



Ashton Hayes Parish Council

Ashton Hayes and Horton-cum-Peel Neighbourhood Plan

Ecological Assessment and Management Plan REV03

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Author	<u>Will Holden</u>	Technical reviewer	<u>Matt Davies</u>
			
Signature	_____	Signature	_____
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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

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1 INTRODUCTION

1.1 Purpose of this Report

This ecological assessment and management plan has been prepared as part of the neighbourhood plan to guide development and ongoing management within the Ashton Hayes and Horton-cum-Peel parish boundary. This report includes:

- an assessment of the current ecological value of the parish;
- assessment of existing management practices;
- suggestions for habitat creation and management of existing habitats; and
- highlights potential detailed protected species surveys required for future planning applications.

The plan includes information on all relevant UK and EU legislation relating to the protection and enhancement of ecology.

1.2 Ecological Context

Ashton Hayes and Horton-cum-Peel parish covers an area of approximately 714 ha. Located 6.5 km east of Chester and 6 km south of the M56 motorway the parish is surrounded by agricultural land, ponds, hedgerows and scattered woodland patches. Delamere Forest is approximately 200 m east of the parish boundary and the southern parish boundary is formed by the A54 road. The parish lies within both the Cheshire Sandstone Ridge and Shropshire, Cheshire and Staffordshire Plain National Character Areas.

1.3 Structure of the Document

The remainder of this document is structured as follows:

- Section 2 describes the baseline ecology;
- Section 3 presents the existing management practices;
- Section 4 presents the habitat creation works;
- Section 5 presents future habitat management practices;
- Section 6 presents the future development and survey requirements.

2 BASELINE ECOLOGY

2.1 General

This section lists the ecological features of the parish, as identified from aerial photography, a pond assessment and ecological walkover undertaken by RSK Environment on 26th September and 4th October 2013.

In addition RECORD, the Cheshire Biological Records Centre, was contacted for records of statutory and non-statutory designated sites and protected and notable species and habitats within the parish boundary. Species included in the search parameters were:

- European protected species (listed on *Schedules 2 and 4 of The Conservation of Habitats and Species (Amendment) Regulations 2012*);
- nationally protected species under *Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981* and *The Protection of Badgers Act 1992*;
- species listed as Critically Endangered, Endangered or Vulnerable on the *IUCN Red List*
- all species listed on the RSPB *Birds of Conservation Concern 2002-2007* as Red or Amber;
- Nationally Rare or Nationally Scarce species;
- notable invertebrates; and
- species that have Action Plans under the UK Biodiversity Action Plan (UKBAP) or are Priority Species under the Local Biodiversity Action Plan.

2.1.1 Designated Sites

There are no statutory designated sites within the parish boundary.

There are five non-statutory designated sites within the parish boundary. These are:

- Ark Wood Local Wildlife Site (LWS);
- Cat Rough (LWS);
- Brines Brow (LWS);
- Lily Wood and Garden Wood (LWS); and
- Ash Wood (LWS).

2.1.2 Habitats

2.1.2.1 General

Ashton Hayes and Horton-cum-Peel parish is predominantly agricultural land with a mixture of improved grassland and arable farm land (Figure 1). The remainder of the parish includes mixed deciduous and coniferous woodland, ponds, including old marl pits, garden ponds and coarse fishing lakes and residential development. Field and garden boundaries are predominantly marked by high hedgerows. There are also several streams and brooks flowing through the parish.

2.1.2.2 Hedgerows

An important feature of the character of the parish are high hedgerows along field boundaries and the edge of gardens. Results of the ecological walkover survey in September and October 2013 show that within the agricultural land, the hedgerows are typically between 2 m and 3m high and predominantly species poor, dominated by *Crataegus monogyna* (Hawthorn) or *Prunus spinosa* (Blackthorn) with a mixture of *Prunus domestica* (Wild Plum) and *Sambucus nigra* (Elder). Many of the hedgerows have large mature trees including *Fraxinus excelsior* (Ash), *Quercus robur* (Pedunculate Oak) and *Tilia xeuropaea* (Lime).

