

WAVENEY WILDLIFE AUDIT
Green spaces, open spaces & County Wildlife Sites
for the Local Plan review
2016/2017

<i>Project no.</i>	<i>Report</i>	<i>Date</i>
05/17	Final	17 July 2017
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1.0 INTRODUCTION

SWT Trading Ltd: Ecological Consultants, the wholly owned company of Suffolk Wildlife Trust (SWT), was commissioned by Waveney District Council in 2016 to carry out an audit of County Wildlife Sites, and in 2017 to carry out a Wildlife Audit of green spaces, open spaces and County Wildlife Sites for the Local Plan review.

Surveys commenced in May 2016 and continued until autumn 2016 and April 2017 to June 2017. The survey protocol conformed to Extended Phase 1 and the information was presented as individual site reports using a standardised reporting form including a Phase 1 map and photographs. The presence, or likely presence, of Priority habitats and species and protected species was recorded. Information was also provided under various broad taxonomic groups, including flora, avifauna, invertebrates, herpetofauna and mammals. In addition, the structural diversity each habitat and the connectivity of sites within the overall ecological network across the District was assessed. Recommendations were provided for further survey work.

2.0 OBJECTIVES

The aim of the surveys was:

- To undertake an Extended Phase 1 habitat survey for all the identified sites
- To provide information and a description of the wildlife interest for each site;
- To map specified habitat types, using standard colour codes for each site including a breakdown of habitat types within it;
- To list species including protected species or evidence of their presence, Priority species and habitats, remark on biodiversity and appraise the nature conservation value;
- For those sites with previous survey data available, to take these findings into account;
- To rank sites in terms of wildlife value with which to evaluate sites;
- To provide an electronic photographic record of the sites;
- To provide a written report of results and recommendations for any necessary compliance or requirements for further survey.

3.0 METHODOLOGY

In order to achieve the overall aims of the project the following tasks were undertaken:

- Existing digital information for each site was collated using data provided by Suffolk Biodiversity Information Service and from 1:10,000 maps and aerial photographs.
- Each site was surveyed and a record made of its conservation value.
- Photographs were taken of relevant features within the sites, both geotagged and digital high-quality images.

- Criteria and a ranking system were used to evaluate sites.
- Comments were made on habitats/species of wildlife interest.
- Management recommendations were provided as appropriate.
- The sites were mapped with Phase 1 colour codes using BosqMap software.

3.1 Criteria for site evaluation

At each site, the following was recorded:

- Location:** site name, number and grid reference;
- Size:** the size was noted in hectares (ha);
- Survey details:** date, surveyor, weather conditions;
- Phase 1 map and photos;**
- Status:** designation, ranking and overall wildlife value;
- Habitat type:** distinct, dominant habitat types were briefly detailed;
- Subsidiary habitat:** this included additional habitats of particular note such as dead wood;
- Site description:** a detailed account of the site;
- Connectivity:** if a site linked to other green corridors, this was noted and described in detail where relevant. The juxtaposition of other proposed sites was also considered;
- Structural diversity:** the differing vegetation structure (height) providing a variation in niche potential for a wide range of taxa was described for each site if relevant;
- Protected species:** these were noted if recorded, or if previously recorded;
- Protected species potential:** this was noted if the habitat was deemed suitable for named protected species;
- Priority species:** these were noted if seen, or if previously recorded. NB: if the species is a 'protected species' and a 'priority species', then it was only listed under protected species;
- Priority species potential:** this was noted if the habitat was deemed suitable for priority species;
- Priority habitats:** these were noted if present;
- Flora, avifauna, herpetofauna, mammals, invertebrates etc:** species seen or recorded were noted and habitat which offered potential for specific taxa was noted;
- Comments and recommendations:** overall impressions of each site were noted and further management work was recommended where relevant;
- References:** these were included when it was appropriate to reference other surveys.

Priority species and habitats: Section 40 of the Natural Environment and Rural Communities (NERC) Act (2006) states that 'Every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. UK priority species as listed under Section 41 of the Act are normally taken as a good benchmark for demonstrating biodiversity duty. These were formerly known as 'BAP' habitats and species.

The UK Biodiversity Action Plan (UK BAP, 1994) was the UK Government response to the 1992 International Convention on Biological Diversity. The UK BAP listed a range of habitats, plus a number of birds and species from other taxa of conservation interest. National targets and priorities were set in order to address the particular needs of those habitats and species. There is no longer a UK Biodiversity Action Plan; this has been replaced by the UK Post-2010 Biodiversity Framework (2012). The England Biodiversity Strategy has been replaced by *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* (2011). The result of these changes is that the BAP process has been devolved to local level with each county deciding its own way forward. Suffolk made the decision in June 2013 to continue to support the Suffolk Biodiversity Action Plan, particularly because the BAP is still enshrined in law through the Natural Environment and Rural Communities Act (2006) and also in planning policy through the National Planning Policy Framework and National Policy Statements.

Protected species: species protected by law under the Wildlife and Countryside Act (1981) (as amended), The Conservation of Habitats and Species Regulations (2010) (as amended) and the Protection of Badgers Act (1992).

3.2 System of site ranking

A system of ranking each site from the information gathered during surveys was established, using a simple numbering method. Numbers 1-6 were used (1 = high, 6 = low).

- 1 Statutory designation e.g. SSSI (Site of Special Scientific Interest) scheduled under the Wildlife and Countryside Act (1981) (as amended).
- 2 Non-statutory designation e.g. County Wildlife Site (CWS). CWSs are sites regarded as important in a county/regional context.
- 3 Non-statutory designation e.g. Local Wildlife Site (LWS), priority species and habitats (except those that are locally common e.g. song thrush) and/or species protected under the Wildlife and Countryside Act (1981) (as amended).
- 4 No designation but clearly of value due to size, connectivity, species diversity, potential for priority and protected species and locally common priority and protected species.
- 5 No designation but has some natural capital: is in character with the area (e.g. woodland), provides limited connectivity.
- 6 No designation and of no conservation value.

Site Ranking 1: Sites of Special Scientific Interest (SSSIs): the most important sites for wildlife within a national context. The criteria used to assess such sites have been developed by English Nature (now Natural England).

Site Ranking 2: County Wildlife Sites (CWSs): these sites have a high priority for protection. Although there is currently no statutory protection, all of Suffolk's local authorities have included a policy in their local plans to protect CWSs from development. The criteria used to assess CWSs have been developed by Suffolk Wildlife Trust, Suffolk County Council, Natural England and Suffolk Biological Records Centre (SBRC) (The County Wildlife Site panel). The information is available on the Suffolk Biodiversity Information Service (SBIS)

website: <http://www.suffolkbis.org.uk/suffolk-sites/cws> accessed 17th November 2016 and 13th July 2017.

Site Ranking 3: sites which do not fulfil the criteria for SSSI or CWS status but have a high conservation value. In some districts, these are designated as 'Local Wildlife Sites' when they are situated within urban areas. These sites comprise the best examples of different habitats or are important for a particular species and are assessed of the following criteria:

- **Non-recreatability.** The sites must have some degree of naturalness.
- **Diversity and presence of indicator species.** Sites that are less diverse than CWSs will be included. For example, grassland that is not a remnant of old meadow but has a good number of grass and herb species. Areas dominated by amenity grassland will not be included.
- **Rarity.** Sites that contain habitats, plants and animals that are rare within the town but may be common throughout the county are included here.
- **Potential value.** These sites may have greater value once appropriate conservation management work is carried out. Some sites that could benefit from habitat creation are included, but only those that already have some conservation value.
- **Size.** There is no minimum size but sites that do not have a great diversity of species or habitats and contain no rare species are unlikely to be included if they are less than 0.25 hectares.
- **Woodland.** Normally such sites are secondary woodland as all ancient woods are designated as CWSs. The exceptions are small sites that may contain remnants of ancient woodland within woods of more recent origin. All secondary woodlands with a reasonably diverse ground flora or containing some old woodland indicator species are included. Woodland strips and shelter belts are not usually included unless they fulfil the criteria of having a reasonably diverse ground flora. Any sites containing exceptionally old trees are included because of their wildlife value.
- **Scrub.** Scrub is particularly important for breeding birds and invertebrates, particularly when it is adjacent to grassland and mature trees.
- **Grassland.** Areas of grassland of some diversity that do not qualify as CWSs are included. These may represent recently established grasslands and areas of amenity grassland where soil type and management favour a more species-rich sward.
- **Freshwater.** Freshwater sites can include rivers, streams, ditches and ponds. Sites which contain a reasonable variety of aquatic or marginal plants are included, as are those with good populations of amphibians.
- **Created habitats.** Some sites which have developed from former arable or industrial use have a high diversity of species or are important for a particular species.
- **Species.** Sites are included if they provide important habitat for one or more of the following groups: invertebrates, amphibians and reptiles, birds and mammals. This includes priority species and habitats (except those that are locally common e.g. song thrush) and/or species protected under the Wildlife and Countryside Act (1981) (as amended). Note: where species are of sufficient rarity or where there are exceptional populations, sites may be designated as CWSs or SSSIs.

Site Ranking 4 Other Sites of Nature Conservation Interest: sites which are less important for wildlife but still retain a degree of naturalness. Locally common priority species such as

song thrush may be present and also locally common protected species such as reptiles. However, this ranking applies only in cases of low numbers of a single species and not significant populations of one or more species (see LWS and CWSs). In addition, these sites often provide valuable stepping stones and wildlife corridors along which species can travel between sites.

Site Ranking 5: Areas that have limited value for wildlife:

These may include arable fields or regularly mown amenity grassland with some features of wildlife value, such as some boundary hedgerows or rough grass margins.

Site Ranking 6: Areas that have no or very limited value for wildlife: These may include built areas, large arable fields, other disturbed ground or regularly mown amenity grassland with no other semi-natural features.

