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

Project no.	***Report***	***Date***
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

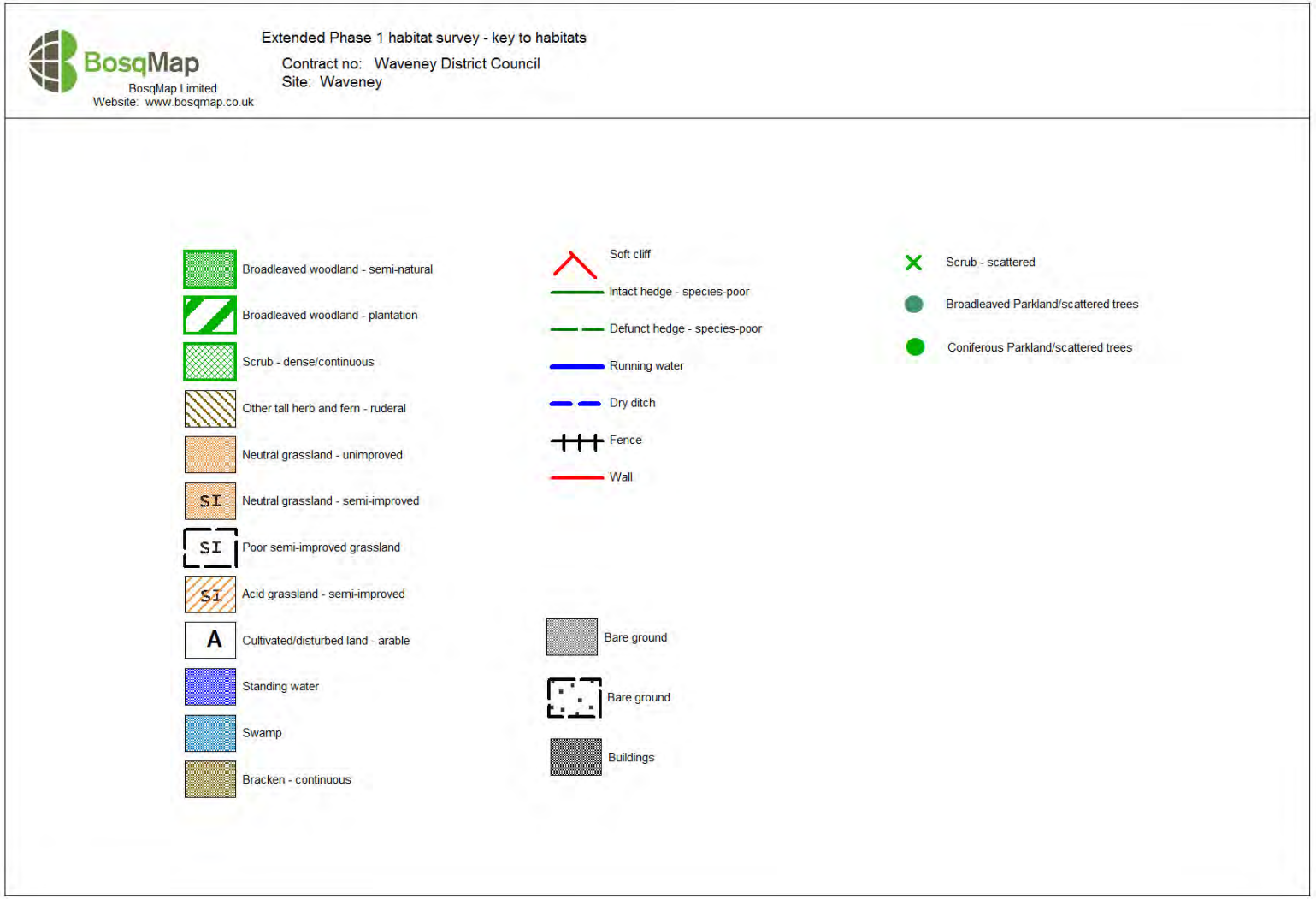
2017 Green spaces, open spaces and County Wildlife Sites (CWS)

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

Site name: Beccles Cemetery

Site ref: Beccles 15
Site status: No wildlife designation
Grid ref: TM 42088 89421
Area: 5.40 hectares
Date: 4 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 20% wispy cloud, slight breeze, warm and bright
Ranking: 4
Biodiversity value: Medium

Map:

Photos:

View north across cemetery

The northern part of the cemetery is more wooded

Habitat type(s):
Poor semi-improved grassland, scattered broad-leaved and coniferous trees, mixed woodland

Subsidiary habitats:
Mature trees, chapel building, fallen deadwood, bare ground

Site description:
Beccles Cemetery lies between the fork of London Road and South Road, with its southern boundary being Meadow Gardens. It is mainly poor semi-improved grassland, shorter mown in the south and less disturbed in the north, although the entire site is regularly managed. In the extreme north of the site, there is an area of mixed woodland. Through the centre of the site there is a swathe of mainly coniferous trees.

There is a small chapel building in the northern section of the site which has potential to support roosting bats.

Protected species seen or known:
Great crested newt recorded to the west of the site in 2004.

Protected species potential:
Bats, common lizard, slow worm

Priority habitats present:
-

Priority species seen or known:
Within the site there are records of dunnock and bullfinch (2010) and in the surrounding area, wall butterfly (2015), hedgehog (2014), swift (2011), starling, dunnock (2009) and house sparrow (2008) have been recorded
Starlings were noted during the survey

Priority species potential:
-

Connectivity:
Beccles Cemetery is bounded by two busy roads, and therefore the only connectivity to the wider environment is via Meadow Gardens in the south of the site and an allotment to the west. Meadow Gardens itself has only moderate connectivity, so Beccles Cemetery is considered to have relatively poor connectivity. However, it is of sufficient size to support a number of taxonomic groups.

Structural diversity:
The structural diversity of the cemetery is good. Although the majority of the site is short mown, the site boundaries have some taller vegetation, scrub and trees, and the gravestones add further structural diversity to the site.

Flora:
Suffolk Rare Plant, cornflower was recorded in the south of site (2009). It was not noted during the survey but the flowering period is typically June to October so it may still be present.

The grassland in the more recently disturbed section of the cemetery in the south of the site was short mown and typical of poor semi-improved grassland with perennial rye-grass and Yorkshire fog with a mix of herbs including daisy, dandelion, dove's-foot crane's-bill, broad-leaved dock, greater and ribwort plantain, white clover, spear thistle, germander speedwell and creeping cinquefoil.

A line of lime trees marks the southern boundary between the cemetery and Meadow Gardens.

Around the edges of the cemetery, where there is more shading and the sward is less managed, there is a higher floristic diversity. Mature trees are spaced along the western boundary of the site, mainly sweet chestnut, larch, silver birch, cherry and beech. These provide some dappled shade which is excellent for the many dog violets along this boundary. Also present are wood forget-me-not, lords-and-ladies, garlic mustard, primrose and lesser celandine. Further north, the vegetation is more ruderal with Alexanders, green alkanet, hemlock and chickweed, there are more holly trees and many of the trees are draped with honeysuckle.

Field woodrush and mouse-ear hawkweed were abundant on old grave sites and scattered across the older areas of the graveyard. This indicates that the site is established grassland with well drained, dry soil. Also within this area, there was smooth meadow grass, sweet vernal grass, yarrow, bulbous buttercup, white dead nettle, spotted medick and common cat's ear.

The northern part of the site becomes more heavily wooded with a mixture of coniferous and deciduous trees including holm oak, pine, leylandii and laurel, with large beech trees lining Waveney Road on the northern boundary. Also present were London plane, sycamore, sumach (garden escape) and giant redwood. The ground flora in this area includes wood sorrel, comfrey, non-native bluebells, wild strawberry, groundsel, green alkanet, cleavers and nettle. The north-eastern corner had a more open canopy and comprised mainly holly with many saplings. Many of the trees were ivy covered and some non-native plants, such as snowberry and grape hyacinth were noted.

To the south of the woodland was a south facing bank with tussocky grasses and mouse ear hawkweed, field woodrush, fescue sp., and common cat's ear.

Avifauna:

The scrub and mature trees, together with the adjacent gardens, provide good foraging, nesting and roosting opportunities for a range of common bird species. Great tit, chiffchaff, collared dove, blue tit, starling, robin and blackbird were noted on site during the survey.

Invertebrates:

This site provides good habitat for invertebrates. The long grass areas are likely to support spiders, grasshoppers and crickets, many of which were noted during the survey. Plenty of deadwood, both standing and fallen will also provide excellent habitat. Buff-tailed bumble bees and bee-flies were noted during the survey, along with speckled wood and small tortoiseshell butterflies. It is likely that other common species of butterfly will utilize the site during the year. Ant hills were also common within the site.

Herpetofauna:

Although much of the site is either short mown or shaded which provides sub-optimal habitat for reptiles, there is a south-east facing bank with tussocky vegetation surrounded by bramble scrub, with bare ground patches near the north of the site which provides good habitat for reptiles such as common lizard and slow worm. The presence of an allotment adjacent to the site improves the likelihood of reptiles being present.

Great crested newts have been recorded less than 200m from the site and although there are no on-site ponds, the cemetery does provide terrestrial habitat for them.

Mammals:

A number of the mature trees on the boundaries of the site could provide natural bat roosting sites, and the small chapel building could also provide roosting opportunities. The large expanse of short mown grassland provides good foraging habitat for hedgehogs and there are a number of records of them both from the site and the surrounding area. Common species of mammal such as fox, rabbit and muntjac deer are likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the woodland and hedgerows on the boundaries of the site. A large number of molehills were noted on site and rabbit activity in the form of burrows, scrapes and grazed lawns were evident. Grey squirrels were also seen during the survey.

Comments and recommendations:

The cemetery provides a large area of semi-natural greenspace in a built-up part of Beccles.

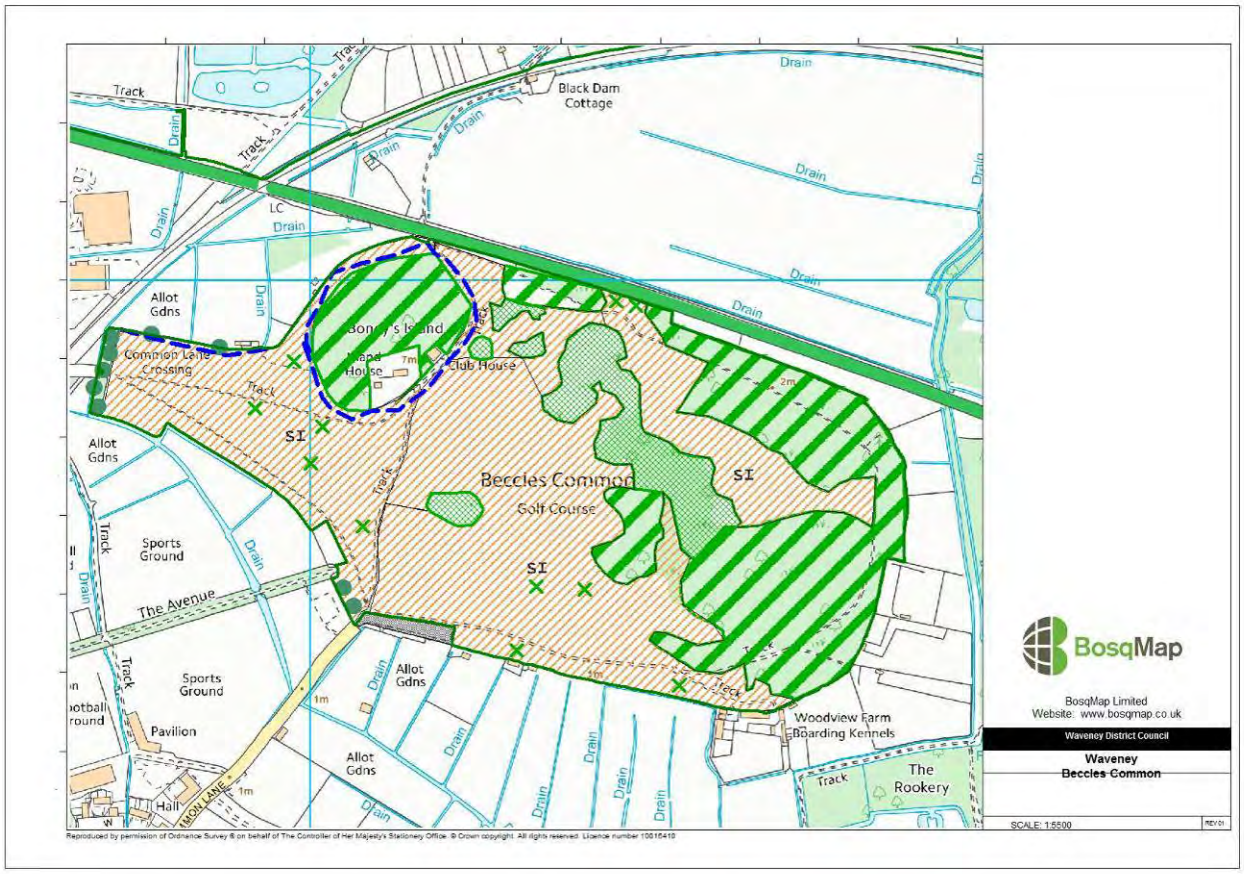
Montbretia (Schedule 9 invasive plant) was recorded within the north of the site in 2011, this was not observed during the survey, but its flowering period is July to September, so it may still be present.

The site is regularly managed, but it is recommended that some areas of grass continue to be left uncut each year, particularly around the edges of the site to act as a refuge for insects, small mammals, amphibians and reptiles. These areas should then be cut the following summer to avoid the formation 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.

Site name — Beccles Common

Site Ref: Waveney 108
Site status: County Wildlife Site
Grid ref: TM 4324 9076
Area: 37.45 hectares
Date: 11 Aug 2016
Recorder: J Crighton and A Looser
Weather conditions: Overcast, cool with moderate wind
Ranking: 2
Biodiversity value: High

Map:



Photos:

Photo 1. View north-east across Beccles Common with acid grassland, scattered scrub and woodland

Photo 2. Some of the grassland is heavily rabbit grazed creating bare ground areas

Photo 3. One of the woodland blocks along the northern edge

Habitat type(s):

Acid grassland, plantation broad-leaved woodland, dense continuous scrub

Subsidiary habitats:

Scattered scrub, bare ground, species-poor hedge, dry ditch, tall ruderal

Site description:

Beccles Common is situated to the east of Beccles town centre and is bordered to the north by the A146 which separates the Common from the River Waveney valley marshes. It sits on the Aldeby Sands and Gravels and is therefore very free-draining. Although the site is relatively species-poor, this is typical of acid grassland - a priority habitat. The majority of the site is occupied by Beccles Common Golf Course and the site is widely used by the public for dog walking and informal recreation. There is a skate park and children's play area near the car park in the west of the site.

The site is enclosed on the northern boundary by a tree belt which extends to the east and thickens into an area of broad-leaved plantation woodland. There is another patch of plantation woodland to the west, surrounding a residential property. There are several patches of dense scrub, dominated by gorse, throughout the site. Outside the south western boundary, there is a wet marshy area which

appears to have been included in the original CWS citation, although it is situated just outside of the defined boundary as provided by SBIS (Suffolk Biodiversity Information Service).

Protected species seen or known:
2006 - Water vole, grass snake, common lizard

Protected species potential:
Bats, other reptiles

Priority habitats present:
Acid grassland

Priority species seen or known:
Cinnabar moth caterpillar seen on site on the day of survey, and previously recorded on site in high numbers in 2009.
The following species have been recorded the west of the site:
2014 - West European hedgehog
2013 - Norfolk hawker and a pair of spotted flycatchers with young
2012 - Count of 10 Bewick's swans
2009 - Turtle dove
To the north of site
2008 - Suffolk Rare Plants: common cudweed, hoary mullein and annual beard grass
1997 - Barn owl (Suffolk Character Species)
To the east of the site there are a number of records as follows:
2014 - House sparrow, song thrush, dunnock
2013 - Yellow wagtail
2012 - Barn owl (Suffolk Character Species)
2011 - Bullfinch, marsh tit
2009 - Wall butterfly
2007 - Swift (Suffolk Character Species)

Priority species potential:
Hedgehog

Connectivity:
Connectivity is excellent for this site. Directly south and west lie a network of drains through green space, to the east there is further woodland and to the north are the River Waveney valley marshes.

Structural diversity:
The structural diversity of this site is varied across the site. Although the rabbit grazed acid grassland has a very short sward, the presence of bare ground areas improves local structural diversity. There are a few patches of dense scrub with trees which provide varied height differences. The woodland is relatively sparse, with a sparse sub-canopy or understorey.

Flora:
The acid grassland contains typical species such as sheep's fescue (*Festuca ovina*), common bent (*Agrostis capillaris*), sheep's sorrel (*Rumex acetosella*) and sand sedge (*Carex arenaria*). Other herb species are also present including ribwort plantain (*Plantago lanceolata*), common cats-ear (*Hypochaeris radicata*), common mouse-ear (*Cerastium fontanum*), broad-leaved dock (*Rumex obtusifolius*), yarrow (*Achillea millefolium*), common nettle (*Urtica dioica*), creeping thistle (*Cirsium arvense*), common ragwort (*Senecio jacobaea*), lady's bedstraw (*Galium verum*), dove's-foot crane's-bill (*Geranium molle*), violet (*Viola* sp.), swine-cress (*Lepidium squamatus*), autumn

hawkbit (*Leontodon autumnalis*), white clover (*Trifolium repens*), selfheal (*Prunella vulgaris*) and mouse-ear hawkweed (*Pilosella aurantiaca*), and grasses include red fescue (*Festuca rubra*), timothy grass (*Phleum pratense*) and false oat-grass (*Arrhenatherum elatius*).

There are some scattered trees and patches of scrub which comprise of sycamore (Acer pseudoplatanus), lime (Tilia x europaea), oak (Quercus robur), hawthorn (Crataegus monogyna), common gorse (*Ulex europaeus*) and bramble (*Rubus fructicosa agg*.) with some cow parsley (*Anthriscus sylvestris*).

In the more sheltered areas toward the woodland, there are additional species typical of more nutrient-rich soils, such as Yorkshire fog (*Holcus lanatus*), bird's-foot trefoil (*Lotus corniculatus*), meadow buttercup (*Ranunculus acris*), greater burdock (*Arctium lappa*), spear thistle (*Cirsium vulgare*), common mallow (*Malva sylvestris*), black horehound (*Ballota nigra*), green alkanet (*Pentaglottis sempervirens*), white campion (*Silene latifolia*) and stinking iris (*Iris foetidissima*).

The central plantation woodland is predominantly oak (*Quercus robur*), beech (*Fagus sylvatica*) and sycamore with some ash (*Fraxinus excelsior*) and cherry (*Prunu*s sp.). Past the Golf Clubhouse, there is a species-poor hedge containing elm (*Ulmus procera*), dogwood (*Cornus sanguinea*) and hawthorn.

Within the golf course, there are many areas of dense scrub which are mainly gorse, but also include sycamore, bramble, hawthorn, ash, elm, elder (*Sambucus nigra*), rosebay willowherb (*Chamerion angustifolium*), creeping thistle (*Cirsium arvense*), Canadian fleabane (*Conyza canadenis*) and soft rush (*Juncus effusus*). There are also areas which are rich in moss and lichens.

The plantation woodland around the northern edge of the site contains similar species as the central woodland patch. It is oak dominant, with the addition of silver birch (Betula pendula), rowan (*Sorbus aucuparia*), elder, gorse and holly (*Ilex aquifolia*). There is also an impressive stand of poplars (*Populus* sp.) to the eastern boundary. The understorey is relatively sparse but is mainly common nettle with some bracken (*Pteridium apuilinum*), Yorkshire fog, broad-leaved dock and nodding thistle (*Cardus nutans*).

Avifauna:

The survey was conducted at a sub-optimal time of year for bird surveys. Swallows were seen foraging low across the acid grassland at the time of survey. Two magpies were also noted. The scrub and woodland areas fringing the common provide important foraging, roosting and nesting habitat for a range of bird species.

Invertebrates:

This site is likely to support a good range of invertebrates. The areas of sparse sward and bare ground could support ground nesting bees and wasps and many members of this group are uncommon or rare. Numerous crickets and grasshoppers were noted on site, as well as cinnabar moth caterpillar (Priority species) and meadow brown butterfly. There is an abundance of oak trees on site and they support a particularly high insect biomass.

Herpetofauna:

There are good reptile records for nearby this site, and it is likely that the site could support common lizard around the margins and in the more scrubby areas. Grass snake may venture onto the site from the adjoining marshes.

Mammals:

Some of the more mature trees could provide a number of natural bat roosting sites and the

woodland blocks and scrubby edges will provide good foraging opportunities for them. Rabbit droppings and burrows were seen on the day of survey, along with fox scat. It is also likely that other common mammals such as grey squirrel, muntjac deer, mice, voles and shrews are present.

Comments and recommendations:

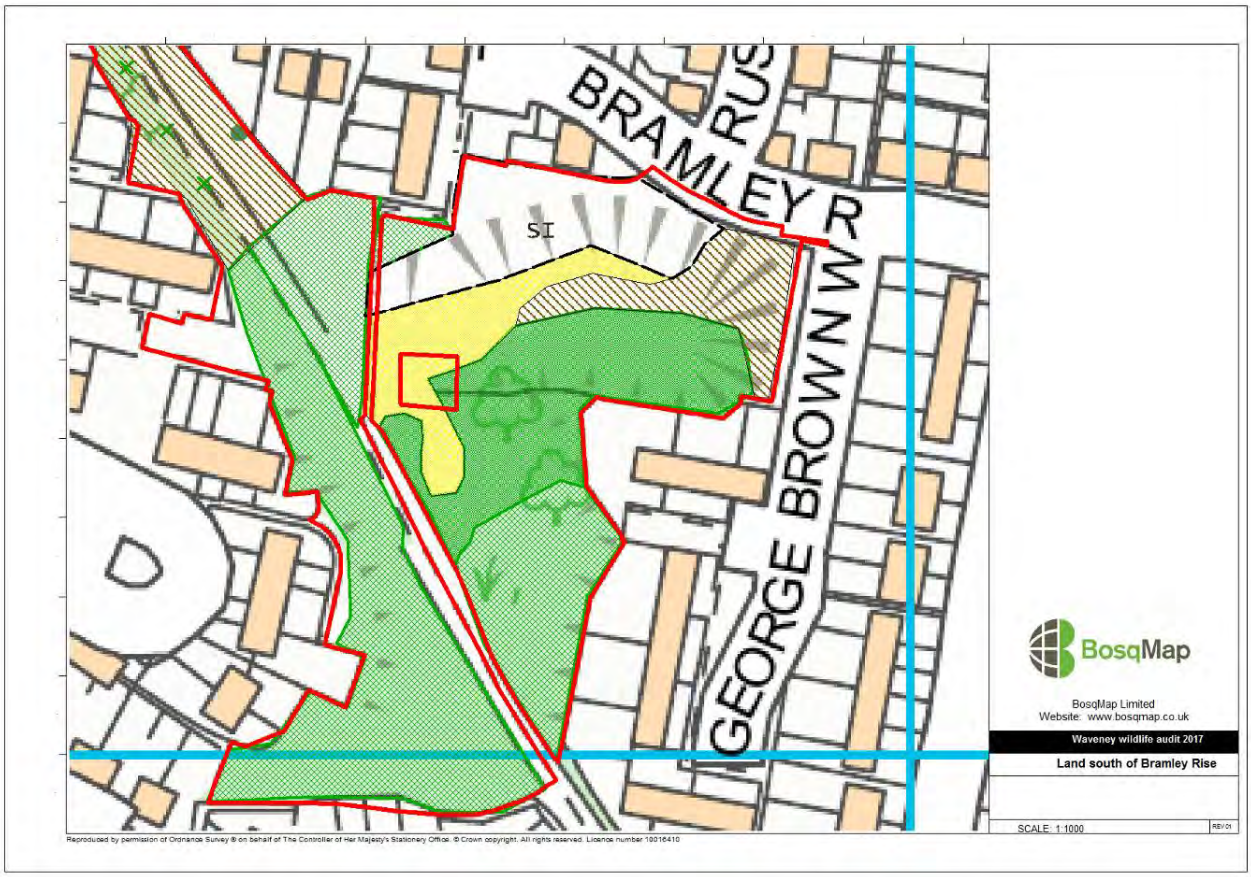
This site is well used for a variety of recreation purposes and the dry soils enable year round use by walkers and are tolerant of a reasonable amount of footfall. It is understood that it is the Town Council's responsibility to manage the Common in consultation with other users. Grassland management is a combination of rabbit grazing, low level grazing by cattle and also mowing within the golf course. A recent programme of ragwort control has now reduced the presence of this species.

There is a rotational gorse management plan to limit encroachment onto the Common. This also helps limit anti-social behaviour such as fire lighting amongst the gorse. Several dog waste bins appear to be assisting with reducing dog faeces on site.

Site name: Land south of Bramley Rise

Site ref: Beccles 17
Site status: No wildlife designation
Grid ref: TM 42920 89095
Area: 0.68 hectares
Date: 4 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Overcast, no wind, warm and bright
Ranking: 4
Biodiversity value: Medium

Map:



Photos:

Play area and amenity grassland

Dense woodland/scrub on edge of pit

Habitat type(s):
Poor semi-improved grassland, amenity grassland, broad-leaved woodland, dense continuous scrub, tall ruderal

Subsidiary habitats:
Fallen and standing deadwood, bare ground

Site description:
Bramley Rise is an area of green space within a built-up area of the town, which is used for recreational purposes. It lies directly east of the southern section of Rigbourne Hill Lane and is bounded on its other sides by Bramley Rise and George Brown residential houses. It comprises an area of amenity grassland in the north of the site, with a small area of dense woodland, grading into scrub to the south. The grassland lies within a pit, the banks of which are covered with poor semi-improved grassland and tall ruderal vegetation. A children's play area occupies the western-most area of the grassland, which does not form a part of the survey area. The woodland, which grades into scrub in the southern part of the site lies within a second pit.

Protected species seen or known:
-

Protected species potential:
Bats

Priority habitats present:
-

Priority species seen or known:
Within the site there are records of starling (2009), and in the surrounding area, hedgehog and tree sparrow (2014), bullfinch (2013 and 2009), barn owl (2012), swift (2011), dunnock (2009), starling (2009 and 2008) and house sparrow (2008) have been recorded.
Starling was seen during the survey

Priority species potential:
-

Connectivity:
Bramley Rise is directly adjacent to Rigbourne Hill Lane, giving it limited connectivity via this wildlife corridor, otherwise it is completely surrounded by roads and residential housing.

Structural diversity:
This site has very good structural diversity, albeit limited in size. The woodland has a good scrub understorey and ground flora and the short-mown grassland graduates into tall ruderal vegetation, offering a wide range of opportunities for many taxonomic groups.

Flora:
The raised bank on the western boundary between Bramley Rise and the pathway of Rigbourne Hill Lane contains the ancient woodland indicator, dog's mercury, below the scrub and trees. This could be an indication that there was an ancient hedge or woodland at this site. There is also abundant hedge woundwort and Alexanders. Along this boundary, there is some variagated yellow archangel, an invasive species.

In the south of the site there is a deep pit which rises steeply to the south east, the habitat here is comprised of woodland, grading into scrub. The majority of the mature trees are ash, some of which are ivy covered. There is also hawthorn, elder, box, field maple, blackthorn, elm and bramble scrub. Many of the elm are dead, or dying back.

The amenity grassland in the northern pit is short mown with typical species including perennial rye, cock's foot and Yorkshire fog grasses, with herbs such as white clover, dove's-foot crane's-bill, black medick, germander speedwell, daisy and common mouse ear. The grassland on the steep northern bank becomes more rank with a dominance of cock's foot and Yorkshire fog grasses and the eastern bank is covered with tall ruderal vegetation with common nettle being the dominant species.

Avifauna:
Chiffchaff, great tit and starling were noted during the survey. This site offers good foraging, nesting and roosting opportunities for a range of bird species, in the dense scrub and mature trees.

Invertebrates:
Buff-tailed bumble bee was noted during the survey. This site is likely to support a good range of invertebrates with plenty of deadwood, both standing and fallen within the woodland area. There is also a steep bank of exposed bare ground which could provide some opportunities for ground nesting bees and wasps.

Herpetofauna:
Due to the relatively isolated nature of this site and regularly short mown grassland this site is sub-optimal for reptiles. There is a very old record of slow worm from more than 20 years ago from Rigbourne Hill Lane, however it is likely that this population no longer exists. Common species of amphibian may be present in the scrub and woodland areas if there are breeding ponds in the adjacent gardens.

Mammals:
Some of the mature trees on site could provide cracks and crevices suitable for natural bat roosts. As the site lies adjacent to Rigbourne Hill Lane there could be bats commuting over the area.

There are a number of hedgehog records in the immediate area and the combination of grassland, scrub and woodland provides good foraging, nesting and hibernation opportunities for them. Common species of mammal such as fox, rabbit, muntjac deer and grey squirrel are likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the woodland and hedgerows on the boundaries of the site.

No evidence of badger was discovered during the survey and the high levels of public disturbance within the woodland along with a lack of connectivity with suitable habitat, suggest it is unlikely that badgers are present.

Comments and recommendations:

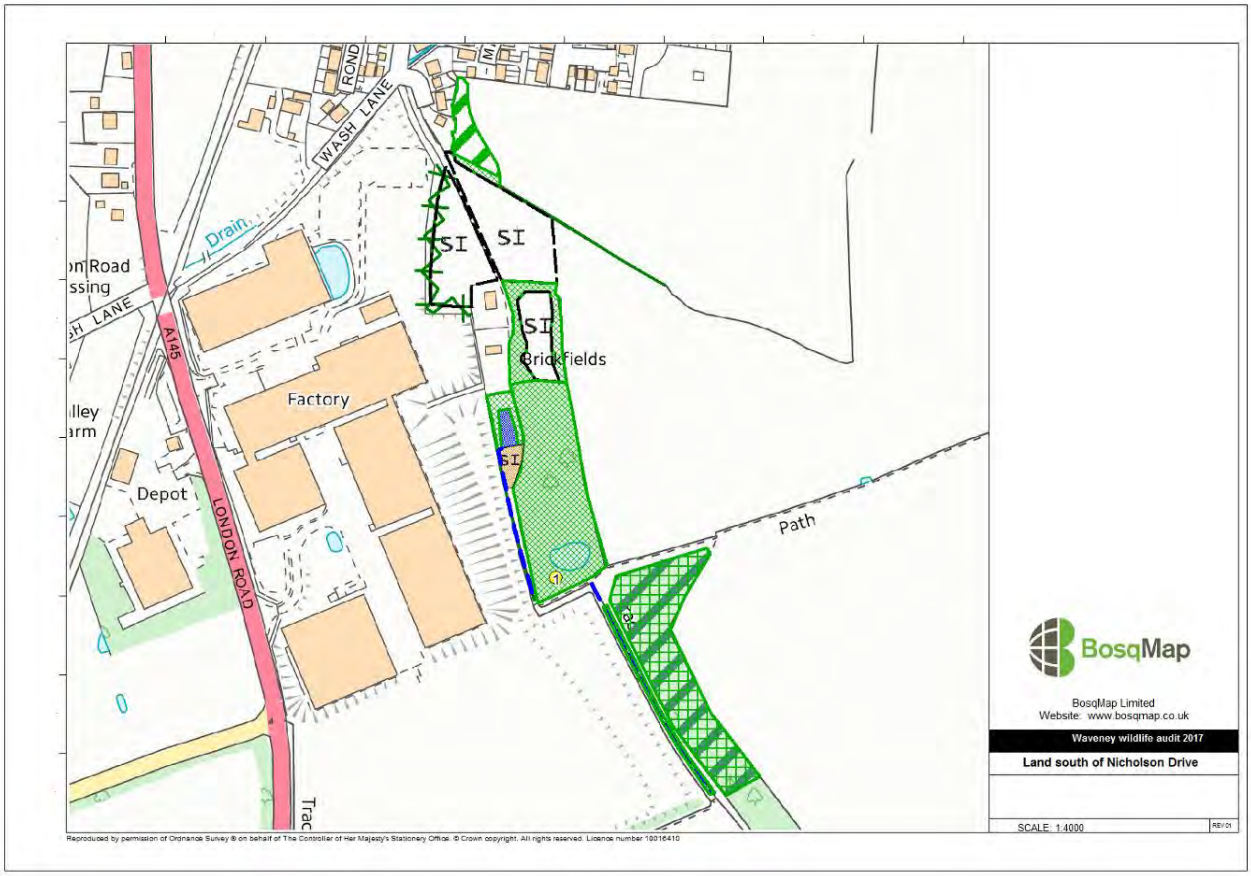
The main area of grassland is regularly mown for recreational use. It is recommended that strimming the northern bank annually in August/September and removing the cuttings to reduce nutrient loading would encourage greater floristic diversity in this area. However, leaving some areas of grass uncut each year provides a variety of vegetation heights to benefit birds and invertebrates.

Variegated yellow archangel is present on the western border of the site and this plant is listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any species listed on Schedule 9. Given this is already an established population within this urban green-space, the spread of the plant should be monitored and any plants removed should be disposed of appropriately to prevent their spread.

Site name: Land south of Nicholson Drive

Site ref: Beccles 18
Site status: No wildlife designation
Grid ref: TM 42501 88432
Area: 4.41 hectares
Date: 4 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Overcast, slight breeze, warm and bright
Ranking: 3
Biodiversity value: Medium

Map:



Photos:

Looking south-east across northern part of the site

Pond on western edge of site

Small meadow surrounded by dense scrub and trees

Habitat type(s):
Semi-improved neutral grassland, poor semi-improved grassland, pond, species-rich hedgerow, species-poor hedgerow, dense continuous scrub, mixed plantation woodland, broad-leaved plantation woodland

Subsidiary habitats:
Dry ditch, fallen and standing deadwood

Site description:
This site lies east of the Industrial Park on London Road, and is a linear strip of grassland, scrub and woodland. A path leads into the north of the site from Wash Lane. Another path separates the north from the south of the site. The southern part of the site is mainly mixed plantation woodland. A seasonally dry ditch runs the length of the site on the western boundary. Adjacent to the southern stretch of woodland, this ditch has hedgerow on either side and footpaths lie on either side of this. This site is frequented by dog walkers.

The map shows two ponds on this site, but only one contained water at the time of the survey. A ditch runs down the western boundary of the site, from the pond.

Protected species seen or known:
Badger setts noted

Protected species potential:
Bats, great crested newt, slow worm

Priority habitats present:
Broad-leaved semi-natural woodland, pond

Priority species seen or known:
A pair of Skylarks within the site, along with hedgehog, yellowhammer, song thrush and linnet from the surrounding area (2014). Starling, house sparrow and dunnock were also recorded in the surrounding area (2009).
House sparrow and song thrush were noted during the survey

Priority species potential:
Nightingale

Connectivity:
The network of hedgerow field boundaries through the arable fields to the south and east provide a degree of connectivity in the wider landscape.

Structural diversity:
The structural diversity of this site is excellent with water bodies, grassland, hedgerows and woodland creating opportunities for a number of taxonomic groups.

Flora:
On entering the site from Wash Lane, there is a scrubby triangle of land in the far north beyond a dry ditch, which contains field maple, alder and bramble. The next section of this site is poor semi-improved grassland with bulbous and meadow buttercup, nettle, cleavers, cow parsley, hogweed and red deadnettle. This field is bisected by a footpath running diagonally towards the woodland. To the west of this path, the sward is slightly more species-rich and also includes Yorkshire fog, soft rush, common sorrel, willowherb sp., bush vetch, creeping thistle and lesser celandine with some recently cut-back dog rose scrub.

A species-rich hedgerow with trees runs along a ditch on the western boundary of the site, with hawthorn, dogwood, elder, blackthorn, elm, dog rose, with taller silver birch and ash trees.

The footpath continues towards a more wooded area and another similar hedgerow separates it from another area of grassland. The grassland is down a steep bank and is similar in composition to that of the field but more species-rich with the addition of glaucous sedge, ground elder, white deadnettle, dandelion, creeping buttercup, lords-and-ladies, creeping cinquefoil, agrimony, daffodil, germander speedwell, white clover, ragwort, ground ivy, meadow crane's-bill and primrose. This area is surrounded by scrub and tree belts comprised of young hornbeam, oak, alder, hawthorn, field maple, cherry and hazel. To the south of this area, the scrub graduates into more mature, semi-natural woodland with similar species, which rises up a very steep bank in the south of the site.

To the west of the woodland, the site widens, and there is an open grassy area with semi-improved neutral grassland, and a large pond. The pond is relatively unshaded and has a variety of emergent vegetation including common reed, hard rush, greater pond sedge and water lilies. Willow trees, common fleabane and soft rush are abundant around the banks. The neutral grassland contains a

more diverse sward, with primrose, greater plantain, creeping buttercup, broad-leaved dock, meadow crane's-bill, lesser celandine, daisy, creeping cinquefoil and germander speedwell. A local resident offered the information that in the past there have been bee orchids, southern marsh orchids and common spotted orchids on this patch of grassland.

The southern mixed-plantation woodland is relatively young and comprises willow, hornbeam, pine, oak and cherry with a hawthorn, blackthorn and bramble hedgerow edge. The ground flora is very limited. The ditch running alongside this woodland is thick with cleavers and teasel and the hedgerow is mainly elm to the west of the ditch and hawthorn, blackthorn and willow to the east.

Avifauna:

The mature trees, scrub, ditches and tall marshy vegetation provide excellent habitat for both resident and migrant species. Pheasant, house sparrow, chiffchaff, moorhen, song thrush, blackbird and long-tailed tit were noted on site during the survey. A local resident offered the information that in the past there have been skylark, linnet and nightingale (red list species) nesting within the site.

Invertebrates:

The diversity of habitats on site, including a substantial number of native trees, as well as open grassland and ponds provide excellent habitat and should support a high invertebrate biomass and diversity; both terrestrial and aquatic. The fallen and standing deadwood is also likely to support a good range of invertebrates, and the long grass provides good habitat for spiders, grasshoppers and crickets.

Common blue, small tortoiseshell and small white butterflies were noted on site during the survey, and it is likely that other common species will utilize the site throughout the year. The scrubby area in the far north of the site was particularly rich in butterflies. A local resident mentioned that he had been butterfly watching that morning and had recorded holly blue, red admiral and brimstone as well as the species noted during the survey. Red-tailed bumble bee was also noted.

Herpetofauna:

The pond in the centre of the site has the potential to support breeding great crested newt, as well as toads and frogs. There are records of great crested newt in the surrounding area, so it is likely that they will be present. The woodland and scrubby hedgerows could also provide good terrestrial habitat and hibernation opportunities for great crested newts and toads.

Reptiles, particularly slow worm, could be present in the grassland areas. However, connectivity is fairly poor.

Mammals:

Several of the mature trees on site had cracks and crevices that could support a natural bat roost, the linear nature of the site provides a natural foraging and commuting corridor. In addition, the pond will support a good variety of insect life so there are likely to be bats foraging over this area.

The large expanse of short mown grassland provides good foraging habitat for hedgehogs and there are a number of records of them both from the site and the surrounding area. The bramble scrub provides excellent hibernation opportunities for them.

Rabbit activity in the form of burrows, scrapes and grazed lawns was evident throughout the site and badger setts were found in the south slope of the woodland (Target Note 1). Fox scat was noted in a number of locations.

Other common species of mammal such as muntjac deer are likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the woodland and hedgerows on the boundaries of the site.

Comments and recommendations:

Any future development proposals should seek to retain the pond and adjacent habitat, including the central semi-natural, mature woodland.

Any development proposals at this site should be accompanied by further surveys including breeding birds, badgers, bats, reptiles and great crested newts, with mitigation plans as appropriate. Consideration should also be given to the likely presence of hedgehog. No vegetation clearance should take place until these surveys have been undertaken and mitigation implemented in full, as required.

Notwithstanding the above, any clearance of scrub or trees should take place outside bird nesting season (March to the end of August inclusive).

Site name: Land west of Oak Lane

Site ref: Beccles 19
Site status: No wildlife designation
Grid ref: TM 43163 88560
Area: 2.32 hectares
Date: 23rd May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 60% cloud cover, sunny and warm
Ranking: 4
Biodiversity value: Medium

Map:

Photos:

Pond 1 in the east of the site

View into the centre of the site

Habitat type(s):
Broad-leaved woodland, ponds, scrub

Subsidiary habitats:
Scattered trees

Site description:
This is a triangular piece of land, formerly used as a scrap yard, which lies north and east of Cucumber Lane. The site is mostly dense species-rich woodland, but there are some cleared areas throughout the site which are currently being inhabited by travelers. There are patches of dense continuous scrub throughout the centre of the site. The ponds are all heavily shaded and thick with leaf litter and duckweed. The northern pond contained a lot of fly-tipping debris.

A footpath runs along the eastern boundary of the site from Cucumber Lane to Oak Lane, and an arable field makes up the rest of the land within the triangle between these two roads. The site was mainly viewed from the boundaries due to access issues.

Protected species seen or known:
Great crested newt records from south east of the site between 2012 -2014.

Protected species potential:
-

Priority habitats present:
-

Priority species seen or known:
From around the site perimeter – hedgehog and grey partridge (2014), barn owl (2013) and spotted flycatcher (2011)

Priority species potential:
Dunnock

Connectivity:
This site has limited connectivity to the north via a hedgerow, but is mainly surrounded by roads and arable land.

Structural diversity:
The structural diversity of this woodland is good, with a thick canopy and an understorey of varying heights, however, there is little ground flora due to a lack of light penetration.

Flora:
The woodland contained a good mix of trees species, including oak, elm, cherry, cypress, yew, ash, silver birch, laurel, field maple, poplar, hazel, sycamore, cherry plum and copper beech. There was also a thick scrub layer including willow, sallow, hawthorn, blackthorn, buddleia, dog rose, dogwood, spindle and bramble.

Within the site, there were some large grey poplars, with ash, alder and bramble. The ground flora was mainly nettle with green alkanet and wood avens.

The grassland areas were not assessed but it is likely to be poor semi-improved grassland.

Avifauna:
This site offers good foraging, nesting and roosting opportunities for a range of bird species. Chiffchaff and great tit were noted on site during the survey.

Invertebrates:
The variety of flowering trees including a good number of hawthorn trees provides an important nectar and pollen source for invertebrates. The sunny edges of the woodland offer good habitat. Red admiral butterfly was seen during the survey.

Herpetofauna:
The two ponds which were viewed were too shaded and silted-up to be suitable for great crested newts or other amphibians. The southern-most pond was not surveyed. The woodland could provide good hibernation opportunities for toads, however the poor connectivity to other suitable habitat reduces the likelihood of this. The site could not be fully assessed for its reptile potential, however it is thought to be sub-optimal habitat for this group.

