

Savills

**Fakenham, Norfolk**

**ECOLOGICAL APPRAISAL**

July 2006

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## 1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR on behalf of Savills to identify any habitats and/or species that may affect the proposed development. It provides details of a Phase 1 habitat assessment and protected species surveys covering bats, badgers, great crested newts, watervoles and birds.
- 1.2 The site is comprised of a series of arable fields, two poultry farms and associated buildings, Lime Tree Farm and some industrial units on Water Moor Lane. The town of Fakenham bounds the site to the south and the A148 to the north and west, to the east are further arable fields and a food supermarket (Figure 1).
- 1.3 The baseline ecology of the site and its surrounds has been reviewed and the character / nature conservation value of habitats and species assessed. The aims of the study were:
- To characterise all the habitats present at the site, including woodland, grassland, hedgerows and the built environment;
  - To compile species lists for semi-natural vegetation in and around the development;
  - To assess species distribution and diversity;
  - To identify habitats of nature conservation value in terms of a local, regional and national context;
  - To identify the areas of ecological interest and make recommendations to minimise the potential impacts of site operations and where feasible, to consider the opportunities for additional habitat creation.
- 1.4 The industrial units on Water Moor Lane and Laurel Poultry Farm were inaccessible at the time of survey, as much as possible of the land was surveyed using binoculars.

## 2.0 METHODOLOGY

### Flora

#### Habitats

- 2.1 The site was surveyed during July 2006 using the standard extended Phase 1 habitat assessment methodology, as adopted by English Nature (Joint Nature Conservation Committee, 1993). This involved a systematic walkover of the site classifying the habitat types present and marking them on a base map. Target notes were used to record features or habitats of particular interest, as well as any sightings or evidence of protected or notable species. Where habitats or features of particular interest were identified detailed notes and species lists were taken. Whilst plant species lists obtained should not be regarded as extensive, sufficient information was obtained to determine broad habitat types and relative value.
- 2.2 The value of each habitat was assessed with regard to:
- Plant species present,
  - The structure of each habitat,
  - National, regional and local references.

### Fauna

#### Protected Species

- 2.3 During the survey of the site, observations, identification or signs of any species protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended), the Conservation (Natural Habitats & c.) Regulations 1994 and the Protection of Badgers Act 1992 were noted, particular attention being given to the presence of bats, badger *Meles meles*, great crested newts *Triturus cristatus* and water vole *Arvicola terrestris*.

#### Bats

- 2.4 Bats and their roosts are afforded protection in Britain through the Wildlife and Countryside Act 1981, and under the Habitats and Species Directive (92/43/EC), enacted in the UK through the Conservation (Natural Habitats, & c.) Regulations 1994.
- 2.5 Mature trees within the site were examined for cavities, cracks, fissures and rot holes or other features that could provide suitable roost sites. In addition any physical evidence of an active roost site such as staining and the presence of bat droppings was recorded. This survey was undertaken from ground level, with the aid of binoculars.

### Badgers

2.6 Badgers and their setts are afforded protection through the Protection of Badgers Act 1992. They are also included on Schedule 6 of the Wildlife and Countryside Act 1981, and Appendix III of the Bern Convention.

2.7 Evidence of badger activity was sought within and on land falling within 30m of the survey site and included:

- Setts (including main, annexe, subsidiary and outlier),
- Faeces and latrines,
- Prints and trackways,
- Guard-hairs caught on rough wood and fencing,
- Snuffle holes, scratching posts and general feeding activity,
- Corpse evidence.

2.8 The identification of any snuffle holes, scratching posts or feeding signs on their own does not necessarily provide conclusive evidence of the presence of badgers and a number of such signs need to be seen in conjunction before they can be said to be conclusive of badger activity.

### Reptiles

2.9 Evidence of reptile use / habitat suitability was sought within the site boundary. This included:

- Habitat mosaics of bare ground, short, and longer vegetation,
- Features suitable for refugia / hibernation,
- Connectivity with suitable surrounding habitat.

### Amphibians

2.10 Any water bodies found within the site were noted and described so as to indicate the potential to support an amphibian population, including great crested newts. This includes confirmation of physical features known to be preferred by crested newts and amphibians generally, such as the size of the water body, the amount of overshadowing by trees and other vegetation and the amount of aquatic vegetation within the pond.