3.3 Biodiversity value

Linked to the ranking system is a broad approach to describing whether a site was of high, medium or low biodiversity value:

- 1-2 High conservation value: These sites include designated sites such as SSSIs and CWSs. It may also include undesignated sites where it is recommended that they should be assessed by the CWS Panel as to whether they meet the criteria for designation.
- 3-4 Medium conservation value: These are undesignated sites which have a known wildlife value and contribute to the overall ecological network.
- 5-6 Low conservation value: These sites have limited wildlife value. However, a change in future management or additional enhancement may result in an increase in ecological value and a change in site ranking.

3.4 Constraints to the surveys undertaken for the Wildlife Audit

This survey represents a snapshot in time and should be considered as an initial assessment of the habitats and the potential species which they may support. Every effort has been made to date to provide an accurate assessment of the current situation but no liability can be assumed for omissions or changes after the survey has taken place. In particular, no detailed surveys have been made for invasive or protected species, or specific botanical or faunal groups.

Access was limited at three sites in 2017 and consequently detailed surveys have not been undertaken on these sites (marked with * in Appendix 1).

Appendix 1 Catalogue of surveyed sites

2016 County Wildlife Sites (CWS)

CWS Ref:	Site Name	Ranking	Biodiversity Value
Waveney 108	Beccles Common	2	High
Waveney 51	Bonds Meadow	2	High
Waveney 110	Fairview Farm Meadow	2	High
Waveney 56	Foxburrow Wood	2	High
Waveney 33	Halesworth Cemetery	2	High
Waveney 41	Holton Sandpits	2	High
Waveney 60	Kirkley Ham	2	High
Waveney 53	Leathes Ham	2	High
Waveney 57	Pakefield Cliffs	2	High
Waveney 54	Pakefield Park	2	High
Waveney 74	St Felix School Grounds	2	High

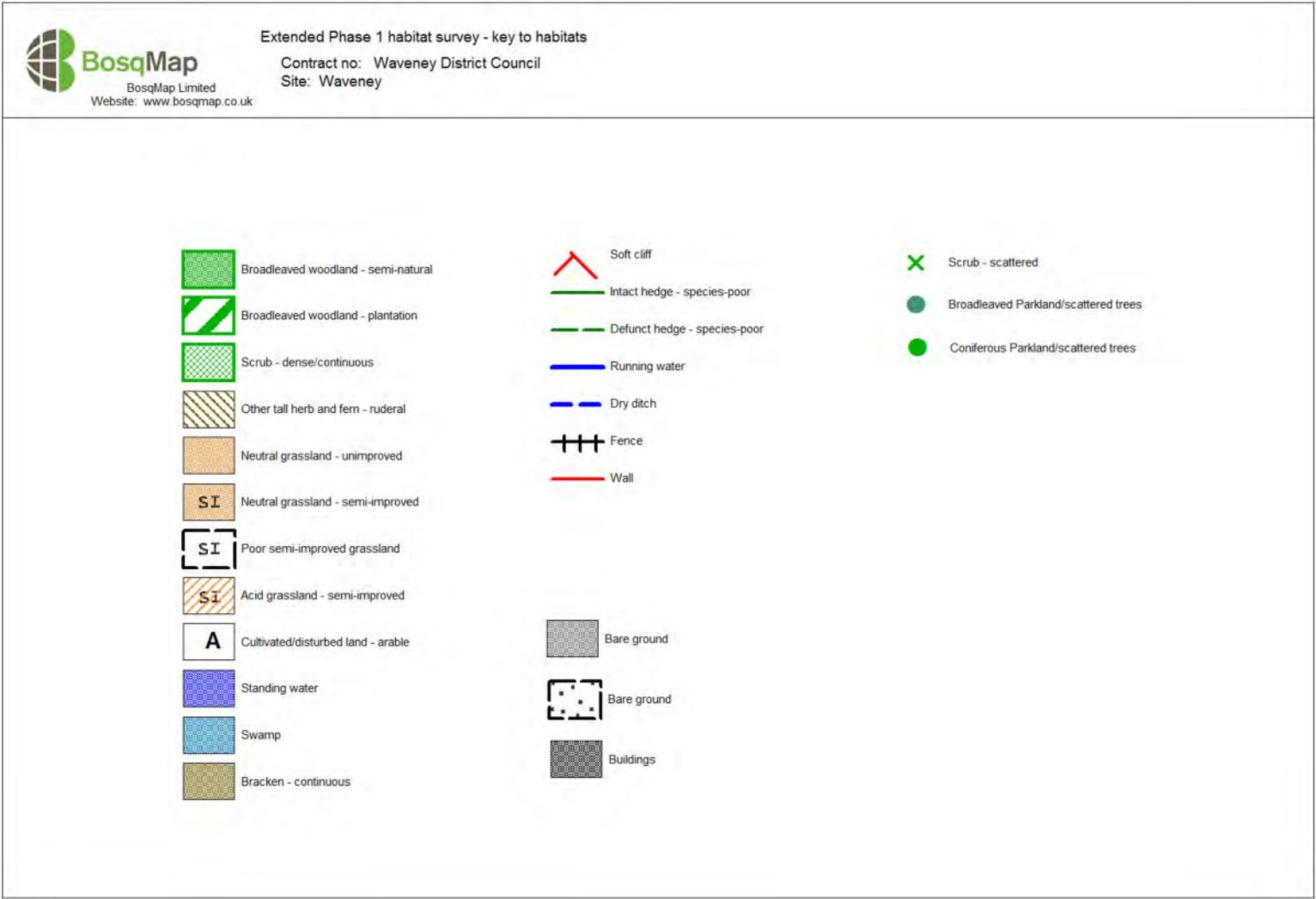
2017 Green spaces, open spaces and County Wildlife Sites (CWS)

Site code	Site Name	Ranking	Biodiversity Value
1	Ness Point	2	High
2	Yarmouth Railway Line	2	High
3	Rusty Backed Fern site	2	High
4	Gunton Meadow	2	High
5	Gunton Warren	2	High
6	Gunton Pond	2	High
7	Gunton Woods	3	Medium
8	Corton Woods	2	High
9	Dale End and land connecting to Airedale	4	Medium
10	Land south of Gunton Meadow	2	High
11	North Denes former campsite	4	Medium
12	Arnolds Bequest	4	Medium
13	Land north of 38-48 Old Station Road	5	Low-Medium
14	Meadow Gardens, land south of Beccles Cemetery	2-3	Medium-High
15	Beccles Cemetery	4	Medium
16	Rigbourne Hill Lane	4	Medium
17	Land south of Bramley Rise	4	Medium
18	Land south of Nicholson Drive	3	Medium
19	Land west of Oak Lane	4	Medium*
20	Outney Common	2	High
21	Land between Pilgrim's Way and Wingfield Street	5	Low





















22	Land West of St John's Road	5	Low
23	Birds Folly	2	High
24	New Reach River and Marsh	2	High
25	Millennium Green	4	Medium
26	New Reach	2	High
27	Fairview Farm, Norwich Road	3	Medium
28	Southwold Denes	2	High
29	Land north of Pickwick Drive	4	Low-Medium*
30	Land north of Union Lane	5	Low*

* Survey incomplete due to access issues

Key to Phase 1 Maps 2016 Surveys



Key to Phase 1 Maps 2017 Surveys

 <p>BosqMap Limited Website: www.bosqmap.co.uk</p>			<p>Extended Phase 1 habitat survey - key to habitats</p> <p>Contract no: Waveney wildlife audit 2017 Site: Waveney</p>		
	Broadleaved woodland - semi-natural		Dune heath		Running water
	Broadleaved woodland - plantation		Open dune		Dry ditch
	Mixed woodland - semi-natural		Bracken - continuous		Intact hedge - native species-rich
	Mixed woodland - plantation		Swamp		Hedge with trees - native species-rich
	Acid grassland - semi-improved		Standing water		Intact hedge - species-poor
	Neutral grassland - unimproved		Cultivated/disturbed land - arable		Wall
	Neutral grassland - semi-improved		Bare ground		Fence
	Improved grassland		Bare ground		Scrub - scattered
	Poor semi-improved grassland		Buildings		Broadleaved Parkland/scattered trees
	Marsh/marshy grassland				Coniferous Parkland/scattered trees
	Cultivated/disturbed land - amenity grassland				Bracken - scattered
	Other tall herb and fern - ruderal				