Mammals:
Some of the mature trees, particularly around the boundaries of the site could provide natural bat roosts.

Dogs running free on site are likely to deter many wild mammals from using the site but common species of small mammal such as wood mice and bank voles will be present in the scrubby areas. The dense scrub may provide suitable hibernation opportunities for hedgehogs.

The site could not be properly assessed for badgers, however the high levels of public disturbance within the woodland suggest it is unlikely that badgers are present.

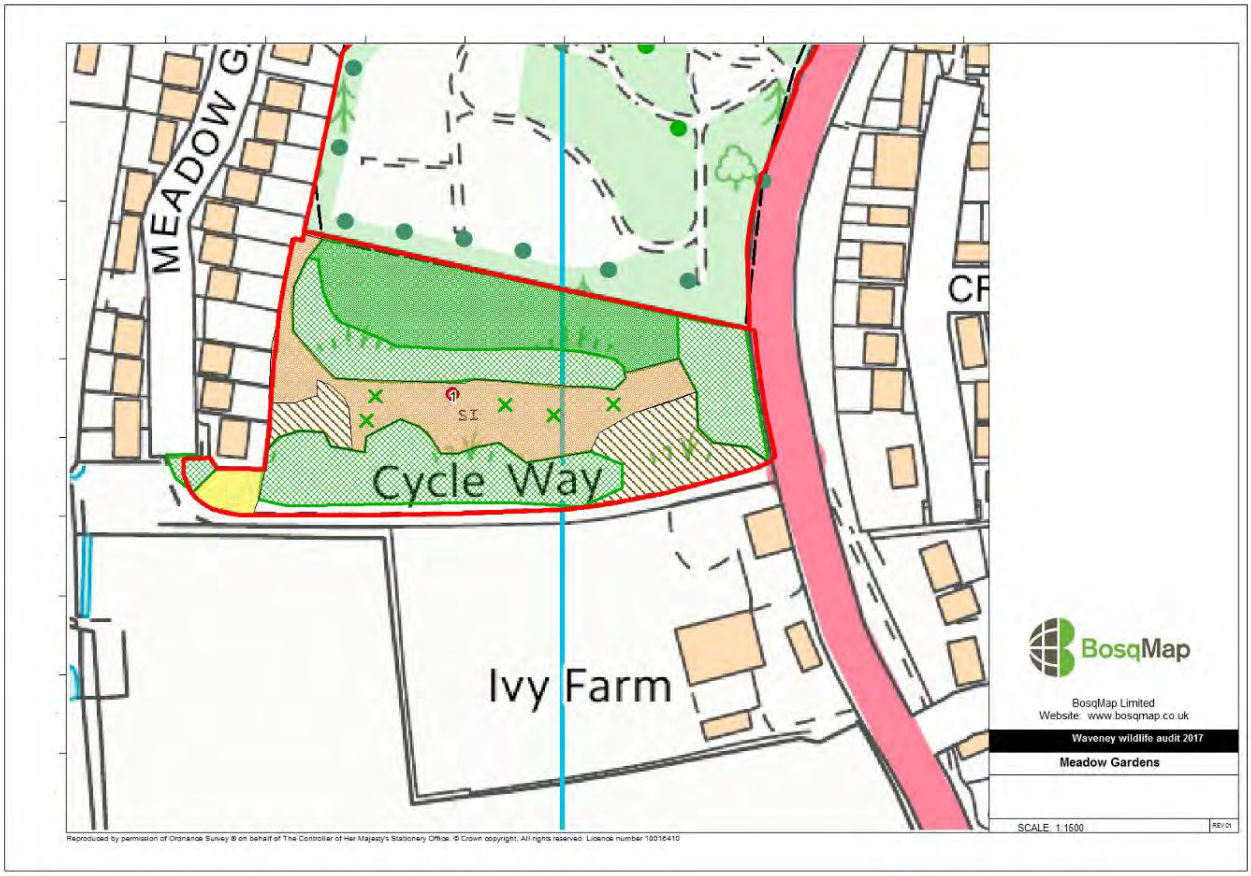
Comments and recommendations:
Any development proposals at this site should be accompanied by further surveys including breeding birds and bats, with mitigation plans as appropriate. Consideration should also be given to the likely presence of hedgehog. No vegetation clearance should take place until these surveys have been undertaken.

Notwithstanding the above, any clearance of scrub or trees should take place outside bird nesting season (March to the end of August inclusive).

Site name: Meadow Gardens, Land south of Beccles Cemetery

Site ref: Beccles 14
Site status: No wildlife designation
Grid ref: TM 41983 89204
Area: 1.34 hectares
Date: 4 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 80% wispy cloud, slight breeze, warm and bright
Ranking: 3 (possibly 2 – see recommendations)
Biodiversity value: Medium-High

Map:



Photos:

View west along site with grassland and scattered scrub

Adder's tongue fern is present in good numbers (Target Note 1)

Habitat type(s):
Tall ruderal, dense continuous scrub, semi-natural broad-leaved woodland, semi-improved neutral grassland, amenity grassland

Subsidiary habitats:
Scattered scrub

Site description:
Meadow Gardens lies directly south of Beccles Cemetery. The busy London Road forms its eastern boundary, residential gardens lie to the west and arable land to the south. It is mostly tall ruderal vegetation with areas of more diverse grassland surrounded by scrub and semi-natural broad-leaved woodland. The sward is kept short by regular mowing and is grazed by rabbits. The most notable feature of this site is its large population of adder's tongue (Target Note 1). Some common spotted orchids were also seen during the survey, and the site is known to support other orchid species, including bee orchid.

Protected species seen or known:
Great crested newt recorded to the west of the site (2004)

Protected species potential:
Common lizard

Priority habitats present:
-

Priority species seen or known:
In the surrounding areas, there are records of hedgehog (2014), starling, dunnock (2009) and house sparrow (2008)
Dunnock was seen during the survey

Priority species potential:
White letter hairstreak butterfly

Connectivity:
Meadow Gardens has moderate connectivity to the wider environment via a network of hedgerows. Beccles cemetery lies adjacent to the site to the north.

Structural diversity:
The structural diversity of this site is very good, albeit limited by the small size of the site. The woodland has a good scrub understorey and herb ground flora as well as some tall mature trees which could offer shelter to a variety of species. The grassland is open and unshaded and includes both shorter and longer sward heights.

Flora:
This site is surrounded by scrub, which graduates into woodland between Meadow Gardens and Beccles Cemetery. The scrub is mainly hawthorn, blackthorn, dog rose and bramble with occasional

larch, leylandii, dogwood, yew and holly. The woodland has mature ash, oak and sycamore with a scrub understorey. To the eastern edge, bordering London Road, is a dense patch of young elm, with bramble and ivy.

There is large area of open grassland in the central section of the site which mainly consists of tall ruderal vegetation typical of the area, including alexanders, cleavers, common nettle, creeping thistle, cow parsley, burdock, willowherb species and broad leaved-dock. However, the center of the site has a shorter sward and a large population of adder's tongue can be found along with some common spotted orchid. This section of the site is generally more herb-rich with species such as agrimony, common fleabane, hoary ragwort, creeping buttercup, meadow crane's-bill, meadow rue, black knapweed, trefoil and bedstraw species, and selfheal.

The ground flora of the woodland contains lords-and-ladies, lesser celandine, ground ivy and stinking iris.

Avifauna:

The dense scrub bordering the site provides good nesting opportunities for a range of common and summer migrant bird species. Wood pigeon, blackbird, robin, wren, chiffchaff, dunnock and black cap were noted during the visit. The high invertebrate population also offers good foraging opportunities. Summer migrants such as whitethroat could nest in the areas of dense bramble.

Invertebrates:

The grassland with its diverse sward provides excellent habitat for a wide range of invertebrate species. Many spiders were noted during the survey along with some beetles, bee-flies and buff-tailed bumble bees. The presence of thick elm scrub in the eastern section of the site could provide habitat for white letter hairstreak butterfly. The open sunny glad within the centre will attract other common butterfly species.

Herpetofauna:

Great crested newts have been recorded close to the site. Although the record is from the other side of South Road, the allotments, cemetery and meadow gardens provides excellent terrestrial habitat for this species. The dense scrub at this site also provides hibernation opportunities for them. The site provides good habitat for reptiles, particularly common lizard. The presence of the cemetery and an allotment adjacent to the site increases the likelihood of their presence.

Mammals:

Although the site is not suitable for roosting bats, the cemetery contains mature trees with holes and crevices, so it is possible that bats may forage over Meadow Gardens. The large expanse of short grassland provides good foraging habitat for hedgehogs and there are a number of records of them both from the site and the surrounding area. The bramble scrub also provides excellent nesting and hibernation opportunities for hedgehogs. Common species of mammal including muntjac deer, rabbits and grey squirrel were seen during the survey. Large amounts of rabbit activity in the form of burrows, scrapes and close-grazed areas are evident.

Comments and recommendations:

It is believed that the site is cut at least once a year. This mowing regime should be continued to maintain the population of adder's tongue and common spotted orchid and other orchid species. It is very important that the cuttings should be collected or raked off, to reduce nutrient enrichment and the increase in taller, competitive grasses and also nettles.

The rabbits will also be having a beneficial effect in maintaining short turf areas.

The boundary scrub should be managed on rotation to maintain areas of open grassland.

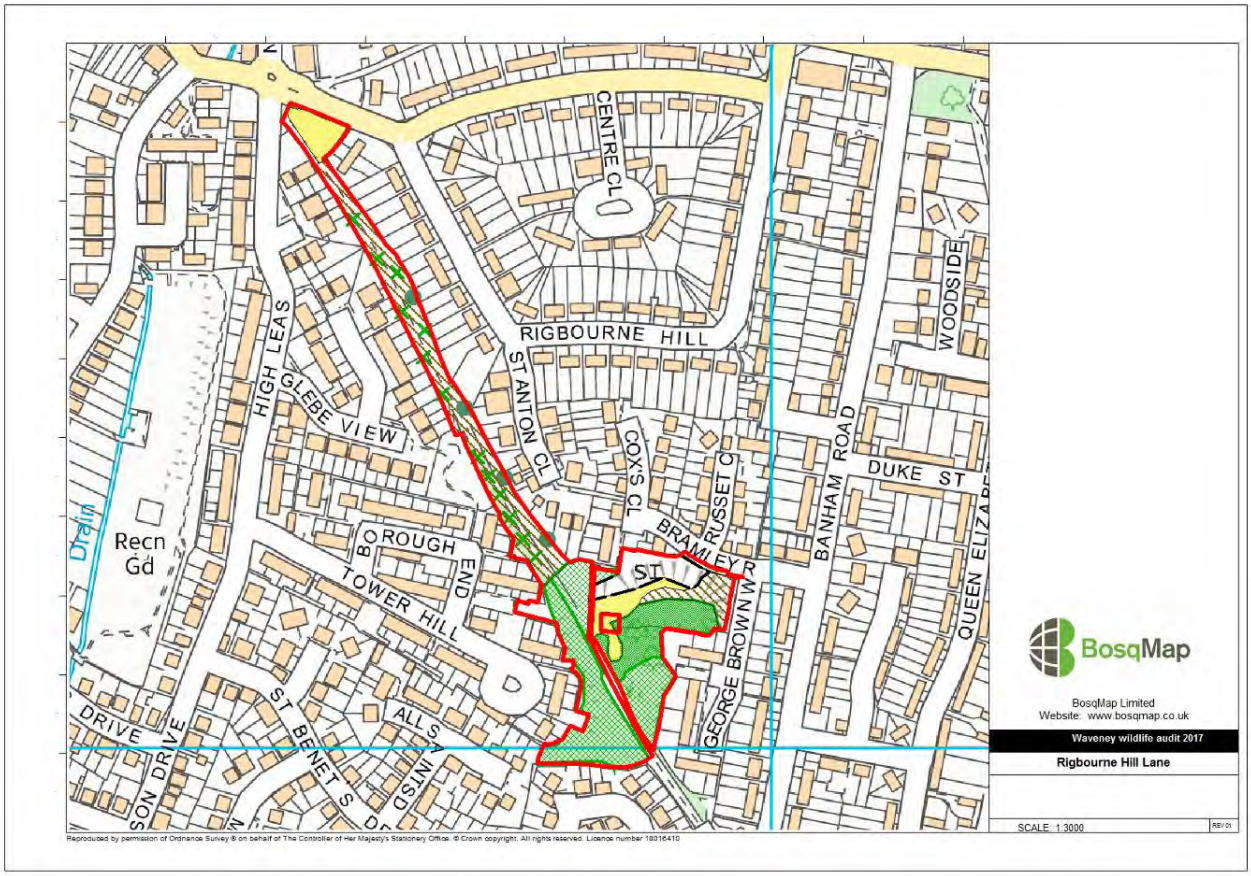
The trees in the woodland between Beccles Cemetery and Meadow Gardens could be thinned to allow more light to reach the ground flora and understorey layers.

Adders tongue is a fern of damp soils and found in a variety of habitats, mainly meadows, usually in older undisturbed sites and especially on ancient sites on the boulder clay. In view of the high population of this plant and also the presence of orchids, this site should be assessed by the County Wildlife Site panel members to consider whether it should become a County Wildlife Site.

Site name: Rigbourne Hill Lane

Site ref: Beccles 16
Site status: No wildlife designation
Grid ref: TM 42846 89126
Area: 1.09 hectares
Date: 4 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Overcast, no wind, warm and bright
Ranking: 4
Biodiversity value: Medium

Map:



Photos:

Steep banks dominated by tall ruderal vegetation with scattered scrub and trees

Habitat type(s):

Tall ruderal, scattered scrub, dense continuous scrub, amenity grassland

Subsidiary habitats:

Fallen deadwood, scattered trees

Site description:

Rigbourne Hill Lane is a linear strip of tall ruderal vegetation with scattered scrub which lies between the residential properties on High Leas, Glebe View, Borough End, Tower Hill, Rigbourne Hill and Stanton Close. In the south-easternmost stretch, Bramley Rise green space lies immediately adjacent. A pathway runs centrally through the site which is bounded on both sides by steep banks for the majority of its length. There is a small area of amenity grassland at the northern end, where the path meets St George's Road. At the southern end, there is a shallow pit to the west which is full of dense scrub and tall ruderal vegetation. To the east of this is another pit, which marks the beginning of Bramley Rise.

Protected species seen or known:

-

Protected species potential:
Bats

Priority habitats present:
-

Priority species seen or known:
In the surrounding area there are records of hedgehog and tree sparrow (2014), bullfinch (2013 and 2009), barn owl (2012), swift (2011), dunnock (2009), starling (2009 and 2008) and house sparrow (2008)
Starling and song thrush were noted on site during the survey

Priority species potential:
-

Connectivity:
Rigbourne Hill creates an important wildlife corridor within the centre of the busy town of Beccles. It is connected to Bramley Rise open space and has a further degree of connectivity via adjacent residential garden spaces.

Structural diversity:
This site has moderate structural diversity. The steep banks covered with ruderal vegetation and scrub offer a degree of structural diversity, but it is very shaded and has limited vegetative diversity.

Flora:
This site was not floristically diverse, with the majority of the vegetation being either scrub or tall ruderal. On the banks, common nettle and Alexanders were dominant, with some hemlock, lesser celandine, dandelion and lords-and-ladies. The scrub was mostly blackthorn and elder with occasional elm, hazel, redcurrant, and silver birch and some larger oak trees. Bramble was abundant throughout the site and many of the shrubs were draped with honeysuckle.

The raised bank between the Bramley Rise pit and the pathway contained the ancient woodland indicator, dog's mercury. This could be an indication that there was an ancient hedge or parish boundary at this site. There was also abundant hedge woundwort.

In the north of the site, where the banks flatten out, there is an area of amenity grassland which contained typical species such as perennial rye-grass, Yorkshire fog, daisy, dandelion, ribwort plantain, broad-leaved dock, common cat's ear and white clover. There were some recently planted rowan trees within tree protectors.

Avifauna:
Common bird species including collared dove, wren, great tit, chiffchaff, blackcap and blackbird were noted on site during the survey. Starling and song thrush (Priority species) were also noted. The scrub and scattered trees offer good foraging, nesting and roosting opportunities for a range of bird species. This site is more important for its bird interest than its botanical interest.

Invertebrates:
Red-tailed bumble bee was noted during the survey. This site is likely to support a good range of invertebrates with plenty of deadwood, both standing and fallen. There are also some areas of bare ground near the tops of the banks, but these appear to be much disturbed by footfall and are therefore unlikely to be suitable for ground nesting bees and wasps.

Herpetofauna:
This site is sub-optimal for reptiles due to current levels of shading. There is a very old slow worm record from more than 20 years ago, but it is likely that the population may no longer exist at this location. Amphibians, such as frogs and common newt are unlikely to be present unless there are breeding ponds in the adjacent gardens.

Mammals:
The linear nature of this site means that it is likely to be used as a foraging and commuting corridor for bats. Some of the more mature trees have cracks and crevices which could be suitable for a bat roost. Common species of small mammal such as wood mice and bank voles will be present in the scrubby areas.

Comments and recommendations:
This site has particular value as a wildlife corridor in an otherwise built up part of Beccles.

Variegated yellow archangel is present on the eastern side of site around the central section and also on the border with Bramley Rise. It is listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any species listed on Schedule 9. Given this is already an established population within this urban green-space, the spread of the plant should be monitored and any plants removed should be disposed of appropriately to prevent their spread.

A non-native *Allium* species was also noted, likely to be few-flowered garlic. This is also listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The potential spread of this invasive species should also be monitored.

Site name: Land north of Pickwick Drive

Site ref: Blundeston 29
Site status: No wildlife designation
Grid ref: TM 51741 97813
Area: 2.28 hectare
Date: 23rd May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Wispy cloud, bright, sunny and warm
Ranking: 4
Biodiversity value: Low-medium

Map:

Photos:

View north from the gate

Looking north east from the gate

Habitat type(s):
Poor semi-improved grassland, hedgerow, dense/continuous scrub

Subsidiary habitats:
Old brick building/water tower, mature trees

Site description:
This site was observed from the gate at Pickwick Drive due to lack of access, so the survey is incomplete. The site is obviously privately used and there were tools and children's toys scattered around. A rubble pile was present on the grassland in the west of the site, and evidence of building material storage was apparent.

Trees line the western boundary and a thick hedge surrounds the north and east sides. A dry ditch runs along the hedgerow in the north.

The east of the site was completely inaccessible due to being covered with dense bramble, but the remnants of old livestock pens (likely poultry smallholding), a dilapidated port-a-cabin and an old brick 'water-tower' type building were visible in the centre.

Protected species seen or known:
-

Protected species potential:
Bats, common lizard

Priority habitats present:
-

Priority species seen or known:
West European hedgehog (2014) and starling (2009) recorded south of the site
House sparrow seen during the survey.
Swift (Suffolk Character Species) recorded overhead during survey.

Priority species potential:
Dunnock

Connectivity:
The site is surrounded on most boundaries by arable fields, but the network of hedgerows give a moderate degree of connectivity, as do the residential gardens to the south of the site.

Structural diversity:
This site has good structural diversity with varying sward lengths in the grassland, dense scrub and hedgerows giving a variety of habitats for a number of taxonomic groups.

Flora:
A hedgerow runs along the northern and western boundary comprising of hawthorn, dog rose, plum, blackthorn, field maple, elm, elder and bramble. There is some tall ruderal vegetation along the hedgerow including creeping thistle, cock's foot, cleavers, nettle, hogweed, alexanders, cow parsley and red campion.

The majority of the site is dense bramble scrub with rosebay willowherb, nettle and teasel. Poor semi-improved grassland with Yorkshire fog, ribwort plantain, greater plantain, prickly lettuce, creeping thistle, daisy, great willowherb, St John's wort, creeping buttercup, bush vetch, white clover, teasel and broad-leaved dock lies between the patches of bramble and extends across the western-most section of the site. There are some mature trees on this boundary, including oak, ash, sallow, beech, elder, sycamore, willow and laurel.

Avifauna:
The site provides excellent opportunities for this group. In particular, the areas of dense scrub provide good foraging, nesting and roosting opportunities for a range of common bird species. Summer migrants such as whitethroat are also likely to nest in the areas of dense bramble, and one was noted on site during the survey along with blackbird, house sparrow and wood pigeon. A screaming party of approximately 10 swifts was noted flying overhead whilst walking along The Street to the south west of the site.

Invertebrates:
The variety of plant species forming the mosaic of short and long vegetation, scrub edge, hedgerow and sunny hotspots provides varied habitat for a rich invertebrate community, providing shelter and variable microclimates. A number of common butterflies were noted on site during the survey, including small white, holly blue and small tortoiseshell, and other common species are likely to be present throughout the year. A buff-tailed bumble bee was also seen.

Herpetofauna:
Grass snake and common lizard may utilize this site. The rubble pile provides a habitat which would benefit reptiles by providing basking and hibernation features, and the open grassland and scrub provide good foraging opportunities.

Mammals:
The old brick building and a mature ash tree on the western boundary of the site could provide potential roosting opportunities for bats. The hedgerow gives a possible commuting corridor and the high invertebrate interest of the site offers excellent foraging opportunities for them also.

There are a number of hedgehog records in the immediate area and the combination of grassland, scrub and hedgerow provides good foraging, nesting and hibernation opportunities for them, especially the bramble scrub. There was evidence of heavy rabbit occupancy in the form of burrows, scrapes and grazed lawns, and some individual rabbits were seen during the survey.

Common species of mammal such as fox and muntjac deer are also likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland and scrub areas and the hedgerows on the boundaries of the site.

Comments and recommendations:

The assessment of this site was incomplete dur to access issues. Consequently, if this site is to be developed in the future, further surveys will be required, particularly breeding birds, reptiles and bats, as well as a more detailed Phase 1 survey. Vegetation clearance should take place only after the findings of the surveys are available and mitigation implemented as required.

Site name: Land between Pilgrims Way and Wingfield Street

Site ref: Bungay 21
Site status: No wildlife designation
Grid ref: TM 34031 89391
Area: 0.91 hectares
Date: 5 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Wispy cloud, moderate wind, warm and sunny
Ranking: 5
Biodiversity value: Low

Map:

Photos:

View across the expanse of bramble

Habitat type(s):
Dense continuous scrub

Subsidiary habitats:
Scattered broad-leaved trees

Site description:
This site lies south of Wingfield Street and is encircled by residential gardens. It was formerly allotment gardens which have been abandoned and have become overgrown. The site is entirely impenetrable bramble scrub throughout, so was viewed externally from the eastern and western boundaries of the site.

Protected species seen or known:
Soprano pipistrelle has been recorded to the west (2006)

Protected species potential:
-

Priority habitats present:

-

Priority species seen or known:

Various moth species have been recorded at this site (2003-2016), along with starling, song thrush (2009) and house sparrow (2008). There are hedgehog records from the surrounding area (2014). Dunnock seen during the survey.

Priority species potential:

-

Connectivity:

Due to this site being enclosed by residential properties, connectivity is relatively poor. There is a small area of green space to the south east but it is short mown and of little ecological value, however this links to a larger area of open space including ponds and ditches.

Structural diversity:

The structural diversity of this site is poor due to impenetrable dense continuous scrub throughout, so there is no height diversity. It does however, provide excellent nesting habitat for birds.

Flora:

This site has very low botanical diversity, as it is heavily dominated by bramble scrub. The only other species recorded were some hawthorn, buddleia and crack willow on the boundaries.

Avifauna:

This site is excellent for nesting and foraging birds as it is impenetrable and undisturbed. Common species of bird including great tit, chiffchaff, long-tailed tit, dunnock, blackbird, chaffinch, wren, wood pigeon and blue tit were noted on site during the survey. It has the potential to support summer migrants, such as nightingale and whitethroat.

Invertebrates:

This site is important for flower-visiting insects and bramble provides a food source from very early to very late in the year. Common species of butterfly are likely to utilize this site throughout the year.

Herpetofauna:

Grass snake, slow worm and common lizard are often associated with allotments, however due to the dense presence of bramble the site is unlikely to be suitable for this group. The site could provide hibernation opportunities for amphibians such as frogs and toads if there is a breeding population in the area.

Mammals:

The mature willow trees are of a size and age to potentially contain bat roosting features, however they were not fully assessed. Hedgehogs are likely to be found nesting and hibernating in the bramble scrub, and foraging in short mown grassland to the west. This site may provide a significant hibernation resource for the local hedgehog population. Common species of small mammal such as wood mice and bank voles are also likely to be present.

Comments and recommendations:

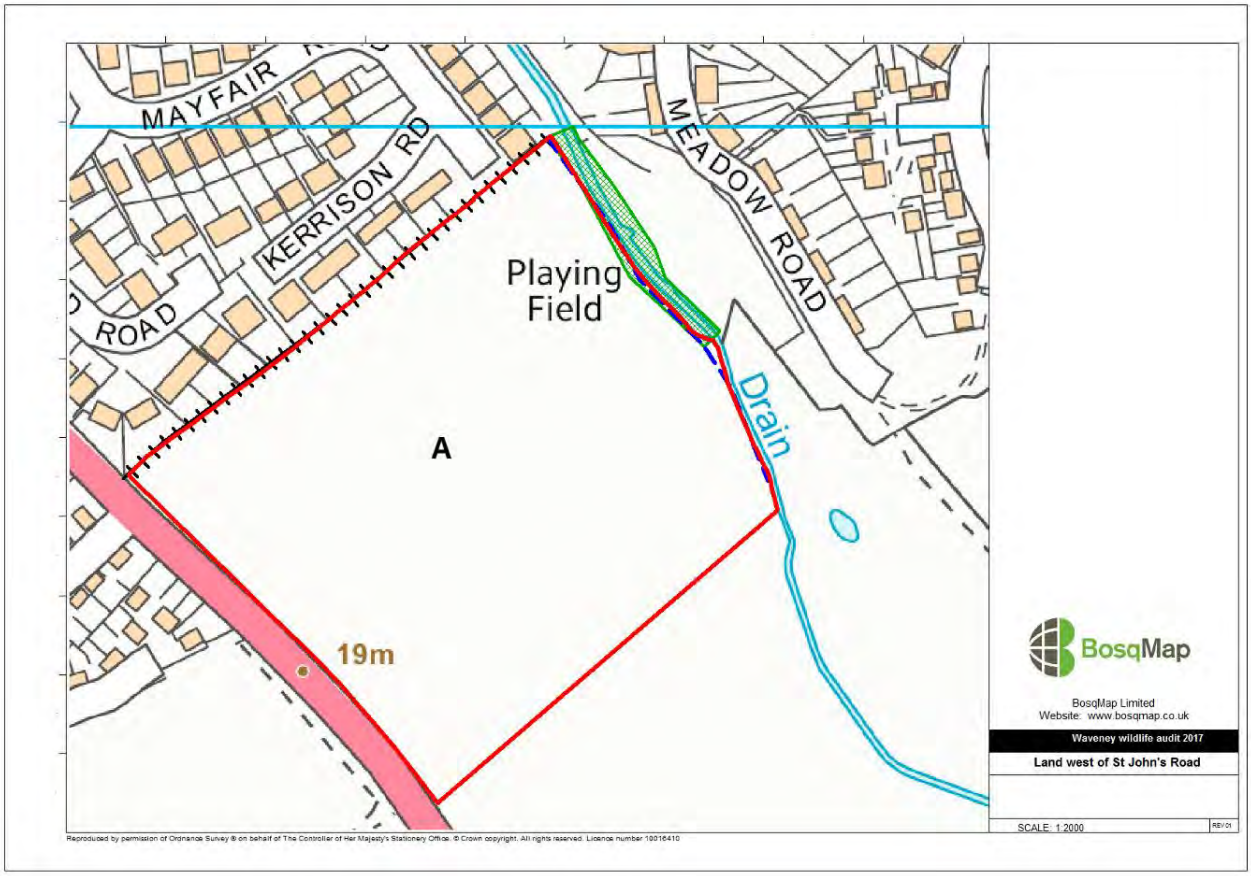
Any development proposals at this site should be accompanied by further surveys including breeding birds and bats and mitigation plans provided as appropriate. Consideration should also be given to the likely presence of hedgehog, particularly in terms of the habitat as a hibernation resource. No vegetation clearance should take place until these surveys have been undertaken and mitigation implemented as appropriate.

Notwithstanding the above, any clearance of scrub or trees should take place outside bird nesting season (March to the end of August inclusive).

Site name: Land west of St Johns Road

Site ref: Bungay 22
Site status: No wildlife designation
Grid ref: TM 34598 88845
Area: 4.63 hectares
Date: 5 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Wispy cloud, moderate wind, warm and sunny
Ranking: 5 (6 if ditch and hedgerow on north-eastern boundary is excluded)
Biodiversity value: Low

Map:



Photos:

View north-east across the arable field

Ditch and hedgerow on the north-eastern boundary

Habitat type(s):
Arable field, species poor hedgerow

Subsidiary habitats:
Seasonally dry ditch adjacent to site

Site description:
This site comprises part of a very large arable field, currently sown with a cereal crop. It has a seasonally dry ditch, called Tin River, and a species-poor hedge on the north-eastern boundary. The hedge thins out and becomes more gappy toward the south. The western boundary is St John's Road, with more arable fields to the south and residential gardens to the north.

Protected species seen or known:
Great crested newt recorded to the east of the site (2013)
Soprano pipistrelle, pipistrelle and Daubenton's bats (2015)
Brown long-eared and soprano pipistrelle bats recorded to the south (2011)

Protected species potential:
Grass snake

Priority habitats present:
-

Priority species seen or known:
Hedgehog (2014)
House sparrow, starling and dunnock (2009)

Priority species potential:
Skylark

Connectivity:
The ditch (Tin River) provides a degree of connectivity for this site, but the majority of the surrounding land is arable land.

Structural diversity:
The structural diversity is poor across the majority of the site, but the ditch and hedge provide some structural diversity.

Flora:
The field margins of this site were the most diverse area with typical species including nettle, cleavers, hogweed, red and white dead-nettle, mallow, dove's-foot crane's-bill, ribwort plantain, chickweed and common field speedwell. The ditch edge also featured lesser celandine, dandelion, great willowherb and shepherd's purse.

The hedgerow along the ditch was mainly hawthorn and blackthorn with some elm, beech, field maple and elder with ivy and honeysuckle growing throughout. Lords-and-ladies was present as part

of the ground flora.

Avifauna:
Although no skylark were noted on site during the survey, the habitat is suitable so their presence cannot be ruled out in future. The hedgerow will provide some foraging, nesting and roosting opportunities for a range of common bird species.

Invertebrates:
This site is sub-optimal for invertebrates, being largely arable. Small tortoiseshell and peacock butterfly and red-tailed bumble bee were recorded during the visit. The northern field margin provides some habitat for common species of butterfly.

Herpetofauna:
Grass snake may be associated with the seasonally wet ditch in the east of the site. There are records of great crested newts in a pond immediately east of the site. However, at the time of survey, this pond appeared to be dry and was within a cattle-grazed field. The habitat appeared unsuitable for great crested newts at this time.

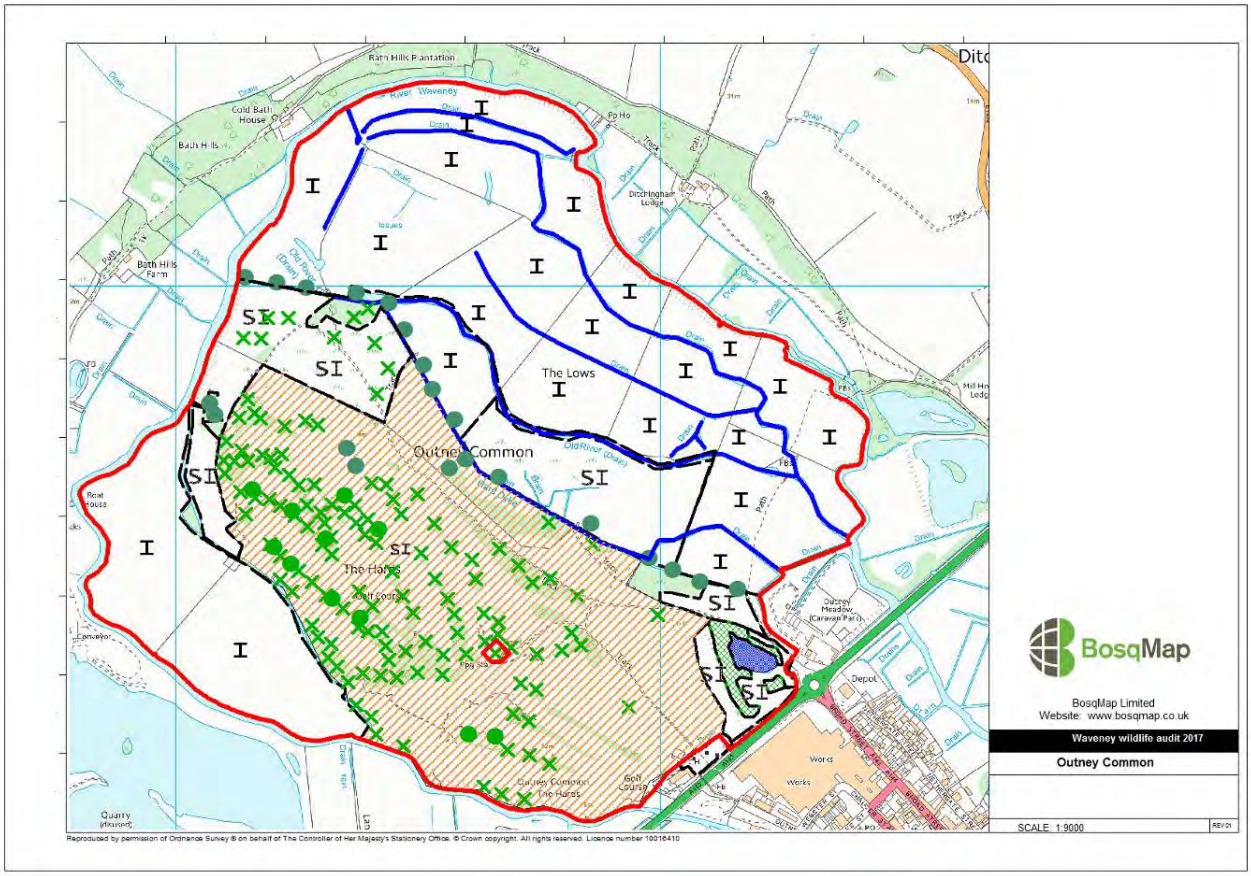
Mammals:
Bats are likely to use the hedgerow/ditch as a commuting or foraging route. The site is sub-optimal for most other mammals.

Comments and recommendations:
Although this site is of low wildlife value, if this site is developed a buffer must be maintained between any development and the hedgerow and seasonally wet ditch on the north-eastern boundary. Further surveys for breeding birds and great crested newts would be required if this feature were to be impacted upon.

Site name: Outney Common

Site ref: Bungay 20
Site status: County Wildlife Site
Grid ref: TM 32760 90540
Area: 156.58 hectares
Date: 5 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 50% cloud cover and moderate wind increasing during survey, sunny
Ranking: 2
Biodiversity value: High

Map:



Photos:

Tussocky grassland and scrub near car park

Lake in south-eastern corner

Ditch with diverse flora

Ditch suitable for water vole

Looking across "The Hards" from the Old River

The Golf Course

Habitat type(s):
Lowland acid grassland, improved grassland, poor semi-improved grassland, wet ditches, river, pond, dense-continuous scrub, scattered scrub, scattered broad-leaved and coniferous trees

Subsidiary habitats:
Fallen and standing deadwood, bare ground, pumphouse building

Site description:
Outney Common is a large County Wildlife Site located to the north west of Bungay, bounded by the A143 to the south and the River Waveney to the north. It is comprises two distinct and different areas. To the south-west there is "The Hards", much of which is taken up by a golf course and is mainly acid grassland with scattered gorse scrub and lines of pine trees. Much of this land is grazed by rabbits, which affects the character of the flora.

In the north-east is "The Lows", which is an area of low lying marshy meadows, grazed by cattle. This area is prone to flooding in winter and is intersected by a number of drainage ditches.

Protected species seen or known:
Norfolk hawker (2014)
Slow worm (1997)
Grass snake (1999, 2010)
European otter (1996, 2005)
Water vole (2004, 2008)
Pipistrelle nursery colony (2003)
European eel (1996)

Protected species potential:
Common lizard

Priority habitats present:
Lowland acid grassland, floodplain grazing marsh, pond

Priority species seen or known:
Bullfinch, house sparrow, marsh tit, barn owl, cuckoo (2014)
Yellow wagtail (2013)
Scaup (2012)
Linnet, dunnock, swift, barn owl, turtle dove, white-fronted goose (2011)
Reed bunting, lesser redpoll, cuckoo, herring gull, lapwing (2010)
Starling (2009)
Linnet (2008)
Hedgehog (2002)
Brown hare (2004, 2005)

Priority species potential:
Skylark

Common toad
Water shrew
Barn owl (Suffolk Character Species)

Connectivity:
This site has excellent connectivity. There is arable farmland intersected by a network of hedges and small pockets of woodland to the north and a large flooded quarry to the south. The River Waveney provides an excellent wildlife corridor to the north.

Structural diversity:
This site has excellent structural diversity with highly varied habitats across site. They include meadows, ditches, river, grassland, scrub and mature trees which offer opportunities for a range of taxonomic groups.

Flora:
The marshy meadows are dominated by Yorkshire fog, with abundant spring beauty, creeping and meadow buttercup, greater plantain, chickweed, dandelion and creeping thistle, with some smaller cat's tail. The southernmost ditch is called "Hard Dyke" and a large proportion is shaded by willow scrub, with some emergent and floating vegetation including water dock, flag iris, duckweed and common reed. The Old River is rich in lesser water parsnip and fool's watercress and further west, there is water starwort, hard rush, common reed, willowherb and pond sedge. Another ditch further north supports the greatest diversity of water plants. In addition to the species noted in the other ditches, brooklime, cuckoo flower, mare's tail, water mint, water plantain, celery-leaved buttercup, reed mace and reed sweetgrass were also recorded. The bank vegetation is comprised of hard rush, marsh bedstraw, Carex spp and meadow rue.

There is a line of trees which separates the grazing marsh and the golf course/common area comprised of alder, oak, elm and bramble.

Between the Old River and the Hard Dyke, there is tussocky grassland with gorse patches on sandy soil. Old mole hills have created areas of bare ground and field woodrush, common cat's ear, sheep's sorrel, meadow buttercup, creeping thistle, common mouse-ear, silverweed and lesser celandine are among the flora found here. Further north, there are patches of gorse with silver birch and oak. American blackberry is a garden/introduced variety of bramble which is common on "the Hards", along with common knapweed, silverweed, sedges, field horsetail and creeping thistle.

The golf course is a mix of short mown and rough acid grassland on sandy soil with patches of scrub and planted trees, including gorse, hawthorn, poplar, blackthorn, oak, beech, silver birch and conifers. The grassland was relatively species poor, which is typical of acid grassland but contained sheep's fescue, sedge sp., annual meadow grass, common bent and field wood rush, which is also an indicator of well established, dry grassland. Herbs present include heath bedstraw, lady's bedstraw, sheep's sorrel, mouse-ear hawkweed, common mouse-ear, spring beauty and germander speedwell. Many areas were rich in byrophytes.

North west of the golf course there is an area of semi-improved grassland, next to the River Waveney, which consists of creeping cinquefoil, meadowsweet, ribwort and greater plantain, sheep's sorrel,

common knapweed, chickweed, meadow buttercup, cock's foot, yarrow, creeping thistle, cow parsley and lady's bedstraw.

The approach towards the car park is lined with conifers, and the new car park area has had some planting of new saplings. Surrounding the car park there is a large area of tussocky grassland, which is mainly poor semi-improved, although the presence of fescue sp., sheep's sorrel, heath speedwell and lady's bedstraw suggests more acidic tendencies. At the time of survey, spring beauty was abundant throughout the area as well as chickweed and ground ivy, with some mouse-ear hawkweed, yarrow, creeping cinquefoil, perforate St John's wort, hairy tare and bush vetch.

There is a small lake with reed canary grass, water lily and flag iris with buck's-horn plantain, pendulous sedge, soft rush, creeping buttercup, teasel, cleavers, nettle, cow parsley and hemlock on the banks. The lake is surrounded by sallow and other willow species.

Records of Suffolk rare plants:
Tubular dropwort, lesser spearwort, marsh speedwell (2014) Water violet (2011, 2013 and 2014)
Corn spurrey (2012)
Common cudweed, suffocated clover, lesser spearwort, upright chickweed (2011)
Field pepperwort, flowering rush (2010)
Good King Henry (2006)
River water dropwort (1997)
Tormentil, marsh speedwell, heath speedwell, Good King Henry, common milkwort, marsh pennywort, devil's-bit scabious, sheep's bit, harebell, pale flax, greater spearwort, heath-grass, quaking grass, mat-grass, marsh cinquefoil, bulbous meadow grass, common valerian (1996)

Avifauna:

The marshy meadows support good numbers of breeding and over-wintering waders. Some of the species noted in this area during the survey were little egret, Canada goose, mallard, snipe, greylag goose, and oystercatcher. Also noted were reed bunting, sedge warbler and meadow pipit, with swallows flying overhead foraging and a kestrel hunting near the river.

On the golf course, the scrub and trees used as golfing 'hazards' provide nesting opportunities for common song bird species. Chiffchaff, blackbird goldfinch, robin, chaffinch and pied wagtail were noted during the survey. Also seen around the golf course were jays, magpies and carrion crows. There is a barn owl box on the common, west of the ditches.

Linnet, skylark and kingfisher are known to breed on this site.

Invertebrates:

This is a very good site for invertebrates, with a mosaic of habitats and good structural diversity. Patches of scrub adjacent to open grassland provide shelter and variable microclimates which benefit a range of species. Some common butterflies were seen during the survey, including red admiral, small tortoiseshell and peacock, and other common species are likely to utilise the site throughout the season. There are a good number of hawthorn trees on site, providing an important nectar and pollen source. Red tailed and garden bumblebees were noted. The patches of bare ground also offer potential habitat for ground dwelling bees and wasps.

The long grass provides good habitat for a range of invertebrates such as spiders, grasshoppers and crickets.

The flora-rich ditches and rivers have excellent water quality, so aquatic invertebrates are also abundant. Norfolk Hawker dragonflies have been recorded along the River Waveney.

Herpetofauna:

The tussocky grassland in the roughs of the golf course provide suitable habitat for slow worm and common lizard and the scrub and bare ground patches offer excellent basking and refuge opportunities. Grass snake are likely to be present along the water courses.

The lake is well-used by ducks, and therefore less suitable for great crested newts. It is likely to support frogs and toads and the network of ditches further enhances the habitat for amphibians.