### Wolverine

2.11 Watercourses were described to indicate their likely potential as to suitable habitat for wolverines including the degree of bankside and emergent vegetation, bank shape and angle and size and flow of the watercourse. Watercourses were also examined for physical signs of wolverines, including:

- Prints
- Latrines

- Holes visible in the banks typical of the species
- Grazed 'lawns' along aquatic margins
- Feeding stations

#### Other species

2.12 Throughout the survey consideration was also given to the existence and use of the site by other notable fauna such as Biodiversity Action Plan (BAP) or Red Data Book (RDB) species.

#### **Consultation for existing data**

2.13 Consultations for existing data regarding statutory and non-statutory species and habitats of interest to nature conservation were sent to the Norfolk Wildlife Trust, Norfolk Biological Records Office and the local badger and bat groups. The Multi-Agency Geographic Information for the Countryside mapping website [www.magic.gov.uk](http://www.magic.gov.uk) was searched for information regarding the location of statutory nature conservation sites.

### 3.0 RESULTS (refer to Figure 1)

#### Flora

##### Arable

- 3.1 The majority of field compartments were comprised of arable fields. Target note 1 on figure 1 shows the two fields in set-aside. The remainder of the arable fields contained wheat, barley and potatoes. These fields were intensively managed and supported a low species diversity with diversity rising towards the field margins and hedge bases species commonly associated with such nutrient enriched areas including mugwort *Artemisia vulgaris*, field bindweed *Convolvulus arvensis*, hogweed *Heracleum sphondylium*, spear thistle *Cirsium vulgare* and scarlet pimpernel *Anagallis arvensis*.

##### Improved grassland

- 3.2 The field compartments adjacent to Lime Tree Farm and Brick Kiln Poultry Farm are comprised of improved grassland paddocks that are grazed by horses and sheep. The species diversity in these fields was generally low and typical of intensively managed land. The grass species were a mixture of common improved grassland species including yorkshire fog *Holcus lanatus*, perennial ryegrass *Lolium perenne* and annual meadow-grass *Poa annua*. Herb species present included ox-eye daisy *Leucanthemum vulgare*, ribwort plantain *Plantago lanceolata*, broadleaved dock, *Rumex obtusifolius*, common poppy *Papaver rhoeas* and spear thistle *Cirsium vulgare*.

##### Hedgerows and trees

- 3.3 The majority of the field boundaries consisted of mixed native species hedgerows with occasional mature trees. There were occasional ornamental hedges around the residential properties and the food superstore. To the east and along the north boundary with the A148 the hedgerows were continuous, well managed and wide. The north/south and southern boundary hedgerows were, in the main, discontinuous and poorly managed. Target note 2 in figure 1 indicates a section of ornamental hedge that surrounds the food superstore and includes species such as variegated dogwood *Cornus sanguinea*, cherry laurel *Prunus laurocerasus* and Japanese cherry *Prunus serrulata*. The Laurel Farm boundary hedge with Thorpland Road is a second mainly ornamental hedge including cherry laurel *Prunus laurocerasus*, garden privet *Ligustrum ovalifolium* and leyland cypress X *Cupressocyparis leylandii*. Eight of the remaining hedges were comprised of five or more species such as field maple *Acer campestre*, hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, blackthorn *Prunus spinosa*, elder *Sambucus nigra* and wayfaring tree *Viburnum lantana*. The hedge base species included cow parsley *Anthriscus sylvestris*, field bindweed *Convolvulus arvensis*, hogweed

*Heracleum sphondylium*, common mouse-ear *Cerastium fontanum*, bracken *Pteridium aquilinum*, daisy *Bellis perennis*, cocksfoot *Dactylis glomerata* and yorkshire fog *Holcus lanatus*.

- 3.4 The majority of the hedgerows contained mature trees as standards including ash *Fraxinus excelsior*, pedunculate oak *Quercus robur*, field maple *Acer campestre* and sycamore *Acer pseudoplatanus*. The trees were mature with dead branches, signs of decay and cracks/fissures.

#### Tall ruderal

- 3.5 Target notes 3 and 4 indicate the two areas of tall ruderal vegetation. These areas were on disturbed ground and along a trackway with a remnant hedge. The species diversity was low comprising species such as common ragwort *Senecio jacobaea*, creeping thistle *Cirsium arvense*, hogweed *Heracleum sphondylium*, great willowherb *Epilobium hirsutum*, field forget-me-not *Myosotis arvensis*, field poppy *Papaver rhoeas*, wild teasel *Dipsacus fullonum*, nettle *Urtica dioica* and yarrow *Achillea millefolium*. The dominant grass species included false oat-grass *Arrhenatherum elatius*, yorkshire fog *Holcus lanatus* and cocksfoot *Dactylis glomerata*.