Site name: Corton Woods

Site ref: Lowestoft 8

Site status: County Wildlife Site

Grid ref: TM 54525 96633

Area: 7.23 hectares

Date: 8 May 2017

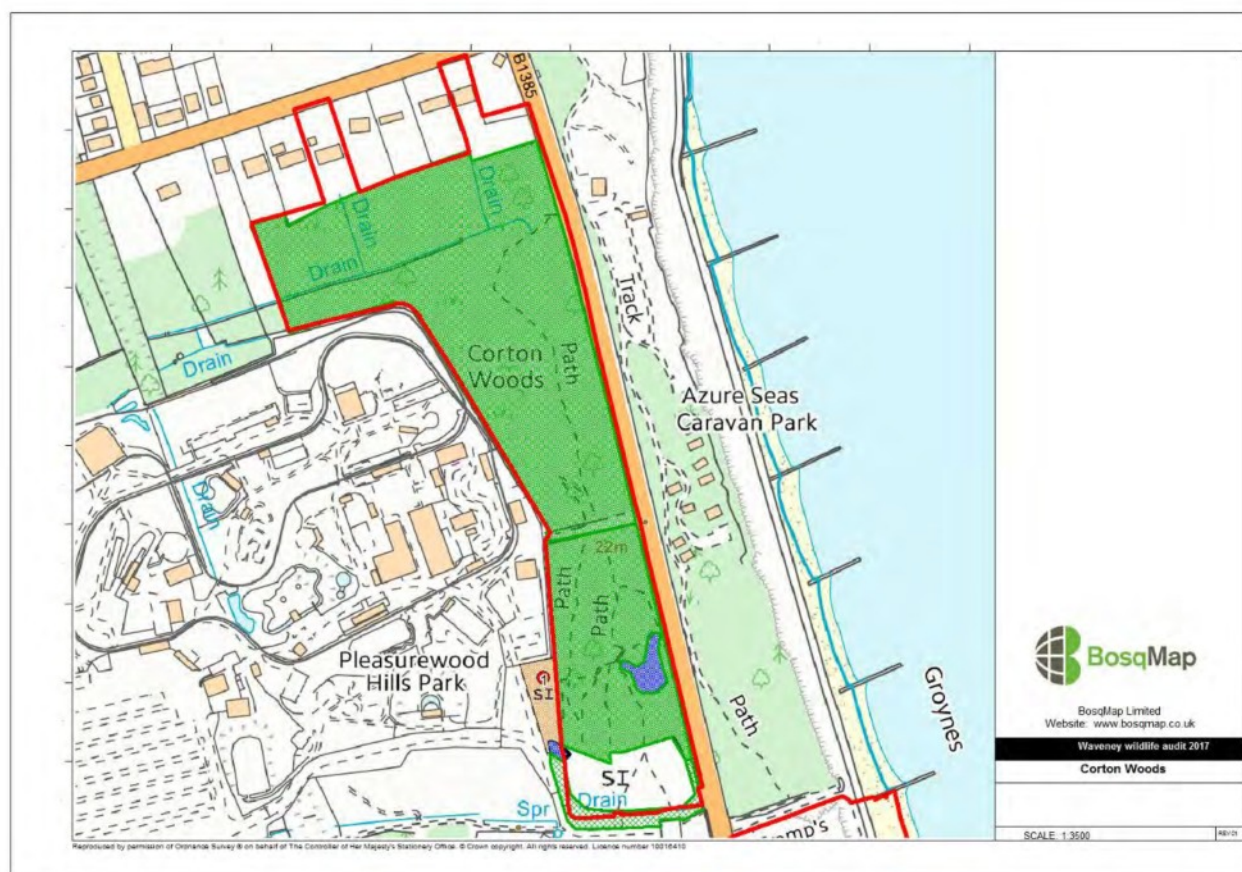
Recorder: J. Crighton & A. Looser

Weather conditions: 40% cloud, bright and sunny with a light breeze

Ranking: 2

Biodiversity value: High

Map:



Photos:



Grassland area to the south of the woodland



Sunny glades through the woodland



Pond in the east of the site



Meadow with orchids south-west of the site (Target Note 1)

Habitat type(s):

Neutral unimproved grassland, broad-leaved semi-natural woodland, ponds

Subsidiary habitats:

Standing and fallen deadwood, ivy covered trees, woodpecker holes

Site description:

Corton Woods lies adjacent to Corton Road and surrounds the eastern boundary of Pleasurewood Hills Theme Park. As well as being a County Wildlife Site, it is also a Local Nature Reserve managed by local volunteers of Corton Woods Project and it is widely used by the public. There is a car park to the south with access to a heavily rabbit grazed grassland meadow before reaching the mature secondary woodland. The woodland itself has a number of entrance points along Corton Road and contains a diverse mix of species. There are two ponds associated with the woodland, a large one on the eastern side and a small pond on the south-western corner of the woodland. The small one was dry at the time of survey. A number of ditches intersect the woodland, some of which were dry at the time of survey.

Evidence of recent management is present in the form of a cleared area, presumably for the creation of a glade in the west of the site and also a recently coppiced section.

A small triangular shaped meadow lies to the west of the woodland, adjacent to Pleasurewood Hills. This had large numbers of orchids but outside the County Wildlife Site boundary.

The site boundary appeared to include two houses and gardens to the north of the woodland but these were not surveyed.

Protected species seen or known:

-

Protected species potential:

Bats

Priority habitats present:

Ponds

Priority species seen or known:

Cuckoo (2014)

Yellowhammer, bullfinch (2010)

Cinnabar moth (2010)

Dunnock (2009)

Song thrush (2007)

Priority species potential:

-

Connectivity:

This site has excellent connectivity as it forms part of a large block of coastal habitat with Gunton

Warren and North Denes to the south, extending all the way to Ness Point and Corton Cliffs to the east. The woodland also extends around Pleasurewood Hills theme park, so also connects with Gunton Meadow.

Structural diversity:

This site has an excellent diversity of habitats, from ponds and well grazed grassland to scrub and woodland.

Flora:

The woodland contained a mix of oak, sycamore, silver birch, apple, holm oak, yew, horse chestnut, lime, hornbeam and Scot's pine. A large stand of beech is present near the north of the site, which offers sunny glades within the woodland. The understorey was mostly holly and hazel but also contained a diverse mix of elm, elder, dog rose, wayfaring tree, hawthorn, spindle, rowan, blackthorn, redcurrant and some gorse. Many of the trees were ivy covered.

The ground flora in the woodland contained a number of ferns, including bracken, broad buckler fern, hart's tongue fern and scaly male fern as well as other woodland species such as bluebell, lords-and-ladies, herb Robert, false brome, creeping Jenny, wood sedge, violets, hedge woundwort and wood sorrel.

On the south-western corner of the woodland there is a seasonally dry pond, which was dry at the time of survey. This pond contained hard rush, great willowherb and yellow flag iris, with alder trees around the edge.

Another pond is located in the east of the site. This pond appeared deeper and was water-filled during the survey. It is unlikely that it ever dries completely. The vegetation was sparse but included water lily, yellow flag iris and duckweed. Around the edges, there was lesser celandine, wavy bittercress and pendulous sedge.

West of the woodland, adjacent to Pleasurewood Hills, is a less disturbed meadow which contains some more interesting species such as common spotted orchid, twayblade and yellow rattle; which is parasitic on grass roots. This ground is likely to be less free-draining, noted by the presence of common fleabane, field horsetail and marsh thistle. This pond and meadow lie just outside the boundary of the County Wildlife Site (Target Note 1).

In the furthest south section of this site, there is an area of grassland which has been heavily rabbit grazed. It has patches of bare ground with ground ivy, ribwort plantain, common ragwort, swine-cress, daisy, dove's-foot crane's-bill, common mouse-ear, common storksbill, lesser trefoil, early forget-me-not, hairy bitter-cress, autumn hawkbit and common cat's-ear, and toward the edges and where the sward is slightly longer, creeping thistle, willowherb sp., common vetch, glaucous sedge, common knapweed, white campion, common mallow, common fleabane and burdock are present. This meadow is surrounded on the southern, eastern and western border by bramble and elm scrub with some aspen trees and a ground flora of alexanders, nettle, hogweed, cleavers and great willowherb.

Suffolk rare plants recorded for Corton Woods include common cudweed, wood sorrel, heath

speedwell, sanicle and hard fern (2011), small cudweed and mossy stonecrop (2002).

Avifauna:

The mature woodland provides excellent habitat for resident and migrant bird species. This is an important site for migrants in particular due to its proximity to the coast and the shelter it offers migrating birds. During the survey, several common bird species were seen including great tit, blackbird and robin in the woodland. A moorhen was seen on the eastern pond. There were a number of large woodpecker holes on a tree near the centre of the woodland.

Invertebrates:

The diversity of habitats on site, including a substantial number of native trees, should provide a high invertebrate biomass and diversity; both terrestrial and aquatic. This mix of habitats provide shelter and variable microclimates. The fallen and standing deadwood is also likely to support a good range of invertebrates.

Herpetofauna:

There is potential for adder and common lizard in the south of the site with scrubby edges and grassland providing good foraging, refuge and hibernation opportunities. It is unlikely that great crested newts would be present in either of the ponds, as one of them is too dry and the other attracted wildfowl and had very little emergent vegetation, required by newts for egg laying. But it is likely that the eastern pond could support more common amphibian species such as frogs and toads. The woodland could provide good hibernation opportunities for toads.

Mammals:

Several of the mature trees on site had cracks and crevices that could support a bat roost. In addition, the ponds will support a lot of insect life so there are likely to be bats foraging over this area. Local volunteers have also erected bat boxes in the area.

Rabbit activity in the form of burrows, scrapes and grazed lawns were evident in the south of the site, as were molehills, and other common species of mammal such as fox, grey squirrel and muntjac deer are likely to forage on this site. Brown rats, mice, voles and shrews are also likely to be present. A squirrel dray was noted in the woodland.

No evidence of badger was discovered during the survey and the high levels of public disturbance within the woodland suggest it is unlikely that badgers are present.

Comments and recommendations:

The pond located within the woodland would benefit from further tree removal around the margins, particularly on the southern side, to increase the light levels reaching the water. This would improve the water quality and encourage more emergent vegetation around the margins of the pond.