Mammals:

There is a pumphouse within the grounds of the golf course which has some broken roof tiles, making it a potential roost site for bats. In addition, the water bodies will support a considerable amount of insect life so there are likely to be bats foraging over this area.

The good network of ditches and Rivers offer excellent habitat for otters and water voles, which have been recorded on site previously.

A number of mammals were seen during the survey including brown hare and Chinese water deer. Rabbit activity in the form of burrows, scrapes and grazed lawns was evident, and fox scat indicates their presence. There were also many molehills around the perimeter of the Golf Course.

Common species of small mammal such as wood mice and bank voles will be present in the scrubby areas, and the water courses are of a sufficiently high quality to support water shrew (priority species).

Comments and recommendations:

Plant species listed on Schedule 9 of the Wildlife and Countryside Act (1981) including Nuttall's Waterweed (2014) on the Hard Dyke and Indian balsam and Japanese rose (2010) on Outney Common. The distribution of these should be monitored and appropriate measures taken to limit the spread.

It was noted that there was a high level of dog fouling around heavily used footpaths within the site. More anti-fouling signage and bins could be provided to help combat this problem.

There were a large number of ducks on the lake. They enrich the water with their faeces and stir up enriched sediment as they up-end and search for food, destroying plant communities and leading to algal blooms, therefore it is advisable to deter duck feeding at the lake.

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 wilowherb 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.

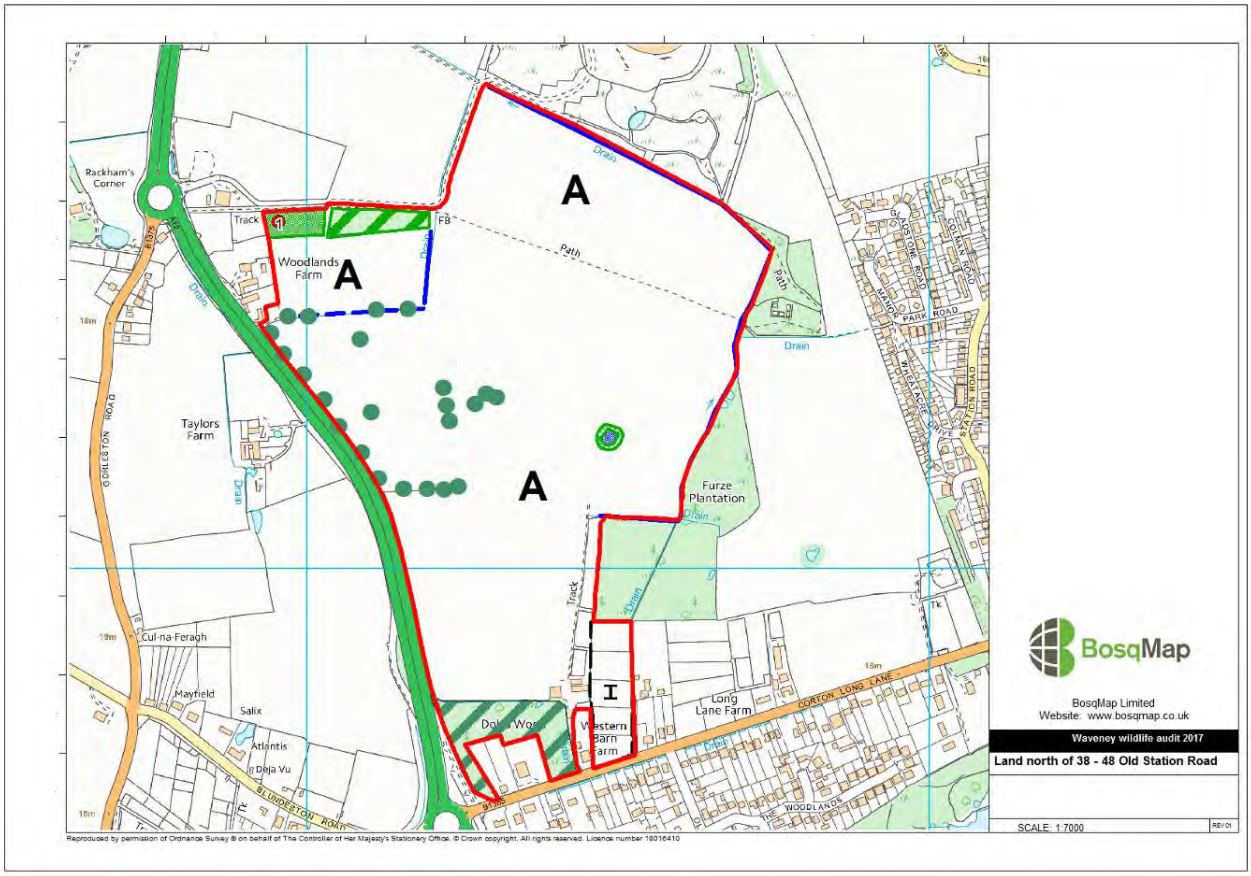
Two plants, few-flowered garlic and rhododendron have been recorded from this site. These are both listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any species listed on Schedule 9. The presence of these plants should 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: Land north of 38-48 Old Station Road

Site ref: Lowestoft 13
Site status: No wildlife designation
Grid ref: TM 53340 97210
Area: 49.77 hectares
Date: 23rd May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 15% cloud, sunny and warm with no breeze
Ranking: 5
Biodiversity value: Low

Map:



Photos:

Hedgerow and woodland in north of site, near the Water Treatment Works

Path between the older woodland and new plantation

Looking south across the barley fields

The pond and standing deadwood

Oak and sycamore with bat potential

Habitat type(s):
Arable field, mixed plantation woodland, broad-leaved plantation woodland, broad-leaved semi-natural woodland, pond, ditch

Subsidiary habitats:
Mature trees, fallen and standing deadwood, ivy-covered trees

Site description:
This site lies adjacent to the A12 in the west, meets the Corton Water Treatment Works in the north and borders Furze Plantation in the east. Doles Wood lies within the site boundary at the southern-most boundary, along with the paddocks of Western Barn Farm. Along the north-western edge, near Woodlands Farm, is a small block of semi-natural woodland with a mature elm on the northern edge (Target Note 1). Adjacent to that is another small block of young planted broad-leaved woodland. The site is mainly a large arable field, currently sown with barley. There is a network of wet ditches, which are likely spring-fed, intersecting the field and bordering it in the east. There is a pond within the arable field in the east of the site, near Furze Plantation which is surrounded by scrub and fruit trees. Within the field there are some mature sycamore and oak trees which may have bat potential due to their size and age and as they have some peeling bark and crevices.

The ditch toward the south of the site, running halfway across the field from the A12, has a number of mature trees along the side, which also are of ecological value.

Doles Wood is a mixed plantation woodland with a dense sub-canopy and little ground flora due to its shady nature. The A12 is lined with trees and scattered scrub.

Protected species seen or known:
Brown long-eared bat breeding colony and pipistrelle breeding colony on Corton Long Lane to the south (2013)

Protected species potential:
Great crested newt, common lizard, grass snake

Priority habitats present:
Pond

Priority species seen or known:
All within the surrounding area:
Common toad at Corton Water Treatment Works (2015)
West European Hedgehog on Corton Long Lane to the south (2014)
Yellowhammer, linnet, lesser redpoll (2008)
House sparrow, song thrush, dunnock, starling (2009)
Cuckoo, wryneck (2013)
Bullfinch, spotted flycatcher, ring ouzel, tree pipit, skylark, barn owl, grey partridge, yellow wagtail (2014)
Wall butterfly on Corton disused railway (2003)
Brown hare (2007)

Priority species potential:
Skylark

Connectivity:
Connectivity across the site is poor, although the boundaries have good connectivity with the surrounding woodlands, network of ditches and the wildlife corridor afforded by the adjacent A12 road.

Structural diversity:
The arable parts of the site have lower wildlife interest or structural diversity (with the exception of the mature trees). However, the pond and boundary features have good structural diversity.

Flora:
The boundary features of this site include Doles Wood in the south, which contains sycamore, small-leaved lime, yew, conifers, beech, sweet chestnut, cherry, ash, silver birch, holm oak, holly, elder and laurel. Also along Corton Long Lane is a hedgerow which lines the paddocks. This hedgerow has ancient oak standards and is relatively species rich, including beech, sycamore, hawthorn, holly, dog rose and ash. It is low trimmed but otherwise an important feature.

A ditch runs alongside the field edge on the eastern boundary, it is heavily shaded by the woodland beyond and a tall ruderal field edge with nettle, alexanders, cleavers and barren brome.

In the north of the site lies Woodlands Farm wood which is a semi-natural woodland comprised of a mature elm (Target Note 1), sycamore, hawthorn, plum, beech, elder, ash and oak with an understorey of bramble, nettle and alexanders.

A wide path runs between Woodlands Farm Wood and another area of new plantation woodland. This woodland contained oak, hawthorn, hazel, elm, sallow, silver birch, dogwood and wayfaring tree.

There is a ditch around the north-western field, which separates this field from the much larger field area. This ditch is densely vegetated with fool's watercress, field horsetail and great willowherb with some bush vetch around the edges.

The field edge presents another feature of the site, with red fescue, sheep's fescue, barren brome, annual meadow-grass, smooth meadow-grass, cock's foot and common couch grasses. There was also a rich herb community with scentless mayweed, creeping thistle, spear thistle, curled dock, broad-leaved dock, lesser trefoil, spurge sp., and where there was a patch of longer sward at the eastern end of the new plantation, cut-leaved crane's-bill, common vetch, ribwort plantain, common sorrel, hairy tare, creeping buttercup and common mouse-ear were present.

The pond was surrounded by hawthorn, elder plum and apple trees with bramble scrub and a patch of great willowherb, nettle and alexanders to the west. Despite this, it was relatively unshaded and although there was very little emergent vegetation, it appeared to have good water quality.

Suffolk Rare Plant Broad-leaved helleborine is recorded in Corton Water Treatment Works and adjacent woodland (2016)

Avifauna:

The woodland areas on the boundaries of the site offer nesting opportunities for common bird species. During the survey great tits were noted, a flock of house martins were observed feeding over the pond and a buzzard was observed hunting over the field. skylark may use the arable areas for nesting, as well as other farm land bird species.

Invertebrates:

The field margins and woodland edges provide opportunities for a range of invertebrates and the presence of fallen and standing deadwood offer additional habitat. The pond is likely to contain a diverse array of aquatic invertebrates. During the survey buff-tailed bumblebees were seen along with a number of butterflies including red admiral, common blue and orange tip. Several damselflies were observed around the pond area, including common blue.

Herpetofauna:

The area around the pond is suitable for grass snake, as there is a good scrub layer and fallen deadwood offering refuge, hibernation and basking opportunities and the invertebrate community associated with the pond would offer foraging opportunities. The woodland edge around the ditch and long vegetation is also suitable for grass snake. Common lizard may also be present. The pond could also provide potential habitat for great crested newts, smooth newts, frogs and toads.

However, the pond lies within an arable field which means that it is largely isolated from other habitats. Although the habitat is suitable, this will reduce the likelihood of the above species being present.

Mammals:

The mature trees throughout the field offer roosting opportunities for bats as do the woodlands and ivy-covered trees on the site boundaries, and they are likely to forage over the site.

Brown hare is likely to be present on site.

The ditches provide sub-optimal habitat for water vole.

Common species of mammal such as fox, rabbit and muntjac deer are likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the woodland and hedgerows on the boundaries of the site.

Comments and recommendations:

There are ecological features of interest on this site, particularly the pond, mature trees, ditches and on-site and adjoining woodland. Opportunities to improve connectivity between these features would be ecologically beneficial.

If this site were to be developed, further surveys will be required, particularly bats, great crested newts, reptiles and breeding birds. Any vegetation clearance should take place only after the findings of the surveys are available and mitigation implemented as required.

The following grid references represent notable mature trees:
TM 53090 97361
TM 53224 97289
TM 53103 97249
TM 53234 97237
TM 53305 97273

In addition, also those trees along the ditch from TM 53120 97121 to TM 53239 97128

Wildlife and Countryside Act, 1981 (as amended) Schedule 9 Invasive plants which have been recorded at Corton Sewage Works to the north include New Zealand Pigmyweed and Nuttalls' waterweed (2016). The potential presence in the on-site pond should also be considered during future surveys.

Site name: Bird's Folly

Site ref: Halesworth 23
Site status: County Wildlife Site
Grid ref: TM 39276 77329
Area: 1.80 hectares
Date: 26 April 2017
Recorder: J. Crighton
Weather conditions: 30-90% cloud cover, intermittent sunshine and black cloud, cold wind
Ranking: 2
Biodiversity value: High

Map:

Photos:

Dense scrubby woodland in the north

Large oak with exposed roots on steep slope

Acid grassland in east of site

Acid grassland and lichen/bryophyte heath in centre of site

Habitat type(s):
Semi natural broad-leaved woodland, dense continuous scrub, acid grassland, acid heath

Subsidiary habitats:
Fallen and standing deadwood, bare ground on slopes

Site description:
Bird's Folly, also known as The Folly, lies north of the railway and south of Holton Road. This site is part of a larger area known as Millennium Green, which includes additional meadows south of the New Reach (Angel Meadow, Chestnut Meadow, Lester's Piece and Blyth Meadow and Folly Meadow north of the New Reach. The New Reach River and the railway line represent significant wildlife corridors linking this network of sites. The Halesworth Millennium Green Trust is a registered charity and habitat management work on the Green is undertaken by volunteer work parties in accordance with their management plan.

Bird's Folly represents a mosaic of different habitat types with secondary mature woodland, scrub and grassland. There is a network of paths throughout the site which are well-used by local residents.

It has been designated as a County Wildlife Site (CWS) largely due to its acid grassland, a scarce habitat in this part of Suffolk. It was originally two gravel pits associated with the building of the railway and contains remnants of the old Halesworth to Southwold railway, open from 1879 to 1929, including a section of track, a bridge and the base of the engine shed.

Protected species seen or known:
Grass snake (2013) and slow worm (2010) to the north of site, common lizard (local record)

Protected species potential:
Various bats

Priority habitats present:
Lowland acid grassland

Priority species seen or known:
West European hedgehog records from north of site (2014)
House sparrow, starling, dunnock (2009) (Dunnock noted on site during the survey)

Barn owl (Suffolk Character Species) (2006)

Priority species potential:
Linnet
Common toad

Connectivity:
This site has excellent connectivity with the wider environment as it abuts the railway line in the south-west, beyond which there is also good connectivity to habitats associated with the New Reach and associated wet ditches.

Structural diversity:
There is excellent structural diversity, with bare ground, short cropped acid grassland, taller edges, scrub and woodland providing a range of opportunities for a variety of taxonomic groups.

Flora:
The plant list is limited by the time of year and additional surveys later in the year would reveal a wider list of species, particularly in the grassland areas. The site is well recorded by local volunteers.

The secondary woodland is mainly sycamore-dominated with some oak, holm oak and hornbeam. Scot's pine, holly, hawthorn, elm, field maple, elder, box, privet, broom and young horse chestnut are within the understorey, with honeysuckle and ivy growing on many of them. The ground flora is shaded with only ferns of *Dryopteris* species (thought to be a scaly male fern hybrid) and a few patches of bluebell (likely to be hybrid) amongst leaf litter and young saplings. In areas where the ground receives more light, the ground flora contains mostly tall ruderal vegetation including Alexanders, nettle, white dead nettle, cow parsley, cleavers, hogweed and garlic mustard, and along the path edges there is Yorkshire fog, dove's-foot crane's-bill, lords-and-ladies, germander speedwell, yarrow, ground ivy, common mouse-ear and meadow rue are present. Toward the acid grassland edge, some rowan, laurel, bramble and gorse can be found.

The steep banks to the north of the woodland are densely covered with tall ruderal vegetation, similar in composition to the ground flora of the dense scrubby areas. Additionally, bluebells and comfrey were also noted on the slopes. A large number of ferns were noted throughout the woodland, and they include the scaly male fern hybrid, broad buckler fern and a particularly high population of common polypody.

The grassland is on two levels, both of which are heavily rabbit grazed. The species composition is largely dictated by the free-draining soil conditions, but there are also some acid indicator species. The higher level represents a horseshoe-shape in the south and east of the site, comprising sheep's fescue, common bent and rough meadow-grass with perforate St John's wort, bulbous buttercup, common sorrel, sheep's sorrel, lesser trefoil, swine cress, common ragwort, agrimony, ground ivy, common cat's ear, white campion, and spring beauty (mainly around the edges). The presence of field woodrush and mouse-ear hawkweed indicates that this is an established dry grassland. The area is surrounded by scrub including gorse and hawthorn.

The lower level of acid grassland in the north-west has similar species but includes a greater amount of bare ground and is dominated by lichens and bryophytes, with some sheep's sorrel, sheep's fescue and common polypody around the edges. This more 'heathy' area is noted by Target Note 1.

The old railway bridge has wild strawberry growing on top and a few black spleenwort plants growing on the north facing surface. The mainline railway bridge has some hart's tongue fern and ivy-leaved toadflax on the north facing surface.

Avifauna:
The weather conditions were cold with heavy showers which is sub-optimal for recording this group. Common bird species including chaffinch, robin and chiffchaff as well as dunnock (priority species) were noted on site during the survey but it is highly likely to support other resident and migrant bird

species in the dense scrub and woodland areas.

Invertebrates:

The mosaic of bare ground, grassland, scrub and woodland provide excellent habitat for a good range of both common and rarer invertebrate species. Common carder bee and garden bumble bee were noted on site during the survey but the cold weather conditions at the time of survey were sub-optimal for recording this group.

There is plenty of fallen and standing deadwood within the woodland areas, which offers potential habitat for a good range of saproxylic invertebrates. The bare ground areas and south facing slopes, particularly in the lower levels of the acid grassland, provide very important habitat for a variety of invertebrates, including ground nesting aculeate hymenoptera, many of which are nationally scarce.

Herpetofauna:

The mosaic of habitats from scrub to short acid grassland and bare ground provides good basking, foraging and refuge habitat for grass snake, slow worm and common lizard, which have been recorded on site. The scrub and woodland areas could be a good hibernation site for common toad, particularly as the site has good connections to the railway line and a network of marshes and species-rich dykes.

Mammals:

Several of the mature trees on site could provide natural bat roosting sites. Due to the diversity of habitats on site, the high invertebrate interest and the good connectivity to the river and railway line it is highly likely that different bat species will forage over the site. Common species of mammal such as fox, grey squirrel and muntjac deer are likely to forage on this site. Common small mammals including mice, voles and shrews are also likely to be present in the woodland and scrub. Rabbit activity in the form of burrows, scrapes and grazed lawns are evident and molehills were apparent throughout the site.

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:

Although relatively small, this site has very high wildlife value and is part of a larger, well connected semi-natural habitat mosaic. The dry habitats complement the wetland habitats found elsewhere within the Millenium Green complex.

Rabbit grazing is helping to manage the grassland areas and retain the acid grassland. If the rabbit population were to decline then additional management would be required to maintain these areas.

References:

About the Green – Halesworth Millennium Green. 2017. *About the Green – Halesworth Millennium Green*. [ONLINE] Available at: http://millenniumgreen.halesworth.net/sample-page/about-the-green/. [Accessed 20 June 2017].

Site name — Fairview Farm Meadow

Site Ref: Waveney 110
Site status: County Wildlife Site
Grid ref: TM 3933 7899
Area: 1.56 hectares
Date: 11 Aug 2016
Recorder: J Crighton and A Looser
Weather conditions: Overcast, cool with slight wind, after rain
Ranking: Unknown due to disturbance - 2 for potential)
Biodiversity value: Medium- High (potential)

Map:

Photos:

Photo 1. View east across site with hedgerow, woodland, tall ruderal and bare ground

Photo 2. A large area in the centre of the site has been recently cleared

Habitat type(s):
Dense continuous scrub, tall ruderal, broadleaved woodland

Subsidiary habitats:
Bare ground, species-poor hedgerow

Site description:
Fairview Farm Meadow lies south of Sparrowhawk Road. It is an area of dense scrub and woodland with some bare ground patches which are the result of very recent scrub clearance. In some areas, the scrub was so thick that it made the site inaccessible. The abundant common fleabane presence indicates poor draining soil, typical of chalky boulder clay soils. Woodchip has been spread throughout the sparse ground flora. Previously, bee orchid and common spotted orchid have been present on site, but these were not seen on this visit and is likely to the current disturbed state of the site. Yellow-wort has also been historically found here, although it was not seen on this occasion.

Protected species seen or known:
-

Protected species potential:
Great crested newts (recorded at Broadway Farm), slow worm, common lizard

Priority habitats present:
-

Priority species seen or known:
-

Priority species potential:
Common toad, hedgehog

Connectivity:
This site has good connectivity, with the southern and eastern margins adjoining rough grassland and other scrubby areas.

Structural diversity:
The structural diversity of this site is moderate. The scrub layer is relatively thick and at different levels with the bramble and willow. The ground flora is sparse and large areas have been cleared completely.

Flora:
Much of the site comprises dense areas of scrub with species including blackthorn (***Prunus spinosa***), bramble (***Rubus fructicosa agg***.), hawthorn (***Crataegus monogyna***), and large stands of willow (***Salix*** spp.).

The ground flora was relatively sparse with large areas of bare ground visible, the dominant species are curled dock (***Rumex crispus***) and common fleabane (***Pulicaria dysenterica***), other species recorded include common nettle (***Urtica dioica***), field bindweed (***Convolvulus arvensis***), ground ivy (***Glechoma hederacea***), hedge woundwort (***Stachys sylvatica***), spear thistle (***Cirsium vulgare***), creeping thistle (***Cirsium arvense***), common ragwort (***Senecio jacobaea***), selfheal (***Prunella vulgaris***), creeping buttercup (***Ranunculus repens***) and nodding thistle (***Cardus nutans***).

Avifauna:
The survey was conducted at a sub-optimal time of year for bird surveys, however this site provides excellent foraging, roosting and nesting habitat for a range of bird species. Blackbird and black cap were noted on site at the time of the survey but a range of other resident and migratory species are likely to use the dense scrub during the year.

Invertebrates:
This scrub and tall ruderal vegetation is likely to support a good range of common invertebrates, particularly butterflies.

Herpetofauna:
There are several records of slow worm and common lizard adjacent to this site. Whilst the habitat is currently sub-optimal for this group due to the presence of large amounts of scrub, it is likely that they could quickly re-colonise the site when the habitat improves after scrub clearance. Great crested newts have been recorded from the opposite side of the A144 (2012) and also from just east of the site (2009). Whilst the A144 is likely to be a barrier to movement, the terrestrial habitat for great crested newts on site is good and the presence of them to the east of the site means the presence of this species cannot be ruled out. Toads could be present due to the damp conditions if there are any in the area.

Mammals:
The dense scrub provides good hibernation potential for hedgehogs and there are records of them in the area. The site provides good habitat for a range of common mammals including grey squirrel, deer and small mammals such as mice, voles and shrews. Rabbit activity was noted on site.

Comments and recommendations:
This site was designated as a County Wildlife Site for its calcareous grassland on chalky boulder clay. The site has been unmanaged for a number of years which has led to the development of large amounts of scrub. Management has recently started to remove scrub which has resulted in recently exposed bare ground and tall ruderals, particularly common fleabane, becoming dominant.

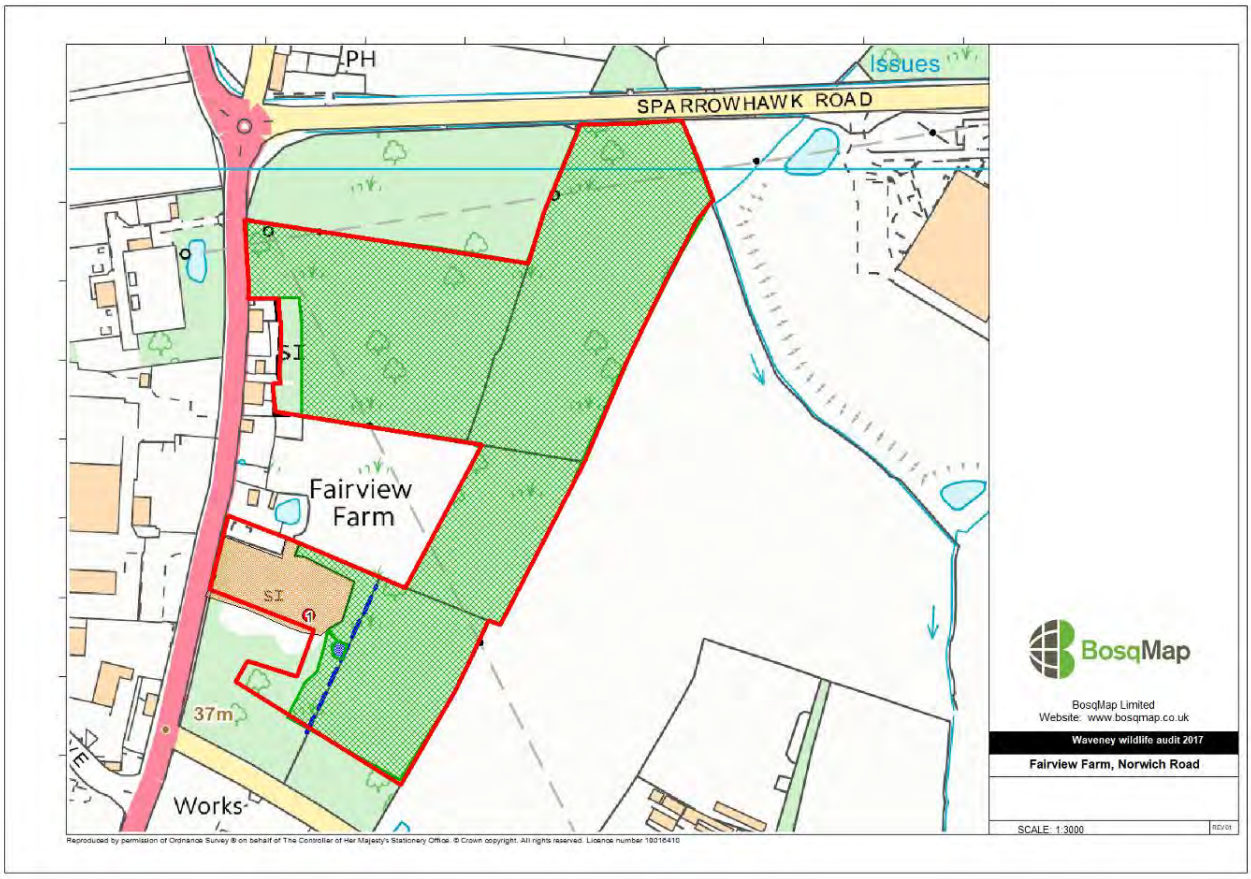
As long as there is no reseeding or addition of fertilisers, then the original seed bank should still be present. The sward will continue to need to be managed by cutting and the arisings removed to avoid enrichment and dominance of tall grasses and ruderal species.

The land to the south and east of the site has been put forward as potential development sites (102 and 113) for housing and industrial units. If this area is developed care should be taken to buffer the County Wildlife Site and maintain a wildlife corridor to other sites both to the south and east.

Site name: Fairview Farm, Norwich Road

Site ref: Halesworth 27
Site status: No wildlife designation
Grid ref: TM 39397 78786
Area: 6.75 hectares
Date: 26 April 2017
Recorder: J. Crighton
Weather conditions: 70% cloud cover, bright and sunny with cold wind and occasional showers
Ranking: 3
Biodiversity value: Medium

Map:



Photos:

Ancient hedgerow/Parish boundary

Botanically interesting meadow (including adder's tongue area – Target Note 1).

Path through the scrub at the northern end of the site

Habitat type(s):
Dense continuous scrub, ancient hedgerow, dry ditch, neutral grassland, pond

Subsidiary habitats:
Fallen and standing dead and rotten wood

Site description:
This site is bounded by two busy roads; Norwich Road to the west and Sparrowhawk Road runs along part of the boundary in the north. Fairview Farm Meadow County Wildlife Site lies between the site and Sparrowhawk Road in the north west. Fairview Road lies to the south but is not as frequently used. To the east there are arable fields.

The northern and eastern regions of this site represent impenetrable dense continuous scrub, with a mown pathway running through. The grassland area south of Fairview Farm is species diverse (Target Note 1). An ancient hedgerow runs through the middle of the southern part of the site alongside a dry ditch, along the line of the parish boundary between Halesworth and Holton.

There is a pond which lies within a patch of encroaching scrub adjacent to the ancient hedge in the southern-most field of the site. The pond was heavily shaded with no emergent or floating vegetation, and appeared to have relatively poor water quality.

Protected species seen or known:
-

Protected species potential:
Great crested newt in pond across the road to the west (2012) and Sparrowhawk Road (2009)
Common lizard and slow worm (both recorded Sparrowhawk Road in 2009), grass snake to east (2003)

Priority habitats present:
Ancient species-rich hedgerow
Pond

Priority species seen or known:
-

Priority species potential:
House sparrow (2008/2009), dunnock (2009) and starling (2008) to south
Hedgehog (nearest record Harrisons Lane to south in 2013)
Common toad

Connectivity:
The site is part of a larger block of semi-natural habitat and is linked to the wider countryside via a network of field margins and hedgerows bordering the arable fields. Fairview Farm County Wildlife Site lies adjacent to the northern boundary of the site.

Structural diversity:
The site has good structural diversity with a mixture of dense scrub and grassland, including a hedgerow and small pond, which collectively provide habitat for a number of taxonomic groups.

Flora:
The areas of dense scrub were mostly impenetrable with hawthorn, blackthorn, field maple, privet, bramble, some apple and cherry plum. The fruit trees suggest there could have been a small orchard present, although there is no record of this on the historic orchard GIS layers. The eastern boundary is marked by a hedgerow, into which the scrub had merged. The remnants of the ancient species-rich hedgerow defining the parish boundary is present in the southern part of the site, but similarly lies within an area of dense scrub. This hedgerow comprises hawthorn, blackthorn, field maple, privet, bramble, some apple and cherry plum. The species-rich hedgerow along the eastern boundary comprises oak, cherry plum, field maple, pear, elm, hazel, elder and includes some oak and ash standards. There is a large stand of dog's mercury near a pond but otherwise the ground flora was sparse with occasional lords-and-ladies.

The area of neutral grassland was dominated by common fleabane but also contained a diverse mix of other notable species such as Adder's tongue fern (Target Note 1), cowslip, meadow rue, corn mint and ox-eye daisy. The common fleabane, along with hard rush, curled dock and marsh thistle indicate that the ground has poor drainage typical of heavy chalky bounder clay soils. Also present were glaucous sedge, Yorkshire fog, cock's foot and meadow grass, with common herbs including ground ivy, creeping cinquefoil, ragwort, creeping buttercup, common sorrel, bristly ox-tongue, tare sp. and silverweed.

In the south of the site, there is an area which has undergone recent extensive scrub clearance, with the cuttings left in piles. North of Fairview Farm, there was a narrow strip of species-poor grassland containing common species.

Avifauna:

The scrub provides excellent nesting and foraging opportunities for a range of common and migrant birds. Although the time of year was suitable for recording this group, the survey took place on a cold afternoon and bird activity was suppressed.

Invertebrates:

Scrub habitats support a range of invertebrates and flowering shrubs also provide an important nectar and pollen source. A variety of invertebrates typical of a grass/scrub mosaic will be present. Many bees and spiders were noted on site during the survey. The water quality in the pond appeared to be poor due to shading, but it will support some common species.

Herpetofauna:

The pond was shaded with no emergent or floating vegetation, so was suboptimal for great crested newts. However, there is a high pond density in the locality and two records just beyond the site boundaries. In addition, the terrestrial habitat on site is highly suitable for this species. Consequently, there is a high possibility that great crested newts will be present on site, at least in low numbers. Other amphibians may be present, including common toad.

The scrub and open grassland mosaic provides good refuge, basking, foraging and hibernation opportunities for reptiles, particularly slow worm and common lizard. Both species have been recorded in the locality of the site, so they are highly likely to be present on site.

Mammals:

The area has excellent potential for hedgehog foraging and nesting and the scrub may also represent an important hibernation resource in the locality. Bats may forage over the site but there were no obvious roosting opportunities observed during the survey.

Rabbit activity in the form of burrows, scrapes and grazed lawns were evident, along with fox scat. The site is also likely to be used by other common mammals such as muntjac deer. Mice, voles and shrews are also likely to be present in the rough grassland areas and the edges of the scrub.

Comments and recommendations:

Any development proposals at this site should be accompanied by further surveys including breeding birds and botanical (particularly early flowering species), bat activity, great crested newt and reptiles. The likely presence of Priority species should also be further evaluated and taken into consideration.

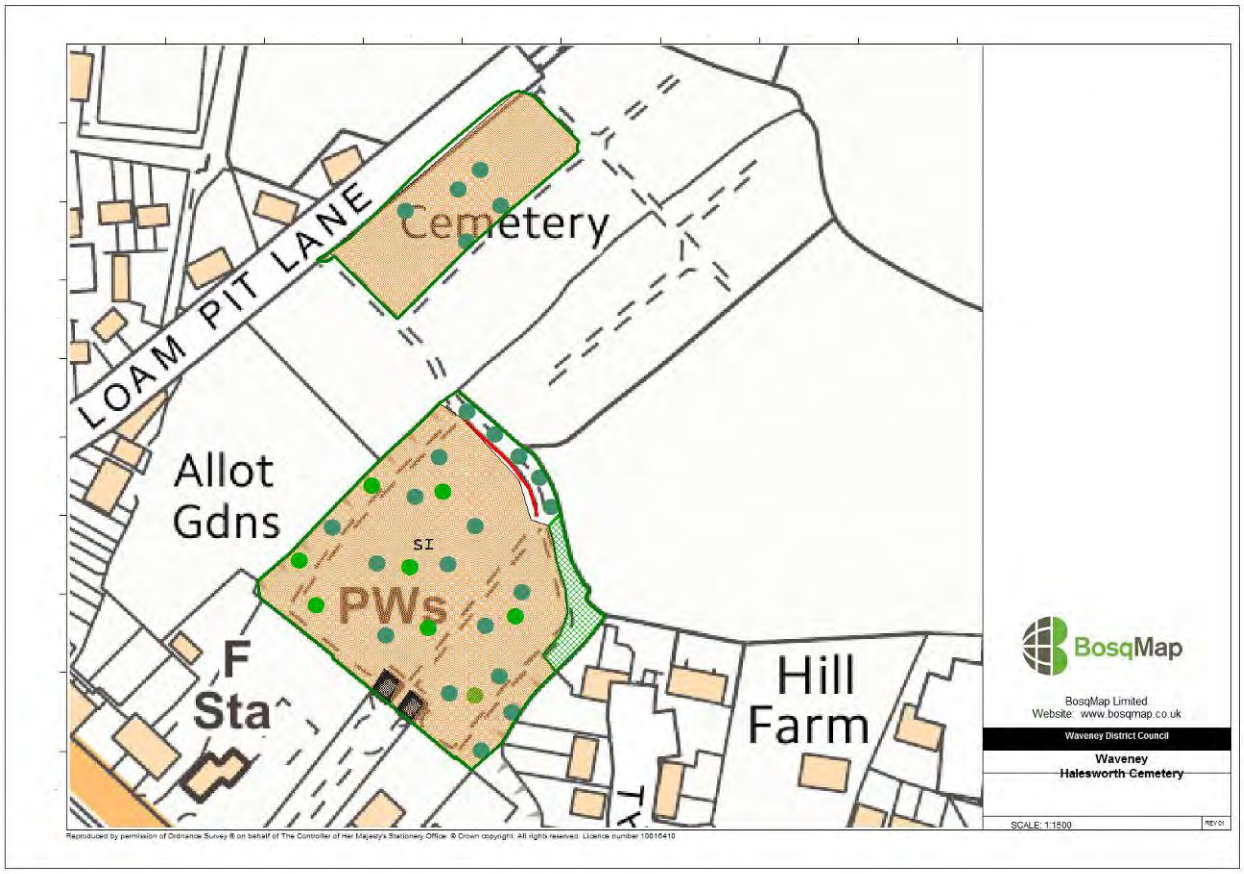
Following the surveys, mitigation plans should be provided as appropriate. No vegetation clearance should take place until these surveys have been undertaken and mitigation implemented as required by the relevant legislation.

Notwithstanding the above, any clearance of scrub or trees should take place outside bird nesting season (March to the end of August inclusive).

Site name — Halesworth Cemetery

Site Ref: Waveney 33
Site status: County Wildlife Site
Grid ref: TM 3923 7777 + TM 3922 7764
Area: 0.86 + 0.26 hectares
Date: 13 June 2016
Recorder: J Crighton and A Looser
Weather conditions: 95% cloud cover, humid with drizzly rain
Ranking: 2
Biodiversity value: High

Map:



Photos:

Photo 1. Species-rich unimproved neutral grassland adjacent to Loam Pit lane (top cemetery)

Photo 2. Maidenhair fern growing on cemetery wall

Photo 3. Black spleenwort growing on cemetery wall

Habitat type(s):
Neutral unimproved grassland, neutral semi-improved grassland

Subsidiary habitats:
Wall, scattered trees, dense continuous scrub

Site description:
Two sections of Halesworth Cemetery are classified as a County Wildlife Site. They lie south east of Loam Pit Lane and north of Quay Street, behind the Fire Station. The Cemetery, along with the Loam Pit Lane allotments are on the edge of the developed area of Halesworth.

The northern section is a good example of a herb-rich grassland (Biodiversity Priority Habitat) with abundant wild flowers. The species found are typical of unimproved neutral grassland on Boulder clay. The wall in the southern section has the most ecological importance, as two rare fern species grow there. Surrounding the graveyard to the western boundary is a hedgerow, but it is not included within the site.

Protected species seen or known:
Grass snake was recorded to the south of the site, and in a nearby garden pond in 2013. Slow worm was recorded to the west of the site in Quay Street in 2013 and to the east of site in 2010.

Protected species potential:
Common lizard
Bats

Priority habitats present:
Lowland species-rich grassland

Priority species seen or known:
West European hedgehog recorded to the east and west of site in 2014.

Priority species potential:
-

Connectivity:
Halesworth Cemetery has good connectivity with other green spaces as there are arable fields to the north, east and west of the site, connected via a series of dense hedgerows surrounding the fields.

Structural diversity:
Structural diversity is relatively good as there are areas of short and long grassland, with scattered trees. The gravestones and high stone wall also provide a degree of structural diversity, offering alternative habitat.

Flora:
The northern section of grassland contains species such as cowslip (***Primula veris***), hedge bedstraw (***Primula veris***), bird's-foot trefoil (***Lotus corniculatus***), black bent (***Agrostis gigantea***), meadow oat-grass (***Avenula pratensis***) and sweet vernal grass (***Anthoxanthum odoratum***), with biting stonecrop (***Sedum acre***) and white stonecrop (***Sedum album***) on gravestones and bare ground. The scattered trees are mainly yew (***Taxus baccata***) and laurel (***Laurus nobilis***).

The wall to the north of the southern graveyard displayed maiden-hair fern (***Adiantum aethiopicum***) and black spleenwort (***Asplenium adiantum-nigrum***).

The southern graveyard has more scattered trees than the north; these include copper beech (***Fagus sylvaticaf. Purpurea***), Scot's pine (***Pinus sylvestris***) and horse chestnut (***Aesculus hippocatanum***). There is also a patch of scrub in the north eastern corner which is mainly blackthorn (***Prunus spinosa***), sycamore (***Acer pseudoplatanus***), dogwood (***Cornus sanguinea***), elder (***Sambucus nigra***) and hawthorn (***Crataegus monogyna***).

The ground flora is not as rich as the north but includes false brome (***Brachypodium sylvaticum***), remote sedge (***Carex remota***), spotted medick (***Medicago arabica***), yarrow (***Achillea millefolium***), common stork's-bill (***Erodium cicutarium***) and procumbent yellow sorrel (***Oxalis corniculata***).

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

Avifauna:
Common garden bird species such as blackbird, long-tailed tit and great tit were noted on site during the survey and other common species are likely to nest and forage on site. Bird boxes have been erected in the surrounding trees.

Invertebrates:
The wildflower meadow provides excellent opportunities for a range of terrestrial invertebrates such as spiders, grasshoppers, crickets and butterflies. Ant hills were noted on site, indicating it has been grassland for a long time.

Herpetofauna:
All three species of reptile have been recorded on site and that is one of the reasons for designation of the County Wildlife Site. Although there are no recent records of reptiles from the site the habitat

in the wildflower meadow still appears to be good for this group and they are likely to be under recorded. The closely mown areas of the site provide sub-optimal habitat for this group. Gravestones and the wall provide excellent basking opportunities for common lizard. Although much of the site is kept short mown the areas of longer grass provide good terrestrial habitat for amphibians.

Mammals:

Hedgehog records suggest hedgehogs are likely to use this site for nesting and foraging. Common species of mammal such as fox, rabbit, muntjac deer are likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the scrub on the boundaries of the site.

Comments and recommendations:

Schedule 9 plants Yellow Archangel and Rhododendron have been recorded in 2011 in the south of the site and to the east. This should be monitored.

The main cemetery area is regularly cut, but the top cemetery was uncut at the time of the visit. If it is not already taking place, annual cutting of the top graveyard should be undertaken in August/September. It is important to remove all trimmings to encourage species diversity and prevent the dominance of tall grasses.

Appendix 1.