The garden hedgerows in Ashton Hayes form part of the designation as a conservation area, requiring hedgerows to be kept at a certain height. Hedgerows in this area are typically 2 m to 3 m high and composed of *Crataegus monogyna* (Hawthorn), *Ligustrum ovalifolium* (Garden Privet) and *Prunus laurocerasus* (Cherry Laurel).

The maintenance of the high hedgerows in both the agricultural field boundaries and residential gardens helps to screen much of the residential development from the roads.

Some field boundaries are not marked by hedgerows. Either through damage to the existing hedgerow or through the creation of new field boundaries, these are typically marked by post and wire fencing.

2.1.2.3 Woodland

Patches of mixed deciduous woodland and coniferous woodland are concentrated towards the centre and north of the parish. In most cases, these are formed around steep sided valleys and areas difficult to farm. There is also a strip of woodland along part of the southern boundary with the A54 road, planted to screen the parish from road noise. There is a narrow strip of woodland and wide hedgerow on both sides of Shay Lane.

Typical woodland trees in the area include *Acer pseudoplatanus* (Sycamore), *Aesculus hippocastanum* (Horse-chestnut), *Fraxinus excelsior* (Ash) and *Quercus robur* (Pedunculate Oak). Areas of coniferous woodland are dominated by *Pinus sylvestris* (Scots Pine).

Woodland represents 6.5% of the parish. This is slightly higher than the Cheshire average of 6.4%, but is well below the national average of 10% (<http://www.woodlandtrust.org.uk/en/campaigning/our-campaigns/panel/Pages/cheshire.aspx#.UI0P0dJJP1M>). An increase of 1% cover of woodland in the parish would require the creation of 7.14ha (17.6 acres) of woodland.

The parish includes four areas of Ancient Woodland comprising Ash Wood, Lily Wood, Garden Wood and part of Ark Wood.

The parish also includes 11 areas of Deciduous Woodland BAP Priority Habitat including Mill Wood, Ash Wood, Dale Covert, Lily Wood, Garden Wood, Black Wood, Brickbank Covert, Brine's Brow and part of Willow Wood and three Traditional Orchards BAP Priority Habitat at Sunny Bank Farm, Ashton Grange and at land to the east of Horton Hall.

2.1.2.4 Ponds

Characteristically for this part of lowland Cheshire, the parish includes a large number of ponds. These are predominantly old marl pits in agricultural land, but also include garden ponds and coarse fishing lakes.

Assessing the ecological value of the ponds in the parish involved the identification of ponds from aerial photography and ordnance survey maps. The pond surveys were carried out by RSK Environment in September and October 2013. These surveys focused on the suitability of the ponds for amphibians and invertebrates, as these are important indicator species gauging the underlying health of the ponds. For this purpose only the ponds were assessed using the readily available Habitat Suitability Index as a means of gauging pond health.

It is important to note, these surveys do not constitute detailed Great Crested Newt surveys and the results do not confirm the presence or absence of Great Crested Newts in the ponds.

2.1.2.4.1 Pond Survey Assessment Methodology

All water features to which access was possible were assessed using the Habitat Suitability Index (HSI) developed by Oldham et al. (2000), which is a derived from systems developed by the US Fish and Wildlife Service. It is a numerical index, between 0 and 1, where 0 indicates unsuitable habitat and 1 represents optimal habitat. The HSI uses ten factors (suitability indices (SI) 1 to 10) as follows:

- geographic location (SI 1);
- surface area (SI 2);
- hydrology (drying) (SI 3);
- water quality (SI 4);
- shade (SI 5);

- presence of water fowl (SI 6);
- presence of fish (SI 7);
- number of adjacent water features (SI 8);
- terrestrial habitat (SI 9); and
- macrophyte cover (SI 10).