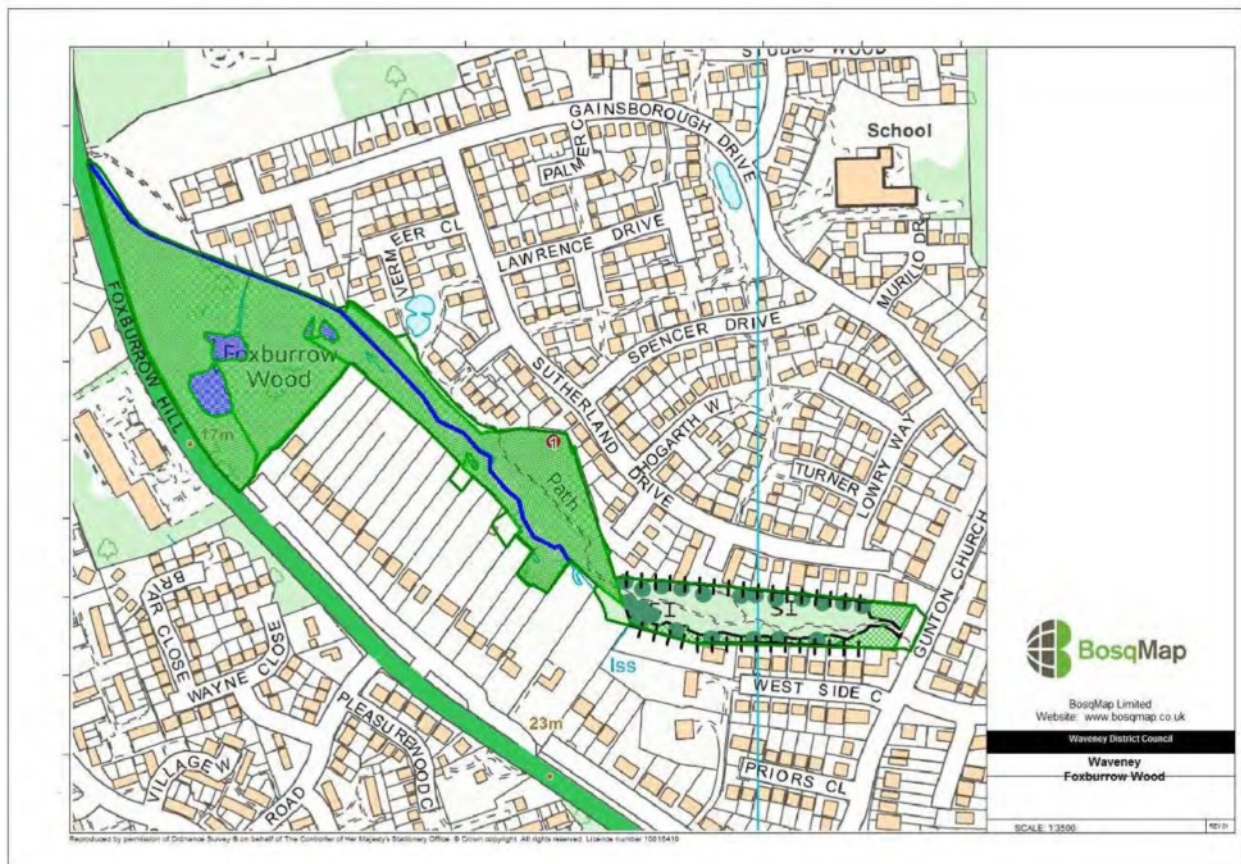
Two plants, few-flowered garlic and rhododendron have been recorded from this site. These are both listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any species listed on Schedule 9. The presence of these plants should be monitored and their spread controlled.

The meadow west of the woodland, adjacent to Centre Parcs, contained large numbers of orchids. This appears to lie outside the current County Wildlife Site boundary. In addition, the current CWS boundary appears to include two sections in the north which appear to have been developed. It is therefore recommended that the County Wildlife Site panel amend the Corton Wood site boundaries to include the meadow and remove the two northern sections.

Site name **Foxburrow Wood**

Site Ref: Waveney 56
Site status: County Wildlife Site (CWS)
Grid ref: TM 5377 9553
Area: 4.88 hectares
Date: 13 June 2016
Recorder: J Crighton and A Looser
Weather conditions: 100% cloud cover, no wind with moderate rain
Ranking: 2
Biodiversity value: High

Map:



Photos:



Photo 1. View along woodland ride



Photo 2. One of the ponds within the woodland



Photo 3. Mature beech tree with bat potential (Target Note 1)



Photo 4. Grassland area looking west

Habitat type(s):

Semi natural broad-leaved woodland, poor semi-improved grassland, ponds

Subsidiary habitats:

Fallen deadwood

Site description:

Foxburrow Wood is a narrow stretch of ancient broad-leaved woodland on sandy soil. It has a boundary along the busy Foxburrow Hill road. The rest of the site is surrounded by residential housing, including Sutherland Drive and Gunton Church Lane. This site is included within the Ancient Woodland Inventory, apart from the narrow strip at the far eastern end. Part of the wood is protected by a Tree Preservation Order.

There are a number of shaded ponds and ditches within the woodland and a small open area of semi improved neutral grassland to the south east of the site, near the Gunton Church Lane entrance.

Protected species seen or known:

Common Pipistrelle bats recorded in neighboring gardens in 2011.

Protected species potential:

Great crested newt

Other bat species

Priority habitats present:

Broad-leaved semi-natural woodland

Ponds

Priority species seen or known:

West European hedgehog recorded in neighbouring streets in 2014.

Priority species potential:

Water shrew (Suffolk Character Species)

Common toad

Connectivity:

Connectivity at Foxburrow Wood is very good, although the busy A12 (Foxburrow Hill) lies to the west and a large housing estate to the east, there is extensive green space with scrub, scattered trees and hedges to the north, which extend east all the way to the coast.

Structural diversity:

The structural diversity is very good. There are a few ponds and a ditch surrounded by good understorey, sub-canopy and canopy giving a good range of habitats. The rough grassland in the south east also provides another habitat.

Flora:

This site is mainly broad-leaved woodland with similar species throughout. English oak (*Quercus robur*), beech (*Fagus sylvatica*) and sweet chestnut (*Castanea sativa*) are dominant, there is a good understorey of holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), spindle (*Euonymus europaeus*), elder (*Sambucus nigra*) and elm (*Ulmus procera*). On the north eastern edge, near Sutherland Drive, there is a large mature beech tree which has excellent bat potential (Target note). The ground flora contains many ancient woodland indicator species, including bluebell (*Hyacinthoides non-scripta*), dog's mercury (*Mercurialis perennis*), pignut

(*Conopodium majus*), sanicle (*Sanicula europaea*), wood sorrel (*Oxalis acetosella*), early purple orchid (*Orchis mascula*) yellow pimpernel (*Lysimachia nemorum*) and wood anemone (*Anemone nemorosa*).

Around the pond and ditch areas, there are stands of pendulous sedge (*Carex pendulosa*) with some wood millet (*Mileum effusum*), wood speedwell (*Veronica montana*) and common twayblade (*Neottia ovata*) which are all also ancient woodland indicators. There is also some gipyswort (*Lycopus europaeus*) and remote sedge (*Carex remota*).

The area of semi-improved neutral grassland in the south includes black bent, red fescue, meadow oat-grass and meadow foxtail. There are also some herbs, such as hairy tare (*Vicia hirusita*), tansy (*Tanacetum vulgare*), common and bush vetch (*Vicia sativa* and *V. sepium*) and common sorrel (*Rumex acetosa*). There are some scattered trees and scrub surrounding this area, including turkey oak (*Quercus cerris*), broom (*Cytisus scoparius*), bramble (*Rubus fruticosus* agg.) and lilac (*Syringa vulgaris*).

A full botanical species list for each area can be found in the appendices.

Avifauna:

Wood pigeon, blackbird, jay, moorhen, wren and a mallard with ducklings noted on site. This is a good nesting site for common garden birds.

Invertebrates:

The substantial number of native trees, along with fallen deadwood and piles of coppiced wood, should provide a high terrestrial invertebrate biomass and diversity. Aquatic invertebrates are likely to be abundant in the pond and ditches. Wasps, bees, spiders, soldier beetles, long horn moth and a horse hair worm were noted on site. This site would be a good area for woodland butterflies, with the hawthorn and bramble providing good food sources.

Herpetofauna:

The ponds and drain within the woodland give potential habitat for smooth newt, frogs and toads.

Mammals:

It is likely that bats roost and forage in this woodland. There is also potential for other common mammals including grey squirrel, badger, fox, muntjac deer, mice, voles and shrews. There is also potential for water shrew.

Comments and recommendations:

This site is particularly notable for its ancient woodland ground flora. Management of the site should seek to encourage and protect this through sensitive coppicing on rotation. Some of the ponds are quite shaded and these would benefit from coppicing on the southern margin to allow more light to reach the water surface.

The meadow area at the Gunton Church lane end would benefit from an annual cut and removal of trimmings in July/August, as this would prevent scrub encroachment, improve the botanical diversity and help keep the paths open.

Appendix 1

Woodland

ash	<i>Fraxinus excelsior</i>
beech	<i>Fagus sylvatica</i>
blackthorn	<i>Prunus spinosa</i>
bracken	<i>Pteridium aquilinum</i>
bramble	<i>Rubus fruticosus agg.</i>
butcher's broom	<i>Ruscus aculeatus</i>
dog rose	<i>Rosa canina</i>
dogwood	<i>Cornus sanguinea</i>
elder	<i>Sambucus nigra</i>
elm	<i>Ulmus procera</i>
hawthorn	<i>Crataegus monogyna</i>
hazel	<i>Corylus avellana</i>
holly	<i>Ilex aquifolium</i>
honeysuckle	<i>Lonicera periclymenum</i>
hornbeam	<i>Carpinus betulus</i>
ivy	<i>Hedera helix</i>
laurel	<i>Laurus nobilis</i>
maple	<i>Acer sp.</i>
plum sp.	<i>Prunus sp.</i>
rowan	<i>Sorbus aucuparia</i>
spindle	<i>Euonymus europaeus</i>
sweet chestnut	<i>Castanea sativa</i>
sycamore	<i>Acer pseudoplatanus</i>
wild raspberry	<i>Fructus rubi</i>
annual meadow-grass	<i>Poa annua</i>
false brome	<i>Brachypodium sylvaticum</i>
rough meadow-grass	<i>Poa trivialis</i>
wood meadow-grass	<i>Poa nemoralis</i>
pendulous sedge	<i>Carex pendulosa</i>
Alexanders	<i>Smyrniolus olusatrum</i>
black horehound	<i>Ballota nigra</i>
bluebell	<i>Hyacinthoides non-scripta</i>
broad-leaved dock	<i>Rumex obtusifolius</i>
bugle	<i>Ajuga reptans</i>
cleavers	<i>Galium aparine</i>
clustered dock	<i>Rumex conglomeratus</i>
common chickweed	<i>Stellaria media</i>
common nettle	<i>Urtica dioica</i>
common stork's-bill	<i>Erodium cicutarium</i>
creeping buttercup	<i>Ranunculus repens</i>
dog's mercury	<i>Mercurialis perennis</i>
dove's-foot crane's-bill	<i>Geranium molle</i>
early purple orchid	<i>Orchis mascula</i>

enchanters nightshade
garlic mustard
greater plantain
greater stitchwort
green alkanet
hart's tongue fern
hogweed
hollyhock
lords-and-ladies
pignut
primrose
red campion
sanicle
spear thistle
welted thistle
white deadnettle
wood anemone
wood avens
wood sorrel
yellow pimpernel