North graveyard

hawthorn	***Crataegus monogyna***
ivy	***Hedera helix***
laurel	***Laurus nobilis***
rose sp.	***Rosa sp.***
yew	***Taxus baccata***
black bent	***Agrostis gigantea***
cock's-foot	***Dactylis glomerata***
crested dog's tail	***Cynosurus cristatus***
meadow oat-grass	***Avenula pratensis***
perennial rye-grass	***Lolium perenne***
sweet vernal grass	***Anthoxanthum odoratum***
yellow oat-grass	***Tristeum flavenscens***
Yorkshire fog	***Holcus lanatus***
biting stonecrop	***Sedum acre***
broad-leaved dock	***Rubex obtusifolium***
bristly oxtongue	***Picris echioides***
bird's foot trefoil	***Lotus corniculatus***
changing forget-me-not	***Myosotis discolor***
common broomrape	***Orobanche minor***
common sorrel	***Rumex acetosa***
common knapweed	***Centaurea nigra***
common vetch	***Vicia sativa***
cowslip	***Primula veris***
creeping cinquefoil	***Potentilla reptans***

cut-leaved crane's-bill	***Geranium dissectum***
creeping buttercup	***Ranunculus repens***
daisy	***Bellis perennis***
dove's-foot crane's-bill	***Geranium molle***
greater knapweed	***Centaurea scabiosa***
hedge bedstraw	***Galium mollugo***
hogweed	***Heracleum sphondylium***
hop trefoil	***Trifolium campestre***
ladies bedstraw	***Galium verum***
meadow vetchling	***Lathyrus pratensis***
meadow buttercup	***Ranunculus acris***
mouse-ear hawkweed	***Pilosella aurantiaca***
ox-eye daisy	***Leucanthemum vulgare***
prickly sow thistle	***Sonchus asper***
ribwort plantain	***Plantago laceolata***
red clover	***Trifolium pratense***
selfheal	***Prunella vulgaris***
smooth tare	***Vicia tetrasperma***
smooth cat's-ear	***Hypochaeris glabra***
stonecrop sp.	***Sedum sp.***
white clover	***Trifolium repens***
white stonecrop	***Sedum album***
wood speedwell	***Veronica montana***
yarrow	***Achillea millefolium***

South graveyard and wall

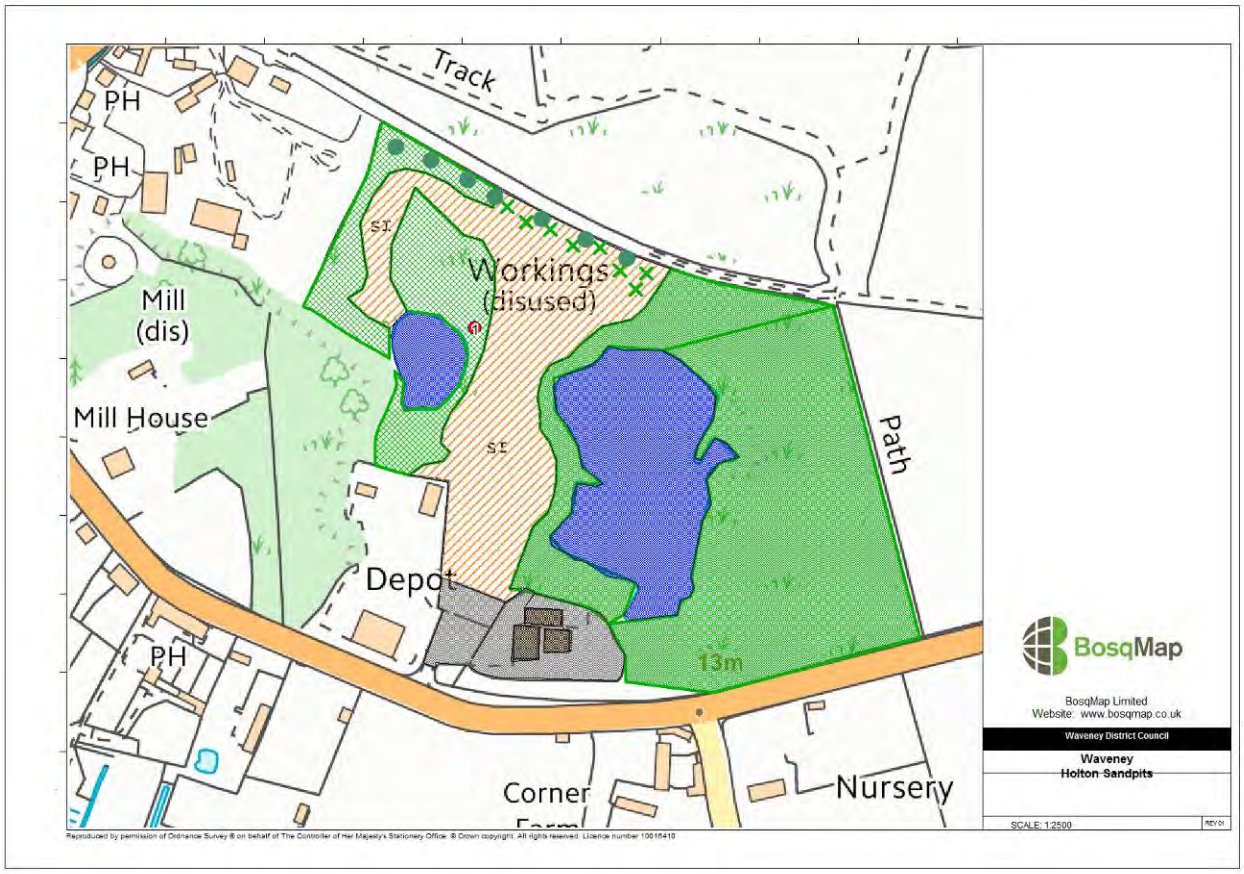
ash	***Fraxinus excelsior***
blackthorn	***Prunus spinosa***
copper beech	***Fagus sylvaticaf. Purpurea***
dog rose	***Rosa canina***
dogwood	***Thelycrania sanguinea***
elder	***Sambucus nigra***
elm	***Ulmus procera***
ground elder	***Aegopodium podagraria***
hawthorn	***Crataegus monogyna***
horse chestnut	***Aesculus hippocastanum***
Scot's pine	***Pinus sylvestris***
sycamore	***Acer pseudoplatanus***
yew	***Taxus baccata***
barren brome	***Bromus sterilis***
cock's-foot	***Dactylis glomerata***
common bent	***Agrostis capillaris***
false brome	***Brachypodium sylvaticum***
meadow foxtail	***Alopecuraus pratensis***
rough meadow-grass	***Poa trivialis***
Yorkshire fog	***Holcus lanatus***

remote sedge	***Carex remota***
black medick	***Medicago lupulina***
black spleenwort	***Asplenium adiantum-nigrum***
broad-leaved dock	***Rumex obtusifolius***
cleavers	***Galium aparine***
cow parsley	***Anthriscus sylvestris***
common sorrel	***Rumex acetosa***
common mouse-ear	***Cerastium fontanum***
common stork's-bill	***Erodium cicutarium***
creeping cinquefoil	***Potentilla reptans***
cut-leaved crane's-bill	***Geranium dissectum***
creeping buttercup	***Ranunculus repens***
common field speedwell	***Veronica persica***
common comfrey	***Symphytum officinale***
common nettle	***Urtica dioica***
common ragwort	***Senecio jacobaea***
dog violet	***Viola riviniana***
dove's-foot crane's-bill	***Geranium molle***
dandelion	***Taraxacum officinale***
Enchanter's nightshade	***Circaea lutetia***
greater stitchwort	***Stellaria holostea***
garlic mustard	***Alliaria petiolata***
great willowherb	***Epilobium hirsutum***
ground ivy	***Glechoma hederacea***
greater plantain	***Plantago major***
hogweed	***Heracleum sphondylium***
hop trefoil	***Trifolium campestre***
lords-and-ladies	***Arum maculatum***
maiden hair fern	***Adiantum aethiopicum***
meadow buttercup	***Ranunculus acris***
mouse-ear hawkweed	***Pilosella aurantiaca***
procumbent yellow sorrel	***Oxalis corniculata***
rosebay willowherb	***Chamerion angustifolium***
sheep's sorrel	***Rumex acetosella***
spear thistle	***Cirsium vulgare***
spotted medick	***Medicago arabica***
wild strawberry	***Fragaria vesca***
wall speedwell	***Veronica arvensis***
wood speedwell	***Veronica montana***
yarrow	***Achillea millefolium***

Site name — Holton Sand Pits

Site Ref: Waveney 41
Site status: County Wildlife Site
Grid ref: TM 4055 7734
Area: 7.31 hectares
Date: 11 Aug 2016
Recorder: J Crighton and A Looser
Weather conditions: Overcast, cool with moderate wind, after rain
Ranking: 2
Biodiversity value: High

Map:



Photos:

Photo 1. View north from car park with bare ground and acid grassland

Photo 2. Large pond used as fishing lake

Photo3. Area of broad-leaved woodland along eastern edge

Habitat type(s):

Acid grassland, semi-natural broad-leaved woodland, ponds, dense continuous scrub

Subsidiary habitats:

Ivy-covered trees, bare ground, hard standing, buildings

Site description:

Holton Sand Pits lies between Blyford Lane and Southwold Road. There is an area of hard standing with some industrial buildings and a car park. The site is widely used by dog walkers. The grassland near the car park and throughout the central region of the site has a very short sward and good lichen cover. It is quite species-rich. The soil is sandy and dry.

There are two ponds on the site. The Woodbridge District Angling Club use the larger pond for fishing and the water quality looks good, but the smaller of the two has relatively poor water quality and is mostly thick with blanket weed. There is an area of Japanese knotweed to the north east of this pond (Target note 1).

Along the eastern edge of the site, there is an area of semi-natural broad-leaved woodland with a path all the way around the large pond.

Protected species seen or known:
Common lizard recorded in the south of the site in 2014.
Long-eared bat species recorded at Holton Church, west of the site, in 2013.

Protected species potential:
Other bat species such as Pipistrelle, Soprano Pipistrelle and Daubenton's
Grass snake
Slow worm

Priority habitats present:
Ponds, broad-leaved woodland, acid grassland

Priority species seen or known:
Cinnabar moth caterpillar seen on site on the day of survey, and moths recorded across site in 2014.
Common toad recorded in small pond on site in 2001.
Record of dead West European hedgehog near the buildings in the south of site in 2010.
Latticed heath moths recorded on site in 2014.
Approximately 100 starlings were recorded in a field to the south of the site in 2014.
House sparrows were recorded to the west in 2014.

Priority species potential:
-

Connectivity:
This site has excellent connectivity to other green spaces in the area via woodlands to the west, tree-lined track to the north and arable land further north east and south. Holton Pit SSSI borders the northern boundary.

Structural diversity:
Excellent structural diversity with mature trees, scrub, rough grassland, bare ground and ponds creating opportunities for a number of taxonomic groups.

Flora:
The acid grassland is lichen-rich and has some notable species, such as mossy stonecrop (*Crassula tillaea*) and sheep's fescue (*Festuca ovina*). The grassland is being maintained by extensive rabbit-grazing. It also has large stands of common gorse (*Ulex europaeus*) and bramble (*Rubus fructicosa agg.*). There are some silver birch (*Betula pendula*) trees to the north of the site. Some ragwort is present within this area, as is typical of sandy, disturbed soils.

The smaller pond has abundant common reed (*Phragmites australis*), with some gipsywort (*Lycopus europaeus*) and is surrounded by willow (*Salix* spp.) scrub. The larger pond has more open water, with some white water lily (*Nymphaea alba*) and common reed. It has a large number of alder (*Alnus glutinosa*) and willow trees around the edges. Scrub around this large pond is being managed to some extent by fishermen.

The woodland is predominantly English oak (*Quercus robur*) and alder with a lot of bramble scrub.

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

Avifauna:
Wren, green woodpecker, magpie, moorhen and black cap were noted on site at the time of the survey. The areas of dense scrub provide good foraging, nesting and roosting opportunities for a range of common bird species. Summer migrants such as whitethroat could also nest in the areas of dense bramble. The large pond is likely to attract a range of water birds.

Invertebrates:
This site is likely to support a good range of invertebrates. The large area of bare ground could provide opportunities for ground burrowing bees and wasps, and many ant hills were seen on site. Cinnabar moth caterpillars were also seen feeding on the common ragwort. The ponds will support a range of aquatic invertebrates, although the poor water quality in the smaller pond will reduce the invertebrate diversity.

Herpetofauna:
Although no reptiles were seen during the survey, common lizards have previously been recorded on this site in high numbers. The site is also likely to support grass snake and slow worm. A frog was noted beside the large pond, which is stocked as a fishing lake. Due to the pond containing fish, it is likely to support some amphibians such as frogs and toads, but the likelihood of great crested newts being present is low. 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 wide range of insect life so there are likely to be bats foraging over this area.

The heavy coverage of bramble scrub provides excellent hibernation opportunities for hedgehogs, and the sparse sward provides foraging opportunities. Other common species of mammal such as fox, rabbit and muntjac deer are likely to forage on this site. Mice, voles and shrews are also likely to be present in the longer grassland areas toward the north, as well as the woodland and scrub on site.

Comments and recommendations:
The site is frequently used by dog walkers and there were notable amounts of dog faeces and although there was a dog waste bin on site, it was overflowing. Litter is also an issue.

A large stand of Japanese knotweed was recorded north-east of the smaller pond at TM 40434 77429 and this should be removed. This is an invasive species on Schedule 9 of the Wildlife & Countryside Act, 1981, as amended). Any soil removed from or close to the area of Japanese Knotweed must be classed as contaminated waste. The roots of this species can extend up to 7 metres underground from the edge of the above ground vegetation. Extreme care must be taken to avoid further spread of this species.

The water quality of small pond appeared poor and may contain species of blue-green algae.

Considerations should be given to management of the gorse and bramble on rotation.

Appendix 1.

Sparse sward and surrounding scrub

bramble	*Rubus fruticosa agg.*
common gorse	*Ulex europaeus*
English oak	*Quercus robur*
silver birch	*Betula pendula*
creeping bent	*Agrostis stolonifera*
red fescue	*Festuca rubra*
sheep's fescue	*Festuca ovina*
smooth meadow-grass	*Poa pratensis*
Yorkshire fog	*Holcus lanatus*
hard rush	*Juncus inflexus*
agrimony	*Agrimonia eupatoria*
beaked hawk's-beard	*Crepis vesicaria*
bird’s foot trefoil	*Lotus corniculatus*
black medick	*Medicago lupulina*
buckshorn plantain	*Plantago coronopus*
Canadian fleabane	*Conyza canadenis*
common cat’s-ear	*Hypochaeris radicata*
common centaury	*Centaurium erythraea*
common cudweed	*Filago vulgaris*
common fleabane	*Pulicaria dysenterica*
common ragwort	*Senecio jacobaea*
common stork’s-bill	*Erodium cicutarium*
creeping cinquefoil	*Potentilla reptans*
creeping thistle	*Cirsium arvense*
dove's-foot crane's-bill	*Geranium molle*
gipsywort	*Lycopus europaeus*
ground ivy	*Glechoma hederacea*
hare's-foot clover	*Trifolium arvense*
hawkweed	*Hieracium agg.*
lesser trefoil	*Trifolium dubium*
mossy stonecrop	*Crassula tillaea*
nodding thistle	*Cardus nutans*
ox-eye daisy	*Leucanthemum vulgare*
perforate St John's wort	*Hypericum perforatum*
primrose	*Primula vulgaris*
rosebay willowherb	*Chamerion angustifolium*
rough chervil	*Chaerophyllum temulum*
scarlet pimpernel	*Anagallis arvensis spp. arvensis*
scentless mayweed	*Tripleurospermum inodorum*
sheep's sorrel	*Rumex acetosella*
stonecrop sp.	*Sedum sp.*

swine-cress	*Lepidium squamatus*
teasel	*Dipsacus fullonum*
tree lupin	*Lupinus arboreus*
white campion	*Silene latifolia*
yarrow	*Achillea millefolium*

Ponds

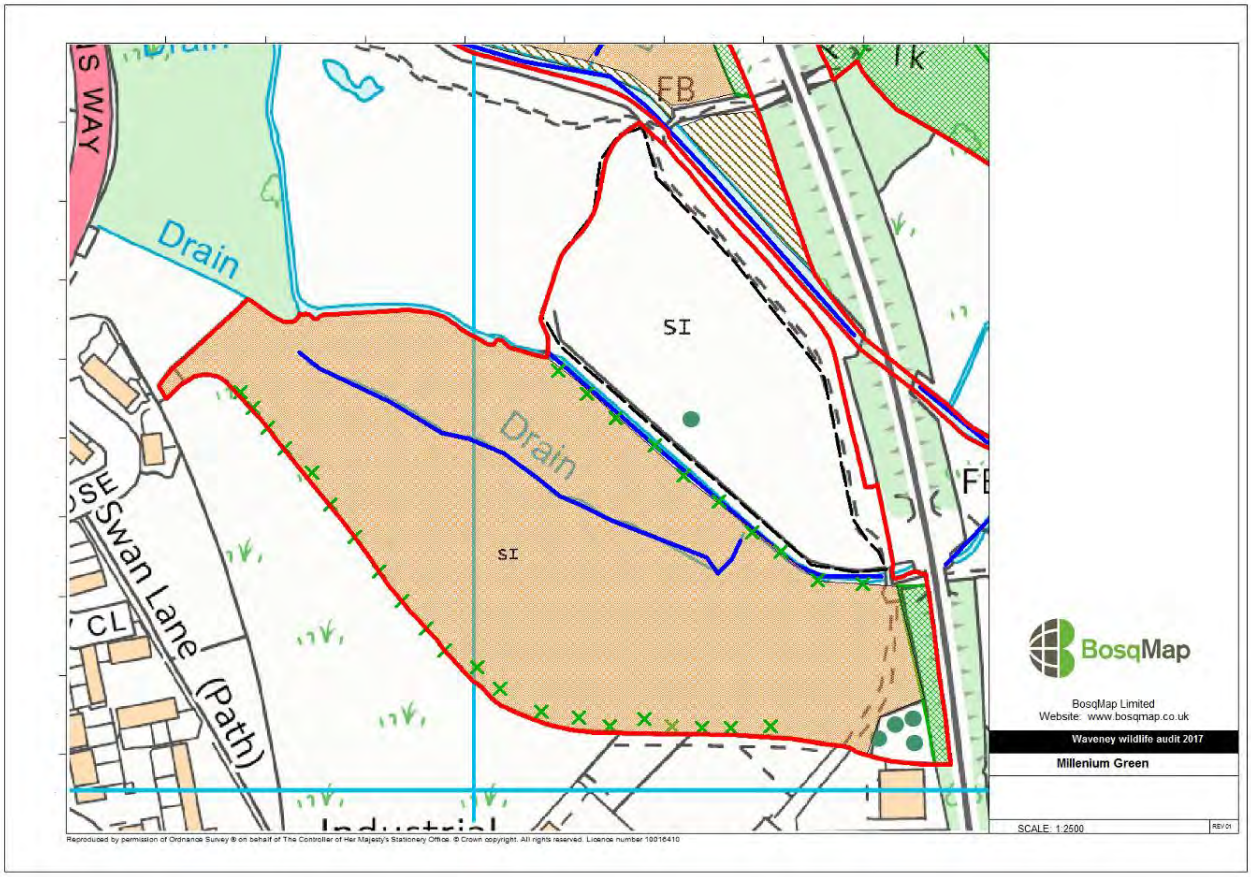
hard rush	*Juncus inflexus*
soft rush	*Juncus effusus*
common reed	*Phragmites australis*
alder	*Alnus glutinosa*
willow	*Salix sp.*
bittersweet	*Solanum dulcamara*
blanket weed	*Cladophora sp.*
bracken	*Pteridium apuilinum*
field horsetail	*Equisetum arvense*
gipsywort	*Lycopus europaeus*
great willowherb	*Epilobium hirsutum*
hogweed	*Heracleum sphondylium*
rosebay willowherb	*Chamerion angustifolium*
white water lily	*Nymphaea alba*
water mint	*Mentha aquatica*
yellow flag iris	*Iris pseudacorus*

Woodland

alder	*Alnus glutinosa*
bramble	*Rubus fruticosa agg.*
common gorse	*Ulex europaeus*
English oak	*Quercus robur*
hawthorn	*Crataegus monogyna*
ivy	*Hedera helix*
pine	*Pinus sp.*
sallow/goat willow	*Salix caprea*
silver birch	*Betula pendula*
sycamore	*Acer pseudoplatanus*
willow	*Salix sp.*
agrimony	*Agrimonia eupatoria*
cow parsley	*Anthriscus sylvestris*
greater plantain	*Plantago major*
lords-and-ladies	*Arum maculatum*

Site name:	**Millennium Green (Chestnut Meadow and Lester's Piece only)**
Site ref:	Halesworth 25
Site status:	No wildlife designation
Grid ref:	TM 39105 77124
Area:	5.39 hectares
Date:	26th April 2017
Recorder:	J. Crighton & A. Looser
Weather conditions:	30% cloud cover, sunny with cold wind, intermittent hail
Ranking:	4
Biodiversity value:	Medium

Map:



Photos:

Chestnut Meadow

Lester's Piece

Habitat type(s):
Tall ruderal, poor semi-improved grassland, neutral semi-improved grassland, species-rich hedgerow, river

Subsidiary habitats:
Spring-fed ditch, scattered trees

Site description:
This site is part of a larger area known as Millennium Green, which includes several meadows south of the New Reach (Angel Meadow, Chestnut Meadow, Lester's Piece and Blyth Meadow and Folly Meadow north of the New Reach. Another site, Bird's Folly CWS, is also part of the Millennium Green but is situated north-east of the railway on higher ground and includes distinctly different habitats from the floodplain meadows. The New Reach River and the railway line represent significant wildlife corridors linking this network of sites. The Halesworth Millennium Green Trust is a registered charity and habitat management work on the Green is undertaken by volunteer work parties in accordance with their management plan.

This site survey only covers Chestnut Meadow, Lester's Piece and the Town River. An all-weather track has been constructed and runs through these meadows connecting Blyth Meadow with the Town Centre.

Chestnut Meadow is dominated by an old horse chestnut tree and lies between the Town River and the New Reach. It is liable to flood every year and since it has not been grazed in some time it has become dominated by rank grassland and tall ruderal vegetation.

Lester's Piece meadow lies south of the Town River, north of the Blyth Road Industrial Estate, separated from the industrial area by a dense hedgerow. During the summer months, it is grazed by cattle. There is a spring-fed ditch in this area which provides the cattle with water.

Protected species seen or known:
Common pipistrelle, soprano pipistrelle, brown long-eared bat, barbastelle bat, Leisler's bat, serotine bat, Myotis spp (Suffolk Bat Group, 2016)
Water vole in drain (2011) and in ditch to north (2014)
Water shrew (2014)
Grass snake (2014)
Norfolk hawker dragonfly (2014)
Slow worm, common lizard and otter have been noted by the volunteer team

Protected species potential:
-

Priority habitats present:
River
Floodplain meadow

Priority species seen or known:
Bullfinch, spotted flycatcher and song thrush (2014)
Fritillary within green (2013)
Whorl-grass (1997), black poplar (2011)
Kestrel and barn owl are known to forage over Chestnut Meadow

Priority species potential:
Common toad
Harvest mouse

Connectivity:
This site is part of a larger site known as Millennium Green which includes part of the New Reach river, which connects with the River Blyth and a series of ditches forming an extensive wildlife corridor to the east and west, through the centre of town. In addition to this, the site lies adjacent to the railway line, which also acts as a wildlife corridor, providing links to the north and south.

Structural diversity:
Structural diversity in this section of the whole site is moderate as Lester's Piece is kept grazed short and Chestnut Meadow has been left to grow rank. The boundaries and the river corridor are the most structurally diverse as there are hedgerows and a more diverse mix of vegetation.

Flora:
Chestnut Meadow is dominated by tall ruderal vegetation and rank grassland containing Yorkshire fog, cock's-foot, meadow foxtail, common reed, hairy willowherb, broad-leaved dock, silverweed, hogweed, cow parsley, great willowherb, creeping thistle, nettle, greater burdock, cleavers, and some cuckoo flower. Along the Town River, there is garlic mustard, meadowsweet, flag iris, lesser celandine, tansy and reed mace with some willow scrub.

Lester's Piece is grazed by cattle and contains grasses such as smooth meadow-grass, meadow foxtail, Yorkshire fog and cock's foot grasses with glaucous sedge, and herbs, including daisy, lesser celandine, cuckoo flower, greater plantain, scentless mayweed, creeping thistle, creeping and meadow buttercup, white clover, groundsel, meadow vetchling and occasional nettle. Marsh foxtail has been recorded in this meadow by the local volunteers.

The spring-fed ditch in Lester's Piece had hard rush, teasel, fool's water-cress, reed mace, field horsetail, water mint, wavy bittercress and celery-leaved buttercup.

This field was edged by a scrubby hedge comprised of blackthorn, hawthorn, bramble, cherry and field maple with ground ivy and common nettle underneath.

Avifauna:
The weather conditions throughout the survey period were sub-optimal for recording this group, but whitethroat and chiffchaff were noted singing between the periods of bad weather and a flock of swallows were noted foraging over Lester's Piece. Kestrel and barn owl are known to forage over Chestnut Meadow, and a kestrel box was erected on the horse chestnut tree in 2016.

The water courses could attract birds such as grey wagtail and other common species are likely to forage on this site, while nesting in nearby scrub and woodland. The grassland, particularly Chestnut Meadow is currently too tall for ground nesting birds such as skylark.

Invertebrates:

The weather conditions throughout the survey period were sub-optimal for recording this group. Local volunteers informed that a beetle survey has been carried out recently, and information regarding this could be found on their website.

The long grass in Chestnut Meadow provides good habitat for a range of invertebrates such as spiders, grasshoppers and crickets and the diversity of habitats including tall ruderal vegetation, scrub, hedgerow and water courses will offer opportunities for both terrestrial and aquatic invertebrates.

Herpetofauna:

This site offers excellent foraging and refuge opportunities for slow worm, grass snake and common lizard, with thick vegetation and sunny hot spots along the river banks. All three species have been recorded within the area.

Mammals:

A static bat detector survey conducted by the Suffolk Bat Group in September 2016 recorded a large number of bat species. The chestnut tree in Chestnut Meadow has cracks and crevices that provide potential bat roosting features.

The Town River and New Reach running through the site provide excellent habitat for otter and water vole; some latrines of water voles were noted during the survey. Also observed were many molehills and evidence of rabbits in the form of burrows, scrapes and droppings. The rough grassland in Chestnut Meadow could support harvest mice, particularly as it is adjacent to the New Reach.

Fox, Chinese water deer and muntjac deer are also likely to forage on this site, and small mammals including mice, voles and shrews will be present in the banks and scrubby areas.

Comments and recommendations:

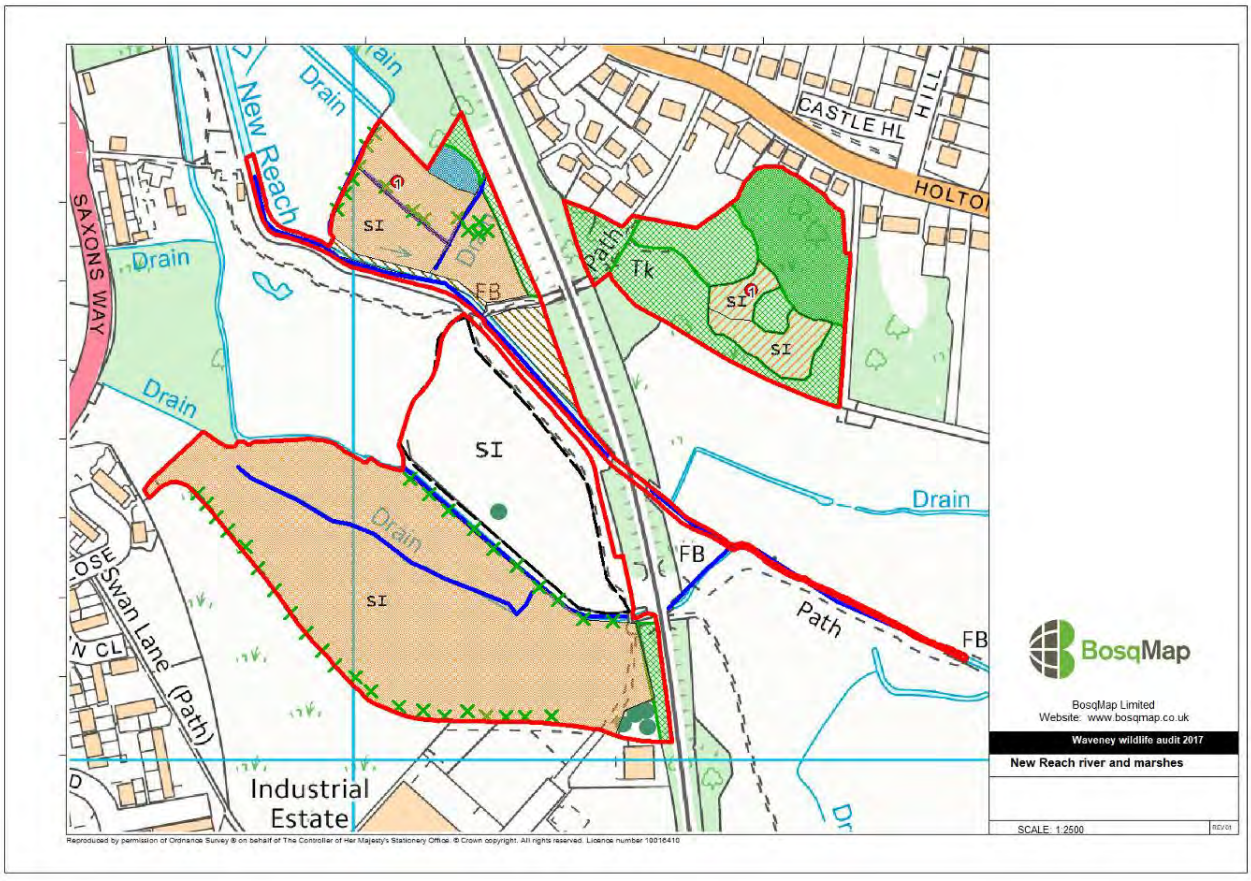
This land forms part of a larger, well-managed site with high biodiversity value.

Re-instating grazing in Chestnut Meadow would be beneficial to the sward, provided it is fenced and safe for cattle including no hidden steep-sided ditches or poisonous plants. Access could be via an open gate from Lester's Piece and this would enable them to gradually choose to explore and graze the new grassland. As the water is likely to be set up in Lester's field, by keeping access between the two fields this means that an additional water supply shouldn't be required. If necessary and if resources allow, there could be some gradual supplementary topping to encourage the cattle to gradually push out further into the field.

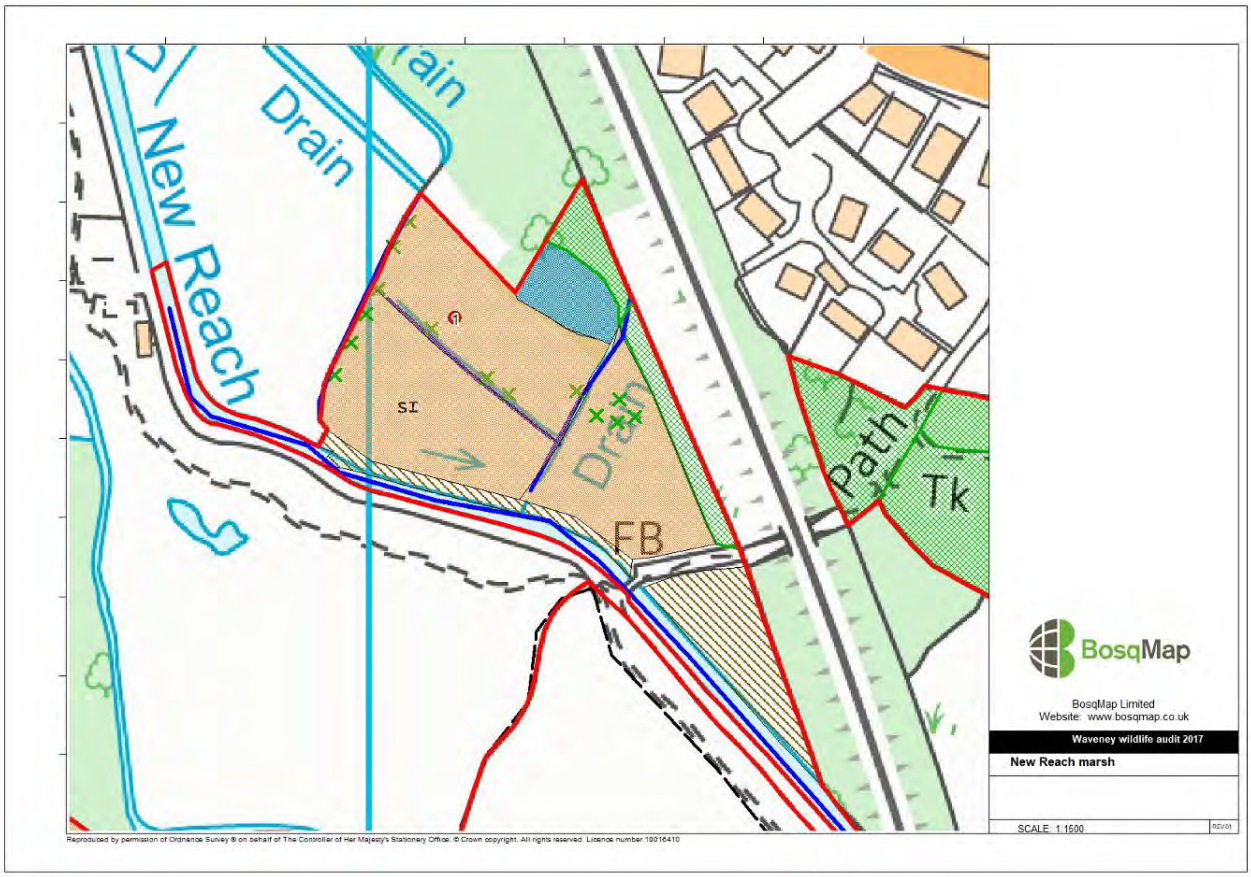
Site name: New Reach River & Marsh

Site ref: Halesworth 24
Site status: County Wildlife Site
Grid ref: TM 39108 77311
Area: 1.55 hectares
Date: 26 April 2017 & 22 June 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 60% cloud, sunny with cold wind and intermittent heavy hail storms & overcast, warm, light breeze
Ranking: 2
Biodiversity value: High

Map:



Overview of Millenium Green showing the surveyed stretch of the New Reach



Close up of Folly Meadow and the Scrub Triangle

Photos:

New Reach, south of Folly Meadow

Wet grassland in Folly Meadow (situated north of New Reach)

Water filled ditch in Folly Meadow with dipping platform and hide in the background

New Reach in the eastern stretch of the County Wildlife Site

Habitat type(s):
Marshy grassland, semi-improved neutral grassland, reed bed, poor semi-improved grassland, ditches, river, tall ruderal, scattered scrub

Subsidiary habitats:
Spoil heaps (with some artificial reptile refugia (tins)), ivy-covered trees

Site description:
This report covers the area defined by the County Wildlife Site (CWS) boundary for the New Reach river and the two areas north of the New Reach: Folly Meadow and the area to the east known as the Scrub Triangle. This area is part of a larger site known as Millennium Green, which includes additional meadows south of the New Reach (Angel Meadow, Chestnut Meadow and Lester's Piece) and Blyth Meadow, south of the river and east of the railway line. Another site, Bird's Folly CWS, is also part of the Millennium Green but is situated north-east of the railway on higher ground and includes distinctly different habitats from the floodplain meadows. The Halesworth Millennium Green Trust is a registered charity and habitat management work on the Green is undertaken by volunteer work parties in accordance with their management plan.

The New Reach is a tributary to the River Blyth. It was opened in 1761 as part of the Blyth Navigation, providing a direct link between Halesworth and the sea at Southwold. It forms the southern boundary of Folly Meadow, continues through the northern boundary of Chestnut Meadow and runs beneath the railway line where it re-joins the River Blyth at the eastern end of Blyth Meadow.

Folly Meadow is the most floristically diverse area of Millennium Green (Target Note 1). The railway line forms the northern boundary, on top of a steep, scrub-covered embankment. A drain runs along the western edge, feeding into the New Reach. Two water filled ditches are situated within the meadow; one which runs north-south with a dipping platform and nature hide. Another ditch runs along the centre of the meadow from east to west. There is a section of reedbed in the north, which is situated east of a community orchard, containing local varieties of fruit trees and a relatively new plantation woodland, called Arthur's Wood. Both lie just outside the boundary of the County Wildlife Site.

A new pond has been hand dug in 2015/2016 in the centre of the meadow.

There is a water control mechanism under the footpath adjacent to the New Reach which holds the water in the ditches just below ground level throughout the year. It is believed that water in the ditches may be spring-fed.

In the far east of this site, there is an area called The Scrub Triangle. It has been left to 'scrub-up' but at present is mainly tall ruderal vegetation.

Protected species seen or known:
Norfolk Hawker dragonfly (2014)
Soprano pipistrelle, common pipistrelle, brown long-eared bat, Leisler's bat, serotine, barbastelle, noctule, myotis species (Suffolk Bat Group, 2016).
Common lizard and slow worm (2013) plus local volunteer sightings for the latter

Water vole in the drain to west (2014) and south (1997)
Otters noted to use the New Reach (local volunteer sightings)

Protected species potential:
Grass snake

Priority habitats present:
River
Floodplain grazing marsh

Priority species seen or known:
Harvest mouse (2010 and local volunteer sightings)
Water shrew (2014), (Suffolk Character Species)
Bullfinch, spotted flycatcher, song thrush, dunnock and herring gull (2014)
Song thrush
Cinnabar moth
Black poplar to the south by the railway arch (2011)

Priority species potential:
Common toad

Connectivity:
The Millennium Green is a very large site, amounting to 20 hectares of habitat, of which the New Reach river and Folly Meadow form a smaller part. The New Reach river has excellent connectivity with the wider landscape, including the River Blyth and associated ditches forming an extensive wetland wildlife corridor to the east and also west, beyond the center of town. In addition to this, the site lies adjacent to the railway line, which also acts as an additional wildlife corridor, providing links to the north and south.

Structural diversity:
There is excellent structural diversity, with varying sward heights within the marshy meadow and taller vegetation and scrub around water bodies, woodland and scrub patches.

Flora:
The northern boundary is the railway, which sits atop a high embankment covered with scrub including hawthorn, blackthorn, elder and bramble.

The ditch along western boundary meets the New Reach at the southern boundary. It has a hedgerow along the edge containing hazel, alder, silver birch and bramble.

The marshy grassland contains a diverse mix of species, particularly in the western section, with fen bedstraw, lesser pond sedge, greater bird's-foot trefoil and meadowsweet being dominant and other species characteristic of damp grassland, including marsh thistle, ragged robin, meadow vetchling, common spotted orchid, water celandine, field horsetail, water mint, water figwort, blunt flowered rush, wavy bittercress and cuckoo flower, flag iris and marsh marigold. Also present are common species such as creeping and meadow buttercup, red clover, hard rush, dandelion, curled dock,

common mouse-ear and chickweed. There are some dense patches of reed canary grass in the eastern section and is slightly less diverse than the western section.

Along the edge of the drain through the centre of The Folly is rich in common reed, water figwort, lesser pond sedge and reed canary-grass and had some scattered willow and alder scrub. South of this drain, is an area of semi-improved neutral grassland with meadow foxtail, Yorkshire fog, lesser pond sedge, false-oat grass, wavy bittercress, broad-leaved dock, creeping buttercup, hedge woundwort and white dead nettle.

Within the wet ditches, water soldier is dominant and around the edges are some flag iris, branched bur-reed, common reed, great willowherb, water mint, water celandine, soft rush, blunt-flowered rush, bittersweet, hemp agrimony, water figwort, water forget-me-not, common fleabane and occasional nettle. There is also some willow and dog rose.

The area known as the Scrub Triangle, located east of the meadow, is dominated by dense areas of nettle, great willowherb and cleavers.

Only the section of the New Reach which is designated as a County Wildlife Site was surveyed. The New Reach has densely vegetated banks. The section west of the railway bridge comprises Yorkshire fog, yellow oat-grass, common nettle, hemlock, bittersweet, great willowherb, cleavers and cow parsley with some emergent flag iris. There is scattered scrub along this section including buddleia, willow, elder and hazel.

The section of the New Reach, alongside Blyth Meadow east of the railway line has steeper banks. The herbs lining the banks include watercress, lesser celandine and meadowsweet with emergent vegetation comprising of broad-leaved pondweed, wavy bittercress, watercress, water figwort, water starwort, reed mace and cuckoo flower. There are scattered trees and scrub, which include ash, willow, elder and alder. Jelly-ear fungus was noted growing on elder and bracket fungus growing on other tree species.

There are several dense patches of Himalayan Balsam along the banks of the New Reach, particularly along the eastern section.

The railway bridge over the New Reach has some hart's tongue fern growing on the north facing wall.

Suffolk Rare Plants recorded on this site include clustered clover and early marsh orchid (2011).

Avifauna:

The dense scrub along the edge of the railway embankment provides undisturbed nesting and foraging opportunities for a number of common and migrant birds. This will be further extended once The Scrub Triangle has developed. Several bird species were noted on site during the survey, including black cap, blackbird, long-tailed tit, chiffchaff, song thrush, swallow, robin, whitethroat and moorhen.

Barn owl and kestrel are known to hunt over Chestnut Meadow, to the east of Folly Meadow, so are likely to hunt on this site also. Cetti's, reed and sedge warblers have been recorded on site.

The New Reach offers opportunities for kingfisher, heron and grey wagtail.

Invertebrates:

The structural diversity and habitat mosaic of the Millennium Green provides excellent habitat for a range of invertebrates, both terrestrial and aquatic. Many six-spot burnet moths were noted, along with a mullein moth caterpillar feeding on water figwort and meadow brown butterflies throughout the site. A number of spiders, crickets and grasshoppers were observed in the long grass.

Common blue damselflies were noted near the pond, ditches and river and Norfolk Hawker dragonflies have been recorded. The large number of wildflowers in the marshy meadow will attract many species of butterfly and bee.

Herpetofauna:

The railway embankment provides undisturbed basking, foraging and refuge opportunities for reptiles such as common lizard, grass snake and slow worm. Slow worm has been recorded on site and reptile 'tins' were noted along the edge of the New Reach. The aquatic habitats will be particularly attractive to foraging grass snake and several grass piles are present, where grass snakes could lay their eggs.

Although the pond within Folly Meadow is relatively new, it will soon become suitable for amphibians such as frog and common toad. Although great crested newt has been recorded in the Parish of Halesworth, there are no records in the immediate locality and they are less likely to be associated with this habitat.

Mammals:

Bats will use the New Reach river as a commuting corridor and there is excellent foraging opportunities over the wider site. Suffolk Bat Group undertook a static bat detector survey in September 2016 and Soprano pipistrelle, common pipistrelle, brown long-eared bat, Leisler's bat, serotine, barbastelle, noctule and a myotis species were recorded.

There are water vole burrows in the New Reach river and Folly Meadow ditches and latrines can be seen on a mink raft stationed on one of the ditches. Otters are also well recorded on the New Reach and water shrews have been recorded here previously.

Other more common mammals are present. There are molehills in Folly Meadow and small mammals such as mice, voles and shrews likely to be present across the site. Foxes, stoats and weasels are also likely to forage within this site.

Comments and recommendations:

This is a well-managed site of high biodiversity value and is a significant community asset. Visitors are welcome at all times.

Himalayan Balsam was noted along the New Reach. Himalayan Balsam is listed on 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.

Himalayan balsam 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.

References:

About the Green – Halesworth Millennium Green. 2017. *About the Green – Halesworth Millennium Green*. [ONLINE] Available at: http://millenniumgreen.halesworth.net/sample-page/about-the-green/. [Accessed 20 June 2017].