Each factor is scored using field and desk-based survey. These ten scores are then converted to SI scores using a scale from 0.01 to 1 from graphs given in Oldham et al. (2000) and a HSI result is calculated using the following formula:

$$\text{HSI} = (\text{SI1} \times \text{SI2} \times \text{SI3} \times \text{SI4} \times \text{SI5} \times \text{SI6} \times \text{SI7} \times \text{SI8} \times \text{SI9} \times \text{SI10})^{1/10}$$

Further research by Brady (unpublished) has developed a system for using HSI scores to define pond suitability for Great Crested Newts according to the following categories:

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

There is a positive correlation between HSI scores and presence and abundance of amphibians in ponds. Generally, ponds with high HSI scores are likely to support larger populations of amphibians and invertebrates. However, the relationship is not sufficiently precise to conclude that any pond with a high HSI will support newts in high populations, or that any pond with a low score will have no newts or only a small population.

2.1.2.4.2 *Survey Results*

The ponds in the parish, being predominantly on agricultural land, are similar in size, vegetation and surrounding land use. They are typically heavily poached by cattle with limited aquatic vegetation dominated by Bulrush, Duckweed and small amounts of Broad-leaved Pondweed. The ponds are heavily used by wildfowl, including ducks, geese and Heron. Some are heavily shaded and contain fish, including those stocked by the land owner.

A total of 55 ponds were identified from ordnance survey maps. Of these ponds, three ponds no longer existed, seven ponds were coarse fishing lakes, five ponds were dry and access was not available to survey ten ponds.

As a result, HSI information was collected for 30 ponds (Figure 2). Results of the assessment are shown below.

Table 2-1: Habitat Suitability Index Scores for ponds in the parish including comments on the reason for low scores

Pond Number	HSI Score	Suitability for Amphibians	Comments
1	0.85	Excellent	
2	0.72	Good	Use by Waterfowl
3	0.63	Average	Use by Waterfowl Fish Present Few Aquatic Plants Present
4	0.68	Average	Use by Waterfowl Fish Present Few Aquatic Plants Present
5	0.66	Average	Use by Waterfowl Fish Present Few Aquatic Plants Present
6	0.69	Average	Use by Waterfowl Fish Present Few Aquatic Plants Present
7	0.58	Below Average	Poor Water Quality Heavy Shading Poor Terrestrial Habitat Quality Few Aquatic Plants Present
8	0.83	Excellent	
9	0.69	Average	Use by Waterfowl Poor Terrestrial Habitat Few Aquatic Plants Present
10	0.77	Good	Poor Water Quality
11	0.53	Below Average	Poor Water Quality Heavy Shading Few Aquatic Plants Present
12	0.48	Poor	Poor Water Quality Heavy Shading Poor Terrestrial Habitat Quality
13	0.55	Below Average	Poor Water Quality Heavy Shading
14	0.65	Average	Use by Waterfowl Few Aquatic Plants Present
15	0.59	Below Average	Poor Water Quality Heavy Shading
16	0.76	Good	Poor Water Quality
17	0.38	Poor	Poor Water Quality Use by Waterfowl Fish Present Few Aquatic Plants Present
18	0.67	Average	Regular Drying Out
19	0.48	Poor	Poor Water Quality Heavy Shading Few Aquatic Plants Present

Pond Number	HSI Score	Suitability for Amphibians	Comments
20	0.69	Average	Frequent Drying Out
21	0.78	Good	Fish Present
22	0.76	Good	Fish Present
23	0.59	Below Average	Poor Water Quality Use by Waterfowl Poor Terrestrial Habitat Quality Few Aquatic Plants Present
24	0.61	Average	Poor Water Quality Use by Waterfowl Poor Terrestrial Habitat Quality Few Aquatic Plants Present
25	0.68	Average	Poor Water Quality Poor Terrestrial Habitat Quality Few Aquatic Plants Present
26	0.58	Below Average	Small Size Frequent Drying Out
27	0.79	Good	
28	0.48	Poor	Fish Present Few Aquatic Plants Present
29	0.46	Poor	Poor Water Quality Fish Present Few Aquatic Plants Present
30	0.56	Below Average	Poor Water Quality Heavy Shading Few Aquatic Plants Present

2.1.2.5 Watercourses

There are three brooks within the parish boundary. These are Ashton Brook, which flows east to west along the northern boundary of the parish, Salter's Brook which flows along the western boundary of the parish and an unnamed brook which flows east to west from Ashton Hayes village into Salter's Brook.

