FOUR ACRE SITE, LITTLEMOOR, CLITHEROE

ECOLOGICAL SURVEY AND ASSESSMENT

June 2011 [Amended April 2012]

[ERAP Ltd ref: 2010_270b]

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A SUMMARY

i. ERAP Ltd (Consultant Ecologists) was commissioned by The Trustees of the Standen Estate to carry out an Ecological Appraisal of the Four Acre Site, Littlemoor, Clitheroe. The survey was required to support a planning application for a residential development at the Site.

ii. The assessment presents the results of a desktop study and comprehensive ecological surveys of the Site carried out in June and July 2011. The scope of surveys undertaken is sufficient to enable the identification and accurate assessment of any potential ecological constraints and opportunities associated with the development proposals.

iii. The Site lies to the immediate south of Clitheroe and comprises a single field unit of improved grassland grazed by cattle. The Site boundaries are marked by hedgerows, fences and walls and standard mature and semi-mature trees and shrubs.

iv. The Site does not support any rare or uncommon plant species. Neither of the two boundary hedgerows are classed as 'important' in accordance with *The Hedgerows Regulations 1997*, however hedgerows are listed as a UK Biodiversity Action Plan (BAP) Priority Habitat. The Site does not support any other UK BAP Priority Habitats, or form part of a significant wildlife corridor.

v. No invasive weeds listed under Schedule 9 of the *Wildlife and Countryside Act 1981*, such as Japanese Knotweed, Indian Balsam and Giant Hogweed are present within the Site.

vi. No protected species were recorded within the Site. Three trees within the Site have potential for use by roosting bats owing to the presence of cracks and splits. Guidance in relation to the appropriate protection of the trees, in conjunction with the development proposals, is provided within this report. Guidance is also provided in relation to the enhancement of the roosting opportunities within the developed site for bats.

vii. The trees and scrub are assessed to be suitable for use by nesting birds. All wild birds are protected by the *Wildlife and Countryside Act 1981* while they are nesting. Guidance in relation to the retention and protection of the trees and protection of nesting birds is presented in this report. The presence of House Sparrow and Dunnock, both UK BAP Priority Species is recognised. Guidance is provided in relation to the enhancement of the opportunities for nesting and feeding birds, including UK BAP Priority Species, within the developed site.

viii. Section 5 of this report describes the mandatory and precautionary measures to be applied to ensure compliance with all EU and UK wildlife legislation, Natural England guidance, the National Planning Policy Framework (NPPF), local planning policy and best practice. Where possible, practical and reasonable opportunities to seek net biodiversity gain by appropriate management, habitat creation and landscape planting have been identified and incorporated into the development proposals. The recommendations are in accordance with the guidance in the NPPF, associated documents and other relevant planning policy.

ix. Based on the survey information presented in this assessment, it is concluded that the principle of the proposed development at the Four Acre Site, Littlemoor, Clitheroe is acceptable in terms of ecological considerations. The proposals provide an opportunity to enhance and improve local biodiversity through landscape planting and habitat creation. This conclusion is valid provided that guidance detailed in Section 5 of this report is implemented.

1.0 INTRODUCTION

1.1 ERAP Ltd (Consultant Ecologists) was commissioned by The Trustees of the Standen Estate to carry out an Ecological Appraisal of the Four Acre Site, Littlemoor, Clitheroe. The Site covers an area of 1.75 hectares and the central grid reference is SD 7421 4088.

1.2 The survey was requested to support a planning application for a residential development at the Site.

1.3 The scope of the ecological study is detailed below: -

a. Desktop study of existing survey information and known ecological records;

b. An Extended Phase 1 Habitat Survey and assessment and preparation of a report describing the survey methodology applied and the habitats/wildlife present;

c. A breeding bird survey;

d. An assessment of the ecological value of the habitats within the Site with the use of the National Vegetation Classification (NVC) and the Ratcliffe criteria (A Nature Conservation Review 1977), the National Vegetation Classification (NVC) and with reference to the UK Biodiversity Action Plan (BAP) and Lancashire BAP;

e. The identification of any potential development constraints, and;

f. The specification of the scope of mitigation and enhancement required in accordance with wildlife legislation, planning policy guidance, other relevant guidance and best practice.

2.0 METHODOLOGY

2.1 Desktop Study and Data Search

2.1.1 The following sources of information and ecological records were consulted for information: -

1. MAgiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation Sites.

2. National Biodiversity Network (NBN Gateway).

3. Lancashire Biodiversity Action Plan (BAP).

2.1.2 The Biological Records Officer at Lancashire County Council Environment Directorate was contacted and a data search for ecological records within an approximately 2 kilometre radius of from the centre of the Site was obtained.

2.2 Vegetation and Habitats

2.2.1 The vegetation at the Site and surrounding land was surveyed on the 25th June 2011 by Mr Brian Robinson B.Sc. (Hons) AIEEM. The weather on this date was overcast with 100% cloud cover, occasional light drizzle, little wind (Beaufort scale 1) and an air temperature of 19^0C.

2.2.2 A follow up survey was conducted by Mr. Brian Robinson on the 19th July 2011 owing to minor access constraints encountered during the first survey (see section 2.4, Survey Limitations, below). The weather on this date was overcast with 100% cloud cover, dry, little wind (Beaufort scale 1) and an air temperature of 16^0C. Conditions on both survey dates were suitable for surveys of this type.

2.2.3 A vegetation and habitat map was prepared for the Site and the immediate surrounding areas on a scale of approximately 1:2,000 (refer to **Figure 1**). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.4 The principal and constant plant species within the Site boundaries were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system (where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare) this being a widely used and accepted system employed by ecological surveyors.

2.2.5 All hedgerows present within the Site were surveyed in accordance with the *Hedgerows Regulations 1997*.

2.2.6 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the *Wildlife and Countryside Act 1981* and indicators of important and uncommon plant communities. All higher plant nomenclature follows Stace (1991). Lower plant nomenclature follows Atherton, Bosanquet & Lawley (2010).

2.2.7 Searches were carried out for the presence of invasive species, including those listed on the revised (April 2010) Schedule 9 Section 14(2) of the *Wildlife and Countryside Act 1981*, including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Animal Life

Badger

2.3.1 A search for Badger activity was carried out within the Site and at adjacent habitats where access was possible.

2.3.2 The following signs of Badger activity were searched for: -

- 'D' shaped sett entrances at least 25cms wide and wider than they are high with large spoil mounds
- Discarded bedding at sett entrances (this includes grass and leaves)
- Scratching posts on shrubs and trees close to a sett entrance
- The presence of Badger hairs which are coarse, up to 100mm long with a long black section and a white tip
- Dung pit latrines and footprints
- Trampled pathways through vegetation and beneath fences.

