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**EXTENDED PHASE 1 HABITAT SURVEY AND
ECOLOGICAL EVALUATION
OF
LAND AT THE COMMON & HARRISON ROAD
ADLINGTON**

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A report for:

Chorley Borough Council

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PART 1 INTRODUCTION:

1.1 REASONS FOR SURVEY

Pennine Ecological has been commissioned by Chorley Borough Council to carry out an Extended Phase 1 Habitat Survey of two sites in Adlington, Chorley. The surveys are required in relation to a proposal to develop a field at The Common as an allotment site, with Harrison Road considered as a potential alternative site.

The aim of the survey was to record species and habitats present, assess their ecological value, and define any ecological impacts caused by creating the allotments.

1.2 SITE LOCATIONS

The Common site is located on the south-west edge of the village and is composed of a single arable field with a pond at its western end.

The Harrison Road site is situated next to the Leeds & Liverpool Canal and comprises two derelict field either side of a farm track west of Red House Bridge at the end of Harrison Road.

1.3 METHODOLOGY

An Extended Phase 1 Habitat Survey (*Nature Conservancy Council 1990*) of each site was undertaken on 26th July 2011. The sites habitats were fully mapped and higher vascular plant species were recorded and given abundance values according to the standard DAFOR scale, where:

D = Dominant
A = Abundant
F = Frequent
O = Occasional
R = Rare

Where appropriate these values can be prefixed by the letter L (locally) or V (very), to provide more subtle biogeographical data.

The sites were also surveyed for evidence of legally protected animal species, and for habitats that had potential for presence of legally protected animal species. Incidental records of fauna not specifically protected by law were also noted.

1.4 SURVEY CONSTRAINTS

The survey was undertaken during the optimum period for Phase 1 survey and there were no constraints to survey.

PART 2: SURVEY RESULTS:

2.1 SITE DESCRIPTIONS:

The Common site is composed of an arable field currently composed of a 'ley' grassland. The habitat is typically uniform and composed of sown grasses.

A large pond is located at the western end of the site and is used for fishing. The western boundary is fenced and has a strip of tall ruderal herb and the highly fragmented remains of a hedgerow with numerous trees.

The roadside boundary is a hawthorn hedge with semi-mature oak whilst the southern boundary is open.

The Harrison Road site is composed of two derelict agricultural fields divided by a farm track. The grasslands are rank and their 'abandonment' has allowed the development of stands of tall ruderal herb and dense/scattered willow scrub, some of which are locally extensive.

An immature broad-leaved plantation is located on an embankment along the southern boundary of the southernmost field.

2.2 EXTENDED PHASE 1 HABITAT SURVEY:

2.2.1 The Common:

(See Map 1 in the Appendix)

Target Note 1:

A ley grassland typically sown with a range of high-yield agricultural rye-grass varieties. The habitat is derived from cultivation and is therefore classed as arable land.

Fertility is artificially high due to the input of nitrogen based fertilisers and farm manure/slurry. The combined effects of cultivation, sowing and application of fertilisers naturally restrict species diversity to a few herbs that are either encouraged, such as white clover which is locally abundant, or have been able to persist on site.

Additional species recorded include occasional common chickweed and Timothy and very occasional marsh foxtail and creeping buttercup.

The grassland has an affinity with the National Vegetation Classification (NVC) community **MG7** *Lolium perenne* leys and related grassland.

Photograph 1 in the Appendix shows a typical view of the grassland at The Common.

Target Note 2:

A large field pond situated on the southern edge of the site. The pond appears deep and has a narrow/fragmented marginal fringe dominated by bulrush with locally frequent great willowherb and occasional bittersweet.

The pond has approximately 30% cover of yellow water-lily and small pondweed is occasional.

The pond is fished and several fishing pegs (platforms) are present around the pond margin. There is also a timber bridge allowing pedestrian access across an outlet channel. The pond appears to be well stocked with coarse fish and numerous large fish were partly visible near to the waters surface. In addition many small fish, either fish fry or sticklebacks were present among the marginal stands.

Photograph 2 in the Appendix shows a typical view of the pond.

Incidental Sightings:

Given the main type of habitat present incidental sighting were restricted to a single moorhen at the pond.

2.2.2 Harrison Road:

(See Map 2 in the Appendix)

Target Note 1:

This is the northernmost of the two fields at Harrison Road.

It is difficult to determine the origin of the grassland here, however the crop patterns shown on online aerial images from 2000 and 2005 indicate that the field is either an abandoned ley or improved grassland, and the very localised dominance of perennial rye-grass may be indicative of former conditions on the site.