The brooks are within steep sided banks approximately 2-3m high and form shallow, narrow and slow flowing streams. Ashton Brook and Salter's Brook are relatively open, with banks dominated by rough grassland and scrub. The brook flowing out of Ashton Hayes village fluctuates greatly in volume depending on recent rain. At times it can become fast flowing and deep. It flows out of the village along the line of a hedgerow and is heavily shaded by the hedgerow.

2.1.2.6 Invasive Plant Species

A full invasive plant species survey of the parish has not been carried out for this report. Incidental sightings of invasive species were recorded during the walkover surveys in September and October 2013.

There are large stands of *Impatiens glandulifera* (Indian Balsam) both along the banks of Ashton Brook and within the ruderal habitat around Ponds 3, 4 and 5.

Several of the ponds contained invasive species. Ponds 2 and 21 contain *Elodea canadensis* (Canadian Waterweed) and Ponds 14, 16, and 27 contain *Crassula helmsii* (New Zealand Pigmyweed).

2.1.3 Protected Species

Species recorded in the Background Data Search within the parish boundary are displayed in Table 1 below. The table includes all bird species recorded in the parish as these are protected during the nesting season. Those bird species present on the Birds of Conservation Concern (BoCC) Red List are marked with an asterisk (*).

Table 2-2: Protected species recorded in Ashton Hayes and Horton-cum-Peel Parish Boundary

Taxon group	Common name	Scientific name
BIRD	Barn Swallow	<i>Hirundo rustica</i>
BIRD	Black-billed Magpie	<i>Pica pica</i>
BIRD	Blue Tit	<i>Cyanistes caeruleus</i>
BIRD	Common Blackbird	<i>Turdus merula</i>
BIRD	Common Buzzard	<i>Buteo buteo</i>
BIRD	Common Grasshopper Warbler*	<i>Locustella naevia</i>
BIRD	Common Kestrel	<i>Falco tinnunculus</i>
BIRD	Common Redstart	<i>Phoenicurus phoenicurus</i>
BIRD	Common Snipe	<i>Gallinago gallinago</i>
BIRD	Common Whitethroat	<i>Sylvia communis</i>
BIRD	Common Wood Pigeon	<i>Columba palumbus</i>
BIRD	Eurasian Collared Dove	<i>Streptopelia decaocto</i>
BIRD	Eurasian Curlew	<i>Numenius arquata</i>
BIRD	Eurasian Jay	<i>Garrulus glandarius</i>
BIRD	Eurasian Tree Sparrow*	<i>Passer montanus</i>
BIRD	European Greenfinch	<i>Carduelis chloris</i>
BIRD	European Robin	<i>Erithacus rubecula</i>
BIRD	Great Spotted Woodpecker	<i>Dendrocopos major</i>
BIRD	Grey Wagtail	<i>Motacilla cinerea</i>
BIRD	House Sparrow*	<i>Passer domesticus</i>
BIRD	Lesser Redpoll*	<i>Carduelis cabaret</i>
BIRD	Merlin	<i>Falco columbarius</i>
BIRD	Northern Lapwing*	<i>Vanellus vanellus</i>
BIRD	Pied Flycatcher	<i>Ficedula hypoleuca</i>
BIRD	Rook	<i>Corvus frugilegus</i>
BIRD	Song Thrush*	<i>Turdus philomelos</i>
BIRD	Spotted Flycatcher*	<i>Muscicapa striata</i>

