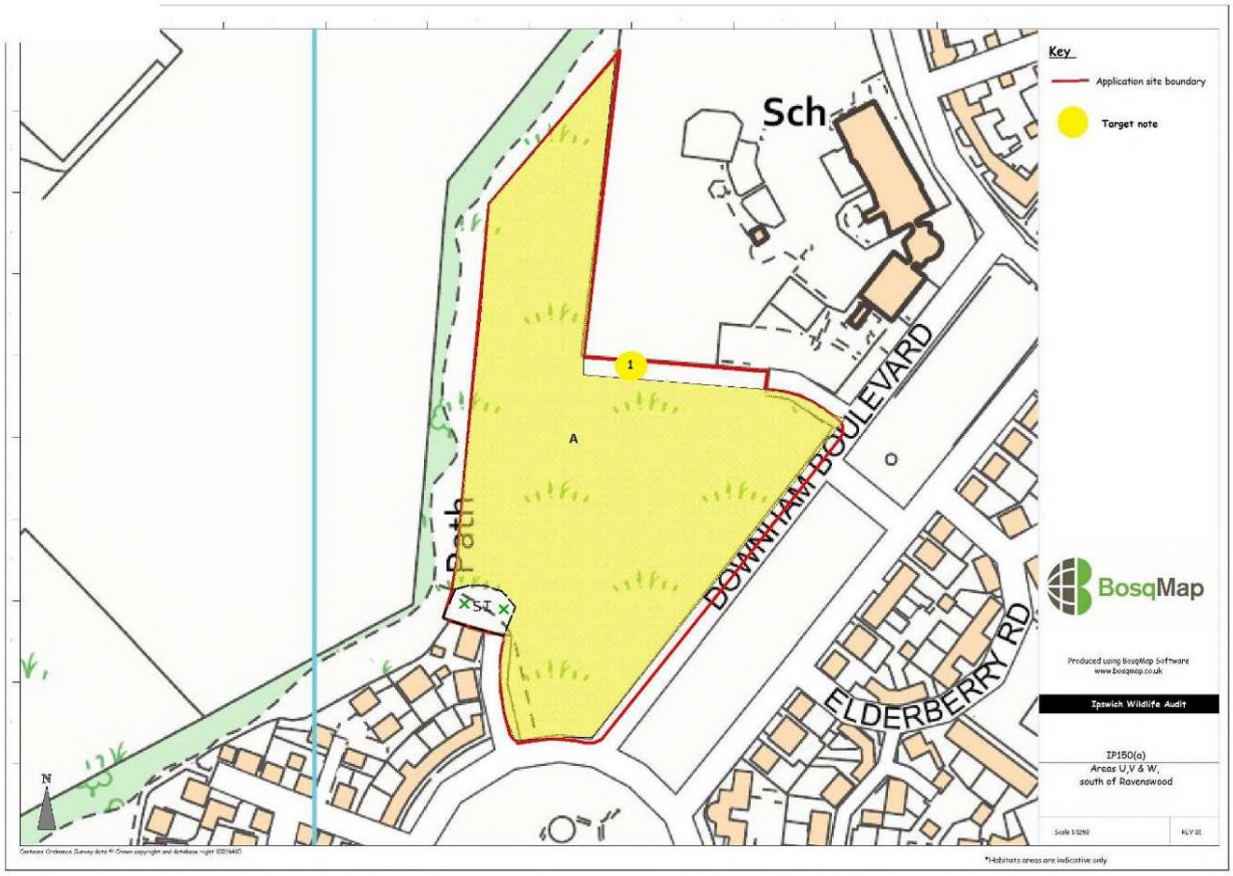
Site name: Land south of Ravenswood East and West

Site ref:	IP150a, IP150b, IP150c, IP150d, IP150e
Site status:	No wildlife designation
Grid ref:	TM 19137 41539, TM 19255 41078, TM 19849 41433, TM 19404 41190, TM 19745 41382
Area:	2.21 hectares, 7.79 hectares, 1.18 hectares, 1.78 hectares, 3.59 hectares
Date:	18th July 2019
Recorder:	J Crighton
Weather conditions:	Overcast, light rain and wind, *ca* 19°C
Ranking:	4, 3, 3, 3, 3 (likely to be higher following detailed surveys)
Biodiversity value:	Medium-High

Map:



IP150a (Areas U, V & W south of Ravenswood)

IP150b (sports park) and IP150d (fronting Alnesbourn Crescent). Land south of Ravenswood West.

IP150c (fronting Nacton Road) and IP150e (fronting Alnesbourn Crescent). Land South of Ravenswood East.

Photos:

IP150a Mown grassland from new earth bund

IP150a Harebells in species rich area (Target Note 1)

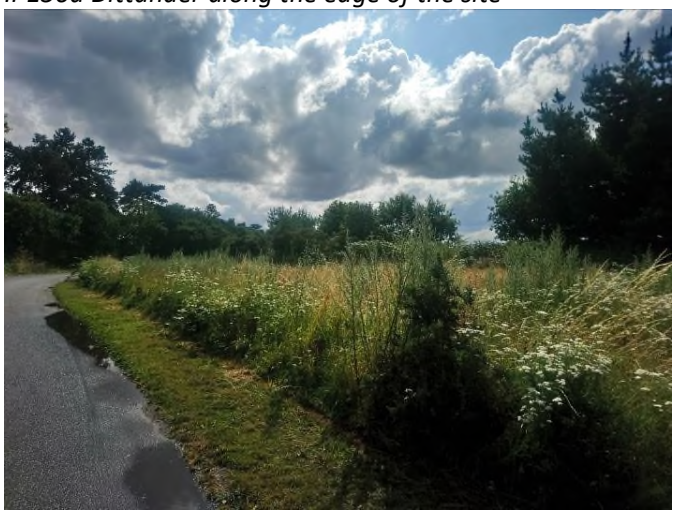
IP150b Scrub/grassland mosaic

IP150b Neutral semi-improved road verge

IP150c Dense scrub and coniferous woodland

IP150d Dittander along the edge of the site

IP150e Bare ground area (Target Note 2)



IP150e Neutral semi-improved verge

Habitat type(s):

Neutral semi-improved grassland, dense/continuous scrub, coniferous plantation woodland, amenity grassland, poor semi-improved grassland, scattered scrub and broad-leaved trees, species poor hedgerow

Subsidiary habitats:

Bare ground, fallen and standing deadwood

Site description:

These five sites which contribute to IP150 lie within Ravenswood, in the south of Ipswich, east of the River Orwell. Formerly part of the Ipswich Airport, sites IP150 b, c, d, and e have been left

undisturbed for a number of years and now contain a species-rich mosaic of grassland and scrub vegetation typical of the light sandy soil in the area.

IP150a was formerly similar in composition to the other sites but has undergone site clearance since it was last surveyed in 2013, when it contained a mosaic of long grass, tall ruderal and scrub along with a moderately dense assemblage of semi-mature trees in the northern-most section. However, the site is now short-mown amenity grassland, with recently created steep earth bunds around the perimeter with the Ravenswood Primary School and Downham Boulevard. Outside of the site boundary to the west, a tree belt and fence separates the site from the adjacent Gainsborough Sports Centre playing fields.

IP150b, IP150d and IP150e used to be part of a continuous linear corridor along the southern edge of Ravenswood Neighbourhood Estate. However, the recently constructed Bluebird Lodge Rehabilitation Centre now bisects the area between IP150d and IP150e. The vegetation throughout these three sites is a habitat mosaic of neutral semi-improved grassland with dense patches of successional scrub as well as scattered scrub and regenerating oaks. The presence of anthills throughout the grassland indicate the relatively undisturbed nature of the sites.

