife corridor link between fragmented habitat in intensively farmed regions"(A biodiversity Audit for the North East). Natural wetland vegetation and forests can hold riverbanks in shape and slow floodwater movement. Marshlands in floodplains provide habitats and breeding grounds for a plethora of bird and fish, including endangered species. (Unda.co.uk)

'Since 1996 otters have successfully colonised the River Wear, and are now widespread on our three major rivers systems, the Derwent, Wear and Tees. The return of the otter to these watercourses is, in large part, due to better water quality and consequent availability of food. Two smaller river systems remain to be fully colonised by otters in the Durham BAP area, the Skerne and the Team." - North East England Nature Partnership

The River Skerne has a key role in flood protection, floodplains and water resources. Floodplains provide a buffer space between a river and inhabited areas at risk of flood. When water rises above the banks, the speed of flow reduces as it spreads out across the floodplain, and the overall peak of the water is lower. This can limit the destructive impact of floods and take pressure off man-made flood defences. Floodplains can act as filters for pollutants, as well to help to reduce sedimentation. (Unda.co.uk)

Flood Risk Sequential & Exception Tests Darlington Borough Council December 2020 has highlighted that within the Skerningham area 10.86% of the site is within a flood zone. The River Skerne which runs along the northern boundary of the site is noted as providing 'a network of connected blue and green infrastructure which includes the protection and enhancement of the River Skerne and its valley setting'.

Importance to wildlife:

- Act as a wildlife corridor for many species - water vole and otter
- Non-migratory fish communities including brown trout, grayling, lamprey and a range of coarse fish species including dace, chub, gudgeon, bream, eel, stone loach, minnow and bullhead
- Wetland bird – ducks, swans and geese
- Water related invertebrates – caddis fly, dragonfly species. Many species rely on water as part of their lifecycles
- Wetland flora

Threats:

- Point source and diffuse pollution
- Land drainage
- Invasive plant and animal species, including mink, signal crayfish, giant hogweed, Japanese knotweed
- Poor or inappropriate land management - erosion can occur
- Urbanisation and road building within the floodplain
- A conflict between otters and the recreational coarse fishing industry can lead to otter persecution

Durham BAP Target and overall vision:

'Vision Statement: To improve the water quality and physical structure of degraded watercourses. Where possible to ensure that watercourses remain, or are allowed to become, dynamic features linked to their floodplains.'

5.1.6 Arable

This area probably is the biggest of the proposed development. At the time of the survey, Feb/March, the fields were ploughed, not planted yet. There are some hedgerows left with mature ash and mature hawthorn used as hedge species. The boundaries between the woodlands, roads, and public rights of way and the arable fields are very small, not more than 1 metre. Skylarks and yellowhammer have been recorded on the land.

There are at least 3 farmers that farm the land at Skerningham, none of these actually hold a farm in situ. The location of this farmland is very important because it acts as a corridor for wildlife to connect to the woodland and to the River Skerne. From the River Skerne, we have an open landscape of countryside farmland, grazing area, old woods, old hedgerows, farms and a network of rights of way that connect all the way to Barmpton, Ketton and Catkill Lane.

Due to the terrain and the soil, clay, seasonal ponds are found throughout the arable land. Some of these seasonal ponds have wading birds such as: oyster catcher ***(****Haematopus ostralegus)****,*** common shelduck *(Tadorna tadorna),* black-headed gull *(Chroicocephalus ridibundus)*, lapwing *(Vanellus vanellus)* which have been noted.

Oyster Catcher ***(****Haematopus ostralegus),* left, on temporary pond within the arable land

Arable farmland

5.1.7 Semi-improved neutral grassland with ridge and furrow features of historical interest

The area comprises a number of semi-improved neutral grasslands some of which have historical ridge and furrow features. These grasslands have derived from agricultural improvements over the years and are generally poor in wildflowers as they are out-competed by the grasses or cutting prior to the flowering setting seed. Although they may not be classed as priority habitats, they do offer a habitat for foraging birds, a refuge for small mammals and therefore a food source for raptors.