Taxon group	Common name	Scientific name
BIRD	Willow Tit*	<i>Poecile montanus</i>
BIRD	Winter Wren	<i>Troglodytes troglodytes</i>
BIRD	Wood Nuthatch	<i>Sitta europaea</i>
BIRD	Wood Warbler*	<i>Phylloscopus sibilatrix</i>
BIRD	Yellowhammer*	<i>Emberiza citrinella</i>
BUTTERFLY	Ringlet	<i>Aphantopus hyperantus</i>
TERRESTRIAL MAMMAL	Eurasian Badger	<i>Meles meles</i>
TERRESTRIAL MAMMAL	European Water Vole	<i>Arvicola amphibius</i>
TERRESTRIAL MAMMAL	West European Hedgehog	<i>Erinaceus europaeus</i>

In addition to these recorded species, there are anecdotal records of Barn Owl, Blackcap, Black-headed Gull, Brambling, Bullfinch, Canada Goose, Carrion Crow, Chaffinch, Chiffchaff, Coal Tit, Common Sandpiper, Coot, Dunnock, Fieldfare*, Goldcrest, Goldfinch, Great Tit, Green Sandpiper, Green Woodpecker, Grey Heron, Hobby, House Martin, Little Owl, Long-tailed Tit, Mistle Thrush, Moorhen, Pheasant, Pied Wagtail, Redwing*, Siskin, Skylark*, Sparrowhawk, Starling*, Swift, Tawny Owl, Treecreeper, Palmate Newt, Toad, American Mink, bats, Hare and Rabbit within the parish

The ecological walkover survey was carried out by RSK Environment Ltd in September and October 2013. The survey focused on assessing the suitability of the ponds for Great Crested Newts. Incidental signs and suitable habitat for other protected species was recorded where present, however this was not a detailed survey for protected species.

Taking into consideration the Protected Species Records, the geographical region and the habitat types, other protected species that could be encountered are:

- Great Crested Newts;
- nesting birds; and
- Otters.

During the ecological walkover survey of the parish, there were several locations where active Badger setts and other evidence of Badgers (latrines, paths) were recorded. The location of Badger setts has not been included within the Figures as this is sensitive information, however it is important to note that Badgers are present within the parish.

In addition, Cheshire Wildlife Trust has recently identified a population of Water Voles on Ashton Brook (also identified in the Background Data Search) within the parish boundary. It is important to note that a lack of records does not confirm a lack of presence within the parish. An ecological walkover survey cannot be relied upon to find all evidence of protected species, although incidental signs are recorded where present.

No other records of protected species or signs of protected species were recorded.

3 EXISTING MANAGEMENT PRACTICES

The majority of the management practices in the parish are focused towards its use as agricultural land. The following management practices and land use in the parish provide ecological value and enhance the character of the parish. These practices should be maintained and encouraged where possible.

3.1 Hedgerows

The maintenance of field boundaries as high hedgerows (typically 3m high) is an important feature within the parish. Not only does this contribute to the landscape character and value of the parish, the hedgerows also provide important nesting and foraging habitat for farmland birds. They provide commuting and foraging routes for bats and foraging habitat and important ground cover for small mammals and amphibians.

3.2 Ponds

Many of the ponds are of use to wildfowl, with many ducks and geese observed using the ponds during the walkover survey.

Some ponds within the parish, including garden ponds, are suitable for Great Crested Newts and other amphibians, however the presence of stocked fish reduces the suitability of some ponds. Ponds in the parish are not actively managed, with the exception of periodic clearance of vegetation. Potential management of the ponds to improve their value for wildlife is described in Section 5.

The majority of the ponds in the parish are agricultural and used to provide water for livestock. This has a detrimental affect on the water quality and diversity and abundance of aquatic plants. Whilst this reduces the suitability of many of the ponds for amphibians (particularly Great Crested Newts) their value, providing water to livestock, is of importance.

3.3 Field Margins

Many of the arable fields, particularly in the north-western corner of the parish, have extensive arable field margins. These margins have a greater diversity of arable weeds and wild flowers than those fields without arable margins, and they provide important foraging habitat potential for invertebrates, reptiles, amphibians, farmland birds and mammals.

There is concern with some farmers that arable field margins will soon be lost due to recent changes in the Stewardship agreements.