Site name: Arnold's Bequest

Site ref: Lowestoft 12
Site status: No wildlife designation
Grid ref: TM 55133 94225
Area: 0.66 hectares
Date: 10 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 80-90% cloud cover, sunny and bright with moderate cool wind
Ranking: 4
Biodiversity value: Low-Medium

Map:

Photos:

Looking north through the woodland

Large sycamore with bat potential (Target Note 1)

Habitat type(s):
Broad-leaved semi-natural woodland

Subsidiary habitats:
Fallen and standing deadwood, ivy covered trees, small spring

Site description:
Arnold's Bequest is a small patch of secondary woodland which lies east of the High Street (A12) and slopes steeply down towards Whapload Road. A tarmac path runs through the site and there is a small spring in the central area, causing a wet section across the path.

Protected species seen or known:
-
Protected species potential:
Bats

Priority habitats present:
-
Priority species seen or known:
Dunnock seen during the survey

Priority species potential:
Hedgehog

Connectivity:
This site has good connectivity via more woodland to the north, eventually joining with the North Denes, although this connectivity is reduced by the roads bisecting this woodland.

Structural diversity:
The structural diversity of this site is relatively poor with a limited understorey.

Flora:
The woodland is dominated by sycamore with some elder, young lime and elm. The ground flora is dominated by alexanders, but in areas where alexanders are less dense, patches of lords-and-ladies, cow parsley, bluebells, daffodil, snowdrop, cleavers and nettles are present. There is a large patch of coltsfoot at the base of the largest sycamores.

Avifauna:
There are good foraging, nesting and roosting opportunities for a range of bird species in the trees and scrub. Common species including great tit, blackbird, dunnock, wood pigeon and blue tit were noted during the survey.

Invertebrates:
The mature trees, scrub and deadwood provide potential over-wintering areas for this group.

Herpetofauna:
The habitat provided on this site is sub-optimal for this group as it is overgrown and shaded.

Mammals:
Broken bat boxes were noted within the site and there were two large sycamores with rot holes and crevices, which could potentially support a natural bat roost (Target Note 1).

The woodland provides foraging habitat for hedgehogs and there are large numbers of sightings in the area, however there are limited nesting opportunities other than for day-time shelter. It is also likely to be good habitat for other common mammals including fox, grey squirrel and deer. Common small mammals such as mice voles and shrews are also likely to be present.

Comments and recommendations:
The site currently has limited wildlife value but it is important as a wildlife corridor, connecting it with other semi-natural habitats. The site does not need a large amount of management, but could benefit from the replacement of the bat boxes and the installation of a selection of bird boxes. The site is frequently used by dog walkers as access from the A12 to the open spaces along this stretch of coast.

Site name — Bonds Meadow

Site Ref: Waveney 51
Site status: County Wildlife Site
Grid ref: TM 5222 9354
Area: 6.02 hectares
Date: 13 June 2016
Recorder: J Crighton and A Looser
Weather conditions: 100% cloud cover, no wind, moderate rain
Ranking: 2
Biodiversity value: High

Map:

Photos:

Photo 1. Area of neutral semi-improved grassland to the north of the site

Photo 2. Large pond on the western edge of the site

Photo 3. Area of wet woodland along western side

Photo 4. Bug hotel provides excellent habitat for invertebrates

Habitat type(s):

Broad-leaved semi-natural woodland, ponds, semi-improved neutral grassland, wet woodland, swamp

Subsidiary habitats:

Fallen deadwood, rubble pile, bug hotel, tall ruderal, scattered scrub, ditches

Site description:
Bond's Meadow is an important wildlife site within the built up area of Oulton Broads. It is situated in the middle of a residential area between Sands Lane, Hall road, Elmhurst Avenue, Chestnut Avenue and Gorleston Road. It is maintained by local volunteers and used for education, work experience, public recreation and community and heritage events.

The majority of the site is broad-leaved woodland, with some open areas of semi-improved neutral grassland, with several ponds and wet woodland in the south of the site.

Protected species seen or known:
Great crested newts have been recorded in the ditch to the western boundary of the site in 2003.

Protected species potential:
Bats, grass snake, slow worm

Priority habitats present:
Broad-leaved woodland, wet woodland, ponds

Priority species seen or known:
There are West European hedgehog records from the site, and from surrounding areas in the north, east and west in 2014. Dunnock and song thrush were recorded to the east of site in 2007.

Priority species potential:
Water shrew, toad

Connectivity:
Connectivity is good. Hall Road Ham County Wildlife Site lies directly south of Bond's Meadow, and this woodland area links to the railway line, providing a wildlife corridor to the west but due to being by bisected by Hall Road, its effectiveness is decreased.

Structural diversity:
Structural diversity is excellent. A very good ground flora, sub-canopy and canopy layer with ponds, grassland and wet woodland areas provide a good range of habitats.

Flora:
The broad-leaved woodland contains English oak (*Quercus robur*), sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*) and willow (*Salix* spp.), with hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and elder (*Sambucus nigra*) in the understorey.

The area of semi-improved neutral grassland contains many grass species including Yorkshire fog (*Holcus lanatus*), cock's foot (*Dactylis glomerata*), smooth meadow-grass (*Poa pratensis*), rough meadow-grass (*Poa trivialis*), crested dog's tail (*Cynosursus sristatus*) and false oat-grass (*Arrhenatherum elatius*), with frequent yellow rattle (*Rhinanthus minor*), common sorrel (*Rumex acetosa*), ox-eye daisy (*Leucanthemum vulgare*), creeping buttercup (*Ranunculus repens*) and meadow crane's-bill (*Geranium pratense*).

The pond area contains weeping willow (*Salix x sepulcralis*) and red campion (*Silene dioica*) around the edges, with common reed (*Phragmites australis*) and yellow flag iris (*Iris pseudacorus*) within the water body. The wet woodland is an alder (*Alnus glutinosa*) plantation, with reed sweet-grass (*Glyceria maxima*), water mint (*Mentha aquatica*), agrimony (*Agrimonia eupatoria*) and hart's-tongue fern (*Asplenium scolopendrium*). The ditch alongside Hall Road was abundant in

branched bur- reed (*Sparganium erectum*) with herb Robert (*Geranium robertianum*) and soft rush (*Juncus effusus*).

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

Avifauna:
A range of common bird species were noted on site including blackbird, wren, magpie, great tit, blue tit, robin, wood pigeon, carrion crow, mallard and black cap. Bird boxes have been erected by local people. The woodland and scrubby areas provide good foraging, nesting and roosting opportunities for a range of common bird species.

Invertebrates:
The diversity of habitats on site, including a substantial number of native trees and deadwood should provide a high invertebrate biomass and diversity; both terrestrial and aquatic. There are also piles of coppiced wood and a man-made bug hotel on site. Lots of bees and spiders were noted, with several ladybirds, large white butterfly and common blue butterfly. A common micro moth *Celypha lacunana* was also recorded during the visit and the site is likely to support a good range of moth species.

Herpetofauna:
A man-made rubble pile has been created for reptiles. The mosaic of habitats is good for reptiles and grass snake and slow worm are likely to be present. The site provides excellent terrestrial habitat for great crested newts and the ponds on site are likely to support them as well as other amphibians such as frogs, toad and smooth newt. The woodland is likely to provide good hibernation opportunities for this group.

Mammals:
There are many mature, ivy-covered trees, which could provide good opportunities for a natural bat roost. In addition, bat boxes have been erected to provide additional roosting habitat. The diversity of habitats including ponds will support a lot of insect life so there are likely to be bats foraging over this area. This site also has the potential to support water shrew (Suffolk Character Species).

The site provides excellent foraging and hibernation opportunities for hedgehogs and there are a number of records of them in the immediate area. The areas of dense bramble scrub could provide a vital hibernation resource for them.

Other common species of mammal such as grey squirrels, foxes, mice, voles and shrews are likely to be present.

Comments and recommendations:
It is recommended that the Japanese Knotweed (Schedule 9) is controlled on the rubble pile in the eastern boundary of the site, backing onto the gardens of Elmhurst Avenue (Target Note 1). This is an invasive species on Schedule 9 of the Wildlife & Countryside Act, 1981, as amended). Any soil removed from or close to the area of Japanese Knotweed must be classed as contaminated waste. The roots of this species can extend up to 7 metres underground from the edge of the above ground vegetation. Extreme care must be taken to avoid further spread of this species.

Other Schedule 9 plants have also been previously recorded on this site in 2011. These include Indian balsam and yellow archangel. Measures should be taken to control these invasive species - monitor the occurrence of invasive variegated yellow archangel (*Lamiastrum galeobdolon ssp. argentatum*) in the wet woodland near the pond.

With respect to the wider part of the site, the current management system should be continued. Fallen deadwood in the woodlands should be left to encourage invertebrate and reptile populations.

The ponds on site are heavily shaded. Selective coppicing of trees around the ponds would let more light in which would improve the water quality and therefore improve the habitat quality for plants, invertebrates and amphibians. The ponds would also benefit from periodic clearance to reduce the quantity of silt in them which should be carried out during the autumn. However, extreme care must be taken not to cause the spread of variegated yellow archangel as this has been recorded adjacent to one of the ponds.

Cutting the meadow areas annually in August/September and removing the cuttings would improve the floristic diversity of these areas, however leaving taller vegetation around the edges will provide a variety of vegetation heights to benefit birds and invertebrates.

Appendix 1

Woodland

ash	*Fraxinus excelsior*
blackthorn	*Prunus spinosa*
bramble	*Rubus fruticosa agg.*
cherry (wild)	*Prunus avium*
dog rose	*Rosa canina*
elder	*Sambucus nigra*
English oak	*Quercus robur*
field maple	*Acer campestre*
grey poplar	*Populus x canescens*
ground elder	*Aegopodium podagraria*
hawthorn	*Crataegus monogyna*
hazel	*Corylus avellana*
holly	*Ilex aquifolium*
honeysuckle	*Lonicera sp.*
horse chestnut	*Aesculus hippocastanum*
ivy	*Hedera helix*
rowan	*Sorbus aucuparia*
silver birch	*Betula pendula*
sycamore	*Acer pseudoplatanus*
annual meadow-grass	*Poa annua*
wood meadow grass	*Poa nemoralis*
Alexanders	*Smyrnium olusatrum*
cleavers	*Galium aparine*
clustered dock	*Rumex conglomeratus*
common comfrey	*Symphytum officinale*
common nettle	*Urtica dioica*
common stork's-bill	*Erodium cicutarium*
cow parsley	*Anthriscus sylvestris*
creeping buttercup	*Ranunculus repens*

curled dock	*Rumex crispus*
garlic mustard	*Alliaria petiolata*
green alkanet	*Pentaglottis sempervirens*
meadow buttercup	*Ranunculus acris*
white deadnettle	*Lamium album*
yarrow	*Achillea millefolium*
yellow archangel (variagated)	*Lamiastrum galeobdolon ssp. argentatum*

Neutral semi-improved grassland

blackthorn	*Prunus spinosa*
hawthorn	*Cratageus monogyna*
annual meadow-grass	*Poa annua*
cock's foot	*Dactylis glomerata*
crested dog's tail	*Cynosurus cristatus*
false oat grass	*Arrhenatherum elatius*
meadow foxtail	*Alopercus pratensis*
perennial rye-grass	*Lolium perenne*
rough meadow-grass	*Poa trivialis*
smaller cat's tail	*Phleum bertolonii*
smooth meadow-grass	*Poa pratensis*
sweet vernal grass	*Anthoxanthum odoratum*
Yorkshire fog	*Holcus lanatus*
bird's-foot trefoil	*Lotus corniculatus*
broad-leaved dock	*Rumex obtusifolius*
changing forget-me-not	*Mysotis discolor*
common cat's ear	*Hypochaeris radicata*
common knapweed	*Centaurea nigra*
common sorrel	*Rumex acetosa*
creeping buttercup	*Ranunculus repens*
creeping thistle	*Cirsium arvense*
germander speedwell	*Veronica chanaedrys*
greater stitchwort	*Stellaria holostea*
green alkanet	*Pentaglottis sempervirens*
hogweed	*Heracleum sphondylium*
hop trefoil	*Trifolium campestre*
Japanese knotweed	*Fallopia japonica*
lesser celandine	*Ficaria ficaria*
meadow buttercup	*Ranunculus acris*
meadow crane's-bill	*Geranium pratense*
oxeye daisy	*Leucanthemum vulgare*
red clover	*Trifolium pratense*
ribwort plantain	*Plantago lanceolata*
rough hawksbeard	*Crepis biennis*
scentless mayweed	*Tripleurospermum inodorum*
yarrow	*Achillea millefolium*
yellow-rattle	*Rhinanthus minor*

Ponds

weeping willow	*Salix × sepulcralis*
common reed	*Phragmites australis*
unbranched bur-reed	*Sparganium emersum*
cow parsley	*Anthriscus sylvestris*
field horsetail	*Equisetum arvense*
greater burdock	*Arctium lappa*
greater duckweed	*Lemna major*
greater plantain	*Plantago major*
ground ivy	*Glechoma hederacea*
red campion	*Silene dioica*
wild raspberry	*Fructus rubi*
yellow flag iris	*Iris pseudacorus*

Marshy wet woodland

alder	*Alnus glutinosa*
bracken	*Pteridium aquilinum*
reed sweet-grass	*Glyceria maxima*
agrimony	*Agrimonia eupatoria*
hart's tongue fern	*Asplenium scolopendrium*
lords-and-ladies	*Arum maculatum*
red campion	*Silene dioica*
water mint	*Mentha aquatica*
welted thistle	*Carduus crispus*
wood avens	*Geum urbanum*

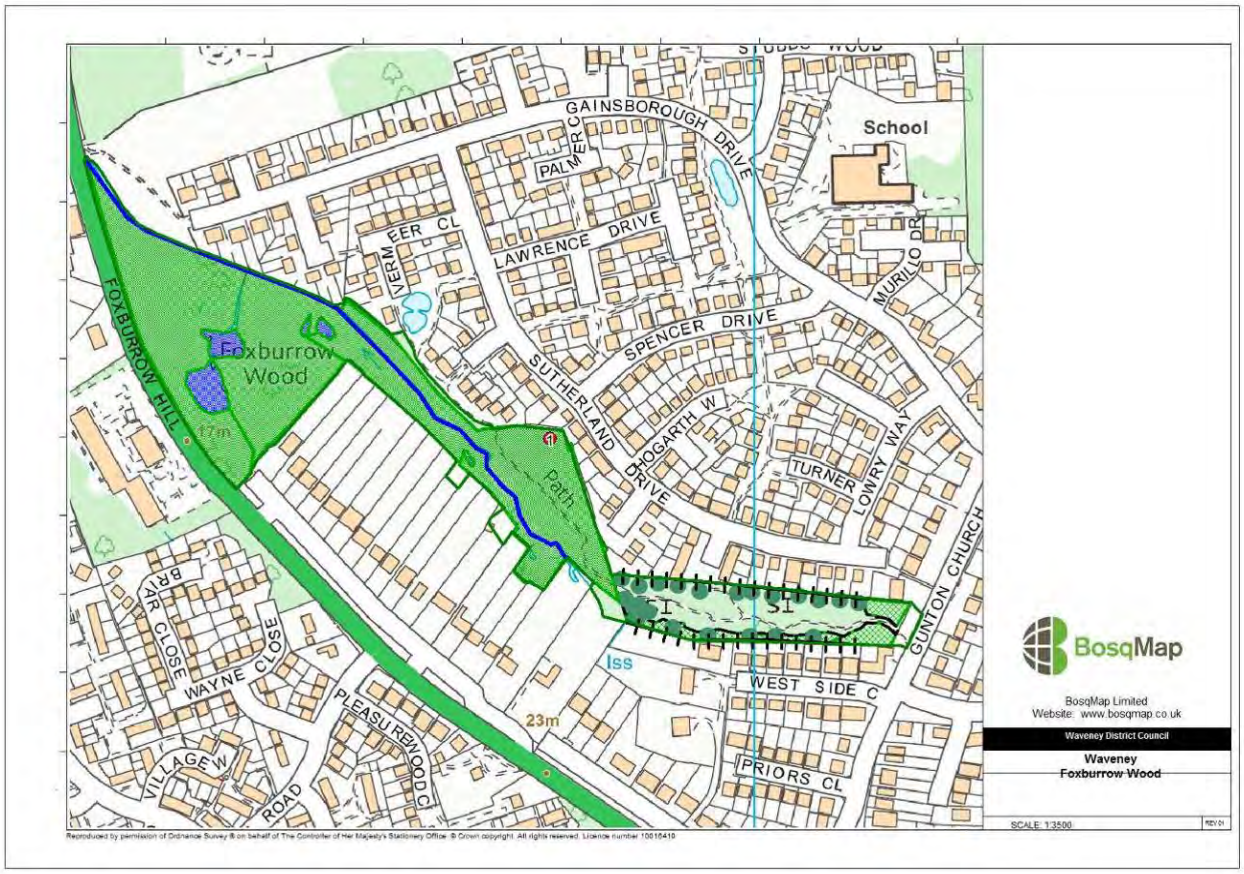
Main ditch by road

bracken	*Pteridium aquilinum*
soft rush	*Juncus effusus*
branched bur-reed	*Sparganium erectum*
broad-leaved dock	*Rumex obtusifolius*
greater duckweed	*Lemna major*
herb Robert	*Geranium robertianum*
rosebay willowherb	*Chamerion angustifolium*
yellow flag iris	*Iris pseudacorus*

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

enchanters nightshade	*Circaea lutetiana*
garlic mustard	*Alliaria petiolata*
greater plantain	*Plantago major*
greater stitchwort	*Stellaria holostea*
green alkanet	*Pentaglottis sempervirens*
hart's tongue fern	*Asplenium scolopendrium*
hogweed	*Heracleum sphondylium*
hollyhock	*Alcea sp.*
lords-and-ladies	*Arum maculatum*
pignut	*Conopodium majus*
primrose	*Primula vulgaris*
red campion	*Silene dioica*
sanicle	*Sanicula europaea*
spear thistle	*Cirsium vulgare*
welted thistle	*Carduus crispus*
white deadnettle	*Lamium album*
wood anemone	*Anemone nemorosa*
wood avens	*Geum urbanum*
wood sorrel	*Oxalis acetosella*
yellow pimpernel	*Lysimachia nemorum*

Open grassland area

bramble	*Rubus fructicosa agg.*
broom	*Cytisus scoparius*
English oak	*Quercus robur*
Leyland cypress	*Cupressus x leylandii*
lilac	*Syringa vulgaris*
snowberry	*Symphoricarpos albus*
turkey oak	*Quercus cerris*
willow	*Salix spp.*
black bent	*Agrostis gigantea*
cock's foot	*Dactylis glomerata*
meadow foxtail	*Alopercus pratensis*
meadow oat-grass	*Avenula pratensis*
perennial rye-grass	*Lolium perenne*
red fescue	*Festuca rubra*
rough meadow-grass	*Poa trivialis*
smaller cat's tail	*Phleum bertolonii*
smooth meadow-grass	*Poa pratensis*
Yorkshire fog	*Holcus lanatus*
bush vetch	*Vicia sepium*
common mouse-ear	*Cerastium fontanum*
common sorrel	*Rumex acetosa*
common vetch	*Vicia sativa*
cow parsley	*Anthriscus sylvestris*
creeping thistle	*Cirsium arvense*

cut-leaved crane's-bill	*Geranium dissectum*
ground ivy	*Glechoma hederacea*
hairy tare	*Vicia hirusita*
mugwort	*Artemisia vulgaris*
rosebay willowherb	*Chamerion angustifolium*
tansy	*Tanacetum vulgare*
white clover	*Trifolium repens*
wild radish	*Raphanus raphanistrum ssp.*

Around woodland ponds

creeping bent	*Agrostis stolonifera*
pendulous sedge	*Carex pendula*
remote sedge	*Carex remota*
wood millet	*Mileum effusum*
common twayblade	*Neottia ovata*
gipsywort	*Lycopus europaeus*
lesser duckweed	*Lemna minor*
water mint	*Mentha aquatica*
wood speedwell	*Veronica montana*
yellow flag iris	*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.

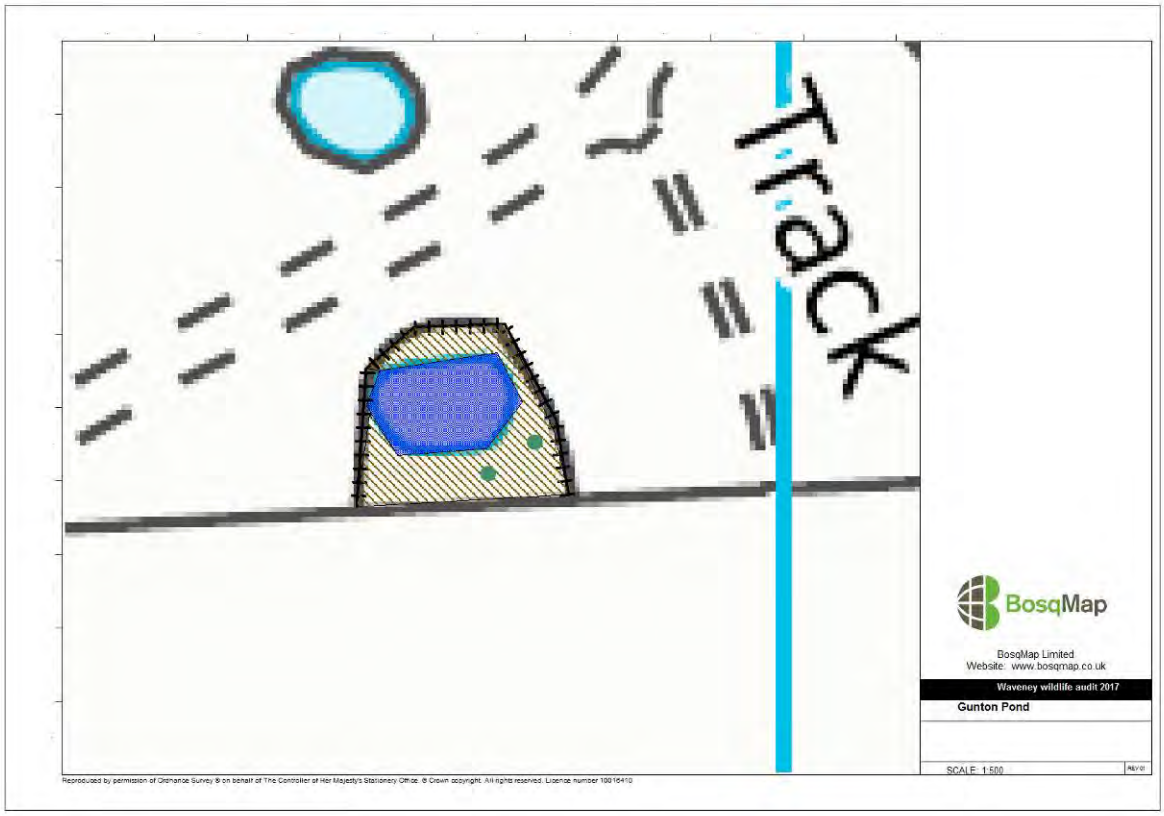
Rotational scrub management should be continued around the edges of the existing scrub to help maintain the open grassland. This should be carried out outside bird nesting season (March to August inclusive).

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.

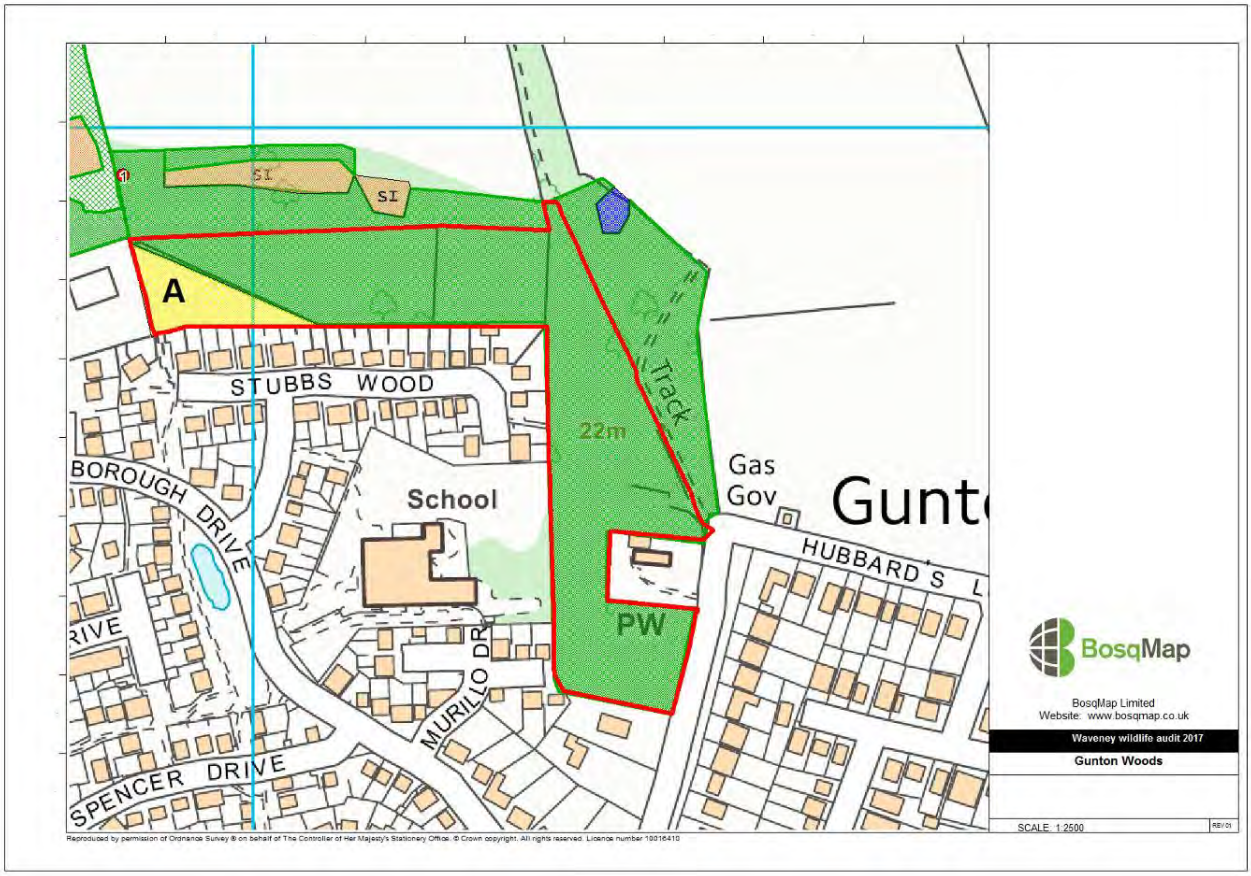
References:

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

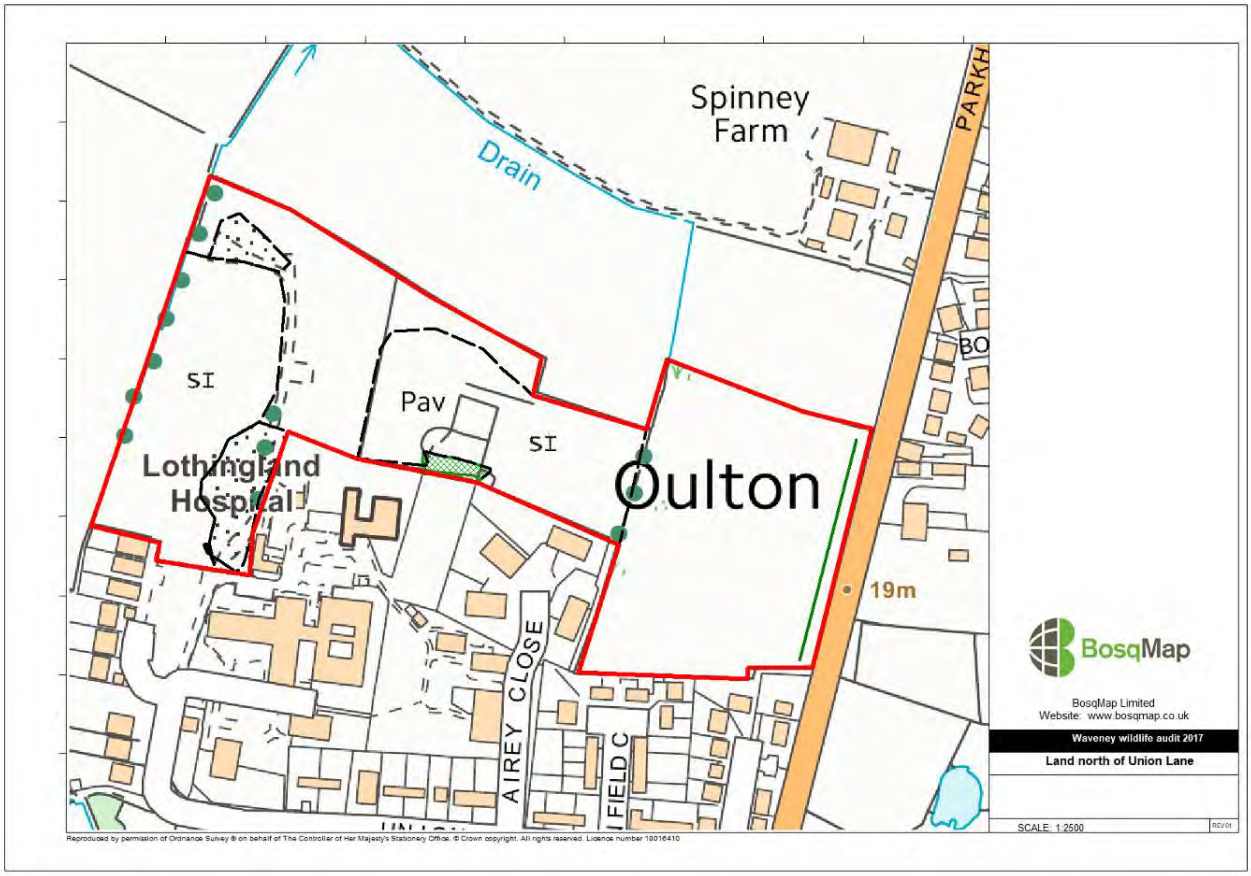
light levels and also shades out other vegetation, gradually impoverishing habitats by killing off other plants. Once established along a river bank the seeds can be transported further afield by water. In dense infestations, strimming before they flower and set seed is the best method to remove them, 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 north of Union Lane

Site ref: Lowestoft 30
Site status: No wildlife designation
Grid ref: TM 52502 95444
Area: 5.91 hectares
Date: 23 May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: Wispy cloud, sunny and warm
Ranking: 5
Biodiversity value: Thought to be low, but subject to further surveys

Map:



Photos:

Bramble scrub in the east of the site

Barn owl box in the east of the site

Entrance to the builders' yard

Damp area within semi-improved grassland

Central area of the site, showing storage and disused building

Looking eastwards from the centre of the site

Habitat type(s):
Poor semi-improved grassland, tall ruderal, scattered trees, dense/continuous scrub

Subsidiary habitats:
Buildings, rubble piles, bare ground

Site description:
This site was inaccessible in the most part due to being unable to gain landowner permission. It was viewed from a range of points around the perimeter. At present, the most westerly section of the site is being used as a builder's yard, there are gravel and rubble piles, storage areas, skips, work vehicles and temporary buildings. This was surrounded by semi-improved grassland and mature trees around the edges. Some ancient buildings were present, but again, inaccessible due to over-growth of scrub.

The most easterly section was entirely inaccessible, but from the aerial photograph it appears to be a mix of scrub patches and semi-improved grassland, surrounded by mature trees; similar to that of the rest of the site.

Protected species seen or known:
Pipistrelle roost recorded south of the site (2010)

Protected species potential:
Other bat species
Grass snake, common lizard

Priority habitats present:
-

Priority species seen or known:
Hedgehog records on Oulton Street and elsewhere throughout Oulton (2015)
Barn owl record directly south of the site (2015)
House sparrow, starling, dunnock, song thrush (2009)

Priority species potential:
Common toad

Connectivity:
This site is connected to the wider landscape along the network of hedgerows that make up the boundaries of the surrounding arable fields. Workhouse woods County Wildlife Site (CWS) lies 130m south-west.

Structural diversity:
Although the majority of this site was inaccessible at the time of survey, the structural diversity appeared to the be good with varying heights of grassland, tall ruderal vegetation, scrub, dis-used buildings and mature trees.

Flora:
A full assessment of the site flora was not carried out. The majority of the site was occupied by semi-improved grassland, Yorkshire fog and cock's foot grasses were abundant with some bush vetch, great willowherb, creeping thistle, ribwort and broad-leaved plantain, broad-leaved dock, dandelion, common knapweed and creeping buttercup.

A patch of vegetation to the west of the builders' yard suggests a damp area, possibly a shallow pond. There were large stands of pendulous sedge, with great willowherb, yellow flag iris, hard rush and teasel.

To the north of the western section, there was a high bank, probably man-made which was densely covered in tall ruderal vegetation including green alkanet, nettle and creeping thistle with some foxgloves.

Much of the scrub present was bramble with occasional elder, and the mature trees consisted of aspen, poplar, oak, silver birch and lime. There was a row of pollarded mature poplars alongside the main path running through the middle of the builders' yard. There were also mature poplars lining the western boundary.

Avifauna:
The site in general offers good foraging, nesting and roosting opportunities for a range of common bird species, with scrub and mature trees. Summer migrants such as whitethroat could also nest in the areas of dense bramble. A barn owl box is located in the east of the site, which looks to have been occupied, probably by a jackdaw. A carrion crow was noted during the survey.

Invertebrates:
The long grass provides good habitat for a range of invertebrates such as spiders, grasshoppers and crickets. Butterflies and bees will be associated with the bramble scrub.

Herpetofauna:
The long grass provides a good habitat for reptiles and amphibians such as grass snake, and can provide a good hibernation site if left uncut through the winter. The rubble piles in the builders' yard area provides a habitat which would benefit reptiles by providing basking and hibernation features.

Mammals:
The mature trees could provide a number of natural bat roosting sites, and they are also likely to forage over this site. There are also some disused old buildings, including an old doctor's surgery bungalow, just outside the site boundaries, which have the potential to contain a bat roost.

There are several hedgehog records in the immediate area and the combination of grassland, scrub and woodland provides good foraging opportunities for them. The dense bramble could provide an important hibernation source for hedgehogs. Rabbit activity in the form of burrows, scrapes and grazed lawns are evident.

Common species of mammal such as fox, roe deer and muntjac deer are likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the woodland and hedgerows on the boundaries of the site.

Comments and recommendations:

The assessment of this site was incomplete due to access issues. Consequently, if this site were to be developed, further surveys will be required, particularly breeding birds (including barn owl), reptiles and bats, as well as a more detailed Phase 1 survey. Vegetation clearance should take place only after the findings of the surveys are available and mitigation implemented as required.

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:

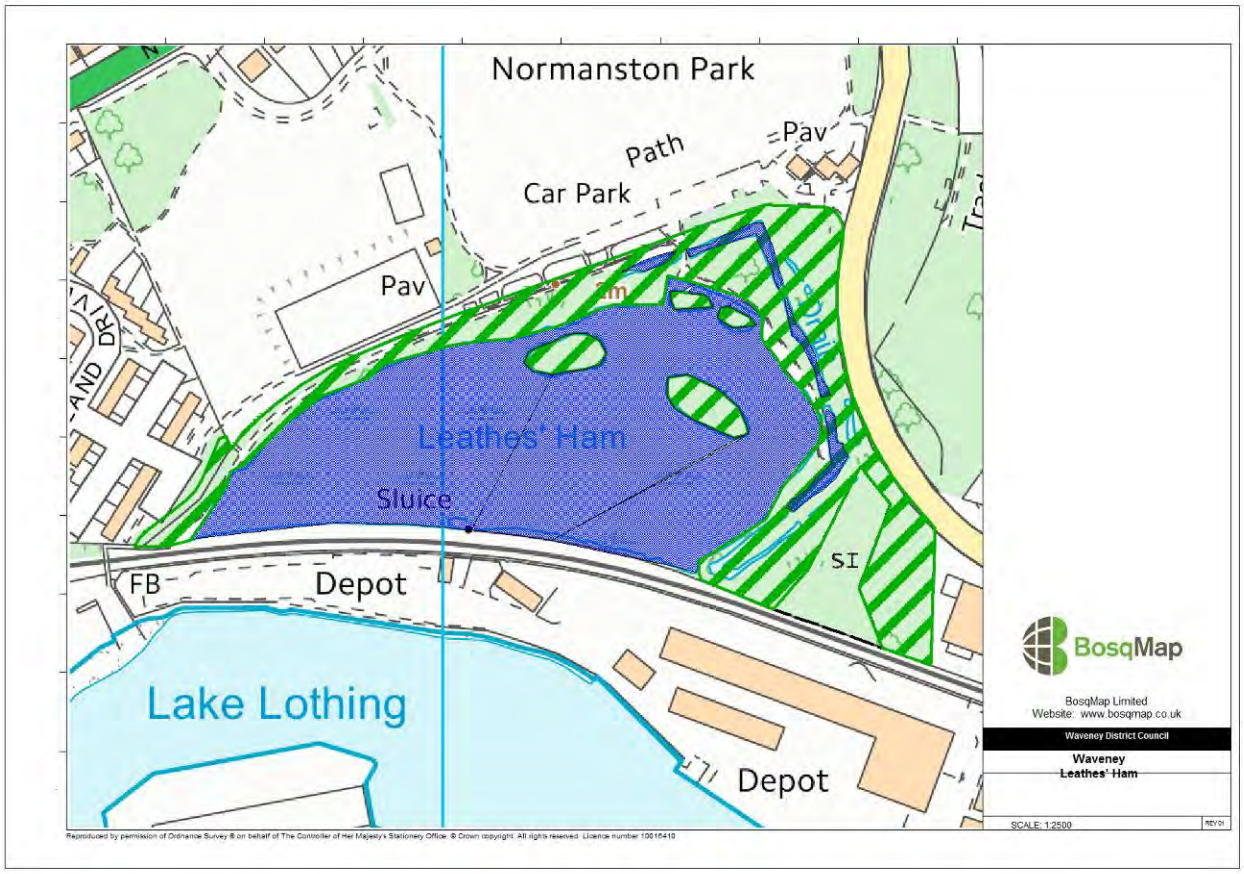
This is a well-managed site of high biodiversity value with a good habitat mosaic of woodland, scrub and grassland.

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.

Site name — Leathes Ham

Site Ref: Waveney 53
Site status: County Wildlife Site
Grid ref: TM 5309 9325
Area: 6.03 hectares
Date: 13 June 2016
Recorder: J Crighton and A Looser
Weather conditions: 90% cloud cover, warm with drizzly rain
Ranking: 2
Biodiversity value: High

Map:



Photos:

Photo 1. View south across lake

Photo 2. Woodland around northern edge of lake

Photo 3. Small area of grassland and scrub on eastern side

Habitat type(s):
Pond, plantation broad-leaved woodland, dense continuous scrub, poor semi-improved grassland, wet woodland

Subsidiary habitats:
Reed bed

Site description:
Leathes Ham lies south of Normanston Park and north of Lake Lothing. It used to form part of the Lake before being cut off by the construction of the Reedham to Lowestoft railway line. The area is now largely flooded and is a very important space for resident and migrant breeding birds including a number of ducks, geese and shovelers.

There is a limited area of marginal reed bed vegetation, surrounded by wet woodland, plantation broad-leaved woodland and rough grassland.

Protected species seen or known:
-

Protected species potential:
Bats, such as Daubenton's bat, grass snake

Priority habitats present:
Reed bed, pond, wet woodland

Priority species seen or known:
Within Leathes Ham, Norfolk hawker dragonflies have been recorded in 2011 and 2015. House sparrow and starling were also recorded in 2011 and dunnock in 2007.

To the north of the site, in Normanston Park, tree sparrow, house sparrow and herring gull were recorded in 2013 and West European hedgehog in 2014.

At lake lothing, to the south, the following Suffolk Rare Plants were recorded: bristly club rush, golden dock, hairlike pondweed and common cudweed (2009). A number of bird species have also been recorded here as follows: swift, bullfinch and tree pipit in 2013, white fronted goose and spotted flycatcher in 2012, ring ouzel and scaup in 2011, lesser redpoll in 2010 and yellow wagtail and wood warbler in 2009.

Priority species potential:
Other migrant and resident waterfowl species, water shrew, toad

Connectivity:
Connectivity is good. The site backs onto Normanston Park in the north, and Lake Lothing across the railway line in the south.

Structural diversity:
Structural diversity in this site is moderately good, there is very little marginal vegetation in the water body, but the wet scrubby woodland around the banks contains vegetation of varying heights and the site offers a good range of habitats for a number of different species.

Flora:
Around the edges of the water body the dominant species are hornbeam (*Carpinus betulus*), sallow (*Salix cinerea*), and willow (*Salix* spp) with silverweed (*Argentina anserina*), slender tufted sedge (*Carex acuta*), water figwort (*Scrophularia auriculata*)**,** and an abundance of hemp agrimony (*Eupatorium cannabinum*). Closer to the water, and in the marginal vegetation, there is hard rush (*Juncus inflexus*), common reed (*Phragmites australis*), water mint (*Mentha aquatica*), reedmace (*Typha latifolia*), false fox sedge (*Carex acutiformis*), common spike rush (*Eleocharis palustris*), soft rush (*Juncus effusus*) and large stands of marsh pennywort (*Hydrocotyle vulgaris*).

To the east of the site, there is an area of grassland with dense continuous scrub including broom (*Cytisus scoparius*), bramble (*Rubus fructicosa agg.*), hawthorn (*Crataegus monogyna*), ivy (*Hedera helix*), alder (*Alnus glutinosa*) and dog rose (*Rosa canina*) with Alexanders (*Smyrnium olusatrum*), bittersweet (*Solanum dulcamara*), sheep's sorrel (*Rumex acetosella*) and white campion (*Silene latifolia*).

Avifauna:
Mallard, blackbird, heron, coot, moorhen and great black-backed gull were seen on site during the survey. There is a good scrub layer around water edge which provides good habitat for breeding birds. The water is also an important space for migrant waterfowl.

Invertebrates:
This site is likely to support a range of terrestrial and aquatic invertebrates. There were many rotting tree stumps on site which provide good habitat for invertebrates. Speckled wood butterfly, blue-tailed damselfly and other dragonflies were seen on site during the survey.

Herpetofauna:
The site is sub-optimal for reptiles. It has been reported that a number of discarded pet red-eared terrapins inhabit Leathes Ham. Due to the presence of fish in the water body and the large number of waterfowl, it is unlikely that many amphibians would thrive here.

