# MAYDENCROft

## PRELIMINARY ECOLOGICAL APPRAISAL

## Site at Lands Southeast of Northaw Road East Cattlegate Farm, Cuffley, Hertfordshire

**OCTOBER 2014** 

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#### **Executive Summary**

It is proposed to install approximately 1,600m of pipeline from the anaerobic digestion plant on Cattlegate Farm to land west of Northaw Road East. The proposed route runs around a number of arable fields, alongside Northaw Road East and around the rear garden of Wells Farm.

The majority of the route (some 1,075m) was found to comprise arable land and compacted soil with no ecological interest or importance. The remainder of the route crosses species-poor rough grassland, short-mown highway verge and some ruderal vegetation on field margins. It also crosses two small drainage ditches.

The habitats which are directly affected by the route were found to be ecologically poor and unimportant. Their potential to support protected or important species was also thought to be unlikely.

Some habitat such as the Hempshill Brook, mature trees and both intact and defunct hedgerow is found adjacent to the proposed pipeline route which may be affected in some minor areas. These habitats however were only found to support low potential for nesting birds; no other protected or important species were thought likely in these areas. Whilst no ecological constraints have been identified with the installation of the pipeline, a precautionary approach is advised to avoid disturbance to nesting birds in adjacent habitats.



#### 1.0 Introduction

Maydencroft Limited was commissioned by Metropolis Green to conduct a Preliminary Ecological Appraisal survey of land covering the route of the Primary Distribution District Heat Network (pipeline) for the connection of the Cattlegate Farm Anaerobic Digestion Plant Location. The survey was conducted on 30<sup>th</sup> September 2014 by Keith Seaman Consultant Ecologist with Maydencroft Limited. The objective of the survey was to assess the potential of the site (in this case, the route of the pipeline) to support protected or important species and/or habitats which may be a development constraint for the site.

#### 1.1 Background & Terms of Reference

In 2010, Maydencroft Limited was commissioned to carry out an Extended Phase One and European Protected Species Survey & Report and Wildlife Habitat Plan for the site of a new anaerobic digester at Cattlegate Farm, in Cuffley, south Hertfordshire.

In September 2014, Maydencroft Limited was commissioned to carry out a Preliminary Ecological Appraisal of the route of a new Primary Distribution District Heat Network (pipeline) linking the anaerobic digester with a proposed residential development on land at Northaw Road East, also in Cuffley.

The indicative proposals for the application site which define the application site boundary upon which this ecological study is concerned are found in drawing '*Land at Northaw Road East, Cuffley*' – Metropolis Green (undated). The survey was undertaken of the route illustrated in plate 1 of this report.

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#### 2.0 Methodology & Technical Approach

#### 2.1 Desk Study

To provide contextual background to this study a biological data search to locate all records of protected and notably important species within a two kilometre radius around the site has been made of the Hertfordshire Environmental Records Centre (HERC).

#### 2.2 Site Survey

This report has been produced following the *Guidelines for Preliminary Ecological Appraisal* 2012 (Institute of Ecology and Environmental Management) and details the results of an Extended Phase 1 Habitat Survey. An Extended Phase 1 Habitat Survey consists of a description of the habitats implicated in the study within the site carried out in accordance with the *Handbook for Phase 1 Habitat Survey* revised reprint 2010 (JNCC). It also includes an assessment of the site's habitats as to their likely importance for protected or notably important species and habitats, as identified under the following legislation; The Conservation of Habitats & Species Regulations 2010, the Wildlife & Countryside Act (as amended) 1981, the Protection of Badgers Act 1992 and the Natural Environment & Rural Communities (NERC) Act 2006.

If relevant, the relative ecological value of the site has been appraised using standard guidelines (Byron, 2000), which have been incorporated into guidelines for *Ecological Impact Assessment* published by the Institute of Ecology and Environmental Management 2006. The guidelines provide a qualitative and quantitative appraisal of the ecological value of the site.

It should be noted that any habitats such as boundary hedgerows, even though they may not technically be found within the survey site boundary, have been included as their presence may materially affect the site's ecological condition and potential value.

In addition, the site's mature trees have been assessed for bat roosting potential. The specified and adopted methodology for this survey has been carried out in accordance with the guidelines published by Natural England and the Bat Conservation Trust (*Bat Workers' Manual 3<sup>rd</sup> Edition*, 2004, English Nature and *Bat Surveys Good Practice Guidelines 2<sup>nd</sup> Edition*, The Bat Conservation Trust, 2012).