Bats

2.3.3 No buildings will be affected by the development proposals. This report has been prepared on the understanding that the houses adjacent to the site are outside the development proposals and will not be affected.

2.3.4 All trees within the Site and on the Site boundaries were examined for features such as cracks, holes, splits and lifted bark which may be suitable for use by roosting bats. Searches

were conducted by Brian Robinson (Natural England licence number 20113323), who has over 5 years experience of conducting bat surveys. Features were examined from the ground using close-focus binoculars where appropriate.

2.3.5 An appraisal of habitat value for foraging and commuting bats was made as part of the walkover surveys.

Birds

2.3.6 A breeding bird survey was carried out by Mr. Chris Swindells B.Sc. (Hons) on the 2nd July 2011. Conditions during the morning survey were cloudy with sunny intervals, dry, little wind (Beaufort scale 1), and an air temperate rising from 14°C to 20°C. Conditions were suitable for a survey of this type.

2.3.7 The survey was conducted in accordance with methodology set out in Bird Monitoring Methods (RSPB, 1998) and following the standard recording methodology and codes of the British Trust for Ornithology (BTO) Common Birds Census (Marchant, 1983).

2.3.8 Habitats throughout the Site and immediate surrounding area were assessed for their potential value for roosting, feeding and nesting birds, as indicated by the amount of shelter and species diversity amongst the shrubs and trees in the Site.

Reptile species

2.3.9 An assessment of potential habitat value was made in relation to reptiles, with consideration of: -

a. Connectivity, for example the presence or absence of wildlife corridors in association with the Site;

b. Suitability of the Site for the support of sheltering, basking, breeding and hibernating reptile; and,

c. Consultation of known ecological records as reported in the desktop study.

Great Crested Newt

2.3.10 There are no ponds within the Site.

2.3.11 In accordance with the current Natural England guidance all ponds within a 500 metres unobstructed radius of a site should be surveyed/assessed for their potential presence to support Great Crested Newts. Habitats in the wider area up to a distance of 500 metres from the Site were examined for the possible presence of ponds (refer to **Figure 1**). The search revealed the presence of one reservoir: -

Pond	Grid reference	Condition	Location
Reservoir near Primrose Road	SD 7391 4065	Dry	185 metres to the south-west. The terrestrial connectivity between the Site and the reservoir is poor for amphibians as it contains a major road (A671, or Whalley Road) and existing housing (refer to **Figure 1**).

2.3.12 Based on the absence of suitable habitat the presence of Great Crested Newts at the Site and the local area can be reasonably discounted.

2.3.13 Similarly, owing to the absence of suitable habitat the presence of a significant population of other amphibians namely Common Toad, a UK BAP Priority Species, can be reasonably discounted.

Water Vole

2.3.14 The desktop study did not indicate the presence of any ditches or drains within or adjacent to the Site. The walkover survey confirmed the absence of any ditches or water-courses. The presence of Water Vole can be discounted at the Site.

2.4 Survey Limitations

2.4.1 On the 25th June 2011 access to view the north-western and south-western boundaries of the Site was restricted to examination from the land immediately outside the Site boundary owing to the presence of cattle in the field which became agitated as a result of the surveyor's presence.

2.4.2 The Site was re-visited on the 19th July 2011. The cattle were not present at this time and all areas of the Site were accessed.

2.4.3 In addition, cattle were not present during on the date the bird survey was carried out (2nd July 2011) and all areas of the Site were accessed at this time.

2.4.4 It is considered that, despite the minor access restrictions, a comprehensive and thorough ecology survey was achieved.

2.5 Evaluation Methodology

2.5.1 All stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and is widely used by Natural England and other wildlife organisations as well as ecological consultants to provide a scientific basis for the description and evaluation of habitats. The NVC provides a reliable framework for nature conservation and land-use planning.

2.5.2 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described by Ratcliffe (1977) and the Nature Conservancy Council (1989). These are; size (extent), diversity, naturalness, rarity, fragility, typicalness, recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

2.5.3 Government advice on biodiversity as set out in the *National Planning Policy Framework (NPPF)* (March 2012) and the associated circulars has been taken into consideration. The UK Biodiversity Action Plan (UK BAP) and the Lancashire Biodiversity Action Plan have been taken into account in the evaluation of the Ste.

3.0 RESULTS

3.1 Desktop Study

Designated Sites

3.1.1 There are no statutory designated sites within the Site or within two kilometres of the centre of the Site.

3.1.2 There are no non-statutory sites within the Site.

3.1.3 The desktop study confirmed the presence of two non-statutory sites within one kilometre of the Site which are designated as Biological Heritage Sites (BHS's). Details of the sites are given in **Table 1**, below;

Table 1: Non Statutorily Designated Sites Within 1km of the site.

Site	Grid reference	Distance from the Site
Primrose Lodge BHS	SD 739 410	200m to the west of the site.
Barrow Clough Wood	SD 736 399	940m to the south-west of the site.

3.1.4 Primrose Lodge has been designated as a BHS for its artificial habitats and its flowering plants and ferns. Although the BHS is within 185 metres of the Site, the intervening land offers poor wildlife connectivity between the Site and the BHS owing to the presence of existing built development and the A671 (Whalley Road). Any inter-relationship or direct impact on the Primrose Lodge BHS as a result of the proposals can be discounted.

3.1.5 Barrow Clough Wood has been designated for the presence of woodland and scrub habitat that meet the BHS selection criteria. The BHS is over 900 metres from the Site. There is no significant habitat connectivity between the Site and the BHS and the presence of this BHS requires no further consideration in this ecological assessment.

Protected and Notable Species

3.1.6 No known records of protected species or notable species are reported for the Site or the wider area.

3.1.7 Notable species are present in the wider area. Teal and Pochard (both Lancashire Biodiversity Action Plan (BAP) species) have been recorded within 500 metres of the Site (at Primrose Lodge BHS), and Curlew, Starling and Song Thrush, (all Lancashire and UKBAP species) have been recorded within 1 kilometre of the Site.