The ridge and furrow features may have been created by a system of ploughing used in the Middle Ages. Also known as rig in the North East of England. Recognised examples of ridge and furrow also occur in the north east of the area at Bishopton (www.keystothepast.info)

Semi-improved neutral grassland

Ridge and Furrow within the semi-improved neutral grassland

Lesser redpoll *(Acanthis cabaret)* in Skerningham Community Woodland

6.0 Carbon Storage

The State of Nature reports 'climate change is predicted to have significant effects on biodiversity, thus making increased habitat resilience, extent and quality essential….. (there are) opportunities to address the threats arising from climate change simultaneously with biodiversity crisis and other ecosystem needs.'

Actions can be prioritised by measuring carbon stock in an ecosystem. The habitats in the Skerningham area comprise soils which can store 3 to 5 times more carbon than vegetation (Deng et al. 2016). The soils under the arable land can have a carbon content to 0.3m depth of between 43-64 tonnes per hectare. Soil under the broadleaved mixed woodland can have carbon content of 124 tonnes per hectare 175.8 to 1m depth with soils under conifer plantation having a content of 73-120 tonnes per hectare (to 0.3m). The National Average for soils under all wood types is 66 tonnes per hectare. Soils under agriculturally improved grassland (basically the semi-improved grassland) has 60 tonnes per hectare. (Data from Milne and Brown (1997), Alonso *et al.* (2012), Hagon *et al*. (2013), Taylor *et al*. (2019))

Professor John Bothwell (Dept of Biosciences, Durham University) helped us to calculate how much CO2 Skerningham Woods could capture. These planted woodlands could capture up to 34,560 tons of CO2 per year. To calculate this figure some assumptions had to be made, for example overall density of trees were 9 trees per 25 square metres.

Vegetation contains little carbon store but accumulates more rapidly when trees are growing strongly but slowly when young. Carbon loss occurs with harvesting and replanting activity (Crane (2020)). Carbon stocks are greater in diverse, long established and well-structured woodland. Clearance of scrub/trees as part of management or change of land use can negatively impact carbon store.

Ecosystem carbon capture can be used as a tool to reduce atmospheric CO2. It is more beneficial to prioritise current carbon stock as it takes time to accumulate carbon in new habitats. Therefore, it is essential that new/restored habitats do not replace those already high in carbon as the carbon balance in new ecosystems is low at the early stage but will only improve over time.

7.0 The Area as a 'Living Landscape'

Skerningham Woods and adjacent agricultural land with its corridor of hedgerows forms part of a mosaic of habitats providing a functioning ecosystem for a variety of species. The ecosystems that comprise our wildlife form part of the building blocks that make up the healthy, functioning environment on which we depend.