Based on a set of 'roosting probability criteria', the trees on site have been evaluated as to whether they have a negligible, very low, low, medium or high probability value for roosting. This set of criteria is subjective, but based on the experience of the surveyor. The appended chart details the criteria used for this assessment and have been used as a guide to influence and inform the survey results and what, if any, further detailed activity surveys are necessary.

#### 2.3 Constraints

This initial ecological assessment of the proposed pipeline route is based on a subjective assessment of the potential for the route to support important species and/or habitats. The conclusions reached are primarily based on the expertise of the assessor, with limited species-specific survey data used. The site was fully accessible and the survey was carried out at an appropriate time of year.



#### 3.0 **Results**

#### 3.1 Desk Study

There are no internationally important sites, statutory sites, local nature reserves or Hertfordshire & Middlesex Wildlife Trust Nature Reserves within the 2km radius data search area. There are 11 non-statutory County Wildlife Sites (CWSs) – Northaw Brook Pastures (ref. 79/002), Northaw Brick Kiln Area (ref. 79/004), Home Wood (Cuffley) (ref. 79/007), The Dell (Cuffley) (ref. 79/017), Cattlegate Wood (ref. 79/018), Hook Copse (ref. 79/022), Grassland by Hook Copse (ref. 79/023), Meadow E of Park Road, Northaw (ref. 79/043), Park Road Pastures (ref. 79/058), Cuffley Station Embankment (ref. 80/010) and Cattlins Wood (ref. 80/059).

A number of protected and notably important species have been recorded within the data search area.

There are two records of slow worm (*Anguis fragilis*) dated 1960 and 1985, from the Cuffley area. In addition, there are five records of grass snake (*Natrix natrix*) dated between 1965 and 1997 from the East Ridgeway, Cuffley and Cuffley areas. There are also two records of common lizard (*Zootoca vivipara*) dated 1985 and 1987.

There are two records of common toad (*Bufo bufo*) both dated 1985, with no locations given and three records of great crested newt (*Triturus cristatus*) dated between 1985 and 1999, from the Ridgeway area.

Several records of invertebrates have also been received from the HERC. Three species of butterfly have been recorded within the data search area; small heath (*Coenonympha pamphilus*), white-letter hairstreak (*Satyrium w-album*) and wall (*Lasiommata megera*). In addition, 47 species of moth have also been recorded within the data search area and a full list of these is appended. Finally, there are four records of stag beetle (*Lucanus cervus*) dated 1947 and 1959 from the Cheshunt and Waltham Cross areas.

A number species of notably important plant have been recorded within the data search area; bluebell (*Hyacinthoides non-scripta*), butcher's-broom (*Ruscus aculeatus*), large white-moss (*Leucobryum glaucum*), blunt-leaved bog-moss (*Sphagnum palustre*) and cow-horn bog-moss (*Sphagnum denticulatum*).

Three protected or notably important species of bird have also been recorded from the 2km radius data search area; kingfisher (*Alcedo atthis*), reed bunting (*Emberiza schoeniclus*), and song thrush (*Turdus philomelos*).

Several species of mammal have been recorded within the data search area. There are two records of hedgehog *(Erinaceus europaeus)*, dated 1985 and 1997. There are 38 records of badger *(Meles meles)* dated between 1979 and 2011, with no locations given. In addition, there is a single record of brown hare *(Lepus europaeus)* dated 1985, with no location given and four records of water vole *(Arvicola amphibious)* all dated 1987. Finally, there are two records of hazel dormouse *(Muscardinus europaeus)* and the second seco

*avellanarius*) dated 1972 and 1985 from the Goffs Oak area and a single record of harvest mouse dated 1985, with no location given.

A number of bat species have also been recorded. There are six records of unidentified bats (*Chiroptera sp.*), 23 records of Natterer's (*Myotis nattereri*), 13 records of common pipistrelle (*Pipistrellus pipistrellus*), a single record of soprano pipistrelle (*Pipistrellus pygmaeus*) and five records of brown long-eared (*Plecotus auritus*). Finally, there are eight records of Daubenton's (*Myotis daubentonii*) bat.



#### 3.2 Site Survey

Plate 1: Aerial view of the indicative pipeline route, in its landscape context

For ease of assessment and interpretation of the results, the pipeline route has been divided into sections; these sections are purely arbitrary and do not necessarily reflect changes in ecology, importance or relevance.