IP150b is the largest and most westerly of the sites. It lies directly east of a 'Community Managed' area which has recently been sown with a wildflower mix. Its northern boundary is a footpath which runs along the outer edge of the houses on Dunwich Close and the southern boundary is the disused airport access road. A high earth bank and associated ditch are set back around 10m from the disused airport road, giving the site an enclosed, sheltered feel, and providing valuable structural diversity.

IP150d lies between IP150b and Bluebird Lodge, with its northern boundary alongside Alnesbourn Crescent and is more heavily scrub dominated than the other sites.

IP150e is east of Bluebird Lodge and continues until it meets IP150c which fronts Nacton Road. In contrast to IP150d, this site is fairly open grassland with scattered scrub and regenerating oak.

IP150c is made up of dense scrub and a small stand of coniferous plantation woodland, which acts as a buffer against road noise and pollution. A species-poor hedgerow separates this woodland from Nacton Road.

Although no Priority habitat is present on these sites, IP150 b, c, d and e in particular have a high biodiversity value and represent part of an important wildlife corridor which further connects to the wider ecological network in the south of Ipswich. These sites are likely to support a diverse range of species.

Protected species seen or known:

Records in the surrounding area include:
Soprano pipistrelle bat
Common pipistrelle bat
Noctule bat
Brown long-eared bat
Badger

Barn owl
Grass snake
Slow worm
Common lizard
Adder

Protected species potential:
-

Priority habitats present:
-

Priority species seen or known:
Records in the surrounding area include:
Hedgehog
Stag beetle
Small heath butterfly
White admiral butterfly
White letter hairstreak butterfly
BoCC Red List birds include song thrush, yellowhammer, reed bunting, lesser redpoll, linnet, cuckoo, starling, herring gull, house sparrow, tree pipit,
BoCC Amber List birds include swift (Suffolk Character Species), dunnock, reed bunting,

Priority species potential:
Cinnabar moth

Connectivity:
This site currently has excellent connectivity with similar habitats in the surrounding area (including Site IP152) and lies east of Orwell Country Park, which encompasses Brazier's Wood, Pond Alder Carr and Meadows County Wildlife Site (CWS). Bridge Wood (ancient woodland) CWS is located to the south on the other side of the A14. The verges and tree belts along the A14 are also an important component of the wider ecological network through Suffolk.

Structural diversity:
These sites (excluding IP150a) have excellent structural diversity with a habitat mosaic of bare ground, tall grass and forbs, dense scrub and semi-mature trees offering several different habitats which are likely to support a number of taxonomic groups.

Flora:
IP150a is currently short-mown right up to the edges of the site. The newly created earth bunds show some vegetation regeneration with species typical of disturbed ground including fat hen, scentless mayweed, bristly ox tongue, common mallow, prickly lettuce, nettle, creeping thistle and white campion. Although the main body of this site is covered with low quality amenity grassland, the southern boundary, which is unmanaged, contains a different composition of species including hedge mustard, teasel, curled dock, goat's beard, mugwort, soapwort, red clover and a few individual knapweed plants. The grasses seen here are likely to be present within the amenity sward also, but

are not so readily identifiable when short mown, such as cock's foot, false oat and red fescue. Although the amenity sward is heavily dominated by perennial rye grass. It also supports common forbs including ribwort plantain, autumn hawkbit, yarrow, common cat's-ear, dandelion, creeping cinquefoil and dove's foot crane's bill. Towards the south of this site, the soil is free draining and sandy and still contains relics of the more diverse historical sward including hares foot clover, common stork's bill and bird's foot trefoil.

The tree belt between the site and the adjacent Playing Fields does not form part of IP150a, but nonetheless is an important boundary feature containing a diverse range of species including oak, poplar, silver birch, sweet chestnut, Corsican pine, guelder rose, dogwood, rowan, holly, field maple, crab apple, walnut, gorse and grey willow.

Along the boundary with the school, a species-poor hedge overhangs the fence and an area (marked on the map as Target Note 1) has a more interesting sward with several harebells, toadflax, hare's foot clover, perforate St John's wort and common vetch.

IP150b, IP150d and IP150e all contain a similar mix of species with a mosaic of dense scrub and neutral semi-improved grassland. The dense scrub generally encloses the sites around the perimeter on the southern boundary, with the earth bund almost covered with thick scrub. There are several access points and mammal trails accessing the central areas of the sites, as well as patches of scrub and individual plants throughout the sites also.

The scrub comprises mainly gorse with dense stands of blackthorn, hawthorn, broom and dog rose, and frequent hazel, silver birch, field maple, elder, dogwood, rowan and buddleia. Bramble has spread throughout the scrub, with evidence of oak regeneration in places, particularly throughout the more open sward of IP150e.

The semi-improved neutral grassland sward is most dense along the road verge next to the former airport access road, it is unclear whether this is a semi-natural sward or if it has been historically sown with a wildflower seed mix. The sward is species-rich and contains wild carrot, common knapweed, field scabious, ox-eye daisy, lady's bedstraw, common poppy and perforate St John's wort. There is also a diverse range of grass species present including creeping bent, smaller cat's tail, timothy, common bent, Yorkshire fog, false oat, cock's foot, soft brome and sweet vernal grass.

These species are present throughout the central areas also, but in a more scattered constitution. Also present are some patches of ruderal vegetation including curled dock, mugwort, rosebay willowherb, creeping thistle, hedge mustard, white campion, common mallow, weld, hemlock and black horehound, which could indicate localized nutrient enrichment.

Some more open, parched areas (such as well used tracks and the edges of IP150e) support bird's foot trefoil, hare's foot clover, common cudweed (Near Threatened), selfheal, common centaury and common toadflax. Dittander has spread along the northern and southern edges of both IP150d and IP150e. Dittander (Nationally Scarce) is normally associated with coastal habitats, but is locally common in this part of Suffolk.

Along the northern edge of IP150b, adjacent the public footpath, is a wide area of heavily managed

amenity grassland. The scrub bordering this is particularly dense and in some areas, fruit trees have been planted including apple, crab apple and plum. Alongside IP150d and IP105e there are also some man-made depressions which have been landscaped with species such as holm oak, silver birch, field maple, gorse and bramble.

IP150c contains a similar species list of scrubby plants in half of the site, but immediately fronting Nacton Road there is some very different habitat, including a managed field maple and hawthorn hedge with some turkey oak, and a small stand of Corsican pine.

Avifauna:

It was a sub-optimal time of year for recording this group. However, the areas of dense scrub provide good foraging, nesting and roosting opportunities for a range of common bird species. It also provides an important resource for summer migrants such as whitethroat, which are likely to nest in the areas of dense bramble across sites IP150 b, c, d and e. From reports carried out across the whole of the former airport site across the years, it is known that these sites used to support several skylark and meadow pipit territories, which have diminished over the years, likely due to the scrub encroachment. During the survey several species were noted including some BoCC Red List species such as linnet, house sparrow and starling, along with house martin, whitethroat, garden warbler, blackbird, chiffchaff, chaffinch, goldfinch, wren, carrion crow and wood pigeon.

Invertebrates:

These sites are likely to support a rich invertebrate community, with a patchy mosaic of vegetation and habitat types, structural diversity and tall buffering patches of scrub adjacent to open grassland providing shelter and variable microclimates. There are also areas of bare ground where evidence of ground burrowing bees and wasps was noted. The fallen and standing deadwood within the site will also offer opportunities for saprophytic invertebrates and give good over-wintering habitat. Stag beetle larvae are likely to be present if there is any subterranean dead wood.

Anthills were noted throughout the site and a number of common invertebrates including spiders, soldier beetles, grasshoppers, hoverflies and bees were associated with the long grass and flowers.