Despite the fields origin it is now in an advanced state of abandonment, the grass is coarse and dominated by false oat-grass, and there is a dense thatch at the base of the sward over much of the area. Lack of management has allowed the seral development of stands of tall ruderal vegetation dominated locally by common nettle, creeping thistle, rosebay willowherb and great willowherb.

Locally extensive stands of dense willow scrub grading into open scattered stands have also developed on the site.

Essentially the whole of the field is a mosaic of tall grasses and herbs punctuated by stands of willow scrub of varying density.

The vegetation in the field has an affinity with several NVC communities including **MG1** *Arrhenatherum elatius* grassland, **OV25** *Urtica dioica-Cirsium arvense* community, **OV27** *Epilobium angustifolium* community, and small localised fragments of **MG7** *Lolium perenne* leys and related grassland.

Photograph 3 in the Appendix shows a typical view of the northern part of the site.

A list of species and their abundance is shown on the following page.

Species:	Abundance:
False oat-grass	D
Common nettle	LD
Creeping thistle	LD
Rosebay willowherb	LD
Great willowherb	LD
Goat/grey willow (saplings)	LD
Perennial rye-grass	VLD
Yorkshire-fog	A-LD
Creeping bent	LA
Dandelion sp.	LA
Field horsetail	LA
Common bent	LA
Creeping buttercup	LA
White clover	VLA
Timothy	LF
Spear thistle	LF
Dock spp.	LF
Ribwort plantain	LF
Compact rush	O

Target Note 2:

This is the southernmost of the two fields at Harrison Road. The field has the same origin as that described in Target Note 1 above and subsequently has a very similar vegetative structure and affinity with the NVC.

Indian balsam is locally dominant in stands in the south-east corner of the site.

Photograph 4 in the Appendix shows a typical view of the southern part of the site.

Species:	Abundance:
False oat-grass	D
Common nettle	LD
Creeping thistle	LD
Rosebay willowherb	LD
Indian balsam	VLD
Perennial rye-grass	VLD
Yorkshire-fog	A-LD
Goat/grey willow (saplings)	A-LD
Common couch	LA
Creeping bent	LA
Great willowherb	LA
Creeping buttercup	LA
Dock spp.	F
White clover	LF
Common bent	LF
Spear thistle	LF
Cleavers	LF

Incidental Sightings:

The coarse grasslands and stands of flowering tall herbs on the Harrison Road site attract a number of bumble bees and a range of common butterflies.

Species recorded include Peacock, Meadow brown, gatekeeper, Large white, Small skipper and Small tortoiseshell. A common moth Large yellow-underwing was also recorded

At the time of survey a single pair of Common whitethroat were resident and breeding in scrub in the northern part of the site. Two pairs of common whitethroat were resident and breeding in the southern part of the site. A newly fledged family was present in suitable breeding habitat.

2.3 AMPHIBIAN ASSESSMENT –THE COMMON:

2.3.1 Great Crested Newt Habitat Suitability Index Survey:

The pond on The Common site was assessed for its potential to support GCN using the Habitat Suitability Index Survey (HSI). The results of the survey are shown below.

The HSI Survey undertaken returned a HSI score of 0.51 which rates as marginally above poor.

HSI Pond suitability rating is as follows:

- <0.5 = poor
- 0.5 – 0.59 = below average
- 0.6 – 0.69 = average
- 0.7 – 0.79 = good
- > 0.8 = excellent

The individual scores are shown in the table below.

Pond ref	The Common
SI1 - Location	1
SI2 - Pond area	0.95
SI3 - Pond drying	0.9
SI4 - Water quality	0.67
SI4 - Shade	1
SI6 - Fowl	0.67
SI7 - Fish	0.01
SI8 - Ponds	0.85
SI9 - Terr'l habitat	0.67
SI10 - Macrophytes	0.6
HSI	0.51

Given the prevailing conditions in the pond, especially the obviously high fish population and lack of good vegetative cover, it is considered very unlikely that GCN would be able to maintain a viable population in the pond on the site.

2.3.2 Other Amphibian Species:

Lancashire County Council (LCC) have records of common toad within and adjacent to the application site. Common toad are able to breed and successfully recruit in fish ponds therefore its presence in the on-site pond is possible.

Smooth and Palmate newt whilst predated by fish have differing habits to GCN and are able to maintain populations in fish ponds and they are possibly present at the site.

2.3.3 Amphibian Terrestrial Habitat:

The habitat on the proposed allotment site is considered to be poor quality GCN habitat, being a flat sown rye-grass ley with little structure, extremely low plant species diversity, and low invertebrate values. The land in question has been created through cultivation and may form part of a crop rotation

Typically the land has experienced intensive management including, ploughing, tilling, application of artificial fertilisers and 2-3 silage crops per year. The land may also have had applications of herbicide to control weeds and if the site has had cereal or other crops grown it will certainly have had herbicide and pesticides applied to it.*

*That is assuming it is not under an organic regime - the low occurrence of clovers suggests that it is not.