3.2 Vegetation and Habitats

Site Overview

Insert 1: Overview of the Site
(*Source image: Google Earth, image taken in 2002*)

3.2.1 The Site lies on the south-east urban edge of Clitheroe, approximately 900 metres from the town centre. The Site is bounded by a road to the south-east, Copperfield Close and playing fields to the north-east, the rear of properties fronting Whalley Road to the north and private properties to the south (refer to **Insert 1**). Please note: the cleared land to the north eastern corner of the image has subsequently been developed into a housing estate.

3.2.2 Further west, south and east the land use comprises fields of arable and pasture.

3.2.3 The Site supports a single field unit of agriculturally improved grassland which is currently grazed by cattle.

3.2.4 The north-western boundary of the field meets a 0.75 metre high mortared walls and 1 to 2 metre fencing associated with housing and a petrol station. The north-eastern boundary is marked by a 1.75 metre high mortared stone wall.

3.2.5 The south-eastern boundary of the field is marked by a hedgerow supported by post and rail fencing adjacent to Littlemoor Road (Hedgerow 1) and a Beech (*Fagus sylvatica*) hedgerow supported by post and rail fencing.

3.2.6 The south-western boundary of the field unit is marked by post and wire fencing, shrubs and a hedgerow (Hedgerow 2) beyond which lies a house, its associated gardens and an overgrown former plant nursery.

3.2.7 Semi-mature planted broadleaf trees and shrubs are present along the north-western and north-eastern boundaries, protected by post and wire fencing. Mature trees are present along the south-eastern boundary and the south-western boundary. A single mature Alder (*Alnus glutinosa*) is present within the northern corner of the Site (refer to **Figure 1**).

3.2.8 Mature and semi-mature trees and shrubs overhang all of the Site boundaries.

Improved grassland

Photograph 1: Improved grassland field unit within Site, taken from the southern corner facing north.

3.2.9 The field has a flat topography. The vegetation comprises improved mesotrophic (neutral) grassland with locally abundant coarse grasses and tall-herb vegetation along the Site boundaries. At the time of the survey the sward was grazed by cattle.

3.2.10 The improved grassland is characterised by constant and abundant Perennial Rye-grass (*Lolium perenne*), constant and frequent Creeping Buttercup (*Ranunculus repens*), Rough Meadow-grass (*Poa trivialis*) Yorkshire-fog (*Holcus lanatus*) and locally frequent Cock's-foot (*Dactylis glomerata*) and Meadow Foxtail (*Alopecurus pratensis*).

3.2.11 The grassland is characteristic of a MG7 Perennial Rye-grass ley.

3.2.12 An approximately 600m^2 area of grassland in the western corner of the Site contains frequent Crested Dog's tail (*Cynosurus cristatus*) and very local Selfheal (*Prunella vulgaris*). This section of the grassland is characteristic of the MG6 Perennial Rye-grass - Crested Dog's-tail grassland community of the NVC. The presence of Crested Dog's-tail in this area indicates the area has received a less intensive treatment of fertiliser however the sward within the whole field is all agriculturally improved.

3.2.13 Grassland at the margins of the Site is ungrazed (owing to inaccessibility by cattle) and is composed from locally very frequent False-oat grass (*Arrhenatherum elatius*), Cock's-foot,

Rough Meadow-grass and Common Couch (*Elytrigia repens*) and is characteristic of the MG1 False Oat-grass community of the NVC.

3.2.14 The tall-herb vegetation at the Site boundaries comprises very locally abundant Common Nettle (*Urtica dioica*) and very locally frequent Creeping Thistle (*Cirsium arvense*) and Cleavers (*Galium aparine*) and is characteristic of the OV25 Common Nettle – Creeping Thistle open community of the NVC.

3.2.15 A full species list for the grassland vegetation is appended (**Table A**).

Boundary Trees and Shrubs


Photographs 2 & 3: Mature trees along the north-eastern Site boundary (Photo 2) and of the Mature Ash in the northern corner of the field (Photo 3).


Photographs 4 & 5: Mature trees along the south western boundary (Photo 4) and semi-mature trees and shrubs along the north-eastern boundary (Photo 5).

3.2.16 The boundary trees are composed of very local mature Ash (*Fraxinus excelsior*), Pedunculate Oak (*Quercus robur*) and Crab Apple (*Malus sylvestris*) and a single mature Alder (*Alnus glutinosa*). Locally frequent semi-mature Ash, Silver Birch (*Betula pendula*), Poplar (*Populus* sp.) trees and Swedish Whitebeam (*Sorbus x intermedia*) and Hawthorn (*Crataegus monogyna*) shrubs are present along the Site's north-eastern and north-western boundaries (refer to **Figure 1**).

Overhanging trees

3.2.17 Mature Ash, Beech and Crab Apple trees overhang the north-eastern, south-eastern, south western and north-western Site boundaries (see **Figure 1**). The potential for the Site proposals to damage overhanging trees is recognised and discussed further in section 5.2.

Boundary hedgerows

3.2.18 Hedgerow 1 marks the south-eastern boundary of the Site and lies adjacent to Littlemoor Road (see **Figure 1**). Hedgerow 2 marks the south-western boundary of the Site. The hedgerows are described and assessed for their importance in accordance with the *Hedgerows Regulations 1997* in **Tables 2** and **3,** below.

3.2.19 Both hedgerows are characterised by constant abundant and frequent Hawthorn (*Crataegus monogyna*) and are characteristic of the W21 Hawthorn scrub community of the NVC. A full species list is appended (**Table B**).

3.2.20 A Beech hedgerow sited outside but adjacent to the south-eastern boundary of the field unit is composed of dominant Beech with rare Elder (*Sambucus nigra*). The hedgerow does not form a NVC community. The hedgerow is associated with the garden of the building to the south and the Site and therefore is not suitable for classification by the *Hedgerows Regulations 1997*.