Eight species of butterfly were recorded during the survey visit, despite sub-optimal weather conditions, which include gatekeeper, small skipper, large white, meadow brown, ringlet, brimstone, red admiral and peacock.

Herpetofauna:

The long grass and scrub cover, along with high banks and areas of bare ground offer excellent foraging, refuge, hibernation and basking opportunities for common reptiles such as grass snake, common lizard and slow worm. The fallen deadwood could also offer valuable hibernation sites. A previous survey (covering IP150 a, c, and e) estimated that a medium sized population of common lizard were present in 2013.

Mammals:

This site could provide important habitat for foraging and commuting bats with a high invertebrate density providing excellent feeding opportunities.

There are a number of hedgehog records in the immediate area and the combination of grassland, and scrub provides good foraging, refuge and hibernation opportunities for them.

Badger latrines were noted in the site south of this area (IP152). Badgers are regularly recorded after road traffic accidents along the A14 and although no evidence of setts were observed during the visit, the dense scrub could have concealed any entrances. They are highly likely to use this site.

Evidence of common species of mammal such as fox, deer, rabbit and grey squirrel using these sites were noted during the survey. The rough grassland and scrubby areas are also likely to support mice, voles and shrews. Small predatory species such as stoat and weasel are also likely to be present.

Comments and recommendations:

IP150a is proposed for residential use with 94 dwellings at medium density (45dph). IP150b has been allocated as a sports park, with the intention to link into cycling and pedestrian route networks in conjunction with the other sites. IP150c is proposed for B1 uses (offices, research & development, light industrial uses), similar to that of the surrounding industrial estates of Futura Park. IP150d and IP150e are also proposed for residential development, with 34 dwellings on 50% of the site and 126 dwellings on 100% of the site respectively, both at low density (35dph). The briefing sheet also noted that surface water flooding and drainage could be a concern around sites IP150b-e.

IP150a, IP150c and IP150e were subject to a range of specialist species surveys in 2013 prior to a development application. These included reptiles, breeding birds and invertebrates. Due to the time lapse, further updated detailed surveys encompassing sites IP150 b, c, d and e should be undertaken to assess the ecological interest of this site, with the addition of badgers.

Mitigation for impacts on the reptile population will be required and ideally populations should be retained on site in conjunction with additional habitat enhancement. In order to achieve this, log piles for basking reptiles sited over the top of a below-ground hibernacula should be incorporated into an undisturbed area of greenspace. Hibernacula can be created by filling holes (minimum 2m long by 1m wide, and up to 50cm deep) with log sections. This should be covered with topsoil and turf, allowing access opportunities so that reptiles can easily enter the hibernacula at the appropriate time. These structures will also benefit stag beetle larvae.

Lighting schemes should be designed to reduce light spillage into any retained boundary features which could provide a wildlife corridor. Bats are particularly sensitive to increased light levels, so it is important to maintain dark corridors to support local ecological networks.

Planning policy supports the mitigation hierarchy of avoid, minimise, remediate and only as a last resort, compensate. However, due to the nature of the existing habitats on this site, it is likely that future development will require compensation to avoid a biodiversity loss and to deliver net gain.

Compensation for habitat loss can be on-site and/or off-site and is delivered through the creation of new habitat, restoring or enhancing existing habitats or occasionally, by accelerating successional processes. In this instance, the magnitude of the habitat proposed to be lost will require significant off-site compensation habitat. This should be located as close as possible to the site and should seek to replicate the characteristics of the habitat(s) to be lost, taking account of the structure and species

composition to provide local distinctiveness. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than habitats lost and wherever possible, should contribute to the wider ecological network.

Delivering net gain is independent of any wider requirements of planning policy or the need to comply with legislation relating to nature conservation or biodiversity.

New development should retain as much of the existing habitat as possible and integrate it within a landscaping scheme, in particular areas of scrub and grassland mosaic, ideally maintaining the wildlife corridor throughout this area. This will help retain the local biodiversity resource, with enhancement through additional habitat creation and long-term good habitat management practices.

Any new greenspaces should be interlinked to provide functional ecological corridors for a range of species and as much as possible they should connect with wider off-site ecological networks, therefore the scheme should maintain some open space adjacent to the A14 corridor, but ensure this space is still connected to similar habitat in the north.

Careful planning and design can integrate the requirement for sustainable drainage systems with the creation of new wildlife habitat. Such places can also create aesthetically pleasing features which can also be integrated into landscaping schemes.

There is the opportunity to channel and store run-off through surface features such as swales, retention basins and ponds, resulting either in temporary or permanent water features. The design should incorporate a variety of features to maximise potential habitats niches and any planting should utilise native species. Where possible, existing habitats should be retained and integrated into the system as this will result in greater species diversity. New habitats should be created taking into account local ecology and site conditions.

Additionally, green roofs can work as part of sustainable drainage options but also be designed to support wildflowers, grasses and sedums and in turn, these can benefit both foraging invertebrates and birds. Living walls can also be created as part of schemes that harvest rainwater or can utilise grey water sources. Aspect is important as shaded walls usually establish quickest. Climbers, such as ivy, are trained on wires or trellis or adapted planters can be used for other species. Green walls provide cover for birds such as house sparrow and shelter and foraging habitat for invertebrates.

In addition to this, action can be taken for individual species such as swifts and bats

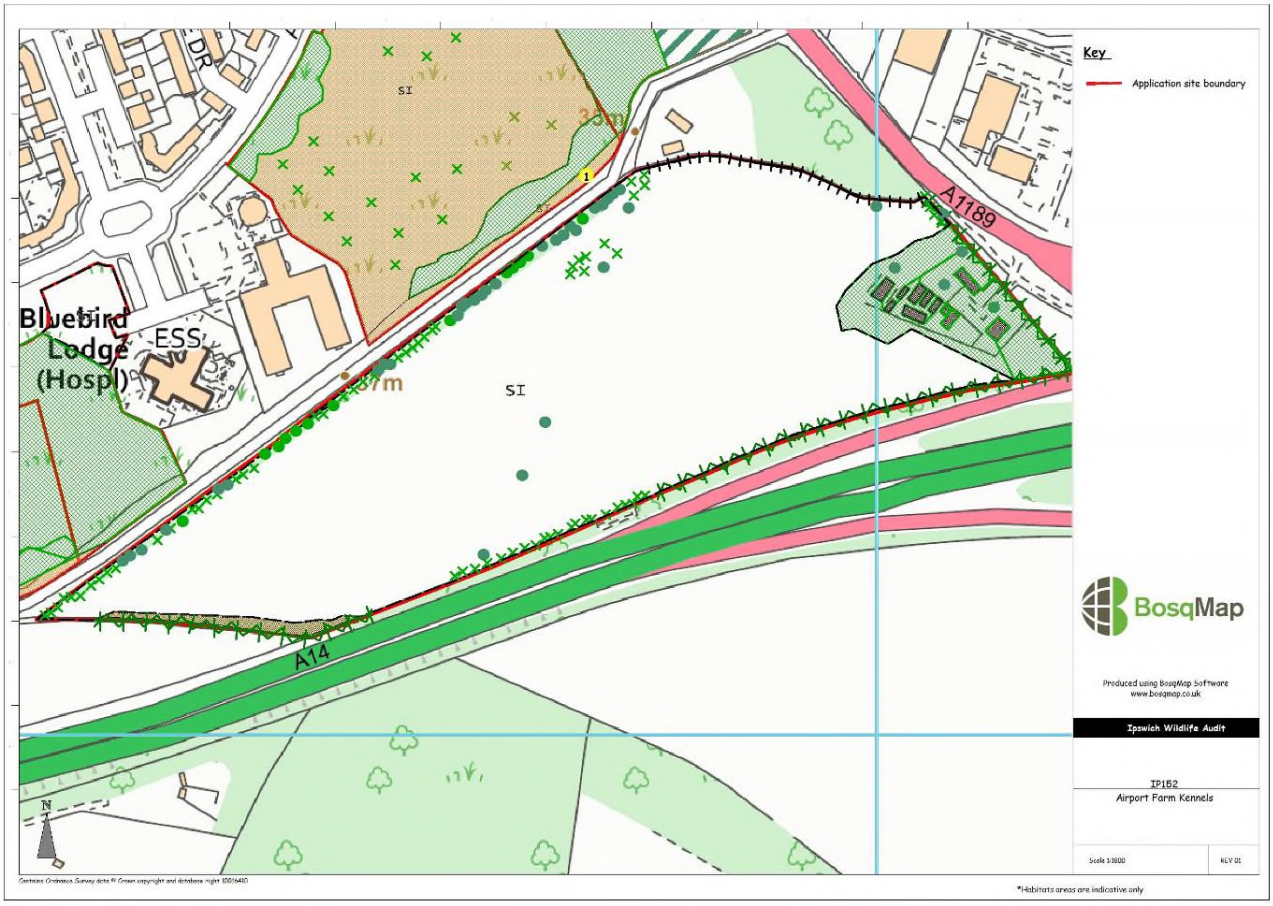
Swifts are a declining migratory species that is almost totally dependent on holes and crevices in buildings for nesting but leave no mess. Swift boxes should be integrated into taller new buildings using ‘swift bricks’ or ‘swift blocks’. Externally mounted boxes can also be used but have a shorter life span than integrated features. Both types are most effective at attracting swifts when used with a swift ‘call system’.