Land managed in this way is not conducive to GCN or other amphibian habitation, and while amphibians may traverse these areas from time to time there is little scope for foraging and no scope for overwintering.

Conversely the land to the west has good amphibian potential as it includes unmanaged grassland on sloping ground, scrub and stands of (immature) planted woodland. Disturbance levels here are very low and invertebrate levels substantially higher than on the proposed allotment site. This would be the favoured direction of travel for GCN or any other amphibian when leaving the pond as it provides extensive foraging, temporary refuge and overwintering sites.

PART 3 EVALUATION:

3.1 THE COMMON:

3.1.1 Habitats:

The land at The Common is composed of very common habitats representative of modern productive farming regimes. Floristic diversity is very limited as the site is sown with a specific low range of agricultural grass varieties, with very few herbs present.

The current management of the land maintains high soil fertility to ensure that multiple cropping of the site is achievable on an annual basis

The grassland is associated with the NVC community **MG7** *Lolium perenne* leys and related grassland.

Arable Farmland is a Lancashire BAP Habitat, however the habitats on the site are considered to be a poor example of the type of habitat that the LBAP represents, and the land here is of very minor significance.

In ecological terms the grassland is of site value only.

The pond has a restricted range of plants in its marginal and aquatic zone, all of which have a widespread distribution nationally. No notable plants occur and the pond is considered to be of local value.

The hedgerows of the site are UK Biodiversity Action Plan habitats and are listed in Section 41 (S41) Habitats and Species of Principal Importance in England Natural Environment and Rural Communities (NERC) Act 2006.

The hedgerows are considered to be of local value.

3.1.2 Amphibians:

The HSI survey and evaluation based on field observation concur that conditions for Great crested newt (GCN) are poor in the pond. Lancashire County Council Ecologists have been consulted on this matter and confirmed that the nearest record for GCN is approximately 1km from this pond.

LCC also stated that GCN could have colonised ponds nearer to the site since the time of that record. As stated previously given the prevailing conditions in the pond on the application site the likelihood of this occurring on the proposed allotment site is considered to be unlikely.

Common toad (Section 41 Species of Principle Importance NERC Act 2006) has been recorded within and adjacent to the application site and its presence in the on-site pond is possible.

Smooth and Palmate newt are possibly present at the site.

The field affected by the proposal is not conducive to GCN or other amphibian habitation, and while amphibians may cross this area there is little scope for foraging and no scope for overwintering.

3.1.3 Other Fauna:

No other fauna was recorded during the visit other than a single moorhen and fish at the pond. The grassland being intensively managed is a serious constraint to wildlife habitation.

3.2 HARRISON ROAD:

3.2.1 Habitats:

The habitats present in both the northern and southern parts of the Harrison Road site are representative of agricultural land where formal management has ceased, and where natural succession has begun.

The grassland has grown tall and coarse with stands of tall ruderal herbs and locally extensive willow scrub. The precursor community is considered to have been an agricultural grass ley or improved grassland.

The habitats present have an affinity with several NVC communities including **MG1** *Arrhenatherum elatius* grassland, **OV25** *Urtica dioica-Cirsium arvense* community, **OV27** *Epilobium angustifolium* community, and small localised fragments of **MG7** *Lolium perenne* leys and related grassland.

The invasive species Indian balsam is present in the southernmost part of the site.

The habitats of the site are considered to be of site-local value ecologically.

3.2.2 Fauna:

The site is used by a range of common songbirds and three pairs of Common whitethroat were recorded as breeding in the scrub on the site.

The abundance of tall herb species such as creeping thistle and willowherb species attract bumblebees and a range of common butterflies.

There are no amphibian issues relating to the site as there are no known ponds within 500m of the site.

3.3 COMPARISON OF THE ECOLOGY OF THE TWO SITES:

3.3.1 Habitats:

The study has shown that the habitats of the two sites are of low general ecological value, with the Harrison Road site being slightly better than The Common on account of its abandonment and subsequent development of a greater diversity of species and habitats.

3.4 EVALUATION OF ALLOTMENT SUITABILITY:

The following section evaluates the suitability of the two sites for use as allotments. The evaluation is based on the potential losses incurred as a result of the formation of the allotments.

It should be noted that allotments are a Lancashire BAP Habitat, however for a net gain in biodiversity to be achieved through the formation of an allotment site, the precursor habitat must be of lower value of what is proposed.