Table 2: ***Hedgerow 1*** Description and Importance in Accordance with the *Hedgerows Regulations 1997*				
General Description				
	**Height**	2m		
	Width	2m		
	Length	70m		
	Continuity	100%		
	Management	Trimmed on all sides		
	Total number of woody species	7 (see **Table B**, appended)		
Number of Qualifying Woody Species				
	Section number	1	2	3
	Qualifying woody species	3	N/A	N/A
	Average number	3		
Number of Features Present:				
	(a) Bank or wall along at least ½ length	No		
	(b) Gaps which in aggregate do not exceed 10%	Yes		
	(c)-(e) 1 standard tree per 50m	Yes (3)		
	(f) At least 3 woodland species	No (2, see **Table B**, appended)		
	(g) Ditch along at least 1/2 its length	No		
	(h) Connections scoring 4 points or more	No		
	(i) Parallel hedge within 15m	No		
Total Features		**2**		
Criteria for Hedgerow Importance 1: Hedgerow contains species listed as:				
	(1)Part 1 of Schedule 1, Schedule 5 or Schedule 8 of W&C Act 1981	No		
	(2)Declining breeders in 'Red Data Birds of Britain'	No		
	(3)Categorised as 'endangered', 'extinct' or 'vulnerable'	No		
Criteria for Hedgerow Importance 2: Hedgerow Includes (all woody species mentioned in (i)-(iv), with each number reduced by one in Lancashire(for this criteria only)**:**				
	(i)At least 7 Woody Species	No		
	(ii)At least 6 woody species and at least 3 features	No		
	(iii)At least 6 woody species, inc. one of: Black poplar, L-leaved Lime, S-leaved Lime or Wild Service Tree	No		
	(iv)At least 5 woody species, and has 4 features	No		
Criteria for Hedgerow Importance 3: Is adjacent to a bridleway, footpath or byway *and* includes at least 4 woody species on average and 2 features from (a) to (g):				
	Qualifies:	No		
	Hedgerow Classed as Important?	**No**		

Table 3: ***Hedgerow 2*** Description and Importance in Accordance With the *Hedgerows Regulations 1997*

General Description

Height	2m
Width	2m
Length	80m
Continuity	100%
Management	Unmanaged
Number of woody species	8 (see **Table B**, appended)

Number of Qualifying Woody Species

Section number	1	2	3
Qualifying woody species	4	N/A	N/A
Average number	4		

Number of Features Present:

(a) Bank or wall along at least ½ length	No
(b) Gaps which in aggregate do not exceed 10%	Yes
(c)-(e) 1 standard tree per 50m	Yes (3)
(f) At least 3 woodland species	Yes (3, see **Table B**, appended)
(g) Ditch along at least 1/2 its length	No
(h) Connections scoring 4 points or more	No
(i) Parallel hedge within 15m	No
Total Features	**3**

Criteria for Hedgerow Importance 1: Hedgerow contains species listed as:

(1)Part 1 of Schedule 1, Schedule 5 or Schedule 8 of W&C Act 1981	No
(2)Declining breeders in 'Red Data Birds of Britain'	No
(3)Categorised as 'endangered', 'extinct' or 'vulnerable'	No

Criteria for Hedgerow Importance 2: Hedgerow Includes (all woody species mentioned in (i)-(iv), with each number reduced by one in Lancashire(for this criteria only))**:**

(i)At least 7 Woody Species	No
(ii)At least 6 woody species and at least 3 features	No
(iii)At least 6 woody species, inc. one of: Black poplar, L-leaved Lime, S-leaved Lime or Wild Service Tree	No
(iv)At least 5 woody species, and has 4 features	No

Criteria for Hedgerow Importance 3: Is adjacent to a bridleway, footpath or byway *and* includes at least 4 woody species on average and 2 features from (a) to (g):

Qualifies:	No
Hedgerow Classed as Important?	**No**

Invasive Weeds

3.2.21 No invasive weeds are present within the Site or on or close to the Site boundaries.

3.3 Animal Life

Badger

3.3.1.1 No evidence of Badger activity was recorded within Site or the local area. Badger or their habitats will not be affected by the proposals.

Bats

Roosting Bats - Trees

3.3.2 Two mature Ash trees located towards the south-eastern corner of the Site have potential for use by roosting bats (refer to **Figure 1**). The mature Alder in the northern corner of the Site has potential for use by roosting bats. These are described in **Table 4**, below.

3.3.3 No other trees within the Site support features suitable for roosting bats.

Foraging/commuting

3.3.4 The boundary features of the Site offer moderate habitat value for edge feeding species such as Common Pipistrelle. The Site does not support areas of mature woodland or water features which would increase the potential value of the habitat for use by foraging bats.

Table 4: Features assessed to be suitable for use by Roosting Bats		
Tree Reference:	**Fe1 (**refer to **Figure 1)**	
	**Feature Fe1A**	
	Height (from ground)	3m up trunk
	Aspect	North-eastern
	Width	0.1m
	Length	0.2m
	Description	Large hole on main branch.
Tree Reference:	**Fe1 (**refer to **Figure 1)**	
	**Feature Fe1B**	
	Height (from ground)	5m
	Aspect	South-eastern
	Width	0.05m
	Length	0.05m
	Description	Downward-facing rot hole in medium-sized branch.
Tree Reference:	**Fe2 (**refer to **Figure 1)**	
	**Feature Fe2A**	
	Height (from ground)	6m
	Aspect	South and south-east
	Width	0.03-0.05m
	Length	Many small gaps within a 1m length
	Description	Small rot holes along main upward stem.
Tree Reference:	**Ag1 (**refer to **Figure 1)**	
	**Feature Ag1a**	
	Height (from ground)	8m
	Aspect	South western
	Width	0.05m
	Length	0.05
	Description	Rot hole on upward-facing branch

Bird species

3.3.5 The birds recorded within the Site are associated with the trees and shrubs along the boundaries of the field unit and the garden in the southern corner of the Site. The results of the breeding bird survey are presented in **Table 5**, below.

Table 5: A record of the bird species associated with the Site			
Common Name	**Conservation Status[1]**	**Protection[2]/ BAP Status**	**Locations/Comments**
House Sparrow	Red	UKBAP Priority Species	x10 in northern corner of Site x10 in gardens adjacent to Site.
Dunnock	Amber	UKBAP Priority Species	Single bird along south-western field boundary.
Blackbird	Green	None	Single bird along south-western field boundary.
Chaffinch	Green	None	Single birds along north-eastern, south eastern and south-western field boundaries.
Collared Dove	Green	None	Single bird along north-western boundary.
Jackdaw	Green	None	Two birds along south-western field boundary.
Robin	Green	None	Single birds Site boundaries.
Wood Pigeon	Green	None	Single birds along north-eastern and south-western boundaries.
Wren	Green	None	Single bird along south-western field boundary.
[1]: As reported in the Birds of Conservation Concern publication (RSPB) [2]: Above that afforded to all breeding birds under the *Wildlife and Countryside Act* (1981)			

3.3.6 All bird species (with the exception of Jackdaw and House Sparrow) were in song during the survey indicating the presence of nesting within the trees and shrubs on the site boundaries.