Circaea lutetiana
Alliaria petiolata
Plantago major
Stellaria holostea
Pentaglottis sempervirens
Asplenium scolopendrium
Heracleum sphondylium
Alcea sp.
Arum maculatum
Conopodium majus
Primula vulgaris
Silene dioica
Sanicula europaea
Cirsium vulgare
Carduus crispus
Lamium album
Anemone nemorosa
Geum urbanum
Oxalis acetosella
Lysimachia nemorum

Open grassland area

bramble
broom
English oak
Leyland cypress
lilac
snowberry
turkey oak
willow
black bent
cock's foot
meadow foxtail
meadow oat-grass
perennial rye-grass
red fescue
rough meadow-grass
smaller cat's tail
smooth meadow-grass
Yorkshire fog
bush vetch
common mouse-ear
common sorrel
common vetch
cow parsley
creeping thistle

Rubus fruticosus agg.
Cytisus scoparius
Quercus robur
Cupressus x leylandii
Syringa vulgaris
Symphoricarpos albus
Quercus cerris
Salix spp.
Agrostis gigantea
Dactylis glomerata
Alopecurus pratensis
Avenula pratensis
Lolium perenne
Festuca rubra
Poa trivialis
Phleum bertolonii
Poa pratensis
Holcus lanatus
Vicia sepium
Cerastium fontanum
Rumex acetosa
Vicia sativa
Anthriscus sylvestris
Cirsium arvense

cut-leaved crane's-bill
ground ivy
hairy tare
mugwort
rosebay willowherb
tansy
white clover
wild radish

Geranium dissectum
Glechoma hederacea
Vicia hirusita
Artemisia vulgaris
Chamerion angustifolium
Tanacetum vulgare
Trifolium repens
Raphanus raphanistrum ssp.

Around woodland ponds

creeping bent
pendulous sedge
remote sedge
wood millet
common twayblade
gipsywort
lesser duckweed
water mint
wood speedwell
yellow flag iris

Agrostis stolonifera
Carex pendula
Carex remota
Mileum effusum
Neottia ovata
Lycopus europaeus
Lemna minor
Mentha aquatica
Veronica montana
Iris pseudacorus

Site name: Gunton Meadow

Site ref: Lowestoft 4
Site status: County Wildlife Site
Grid ref: TM 53787 96098
Area: 1.88 hectares
Date: 8th May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Overcast, drizzle with a cold wind
Ranking: 2
Biodiversity value: High

Map:



Photos:



View east across Gunton Meadow



Green-winged orchid

Habitat type(s):

Dense continuous scrub, unimproved neutral grassland

Subsidiary habitats:

Mature trees

Site description:

Gunton Meadow is an area of flower-rich grassland and, as one of the scarcest habitats in Suffolk, it is designated as a County Wildlife Site. It is situated on a hill that slopes down toward Gunton Lake. A superstore lies to the west and the grounds and driveway to Pleasurewood Hills Theme Park lie to the east and north, respectively.

The meadow is surrounded by dense scrub, and there are also a few patches of scattered scrub in the central part of the site. The meadow itself is more species-rich in the west, where the sward is shorter. The most notable species found were green-winged orchid, which is near threatened at a National level and is still declining in Suffolk (Target Note 1), adder's tongue fern, common twayblade and common spotted orchid.

There is a roundabout to the south-west of the main meadow which is part of the County Wildlife Site, although this has lower species diversity.

Protected species seen or known:

Grass snake record (2010)

Great crested newt eggs recorded (2007, 2008) in ponds to south and east

Protected species potential:

Common lizard, slow worm, great crested newt

Priority habitats present:

Lowland hay meadow

Priority species seen or known:

Bullfinch (2011)

Priority species potential:

Toad, hedgehog, song thrush, dunnock

Connectivity:

Connectivity is excellent with the north of the site lying adjacent to a watercourse, providing a wildlife corridor which extends out to the coast. This site is also part of a network of other sites including Gunton Meadow south and beyond that to Gunton Wood and Foxburrow Wood to the south.

Structural diversity:

There is excellent structural diversity with gradation of short grassland into longer edges and dense scrub.

Flora:

The scrub is a diverse mix of hawthorn, hazel, field maple, hornbeam, oak, sycamore, blackthorn, cherry and dog rose with dense bramble patches. The understorey contained a typical tall ruderal mix of alexanders, common nettle, creeping thistle and cleavers. There were also large stands of lords-and-ladies, primrose and marsh thistle around the edges.

The grassland was species-rich with common knapweed showing dominance. There were a number of plants present which indicate that the grassland is undisturbed and typical of damp grassland on boulder clay. These include green-winged orchid, common spotted orchid and adder's tongue fern. In addition to these species, a good variety of other plants were also found, including field woodrush, creeping buttercup, creeping cinquefoil, ribwort plantain, common sorrel, mouse-ear hawkweed, dandelion, yarrow, ground ivy, agrimony, common vetch, meadow vetchling, bird's-foot trefoil, sweet vernal grass, selfheal, meadow buttercup, tare sp., hogweed, greater knapweed, white clover, germander speedwell, violet sp., bulbous buttercup, ox-eye daisy, St John's wort sp., bugle, ragwort, broad-leaved dock and common cat's ear. The presence of field horsetail, common fleabane, soft rush and cuckoo flower suggest the meadow is relatively wet. Quaking grass has been recorded in recent years but was not recorded during this survey.

A recently disturbed area was found in the north of the site, near the boundary, which was much less diverse and contained bittercress, green alkanet and lesser celandine.

The roundabout, which is also a part of the County Wildlife Site, was less species-rich than the meadow. Species recorded include Yorkshire fog, sweet vernal grass, red clover, ox-eye daisy, bulbous buttercup, dandelion, creeping cinquefoil, white clover, bird's-foot trefoil, common ragwort, common knapweed, common cat's-ear, common mouse ear, thyme-leaved speedwell, daisy, and germander speedwell. It may exhibit other species at different times of the year.

Avifauna:

The dense scrub on this site could support a large range of bird species, including summer migrants such as whitethroat. A chiffchaff was noted singing on site and a pair of oystercatchers flew overhead, other birds were expected to be present but due to sub-optimal weather conditions, were not observed.

Invertebrates:

This site has an excellent range of habitats to support this group. Sunny glades are likely to support common butterfly species, although none were noted at the time of survey due to sub-optimal weather conditions.

Herpetofauna:

Although there are no water bodies on site the presence of ponds adjacent to the site and the presence of large numbers of great crested newt records in the area, mean it is highly likely that great crested newts will be occupying the site during their terrestrial phases later in the year. The meadow and scrub areas provide excellent terrestrial habitat and the scrub also provides good hibernation opportunities for great crested newts and other amphibian

species. Other species of amphibian such as smooth newt, toad and frog are also highly likely to be present.

The overall structure and position of the site is such that it is highly likely to support grass snake, slow worm and common lizard with good scrub cover and basking areas.

Mammals:

Bats are highly likely to forage over this site.

Throughout the site there was evidence of rabbits in the form of scrapes, burrows and droppings, and there was a heavy presence of molehills.

The site is also likely to support common mammals such as fox, muntjac deer, mice, voles and shrews. No evidence of badger was noted during the survey.

Comments and recommendations:

This site is of high wildlife value. The current management regime of cutting and removal of clippings should be continued to limit nutrient inputs and support a greater diversity of plant species.

It is recommended that some small areas of grass around the edges are left uncut each year, to act as a refuge for insects, small mammals, amphibians and reptiles. These areas should then be cut the following summer to avoid the development of scrub. As a precaution to help avoid any impacts on reptiles and amphibians, which may be present on site, we further recommend that cutting of these taller grass areas should be a two-stage process, with a high cut immediately followed by a lower cut, to give animals time to move out of the way.

Rotational scrub management should be continued around the edges of the existing scrub to help maintain the open grassland. This should be carried out outside bird nesting season (March to August inclusive).

Consideration should be given to removing the roundabout from the County Wildlife Site boundary due to its very small size, isolation and lower botanical value. Whether the boundary is amended or not is the decision of the County Wildlife Site panel.