The evaluation is provided as a series of bullet points below.

The formation of an allotment site at The Common would result in the loss of the following features:

- An intensively managed ley grassland of very low species diversity, low invertebrate and breeding bird value.
- Potential fatalities of amphibians during site clearance.

The formation of an allotment site at Harrison Road would result in the loss of the following features:

- Loss of an unmanaged rank habitat mosaic of coarse grassland, tall herb and scrub.
- Habitats used by common invertebrates for food and shelter including bumble bees and several common butterfly species.
- Breeding bird habitat used by Common whitethroat. The site is also used for foraging by other common bird species.
- Habitat used by small mammals such as wood mice, field vole, common and pigmy shrew, which in turn provide food for common raptors including Tawny owl, Little owl and Kestrel.

The evaluation of the two sites shows that a greater level of loss and disturbance to wildlife will occur through the formation of an allotment site at Harrison Road. Whilst the losses at Harrison Road only relate to common habitats and species, the losses at The Common are minimal and measurable gains in biodiversity are predicted with a change from intensive grassland management to allotments.

3.5 CONCLUSIONS:

Ecologically the most appropriate site for the formation of the allotment site is at The Common. This is due to the site being under modern ley grassland management, therefore disturbance to wildlife at this site is minimal and can be managed through appropriate precautionary measures.

Developing The Common site as allotments would see a measurable increase in Biodiversity on the site.

If the Harrison Road site were chosen as an allotment site, the habitats that have developed local breeding bird, invertebrate and small mammal value would have to be removed, and there would be no measurable gain in biodiversity, only potential losses.

In addition the biodiversity value of The Common site would remain poor.

PART 4 POTENTIAL IMPACTS & RECOMMENDATIONS:

4.1 POTENTIAL IMPACTS & RECOMMENDATIONS:

The following section discusses the potential impacts on ecology arising from the creation of allotments at The Common. The recommended action is provided where potential impacts might occur.

4.1.1 Potential Impacts:

The grassland at the site is of site value only and formation of the allotments would result in the loss of a rye-grass ley, a very common habitat type on a local – national basis.

The pond is of local value and is to be retained and protected by a buffer area. The presence of great crested newt (GCN) is considered to be unlikely given the prevailing conditions and low HSI score. There is no loss of core terrestrial habitat proposed for the site, and the grassland provides only highly sub-optimal conditions for amphibians.

Given the availability of good terrestrial habitat off-site west of the pond this area will form the main foraging and overwintering area of any amphibian species.

Potential short-term impacts on amphibians are predicted during the construction phase, however these can be adequately mitigated through the provision of appropriately-timed precautionary measures.

The loss of the grassland on ecology in the long-term is predicted to have negligible effect, however positive effects for amphibians, insects and common birds are predicted through the formation of the allotments through increased foraging areas/food sources, temporary refuge/shelter around the allotments.

An existing gap in the hedgerow will be widened to create vehicular access to the site, which is predicted to have a negligible effect on site biodiversity.

The nature area proposed as a buffer around the pond can be designed to have a positive value to amphibians through the provision of good foraging habitat, temporary refuge and possibly overwintering sites.

A new hedgerow and re-stocking of existing hedgerows are also proposed for the site which will have a long-term positive effect on ecology locally.

4.1.2 Recommendations to Avoid Impacts During Construction of the Allotments:

The following action is recommended to prevent impacts during the construction phase.

Birds:

Formation of the site access will require removal of several hedgerow shrubs. The removal of woody vegetation must be undertaken outside of the bird breeding season during September-February.

If the shrubs cannot be removed at this time then an inspection by an ecologist will be required to ensure that no nesting birds are present that could be disturbed by the operation.

Amphibians:

A detailed Precautionary Method Statement should be produced to provide guidance on the nature and timing of the proposed works to avoid impacts on amphibians.

The following issues need to be addressed:

- Nature of works.
- Timing of works.
- Duration of works.
- Storage of materials.
- Barrier effects.
- Entrapment.
- Supervision by ecologist.

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Web Sites:

Bing Maps.

Google Earth.

Lancashire Biodiversity Partnership website.

MARIO.

Natural England – Nature on the Map.

UKBAP website.

APPENDIX:

Site Photographs:

Map 1: Extended Phase 1 Habitat Survey – The Common

Map 2: Extended Phase 1 Habitat Survey – Harrison Road

Site Photographs:



Photograph 1: Ley Grassland at The Common



Photograph 2: The pond at The Common

(Note clearance of vegetation for fishing)



Photograph 3: Harrison Road Northern Field



Photograph 4: Harrison Road Southern Field