3.3.7 The presence of the UKBAP Priority Species Dunnock and House Sparrow is recognised and discussed in Sections 4 and 5 of this report.

3.3.8 No ground nesting birds were recorded using the Site. The field unit offers some habitat potential for ground nesting birds, but is relatively small and surrounded by hedges and fencing on all sides. This may deter ground nesting birds from selecting this Site above more preferable, larger fields in the local area.

Reptile species

3.3.9 The Site offers poor quality habitat for reptiles. The Site supports a poor physiognomy for reptiles and the majority of the Site is regularly grazed.

3.3.10 There are no records of reptiles for the Site or the wider area. The presence of reptiles within the Site can be reasonably discounted.

Other Wildlife

Insects

3.3.11 The surveys in June and July 2011 were conducted under poor conditions to detect invertebrates such as butterflies, bees and dragonflies.

3.3.12 The absence of semi-natural or species-rich vegetation indicates the Site is unlikely to support rare or uncommon species or a rich assemblage of invertebrates.

4.0 EVALUATION

4.1 Vegetation and Habitats

4.1.1 The Site contains only common and widespread plant species. The limited assemblages of NVC communities present are of widespread occurrence in the UK and the local area and are characteristic of intensively managed agricultural land. No semi-natural features are present.

4.1.2 Neither of the boundary hedgerows are assessed as 'important' with regards *The Hedgerows Regulations 1997*. It is recognised that Hedgerows 1 and 2 are classed as UK BAP Priority Habitat and are capable of being a material consideration in connection with planning applications.

4.1.3 No other UK BAP Priority Habitats are present.

4.1.4 The mature and semi-mature trees on the Site boundaries are assessed to be of local value as they add structural diversity to the area and provide suitable habitat for use by nesting birds (and possibly roosting bats).

4.1.5 The Site does not support any invasive weeds.

4.2 Protected Species and Other Wildlife

4.2.1 No evidence of protected species was recorded within the Site or its immediate surrounding area.

4.2.2 The potential for the mature Ash trees Fe1 and Fe2 and the mature Alder Ag1 to support roosting bats is recognised in this appraisal and further guidance is detailed in Section 5. The suitability of the boundary features to support foraging bats is also recognised.

4.2.3 Two UK BAP Priority Species (Dunnock and House Sparrow) were recorded in the Site in June 2011 and the habitats present assessed to be suitable for nesting. Other passerine bird species were recorded and the boundary trees and shrubs are assessed as favourable nesting habitat for the species recorded.

4.3 Summary

4.3.1 The features of ecological interest within the Site, which must be considered further in connection with any development proposals, are listed below:-

- The suitability of the mature Ash trees Fe1, Fe2 and Ag1 to support roosting bats;
- Hedgerows 1 and 2 are recognised as UK BAP Priority Habitat.
- The local value of the semi-mature trees;
- The use of the trees and shrubs around the Site by bird species listed as UK BAP Priority Species (Dunnock and House Sparrow).

5.0 RECOMMENDATIONS

5.1 Introduction

5.1.1 The comprehensive ecological survey carried out at the Site has provided an accurate account of the ecological considerations in connection with the proposed development.

5.1.2 The recommendations in the paragraphs below aim to ensure that development is implemented in accordance with all wildlife legislation, Natural England guidance, The National Planning Policy Framework (NPPF), local planning policy and best practice.

5.1.3 Where possible, opportunities to enhance the ecological interest and seek biodiversity gain through appropriate design, landscape planting and habitat creation have been identified and recommended (in accordance with the guidance in NPPF) and associated documents).

5.2 Site Layout Design, Protection Existing Vegetation and Habitats and Use of Demarcation Fencing

Site Layout Design

5.2.1 Where possible, the existing hedgerows will be retained. Any loss of hedgerow (for example it is understood that Site access is to be created from Littlemoor Road which will involve the removal of a portion of Hedgerow 1) will be compensated for by the planting of new hedgerows and linear native species planting in suitable locations within the Site. Compensatory and additional landscape planting will follow the recommendations in Section 5.7.

5.2.2 Where possible, existing trees will be retained. Any tree removal will be compensated for with the introduction of native species landscape planting. Where removal of the hedgerows and trees is unavoidable the specification and implementation of appropriate compensatory measures is appropriate in accordance with the principles of the NPPF.

Protection of Existing Hedgerows and Trees

5.2.3 During the construction phase, temporary protective demarcation fencing will be used to protect the roots and canopies of the retained trees within and on the margins of the Site. The fencing must remain in position until all construction works have been completed to ensure protection is provided throughout the construction phase.

5.2.4 The fencing will also ensure that tree branches overhanging the site boundaries are not damaged.

5.2.5 The fencing will be in accordance with BS5837: 2005 *Trees in Relation to Construction.*

5.3 Consideration of Bats

5.3.1 The three mature trees Fe1, Fe2 and Ag1 (refer to **Figure 1**) support features which are assessed to be suitable for use by roosting bats. It is strongly recommended that these trees are retained and incorporated into any proposed development of the Site.

5.3.2 If removal of any of the three identified trees is necessary then further survey work including emergence surveys and internal inspection with an endoscope by a suitably licensed ecologist must be carried out.

5.3.3 The recommendations outlined in section 5.2, regarding the protection of vegetation along the Site boundaries, in section 5.7 regarding the use of native species in landscape planting of the Site, and in section 5.6 regarding the consideration of lighting at the Site will maintain and potentially improve the opportunities for foraging bats at the Site.

5.3.4 As the habitats at the Site and the local area will remain suitable for use by foraging bats it is recommended that the development proposals incorporate the installation of four commercially available bat bricks/tubes to provide habitats for the attraction of roosting bats, particularly Pipistrelle species (Soprano Pipistrelle is a UK BAP Priority Species).

5.3.5 The bricks/tubes should be sited on the new properties on the outer margins of the Site at a height of over 4 metres from ground level, ideally close to areas of landscape planting or existing linear planting. The bricks/tubes should not be positioned over windows or doorways where droppings may become a nuisance. Once the development layout has been finalised on paper an Ecologist can advise on appropriate positions for the bat bricks/tubes.

5.3.6 Examples of suitable bricks/tubes (as available from Alana Ecology (www.alanaecology.co.uk), IBStock or Bioquip (www.bioquip.net)) are presented at **Insert 2.**

5.3.7 The incorporation of provisions for use by roosting bats is in accord with the guidance detailed in the NPPF, local planning policy and the objectives of the UK and Lancashire Biodiversity Action Plans for bats.