#### Section 1

This section of the route is approximately 570m in length and runs parallel with the three garden boundaries of Wells Farm. The route runs alongside a low, intact hedge of hawthorn (*Crataegus monogyna*) and bramble (*Rubus fruticosa agg.*) with some dog rose (*Rosa canina*). The pipeline route runs on arable land with no semi-natural habitat. The route continues parallel with the Wells Farm north-eastern garden boundary and runs through a large field margin grassland headland, dominated by rough grasses including; cocksfoot (*Dactylis glomerta*), false oat grass (*Arrhenatherum elatius*) and red fescue (*Festuca rubra*) out onto the Northaw Road East highway verge.



The pipeline route runs south-east for 233m, parallel with Northaw Road East, on the grass verge. The verge appears typical amenity grassland, maintained short by the local authority. A length of formal *leylandii* type hedge which connects to a length of intact hawthorn and blackthorn (*Prunus spinosa*) hedge also runs close and parallel with the pipeline route. At the end of this section, located on the opposite side of the intact hawthorn hedge is a wild garden pond.



#### Section 2

Crossing Northaw Road East and dry ditch of the highway verge, the pipeline route runs southeast for 233m. The route crosses through a cluster of mature trees; common lime (*Tilia x vulgaris*), horse chestnut (*Aesculus hippocastanum*) and hawthorn. It extends south-east on the arable field margin, running beside the Hempshill Brook, on ruderal and short ephemeral vegetation consisting of nettle (*Urticia dioica*), hogweed (*Heracleum sphondylium*), false oat grass, cocksfoot, cow parsley and dove's foot cranesbill (*Geranium molle*). Growing on either side of the brook is a gappy, defunct hedge of sycamore (*Acer pseudoplatanus*), sallow (*Salix sp*) and hawthorn with limited amounts of hedge oak (*Quercus robur*), ash (*Fraxinus excelsior*) and suckering elm (*Ulmus sp*).



#### Section 3

The pipeline route crosses a small feeder ditch into the brook and continues for 272m across arable land, with no semi-natural vegetation.





#### Section 4

The pipeline route continues for 277m east, across a small feeder ditch into the brook and parallel with the brook and defunct hedge over bare soil and then through some very short grass on the field margin and under the railway viaduct. The short grass was interspersed with short ephemeral vegetation including mayweed (*Tripleurospermum inodorum*), mugwort (*Artemisia vulgaris*) and creeping buttercup (*Ranunculus repens*).



#### Section 5

The route turns south towards the anaerobic digestion plant along bare soil and a compacted vehicular access route for approximately 300m.



#### 4.0 Discussion of Results

#### 4.1 Habitats

Few habitats are directly affected by the proposed installation of the pipeline. The majority of the pipeline either runs through arable fields or bare and compacted soil. It is approximately 1,072m of a total length of 1,646m.

The remainder of the pipeline route crosses a length of what appears to be species-poor rough grassland, close-mown highway verge, and a length of ruderal vegetation growing on a field margin. The route also cuts through a line of mature trees alongside the Northaw Road East.

All the habitats directly affected by the route of the pipeline appear typical of vegetation growing on field margins and road edges, containing common nutrient-rich species of plant which thrive in disturbed conditions.

Habitats not directly affected but found in close proximity to the pipeline route include the Hempshill Brook and various sections of riparian hedgerow in a defunct and intact condition. The brook was found to have small amounts of flowing water, often overshadowed by vegetation, but with no discernible aquatic or submerged vegetation. Whilst the hedge, which runs parallel with the route and Northaw Road East was found to be intact, the majority of the hedgerow which runs across the arable fields is defunct, in poor condition, largely very gappy and lacking in quality habitat.



#### 4.2 Species

None of the habitats directly affected by the pipeline are likely to support protected or important species. The majority for the route runs though arable land or bare and compacted spoil which would not support important species.

Habitats running in close proximity to the pipeline such as the mature trees, the defunct and intact hedgerow have the potential to support nesting birds, but were found to lack the potential to support roosting bats.

The brook was searched for evidence of water vole but none was found, suggesting the absence of water vole in the brook which runs parallel to the pipeline route.

One pond is found in close proximity to the proposed pipeline route, however, great crested newts are not recorded from that pond or in close proximity to the site; great crested newts are recorded from the Ridgeway area. Therefore, there is no suggestion that great crested newts could be a development constraint at this stage.