#### Scrub

- 3.6 The northern boundary with the A148 has a planted native species buffer zone alongside the hedge, the ground flora is generally typical of disturbed ground. The planted species included hazel *Corylus avellana*, field maple *Acer campestre*, blackthorn *Prunus spinosa*, ash *Fraxinus excelsior*, silver birch *Betula pendula*, cornelian cherry *Cornus mas* and wayfaring tree *Viburnum lantana*. The ground flora included hogweed *Heracleum sphondylium*, bracken *Pteridium aquilinum*, field bindweed *Convolvulus arvensis*, spear thistle *Cirsium vulgare*, common knapweed *Centaurea nigra*, silverweed *Potentilla anserina* and along a footpath lords-and-ladies *Arum maculatum*.
- 3.7 Scrub has naturally regenerated in the field adjacent to Laurel Farm, around the pond, to the north and south of the industrial units and scattered around the improved grassland off Rudham Stile Lane. These areas are dominated by hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.

#### Pond

- 3.8 There is one pond on site close to the northern boundary with the A148. The pond has a radius of about 7m, the depth could not be estimated due to the level of suspended solids and colour of the water. The sides were steep, about a 45° angle and vegetated with ivy *Hedera helix*, nettle *Urtica dioica*, bramble *Rubus fruticosus* agg. and great willowherb

*Epilobium hirsutum*. Yellow water lily *Nuphar lutea* was the only aquatic plant, in the area that could be seen, there was no emergent vegetation, possibly due to over shading by the surrounding trees. The pond was surrounded by four mature trees of pedunculate oak *Quercus robur* and ash *Fraxinus excelsior* and a scrub layer of hawthorn *Crataegus monogyna* and elder *Sambucus nigra*. The surrounding trees and shrubs have added leaf litter and fallen branches to the pond, these will have decayed and added nutrients and debris to the water thereby depleting it of oxygen and causing it to be anoxic and black.

#### Buildings

- 3.9 There were six building complexes on the site including the two poultry farms, residential buildings and the industrial units. The poultry sheds, Lime Tree Farm sheds and industrial units were of breeze block, timber and corrugated asbestos/tin construction. The two residential properties that could be seen were of brick and tile construction with wooden fascias.

#### **Fauna**

- 3.10 No evidence of badgers was seen during the walkover survey.
- 3.11 There were no ditches or water courses on site that could support water vole.
- 3.12 No reptiles were observed on suitable refugia within the site during the survey.
- 3.13 A brown hare *Lepus europaeus* was observed in the set-aside field (TN1).

#### **Consultation**

- 3.14 Responses from the Norfolk Biological Records Centre and the Norfolk Badger Group have been received and provide the following information.
- 3.15 The protected species records show water vole *Arvicola terrestris*, freshwater crayfish *Austropotamobius pallipes* and Daubenton's *Myotis daubentoni* and Pipistrelle *Pipistrellus pipistrellus* bats using the River Wensum corridor. Barn owl *Tyto alba* have been observed about half a kilometre to the north west of the site.
- 3.16 The Norfolk Badger Group confirm that there are no records within the search area of 2km radius, the closest records are to the south of Fakenham along the River Wensum corridor.
- 3.17 A search of the MAGIC website confirms that the only statutory designated site within the 2 km search area is the River Wensum which has been designated for its entire length as

an example of an enriched, calcareous lowland river. At its closest it is 1.5km away from the site. Due to the lack of water courses on site it is not felt that this will be a constraint on site.

## **4.0 DISCUSSION**

- 4.1 The main arable and improved grassland habitats were of low species diversity and were determined to be of low conservation value. The hedgerows were considered to be of low ecological value primarily due to their lack of connectivity and isolation from other hedgerows, although, the species diversity in the majority of hedgerows is good. The scrub areas provide cover and foraging areas for birds and mammals. The mature hedgerow trees have potential to support bat roosts and possibly barn owls, although no indications of the presence of these species were observed during the survey. Consequently, minimal impacts to the local ecological resource are predicted from loss of the arable and grassland habitats, however the hedgerow trees and scrub areas have conservation potential.
- 4.2 No Japanese knotweed or other invasive plants listed in schedule 9 of the Wildlife and Countryside Act 1981 were observed on site.
- 4.3 No evidence of badger activity was identified within the site or on accessible land surrounding the site. Consequently, from the current survey evidence and the consultation responses, it has been determined that there are no statutory constraints from the presence of badgers.
- 4.4 The farm sheds were constructed of breeze blocks and corrugated asbestos, these buildings have very limited potential to support bat roosts. The residential properties were well constructed and offer low/moderate potential to support bat roosts.
- 4.5 The pond is considered to be too steep-sided and shaded with little emergent vegetation to support great crested newts. This is the only pond on site although there is one located in the school grounds to the south, it is not within 500m of Pond 1. There are about twelve ponds to the north of the site (consultation with OS Explorer 251), to the north of the A148, however the presence of a busy road is considered to be a barrier to the movement of great crested newts north/south.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