Insert 2: Examples of commercially available bat bricks/tubes suitable for housing

5.4 Protection of Breeding Birds including Dunnock and House Sparrow.

5.4.1 As identified in this report, the trees and shrubs within the Site are suitable for use by nesting birds.

5.4.2 All wild birds are protected under the *Wildlife and Countryside Act 1981* while they are breeding. It is mandatory that any shrubs or other suitable breeding bird habitat which are to be removed as part of the proposals are only removed outside the bird breeding season, unless it can be adequately demonstrated by an ecologist that no breeding birds, active nests, eggs or fledglings are present in the area to be cleared. The bird breeding season typically extends between March to August inclusive.

5.4.3 The use of native trees and shrubs as recommended in section 5.7, below, will maintain and improve features within the Site for breeding birds including Dunnock, a UK BAP Priority Species.

Consideration of House Sparrow

5.4.4 House Sparrow (a UK BAP Priority Species) is associated with urban areas. The House Sparrow is reported to have declined by 62% over a 25 year period, partly as a result of the loss of available nesting sites.

5.4.5 Native species of trees and shrubs should be used in the landscape planting to provide berry and invertebrate food for adult and young birds. It is recommended that two House Sparrow terrace nest boxes are installed at the Site to contribute to conservation and enhancement of the urban populations of House Sparrow in the area.

5.4.6 The boxes should be fitted at suitable elevations on the walls of the new buildings (garages are ideal). The boxes should be positioned at a height of over 2.5 metres. Care must be taken to avoid siting the boxes over windows or doorways where droppings may cause a nuisance.

5.4.7 The boxes (**Insert 3**) are available from Alana Ecology (www.alanaecology.co.uk) or Bioquip (www.bioquip.net).

Insert 3: House Sparrow terrace nest box

5.4.8 The provision of House Sparrow terrace boxes will ensure a positive conservation action for House Sparrow in the developed Site and its locality whilst the proposed native landscape planting will provide small invertebrate prey for House Sparrow chicks.

5.5 Consideration of Hedgehog

5.5.1 The proposed development of the Site has the potential to create suitable habitat for foraging Hedgehog (a UK BAP Priority Species) in the form of gardens. It is important to the movement of Hedgehog and other wildlife throughout the Site that garden fencing allows access underneath, ideally by raising the bottom of the fencing from ground level for part, if not all of the fencings length, by approximately 0.1m.

5.6 Consideration of Lighting

5.6.1 Any lighting to be used at the Site during the construction and operation phases should be directional and screened where possible.

5.6.2 No excessive lighting must shine over the boundary trees, hedgerows and shrubs as lighting overspill may deter use by wildlife such as foraging bats.

5.7 Ecological Enhancement and Landscape Planting

5.7.1 The National Planning Policy Framework (NPPF) advises that planning policies and decisions should not only avoid, mitigate or compensate for harm but seek ways to enhance and restore biodiversity.

5.7.2 In addition to the creation of habitats for roosting bats (section 5.3) and nesting birds (section 5.4) the development proposals provide an opportunity to enhance the ecological and biodiversity value of the Site through appropriate landscape planting and long-term management.

5.7.3 All recommendations detailed below are complementary to the type and style of development, the geographical area and the habitats in the local area. Their main function is to contribute to and enhance the nature conservation and biodiversity value of the Site.

Enhancement of Habitats and Habitat Connectivity within the Site

Trees

5.7.4 In an article published by Land (2004) which detailed the results of transect surveys of garden habitats and the abundance and diversity of bird species present, trees were confirmed to be important features for birds within street landscapes. The importance of the trees was indicated in the field study as the highest percentage of registrations of birds was recorded in gardens with trees. The article demonstrated the importance of the provision of a range of features within a landscape scheme for the attraction of bird species. At this Site it is recommended that small native trees are incorporated into the landscape planting.

5.7.5 It is recommended that trees which support blossom and fruit which will attract insects are incorporated into the landscape planting. This will aim to encourage foraging bats and birds. Suitable species include Crab Apple, Rowan, Silver Birch, Wild Cherry, Field Maple, Hazel, Hawthorn and Blackthorn.

5.7.6 Other woody species to be incorporated into the mix should comprise a selection of the following native species that are complementary to the habitats in the local area. The selected species are in accordance with Appendix 10 of the Joint Lancashire Structure Plan adopted SPG landscape and heritage: -

Already included species:-

Crataegus monogyna	Hawthorn
Prunus spinosa	Blackthorn
Sambucus nigra	Elder
Viburnum opulus	Guelder Rose

Additional Species: -

Corylus avellana	Hazel
Ilex aquifolium	Holly
Rosa canina	Dog Rose
Sorbus aucuparia	Rowan

Hedgerow

5.7.7 Planting of new and replacement/compensatory hedgerows within the Site can aid wildlife connectivity, provide suitable nesting and foraging habitat for birds and provide attractive blossom. Suitable species for native species hedgerow planting include Hawthorn, Blackthorn, Hazel, Wild Cherry, Guelder Rose, Crab Apple, Field Maple and Field Rose.

Understorey and Ground Cover Planting

5.7.8 Understorey and ground cover landscape planting within the landscape planting design can be specified to optimise the attraction of invertebrates such as feeding bumblebees and butterflies. Where possible the use of native species should be maximised but where necessary non-native species known to be attractive to invertebrates should be used.

5.7.9 Planting schemes that include flowering species such as Lavender, Rosemary, Hebe, Potentilla, Calluna, Ceanothus and Vinca can maximise opportunities for feeding invertebrates.

5.7.10 It is recommended that plant species that produce berries such as Berberis, Pyracantha and Cotoneaster (not the invasive *C.horizontalis, C. integrifolius, C. simonsii*, or *C. microphyllus*) are introduced into the planting scheme for the attraction of feeding birds.

5.8 Conclusion

5.8.1 Based on the survey information presented in this assessment, it is concluded that the principle of development at the Four Acre Site, Littlemoor, Clitheroe, is feasible in accordance with ecological considerations.

5.8.2 In accordance with the principles of the National Planning Policy Framework avoidance and protection of features of biodiversity value, namely the trees that have features for use by roosting bats, is feasible. The planting of hedgerows and trees to compensate for the areas to be removed to facilitate the development is appropriate and acceptable. Further, the opportunity to incorporate biodiversity in and around the development such as habitat creation for roosting bats, nesting birds and maintenance of wildlife links for wildlife is encouraged and is entirely feasible within the remit of the development.