Mammals:

The large water bodies will support a wide range of insect life so there are likely to be bats foraging over this area and in Normanston Park to the north. Some of the mature trees in Normanston Park could support a bat roost.

Comments and recommendations:

The Schedule 9 plant New Zealand Pigmyweed was recorded to the south of the site at Lake Lothing in 2009. This should be taken into account and monitored.

A five year management plan was prepared in 2010. Consideration should be given to reviewing and updating this plan.

Appendix 1.

In and around water body

alder	*Alnus glutinosa*
bramble	*Rubus fruticosa agg.*
hawthorn	*Crataegus monogyna*
hornbeam	*Carpinus betulus*
rose	*Rosa sp.*
sallow	*Salix cinerea*
silver birch	*Betula pendula*
barren brome	*Bromus sterilis*
perennial rye-grass	*Lolium perenne*
rough meadow-grass	*Poa trivialis*
smooth meadow-grass	*Poa pratensis*
wall barley	*Hordeum murinum*
hard rush	*Juncus inflexus*
soft rush	*Juncus effusus*
common spike rush	*Eleocharis palustris*
common reed	*Phragmites australis*
reedmace	*Typha latifolia*
false fox sedge	*Carex acutiformis*
slender tufted sedge	*Carex acuta*
greater tussock sedge	*Carex paniculata*
bird's foot trefoil	*Lotus corniculatus*
bittersweet	*Solanum dulcamara*
bristly oxtongue	*Picris echioides*
broad-leaved dock	*Rumex obtusifolius*
bush vetch	*Vicia sepium*
cleavers	*Galium aparine*
clustered dock	*Rumex conglomeratus*
coltsfoot	*Tussilago farfara*
common nettle	*Urtica dioica*
common ragwort	*Senecio jacobaea*
common spotted orchid	*Dactylorhiza fuchsii*
common stork's-bill	*Erodium cicutarium*

common water-starwort	*Callitriche stagnalis*
common vetch	*Vicia sativa*
creeping buttercup	*Ranunculus repens*
creeping thistle	*Cirsium arvense*
field horsetail	*Equisetum arvense*
gipsywort	*Lycopus europaeus*
greater bird's-foot trefoil	*Lotus pendunculatus*
greater duckweed	*Lemna major*
greater knapweed	*Centaurea scabiosa*
great willowherb	*Epilobium hirsutum*
green alkanet	*Pentaglottis sempervirens*
hemp agrimony	*Eupatorium cannabinum*
marsh pennywort	*Hydrocotyle vulgaris*
marsh thistle	*Cirsium palustre*
meadow buttercup	*Ranunculus acris*
pineapple mayweed	*Matricaria discoidea*
ribwort plantain	*Plantago laceolata*
red clover	*Trifolium pratense*
silverweed	*Argentina anserina*
spear thistle	*Cirsium vulgare*
smooth hawksbeard	*Crepis capillaris*
smooth sow thistle	*Sonchus oleraceus*
tansy	*Tanacetum vulgare*
water figwort	*Scrophularia auriculata*
water mint	*Mentha aquatica*
wood avens	*Geum urbanum*
yellow flag iris	*Iris pseudacorus*

Back grassland/scrub

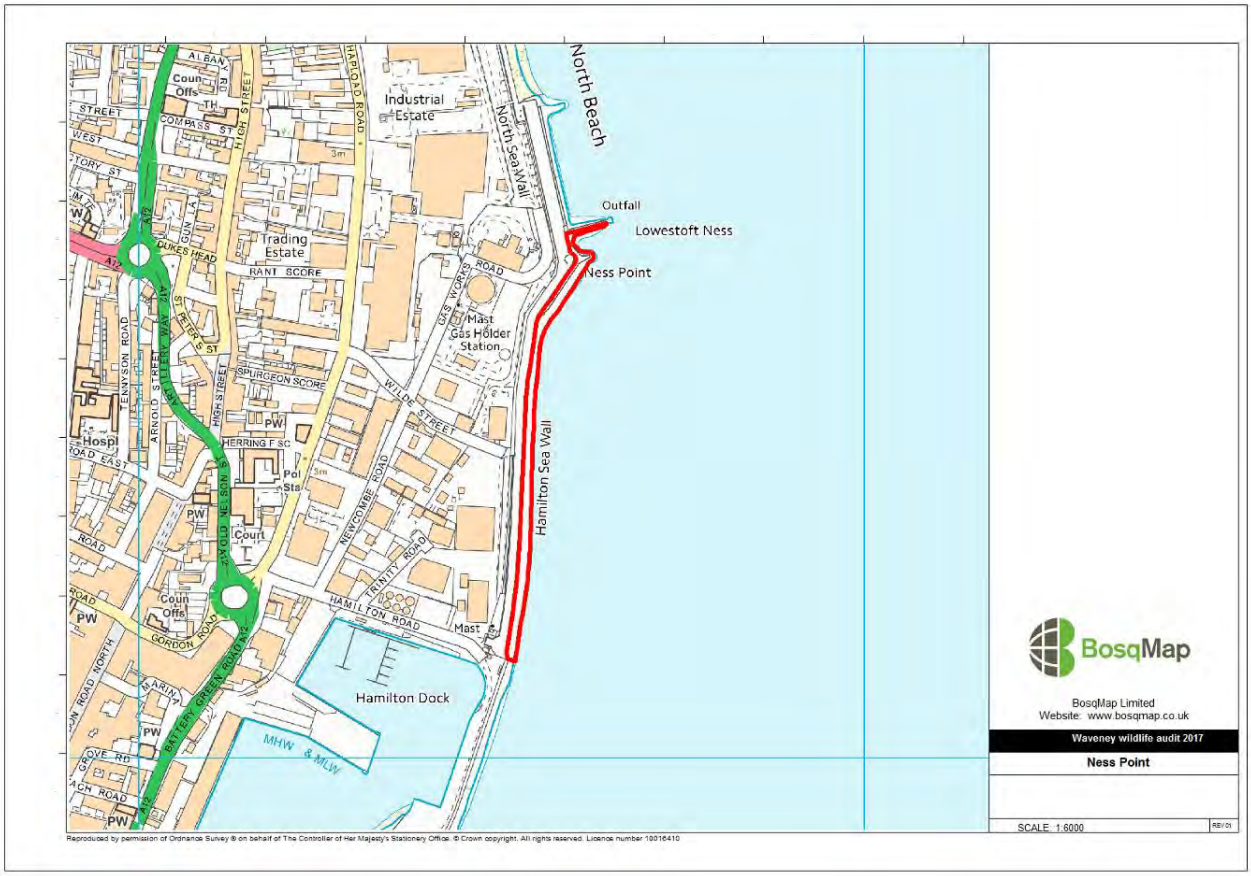
bramble	*Rubus fruticosa agg.*
broom	*Cytisus scoparius*
bracken	*Pteridium apuilinum*
dog rose	*Rosa canina*
English oak	*Quercus robur*
gorse	*Ulex europaeus*
sycamore	*Acer pseudoplatanus*
rough meadow-grass	*Poa trivialis*
smooth meadow-grass	*Poa pratensis*
Yorkshire fog	*Holcus lanatus*
Alexanders	*Smyrnium olusatrum*
bittersweet	*Solanum dulcamara*
black horehound	*Ballota nigra*
broad-leaved dock	*Rumex obtusifolius*
cleavers	*Galium aparine*
common knapweed	*Centaurea nigra*
common mouse-ear	*Cerastium fontanum*

common nettle	*Urtica dioica*
common ragwort	*Senecio jacobaea*
common vetch	*Vicia sativa*
cow parsley	*Anthriscus sylvestris*
creeping thistle	*Cirsium arvense*
cut-leaved crane's-bill	*Geranium dissectum*
gipsywort	*Lycopus europaeus*
hemp agrimony	*Eupatorium cannabinum*
hogweed	*Heracleum sphondylium*
hop	*Humulus lupulus*
lords-and-ladies	*Arum maculatum*
meadow buttercup	*Ranunculus acris*
perforate St John’s wort	*Hypericum perforatum*
prickly sow thistle	*Sonchus asper*
ribwort plantain	*Plantago laceolata*
sheep's sorrel	*Rumex acetosella*
spear thistle	*Cirsium vulgare*
white campion	*Silene latifolia*
wood avens	*Geum urbanum*
yarrow	*Achillea millefolium*

Site name: Ness Point

Site ref: Lowestoft 1
Site status: County Wildlife Site
Grid ref: TM 55538 93482
Area: 0.87 hectares
Date: 10th April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 80-90% cloud cover, bright intervals with a moderate cool wind
Ranking: 2
Biodiversity value: High

Map:



Photos:

View looking north from the mid-point of the site

Close-up view of the tip of the sea defenses

View looking south from the mid-point of the site

Habitat type(s):
Man-made sea wall

Subsidiary habitats:
-

Site description:
Ness Point is the most easterly place in the UK, it lies directly south of North Beach and is reached via Gas Works Road or Wilde Street. This site comprises artificial sea defences including Hamilton Sea Wall, which spans just over 550m of coastline and Lowestoft Ness Outfall, a heavily reinforced groyne. Lining the entire stretch are substantial concrete blocks which protect the coast from erosion, but also provide habitat for over-wintering purple sandpiper, *Calidris maritima*. The purple sandpiper is on the Amber List of Birds of Conservation Concern and due to the fact that Ness Point is the most regular site for this species in Suffolk, it was designated as a County Wildlife Site.

Protected species seen or known:
Common porpoise (2003, 2005)
Common seal (2003)

Protected species potential:
-

Priority habitats present:
-

Priority species seen or known:
Harbour porpoise (2005)

Priority species potential:
-

Connectivity:
Although this site itself is not a natural habitat, it does form the southern end of a linear strip of green space all the way up the coast to Corton Woods.

Structural diversity:
This site has limited structural diversity, although the gaps in the rocks provide nesting and foraging opportunities for birds and invertebrates.

Flora:
-

Avifauna:
The purple sandpiper is a medium sized, dark grey wading bird with a downcurved beak and short orange legs. They feed on winkles, crustaceans, insects, spiders and plants. The most up-to-date surveys (Suffolk Ornithologists Group, 2016), show that they were recorded at Ness Point from 1st January until 4th May 2015 and returning on 23rd October. Peak counts were 14 in the early part of the year, and 11 in the latter.

There were other early-year records in Lowestoft, Slaughden, Bawdsey and Landguard, and late-year records from Gorleston, Corton Cliffs, Lowestoft, Southwold, Thorpeness, Slaughden, Bawdsey, Falkenham Marshes and Landguard.

Invertebrates:
Crustaceans and marine invertebrates will be associated with the concrete blocks, using them as refuge and foraging habitat. Grayling butterfly (2014) is also noted at Ness Point, but likely to be associated with habitats outside the CWS.

Herpetofauna:
This site is unsuitable for this group.

Mammals:
Harbour porpoise and common seal have been spotted off the coast of Ness Point. It is unlikely that any mammals would utilize this site.

Comments and recommendations:
Continue to monitor the purple sandpiper population each winter.

References:
Suffolk Ornithologists Group (2016), *Suffolk Birds 2015* Vol 65. Ipswich: The Suffolk Naturalists' Society.

The Denes Lowestoft
Extended Phase 1 Survey and
Habitat Management Recommendations

Project no.	*Report*	*Date*
21/14	Final	11/08/2016
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Suffolk Wildlife Trust

This report has been compiled in accordance with BS 42020:2013 Biodiversity – Code of practice for planning and development, as has the survey work to which it relates.

The information, data, advice and opinions which have been prepared and provided are true, and have been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional *bona fide* opinions.

Disclaimer

This survey was carried and an assessment made of the site at a particular time. The evidence of the report can be used to draw conclusions as to the likely presence/absence of protected species and the impacts of any future development works. This survey is a snapshot in time and further work may be necessary for instance if there is a delay or when applying for a Natural England European Protected Species Licence, or the requirement for a Habitat Regulations Assessment.

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.

Summary

SWT Trading Ltd: Ecological consultants were commissioned by Suffolk Coastal and Waveney District Councils to carry out an Extended Phase 1 assessment of The Denes, Lowestoft.

The site assessment was carried out to assist a Heritage Lottery Fund bid to improve the landscaping and historical aspects of this site.

This is a long, thin site covering 8 hectares to the east of Whapload Road between Lowestoft Denes Caravan Park and Lowestoft Ness. It includes part of the sea wall and a large area of dry acid grassland which is known as the Net Drying Area. This has wooden poles which the fisherman used to use for drying their nets.

The habitats of the net drying area are particularly important for their bird and invertebrate communities. This area forms part of a linear group of semi-natural habitats which runs from the net drying area north to Gunton Warren and beyond, so represents an important wildlife corridor. The juxtaposition of these sites increases the value of the net drying area grassland and its associated areas of scrub.

Species have been described within the report and information has been supplemented by consultation with local natural history groups.

Brief management recommendations have been made to

- Promote a mosaic of structural diversity across the grassland
- Encourage floristic diversity
- Protect and improve the diversity of invertebrates
- Continue to support a range of bird species

Any future actions within the site should also consider the likely presence of reptiles and a survey undertaken as required. It is also recommended that a detailed management plan is produced once specific plans for this area are drawn up.

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1. Introduction

SWT Trading Ltd: Ecological Consultants was commissioned by the partnership of Suffolk Coastal and Waveney District Councils (East Suffolk) to carry out an Extended Phase 1 assessment of area known as North Denes, Lowestoft, centred on the area known as the 'net drying area'. The overall site area represents 8 hectares east of Whapload Road between Lowestoft Denes Caravan Park and Lowestoft Ness. The former net drying area represents the largest block of semi-natural habitat within the site and still includes the wooden poles formerly used by fisherman for drying their nets. The site encompasses also encompasses a linear stretch of the sea wall as well as a block of amenity grassland north of the net drying area.

An earlier site assessment of the net drying area was carried out in 2007 as part of a wildlife audit of Lowestoft commissioned by Waveney District Council. In this current survey, the report has been presented using Phase 1 methodology that has been extended to consider the presence of protected species and Priority Habitats and Species. In addition, recommendations are made for ecological enhancement across the site.

The survey is being undertaken to assist a Heritage Lottery Fund bid to improve the landscaping and historical aspects of this site. The project seeks to interpret and enhance an area where the old Beach Village was once located as the most easterly community in Britain. The project aims to improve access, knowledge, participation and enjoyment of the project area and its maritime heritage. The old Beach Village was formed on Lowestoft Denes in 1760s, with Beach Companies servicing the fishing industry operating along the shore carrying out anchor salvage, pilotage and rescuing ships/boats driven on to the treacherous offshore sandbanks. The old Beach Village often succumbed to the hazards of the sea and was flooded on numerous occasions and in the 1960s the village was demolished as part of a slum clearance. All that remains are the remnants of the net drying racks and a maritime display. The main elements of the project relating to the natural environment will include:

- **Landscaping.** Create an interesting landscape which connects the open space, the Seawall and Lowestoft Ness. This improved landscape will create a high quality, vibrant and interactive landscape and be designed in such a way that it will interpret the former uses of the area for example the fishing trade and aspects of seamanship. The following will be delivered as part of landscaping:

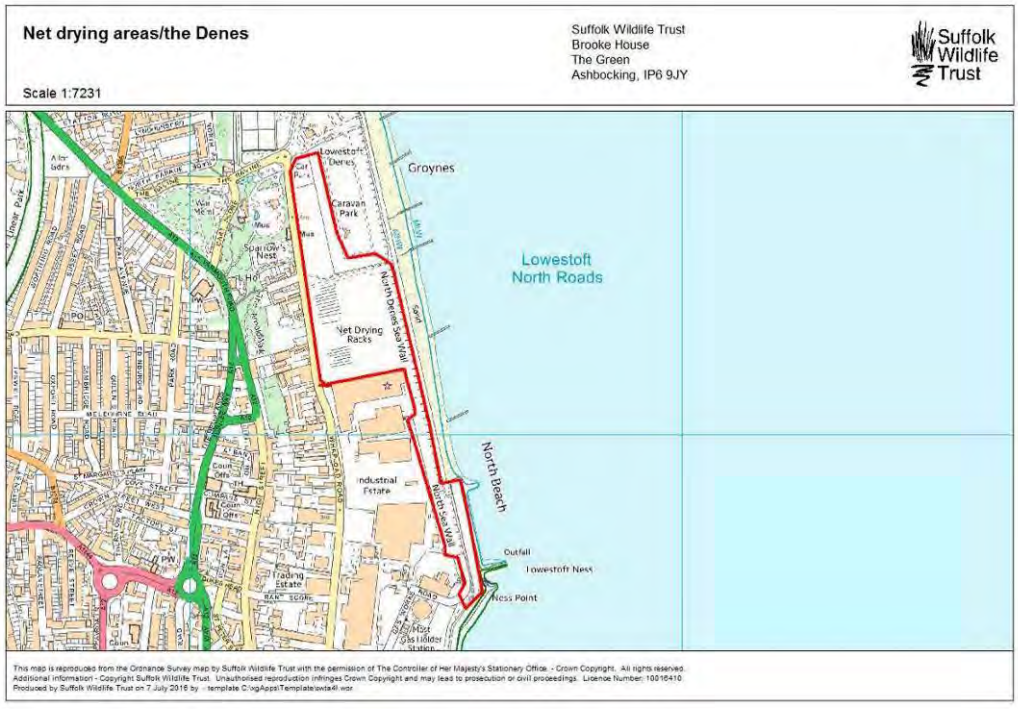
- **Flora -** The landscaping will need to be sensitive to the existing semi natural area of the North Denes which represents a sizeable area of semi-natural grassland which is an important site for a variety of bird species throughout the year. Other valuable habitats include the concrete blocks of the sea defences for overwintering purple sandpiper. To ensure this, more diverse flora and increase in structural diversity will be encouraged in at net drying area. This will be achieved through cutting and removal of arisings to break up uniformity of the sward and create a patchier habitat. This will be on rotation to ensure that a diverse invertebrate community is also maintained, which in turn will benefit bird species.

- **Community space and play area -** A designated area for community events and a play area are key landscape improvements to achieve. The play area will act as an outdoor

classroom and space where children can learn through play and make the heritage more accessible and easier to interpret and therefore more valued. There is also the opportunity to address the need for a play area which is suitable for disable children, presently there is no provision for this in Waveney. The community space will have a rolling programme of events / activities to help offer attractions at different times of the year. This was an idea particularly favoured by young people who stated this would help keep interest high, provide an outlet for different local interests and be a pull factor for both locals people and tourists. The events could also forge links with neighbouring events in Sparrows Nest, the Town Centre and Lowestoft Ness and encourage visitors in the town down the historic Scores and to the East of England Park. The events would draw upon ideas heard at community consultations and there is scope for the events to be unique to this specific location and its history and not compete but compliment existing events.

- **Street Furniture -** Creative seating, bins, innovative lighting and natural pathways will be developed across the site to forge links between the open space, the seawall, Lowestoft Ness and make the heritage of this area more accessible, aesthetically pleasing, safe and functional. A screening solution will be installed to reduce the visual impact of Birds Eye factory building by the use of either tree, projecting images / footage on the existing factory building or through art work panels. This will be refined in the Design Plan.

Figure 1: Site location



The site lies within an important wildlife corridor in this part of northern Lowestoft , with direct connectivity to a number of important wildlife sites to the north of the site including Gunton Warren, Gunton Cliffs and Corton Woods. The aerial map (Figure 2) shows the site in the context of other open space in the area. The juxtaposition of other sites to the north increases the wildlife value of the net drying area and associated scrub.

Figure 2: Coastal wildlife corridor

The objectives of this survey are to undertake a Phase 1 habitat survey and to produce a general map of the semi-natural habitats present and to gain an overall impression of the biodiversity and conservation value associated with these habitats. A survey to Phase 1 standard was conducted (according to the Nature Conservancy Council (NCC) standard methodology). In addition, an assessment was made of the likely presence of Protected and Priority Species.

2 Survey methodology

2.1 Desktop study and consultation with local experts

Prior to the initial survey, a search was carried out for designated sites and protected and BAP species records using Suffolk Wildlife Trust's database, which contains our own survey data and records from Suffolk Biological Records Centre. The area of search was 2 km from the boundaries of the site. In addition, local experts were consulted to gain further information on the site.

2.2 Phase 1 survey

The Phase 1 survey was undertaken on the 12th July by Alison Looser and Simone Bullion. The weather was warm but overcast with a heavy rain shower at the end of the survey. A digital camera was used where appropriate and a GPS, accurate to within 5m was used to obtain 10 figure grid references.

4.2.1 Recording

The aim of Phase 1 survey is to provide, relatively rapidly, a record of the semi-natural vegetation and wildlife habitat over large areas of countryside.

- Each habitat type was mapped on 1:10,000 scale map
- Dominant species were recorded
- Areas of conservation interest were targeted

4.2.2 Mapping

A map has been produced using BosqMap software to indicate and classify the occurrence of semi-natural habitats. However, this is not to be regarded as a definitive representation of the conservation value or interest of the site. In particular, the absence of any symbol such as a colour code or target symbol should not be taken as denoting a lack of conservation value.

4.2.3 Target notes

The aim of the target note is to give a succinct picture of the nature conservation interest of a particular site (a readily identifiable and homogenous habitat) in the context of its land-use and management.

2.3 Assessment of Protected Species and Priority Species

Botany
The dates of the survey were conducive for recording this group and all observed plant species were recorded.

Birds
The dates of the survey were conducive for recording this group as a series of incidental records, but the survey took place outside of the bird breeding season or the spring and autumn migration periods.

Amphibians and reptiles
The habitats were assessed for their potential to support members of this group by assessing habitat features, structural diversity and connectivity to other areas of suitable habitat.

Invertebrates
The dates of the survey were conducive for recording this group as a series of incidental records. However detailed surveys were outside the scope of this study.

Mammals
Evidence of any mammal species was recorded.

The suitability of the habitat to support roosting bats was assessed, particularly by noting the size of any trees and whether they contained any cavities or loose bark. The quality of foraging habitat was also assessed.

All areas were closely examined for evidence of badgers, such as droppings/latrines, tracks, hair and setts.

2.4 Survey constraints and limitations

There were no constraints or limitations to the survey with the exception of birds. The visit was carried out at the optimal time of year for Phase 1 habitat assessment.

3 Ecological assessment of the site

3.1 Desktop study and consultation with local experts
The desktop study indicated that:

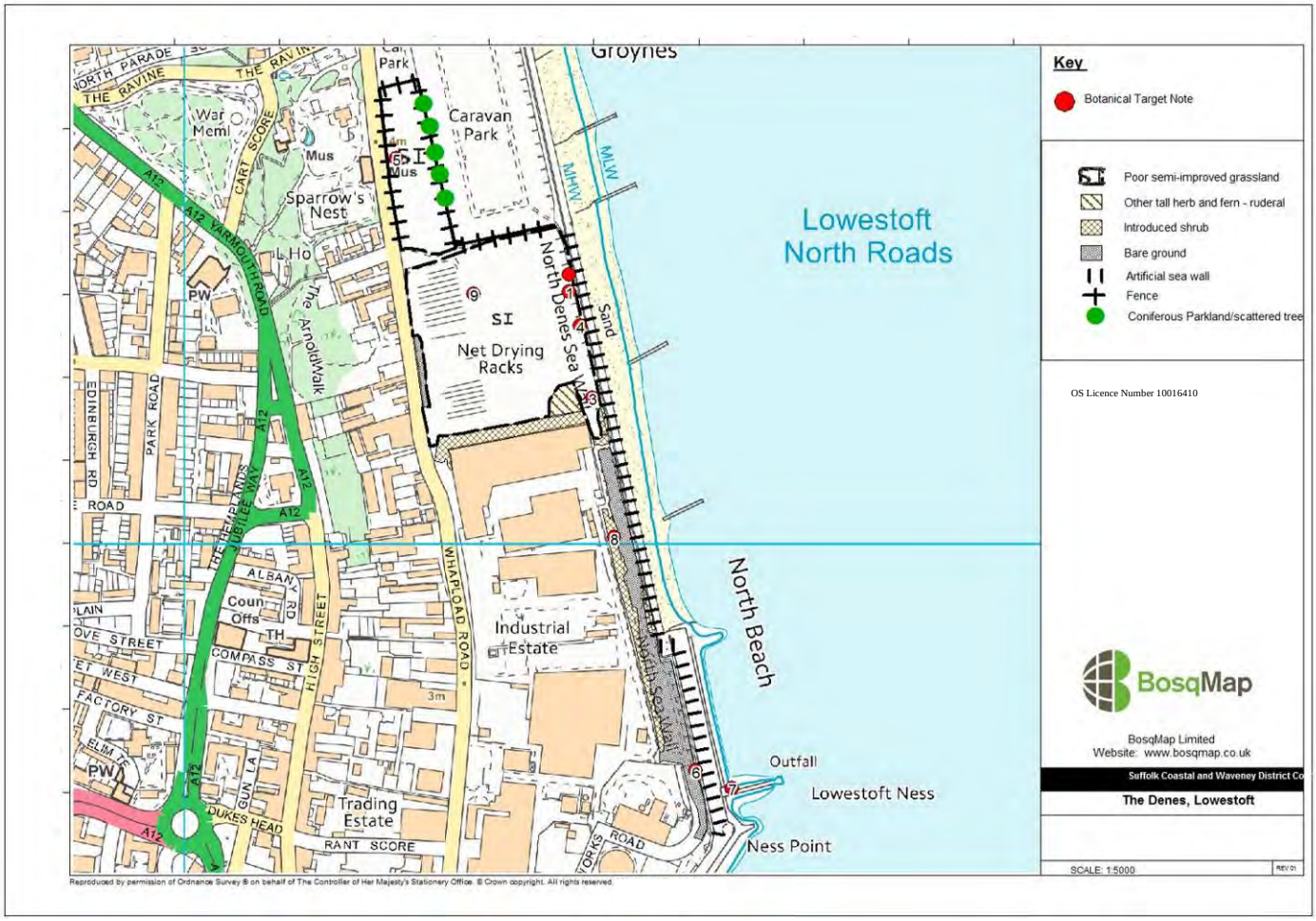
- Wasp spider has been recorded around the net drying area (c2008)
- Small heath butterfly recorded at the Denes (2005)
- Purple sandpiper has been recorded at Ness Point (2014)
- Blackbird, robin, dunnock and greenfinch have been recorded breeding on site (2016)
- Starling and skylark have both been recorded in the net drying area (2007)

Local expert, Robert Wilton, was very helpful in providing the report ‘North Denes in Bloom’ and also supplying ornithological records through the Lowestoft ‘Lounge Lizards’ bird group.

3.2 Phase 1 survey

The habitat locations, as defined by the Phase 1 survey are reproduced in Figure 3 below with its accompanying key. The associated Target Notes are described in Section 3.3.

Figure 3: Phase 1 vegetation survey



3.2.1 Vegetation types within site boundary:

	Vegetation type	Code
•	Poor semi-improved (dry) grassland	B6
•	Ephemeral/short perennial	J1.3
•	Tall ruderal	C3.1
•	Introduced scrub	J1.4
•	Scattered coniferous trees	A3.2
•	Boulders/rocks	H4
•	Artificial sea wall	J3.5
•	Hard standing	J4

3.2.2 Target notes

Target notes are an essential part of Phase 1 survey and provide supplementary information to the Phase 1 habitat map (Figure 2), particularly regarding features of interest. They are shown as red circles on the map with a number inserted. The detail is enhanced if the map is viewed using the 'zoom' feature.

- Target Note 1 Common restharrow
- Target Note 2 Sea sandwort
- Target Note 3 Sea radish
- Target Note 4 Dune grassland
- Target Note 5 Mossy stonecrop
- Target Note 6 Yellow horned poppy
- Target Note 7 Boulders important for purple sandpiper
- Target Note 8 Tamarisk bushes – excellent for birds
- Target Note 9 Large area of acid grassland supporting good numbers of birds and invertebrates

3.2.3 Description of Phase 1 Habitat categories

POOR SEMI-IMPROVED (Dry) GRASSLAND (B6)

The net drying area is the largest block of habitat and represents very dry grassland. The driving factor in such habitats is the free-draining nature of the soils rather than pH and as a consequence it does not fit easily within the Phase 1 vegetation classification. In trying to apply the coding, the nearest fit is 'poor semi-improved grassland', but this does not do justice to a habitat which is relatively scarce and valuable for a range of species.

Dry grasslands do not naturally support a wide range of species, as the arid soil conditions tend to support more specialist species. Typical plants observed this area include the following: Grasses and sedges: common bent, cock's-foot, Yorkshire fog and sheep's fescue, sand sedge, pill sedge. Herbs: sheep's sorrel, common cat's ear, mouse-ear hawkweed, common mouse ear, hare's-foot clover, black medick, toothed medick, dove's-foot cranesbill, perennial sow thistle, yarrow and common centaury. There were a few patches dominated by ragwort plants, although in most places the sward was too lush to favour their colonisation.

This large area of grassland provides excellent habitat for birds, mammals, reptiles and invertebrates (Target Note 9).

There are unobtrusive paths winding their way through the grassland and the footfall is naturally maintaining these. Rabbits are also creating a lower growing sward and occasional bare ground in patches through the site, creating some limited structural diversity. Although the site is well used by dog walkers, dog faeces - although present, was less of a problem than might be envisaged for a well-used site such as this. Litter too was not noticeable, although this has been reported to be a problem in the past.

Figure 4: Dry grassland with Yorkshire fog the dominant species in the photo

There is a narrow strip of grassland adjacent to the sea wall where there appears to be the additional influence of sea spray. The grassland here, although still free-draining, includes more salt tolerant species including marram grass, sea couch with dittander (a nationally scarce species), sea sandwort, sea radish, as well as smooth meadow grass, bindweed spp, bird's-foot trefoil, wild carrot and common restharrow (Target Note 1).

Figure 5: Common restharrow (Target Note 1)

As for dry grassland, it is difficult to assign this narrow strip to a specific Phase 1 category, as the habitat has some characteristics of Dune Grassland, although it is clearly not a dune. It was decided to leave the category as poor semi-improved grassland and comment on these different species through Target Notes 1-3.

Common restharrow favours well drained soils and was thought to have been lost from the site, so this is an exciting find. As well as inland sites it is also found in coastal grassland, sand dunes and older vegetated shingle.

Sea sandwort (Target Note 2) grows in shingle or sandy beaches, with its attractive succulent geometric leaves.

Sea radish (Target Note 3) is also found in coastal grassland and sand dunes and is recorded as an occasional species on the north coast of Suffolk, including Lowestoft.

Dittander is found in both wet and dry coastal habitats. Although it its status is 'Nationally Scarce', it is increasing as a coloniser of disturbed areas in towns and waysides and has spread from its original tidal riverbanks far inland.

Marram is found on sandy soils all along the Suffolk coast.

To the north of the net drying area, west of the caravan park is a long thin strip of short mown grassland which is less diverse than the net drying area but also dominated by species associated with free-draining soils. These include grasses: common bent, rye grass, Yorkshire fog, soft brome and wall barley and herbs: ribwort plantain, buckshorn plantain, daisy, beaked hawk's-beard, hawkweed spp, common cat's-ear, hare's-foot clover, yarrow, ladies bedstraw, common mouse ear and sheep's sorrel, and mossy stonecrop in the bare areas.

Figure 6 View north from net drying area

Figure 7: Mossy stonecrop (Target Note 5)

In the area of short mown grassland west of the caravan park there are a few areas of bare ground. Mossy stonecrop (Nationally Scarce plant) was recorded here (Target Note 5) as well as sheep's sorrel. Mossy stonecrop is found in inhospitable bare, compacted, free-draining soils where there is low competition from other species. In autumn, its fleshy leaves turn bright red creating a splash of colour on pathways.

TALL RUDERAL (C3.1)

At the south-eastern corner of the site, adjacent to the Bird's eye factory, the grassland is ranker with false oat, common couch, creeping thistle, spear thistle, curled dock, nettle, hemlock, white campion, alexanders and ragwort. The presence of these species indicates a more disturbed, nutrient rich soil.

Figure 8: Area of ranker vegetation in south-east corner of net drying area

BOULDERS/ROCKS (A2.1)

On the seaward side of the sea wall are large boulders which are part of the sea defences and these provide good habitat for birds, most notably purple sandpiper (see 3.4.1).

Figure 9: Large boulders against sea wall (Target Note 7)

SCATTERED TREES (A3)
There is a line of mature pine trees along the boundary with the caravan park. It appeared that a herbicide had been recently applied around the base of the trees as the grass was brown and wilted.

INTRODUCED SHRUB (J1.4)
Along the northern edge of the Birds Eye factory and also bordering the car park on the eastern side of the factory is a thick, dense belt of introduced shrub with species including tamarisk, hawthorn, Japanese rose, ash, sumach, sycamore, bramble and sea buckthorn.

Figure 10: Dense area of scrubby vegetation

Tamarisk (Target Note 8) is an introduced species found all along the Suffolk coast and is native to the western Mediterranean and south-west Europe. As it thrives in coastal locations it is often used as a valuable screen or wind break. These shrubs are particularly important for bird species on this site (see 3.4.1).

Sea buckthorn, a spiny shrub, is also listed as Nationally Scarce and native to the East of England. It is found along the Suffolk coast and its fruits are an attractive orange colour.

Two of the other species listed above can be considered as 'invasive': Stag's-horn sumach (*Rhus typhina*) is a garden escape and propagates by suckers which can emerge metres away from the original shrub. Japanese rose (*Rosa rugosa*) can also spread by suckering growth and can form dense thickets in coastal areas as it is tolerant of salt. Japanese rose is listed under Schedule 9 to the Wildlife and Countryside Act 1981 with respect to England and Wales. As such, it is an offence to plant or otherwise allow this species to grow in the wild.

SHINGLE FLORA: TARGET NOTE 6

There are areas of imported shingle at the southern end, near Ness Point, and also in front of the shrubs surrounding the Birds Eye factory car park which have a good range of coastal plants. It is not clear if these areas have been seeded. These plants include marram grass, sand sedge, yellow horned poppy great mullein, scarlet pimpernel, sea sandwort, biting stonecrop, English stonecrop, black medick, buckshorn plantain, common and Canadian fleabane, black medick, hare's-foot clover, pearlwort spp, creeping cinquefoil, pineapple mayweed, sun spurge, mallow, mugwort, sticky groundsel and pellitory of the wall.

Yellow horned poppy (Target Note 6), is a native of stony coastal habitats. The yellow flowers create a bright splash of colour in otherwise relatively barren habitats.

Figure 11: Area of imported shingle with scattered plants at the southern end of the survey area. Yellow horned poppy is flowering on the upper parts of the banks.

3.3 Faunal Groups

3.3.1 Birds

This site is very important for a variety of bird species and we are very grateful for Robert Wilton for assisting with this information.

The net drying area is very good for migrant birds, particularly members of the family known as the 'chats', which like to perch on the posts. In spring and autumn good numbers of wheatear can be found along with smaller numbers of winchat and the occasional black redstart. Despite the high levels of public disturbance meadow pipits have successfully bred and fledged young at the base of the sea wall opposite the nest posts in recent years. Other breeding species around the nest drying area include whitethroat, dunnock (Priority Species), blackbird and wren.

House sparrows used to congregate in good numbers around the net posts, but have been affected by some clearance of bramble. They still breed and roost in the tamarisk associated with the factory, although they can still be seen foraging on the net drying area (see Figure 12).

Figure 12: House sparrow (Priority Species) perching on net drying posts with the Birds Eye factory in the distance.

Starlings sometimes gather in numbers to forage within the grassland on the nest drying area, although this was not observed during the survey. They also pre-roost gather around the gas terminal at Ness Point before heading south to their roost in Lowestoft Harbour.

A number of swifts (Suffolk Character species) were seen feeding over the site. Although there are no nesting opportunities for swifts, the grassland supports an excellent invertebrate community and so provides a valuable food source for them. A group of 40 birds have been

reported on the North Denes in previous years so this is an important colony. Barn swallows may also be seen hunting for insects over the grassland.

The belt of tamarisk shrubs that run north to south behind the Bird's Eye car park are exceptionally good for both breeding and migrant birds. Birds breeding in this shrub include house sparrow, blackbird, robin, dunnock, greenfinch, whitethroat and wren. Many tired migrants such as redstart, thrushes and finches use the area for cover when they make landfall. Migrant birds, like moths, are attracted to the lights of the Bird's Eye factory and make landfall in these bushes.

The boulders on the seaward side of the sea wall provide vital habitat for a number of bird species, particularly purple sandpiper which is a regular winter visitor to the site. Ness Point County Wildlife Site is one of the most important sites for this species (Piotrowski 2003).

The groynes also provide excellent roosting opportunities for birds, especially gulls. Herring gulls (Priority Species), greater and lesser black backed gulls and black headed gulls were seen during the visit.

Figure 13: Gulls roosting on groyne.

3.3.2 Amphibians and reptiles

There are no ponds on site and although there are 3 ponds within 100m of the northern end of the site, they are on the other side of the Whapload Road so the likelihood of amphibians using the site is low. However, the large area of dry grassland provides good habitat for reptiles, particularly common lizard. It is unknown of they occur on this site and none were seen during the survey, but the unshaded habitat mosaic is highly suitable for this species and the posts of the net drying area provide excellent basking opportunities. All reptiles have partial protection and are a Priority Species.

Figure 14: The posts of the net drying area could provide excellent basking areas for common lizard if they are present on this site.

3.3.3 Invertebrates

The site is excellent for invertebrates. The uneven height of the sward provides good opportunities for a wide range of invertebrate species.

Figure 15: Looking east across site showing uneven sward height

Meadow brown, gatekeeper, small skipper, small tortoiseshell, large white and small white butterflies were seen. Common blue is also present on site and brown argus is also recorded annually, although in low numbers. The presence of common ragwort means there is a high likelihood of the cinnabar moth being present (Priority Species), although no brightly striped caterpillars of this species were seen during the survey.

Within the grassland are areas of bare ground which will provide excellent habitat for a range of ground nesting bees and wasps and many members of this group are scarce or rare. Large numbers of crickets, grasshoppers and spiders were observed in the grassland and wasp spider has been recorded on site (2008). 7 spot ladybird and soldier beetle were also seen.

Red tailed bumblebee, common carder bee and early bumblebee were seen during the visit. A survey conducted in 2012 north of the current survey area by Danny Porter recorded 5 species of bumblebee (those listed above plus buff tailed and white tailed bumblebees) and these are all likely to frequent this site.

Figure 16: skipper butterfly (likely to be small skipper but difficult to separate from Essex skipper)

3.3.4 Mammals

Patches within the net drying area grassland are heavily rabbit grazed to a short turf (see Figure 15), which is helping to create a mosaic of sward heights and patches of bare ground. This also provides excellent habitat for a range of small mammals including mice, voles and shrews. Fox scat was seen, so this species will be hunting at night time within the site.

4 HABITAT MANAGEMENT RECOMMENDATIONS

Brief recommendations are made for specific parts of the site, but it is strongly advised that a more detailed management plan is produced once specific plans for this area are drawn up.

4.1 Grassland – net drying area

The grassland requires only a low level of management as it already has a biodiversity value and the activity of rabbits and people walking through the site are helping maintain a degree of habitat mosaic. What might appear on first glances to be a 'messy' site is likely to be rich in biodiversity!

Any future management on this site should seek to:

- Promote a mosaic of structural diversity across the grassland
- Encourage floristic diversity
- Protect and improve the diversity of invertebrates
- Continue to support a range of bird species

The levels of rabbit activity on the site should be monitored, but could be supplemented by sensitive mowing. This can be undertaken along existing paths, or by adding new ones, thus creating sinuous tracks through the grassland. At a series of locations, the mower can create 'clearings' along the paths so there is a scalloped edge to the path. The locations of these should be varied from year to year. Timing can be varied, but in terms of promoting floristic diversity, July is the best month to undertake this. This type of 'random' management will favour invertebrate species which depend on a varied habitat mosaic. As many invertebrates overwinter in tall grassland, it is very important that there is always a sufficient resource of uncut grassland so at least a third – half of the grassland should always be left uncut each year. This will, in turn, benefit birds and the small mammal community.

Cuttings should always be removed to promote plant diversity by reducing nutrient levels and to avoid smothering of less competitive species. The cuttings should be removed by raking or by a collector attached to the mower. This should help encourage spread of restharrow and other attractive plants such as bird's foot trefoil. <u>However, if cuttings cannot be removed it would be best not to attempt cutting.</u>

Ragwort is found on site and will be seeding into areas of bare ground disturbed by rabbits. This plant is extremely toxic to grazing animals and should always be controlled where it may be a risk to livestock. However, this plant is part of our native flora and around 30 species of invertebrate are dependent upon it. It is also an important source of nectar for bees and butterflies. Consequently, where it presents no risk to livestock and is not spreading, it can be left to flower.

There is a degree of lighting associated with the adjacent factory, but the net drying area grassland should continue to remain unlit.

4.2 Tall ruderal area in south-east of net drying area

This patch of habitat has become dominated by nettles and thistles. However, many species of moths and butterfly caterpillars are dependent on nettle as a foodplant. Thistle flowers are

visited by nectaring invertebrates and birds such as goldfinch will feed on thistle seeds, so it is not necessary to remove completely all the nettles and thistles, but similarly, it would be undesirable for this patch to become larger. Topping of some of the nettles and thistles and removal of arisings before they seed will help control this spread. Timing of any cutting is important and is best undertaken in late June or early July.

4.3 Short mown grassland

The area to the north of the main net drying area is short mown and is of lower biodiversity interest. This area should be maintained short to be used for community events and educational activities associated with the proposals, which will help reduce the public pressure within the main net drying area.

4.4 Scrub

The areas of scrub around the Bird's Eye factory and the factory car park should be retained as they provide vital habitat for a range of bird species. They also help screen the factory from view. In future years a small amount of cutting back may be required but this should be undertaken during the winter to avoid the bird nesting season.

Japanese rose (Schedule 9 species) and sumach are invasive and should be controlled by regular cutting back, to avoid spread of these species.

4.5 Shingle gardens

The southern section of the site includes large tracts of hard standing, but there are pockets of shingle in these areas which have been created as part of landscaping. In these areas a shingle plant community is developing. Such habitats are, by their nature, relatively robust and consideration should be given to establishing additional areas in the narrow linear areas of the site at both the northern and southern ends. As well as yellow horned poppy, these areas could support sea holly and other flowering species which are typical features of the shingle coastline of Suffolk.

5 OTHER RECOMMENDATIONS

If there are any future proposals for the net drying area which might impact upon reptiles, then it is strongly recommended that a reptile survey should be undertaken. This is to ensure compliance with the legislation protecting this group (see Appendix 1). Surveys are normally undertaken using artificial refugia (mats) which encourage reptiles to bask and thus be recorded, particularly in spring and autumn. However, this is a very public site so the appropriateness of the use of mats would have to be considered. In such circumstances, a reptile survey may have to rely on multiple visits using observation of existing basking areas, such as the posts.