4 HABITAT CREATION

4.1 Introduction

There are several opportunities to improve the value of the parish for wildlife, the following opportunities for habitat creation are proposed, however, these are suggestions only and actual habitat creation will require agreement from the relevant landowners and site-specific assessment and prescriptions will need to be developed. The focus of habitat creations works should be on those habitats listed in the Cheshire Habitat Action Plan (<http://www.cheshire-biodiversity.org.uk/action-plans/?id=64>). These describe targets for creation and restoration as well as detailing threats to the important habitats within Cheshire.

4.1.1 Location

The selection of sites for habitat creation should focus on those areas that will bring the greatest gain for the time and money invested. Woodland planting to join two areas of existing woodland, or hedgerow planting to increase connectivity between other habitats (existing hedgerows, woodland, etc) will bring greater benefit than the creation of isolated hedgerows or woodlands.

4.1.2 Sourcing

It is important that the source of seeds, trees, etc is of local provenance and from a reputable supplier. Recommended suppliers can be found at Flora Locale (<http://www.floralocale.org/page24182>). Recent examples of the spread of pathogens from imported stock have provided a clear demonstration of the importance of sourcing stock locally.

4.2 Features

4.2.1 Woodland

The creation of new areas of woodland would increase the average cover of woodland within the parish to bring it closer to the national average and would also provide additional habitat diversity for the parish. The target of woodland creation should include consideration of suitable species and the target type of woodland. The Cheshire Habitat Action Plan for woodland includes targets for Lowland Mixed Deciduous Woodland (<http://www.cheshire-biodiversity.org.uk/action-plans/listing.php?id=69>) and includes contact details of relevant partners who can provide guidance and advice on woodland management and creation. A 1% increase in woodland cover in the parish will require 7.14ha (17.6 acres) of new woodland planting.

Indicative suggestions (below) will need to be developed in more detail once sites were selected, so that species could be chosen that are appropriate to the site.

New woodland could be created along the boundary of existing woodland, extending the area covered by established woods. Alternatively, the planting of a new woodland closer to the village, alongside the Ashton Hayes Playing Field to the south west of the village or close to Ashton Hayes Primary School would provide a recreational and educational resource for the village.

New woodland should be planted with a mixture of native species of local provenance. Species including *Corylus avellana* (Hazel), *Prunus spinosa* (Blackthorn), *Sorbus aucuparia* (Rowan) are *Quercus robur* (Pedunculate Oak) already present within the parish and would be suitable trees that would provide food and shelter for wildlife.

Guidance for the creation of new woodlands can be found from the Forestry Commission ([http://www.forestry.gov.uk/pdf/fcin15.pdf/\\$file/fcin15.pdf](http://www.forestry.gov.uk/pdf/fcin15.pdf/$file/fcin15.pdf))

4.2.2 Tree Belts

Additional woodland planting could be considered along the A54 road. Part of the road boundary is currently planted with trees to screen it from the parish. The tree belt could be extended along the full length of the boundary with the A54 road to provide better visual screening.

Planting along this boundary should be between 10 and 15 m deep. The edges of this woodland strip will include fast growing species such as *Betula pendula* (Silver Birch) and *Sorbus aucuparia* (Rowan) to provide a nurse crop. The centre of the tree belt should include species such as *Quercus robur* (Pedunculate Oak) and *Tilia xeuropaea* (Lime) as these are already present within the parish and as these mature, they will provide a high screen of the road. A more dense, year round screen can also include *Acer pseudoplatanus* (Sycamore), *Crataegus monogyna* (Hawthorn), *Fagus sylvatica* (Beech) and *Ilex aquifolium* (Holly). Tree belts typically take 10-15 years to mature and take effect.

An additional tree belt could be planted from the western corner of the Ashton Hayes Playing Field heading along the footpath and field boundaries to the northwest. This would attempt to shield the village from the prevailing southwesterly wind.

4.2.3 Ponds

The density of ponds within the parish is high. However the creation of several new ponds, designed specifically for wildlife, would improve habitat availability for amphibians and aquatic invertebrates. Ponds with shallow sloping banks and variations in depth will create important habitat for these species. Guidance for pond creation can be found at <http://www.pondconservation.org.uk/millionponds/pondcreationtoolkit>.