- 5.1 Consideration should be given to retaining and gapping up the existing hedgerows and potentially creating a network north/south and east/west.
- 5.2 If development requires removal of on site hedgerows and areas of dense scrub, such areas should be removed outside the bird-breeding season (March - September, inclusive).
- 5.3 Due to the potential of the hedgerow trees supporting bat roosts, if the trees are to be removed, a close inspection should be carried out on the identified trees by qualified tree climbers or through roost/emergence surveys depending on the time of year to ascertain the use of the trees by bats. If the residential buildings are to be demolished a closer internal inspection will help ascertain their potential to support bat roosts.
- 5.4 Although Pond 1 is considered to have low potential for great crested newts it is recommended that four presence/absence surveys are carried out to determine whether they are present. These should be undertaken between mid March and mid June following English Nature standard guidelines.

## Appendix 1 Species List

### Arable (including field margins)

<i>Anchusa arvensis</i>	bugloss
<i>Veronica persica</i>	common field speedwell
<i>Heracleum sphondylium</i>	hogweed
<i>Anisantha sterilis</i>	barren brome
<i>Arrhenatherum elatius</i>	false oatgrass
<i>Anagallis arvensis</i>	scarlet pimpernel
<i>Cirsium vulgare</i>	spear thistle
<i>Geum urbanum</i>	herb bennet
<i>Leontodon autumnalis</i>	autumn hawkbit
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Matricaria discoides</i>	pineapple weed
<i>Plantago lanceolata</i>	ribwort plantain
<i>Poa annua</i>	annual meadow-grass
<i>Rumex obtusifolius</i>	broad-leaved dock
<i>Senecio jacobaea</i>	common ragwort
<i>Solanum tuberosum</i>	potato
<i>Urtica dioica</i>	common nettle
<i>Papaver rhoeas</i>	common poppy
<i>Tripleurospermum inodorum</i>	scentless mayweed

### Improved Grassland

<i>Cirsium vulgare</i>	spear thistle
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Matricaria discoides</i>	pineapple weed
<i>Plantago lanceolata</i>	ribwort plantain
<i>Poa annua</i>	annual meadow-grass
<i>Rumex obtusifolius</i>	broad-leaved dock
<i>Senecio jacobaea</i>	common ragwort
<i>Urtica dioica</i>	common nettle
<i>Papaver rhoeas</i>	common poppy
<i>Tripleurospermum inodorum</i>	scentless mayweed
<i>Ranunculus repens</i>	creeping buttercup
<i>Taraxacum officinale agg.</i>	dandelion
<i>Trifolium repens</i>	white clover
<i>Lolium perenne</i>	perennial ryegrass
<i>Holcus lanatus</i>	Yorkshire fog

### Hedgerow/Tree (including hedge base)

<i>Acer campestre</i>	field maple
<i>Acer pseudoplatanus</i>	sycamore
<i>Cornus sanguinea</i>	dogwood
<i>Cornus mas</i>	cornelian cherry
<i>Corylus avellana</i>	hazel
<i>Crataegus monogyna</i>	hawthorn
<i>Fagus sylvatica</i>	beech
<i>Fraxinus excelsior</i>	ash
<i>Ilex aquifolium</i>	holly
<i>Ligustrum ovalifolium</i>	garden privet
<i>Ligustrum vulgare</i>	wild privet
<i>Malus sylvestris</i>	crab apple
<i>Prunus laurocerasus</i>	cherry laurel
<i>Prunus padus</i>	bird cherry
<i>Prunus spinosa</i>	blackthorn
<i>Quercus robur</i>	pedunculate oak
<i>Salix 'Chrysocoma'</i>	weeping willow
<i>Sambucus nigra</i>	elder
<i>Ulmus procera</i>	English elm