Bat boxes should also be integrated into new buildings, or durable boxes placed on trees where there is a low risk of interference.

Site name: Airport Farm Kennels

Site ref: IP152
Site status: No wildlife designation
Grid ref: TM 198812 41199
Area: 7.34 hectares
Date: 29th July 2019
Recorder: J Crighton
Weather conditions: Warm, clear skies with moderate breeze, *ca.* 24°C
Ranking: 4 (potentially higher following more detailed surveys)
Biodiversity value: Medium

Map:



Photos:

Mature trees on northern boundary

Disused buildings in the south eastern corner

Looking west across the site

Bare ground with burrowing wasp holes on path along northern boundary

Habitat type(s):

Poor semi-improved grassland, dense/continuous scrub, species-rich intact hedgerow with trees, broad-leaved trees, bare ground, bracken

Subsidiary habitats:

Rot holes, stag-horned oak trees, fallen deadwood, brash piles

Site description:

This site lies directly north of the A14 near the Nacton Road roundabout and is bounded to the north by the former airport perimeter road. The land was previously in arable production but is now largely poor semi-improved grassland. There are a number of derelict buildings in the south eastern corner and the site is surrounded by trees, scrub and species-rich intact hedgerow. Some veteran oaks are present throughout the grassland.

Along the A14 edge, there is a large volume of litter from the road.

The site is partially located within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty, with the remainder of the site lying directly adjacent.

Protected species seen or known:
Records in the surrounding area include:
Soprano pipistrelle bat
Common pipistrelle bat
Noctule bat
Brown long-eared bat
Badger
Barn owl
Grass snake
Slow worm
Common lizard
Adder

Protected species potential:
-

Priority habitats present:
Hedgerow

Priority species seen or known:
Records in the surrounding area include:
Hedgehog
Swift (Suffolk Character Species)
Skylark
Song thrush
Dunnock
Linnet
Yellowhammer
Lesser redpoll
Starling
House sparrow
Stag beetle
Small heath butterfly
White admiral butterfly
White letter hairstreak butterfly

Priority species potential:
Cinnabar moth

Connectivity:
This site currently has excellent connectivity with similar habitats in the surrounding area (Site IP150) and lies east of Orwell Country Park, which encompasses Brazier's Wood, Pond Alder Carr and

Meadows County Wildlife Site (CWS) and Bridge Wood (ancient woodland) CWS is located to the south on the other side of the A14.

Structural diversity:

This site has good structural diversity offering a wide diversity of habitat structure, including bare ground with light sandy soil, areas with short and tall forbs and grasses, scrub, hedgerow and mature trees which will support a range of taxonomic groups.

Flora:

The main bulk of the site is occupied by species-poor grassland, including common grasses such as red fescue, false oat, cock's foot and Yorkshire fog. Tall herbs dominated for the most part by large stands of rosebay willowherb, weld, ragwort, Canadian fleabane and creeping thistle are present and scattered amongst these are other typical species of former arable soils such as prickly lettuce, curled dock, black horehound, lesser burdock, white campion, evening primrose, yarrow, bristly ox-tongue, mugwort, prickly sow thistle, spear thistle, teasel, bugloss, wild parsnip, great mullein, common mallow, hedge mustard, common nettle, hogweed and cow parsley. Four veteran oaks with stag-horned branches are situated in a diagonal line across the field.

Towards the edges, where there are rough, overgrown paths, there is a little more diversity including perforate St John's wort, scentless mayweed, hairy tare, common poppy, germander speedwell, rough chervil and white deadnettle as well as some patches of dry, bare ground with hare's foot clover, scarlet pimpernel, common cudweed, selfheal, sheep's sorrel, tormentil (Suffolk Rare Plant), shining crane's bill, common stork's bill, common cat's ear and common bent. Although some of these species, in particular, sheep's sorrel and common bent are more often associated with acid grassland, in this instance they are likely to be more indicative of the parched nature of the ground rather than pH.

Along the disused airport road in the north of the site, there are several mature oak and Corsican pine trees, some of which are ivy covered. There are also some more scrubby species including goat willow, hawthorn, elm, young sycamore, holly with bramble and honeysuckle. Toadflax and knotgrass were frequent along the path in the north, along with some pink wood sorrel (non-native).

On the A14 boundary, species rich hedgerow gives way to overgrown scrub with trees in the south-eastern corner around the derelict buildings which includes leylandii, elder, silver birch and cherry with bracken patches and a number of veteran oaks. The hedgerow comprises hazel, field maple, silver birch, hawthorn, broom, gorse, elder, plum, blackthorn, cherry and some scrubby oaks along with some mature white poplar and Corsican pine.

Avifauna:

It was a sub-optimal time of year for recording this group. However, the site offers good potential nesting sites for skylark and meadow pipit, with a large open expanse of grassland. The surrounding scrub, hedgerow and mature trees also offer additional nesting sites for common species and summer migrants. During the survey, goldfinch, linnet, blackbird and chaffinch were noted but the site is also suitable for species such as house sparrow, starling, dunnock, yellowhammer, song thrush and bullfinch.

Invertebrates:

This habitat is likely to support a rich invertebrate community. Nine species of butterfly were noted during the survey, including peacock, ringlet, painted lady, red admiral, large white, gatekeeper, small white, meadow brown and small skipper. Several day flying moths were also seen and the site is likely to support the Priority species, cinnabar moth, whose larval foodplant is common ragwort which is abundant on site. Ant hills were noted in the west of the site, indicating that the grassland here is relatively dry and undisturbed. In some areas a thick thatch of dead and rotting vegetation has formed which, along with fallen deadwood and brash piles, could support detritus feeding insects. Stag beetle larvae are likely to be present if there is any subterranean dead wood associated with the hedgerows. White letter hairstreak butterflies (Priority Species) could also be present due to the presence of elm on the boundaries.