5.8.3 This conclusion is valid provided that guidance detailed in Section 5 of this assessment is applied throughout the design and construction of the Site.

6.0 REFERENCES

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7.0 TABLES AND FIGURES

Table A: Plant Species Composition, Frequency and Percentage Cover for the improved grassland and Site boundary vegetation

Scientific Name	Common Name	Frequency	Percentage Cover
Woody Vegetation			
-	Exotic garden species	R	<1%
Acer pseudoplatanus	Sycamore	R	<1%
Alnus glutinosa	Alder	VL	<1%
Betula pendula	Silver Birch	VLF	1%
Crataegus monogyna	Hawthorn	VLA	2%
Fagus sylvatica	Beech	VL	<1%
Fraxinus excelsior	Ash	VLF	<1%
Poplar sp.	Poplar species	VLF	<1%
Quercus robur	Pedunculate Oak	VL	<1%
Rosa canina	Dog-rose	VL	<1%
Sambucus nigra	Elder	VL	<1%
Sorbus intermedia	Swedish Whitebeam	VLF	<1%
Symphoricarpus albus	Snowberry	VLA	<1%
Ulmus glabra	Wych Elm	R	<1%
Herb vegetation			
Agrostis capillaris	Common Bent	VLF	<1%
Agrostis stolonifera	Creeping Bent	LF	3%
Alliaria petiolata	Garlic Mustard	VL	<1%
Alopecurus pratensis	Meadow Foxtail	LF	5%
Anthriscus sylvestris	Cow Parsley	VL	<1%
Arrhenatherum elatius	False Oat-grass	VLA	1%
Arum maculatum	Lord's-and-ladies	VLF	<1%
Bellis perennis	Daisy	VL	<1%
Cerastium fontanum	Common Mouse-ear	VL	<1%
Chamerion angustifolium	Rosebay Willowherb	VLF	<1%
Cirsium arvense	Creeping Thistle	LF	1%
Cynosurus cristatus	Crested Dog's-tail	VLF	<1%
Dactylis glomerata	Cock's-foot	LF/VLA*	2%
Elytrigia repens	Common Couch	VLF	<1%
Epilobium hirsutum	Great Willowherb	VLF/VLA	<1%
Epilobium montanum	Broad-leaved Willowherb	LF	<1%
Equisetum arvense	Field Horsetail	VLF	<1%
Festuca rubra	Red Fescue	LF	<1%
Galium aparine	Cleavers	LF	<1%
Geranium robertianum	Herb-robert	VL	<1%
Geum urbanum	Wood Avens	VL	<1%
Hedera helix	Ivy	VLA	<1%
Heracleum sphondylium	Hogweed	VL	<1%
Holcus lanatus	Yorkshire-fog	F*	10%
Lolium perenne	Perennial Rye-grass	A*	80%
Poa annua	Annual Meadow-grass	VL	<1%
Poa trivialis	Rough Meadow-grass	F*	2%
Potentilla reptans	Creeping Cinquefoil	VLF	<1%
Prunella vulgaris	Selfheal	VL	<1%
Ranunculus repens	Creeping Buttercup	F*	1%
Rubus fruticosus agg.	Bramble	VL	<1%
Rumex obtusifolius	Broad-leaved Dock	LF	<1%
Senecio jacobaea	Common Ragwort	VL	<1%