Site name: Gunton Pond

Site ref: Lowestoft

Site status: County Wildlife Site

Grid ref: TM 53960 96104

Area: 0.05 hectares

Date: 8th May 2017

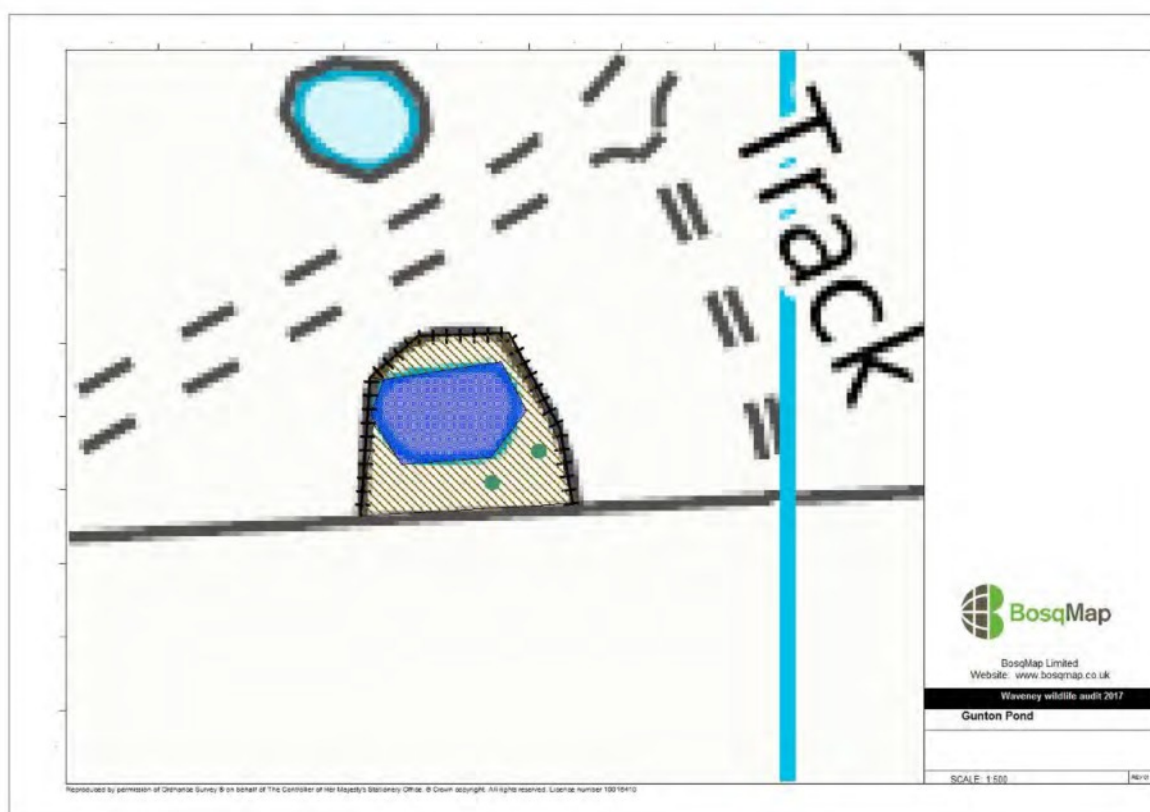
Recorder: J. Crighton & A. Looser

Weather conditions: 90% cloud with bright sunny intervals

Ranking: 2

Biodiversity value: High

Map:



Photos:



Gunton pond, looking south



Water violet

Habitat type(s):

Pond

Subsidiary habitats:

Mature trees, tall ruderal

Site description:

Gunton Pond is located to the south of the entrance driveway to Pleasurewood Hills Theme Park, within the overflow carpark. It is classed as a County Wildlife Site due to the presence of water violet and fine-leaved water dropwort. It is very species-rich for its small size, and is surrounded by grasses, rushes, willowherb and mature trees. The whole pond is fenced.

Protected species seen or known:

Great crested newt eggs found (2008), and eggs found during survey visit.

Protected species potential:

Grass snake

Priority habitats present:

Pond

Priority species seen or known:

-

Priority species potential:

Toad, water shrew

Connectivity:

Connectivity is moderate. Although the pond lies within short mown grassland, immediately to the south, there is a hedgerow with mature trees backing on to a tussocky grassland meadow.

Structural diversity:

The structural diversity of this pond is good, despite its small size, with a healthy emergent and submerged vegetation population, and long grasses with scrub and trees around the pond.

Flora:

This pond supports a good diversity of water plants, including water plantain, water mint, water lily, broad-leaved pondweed, yellow flag iris, water dock and fool's water cress with a few notable species, fine-leaved water dropwort and water violet, which indicates a clean pond with little or no nutrient loading. Around the edges, cuckoo flower, great willowherb, hard rush, Yorkshire fog and bramble give good cover for any amphibians using the pond, and mature oak and ash trees provide minimal shading.

Avifauna:

This pond is too small to attract many waterfowl. A single moorhen was seen during the survey.

Invertebrates:

Although small, this site has a good range of habitats to support a good diversity of both aquatic and terrestrial invertebrates.

Herpetofauna:

This pond provides excellent habitat for amphibians, a frog and great crested newt eggs were noted during the survey. It is also likely that smooth newts, toads and grass snakes may use the pond due to its connectivity to the hedgerow and adjacent grassland.

Mammals:

Mice, voles and shrews are likely to be present in the rough grassland areas and the hedgerow adjacent to the site. The pond provides excellent habitat for water shrew.

Comments and recommendations:

This pond has very high wildlife value, particularly due to the mature hedgerow and rough grassland field to the south.

The pond currently experiences high levels of sunlight which supports the wide diversity of aquatic plants. Future shade levels should be monitored and if this is increasing, bankside trees should be coppiced, particularly if on the southern boundary.

Site name: Gunton Warren

Site ref: Lowestoft 5

Site status: County Wildlife Site

Grid ref: TM 54904 95736

Area: 25.47 hectares

Date: 10 April 2017

Recorder: J. Crighton & A. Looser

Weather conditions: 50% cloud cover, sunny with moderate cold wind

Ranking: 2

Biodiversity value: High

Map:



Photos:



View looking north between the dunes and the sloping cliff



Gorse and bracken heath



Fire damaged area in background



Shingle beach looking south



Areas which have been fenced off to protect and promote shingle flora

Habitat type(s):

Vegetated shingle, sand dunes, sloping sand cliffs, lowland heath, dense continuous scrub, woodland, acid grassland, bracken

Subsidiary habitats:

Wet springs

Site description:

Gunton Warren is a County Wildlife Site and Local Nature Reserve owned by Waveney District Council and managed by Suffolk Wildlife Trust. It lies north of Links Road and North Denes. Corton Road runs parallel to the western boundary of the site for its entire length. There is a mosaic of habitats, many of which are Priority habitats with an important ecotone from marine to semi-natural terrestrial habitat.

The area exhibits a wide range of coastal vegetation communities including scrub and bracken, heath and acid grassland, vegetated sand dunes and shingle. There is also a small amount of holm-oak dominated woodland. This habitat mosaic supports migrant birds, reptiles and invertebrates. It is widely used by residents and visitors, which can result in pressure on some of the more fragile habitats. A number of sea-defence groynes help slow erosion of the beach and promote stability in the dunes. There are several areas which have been fenced off to allow regeneration of shingle flora, which appears to be successful in one area in particular.

Protected species seen or known:

Common lizard, slow worm, grass snake (2006- 2017)
Adder (2000-2016)
Leathery turtle 100yds off headland (2005)
Common porpoise found dead (2014)
Common seal (1996)

Protected species potential:

-

Priority habitats present:

Coastal sand dunes, coastal vegetated shingle, lowland heath, maritime cliffs and slopes, acid grassland

Priority species seen or known:

Wall & small heath butterfly (2014)
Antlion (2014)
Linnet, yellowhammer and song thrush (2007)
White letter hairstreak (2005)

Priority species potential:

Hedgehog
Whitethroat

Connectivity:

This site has excellent connectivity as it forms part of a large block of coastal habitat with Corton Woods and Corton Cliffs to the north and North Denes to the south, extending all the way to Ness Point.

Structural diversity:

This site has very good structural diversity, with sand and shingle progressing into dunes, heath, scrub and woodland, offering habitat for a number of taxonomic groups.

Flora:

Acid grassland is present across the site with the largest patch in the south, surrounded by scrub and mature trees, near Links Road and the car park. It is intensively rabbit grazed to a short turf and contains sheep's fescue, lady's bedstraw, sand spurrey, hairy bittercress, sheep's sorrel, common cat's ear, autumn hawkbit, spring beauty, mossy stonecrop and swine cress.

In the north of the site there is an area of cliff top grassland habitat which although formerly more bracken dominated is now more heath-like with field woodrush, small patches of heather (mainly ling but also a small amount of bell heather), sheep's sorrel, fescue sp., and bedstraw sp. This area has been subjected to management in the last three years to try to restore the heather heathland. Four large areas have been scraped off and the vegetative litter removed, followed by Asulox spraying of bracken regrowth. This is building on the smaller-scale habitat work undertaken previously by volunteers.

The dunes are mostly comprised of marram grass with sea couch grass, sea mouse-ear, buck's-horn plantain, swine cress, autumn hawkbit, bird's-foot trefoil and sea sandwort.

The cliff slopes vary are being well vegetated with bracken, gorse and bramble and other areas are more open with patches of acid grassland and heather, or dominated by ruderal plants such as alexanders and nettles. Patches of sea buckthorn are present throughout the north of the site. A large area affected by a recent fire has been subsequently scraped back to encourage acid grassland to regenerate.

The two woodland areas are primarily holm oak and sycamore with some elm, white poplar and field maple. The ground flora is relatively sparse with only the occasional lesser celandine and lords-and-ladies. Some management has been undertaken in these areas to improve woodland structure. There are also patches of dense bramble scrub with alexanders and bracken.

In the south of the site there are natural springs, one was noted at the northern edge of the woodland and another within a sandy clearing.

The shingle flora (Target Note 2) was diverse but relatively sparse, with sea sandwort being the most common species. At the northern end, there were a few sea kale plants, and occasional sea pea, sea holly and yellow horned poppy. Two areas have been fenced off to encourage regeneration of shingle flora.

In the south of the site, north of the woodland area, the habitat grades into scrub including coppiced ash trees, gorse with bracken and honeysuckle. There is a stand of Japanese knotweed growing in this area (Target Note 1) which has been subject to intensive herbicide treatment during the last three years. The stems have been injected by a contractor and there has been also root removal. Some additional stems have also been noted on the cliff face and these are also being treated.

Avifauna:

Due to the high levels of visitor pressure, only common birds breed on site. However, this is an important site for migratory birds, as it is an area of semi-natural habitat along a heavily built-up coastline and is a valuable first landfall. The scrub and woodland will also attract birds moving along the coast. Some rare species have been recorded here such as dartford, icterine and yellow-browed warblers. Linnets and wheatears have also been recorded.

Invertebrates:

The range of habitats provides good feeding, over-wintering and basking opportunities for a wide range of invertebrate species. This includes good portions of fallen deadwood within the woodland and bare ground patches within the heath and cliff face, which could attract some notable or scarce species. Organic debris washed up along the strandline is also likely to support a range of invertebrates. Buff-tailed bumble bee, small white butterfly and bee fly were seen on site during the survey. The site may be good for ground nesting bees and wasps (aculeate hymenoptera) and this group includes a number of rare species.

Herpetofauna:

The scrubby heathland offers basking, refuge and hibernation opportunities and the site has locally important populations of common lizard, with also slow worm and occasionally grass snake being recorded. Adders are known to be present on the site, but numbers have been reducing and there are no definite sightings for at least a year. Reptiles are monitored on site using artificial refugia 'tins'.