Several small holes, likely made by ground burrowing bees and wasps were visible along the dry, sandy path along the north of the field. Buff-tailed bumble bee and common carder bee were seen along with a large number of grasshoppers, crickets and spiders.

Herpetofauna:

The long grass and hedgerow edging along with areas of bare ground offer suitable foraging, refuge, hibernation and basking opportunities for common reptiles such as grass snake, common lizard and slow worm and potentially adder, which has a much more restricted range in Suffolk.

The brash piles and fallen deadwood could also offer valuable breeding and hibernation sites.

Mammals:

This site could provide important habitat for foraging and commuting bats. In addition, the veteran trees throughout the site and the perimeter have cracks, crevices and other features that have the potential to support roosting bats. The derelict buildings and a small pillbox on the northern boundary could also support roosting bats, with the later also potentially providing hibernation habitat.

There are a number of hedgehog records in the immediate area and the combination of grassland, scrub and hedgerow provides good foraging, refuge and hibernation opportunities for them.

Badger latrines were noted near the path along the northern boundary. Badgers are regularly recorded after road traffic accidents along the A14 and although no evidence of setts were observed during the visit, the dense scrub and hedgerow could have concealed any entrances. They are highly likely to use this site.

Rabbit activity in the form of burrows, scrapes and grazed lawns was evident.

Common species of mammal such as fox, deer and grey squirrel are likely to be present on this site. The rough grassland and boundary hedgerows are also likely to support mice, voles and shrews. Small predatory species such as stoat and weasel may also be present.

Comments and recommendations:

This site has been allocated as B1, B2 and B8 use with appropriate employment over an indicative capacity of 20,000 sq m. A secondary option includes discussion over the feasibility of utilising a small section of the site for Park & Ride facilities.

Further detailed surveys should be undertaken to assess the ecological interest of this site, particularly bats, badgers, reptiles, invertebrates and breeding birds, as well as impacts upon priority species.

Planning policy supports the mitigation hierarchy of avoid, minimise, remediate and only as a last resort, compensate. However, due to the nature of the existing habitats on this site, it is likely that future development will require compensation to avoid a biodiversity loss and to deliver net gain. Compensation for habitat loss can be on-site and/or off-site and is delivered through the creation of new habitat, restoring or enhancing existing habitats or occasionally, by accelerating successional processes. Off-site compensation habitat should be located as close as possible to the site and should seek to replicate the characteristics of the habitat(s) to be lost, taking account of the structure and species composition to provide local distinctiveness. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than habitats lost and wherever possible, should contribute to the wider ecological network.

Delivering net gain is independent of any wider requirements of planning policy or the need to comply with legislation relating to nature conservation or biodiversity.

New development should retain as much of the existing habitat as possible and integrate it within a landscaping scheme, in particular the hedgerows and mature trees along the boundaries. This will help retain the local biodiversity resource, with enhancement through additional habitat creation and long-term good habitat management practices.

Greenspaces should be interlinked to provide functional ecological corridors for a range of species and as much as possible they should connect with wider off-site ecological networks, therefore the scheme should maintain some open space adjacent to the A14 corridor, but ensure this space is still connected to similar habitat to the west and north via the perimeter.

Lighting schemes should be designed to reduce light spillage into the boundary hedgerows and scrub and any other habitat which may act as a wildlife corridor. Bats are particularly sensitive to increased light levels, so it is important to maintain dark corridors to support local ecological networks.

Careful planning and design can integrate the requirement for sustainable drainage systems with the creation of new wildlife habitat. Such places can also create aesthetically pleasing features which can also be integrated into landscaping schemes.

There is the opportunity to channel and store run-off through surface features such as swales, retention basins and ponds, resulting either in temporary or permanent water features. The design should incorporate a variety of features to maximise potential habitats niches and any planting should utilise native species. Where possible, existing habitats should be retained and integrated into the

system as this will result in greater species diversity. New habitats should be created taking into account local ecology and site conditions.

Additionally, green roofs can work as part of sustainable drainage options but also be designed to support wildflowers, grasses and sedums and in turn, these can benefit both foraging invertebrates and birds. Living walls can also be created as part of schemes that harvest rainwater or can utilise grey water sources. Aspect is important as shaded walls usually establish quickest. Climbers, such as ivy, are trained on wires or trellis or adapted planters can be used for other species. Green walls provide cover for birds such as house sparrow and shelter and foraging habitat for invertebrates.

In addition to this, action can be taken for individual species such as swifts, bats, reptiles and stag beetles.

Swifts are a declining migratory species that is almost totally dependent on holes and crevices in buildings for nesting but leave no mess. Swift boxes should be integrated into taller new buildings using 'swift bricks' or 'swift blocks'. Externally mounted boxes can also be used but have a shorter life span than integrated features. Both types are most effective at attracting swifts when used with a swift 'call system'.

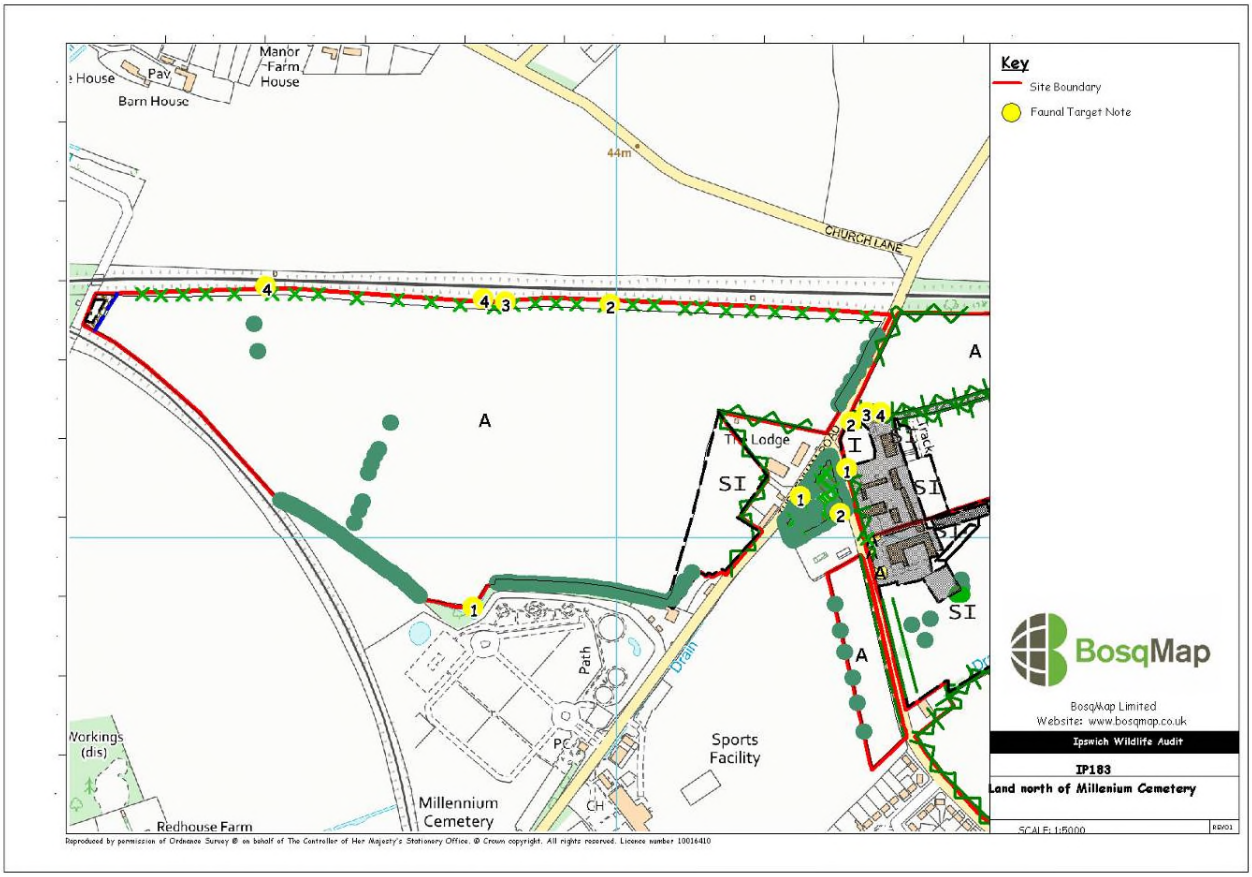
Bat boxes should also be integrated into new buildings, or durable boxes placed on trees where there is a low risk of interference.