Ponds could be created with a pontoon, board walk or pond dipping platform within public accessible land, to provide an educational resource for the village. Care would

have to be taken, however, to ensure the safety of the public and wildlife when designing these features.

4.2.4 Wildflower Verges

Many of the roadside verges in the village are maintained by Cheshire West and Chester Council. These are regularly cut, predominantly species poor and dominated by improved grassland and ruderal species.

Diversity of roadside verges could be improved by overseeding with a wildflower seed mix. In addition, a relaxed cutting regime, cutting once a year in September with arisings removed from the site will promote wildflower diversity. This would provide an important resource for invertebrates and help to achieve the Cheshire Roadside Verges Habitat Action Plan Target (<http://www.cheshire-biodiversity.org.uk/action-plans/listing.php?id=20>). The management of roadside verges will require tailoring to each verge. Tussocky verges may require breaking up to improve the structure and allow the growth of less competitive species. Nutrient rich and improved grassland verges may require topsoil stripping to remove nutrients. Guidance for the management of roadside verges can be found at Plantlife's road verge campaign webpage:

http://www.plantlife.org.uk/roadvergecampaign/3_steps_to_good_road_verge_management.

4.2.5 Hedgerows

Those field boundaries that are currently formed by post and wire fences could be planted up to create hedgerows with a similar character to those already present within the parish. Species including *Crataegus monogyna* (Hawthorn), *Prunus spinosa* (Blackthorn) and *Sambucus nigra* (Elder) should be used to maintain consistency with existing hedgerows.

Shay Lane has been restored in the last 4-5 years, with additional planting of the hedgerows to fill gaps and increase hedgerow height. Habitat improvements along Shay Lane could be continued by additional planting to increase the width of the woodland belt along the lane. This would encourage the use of Shay Lane as a wildlife corridor.

New hedgerows will increase a foraging and commuting resource for bats and small mammals as well as increasing the availability of nesting habitat for farmland birds. The location for the creation of new hedgerows should focus on linking existing habitats (woodland, hedgerows) providing connectivity between habitats.

4.2.6 Bat Boxes and Nest Boxes

Many of the farms currently have bird boxes erected on trees and buildings. Bat boxes and bird boxes can also be installed in suitable trees along woodland edges and on houses within the village. This would increase the available habitat for bird and bat species. These would be positioned to allow clear flight lines to adjacent suitable habitat. Guidance of the type and location of boxes can be found at the Bat Conservation Trust (http://www.bats.org.uk/pages/bat_boxes.html)

4.2.7 Arable Field Margins

More of the arable fields within the parish should include a margin strip left to seed with arable weeds and wild flowers. This can be part of Entry Level and Higher Level Stewardship schemes. The provision of more arable field margins will improve habitat for small mammals, invertebrates and farmland birds.

5 FUTURE HABITAT MANAGEMENT

5.1 General

The following section provides recommendations for the management of the features described in *Section 3* in order to maintain and enhance their value for wildlife. Alterations to existing management practices will need approval from the landowners.

5.2 Features

5.2.1 Ponds

Objective: to maximise the value of this feature for amphibians and invertebrates

The majority of the ponds surveyed in September and October were of average, below average or poor suitability for this objective. In these cases, the common factors affecting their suitability were a low proportion of aquatic plants and low water quality.

In most cases, the reason for this is the use of the ponds by livestock or the shading of the ponds by trees. In addition, the ponds in the parish as a whole are affected to varying degrees by infilling and drying out.

Suggested management for each pond (where required) are shown in the Table 5.1 below. Please note, these are suggestions only and management undertaken at each pond is subject to approval by the relevant landowners.

Livestock

While it is important that livestock can continue to use, fencing off part of the boundary of the pond will prevent access to some sections. This will encourage the growth of aquatic plants and by reducing livestock poaching the banks and entering the water, water quality will be improved.