Although we strongly advise that the scrub bordering the Birds Eye Factory is retained, if any cutting back is required this should be undertaken outside of the bird nesting season (March-August inclusive).

6 REFERENCES

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Appendix 1: Relevant wildlife Legislation

Reptiles

All of the species of reptiles in Suffolk are partially protected by the Wildlife and Countryside Act (1981) (as amended) such that it is an offence to:

- intentionally kill or injure any reptile
- sell, barter or exchange reptiles, or parts of reptiles

No derogation licences are required in respect of reptiles in Suffolk, but development of a site where reptiles are known to be present, without taking the necessary measures to protect them, could constitute intentional killing or injuring (English Nature, 2004).

All reptiles are listed as Species of Principal Importance in England.

Birds

The Wildlife and Countryside Act 1981 (as amended) makes it an offence, amongst other things, to:

- Intentionally kill or injure any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built;
- Intentionally take damage or destroy the nest of any wild bird included in Schedule 1 (whether or not it is active);
- Intentionally take or destroy the egg of any wild bird;
- Intentionally or recklessly disturb any bird species included in Schedule 1 of the Act while it is building a nest, or is in, on or near any nest containing eggs or young;
- Intentionally or recklessly disturb the dependent young of any bird included in Schedule 1.

Schedule 1 of the Act includes certain rare or threatened species. Licences to permit these offences can only be granted by Natural England for reasons of preserving public health or public safety.

Schedule 9 Plants and Animals

The Wildlife and Countryside Act (1981) (as amended) makes it an offence, amongst other things, to:

- plant or otherwise cause to grow in the wild any plant that is included in Part II of Schedule 9;
- to release or allow to escape into the wild any animal which is of a kind which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state, or is included in Part I of Schedule 9 of the Act.

There is a defence available if it can be proven that all reasonable steps were taken to avoid the offence and due diligence was exercised.

Injurious Weeds Act:1959:

Ragwort has been specified in the Injurious Weeds Act so it is important to try to control the plant as required and prevent its spread to neighbouring land.

Species of Principal Importance in England

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.

Appendix 2: County Wildlife Site Citation

County Wildlife Site Citations

CWS Number	Waveney 106
Site Name	NESS POINT
Parish	LOWESTOFT
District	Waveney
NGR	TM556937
Description	Ness Point, Lowestoft is the most easterly point in the British Isles and is protected from coastal erosion by substantial concrete blocks. These artificial sea defences provide a valuable habitat for overwintering purple sandpiper, an uncommon species in the UK. The population of purple sandpiper in East Anglia is small and sparsely distributed. The species is restricted to a few rocky coastal sites which provide secure resting and feeding places. The majority of Suffolk's purple sandpiper population overwinters at Ness Point. In 1988-1993, winter peaks of between 12 and 39 birds were recorded at this site. Ness Point is therefore the most important site for purple sandpiper, not only in Suffolk, but in East Anglia as a whole. It is therefore a valuable addition to the Register of County Wildlife Sites (Waveney District).
RNR Number	0
Area	0.87

Site name: North Denes Campsite

Site ref: Lowestoft 11
Site status: No wildlife designation
Grid ref: TM 55104 95035
Area: 14.49 hectares
Date: 10 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 70% cloud cover, sunny with moderate cool breeze
Ranking: 4
Biodiversity value: Medium

Map:

Photos:

View looking south from the car park in the north of the site

Interesting bank in the centre of the site

The north-west section of the site

Habitat type(s):
Dense/continuous scrub, scattered scrub, broad-leaved semi-natural woodland, scattered broadleaf and coniferous trees, bracken, poor semi-improved grassland, tall ruderal

Subsidiary habitats:
Fallen deadwood, bare ground

Site description:
The North Denes site is a large expanse of rough grassland with patches of dense, continuous scrub. It lies between the sea wall and the sloping cliffs and is a continuation of the Net Drying Area. It was previously used as a static caravan site and is now frequently used by dog walkers.

The west of the site is woodland on the side of the cliff face, which graduates into scrub, scattered trees and bracken towards the north. In the north-eastern corner, there is a large gravel car park.

Protected species seen or known:
-

Protected species potential:
Common lizard, slow worm

Priority habitats present:
-

Priority species seen or known:
Dunnock noted during survey

Priority species potential:
Linnet, hedgehog

Connectivity:
This site has excellent links to other areas of semi-natural habitat, being adjacent to Gunton Warren CWS to the north and other sites to the south (Net Drying Area) and south west (Belle Vue Park and Sparrows Nest).

Structural diversity:
This site has excellent structural diversity with woodland, scrub, tall ruderal vegetation and rough grassland creating opportunities for a number of taxonomic groups.

Flora:
The rough grassland south of the car park makes up the majority of the site and is scattered with patches of alexanders, along with frequent sea radish, bindweed, red deadnettle, yarrow and ribwort plantain. Further south, there is more sheep's sorrel, common cat's ear, patches of tansy and black horehound, lesser celandine, common couch and sea sandwort. There are also many swine-cress plants on the well-trodden path. The car park is surrounded by bramble scrub, with some ground elder, nettle and alexanders.

There is an area that is surrounded by Herras fencing which contains a slightly more diverse sward with bent sp., common couch, hare's-foot clover and creeping thistle as well as species previously mentioned.

The raised banks along the edge of the path leading to Whapload Road were more floristically diverse and supported bristly ox-tongue, common mallow, spotted medick, chickweed, spring beauty, wavy bittercress, perennial sow thistle, nettle, dove's-foot crane's-bill, groundsel, common mouse-ear, sun spurge and fescue sp., along with some willow scrub.

The area to the west of the Denes Oval playing fields is mainly sycamore and elder woodland with a dense understorey of alexanders and bramble. There is also some cleavers, green alkanet and lesser celandine and a few young aspen trees. Some of the sycamore are ivy-covered. Further north, the woodland is more sparse, with a bracken and bramble understorey. This area contains more Scot's pine, some laurel, gorse and honeysuckle. There are some scrubby outcroppings extending into the western edge of the rough grassland which are comprised of blackthorn, hawthorn, sycamore and tamarisk.

Avifauna:
The dense scrub and trees on the cliffs make good cover for birds and the grassland provides good foraging opportunities for ground feeding species. Scrub in this location will also provide valuable cover for migrant birds making first landfall.

Species seen at the time of the survey were magpie, great tit, wood pigeon, carrion crow, blackbird, dunnock and robin. Surveys carried out by the Lowestoft Community Wildlife Group in 2012 recorded whitethroat, greenfinch, meadow pipit, house sparrow and large numbers of swifts foraging over the site.

Invertebrates:

This site is likely to be very good for invertebrates. The dense bramble scrub is a good nectar source for some species in this group and provides over-wintering habitat. The grassland provides good habitat for other invertebrate species such as spiders, crickets and grasshoppers. Species seen at the time of the survey were small tortoiseshell and small white butterflies; it is likely that other common butterfly species will utilize the site throughout the year. A survey conducted by the Lowestoft Community Wildlife Group in 2012 revealed good numbers of meadow brown, as well as small white, large white and common blue butterflies. They also recorded early bumblebee, red-tailed bumblebee, white-tailed bumblebee, common carder bee and buff-tailed bumblebee.

Herpetofauna:

The scrubby edges, vegetated banks and rough grassland within this site would provide excellent foraging and refuge opportunities for common lizard and slow worm. It is sub-optimal habitat for amphibians.

Mammals:

Rabbit activity in the form of burrows, scrapes and grazed lawns are evident within the woodland, and many droppings are present across the grassland. Fox scat was also present, and they are likely to forage here during the night.

There are a number of hedgehog records in the immediate area and the combination of grassland, scrub and woodland provides good foraging, nesting and hibernation opportunities for them. Other small mammals such as mice, voles and shrews are also likely to be present.

Comments and recommendations:

It was noted that there was a high level of dog fouling within the site. More anti-fouling signage and bins could be provided to help combat this problem.

If resources allow, cutting patches of the grassland areas in August/September would improve the floristic diversity of these areas, but only if the cuttings can be removed to limit nutrient load. Leaving taller vegetation around the edges will provide a variety of vegetation heights to benefit birds and invertebrates. These taller areas could be cut on a 1-2 year rotation to avoid the formation of scrub, although a continued presence of scrub is essential for bird species.

The site provides a good habitat mosaic with woodland, scrub and grassland. If resources allow, the site would benefit from rotational gorse, bramble and bracken management to maintain the open grassland. This should be carried out outside bird nesting season (March to August inclusive).

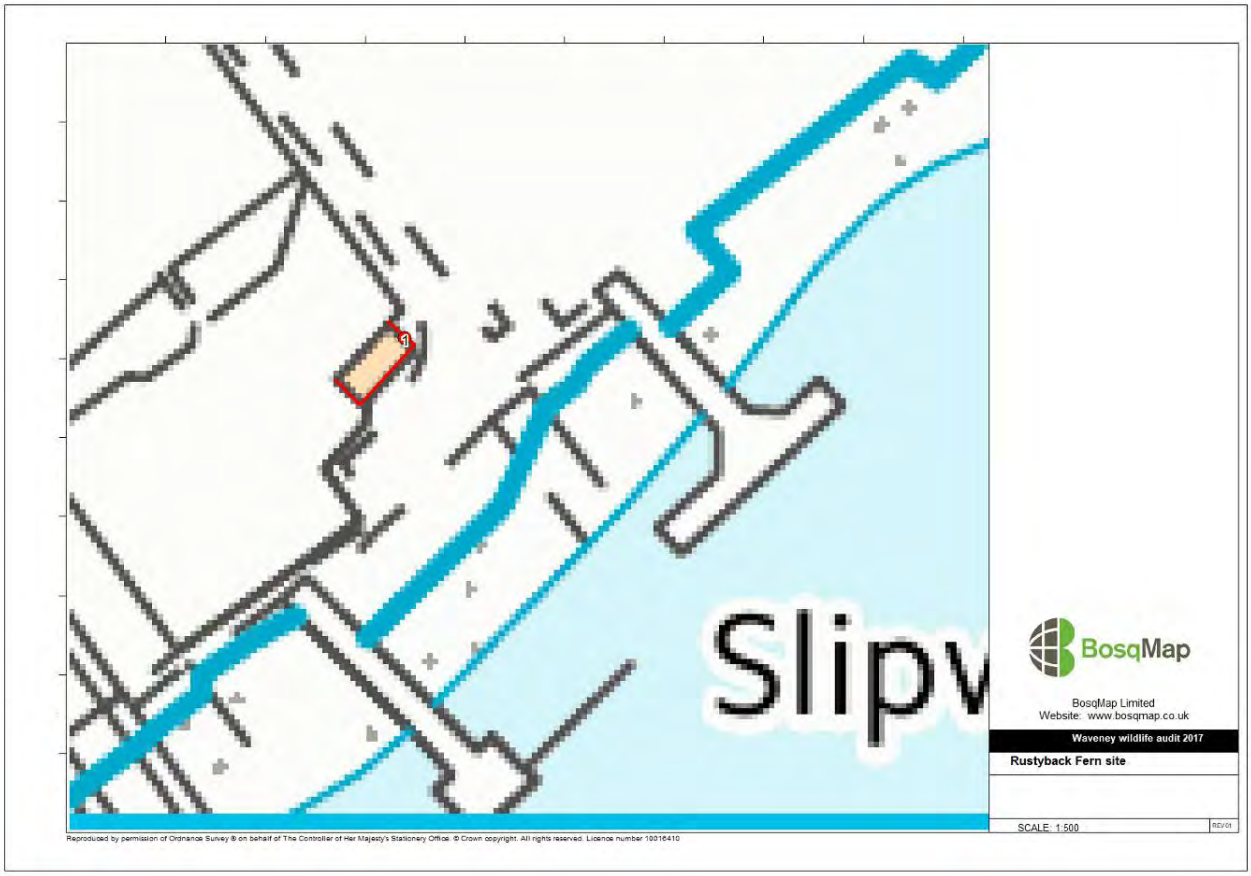
References:

Lowestoft North Denes in Bloom! A report by the Lowestoft Community Wildlife Group on the wildlife found on Lowestoft North Denes in summer and autumn 2012.

Site name: Rustyback Fern Site

Site ref: Lowestoft 3
Site status: County Wildlife Site
Grid ref: TM 52696 93052
Area: 0.08 hectares
Date: 10 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 80% cloud cover, sunny with slight breeze
Ranking: 2
Biodiversity value: High

Map:



Photos:

Rustyback Fern

Habitat type(s):

Brick walls of derelict building

Subsidiary habitats:

-

Site description:

This site contains approximately 50 rustyback fern plants (regionally rare), on a brick wall facing Lake Lothing to the east, with a further 20 plants on the north facing wall and approximately 10 on the south facing wall. It is one of only four sites in Suffolk known to support rustyback fern. The species has a south-western distribution in the UK and is uncommon in the east of England. The fern has been known to occur at this site since 1977.

Protected species seen or known:

-

Protected species potential:

-

Priority habitats present:
-

Priority species seen or known:
Herring gull (2007)

Priority species potential:
-

Connectivity:
The ferns are located on a wall to the rear of an industrial site, so this is an isolated site for this species.

Structural diversity:
Good for the species concerned (rustyback fern). Not applicable for other species.

Flora:
Due to the nature of the substrate, flora at this site is limited. The principle interest is the rustyback fern (*Ceterach officinarum*). Male fern, prickly sow thistle and prickly lettuce were also noted.

Avifauna:
N/A

Invertebrates:
N/A

Herpetofauna:
N/A

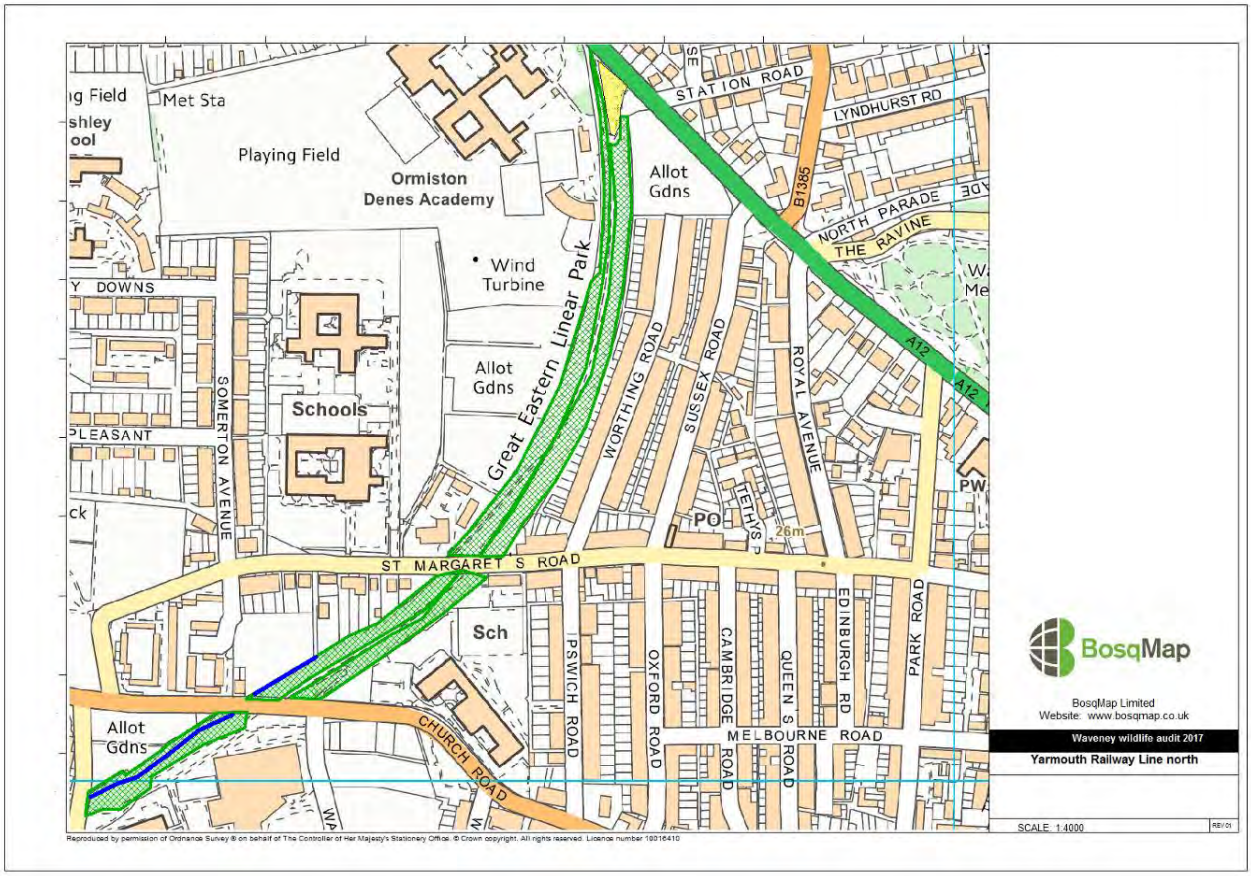
Mammals:
N/A

Comments and recommendations:
The County Wildlife Site Citation dating from the early 1990s indicated approximately 80 plants on the east facing wall. During this survey, only 50 were found on this wall. The previous survey in 2007 indicates that the ferns had spread from one wall to two, and on this survey, three walls were inhabited. Therefore, although the number of plants on the east wall has decreased, the total number of plants across all three walls has increased.

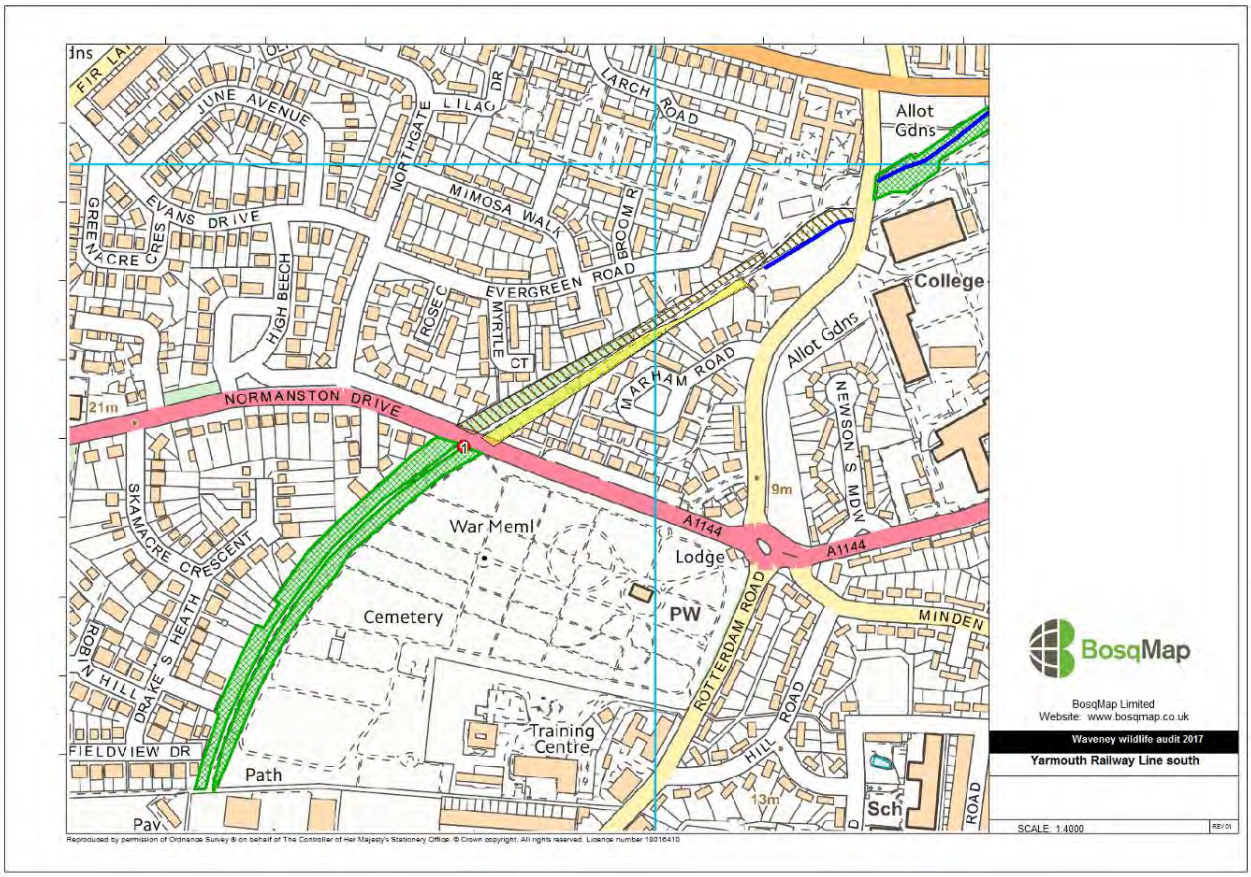
Site name: Yarmouth Railway Line

Site ref: Lowestoft 2
Site status: County Wildlife Site
Grid ref: TM 54683 94651 to TM 53594 93430
Area: 4.88 hectares
Date: 10 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 90% cloud cover, sunny with slight breeze
Ranking: 2
Biodiversity value: High

Map:



Yarmouth railway line north



Yarmouth railway line south

Photos:

View north from the southern-most point of the site

Some of the ferns found on Normanston Drive bridge (Target Note 1)

Unstable walkway along the stream and evidence of fly tipping

View south form the northern-most end of site

Habitat type(s):
Dense/continuous scrub, stream, amenity grassland, tall ruderal

Subsidiary habitats:
Marshy area, brick walls, bare ground, ivy-covered trees

Site description:
This disused railway forms a linear habitat and wildlife corridor running from the former Eastern Coachworks site near the cemetery to the Yarmouth Road (A12). A dual bike/pedestrian tarmac path runs the length of the site. The path is surrounded mainly by scrub, with some mature trees, but where the site widens, there is tall ruderal vegetation and some open grassy areas. A stream, which is likely to be spring fed due to the clarity of the water, runs approximately half the length of the site. This provides suitable habitat for some wetland flora and adds habitat diversity. An unstable and mostly broken walkway runs along part of the stream. A series of brick-walled bridges cross the site at the higher road level.

Protected species seen or known:
-

Protected species potential:
Bats, common lizard, slow-worm, grass snake

Priority habitats present:
-

Priority species seen or known:
West European hedgehog in surrounding areas (2014)
House sparrow, starling and dunnock (2009, 2011)
House sparrow and dunnock seen during survey

Priority species potential:
Common toad, song thrush

Connectivity:
This site has very good links to other sites and forms part of a wildlife corridor within Lowestoft. It is connected to three allotment sites close to Northfield and Church Road/Water Lane and Lowestoft Cemetery.

Structural diversity:
Good variation in structure is provided through rough grassland, tall ruderal, scrub and mature trees.

Flora:
The majority of the path is bounded by scrub. Hawthorn is the most dominant species in the south of the site, but moving north the flora becomes more diverse and includes elder, oak, ash, cherry, sycamore, holly and the occasional horse chestnut. Bramble, clematis, dog rose and honeysuckle

grow amongst the scrub, creating more dense areas. The ground flora is mainly alexanders, but other common species include cleavers, dandelion, broad-leaved dock, hogweed, cow parsley, nettle, black bindweed, stinking iris, green alkanet and hops. In areas where the canopy is more open, these plants have flourished becoming tall, thick ruderal vegetation.

Of the four bridges that cross the site, the Normanston Drive bridge was the most species-rich (Target Note 1) with hart's tongue fern, soft shield fern, maidenhair spleenwort, common polypody procumbent pearlwort and buck's-horn plantain. Church Road bridge had some wall rue but little else, St Margaret's Bridge was colonized mainly by buddleia, and Rotterdam Road bridge lacked any vegetation.

The stream was likely spring fed due to having very clean, clear water despite pollution from fly-tipping. Within the water itself, water cress was dominant with occasional water dock. On the banks, pendulous sedge and lesser celandine formed the ground flora with some scrubby trees shading the stream, including willow, sallow, ash, blackthorn and hawthorn. As the stream dries out, there is some marshy grassland with creeping buttercup, wavy bittercress and great willowherb.

Some Spanish bluebells are present near the northern-most section of the site, which ends in short mown amenity grassland with typical species such as ribwort plantain, daisy, dandelion and perennial rye-grass.

Butcher's broom has been recorded in 2011, but was not seen during this visit.

Avifauna:

The scrub and bramble banks, together with the adjacent gardens, provide good foraging, nesting and roosting opportunities for a range of common bird species. Summer migrants such as whitethroat could also nest in the areas of dense bramble. Common bird species including great tit, blue tit, blackbird, robin, wren and feral pigeon as well as dunnock and house sparrow (priority species) were recorded during the survey.

Invertebrates:

Several bee species were present along the length of the site. The scrub along the length of the site will provide suitable habitat for a range of common invertebrate species including potential foraging and over-wintering habitat. The stream was clear and appeared to have good water quality, despite the quantity of fly tipping present, and will provide good habitat for a number of aquatic invertebrate species.

Herpetofauna:

Disused railway lines have high potential for common lizard and slow-worm and the presence of the cemetery and three allotments adjacent to the site increase the likelihood of these being present. Grass snake, toad and frog may also be associated with the wetter areas. The scrubby woodland could also provide good hibernation opportunities for toads.

Mammals:

This site offers good foraging opportunities and is likely to be used as a commuting corridor for bats. The dense bramble scrub provides excellent hibernation and nesting opportunities for hedgehogs,

and along with the short-mown amenity grassland areas, this provides ideal habitat for them. The site provides good habitat for other common mammal species including rabbit and grey squirrel, which were noted during the survey, and also fox, stoat and small mammals such as mice, voles and shrews.

Comments and recommendations:

This site is an important wildlife corridor in the centre of Lowestoft, linking other areas of open space such as the cemetery and several allotments.

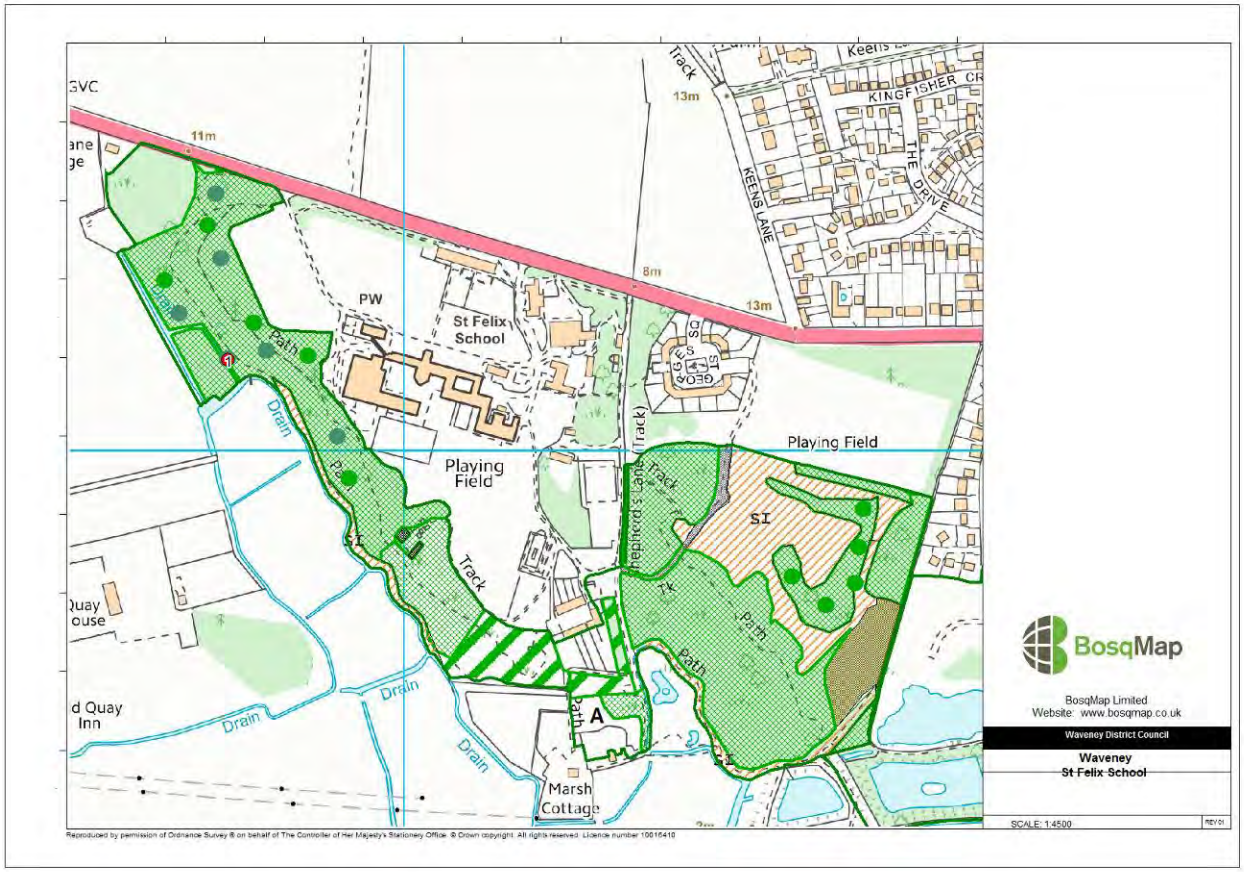
Variegated yellow archangel was recorded here in 2011 and noted on the northern-most edge of the pathway in the south of the site. It is listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended). It is illegal to plant or otherwise cause to grow in the wild any species listed on Schedule 9. Given this is already an established population within this urban green-space, the spread of the plant should be monitored and any plants removed should be disposed of appropriately to prevent their spread.

It is recommended that action is taken to clean up the fly-tipping debris and to prevent this issue reoccurring.

Site name — St Felix School Grounds

Site Ref: Waveney 74
Site status: County Wildlife Site
Grid ref: TM 4918 7692
Area: hectares
Date: 23 May 2016 / 12 Sep 2016
Recorder: L Washington / S Bullion and J Crighton
Weather conditions: Warm, 20% cloud cover on both visits
Ranking: 2
Biodiversity value: High

Map:



Photos:

Photo 1. Area of dense bracken coverage with gorse scrub edging

Photo 2. Sunny semi-improved acid grassland path edged by scrub and standing deadwood

Photo 3. Excellent reptile basking area

Photo 4. Pathway leading to semi-improved acid grassland equestrian area

Photo 5. Migrant Hawker dragonfly at rest on gorse bush

Habitat type(s):

Semi-improved acid grassland, dense continuous scrub, bracken

Subsidiary habitats:
Broad-leaved plantation woodland, ditch, species-poor hedgerow, bare ground

Site description:
The grounds of St Felix School slope gently down to Buss Creek and Reydon gravel pits. This site is a small remnant of a large tract of heathland which once bordered the Suffolk coast. The slopes are densely covered with scrub dominated by gorse, with large stands of bramble and bracken. Amongst this, there are open areas of species-poor acid grassland, a large part of which is currently being used by the school for equestrian activities. There is a network of well-trodden paths. Those around the perimeter are used extensively by dog walkers and those within the site by the school, intersecting the gorse scrub.

An area of the site in the most north western corner was inaccessible during the survey due to scrub encroachment.

Protected species seen or known:
Common lizard, nightingale and linnet previously recorded on site
Water vole and European otter recorded in adjacent marshes
Badger paths and two sett entrances recorded during surveys
Brown long-eared bat recorded in 1995 and 2000.

Protected species potential:
Grass snake
Bats - various species

Priority habitats present:
Acid grassland, broad-leaved woodland

Priority species seen or known:
Skylark, starling and cuckoo were seen or heard during site visit
Turtle dove recorded in 2011.
Small heath butterfly recorded on site in recent years.
Many West European hedgehog records from residential area north east of the site in recent years
Barn owl recorded nearby in 1998.

Priority species potential:
Linnet

Connectivity:
Connectivity to other areas of semi-natural habitat, particularly to the south, is good. Areas of floodplain grazing marsh (priority habitat) occur to the south (Botany Marshes, Three Marshes and Reydon Marshes). The latter is also a County Wildlife Site (CWS) and consists of cattle-grazed pastures separated by a series of drainage dykes and attracts teal, shoveler, wigeon, shelduck, curlew and redshank. Standing open water in the form of ponds and fishing lakes occur to the south east. Built up areas and domestic gardens occur to the north east and arable land to the north and north west connected via pockets of broadleaf woodland, tree-lined footpaths, hedgerows and ditches.

Structural diversity:
This site has excellent structural diversity, with bare ground, acid grassland, dense scrub and scattered trees providing a range of habitats for a number of taxonomic groups. The juxtaposition of the marshes on the southern boundary complement the structural diversity of the site.

Flora:

The scrub is dominated by gorse (***Ulex europaeus***) with bramble (***Rubus fructicosa agg***.) and bracken (***Pteridium aquilinum***). There are scattered trees throughout the scrub, including many holm oak (***Quercus ilex***) and Scot's pine (***Pinus sylvestris***) with some elm (***Ulmus procera***), privet (***Ligustrum*** sp.), elder (***Sambucus nigra***), hawthorn (***Crataegus monogyna***), English oak (***Quercus robur***), silver birch (***Betula pendula***), willow (***Salix*** sp.), Norway maple (***Acer platanoides***), hazel (***Corylus avellana***) and sycamore (***Acer pseudoplatanus***). There are also many Cypress trees ***Cupressus sp***, possibly mediterranean or monterey cypress. In shady areas, common polypody (***Polypodium vulgare***) and broad buckler fern (***Dryopteris dilatata***) are present.

There is a larger section of bracken with common reed (***Phragmites australis***), rosebay willowherb (***Chamerion augustifolium***), hemp nettle (***Gaelopsis tetrahit***), honeysuckle (***Lonicera periclymenum***) and field bindweed (***Convolvulus arvensis***) interspersed. There are some dense stands of bramble in this area and also some dog rose (***Rosa canina***) and rowan (***Sorbus aucuparia***).

A survey of the land in Nov 2014 by Norfolk Wildlife Services, showed that the equestrian area was moderately species-rich semi-improved sandy acid grassland (St. Felix School equestrian area) with a few scattered small deciduous trees, mostly oak (***Quercus robur***). The sward was very short at the time of survey, primarily due to rabbit grazing. Dominant grasses included red fescue (***Festuca rubra***) and sweet vernal (***Anthoxanthum odoratum***), field wood-rush (***Luzula campestris***) was fairly frequent. Herbs included bird's-foot trefoil (***Lotus corniculatus***), common mouse-ear (***Cerastium fontanum***), heath bedstraw (***Galium saxatile***), lesser hawkbit (***Leontodon saxatalis***), mouse-ear hawkweed (***Pilosella officinarum***), sheep's sorrel (***Rumex acetosella***) and yarrow (***Achillea millefolium***)**.** Further south are dense areas of scrub dominated by gorse with hawthorn. This survey also noted clustered clover ***Trifolium glomeratum*** (Nationally Scarce) around the margins of the playing field north of the equestrian area and this species may also be present within the CWS.

During the 2016 visits, the semi-improved acid grassland on the paths and open areas within the gorse scrub was dominated by common bent (***Agrostis capillaris***), with some cock's foot (***Dactylis glomerata***), sweet vernal grass and Yorkshire fog (***Holcus lanatus***) with abundant sheep's sorrel. Other occasional species include ribwort and greater plantain (***Plantago lanceolata*** and ***P. major***), wood sedge (***Carex sylvatica***), dandelion (***Taraxacum officinale***), common chickweed (***Stellaria media***), spring beauty (***Claytonia perfoliata***), heath dog violet (***Viola canina***), daisy (***Bellis perennis***), cleavers (***Galium aparine***), bramble, gorse, tormentil (***Potentilla erecta***), lesser stitchwort (***Stellaria graminea***), common nettle (***Urtica dioica***), spear thistle (***Cirsium vulgare***), creeping thistle (***Cirsium arvense***), broad-leaved dock (***Rumex obtusifolia***), cow parsley (***Anthriscus sylvestris***), garden radish (***Raphanus sativus***), smooth hawk's-beard (***Crepis capillaris***), rough chervil (***Chaerophyllum temulum***), field horsetail (***Equisetum arvense***), autumn hawkbit (***Leontodon autumnalis***) and bluebell (***Hyacinthoides non-scriptus***). There are some mature fruit trees along the path, including fig (***Ficus carica***) and apple (***Malus*** sp.) which have some soft rush (***Juncus effusus***) below.

There is a short-cut species-poor hedge along the roadside in centre of site which comprises hawthorn, blackthorn (***Prunus spinosa***) and privet. Toadflax (***Linaria vulgaris***) is present below this hedgerow.

The broad-leaved plantation woodland mainly contains sycamore, some of which are ivy (***Hedera helix***) covered with some hawthorn with a sparse ground flora of false oat-grass (***Arrhenatherum elatius***), bramble, bracken, common nettle and bluebell. Some parasol mushrooms (***Macrolepiota procera***) were present near the woodland.

In the area where the ditch is included within the site, the ditch is very shaded by hawthorn and mature oaks (Target note 1). It appeared relatively dry at the time of survey and has no vegetation, unlike the unshaded areas (not within the CWS) which are rich in common reed. On the other side of the ditch is a band of willow scrub.

Avifauna:
Birds recorded during the first visit include blackcap, blackbird, robin, blue tit, goldfinch, chaffinch and Cetti's warbler. On the second visit blackcap, blackbird, chaffinch, carrion crow, pheasant, wood pigeon and coal tit were noted. A barn owl box is located in adjacent marshes and school staff confirmed that they are observed hunting regularly over the school grounds.

Invertebrates:
Many dragonflies were seen on site during the second visit, species included both male and female common darters and a migrant hawker. This area is excellent for dragonflies, with the adjacent marsh and pond areas and the dry grassland and scrub creating an ecotone of desirable habitats. The areas of bare ground within the equestrian area provide ideal habitat for ground burrowing wasps and bees. The gorse was heavily populated with spider mite webs and garden orb spiders. Also noted were various crickets, male common carder bee, white-tailed bumblebee, lacewing and a number of butterfly species, including comma, speckled wood, red admiral and large white.

Herpetofauna:
A juvenile common lizard was seen crossing the path. There is many good basking, sheltering and foraging opportunities within the gorse for both common lizard and grass snake, especially on the sunny south-facing side, near the ditch, where there are occasional branches and logs suitable for basking.

Mammals:
A number of WWII shelters occur on site which could provide hibernation opportunities for bats. There are also a number of mature oaks (Target note 1) near the ditch which have large cracks and crevices which could support a bat roost.

There was evidence of badgers, including paths and two sett entrances, found on the first 2016 visit. The scrub and grassland areas offer potential habitat for hedgehogs. Common species of mammal such as grey squirrel, fox, rabbit and muntjac deer are likely to be found on this site. There was evidence in the form of faeces and burrows that the site is well-used by rabbits. Species of small mammal such as wood mice and bank voles will also be present in the scrubby areas.

Comments and recommendations:
Impenetrable gorse stands are forming with bushes becoming leggy in parts. The site would benefit from a rotational management pan to incorporate fire breaks/widening of grassy paths. Maintaining the gorse scrub in more favourable habitat would also benefit nightingale.

A proposed development area, currently utilized as playing fields, borders the northern edge of St Felix School Grounds County Wildlife Site (CWS). The CWS area adjacent to the proposed development is currently use for equestrian activities and is primarily comprised of rabbit grazed acid grassland with gorse scrub and Scot's pine margins. Therefore, care should be taken during construction to limit associated building activities within the boundaries of the development site. This also applies to the movement of vehicles and the CWS site should not be used for parking or turning of construction vehicles, nor the temporary storage of building materials.

As part of the development mitigation to reduce the impact to the CWS caused by the additional recreational pressure, the school have expressed a desire to manage an area currently consisting of broadleaf species such as elm, sycamore and birch with an understory of bramble, nettle and other ruderal herbs to divert foot pressure from the more environmentally sensitive areas. This area is set in a hollow with a gorse ridge on more impoverished soils on top, with vegetation more typical of fertile soils at its base and is approximately located at TM 492587681. The trees here are currently cut by EDF to allow clear overhead passage of power lines. The school plans to remove dead elm and suckers, cut back bramble and mow paths and clearings throughout to direct walkers to designated footpaths and reduce the use of unpermitted routes across the school grounds.

On the southern side, close to Marsh Cottage, it appears that an area currently shown as within the CWS represents the garden to an existing house. It is recommended that the County Wildlife Site panel review this boundary.