If present, mitigation for impacts on the reptile population will be required and ideally populations should be retained on site in conjunction with additional habitat enhancement. In order to achieve this, log piles for basking reptiles sited over the top of a below-ground hibernacula could be incorporated into an undisturbed area of greenspace. Hibernacula can be created by filling holes (minimum 2m long by 1m wide, and up to 50cm deep) with log sections. This should be covered with topsoil and turf, allowing access opportunities so that reptiles can easily enter the hibernacula at the appropriate time. These structures could also be used to provide stag beetle habitat if logs are buried to support their larvae.

Site name: Land north of Millennium Cemetery

Site ref: IP183
Site status: No wildlife designation
Grid ref: TM 17850 47103
Area: 21.72 hectares
Date: 23rd August 2019
Recorder: A Looser
Weather conditions: Hot and sunny, 26°C
Ranking: 5
Biodiversity value: Low

Map:



Photos:

View westwards along northern boundary

Pill box on Northern boundary (Target Note 4)

View south-westwards toward relic hedgerow trees

Potential bat roosting feature in aspen along southern edge

Habitat type(s):

Arable, poor semi-improved grassland, tree belt, species-poor hedgerow, scattered scrub

Subsidiary habitats:

-

Site description:

This large arable field is bordered by the railway line to the north and south-west. The Millennium Cemetery lies to the south of the site and Tuddenham Road with its associated properties forms the eastern boundary. Within the arable field there are mature trees, which were once part of an old hedge line. In the south-eastern boundary is an area of poor semi-improved grassland. There are two WW2 pill boxes along the northern boundary (Target Note 4).

Protected species seen or known:

Records in the surrounding area include:
Soprano pipistrelle bat
Common pipistrelle bat
Noctule bat
Serotine bat

Barn owl
Badger
Great Crested Newt
Common lizard

Protected species potential:
-

Priority habitats present:
Hedgerows

Priority species seen or known:
Records in the surrounding area include:
Hedgehog
Stag beetle
Common toad
Brown hare
Small heath butterfly
Wall butterfly
Grayling butterfly
BoCC Red List birds include turtle dove, skylark, house sparrow, starling, yellowhammer, linnet, lapwing, cuckoo, herring gull and lesser redpoll
BoCC Amber List birds include bullfinch, swift (Suffolk Character Species) and song thrush

Priority species potential:
White-letter hairstreak butterfly

Connectivity:
The railway embankments along with the tree belt to the south that borders the cemetery provide excellent connectivity to the wider landscape.

Structural diversity:
The site is almost entirely arable, so the structural diversity is poor. However, the hedgerows and field margins, along with the tree belt to the south and the in-field trees combine to add important structural value to this site.

Flora:
The wooded tree belt bordering the Millennium Cemetery has a good diversity of woody species including oak, ash, sycamore, aspen, hawthorn, blackthorn, field maple, elm, dogwood, dog rose and bramble. Many of the trees are ivy covered.

The arable field margins contain a range of species typical of this habitat type including poppy, scarlet pimpernel, field pansy, field bindweed, scentless mayweed, common field speedwell, spear thistle, creeping thistle, ragwort, perennial sow thistle, hop trefoil, dove's-foot cranesbill, black horehound, black nightshade, yarrow and field scabious (listed as declining on the Suffolk plant register).

There is an area of poor semi-improved grassland in the south-eastern corner of the field. This is dominated by grasses including cock's-foot and false oat with some common forbs including dandelion, bristly ox tongue, creeping buttercup, creeping thistle, spear thistle, cow parsley, ribwort plantain, hogweed, cow parsley and perennial sow thistle. Bracken grows along the railway margins.

Avifauna:

It was a suboptimal time of year for recording this group. The margins of the site and the mature trees provide the most opportunities for nesting, although the large arable field is good for ground nesting birds particularly skylark. Several common species including carrion crow, magpie, green woodpecker, greater spotted woodpecker, buzzard and blackcap were seen or heard during the visit. There are a number of records of Red and Amber listed species in the area which could be present on or use the site including declining farmland birds such as yellowhammer and linnet. Species such as lapwing could also use the field for foraging during the winter.

Invertebrates:

Arable farmland generally represents suboptimal habitat for invertebrate species. However, there will be a range of species associated with the woody features on the boundary and in-field trees. The field margins will provide some habitat for nectar feeding species. Stag beetles (Priority species) are likely to be present around the margins of the site as there is likely to be subterranean dead wood for their larvae. Common species of butterfly were seen during the visit including small white, red admiral, small tortoiseshell and speckled wood. White-letter hairstreak could also be present due to the elm along the boundaries.

Herpetofauna:

Great crested newt is known to breed in a pond within the Millennium Cemetery and there are other records in the area. Common toad is also recorded in this area. There is a very heavily shaded pond on the southern boundary (Target Note 1), but this was dry in summer 2012 and again held no water at the time of this visit. Whether it supports breeding amphibians will depend on if it holds any water in the spring.

A common lizard was seen on the northern field margin adjacent to the railway line (Target Note 3).

Mammals:

There is a record of hazel dormouse approximately 700m to the east and the densely wooded section along the southern boundary is suitable them if they are present within the wider landscape. Bats are highly likely to use the boundary features for foraging and commuting and some of the trees have potential roost features.

An outlier badger sett was recorded in the 2012 Wildlife Audit and this was still present and with a greater degree of activity, with additional holes indicating this may now be a main sett (Target Note 2).

Brown hare may be present, but this is a wide-ranging species.

Common mammal species such as fox, grey squirrel, rabbit and muntjac deer will also be present.

Comments and recommendations:

No information is provided regarding any future proposals for this site.

Development proposals should be informed by detailed ecological surveys, to include various groups but particularly botanicals, bats, hazel dormouse, great crested newt, reptiles, badger and breeding birds.

The scheme should retain the existing habitat on the boundaries and strengthen it by integration with new landscaping proposals to connect with ecological networks in the wider landscape. This will help retain the local biodiversity resource, with enhancement through additional habitat creation and delivery through long-term good habitat management practices.

Careful planning and design can also integrate the requirement for sustainable drainage systems with the creation of new wildlife habitat. Such places can also create aesthetically pleasing features which can also be integrated into landscaping schemes. On a site of this size, there is the opportunity to channel and store run-off through surface features such as swales, retention basins and ponds, resulting either in temporary or permanent water features. The design should incorporate a variety of features to maximise potential habitats niches and any planting should utilise native species. New habitats should be created taking into account local ecology and site conditions.

Action can be undertaken for individual species or groups depending on the nature of the proposal. For example, holes in fences for hedgehog should be part of new housing proposals, to deliver landscape permeability for this wide-ranging, declining species. Toad, another UK Priority species, will also benefit from holes in garden fences. There is a pond in the woodland edge on the southern boundary which is heavily shaded and dry most of the year, so largely unsuitable for amphibians. Management work to de-silt this pond and remove some of the canopy to let light in, possibly linked to a sustainable drainage scheme, would benefit this habitat.