The natural springs do not appear to be large enough to support breeding amphibians, but if there is sufficient standing water in spring then smooth newts, frogs and toads may be present.

Mammals:

There are a number of disused "pill-boxes" along the length of Gunton Warren, some of which are heavily used by the public, but the more inaccessible buildings could provide potential roosting sites for bats.

The site offers foraging and refuge opportunities for small mammals such as mice, voles and shrews and also muntjac and roe deer. Evidence of moles and rabbits were noted on site during the survey, especially on the patch of acid grassland at the southern end of the site.

Comments and recommendations:

This site is very important as a major contributor to the mosaic of open spaces that interlink in this area. It is particularly significant in that it contains a range of maritime Priority habitats which grade from one to another as an ecotone.

There are a number of important and scarce species known to be present including sea-pea, sea-holly, yellow horned poppy associated with the shingle.

There are a number of invasive plant species on site. The Japanese knotweed issue is discussed above, but there is also Himalayan balsam growing close to the area where the Japanese knotweed is being treated and this is being pulled up by hand. There is ongoing management work to remove rhododendron and bamboo. Japanese rose is also present on site and the presence of this plant is being monitored to ensure that it is not spreading.

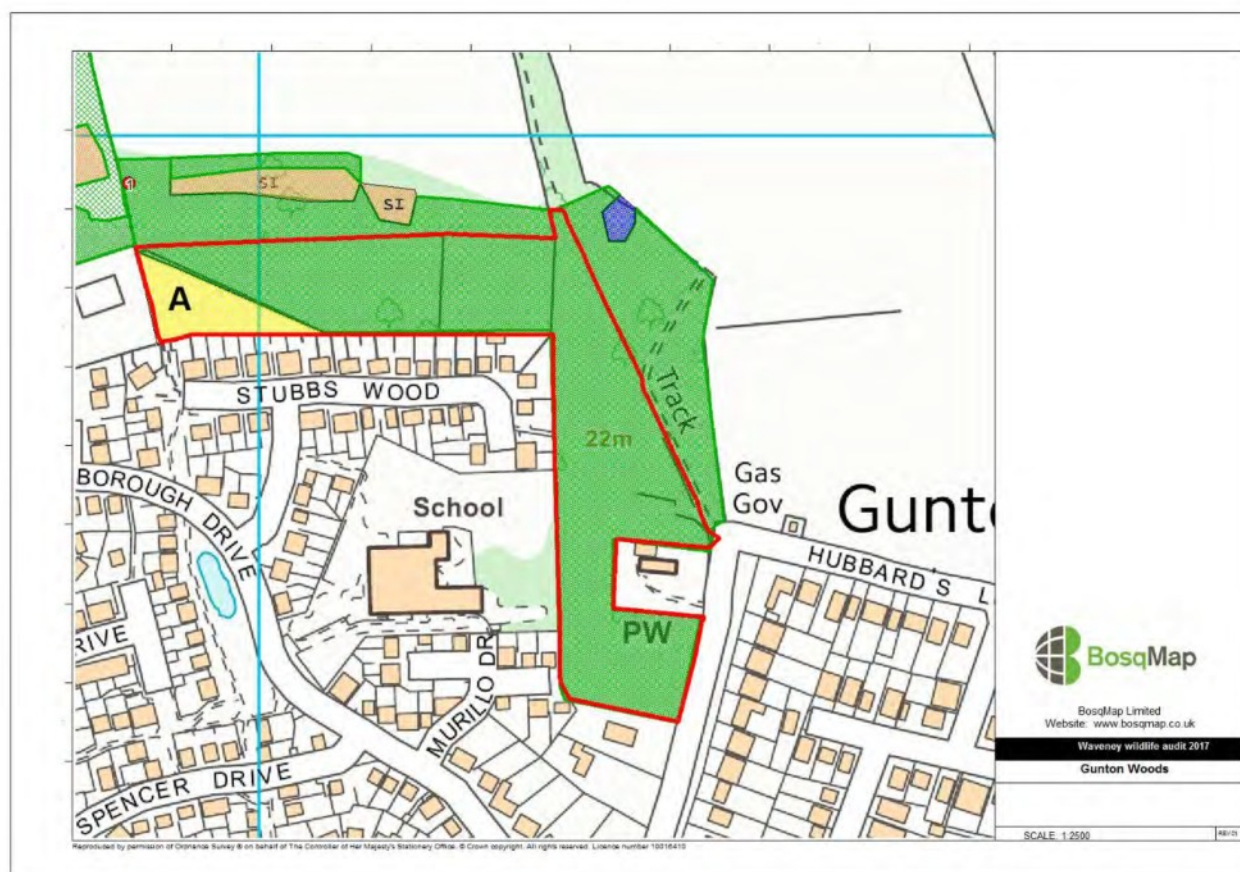
References:

Aylward, S. (2011) *Management Plan for Gunton Warren, Corton 2011-2021*. SWT Trading Ltd.

Site name: Gunton Woods

Site ref: Lowestoft 7
Site status: Local Nature Reserve
Grid ref: TM 54187 95868
Area: 2.77 hectares
Date: 8th May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 90% cloud, bright and warm
Ranking: 3
Biodiversity value: Medium

Map:



Photos:



Paths created through the centre of the woodland



Pond in the east, just outside the Local Nature Reserve



Wildflower meadow to the north of the Local Nature Reserve

Habitat type(s):

Broad-leaved semi-natural woodland, pond, neutral semi-improved grassland

Subsidiary habitats:

Standing and fallen deadwood

Site description:

Gunton Woods is an L-shaped section of woodland which lies north of Gainsborough Drive. It is run by Gunton Woodland Community Project (GWCP), which was founded in 1998. The Local Nature Reserve Section of the site is owned by Waveney Council, and the north-eastern section is under Church ownership. The survey boundary provided was just the Local Nature Reserve boundary, however as this boundary was not clear on the ground the whole site was surveyed. It used to be connected to the ancient woodlands of Corton and Foxburrow woods, but as it was formerly part of the grounds of the Manor House, it has been extensively re-planted in the past. It is, however, part of a network of Nature Reserves and County Wildlife Sites in the area, which are all connected, including Gunton Meadow and Gunton Pond.

There are a network of well managed paths and a circular route through the woodland, which have been spread with woodchip. The majority of the site is made up of species-rich woodland, but there are areas of wildflower meadow and a pond which lie just outside the Local Nature Reserve boundary.

There is a section which has been fenced off using a woven fence, which has been dedicated for

wildlife use only. It is inaccessible to the public.

Protected species seen or known:

Great crested newt (2007)

Grass snake, nearby in Gunton Meadow CWS (2010)

Protected species potential:

Grass snake, slow worm, adder (recorded to north in 2006),
bats

Priority habitats present:

Broad-leaved semi-natural woodland
Pond

Priority species seen or known:

Hedgehog (2014)

Song thrush (2010)

House sparrow, dunnock (2009)

Black poplar (2010)

Priority species potential:

Common toad

White letter hairstreak butterfly possible on the elms.

Connectivity:

Gunton Woods has excellent connectivity. There is a woodland corridor which directly connects to Hill Covert in the north which leads on to the green spaces surrounding Pleasurewood Hills Theme Park and it borders Gunton Meadow Nature Reserve in the west.

Structural diversity:

The site has very good structural diversity, with a thick understorey but sunny glades. The ground flora is rich and the addition of the meadow and pond give another dimension to the structural diversity and habitat availability.

Flora:

The woodland contains a diverse mix of mature trees and scrub including sycamore, oak, holm oak, field maple, horse chestnut, lime, beech, London plane, yew, holly, elm, hazel, spindle, elder, rowan, cherry, laurel, dogwood, snowberry, redcurrant and hawthorn. There is also a record of black poplar in the woodland, although this was not noted during the survey.

The majority of the ground flora is typical of woodland, including green alkanet, ground elder, cleavers, herb robert, lords-and-ladies, cow parsley, garlic mustard, nettle, lesser celandine, wood speedwell and chickweed, but there are a few more interesting herbs such as pignut (ancient woodland indicator), wood anemone, bluebell, wild garlic, hops and stinking iris.

Within the north-eastern corner of the woodland there is a pond which contained marsh marigold,

pendulous sedge, common reed and wavy bitter-cress. Water soldier was noted in the pond, but it is likely this has been deliberately introduced. This pond is outside the boundary of the Local Nature Reserve but is still an important feature of the woodland.

Also, just outside the Local Nature Reserve boundary to the north, there is an open sunny wildflower meadow with primrose, common spotted orchid, cowslip, ox-eye daisy, common knapweed, marsh thistle, common sorrel, yellow rattle and cuckoo flower. Many of these species have been planted by the GWCP members. Yorkshire fog was the dominant grass and other common herbs were present such as comfrey, meadow and creeping buttercup, common vetch, thyme-leaved speedwell, changing forget-me-not, spotted medick, cut-leaved crane's-bill, hogweed and herb robert. There were also some patches of Spanish bluebell. Towards the west of this area, there is some snowberry scrub and a spring-fed ditch separates Gunton Wood from Gunton Meadow. This ditch contained some Himalayan Balsam (Target Note 1), near a small bridge and entrance to Gunton Meadow. The ditch has a muddy substrate and is heavily shaded, some pendulous sedge and lesser celandine are present.

There is an area of amenity grassland in the far west of the site, which backs on to residential gardens and this contains typical species such as perennial rye grass, annual meadow grass, white clover, creeping cinquefoil, cut-leaved crane's-bill, ribwort plantain, daisy and dandelion. It is kept short-mown and there is some periwinkle which has escaped from the nearby gardens. Along the woodland edge there is thick bramble, alexanders and black horehound.

Suffolk rare plants recorded here include green winged orchid, daffodil (*Narcissus pseudonarcissus* variety) (2006) and wood sorrel (2010)

Avifauna:

The mature trees, scrub, ditch and sunny glades provide excellent habitat for both resident and migrant species. The GWCP members have erected bird boxes, which are in use by blue tits seen during the survey. Also seen or heard were blackbird, great tit, blackcap, jay, magpie, carrion crow, wood pigeon and robin.