#### 4.3 Ecological Evaluation

The pipeline is proposed to run through arable land, bare and compacted soil of no ecological value. Some limited areas of semi-natural vegetation are directed affected by the route, however these habitats are small, common habitats growing on arable margins on disturbed and nutrient-rich soils; their ecological value is low, particularly as they are unlikely to support important or protected species. None of the land on which the route is proposed is regarded as ecologically important and none is designated as a site of importance for nature conservation.

#### 5.0 Recommendations

#### 5.1 Further Surveys

No further or species-specific surveys are thought necessary to facilitate the installation of the pipeline at this time.

#### 5.2 Mitigation

Mitigation is not thought necessary for the installation of the majority of the pipeline. However, where the route passes close to trees or hedgerows, care should be exercised not to disturb nesting birds.

#### 5.3 Biodiversity Enhancement

The Natural Environment & Rural Communities (NERC) Act 2006 places an obligation on public bodies to promote biodiversity gain, including within development. Most local planning authorities will require proposals to support a planning application for biodiversity gain which is proportionate to the size and environmental impact of the development.

These biodiversity enhancements should be designed and constructed in consultation with an Ecologist, should the local planning authority require such enhancements.

#### 6.0 References

*Guidelines for Preliminary Ecological Appraisal* 2012 (Institute of Ecology and Environmental Management)

Handbook for Phase 1 Habitat Survey revised reprint 2010 (JNCC)

*Guidelines for Ecological Impact Assessment* 2006 (Institute of Ecology and Environmental Management)

Bat Surveys Good Practice Guidelines 2<sup>nd</sup> Edition 2012 (Bat Conservation Trust)



## Appendix I.Impact Assessment Methodology

Value Category	Site or Ecological Feature	
International	All internationally important Sites or candidate/proposed Sites.	
	Regularly occurring, internationally significant population of	
	protected or important species.	
National/	SSSIs and other nationally designated Sites.	
Regional	Regularly occurring, regionally or nationally significant population	
C	of European Protected Species or habitats.	
	Regularly occurring, locally significant population of a regionally	
	important species.	
County/	County designated Sites (CWS) Other Sites with BAP priority	
District	habitats or species of appreciable value.	
	Regularly occurring, locally significant population of a County	
	important species.	
	Local Nature Reserves and other viable areas of key habitat identified	
	in the County BAP.	
	Area of habitat identified in a District/Borough BAP and other	
	natural or semi-natural Sites of significant biodiversity.	
	Regularly occurring, locally significant population of a	
	District/Borough important species during a critical stage of its life	
	cycle.	
Neighbourhood	Sites with some biodiversity.	
Negligible	Sites with little or no biodiversity and minimal nature conservation	
	value.	

Valuing Ecological Receptors

#### Level/Magnitude of Ecological Effects

Magnitude of	Effect on Valued Ecological Resource and Feature
effect	
Major negative	The change is likely to cause a permanent adverse effect on the integrity of
	an ecological receptor.
Intermediate	The change adversely affects the valued ecological receptor, but there will
negative	probably be no permanent effect on its integrity.
Minor negative	The change adversely affects the valued ecological receptor but not in a
_	significant way. And will not affect its integrity.
Neutral impact	No observable effect on any valued ecological receptors
Minor	The change is likely to benefit the receptor in terms of its conservation
beneficial	status, but not so as to achieve favourable conservation status.
Major	The change is likely to restore an ecological receptor to favourable
beneficial	conservation status, or to create a feature of recognisable value.



### Impact Significance

Level	Major negative	Intermediate	Minor	Neutral	Minor	Major
		negative	negative		beneficial	beneficial
International	Substantial	Large adverse	Moderate adverse	Neutral	Slight positive	Large positive
National/	Substantial	Large adverse	Slight adverse	Neutral	Slight positive	Large positive
Regional		-	-			
County/	Large adverse	Moderate adverse	Slight adverse	Neutral	Slight positive	Large positive
District						
Neighbourhood	Slight adverse	Slight adverse	Slight adverse	Neutral	Slight positive	Large positive
Negligible	Neutral	Neutral	Neutral	Neutral	Slight positive	Large positive