Invertebrates should be supported by creation of wildflower meadows or log piles for saproxylic invertebrates such as stag beetle. Swifts are a declining migratory bird species that are almost totally dependent on holes and crevices in buildings for nesting but leave no mess. Swift boxes should be integrated into taller new buildings such as office blocks or flats using ‘swift bricks’ or ‘swift blocks’. Externally mounted boxes can also be used but have a shorter life span than integrated features. Both types are most effective at attracting swifts when used with a swift ‘call system’.

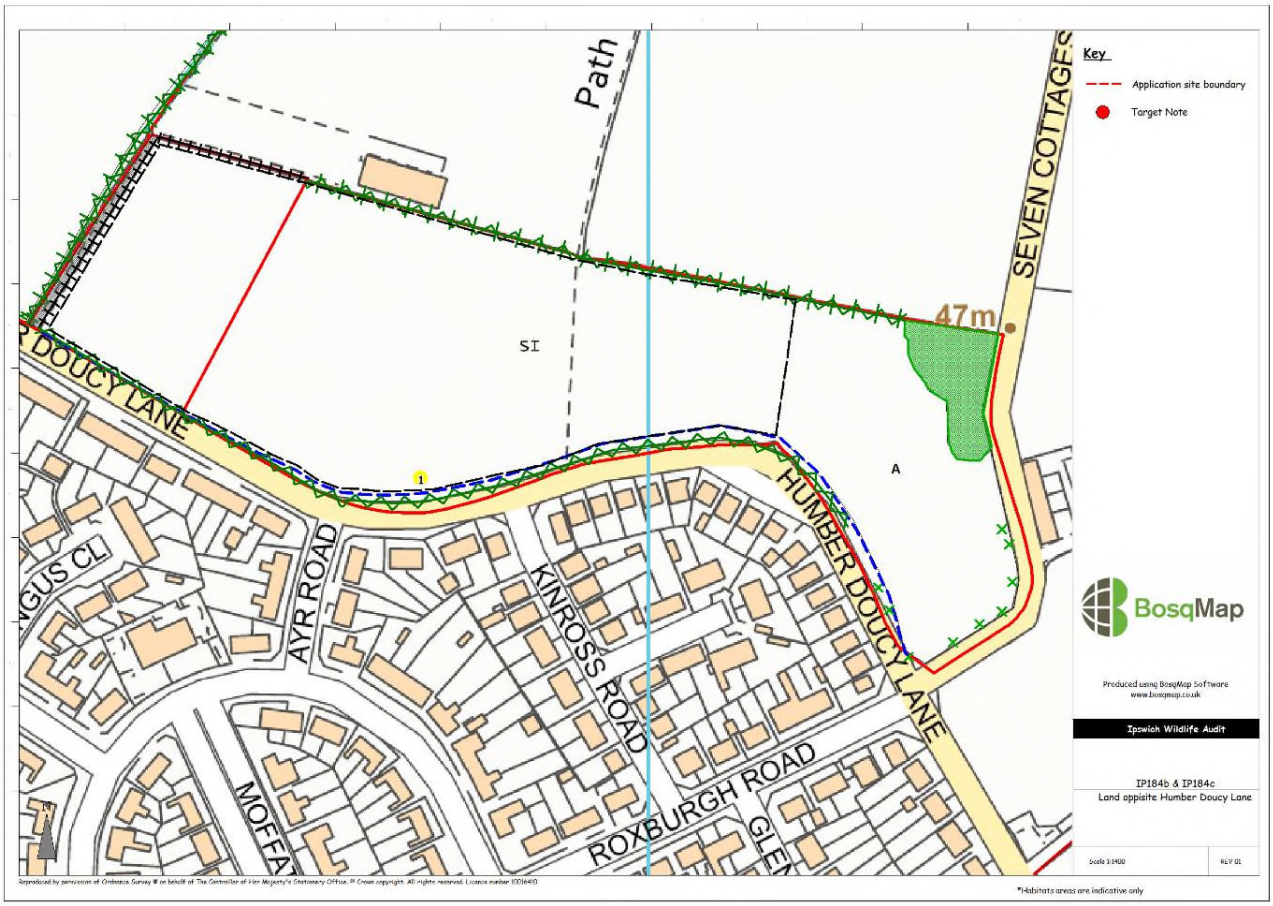
The two WW2 pill boxes along the railway line could be adapted to make them suitable for bat hibernation. This would involve putting a locked door on the existing entrance to reduce winter temperature fluctuation and also public access. Roosting features such as tiles and bat bricks would be added inside the pill box to increase the opportunities for bats to roost and hibernate.

Site name: Land Opposite 341 to 447 Humber Doucy Lane

Site ref: IP184a/IP184b/IP184c
Site status: No wildlife designation
Grid ref: TM 18595 46678/TM 18780 46488/TM 18980 46419
Area: 10.1 hectares/0.85 hectares/3.99 hectares
Date: 24th July 2019
Recorder: J Crighton
Weather conditions: Clear sky, no wind, *ca.* 32°C
Ranking: 5, 4, 4
Biodiversity value: Low/Medium

Map:

IP184a



The west of this site is IP184b and IP184c is the larger site in the east

Photos:

IP184a Hedgerow alongside Humber Doucy Lane

IP184b Playing field adjacent Rugby Club

IP184c Arable field adjacent playing field

IP184c Playing field

IP184c Stag-horned trees with bat potential

Habitat type(s):

Arable field, poor semi-improved grassland, intact species-rich hedgerow, intact-species-rich hedgerow with trees, semi-natural broad-leaved woodland, scattered broad-leaved trees, scattered scrub

Subsidiary habitats:

Standing deadwood

Site description:

These sites are located on the north-eastern edge of Ipswich, to the north-east of Humber Doucy Lane. A detailed survey was not undertaken for IP184a as it was inaccessible from the road. It could only be assessed from the track which runs along the south eastern boundary, between the site and IP184b. The site is currently under arable production with a cereal crop present. It is lined with a species-rich hedgerow with trees on its boundary with the track, Humber Doucy Lane and Site IP280

in the north. It is a small section of a much larger arable field.

IP184b is south of the aforementioned track, opposite 367 to 381 Humber Doucy Lane. It is currently used as a sports pitch by Ipswich Rugby Club and therefore is relatively short-mown right up to the perimeter. Despite this, the sward represents a poor semi-improved habitat rather than low value amenity grassland.

IP184c lies directly south of IP184b, opposite 341 to 365 Humber Doucy Lane. The site is mainly used as additional training ground/sports fields for Ipswich Rugby Club, but the southeastern-most section is sown with cereal crop. The sports fields are largely poor semi-improved grassland but towards the southern boundary, there is some evidence of a more species rich sward which may be present throughout if the mowing regime was relaxed (Target Note 1). A small pocket of woodland is present in the north-eastern corner of the site. The northern hedgerow contains some standards and deadwood.

A species-rich hedge runs the length of these three sites along Humber Doucy Lane which is likely to be of ancient origin. Similarly, the hedge along the east of IP184a (west of the track) has a ditch and bank, as does the hedge on the west of this site, so may also represent old field boundaries. This hedge is likely to be classed as 'important' under the Hedgerow Regulations 1997. The north-eastern boundary of these sites is the Rushmere St Andrew parish boundary.