<i>Viburnum lantana</i>	wayfaring tree
<i>XCupressocyparis leylandii</i>	leyland cypress
<i>Cerastium fontanum</i>	common mouse ear
<i>Anthriscus sylvestris</i>	cow parsley
<i>Artemisia vulgaris</i>	mugwort
<i>Convolvulus arvensis</i>	field bindweed
<i>Galium aparine</i>	cleavers
<i>Hedera helix</i>	ivy
<i>Heracleum sphondylium</i>	hogweed
<i>Arctium minus</i>	lesser burdock
<i>Pteridium aquilinum</i>	bracken
<i>Rosa canina</i>	dog-rose
<i>Rubus fruticosus</i>	bramble
<i>Sonchus arvensis</i>	sow thistle
<i>Urtica dioica</i>	common nettle
<i>Cirsium arvense</i>	creeping thistle
<i>Bellis perennis</i>	daisy
<i>Dactylis glomerata</i>	cocksfoot
<i>Geranium dissectum</i>	cut-leaved cranesbill
<i>Epilobium hirsutum</i>	great willowherb
<i>Euphorbia peplus</i>	petty spurge
<i>Verbascum thapsus</i>	great mullein
<i>Holcus lanatus</i>	yorkshire-fog
<i>Rumex obtusifolius</i>	broad-leaved dock
<i>Veronica persica</i>	common field speedwell
<i>Humulus lupulus</i>	hop
<i>Stachys arvensis</i>	field woundwort
<i>Stachys sylvatica</i>	hedge woundwort
<i>Papaver rhoeas</i>	common poppy
<i>Anchusa arvensis</i>	bugloss

Tall ruderal

<i>Achillea millefolium</i>	yarrow
<i>Arrhenatherum elatius</i>	false oat-grass
<i>Artemisia vulgaris</i>	mugwort
<i>Chamerion angustifolium</i>	rosebay willowherb
<i>Cirsium arvense</i>	creeping thistle
<i>Convolvulus arvensis</i>	field bindweed
<i>Dactylis glomerata</i>	cocksfoot
<i>Dipsacus fullonum</i>	teasel
<i>Epilobium hirsutum</i>	great willowherb
<i>Heracleum sphondylium</i>	hogweed
<i>Holcus lanatus</i>	yorkshire-fog
<i>Myosotis arvensis</i>	field forget-me-not
<i>Potentilla anserina</i>	silverweed
<i>Papaver rhoeas</i>	field poppy
<i>Picris echinoides</i>	bristly oxtongue
<i>Plantago major</i>	greater plantain
<i>Quercus robur</i>	pedunculate oak
<i>Rosa canina</i>	dog-rose
<i>Rubus fruticosus</i>	bramble
<i>Rumex crispus</i>	curled dock
<i>Rumex obtusifolius</i>	broad-leaved dock
<i>Senecio jacobaea</i>	common ragwort
<i>Stachys arvensis</i>	field woundwort
<i>Urtica dioica</i>	common nettle

Scrub

<i>Acer campestre</i>	field maple
<i>Betula pendula</i>	silver birch

*Cornus sanguinea*  
*Cornus mas*  
*Corylus avellana*  
*Crataegus monogyna*  
*Fraxinus excelsior*  
*Prunus spinosa*  
*Quercus robur*  
*Sambucus nigra*  
*Viburnum lantana*  
*Arum maculatum*  
*Centaurea nigra*  
*Cirsium vulgare*  
*Convolvulus arvensis*  
*Hedera helix*  
*Heracleum sphondylium*  
*Matricaria discoidea*  
*Papaver rhoeas*  
*Plantago lanceolata*  
*Plantago major*  
*Potentilla anserina*  
*Pteridium aquilinum*  
*Rubus fruticosus*  
*Rumex obtusifolius*  
*Senecio jacobaea*  
*Urtica dioica*

dogwood  
cornelian cherry  
hazel  
hawthorn  
ash  
blackthorn  
pedunculate oak  
elder  
wayfaring tree  
lords-and-ladies  
common knapweed  
spear thistle  
field bindweed  
ivy  
hogweed  
pineappleweed  
common poppy  
ribwort plantain  
greater plantain  
silverweed  
bracken  
bramble  
broad-leaved dock  
common ragwort  
common nettle

Pond

*Fraxinus excelsior*  
*Sambucus nigra*  
*Quercus robur*  
*Hedera helix*  
*Crataegus monogyna*  
*Urtica dioica*  
*Epilobium hirsutum*  
*Nuphar lutea*

ash  
elder  
pedunculate oak  
ivy  
hawthorn  
common nettle  
great willowherb  
yellow water lily