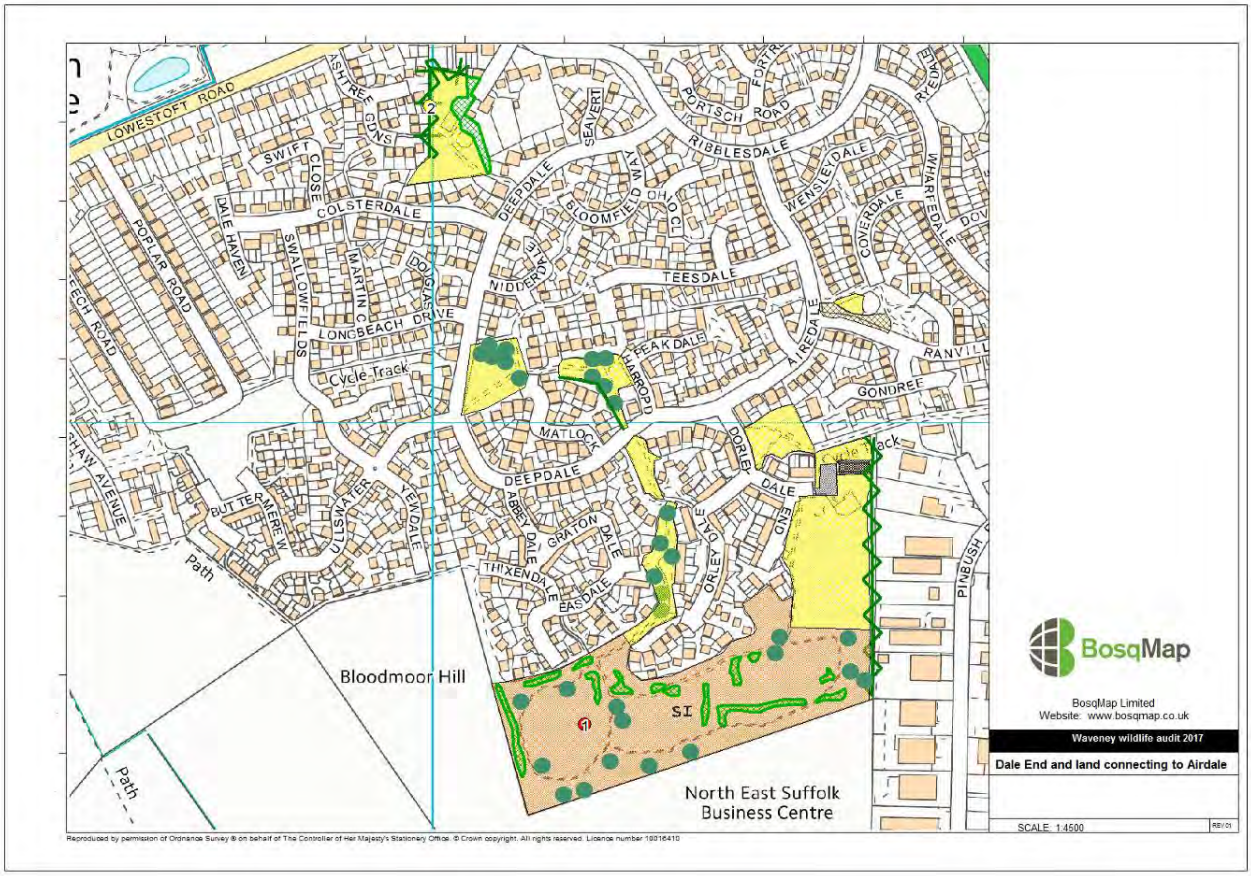
References:

Norfolk Wildlife Services Ltd, (November 2014), ***Ecological Survey of land at St. Felix School, Reydon, Suffolk***

Site name: Dale End and land connecting to Airedale

Site ref: Lowestoft 9
Site status: No wildlife designation
Grid ref: TM 53335 97202
Area: 50.34 hectares
Date: 23rd May 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 70% cloud, sunny and warm with no breeze
Ranking: 4
Biodiversity value: Medium

Map:



Photos:

Open space area SLow86: Looking west across the southern section

Open space area SLow86: The southern meadow (Target Note 1)

Open space area: SLow 84

Open space area: SLow 56b showing oak trees with bat potential (Target Note 2)

Habitat type(s):
Semi-improved neutral grassland, scattered scrub, hedgerow, amenity grassland, introduced shrub, scattered trees

Subsidiary habitats:
Bare ground, wood piles

Site description:
This South Lowestoft site represents a number of small pockets of land throughout a housing estate off Castleton Avenue, Carlton Colville, with a larger block to the south. A map showing the compartment numbers is included in the Appendix at the end of this report. Many of them are amenity grassland surrounded by introduced shrub but the largest section, in the south of the site, has been left unmown and has a much more species rich sward with some patches of scrub. It is possible that a wildflower seed mix has been sown in this area to create a wildflower meadow.

Many of the areas have cycle paths winding through them, which are regularly used by local children.

Protected species seen or known:
Grass snake (2010)
Badger recorded to the south of the site in the small block of woodland off Bloodmoor Lane track (2015)

Protected species potential:
Bats, common lizard, slow worm

Priority habitats present:
-

Priority species seen or known:
Small square-spot, dusty brocade and latticed heath moths (2016)
Hedgehog (2014)
Starling (2009)
House sparrow (2008)
Red-shanked carder bee and herring gull (2013)

Priority species potential:
Dunnock

Connectivity:
Connectivity is relatively poor as the most botanically interesting area of the site is in the south and this is surrounded by arable land with a limited hedgerow network to the south and west, with residential housing estate to the north and east. The network of paths and greens between the houses gives a degree of connectivity throughout the housing estate, which will be beneficial for hedgehogs.

Structural diversity:

The largest area in the south of the site has good structural diversity, with a variation of sward heights and patches of scrub, with sunny hot spots providing a range of habitats for a number of taxonomic groups. The smaller sections of the site have limited structural diversity as they are heavily used, short-mown amenity grassland, however, the shrub and scrub patches could provide some structural diversity.

Flora:

Open space area: SLow 86

This is the largest and most diverse section within this site. On the eastern boundary, there is a bank with a species-rich hedgerow including field maple, turkey oak, oak, alder, blackthorn, hazel, bramble, willow, hawthorn, white poplar, sea buckthorn and sallow.

Sections of the bank, where there is little shading from trees, are dominated by cock's foot and Yorkshire fog grasses with bush vetch, creeping thistle, common ragwort, hoary ragwort, common vetch, cleavers, common mallow, ribwort plantain, curled dock and meadow buttercup. The bank gradually flattens out toward the south and here there is Leylandii with alexanders, hogweed, greater knapweed, lady's bedstraw, common mouse-ear and wild carrot.

Alongside the hedge to the west there is a car park, community centre, play area and a section of amenity grassland with typical species such as daisy, dandelion, greater and ribwort plantain, white clover, creeping buttercup, common ragwort, common mouse-ear, common cat's ear and towards the south, ox-eye daisy.

The south has a longer sward and is more species-rich, including grasses such as barren brome, soft brome, meadow brome, yellow oat-grass, giant fescue and red fescue, with yellow rattle which is parasitic on the roots of grasses. The herbs present indicate that the soil is neutral to chalky and there is a mix common to dry and damp grassland; the well-drained soil herbs include lady's bedstraw, hedge bedstraw, common knapweed, greater knapweed, bird's-foot trefoil, bladder campion, ox-eye daisy and field scabious. The species more common to damp soils are bush vetch, common vetch, hairy tare, meadow vetchling, agrimony and square-stemmed St John's wort. Additionally, germander speedwell, cowslip, meadow buttercup, perforate St John's wort and common poppy were present.

Amongst this grassland were patches of scrub including sallow, white poplar, sea buckthorn and ornamental shrubs.

Open space area: SLow 90

This section leads north from section 86, between the back gardens of the houses on Dorley Dale and Graton Dale, leading to Deepdale. The ground is mostly short mown amenity grassland similar to that of the rest of the site, with scattered trees and scrub including sea buckthorn, field maple, ash, poplar, hazel, alder, goat willow, blackthorn, privet, hawthorn hazel and dogwood, which thickens to hedgerow towards Deepdale.

Open space area: SLow 89
Across the Deepdale road from section 90 is section 89, another area of amenity grassland with scattered young trees. A Japanese rose (*Rosa rugosa*) hedge has been recently planted along the fence-line in the west of this section, lining Matlock Dale. The trees in this section include field maple, Scot's pine, hawthorn, hazel, rowan and pear. Harrop Dale lies to the east of this section.

Open space area: SLow 84
To the west of section 89, through a pedestrianized area, section 84 contains an enclosed playpark, amenity grassland with patches of introduced shrub and scattered trees including ash, hawthorn, field maple and some sea plantain. The west of this section is bordered by Deepdale.

Open space area: SLow 45a & b
In the east of the housing estate, on the corner between Airedale and Ranville, lies section 45b. Directly east of this lies 45a, which has a fenced-in area of amenity grassland surrounded by laurel, cotoneaster, privet, box and dogwood hedge with bramble. There are a number of mature trees amongst the scrubby vegetation including walnut, cherry and alder. Section 45b is very similar in layout and composition with the addition of honeysuckle, broom, hazel, cherry and silver birch.

Open space area: SLow 85
This section is similar to section 80 with amenity grassland, scattered trees and a patch of introduced shrub including cherry, field maple, laurel, Japanese rose and cotoneaster sp. It lies north-west of the community centre and car park in section 86.

Open space area: SLow 56b
This section is separate from the other areas surveyed, and is completely surrounded by residential gardens. A path runs through it from Deepdale to Ashtree Gardens. It is similar to the other areas of grassland, but is more species-rich with the addition of dove's-foot crane's-bill, soft brome, sea plantain, common cats ear, yarrow, creeping buttercup and broad-leaved dock. Some areas have been allowed to grow, which has enhanced diversity. There is an enclosed play area next to a patch of scrub which runs along the eastern boundary of the site. It contains hazel, ash, field maple, silver birch, dogwood and privet and thins out to a hedgerow including field maple, hazel, hawthorn and blackthorn which runs along the north and western boundary. There are also several large oaks along the western boundary.

Avifauna:
The areas of dense scrub provide good foraging, nesting and roosting opportunities for a range of common bird species. Collared doves, starlings, house sparrows, wood pigeons and blackbirds were seen on site during the survey.

Invertebrates:
The long grass provides good habitat for a range of invertebrates such as spiders, grasshoppers and crickets. It also provides shelter and variable microclimates for butterflies, common blue, holly blue and large white were noted on site and other common species are likely to utilize the site during the year. A number of ant-hills were noted on the southern grassland, which indicates that the grassland is well established. Common carder bee was also seen during the survey.

Herpetofauna:
Whilst much of the site is short mown and therefore represents sub-optimal habitat for this group, the areas of long grass in the wildflower meadow, and the bank and hedgerow on the eastern boundary of this site could support common lizard and slow worms.

Mammals:
The large oak trees in section 56b contained cracks and crevices which have the potential to support roosting bats (Target Note 2). There are a number of hedgehog records in the immediate area and the combination of short and long grassland and scrub provides good foraging opportunities for them. Hedgehog faeces were noted in the area of amenity grassland in the south.

Badgers have been recorded to the south of the site, and although they are unlikely to build setts on site, they could potentially forage in the long grassland.

Common species of mammal such as fox, rabbit, grey squirrel and muntjac deer are likely to forage on this site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the hedgerows on the boundaries of the site. Rabbit activity in the form of burrows, scrapes and grazed lawns are evident in the grassland in the south, and there are molehills throughout this area.

Comments and recommendations:
The area of grassland in the southern section of the site is species-rich and this section provides the highest biodiversity value.

Should the mature oak trees in section 56b require felling they should first be assessed for their bat potential by a suitably qualified ecologist.

As the taller grass areas in the southern section could support reptiles, mowing should be avoided during the months when reptiles are active unless the cut can be undertaken in such a way to reduce the risk of killing and injury of this group. In these circumstances, 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. Mowing should be undertaken on a warm day when animals are fully active and work should take place from the centre towards the boundaries to allow animals room to retreat.

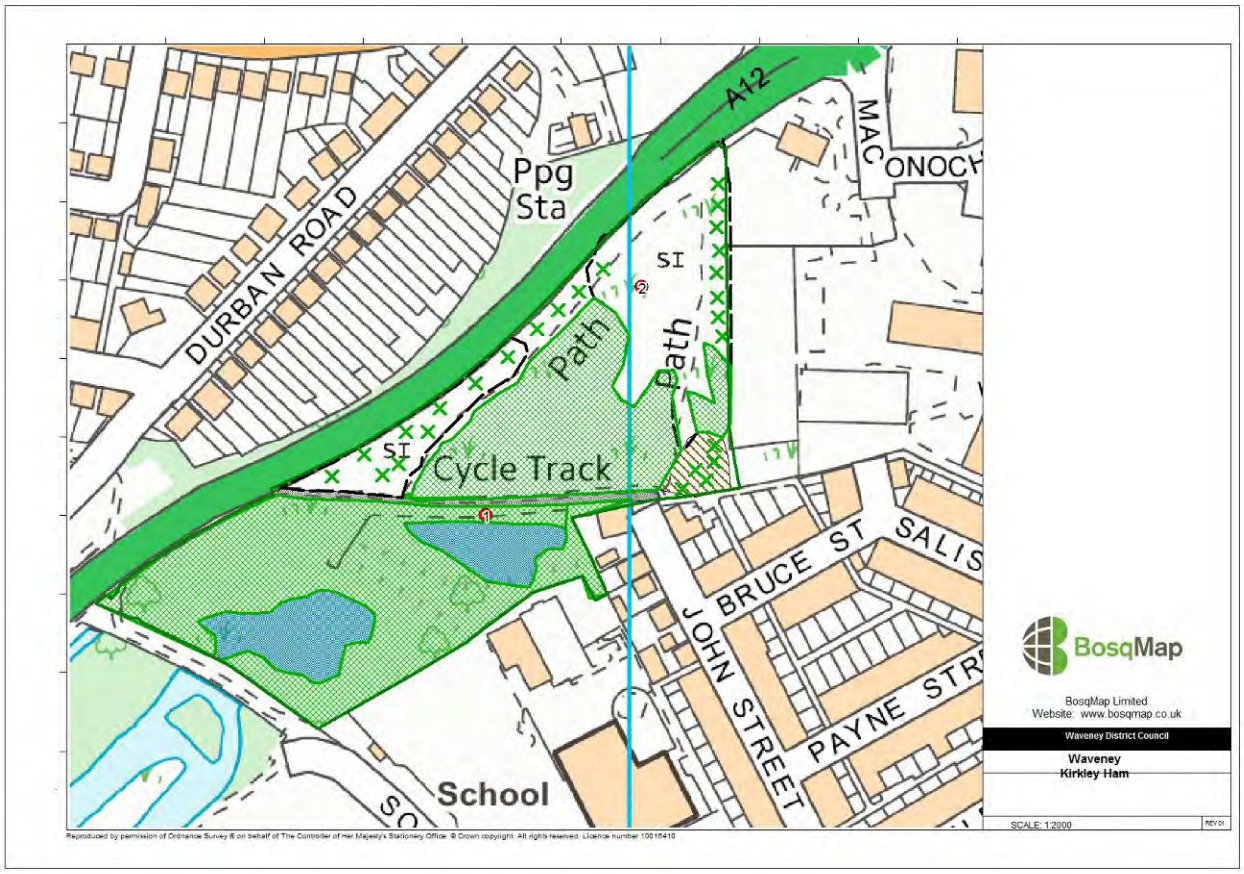
Appendix:

Map showing compartment section numbers

Site name — Kirkley Ham

Site Ref: Waveney 60
Site status: County Wildlife Site
Grid ref: TM 5594 9221
Area: 3.10 hectares
Date: 06 June 2016
Recorder: J Crighton and A Looser
Weather conditions: no cloud cover, sunny with slight warm breeze
Ranking: 2
Biodiversity value: High

Map:



Photos:

Photo 1. Reedbed in southern part of site with Japanese Knotweed along edge (Target Note 1)

Photo 2. Dry grassland at northern end of site (Target Note 2)

Photo 3. Dense scrub near A12

Habitat type(s):
Poor semi improved grassland, neutral grassland, dense continuous scrub, swamp

Subsidiary habitats:
Species-poor hedgerow, tall ruderal, scattered scrub

Site description:
Kirkley Ham lies between the very busy A12 and a densely populated housing estate. The southern section contains two areas of reedbed, fringed by willow scrub, with willowherb and scrub encroaching in places. The reedbeds, which contain some areas of open water, are fed by surrounding run-off and form part of the flood defence system in this area. Much of this area was inaccessible and difficult to survey.

The higher northern section contains dry poor semi-improved grassland on sandy soil with gorse and scattered hawthorn scrub. The two areas are separated by a concrete path which runs diagonally from John Street to the A12.

This site is well used by dog walkers.

Protected species seen or known:
Common lizard, yellow hammer and song thrush recorded in 2007. House sparrow recorded nearby in 2011.

Protected species potential:
Grass snake

Priority habitats present:
Reedbed

Priority species seen or known:
Starling noted on site during the survey.

Priority species potential:
Hedgehog

Connectivity:
Connectivity is relatively poor. Kirkley Ham lies directly parallel to Kirkley Park which consists of a fishing lake and islands.

Structural diversity:
The structural diversity is good with some trees, a decent scrub layer and grassland in the north, and reedbed with trees in the south.

Flora:
To the south-west of the site is an inaccessible reed bed, heavily dominated by common reed (***Phragmites australis)*** that is edged with thick scrub on the side of the path, including hawthorn (***Crataegus monogyna***), broom (***Cytisus scoparius***), common gorse (***Ulex europaeus***) and bramble (***Rubus fructicosa agg***.), plus a large area of the invasive species Japanese Knotweed (Target note) (***Fallopia japonica)***. There are some trees, mainly willow (***Salix*** sp.) with sycamore (***Acer pseudoplatanus***), hazel (***Corylus avellana***), lime (***Tilia x europaea***), English oak (***Quercus robur***) and ash (***Fraxinus excelsior***) and a privet (***Ligustrum*** sp.) hedge on the boundary edge. From what was visible, it did not look like there was any open water in this area. Surrounding the reedbeds is tall ruderal vegetation including common nettle (***Urtica dioica***), cow parsley (***Anthriscus sylvestris***), Alexanders (***Smyrnium olusatrum***), green alkanet (***Pentaglottis semervirens***), fennel (***Foeniculum vulgare***), cleavers (***Galium aparine***) and cock's foot grass (***Dactylis glomerata***).

The north-east side of the path, is mainly poor semi-improved grassland with species such as Yorkshire fog (***Holcus lanatus***), rough meadow-grass (***Poa trivialis***), perennial rye-grass (***Lolium perenne***), wall barley (***Hordeum murinum***), tall fescue (***Festuca arundinacea***) with cow parsley, green alkanet, Alexanders, common nettle, cleavers, common vetch (***Vicia sativa***), fennel, field horsetail (***Equisetum arvensis***), creeping cinquefoil (***Potentilla reptans***), hairy tare (***Vicia hirsuta***), ribwort plantain (***Plantago lanceolata***), white clover (***Trifolium repens***), knotted clover (***Trifolium striatum***) and common ragwort (***Senecio jacobaea***) with many dense patches of scrub, predominantly common gorse with hawthorn, bramble, sycamore and rose (***Rosa*** sp.). There is an area of tall ruderal vegetation, mainly common nettle and cow parsley with green alkanet in the south-east corner.

Closest to the A12, there is an area of dry grassland on sandy soil which contains some species more common in acid grassland, such as common bent (***Agrostis capillaris***), fescue (***Festuca*** sp.), hair-grass (***Deschampsia*** sp.) and sheep's sorrel (***Rumex acetosella***). However, it is too species-rich to be fully acidic and includes other species such as red fescue (***Festuca rubra***), barren brome (***Anisantha sterilis***), smooth hawk's-beard (***Crepis capillaris***), hop trefoil (***Trifolium campestre***), red clover (***Trifolium pratense***), common cat's ear (***Hypochaeris radicata***), creeping thistle (***Cirsium arvense***), bird's-foot trefoil (***Lotus corniculatus***), dandelion (***Taraxacum officinale***), mugwort (***Artemisia vulgaris***), tansy (***Tanacetum vulgare***), yarrow (***Achillea millefolium***), common knapweed (***Centaurea nigra***), creeping buttercup (***Ranunculus repens***), curled dock (***Rumex crispus***), cut-leaved crane's-bill (***Geranium dissectum***), tree lupin (***Lupinus arboreus***), ribwort plantain, hairy tare, white campion (***Silene latifolia***) and rosebay willowherb (***Chamerion augustifolium***). There is some scattered scrub in this area, including willow, broom, common gorse, bramble and dog rose (***Rosa canina***).

Avifauna:

Blackbird, magpie, starling, whitethroat, long tailed tit, chaffinch and great tit noted during the survey. The dense scrub will provide good nesting opportunities for a range of resident and migratory bird species.

Invertebrates:

Large white butterfly and ant hills noted on site, along with an abundance of flying midges. Fallen deadwood in woodland area to the north of the site provides good foraging habitat for invertebrates.

Herpetofauna:

No reptiles or amphibians noted on site but this has previously been a good site for reptiles. With good tall ruderal, scrub and grassland habitats, this would be a good area for basking, foraging and hibernating.

Mammals:

This site could provide good hibernation, nesting and foraging opportunities for hedgehogs. Common species of mammal such as grey squirrel, fox, muntjac deer and mice, voles and shrews are likely to be present.

Comments and recommendations:

It is recommended to remove the stand of Japanese knotweed from TM 53908 92198. This is an invasive species on Schedule 9 of the Wildlife & Countryside Act, 1981, as amended). Any soil removed from or close to the area of Japanese Knotweed must be classed as contaminated waste. The roots of this species can extend up to 7 metres underground from the edge of the above ground vegetation. Extreme care must be taken to avoid further spread of this species.

Consideration should be given to management of the scrub on rotation. Earlier surveys in 2007 comment on the presence of fen meadow flora in the southern section. It appears that the wet habitats are now much more species-poor. Although the northern section was formerly described as containing acid grassland, the sward is currently more indicative of unmanaged dry grassland. However, this is still an important area of public open space with a variety of habitats supporting a range of species.

Site name — Pakefield Cliffs

Site Ref: Waveney 57
Site status: County Wildlife Site
Grid ref: TM 5372 8925
Area: 7.80 hectares
Date: 06 June 2016
Recorder: J Crighton and A Looser
Weather conditions: 10% cloud cover, sunny and warm with moderate cool sea breeze
Ranking: 2
Biodiversity value: High

Map:

Photos:

Photo 1. Vegetated cliff face at northern end

Photo 2. Bare cliff face

Photo 3. Sand martin colony (Target Note 3)

Photo 4. Looking north from southern end of site

Photo 5. Yellow horned poppy on vegetated shingle

Habitat type(s):
Soft cliff, dense/continuous scrub, scattered scrub, intertidal mud/sand, shingle/gravel above high tide mark

Subsidiary habitats:
Sandy beach

Site description:
Pakefield cliffs lie on the North Sea coast west of Pakefield village. The site consists of sandy cliffs which are subject to erosion, and a sandy beach which continues into shingle above the high tide mark at the northern end. For the most part, the tops of the cliffs are covered by scrub. Directly south of the site, lies the Pakefield to Easton Bavents SSSI.

Protected species seen or known:
-

Protected species potential:
Common lizard, slow worm

Priority habitats present:
Coastal vegetated shingle, maritime cliffs and slopes

Priority species seen or known:
House sparrow (BAP) seen on site during the survey.
Starling reported on site 2007.

Priority species potential:
-

Connectivity:
This site has good connectivity to the north where there is further sandy beach and shingle and Pakefield to Eastern Bavents SSSI lies directly south of the site.

Structural diversity:
The structural diversity is typical of shingle and vegetated cliffs. Although most of the cliff and beach areas appear relatively bare, this provides habitat for a range of specialist flora and fauna. The sandy cliff face is particularly suitable for burrowing insects and sand martins. The northern-most cliff face and southern-most areas of the site have a good scrub layer suitable for a range of birds, including migrants.

Flora:
The shingle vegetation is dominated by Nationally Scarce sea pea (***Lathyrus japonicas*****),** (Target Note 1)**,** with frequent yellow-horned poppy (***Glaucium flavum*****),** sea kale (***Crambe maritima***) and bush vetch (***Vicia sepium***).

At the northern end, the cliff face is dominated by Alexanders (***Smyrnium olusatrum*****),** common nettle (***Urtica dioica***) and bramble (***Rubus fructicosa agg.***) with occasional hawthorn (***Crataegus monogyna***) and English oak (***Quercus robur***) scrub. The cliff is being actively eroded, with many hawthorn bushes and small trees strewn along the beach that have fallen from the cliff top.

Toward the southern end of site, the cliff face vegetation becomes sparse with only occasional patches of yarrow (***Achillea millefolium***), Brassicae sp. and ribwort plantain (***Plantago lanceolata***).

A path leads up between the "pitch and putt" site and the southern cliff edge, which was the only accessible area of cliff-top throughout the site. The path leads through an area of dense scrub, consisting mainly of privet (***Ligustrum*** sp.), hawthorn and elder (***Sambucus nigra***) up to the cliff top.

A full botanical species list for each area is listed in the Appendices.

Avifauna:

Sand martins were seen nesting in cliff face during the survey at TM 53634 88698 (Target Note 3). House sparrow, whitethroat, kestrel, wood pigeon and robin were also seen on site during the survey. The areas of dense scrub provide good foraging, nesting and roosting opportunities for a range of common bird species. Summer migrants such as whitethroat could nest in the areas of dense bramble on the cliff face and top. Cliff top scrub is a very important habitat for tired migrant birds as they first make landfall.

Invertebrates:

White-tailed bumble bee, small white butterfly, large white butterfly and common blue butterfly noted on site. Holes in the sand on the beach at the southern end of the site indicate ground burrowing insects. The scrub and vegetation on the cliff face and top provide good opportunities for a range of invertebrate species, including burrowing aculeate hymenoptera.

Herpetofauna:

Although no reptiles or amphibians were seen during the survey, it is highly likely that common and lizard and possibly also slow worm could be found here. The scrubby and bare areas on the cliff face offer good shelter and basking opportunities.

Mammals:

No mammals were seen on site. There was evidence of the presence of rabbits and small mammals such as wood mice and bank voles will be present in the scrubby areas.

Comments and recommendations:

This is a site of high biodiversity, being subjected to a range of natural processes.

As long as the cliff remains steep, the sand martins returning each year will be less vulnerable to predators accessing their nests or damage through vandalism.

Russian vine was noted on the southern cliff. This is an invasive species and its spread should be prevented.

Appendix 1

Southern cliff

bramble	***Rubus fructicosa agg.***
elder	***Sambucus nigra***
field maple	***Acer campestre***
hawthorn	***Crataegus monogyna***
Russian vine	***Fallopia baldschaunica***
privet	***Ligustrum sp.***

barren brome	***Anisantha sterilis***
false brome	***Brachypodium sylvaticum***
marram grass	***Ammophila arenaria***
perennial rye grass	***Lolium perenne***
sand sedge	***Carex arenaria***
alexanders	***Smyrnium olusatrum***
bristly oxtongue	***Oicris echioides***
broad-leaved dock	***Rumex obtusifolius***
common mallow	***Malva sylvestris***
common mouse-ear	***Cerastium fontanum***
common nettle	***Urtica dioica***
common poppy	***Papaver rhoeas***
common ragwort	***Senicio jacobaea***
cow parsley	***Anthriscus sylvestris***
creeping cinquefoil	***Potentilla reptans***
cut-leaved crane's-bill	***Geranium dissectum***
daisy	***Bellis perennis***
greater burdock	***Arctium lappa***
ground ivy	***Glechoma hederacea***
hop	***Humulus lupulus***
ribwort plantain	***Plantago lanceolata***
scarlet pimpernel	***Anagallis arvensis ssp. arvensis***
silverweed	***Potentilla anserina***
spear thistle	***Cirsium vulgare***
weld	***Reseda luteola***
white campion	***Silene latifolia***

South shore

sea beet	***Beta vulgaris spp. Maritima***
marram grass	***Ammophila arenaria***

Northern side of cliff face

bracken	***Pteridium aquilinum***
bramble	***Rubus fructicosa agg.***
Traveller's joy	***Clematis vitalba***
dog rose	***Rosa canina***
English oak	***Quercus robur***
ground elder	***Aegopodium podagraria***
hawthorn	***Crataegus monogyna***
privet	***Ligustrum sp.***
cock's foot	***Dactylis glomerata***
common couch	***Elytrigia repens***
Italian rye grass	***Lolium multiflorum***
wall barley	***Hordeum murinum***
Yorkshire fog	***Holcus lanatus***
Alexanders	***Smyrnium olusatrum***

black bindweed	***Fallopia convolvulvus***
brassicae sp.	
bush vetch	***Vicia sepium***
cleavers	***Galium aparine***
common cat's-ear	***Hypochaeris radicata***
common fumitory	***Fumaria officinalis***
common mouse-ear	***Cerastium fontanum***
common nettle	***Urtica dioica***
common ragwort	***Senicio jacobaea***
common sorrel	***Rumex acetosa***
common vetch	***Vicia sativa***
creeping cinquefoil	***Potentilla reptans***
dove's-foot crane's-bill	***Geranium molle***
hedge bindweed	***Calystegia sepium***
hop trefoil	***Trifolium campestre***
mugwort	***Artemisia vulgaris***
perennial sow thistle	***Sonchus arvensis***
periwinkle	***Vinca sp.***
prickly sow thistle	***Sonchus asper***
ribwort plantain	***Plantago lanceolata***
sun spurge	***Euphorbia helioscopia***
sea plantain	***Plantago maritima***
teasel	***Dipsacus fullonum***
tree lupin	***Lupinus arboreus***
yarrow	***Achillea millefolium***

Northern shingle vegetation

cock's foot	***Dactylis glomerata***
couch grass	***Elymus repens***
marram grass	***Ammophila arenaria***
Italian rye grass	***Lolium multiflorum***
wall barley	***Hordeum murinum***
Alexanders	***Smyrnium olusatrum***
bush vetch	***Vicia sepium***
common cat's-ear	***Hypochaeris radicata***
ribwort plantain	***Plantago lanceolata***
sea kale	***Crambe maritima***
sea pea	***Lathyrus japonicus***
sea radish	***Raphanus raphanistrum ssp. Maritimus***
sea sandwort	***Honckenya peploides***
smooth hawk's-beard	***Crepis capillaris***
spear thistle	***Cirsium vulgare***
yellow horned poppy	***Glaucium flavum***

Site name — Pakefield Park

Site Ref: Waveney 54
Site status: County Wildlife Site
Grid ref: TM 5306 9082
Area: 5.84 hectares
Date: 06 June 2016
Recorder: J Crighton and A Looser
Weather conditions: no cloud cover, sunny with warm breeze
Ranking: 2
Biodiversity value: High

Map:

Photos:

Photo 1. Good habitat mosaic with scrub, trees and grassland

Photo 2. Woodland area to the north of the site including some mature oak trees

Photo 3. Area of dense scrub in southern part of site

Habitat type(s):
Broad-leaved semi-natural woodland, semi-improved acid grassland, poor semi improved grassland, dense continuous scrub

Subsidiary habitats:
Fallen deadwood, bracken

Site description:
Pakefield Park lies to the east of the A12 and is surrounded by residential buildings. It is a diverse site with mature woodland and a network of scrub and rough meadows. The site has been largely left to regenerate naturally. The park contains a network of paths and is frequented by dog walkers.

Protected species seen or known:
Turtle dove recorded to the west of the site in 2009, lesser redpoll in 2010, hawfinch, four flocks of house sparrow and ring ouzel in 2011 and spotted flycatcher in 2012.

Protected species potential:
Bats, slow worm, common lizard

Priority habitats present:
Broad-leaved woodland, acid grassland

Priority species seen or known:
West European hedgehog recorded nearby in Blackheath Road in 2014

Priority species potential:
-

Connectivity:
Moderate. Although the site is mainly surrounded by residential buildings, the northern most area of the woodland lies directly parallel to the A12 where the verges and banks can act as a wildlife corridor.

Structural diversity:
Structural diversity is excellent at this site. There is good ground flora layer with scrub understorey and woodland canopy providing diverse habitat for many species.

Flora:
The scrub at the south east of the site is densely populated by blackthorn (*Prunus spinosa*) and gorse (*Ulex europaeus*) scrub.

In the west of the site, just before the linear strip of woodland there is a shady area containing many holly trees (*Ilex aquifolium*) to the south and an area of acid grassland north of this, indicated by sheep's fescue (*Festuca ovina*) and sheep's sorrel (*Rumex acetosella*). There is also a small area of bracken (*Pteridium aquilinum*) which is relatively sparse, which is surrounded by broom (*Cytisus scoparius*) and bramble (*Rubus fructicosa agg.*).

At the western edge there is a long linear strip of broad-leaved semi-natural woodland, dominated by sycamore (*Acer pseudoplatanus*), which extends to the north further than the rest of the site. There is an impressive white poplar (*Populus alba*) (Target note 1) at the far north western end of this tree belt.

To the east of the site, south of Green Drive and west of Kirkley and Pakefield football club is an open grassland area with a mature lime (*Tilia x europaea*), this area is dominated by cock's foot (*Dactylis glomerata*) and Yorkshire fog (*Holcus lanatus*) grasses with typical herbs such as white clover (*Trifolium repens*), yarrow (*Achillea millefolium*) and bird's-foot trefoil (*Lotus corniculatus*).

A full botanical species list for each area is listed in the Appendices.

Avifauna:
The mature trees, scrub and rough grassland provide excellent habitat for resident and migrant species. Chiffchaff, robin, blackbird, wood pigeon, collared dove, long tailed tit, great tit, blue tit and chaffinch noted on site. Bird boxes have been erected on site by local people.

Invertebrates:
The variety of plant species forming the mosaic of long vegetation with scrub and woodland provides varied habitat for a rich invertebrate community. Small white, large white and common blue butterflies, blue damselfly, cuckoo spit, hornets, wasps and bees were noted on site, along with an abundance of flying midges. Fallen deadwood in the woodland area to the north of the site provides good foraging habitat for invertebrates.

Herpetofauna:
No reptiles or amphibians were noted on site. The grassland/scrub mosaic provides good habitat for reptiles and they are likely to be found around the margins of the grassland areas. The scrub and woodland could provide valuable hibernation opportunities for amphibians if there are any ponds close to the site.

Mammals:

There are many mature trees that would provide excellent natural bat roosting sites. Other common species of mammal such as rabbit, grey squirrel, fox and muntjac deer are likely to be present. Molehills and rabbit droppings were noted on site. Mice, voles and shrews are also likely to be present in the rough grassland areas and the scrub on the boundaries of the site.

Comments and recommendations:

The site provides a good habitat mosaic with woodland, scrub and grassland. The site would benefit from rotational scrub management to maintain the open grassland. This should be carried out outside bird nesting season (March to August inclusive).

It is recommended that the open grassy areas have an annual cutting regime, if not already carried out, in August/September to prevent scrub encroachment. All cuttings should be removed to encourage diversity in the sward.

In the CWS citation, an area of low-lying wetter habitat is described. This was not apparent during this survey, or a previous survey carried out in July 2007. It may have dried out in previous years.

The occurrence of Schedule 9 invasive, variegated yellow archangel (*Lamiastrum galeobdolon ssp. argentatum*), should be monitored in the woodland to the north of the site and care should be taken to ensure that it is not spread.

Appendix 1

Woodland in north

ash	*Fraxinus excelsior*
aspen	*Populus tremula*
bracken	*Pteridium aquilinum*
broom	*Cytisus scoparius*
elder	*Sambucus nigra*
English oak	*Quercus robur*
hawthorn	*Crataegus monogyna*
hazel	*Corylus avellana*
holly	*Ilex aquifolium*
ivy	*Hedera helix*
sycamore	*Acer pseudoplatanus*
white poplar	*Populus alba*
yew	*Taxas baccata*
annual meadow-grass	*Poa annua*
rough meadow-grass	*Poa trivialis*
soft rush	*Juncus effusus*
Alexanders	*Smyrnium olusatrum*
bluebell	*Hyacinthoides non-scripta*
cleavers	*Galium aparine*
common chickweed	*Stellaria media*
common nettle	*Urtica dioica*
common stork's-bill	*Erodium cicutarium*
cow parsley	*Anthriscus sylvestris*
field bindweed	*Convolvulus rvensis*

garlic mustard	*Alliaria petiolata*
greater burdock	*Arctium lappa*
green alkanet	*Pentaglottis sempervirens*
ground elder	*Aegopodium podagraria*
star of bethlehem	*Ornithogalum angustifoium*
wood avens	*Geum urbanum*
wood sorrel	*Oxalis acetosella*
yellow archangel (variagated)	*Lamiastrum galeobdolon ssp. argentatum*

Southern area of site

blackcurrant	*Ribes nigrum*
blackthorn	*Prunus spinosa*
bracken	*Pteridium aquilinum*
bramble	*Rubus fructicosa agg.*
broom	*Cytisus scoparius*
elder	*Sambucus nigra*
English oak	*Quercus robur*
gorse	*Ules europaeus*
holm oak	*Quercus ilex*
honeysuckle	*Lonicera sp.*
ivy	*Hedera helix*
Leyland cypress	*Cupressus x leylandii*
lime	*Tilia x europaea*
maple	*Acer sp.*
sycamore	*Acer pseudoplatanus*
cock's foot	*Dactylis glomerata*
common couch	*Elytrigia repens*
perennial rye-grass	*Lolium perenne*
rough meadow-grass	*Poa trivialis*
Yorkshire fog	*Holcus lanatus*
Alexanders	*Smyrnium olusatrum*
bird's-foot trefoil	*Lotus corniculatus*
bittersweet	*Solanum dulcamara*
brassicae sp.	
bulbous buttercup	*Ranunculus bulbosus*
cleavers	*Galium aparine*
common cat's-ear	*Hypochaeris radicata*
common nettle	*Urtica dioica*
common ragwort	*Senicio jacobaea*
common sorrel	*Rumex acetosa*
cow parsley	*Anthriscus sylvestris*
creeping thistle	*Cirsium arvense*
dove's-foot crane's-bill	*Geranium molle*
field horsetail	*Equisetum arvense*
greater plantain	*Plantago major*
hogweed	*Heracleum mantegazzianum*

meadow buttercup	*Ranunculus acris*
pineapple mayweed	*Matricaria discoidea*
ribwort plantain	*Plantago lanceolata*
spear thistle	*Cirsium vulgare*
white clover	*Trifolium repens*
yarrow	*Achillea millefolium*

Acid grassland

common bent	*Agrostis capillaris*
meadow fescue	*Festuca pratensis*
sheep's fescue	*Festuca ovina*
sweet vernal grass	*Anthoxanthum odoratum*
Yorkshire fog	*Holcus lanatus*
bird's-foot trefoil	*Lotus corniculatus*
common cat's-ear	*Hypochaeris radicata*
common ragwort	*Senicio jacobaea*
common sorrel	*Rumex acetosa*
common vetch	*Vitia sativa*
hop trefoil	*Trifolium campestre*
mouse-ear hawkweed	*Pilosella officinarum*
rosebay willowherb	*Chamerion angustifolium*
sheep's sorrel	*Rumex acetosella*
white clover	*Trifolium repens*
yarrow	*Achillea millefolium*

Site name: Southwold Denes

Site ref: Southold & Reydon 28
Site status: County Wildlife Site
Grid ref: TM 50707 75333
Area: 10.78 hectares
Date: 5 April 2017
Recorder: J. Crighton & A. Looser
Weather conditions: 90% cloud cover, bright with sunny intervals and moderate wind
Ranking: 2
Biodiversity value: High

Map:

Photos:

View south across Denes with low growing vegetation

Looking north from the southern end of the site with dune vegetation

Habitat type(s):
Sand dunes, dry grassland, vegetated shingle, bracken, tall ruderal, scattered scrub

Subsidiary habitats:
Bare ground, fallen deadwood

Site description:
Southwold Denes lies east of Ferry Road. It is characterised by mobile sand dunes and vegetated shingle beach. It is backed by marshes and is within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty. To the south lies the harbour and the mouth of the River Blyth, and the site extends to Gun Hill and Southwold Town in the north. There are extensive areas of marram grass which have been planted to help limit erosion through visitor pressure.

The northern section of the site is more bare sand with dunes, but towards the south there is more shingle vegetation. There is an area behind the dunes which is well trodden, beyond which is the tall ruderal and scrubby vegetation on the banks sloping down to Ferry Road.

The fragile plant community which has colonised the shingle and sand substrate includes many plants which are not only locally but also nationally rare. These include sea holly, bulbous meadow grass and sea pea. Furthermore, two species of the uncommon bird's nest fungus have been recorded here by a local mycologist.

Some cottages lie adjacent to the site.

Protected species seen or known:
Common porpoise found dead (2014), and live in harbour (2007)

Protected species potential:
Common lizard, slow worm

Priority habitats present:
Vegetated shingle, coastal sand dunes

Priority species seen or known:
A number of moth species recorded between 2003 and 2010
Herring gull (2007)
Little tern (2000)
Starling and house sparrow seen during the survey

Priority species potential:
Dunnock

Connectivity:
This site has excellent connectivity. The beach continues beyond the town to the north and to the west lies Havenbeach Marshes County Wildlife Site (CWS) and further west of that, the Town Marshes Site of Special Scientific Interest (SSSI). The River Blyth in the south of the site also extends to the west.

Structural diversity:
The structural diversity of this site is very good, with a range of vegetation heights encompassing shingle flora, dunes, tall ruderal and scrub offering a range of habitats for use by a number of taxonomic groups.

Flora:
On the bank between the dunes and Ferry Road, sand sedge and alexanders is dominant at the northern end of the site with some other occasional species such as dandelion, spring beauty, yarrow, hairy bitter-cress at the sandy edge gradually increasing in height to tall ruderal vegetation including tree lupin (non-native), broad-leaved dock, nettle and burdock. There are also patches of scattered scrub comprised of sea buckthorn, elder, bramble and dog rose. This changes towards the south where there is more gorse, bracken and sheep's sorrel.

Between the bank and the dunes, for the majority of the length of the Denes, there is an area of well-trodden, short dry grassland which supports mossy stonecrop, swine-cress, sea sandwort, ragwort, sheep's sorrel and wall speedwell. This area is known to be used by walkers and horse-riders.

The dune vegetation is dominated by marram grass, with occasional ragwort, spring beauty, common mouse ear, sea couch, sheep's sorrel and common cat's ear. Further south, sea mouse-ear and groundsel were observed and sea pea, a Nationally scarce plant, is abundant amongst the dunes, becoming sparser moving north. The Suffolk Coast supports the bulk of the UK population of this species. This plant was also common throughout the shingle, along with sea sandwort.

The Suffolk rare plants which have been recorded here previously include smooth cat's ear, sea bindweed, yellow horned poppy, dittander, English stonecrop, bulbous meadow-grass and common sea lavender (1997), sand cat's tail and sea pea (1999), sea holly and sea pea (2001) and bird's-foot clover (2016).

Avifauna:
The scattered scrub provides some habitat for common bird species. Pied wagtail, meadow pipit, house sparrow and starling were seen during the survey.

Invertebrates:
A variety of invertebrates typical of a beach/grass/scrub mosaic will be present. The long grass on the banks provides good habitat for a range of invertebrates such as spiders, grasshoppers and crickets. The site is likely to support other invertebrates with plenty of fallen deadwood. Additionally, organic debris washed up along the strandline is likely to support a range of invertebrates.

Herpetofauna:
The scrubby banks to the west of the site provide excellent basking, foraging and refuge opportunities for reptiles such as common lizard and slow worm (which has been shown in recent surveys).

The fallen deadwood within the tall ruderal banks can provide a refuge or over-wintering site for reptiles.

Mammals:
Rabbit activity in the form of burrows, scrapes and grazed lawns are evident in the banks and dry grassland.

Comments and recommendations:
The habitats on this site are fragile and easily affected by increased footfall. Measures to encourage the public to remain on well-trodden paths will be beneficial.

The Wildlife and Countryside Act (1981) (as amended) makes it an offence, amongst other things, to:

- plant or otherwise cause to grow in the wild any plant that is included in Part II of Schedule 9;
- to release or allow to escape into the wild any animal which is of a kind which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state, or is included in Part I of Schedule 9 of the Act.

There is a defence available if it can be proven that all reasonable steps were taken to avoid the offence and due diligence was exercised.

There is a record of Japanese knotweed in the north of the site (2011). This species was not seen during the surveys but may be masked by the dense stand of alexanders. Towards the south of the site, near the entrance of the caravan site, there is another record of this Schedule 9 invasive species. Cutting the plant or roots and disturbing surrounding soil could encourage 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.

There is a patch of Japanese rose (*Rosa rugosa*) in the south of the site and this species is also listed on Schedule 9.