Invertebrates:

The diversity of habitats on site, including a substantial number of native trees, should provide a high invertebrate biomass and diversity; both terrestrial and aquatic. The long grass in the wildflower meadow provides good habitat for spiders, grasshoppers and crickets, many of which were noted during the survey. This area has many sunny hotspots which also make it excellent habitat for common species of butterfly. The high number of elm trees could also provide habitat for the white letter hairstreak butterfly. Also noted on site were a number of hoverflies, red-tailed bumblebee and ladybirds.

Herpetofauna:

The wood and brash piles also provide good refuge and hibernation opportunities for reptiles and amphibians, including grass snake, slow worm, great crested and smooth newt. The woodland offers excellent terrestrial habitat and hibernation opportunities for common toad. Adders have been recorded in the area and could be present around the margins of the site. The woodland edge and rough grassland wildflower meadow offers good refuge, foraging and basking opportunities for reptiles.

Great crested newts have been recorded in the woodland previously, and the pond is likely to also support common frog and smooth newt.

Mammals:

Several of the mature trees on site had cracks and crevices that could support a bat roost. In addition, the pond will support a good variety of invertebrates so there are likely to be bats foraging over this area and the meadow areas beyond.

There are a number of hedgehog records in the immediate area and the combination of grassland, scrub and woodland provides good foraging opportunities for them, the bramble scrub provides excellent hibernation opportunities for them. Hedgehog faeces were noted in the short-mown amenity grassland in the west of the site.

A number of molehills were observed throughout the wildflower meadow.

Common species of mammal such as fox, rabbit, muntjac deer and grey squirrel are likely to utilise this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the scrubby woodland edges.

No evidence of badger was discovered during the survey and the high levels of public disturbance within the woodland suggest it is unlikely that badgers are present.

Comments and recommendations:

The pond would benefit from the cutting down of the sycamores around the western edge, this would allow more light penetration which would improve water quality and make this pond a more desirable breeding pond for species such as great crested newt.

Bat boxes could be erected in suitable locations throughout the woodland, especially near the meadow in the north as this is excellent foraging ground.

Non-native plant species: Volunteers regularly remove Spanish bluebells, which are non-native and hybridise with the native variety.

Non-native species listed under Schedule 9 of the Wildlife and Countryside Act (1981) as amended:

It is an offence to plant or otherwise cause to grow in the wild any plant that is included in Part II of Schedule 9.

There are old records of Japanese knotweed and rhododendron (1997), Japanese rose (2006), three-cornered garlic and dwarf spurge (2009) and yellow archangel (2011). Only Yellow archangel was noted during the survey, near the residential gardens and its spread should be monitored.

Himalayan Balsam was noted in the spring-fed ditch (Target Note 1). It is native to the Himalayas and is now a naturalised plant in the UK, found especially on riverbanks where it has become a problem weed. The seed pods open explosively when ripe and each plant can produce 1000s of seeds which are dispersed widely as the ripe seed pods shoot their seeds metres away. The plant tolerates low

light levels and also shades out other vegetation, gradually impoverishing habitats by killing off other plants. Once established along a river bank the seeds can be transported further afield by water. In dense infestations, strimming before they flower and set seed is the best method to remove them, but where there are only a few plants established it is possible to hand pull individual plants before flowering.

If Japanese knotweed is present on site it is highly invasive and cutting the plant or roots and disturbing surrounding soil could encourage its spread, so considerable care should be taken and expert advice sought to control its spread. In addition, where Japanese knotweed is present, it must be considered as 'Controlled Waste' under the Environmental Protection Act (EPA) (1990) and the Environmental Protection (Duty of Care) Regulations (1991). Any vegetation that is cut must either be burned on site or taken to a landfill site that is licensed to deal with it. The landfill site must be informed of the presence of Japanese knotweed in the material.

Site name: Land south of Gunton Meadow

Site ref: Lowestoft
Site status: County Wildlife Site and SWT Nature Reserve
Grid ref: TM 53842 95949
Area: 2.2 hectares
Date: 8th May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Overcast, drizzle with a cold wind
Ranking: 2
Biodiversity value: High

Map:



Photos:



Large, open pond at south-western corner of reserve



Much of the site includes dense scrub

Habitat type(s):

Dense continuous scrub, unimproved neutral grassland, ponds

Subsidiary habitats:

Brash piles, grass piles, mature trees

Site description:

The land south of Gunton Meadow is a County Wildlife Site and Suffolk Wildlife Trust Nature Reserve which lies south of Leisure Way. It was previously a species-rich meadow but now contains a scrub/grassland mosaic with a network of open grassy paths. There are two ponds on site, one in the north, which is quite shaded and one in the south-west, which is unshaded, has good emergent and submerged vegetation and has records of great crested newts.

Another section of the site lies on the western side of the access road from a petrol station. This is dominated by dense scrub with a steep grassy bank leading down to the road. Just outside the eastern boundary there is an ancient hedge and ditch which marks the start of Gunton Woods.

Protected species seen or known:

Numerous great crested newt records from ponds on site and also from north-east (2016)

Protected species potential:

Common lizard, grass snake, slow worm, adder (recorded to the north 2006)

Priority habitats present:

Ponds, lowland hay meadow

Priority species seen or known:

A record of an old broken black poplar pollard exists from 1997 – not seen during the survey visit.

Priority species potential:

Dunnock

Connectivity:

Connectivity is excellent with the east of the site lying adjacent to Gunton Woods and tussocky grassland, which provides a wildlife corridor to the east and the north. The grassland continues to the west. Gunton Meadow lies just north of the site.

Structural diversity:

There is excellent structural diversity with gradation of short grassland into longer edges and dense scrub, the ponds also offer another degree of diversity.

Flora:

The majority of the site is covered with dense continuous scrub and scattered mature trees. The scrub was a mix of blackthorn, hawthorn, elder, dog rose, holly and dense bramble patches with some mature sycamore, ash and oak. The ground flora contained male fern, broad buckler fern, common nettle, alexanders, herb robert, primrose and lords-and-ladies. The grassy paths between the scrub have typical flora around the edges such as field forget-

me-not, hogweed, creeping buttercup, common knapweed, broad-leaved dock, ground ivy, red campion, germander speedwell, chickweed, green alkanet and lesser celandine.

There is an area of new plantation which is protected by a natural barrier consisting of a living willow fence and bramble barrier. The newly planted trees included hazel and field maple, and have tree guards around their stems.

There are three meadow areas, the area near the southern pond was the most floristically diverse. All areas contained sweet vernal grass, red clover, ribwort plantain, meadow buttercup and cow parsley. The diverse area had common spotted orchid and cowslip typical of species-rich neutral to chalky boulder clay grassland. Also present were early forget-me-not and meadowsweet, along with members of the pea family such as meadow vetchling, bird's foot trefoil, greater bird's foot trefoil, common and bush vetch. The presence of yellow rattle and common sorrel indicate that the grassland is relatively undisturbed. There were also some patches of Spanish bluebell and periwinkle.

The south-western pond was unshaded and relatively species-rich with pondweed, water mint, reed mace, soft rush, cuckoo flower, great willowherb, flag iris and bittersweet. The pond was directly surrounded by grassland with species such as field horsetail, agrimony and silverweed, and this was edged with bramble and hawthorn scrub. The second pond in the north of the site was shaded on all boundaries by scrub and trees. Flag iris was the only species within the pond, and in the immediate surroundings great willowherb and hedge woundwort were present.

A section of coppiced hawthorn lies north of the northern pond, the ground flora contained less ruderal species in this area, allowing greater diversity of flora. This included violet sp., rush sp., common fleabane, primrose, selfheal, perforate St John's wort, marsh thistle, common mouse ear, ox-eye daisy, thyme-leaved speedwell, ivy-leaved speedwell and agrimony.

Another section, which lies across the Tesco garage road had abundant elf cup fungus on its east facing slopes. The south facing slope was herb rich with dense common knapweed and bird's-foot trefoil, with some germander speedwell, common ragwort, tare sp., common vetch, bristly ox-tongue and hop trefoil. The top of the mound was dominated by hawthorn scrub with bramble and honeysuckle. Some mature oak trees were also present, and could provide roosting opportunities for bats.

Avifauna:

The dense scrub on this site is likely to support a good diversity of bird species, including summer migrants such as whitethroat and blackcap. A chaffinch was noted singing on site, other birds were expected to be present but due to unfavourable weather conditions, were not observed.

Invertebrates:

This site has an excellent range of habitats to support this group. Sunny glades are likely to support common butterfly species, although none were noted at the time of survey due to

unfavourable weather conditions. The grass and brash piles, fallen deadwood, grassland and ponds provide opportunities for a number of invertebrates, both terrestrial and aquatic.

Herpetofauna:

Brash and grass piles throughout the site offer excellent refuge opportunities for reptiles, and the presence of water bodies make it especially attractive to grass snake. The overall structure of the site is such that it could support common lizard and slow worm, with good scrub cover and basking areas, although they could benefit from further scrub clearance. Adder has been recorded in the vicinity of the site so may also be present. The ponds, in particular the south-western pond, provide excellent habitat for great crested and smooth newts, frogs and toads. The scrubby woodland also provides excellent terrestrial habitat.

Amphibian mitigation has been carried out on this site as a consequence of development to the west of the site. Permanent amphibian fencing has been erected around the pond boundary and the site across the road.

Mammals:

There are several large mature oaks which contain rot holes that could support a natural bat roost. Throughout the site there was evidence of rabbits in the form of scrapes, burrows and droppings, and there was a heavy presence of molehills.

The site is also likely to support common mammals such as fox, muntjac deer, mice, voles and shrews. No evidence of badger was noted during the survey.

Comments and recommendations:

This is a well-managed site of high biodiversity value with a good habitat mosaic of woodland, scrub and grassland.

The pond in the centre of the site is quite shaded and would benefit from some scrub removal to allow additional light to reach the water.