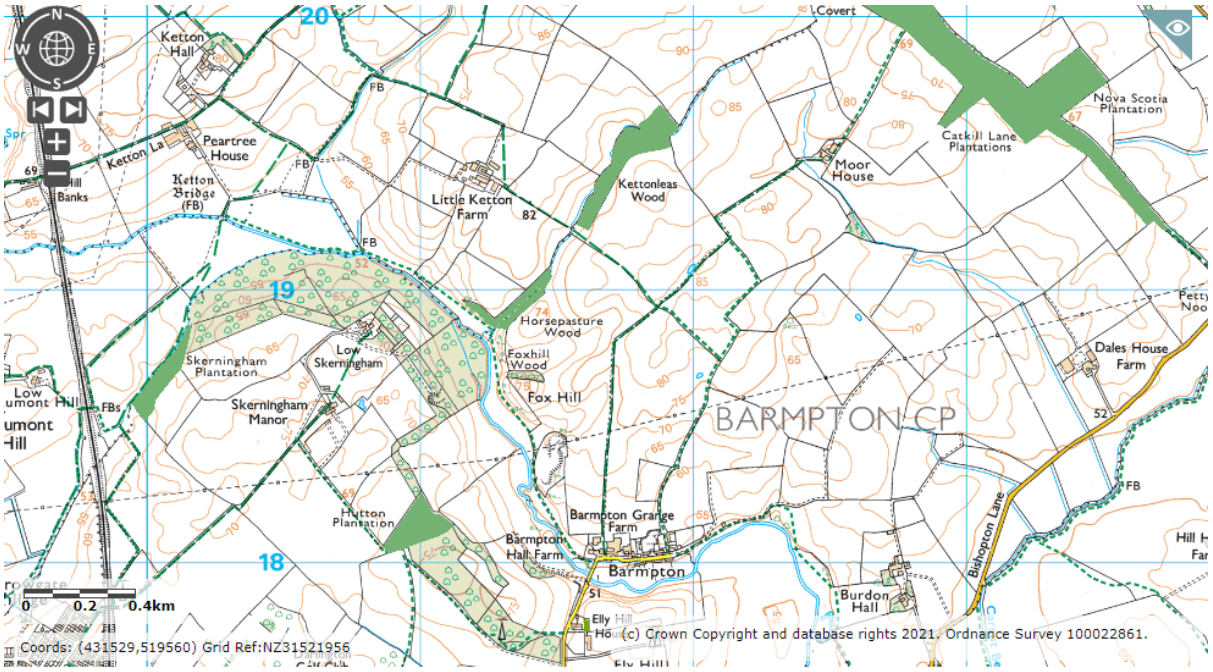
In the past we have been slowing down the decline in biodiversity by protecting small isolated pockets or islands of wildlife and thus producing a fragmented landscape with small oases. Our ways of thinking and working have now changed and we are realising that it is essential that we link these wildlife pockets and restore the ecosystem on a landscape scale. These corridors and joined up landscape allows our wildlife populations to move up and down the country and adapt to climate change. This in turn will halt biodiversity loss, create sustainable wildlife communities and a resilient countryside.

The 'Making Space for Nature' report (cited as the 'Lawton Report') 2010 stated that we needed to change our approach to wildlife conservation from conserving what we have left to large scale habitat restoration by re-establishment of ecological processes and ecosystem services and, among other things, creating wildlife corridors.

This approach would benefit both people and wildlife. Ecological restoration within and surrounding towns and cities provides an opportunity for people to connect with nature, with evidence showing

the benefits to mental health and physical well-being. Skerningham Woods and the surrounding area provides this free 'green' prescription for health and well-being as well as a natural solution for reducing air pollution, after management and a cooling effect.

With regards to wildlife, Skerningham Woods forms part of the overall landscape connectivity linking deciduous woodland to the NE, S and SW that are part of the priority habitat inventory. The hedgerows that form part of the field boundaries to the arable land are in effect linear woods. Whether ancient or recently planted they provide a complex of micro habitats providing corridors of connectivity between woodland. They provide cover for foraging mammals and birds, allowing them to move safely from place to place.



The Skerningham area's connectivity to the wider landscape (MAGIC, Natural England)

The County Durham Landscape Strategy has several objectives to take into consideration when changes in land use are to be proposed:

- To support and encourage the conservation and enhancement of biodiversity and the delivery of the Durham Biodiversity Action Plan.
- To promote and develop a landscape-scale approach to biodiversity in County Durham.
- To promote an integrated approach to action on landscape and biodiversity, and particularly through the use of Natural Area Partnerships.
- To secure a 'positive audit' for biodiversity in new development.
- To promote biodiversity in landscape design.

(http://www.durhamlandscape.info/)

The above points should therefore be taken into account with regards to the potential development of the Skerningham area and the objectives met so that biodiversity does not decline but increases.

Conclusion

The Skerningham area is a key and valuable landscape because it provides habitat and connectivity habitat to mammal and birds species, its hedgerows and farmland have truly ancient trees. It has priority habitats that need conservation and management, like ponds, broadleaved woodland, and hedgerows. The River Skerne is an important feature to alleviate flooding into Darlington urban areas. The services that the area provides in terms of CO2 capture and greenspaces for walking or outdoor activities are unique.

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