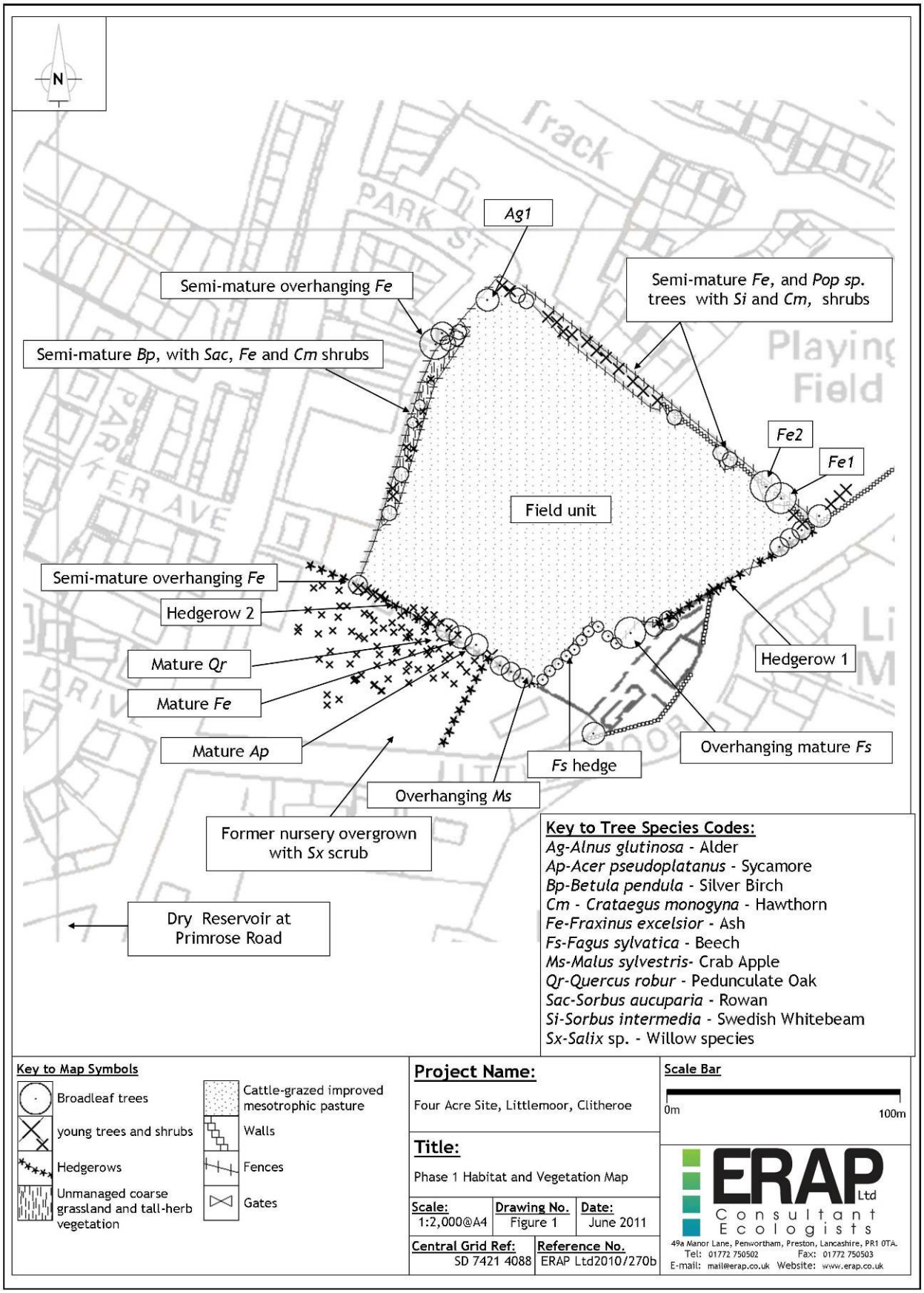
Continued overleaf

Table A: Plant Species Composition, Frequency and Percentage Cover for the improved grassland and Site boundary vegetation			
Scientific Name	**Common Name**	**Frequency**	**Percentage Cover**
Continued			
Solanum dulcamara	Bittersweet	VL	<1%
Stachys sylvatica	Hedge Woundwort	VL	<1%
Stellaria media	Common Chickweed	LF	<1%
Taraxacum officinale	Dandelion	VL	<1%
Trifolium repens	White Clover	VL	<1%
Urtica dioica	Common Nettle	LF/VLA	2%
Key to DAFOR: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species			

Table B: Species Composition, Frequency and Percentage Cover for Hedgerows 1 and 2

Scientific Name	Common Name	Hedgerow 1		Hedgerow 2	
		Freq.[1]	% [2]	Freq.[1]	% [2]
	Exotic garden species	R	<1%	R	<1%
Acer pseudoplatanus	Sycamore	-	-	LF	1%
Alnus glutinosa	Alder	R	<1%	-	-
Crataegus monogyna	Hawthorn	LD	50%	A*	80%
Fagus sylvatica	Beech	R	<1%	-	-
Fraxinus excelsior	Ash	VL	<1%	F/LA*	5%
Quercus robur	Pedunculate Oak	-	-	LA	3%
Rosa canina	Dog-rose	-	-	LF	<1%
Sambucus nigra	Elder	LF	<1%	F*	5%
Symphoricarpus albus	Snowberry	LD	40%	VLA	<1%
Ulmus glabra	Wych Elm	-	-	VL	<1%
Herb vegetation					
Agrostis stolonifera	Creeping Bent	LF	<1%	-	-
Alliaria petiolata	Garlic Mustard	-	-	VL	<1%
Arrhenatherum elatius	False Oat-grass	LF*	1%	VLF	<1%
Arum maculatum	Lord's-and-ladies	F*	2%	-	-
Chamerion angustifolium	Rosebay Willowherb	-	-	LF	<1%
Dactylis glomerata	Cock's-foot	F	2%	F*	1%
Dryopteris filix-mas	Male-fern	-	-	VL	<1%
Elytrigia repens	Common Couch	LF*	1%	-	-
Epilobium hirsutum	Great Willowherb	-	-	VL	<1%
Epilobium montanum	Broad-leaved Willowherb	LF	<1%	VLF	<1%
Galium aparine	Cleavers	F	3%	F*	<1%
Geranium robertianum	Herb-robert	-	-	R	<1%
Geum urbanum	Wood Avens	R	<1%	R	<1%
Hedera helix	Ivy	LF	<1%	A*	<1%
Heracleum sphondylium	Hogweed	VL	<1%	-	-
Holcus lanatus	Yorkshire-fog	LF	<1%	LF	<1%
Lolium perenne	Perennial Rye-grass	LA	3%	F*	2%
Poa annua	Annual Meadow-grass	LF	<1%	-	-
Poa trivialis	Rough Meadow-grass	F*	1%	-	-
Potentilla reptans	Creeping Cinquefoil	LF	<1%	-	-
Ranunculus repens	Creeping Buttercup	LF	<1%	-	-
Rubus fruticosus agg.	Bramble	VL	<1%	L	<1%
Senecio jacobaea	Common Ragwort	VL	<1%	-	-
Solanum dulcamara	Bittersweet	VL	<1%	-	-
Stachys sylvatica	Hedge Woundwort	VL	<1%	-	-
Taraxacum officinale	Dandelion	VL	<1%	-	-
Urtica dioica	Common Nettle	LF*	2%	F*	2%
Total Qualifying Woody Species		5		6	
Total Qualifying Woodland Species		2		3	

[1]**Freq.**=Frequency. [2]**%**=Percentage Cover.
Key to DAFOR: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare, V=Very, L=Local and *denotes a constant species.
NOTE: Species shaded grey are those listed as either woody or woodland species in the *Hedgerows Regulations 1997*


N
Ag1
Semi-mature overhanging Fe
Semi-mature Fe, and Pop sp. trees with Si and Cm, shrubs
Semi-mature Bp, with Sac, Fe and Cm shrubs
Fe2
Fe1
Field unit
Semi-mature overhanging Fe
Hedgerow 2
Mature Qr
Mature Fe
Mature Ap
Hedgerow 1
Overhanging mature Fs
Fs hedge
Overhanging Ms
Former nursery overgrown with Sx scrub
Dry Reservoir at Primrose Road
Key to Tree Species Codes:
Ag-Alnus glutinosa - Alder
Ap-Acer pseudoplatanus - Sycamore
Bp-Betula pendula - Silver Birch
Cm - Crataegus monogyna - Hawthorn
Fe-Fraxinus excelsior - Ash
Fs-Fagus sylvatica - Beech
Ms-Malus sylvestris- Crab Apple
Qr-Quercus robur - Pedunculate Oak
Sac-Sorbus aucuparia - Rowan
Si-Sorbus intermedia - Swedish Whitebeam
Sx-Salix sp. - Willow species
Key to Map Symbols
Broadleaf trees
young trees and shrubs
Hedgerows
Unmanaged coarse grassland and tall-herb vegetation
Cattle-grazed improved mesotrophic pasture
Walls
Fences
Gates
Project Name:
Four Acre Site, Littlemoor, Clitheroe
Title:
Phase 1 Habitat and Vegetation Map
Scale: 1:2,000@A4
Drawing No. Figure 1
Date: June 2011
Central Grid Ref: SD 7421 4088
Reference No. ERAP Ltd2010/270b
Scale Bar
0m
100m
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