Protected species seen or known:
Records in the surrounding area include:
Soprano pipistrelle bat
Common pipistrelle bat
Noctule bat
Serotine bat
Barn owl

Protected species potential:
Badger

Priority habitats present:
Hedgerow

Priority species seen or known:
Records in the surrounding area include:
Hedgehog
Stag beetle
Common toad
Brown hare
Small heath butterfly
Wall butterfly
Grayling butterfly
BoCC Red List birds include turtle dove, skylark, house sparrow, starling, yellowhammer, linnet, lapwing, cuckoo, herring gull and lesser redpoll

BoCC Amber List birds include bullfinch, swift (Suffolk Character Species) and song thrush

Priority species potential:
White-letter hairstreak butterfly

Connectivity:
These sites have moderate connectivity with similar habitats through a network of field boundaries and hedgerows.

Structural diversity:
The structural diversity of these sites is relatively poor, as the majority of the space is occupied with either arable crop or short-mown grassland. However, some aspects of the site add greater diversity to small areas. These include the dry ditch with scrub, the boundary hedgerows and the small area of woodland which could offer a range of habitats to a number of taxonomic groups.

Flora:
An ancient species-rich hedgerow runs the length of these three sites along Humber Doucy Lane and includes several woody species including field maple, blackthorn, elm, ash, field rose, spindle, elder, hazel, dogwood and ivy. Associated with this hedgerow is a dry ditch, currently heavily overgrown with bramble.

Within the sites, IP184a is an arable field currently sown with a cereal crop, similar in nature to the south-easternmost section of IP184c.

IP184b, although more heavily managed than IP184c, contains similar species within the expanse of mown grassland including red fescue, creeping bent, perennial rye, cock's foot and smaller cat's tail grasses with common forbs such as red and white clover, autumn hawkbit, selfheal cut-leaved crane's bill, dandelion, ribwort and greater plantain, daisy and common mouse ear. The northern perimeter, near the hedgerow was noticeably more parched than the rest of the site and the southern perimeter, close to the hedgerow bounding Humber Doucy Lane was more species-rich with large swathes of bird's foot trefoil with agrimony and field speedwell.

The hedgerow along the northern boundary of IP184c contains a large number of elm trees with hawthorn, blackthorn, dog rose and field maple with oak standards. Some Alexanders, nettle and cow parsley are present amongst the ground flora around the foot of the hedge.

A small pocket of woodland is present in the north-eastern corner of IP184c, adjacent the arable field. It is mainly comprised of ash with field maple but was only viewed from a distance, so a detailed assessment was not carried out.

Avifauna:
It was a sub-optimal time of year for recording this group, and the extreme hot weather meant there was little bird activity noted. However, the hedgerows, scrub and woodland provide good potential nesting and foraging sites with house sparrow, starling, great tit and wood pigeon recorded during the survey.

The sites have potential to support yellowhammer, bullfinch, dunnock and skylark.

Invertebrates:
The majority of these sites were either an arable crop or short mown grassland which provide sub-optimal habitat for invertebrates. However, the mature trees, hedgerows and marginal vegetation (particularly the more species-rich areas around the perimeter of IP184c) adjacent to open grassland offer a range of habitats providing shelter and variable microclimates, which will be very attractive to invertebrates. Within IP184c, gatekeeper, meadow brown and large white butterflies were recorded along with red-tailed bumblebees. The northern boundary hedgerow within this site contains a large number of elms, which are the food plant of the white-letter hairstreak caterpillar (Priority species).

The ancient hedgerow could support stag beetle larvae within any sub-terranean deadwood present. Oak trees support a particularly high insect biomass and the large number of hawthorn, blackthorn and bramble around the perimeter provide an important nectar and pollen source.

Herpetofauna:
There are limited opportunities for this group within these two sites, however the hedgerows, scrub and field margins may be used as transitory habitat for amphibians and reptiles.

Mammals:
The mature trees in this site, most notably the oaks, contain cracks, crevices knot holes and stag-horned trees which offer potential roosting features for bats, which are also likely to commute and forage along the network of hedgerows.

No evidence of a badger sett was found but this did not constitute a detailed survey, and a sett could be present within areas which were inaccessible during the survey. Badgers are also likely to forage around the field boundaries.

A number of hedgehog records exist from Humber Doucy Lane and the associated residential areas, and they are likely to use the hedgerows and field margins for refuge and foraging. The bramble scrub offers attractive prospects for hibernating hedgehogs.

Common species of mammal such as fox, rabbit and deer species are likely to forage on these sites. Mice, voles and shrews are also likely to be present in the field margins, scrub and hedgerows.

Comments and recommendations:
The proposed developments are for residential development on all sites, estimated to be deliverable within 11-15 years.

IP184a and IP184c are part of a larger development around Humber Doucy Lane for the allocation of 496 dwellings (see site allocation ISPA4). IP184b has an indicative capacity of 30 dwellings at low density (35dph).

These developments are subject to consultation with the neighbouring local planning authority (East Suffolk District Council) due to some sites spanning the Borough boundary, and also the provision of replacement facilities for the Rugby Club.

Detailed ecological surveys should be undertaken to inform any future proposals.

New development should retain as much of the existing habitat as possible and integrate it within a landscaping scheme, to deliver locally accessible natural greenspace. The hedgerows are an important part of this landscape and should be buffered against development. In addition, any lighting scheme should be designed to prevent light spillage onto these boundary habitats. Bats are particularly sensitive to increased light levels, so it is important to maintain dark corridors to support local ecological networks. These actions will help retain the local biodiversity resource, with enhancement through additional habitat creation and long-term good habitat management practices. Greenspaces should be interlinked to provide functional ecological corridors for a range of species and as much as possible they should connect with wider off-site ecological networks. New planting should seek to use native species typical of the local area.

Delivering net gain is independent of any wider requirements of planning policy or the need to comply with legislation relating to nature conservation or biodiversity.

Careful planning and design can integrate the requirement for sustainable drainage systems with the creation of new wildlife habitat. Such places can also create aesthetically pleasing features which can also be integrated into landscaping schemes.

There is the opportunity to channel and store run-off through surface features such as swales, retention basins, ponds and rain gardens resulting either in temporary or permanent water features. The design should incorporate a variety of features to maximise potential habitats niches and any planting should utilise native species. Where possible, existing habitats should be retained and integrated into the system as this will result in greater species diversity. New habitats should be created taking into account local ecology and site conditions.

Additionally, there is the opportunity to provide enhancements for individual species such as swifts, hedgehogs, stag beetles, reptiles and invertebrates.

Swifts are a declining migratory species that are almost totally dependent on holes and crevices in buildings for nesting but leave no mess. Swift boxes should be integrated into taller new buildings using ‘swift bricks’ or ‘swift blocks’. Externally mounted boxes can also be used but have a shorter life span than integrated features. Both types are most effective at attracting swifts when used with a swift ‘call system’. Bat boxes should also be integrated into new buildings, or durable boxes placed on trees where there is a low risk of interference.

As reptiles are likely to be present around the site boundaries, a log pile for basking reptiles over the top of a below-ground hibernacula should be incorporated into an undisturbed area of greenspace. Hibernacula can be created by filling holes (minimum 2m long by 1m wide, and up to 50cm deep) with loose log sections. This should be covered with topsoil and turf, allowing access opportunities so that reptiles can easily enter the hibernacula at the appropriate time. This would also benefit stag beetles.

Holes in fences for hedgehog should be part of new housing proposals, to deliver landscape permeability for this wide-ranging, declining species.

If there was a commitment to regular maintenance, then a wildflower area could be sown to benefit invertebrates. The mix should include species typical of the prevailing soil conditions, eg. either sandy and free draining or if there are heavier soils. Wildflower areas are left uncut until mid-July/August and then cut, with a second cut in September.

In areas of public open space, interpretation panels should be used to showcase the presence of on-site habitats and species and help people understand the needs of wildlife.