#### Chart of bat roosting probability and value to bats

Negligible	No potential roosting features and/or bat habitat in close proximity to the site.	
probability value		
Very low	Very low number of potential roosting features, with no indicative signs of usage, located in very	
probability value	poor bat habitat, with no discernable feeding, foraging or commuting habitat.	
Low probability	A low number of potential roosting features, but not likely to support an important roost such as a	
value	maternity or hibernacula.	
	Location in poor or isolated bat foraging habitat such as a highly urbanized/industrial environment,	
	not connected to linear commuting features, but with isolated lone trees or patches of scrub.	
Moderate	Several potential roosting features, and/or the presence of bat droppings.	
probability value	Habitat suitable for foraging and feeding bats, but may be limited in extent or connectivity to linear	
	features such as lines of trees, scrub or linked back gardens.	
High probability	Numerous potential roosting features, and/or the presence of bat droppings, including scattered	
value	and accumulations.	
	Buildings or structures typically used by roosting bats.	
	Close proximity and/or connectivity of high quality bat feeding habitat such as woodland, open or	
	running water, grazed pasture, rural hedgerows and marsh/wetlands.	
	Close to known roosting or bat activity.	

## Appendix II. Protected & Notably Important Species Legislation & Protection

#### Birds

Legislation covering bird protection includes; The Birds Directive (1979), the Wildlife & Countryside Act 1981 (as amended), the Countryside & Rights of Way (CROW) Act 2000.

A number of British birds are UK Priority Species for Conservation and Species of Principal Importance under the Natural Environment and Rural Communities (NERC) Act 2006. The protection of UK BAP Priority Species and Species of Principal Importance is implemented through NPPF and Local Planning Policy.

All birds, their nests and eggs are protected by law and it is thus an offence (with certain exceptions), to:

- intentionally kill, injure or take any wild bird
- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built
- intentionally take or destroy the egg of any wild bird
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

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## Appendix III. Habitat Map



## Appendix IV. Protected & Notably Important Species of Moth

Common Name	Latin Name		
Grey Dagger	Acronicta psi		
Knot Grass	Acronicta rumicis		
Beaded Chestnut	Agrochola lychnidis		
Green-brindled Crescent	Allophyes oxyacanthae		
Mouse Moth	Amphipyra tragopoginis		
Large Nutmeg	Apamea anceps		
Dusky Brocade	Apamea rervissa		
Deep-brown Dart	Aporophyla lutulenta		
Garden Tiger	Arctia caja		
Sprawler	Asteroscopus sphinx		
Centre-barred Sallow	Atethmia centrago		
Minor Shoulder-knot	Brachylomia viminalis		
Mottled Rustic	Caradrina morpheus		
Crescent	Celaena leucostigma		
Latticed Heath	Chiasmia clathrata		
Small Square-spot	Diarsia rubi		
Figure of Eight	Diloba caeruleocephala		
Small Pheonix	Ecliptopera silaceata		
September Thorn	Ennomos erosaria		
Dusky Thorn	Ennomos fuscantaria		
Spinach	Eulithis mellinata		
Garden Dart	Euxoa niaricans		
White-line Dart	Euxoa tritci		
Double Dart	Graphiphora augur		
Small Emerald	Hemistola chrvsoprasana		
Rustic	Hoplodrina blanda		
Rosy Rustic	Hydraecia micacea		
Brindled Beauty	Lycia hirtaria		
Lackey	Malacosoma neustria		
Dot Moth	Melanchra persicariae		
Pretty Chalk Carpet	Melanthia procellata		
Shoulder-striped Wainscot	Mythimna comma		
Powdered Ouaker	Orthosia aracilis		
Large Wainscot	Rhizedra lutosa		
Mullein Wave	Scopula marainepunctata		
Shaded Broad-bar	Scotoptervx chenopodiata		
White Ermine	Spilosoma lubricipeda		
Buff Ermine	Spilosoma luteum		
Hedge Bustic	Tholera cespitis		
Feathered Gothic	Tholera decimalis		
Blood Vein	Timandra comae		
Pale Eggar	Trichiura cratagai		
Cinnabar	Tyria jacobaeae		
Oak Hook-tip	Watsonalla hinaria		
Sallow	Xanthia icteritia		
Common fan-foot	Perhipago striailata		

Records of moth within the data search area.



#### Disclaimer

Every effort has been made to ensure that the content of this report accurately identifies the potential ecological constraints to development, its overall ecological value, and considered the possibility of the presence or absence of all Protected Species and the need for further surveys or ecological works. External factors such as weather conditions, time of day, seasons, disturbance by others, can all affect the use of the site by such species, and this report should therefore not be viewed as definitive.

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16 October 2014