Shading

Although some shading is beneficial, heavy shading of ponds reduces the availability of light and the presence of aquatic plants. Build-up of leaf litter in the ponds also reduces water quality. Removing some trees and shrubs around the margins of ponds, particularly along their southern edge, will improve the diversity of aquatic plants and improve water quality.

A diversity of habitat within the parish is important. Some species of aquatic invertebrates require ponds which are heavily shaded with a high proportion of leaf litter. Management of the parish's pond resource should seek to achieve a balance between ponds managed for amphibians and those managed for shade-tolerant species.

Infilling

As many of the ponds are becoming drier and infilling with silt and vegetation, these areas can be excavated to increase water depth.

Excavated material laid on the pond banks for several days to allow invertebrates to escape. This material should then be removed to prevent colonisation by ruderal species such as nettles. Excavation of sections of the pond over several years is advised so that all invertebrates, amphibians and plants present are not impacted by management works in the same year: typically it is suggested that only one third of a pond margin should be managed in any one year. Excavation works should take place in winter, so that wildlife will be dormant. Also no European Protected Species licence will be required. If Great Crested Newts are found during the works, work must stop and a suitably qualified ecologist should be contacted immediately.

Care should be taken when excavating ponds. If ponds are excavated too deep, then it is possible that the clay lining may be punctured and the pond will dry up.

Excavation of ponds on farm land should be done with caution. Creating deeper water may be inadvisable as it may encourage livestock into the ponds, which may then become stuck.

5.2.2 Invasive species

Objective: to remove invasive species from the parish

Several of the ponds contain *Crassula helmsii* (New Zealand Pigmyweed), *Elodea canadensis* (Canadian Waterweed) and *Lemna minor* (Common Duckweed). Management of these species can be difficult, however, without management, ponds can become overgrown.

Where possible, mechanical removal is the most effective option, with material dumped on the pond banks. Any machinery used to remove invasive species should be cleaned thoroughly as it is an offence to cause the spread of some invasive species in the wild. Guidance from the Environment Agency on the control of invasive species can be found at

<http://www.lbp.org.uk/downloads/Publications/SpeciesInfo/Managing%20Invasive%20Non-Native%20Plants.pdf>.

The stands of *Impatiens glandulifera* (Indian Balsam) along Ashton Brook and around Ponds 3, 4 and 5 can be treated by cutting back or hand pulling in late spring/early summer before the plants set seed. This will need to be repeated over several years until the plant stops growing from the seed bank.



Pond Management outlined below aims to achieve the objective of maximising the value of ponds in the parish for amphibians and invertebrates. The aim is to maximise pond diversity throughout the parish and improve diversity of amphibians, aquatic plants and invertebrates as well as fish and wild fowl. Though the presence of fish and wildfowl are to be encouraged, and improve diversity in the parish, if they are allowed to become dominant within a pond, the diversity of other species will be reduced.

The aim is to create a diversity of ponds across the parish. Please note, these are suggestions only and management undertaken at each pond is subject to approval by the relevant landowners.

Table 5-1: Suggested Pond Management

Pond Number	Suggested Management/ Actions
1	None
2	Fence part of pond perimeter to reduce cattle access and improve aquatic plant abundance
3	Reduce Fish numbers to reduce predation of amphibians and reduce grazing on aquatic plants Open up pond banks by clearing vegetation Consider treatment of invasive species (Himalayan Balsam). This can be achieved by hand pulling in May over several years.
4	Reduce Fish numbers to reduce predation of amphibians and reduce grazing on aquatic plants Open up pond banks by clearing vegetation Consider treatment of invasive species (Himalayan Balsam). This can be achieved by hand pulling in May over several years.
5	Reduce Fish numbers to reduce predation of amphibians and reduce grazing on aquatic plants Open up pond banks by clearing vegetation Consider treatment of invasive species (Himalayan Balsam)
6	Reduce Fish numbers to reduce predation of amphibians and reduce grazing on aquatic plants Open up pond banks by clearing vegetation to allow more light to the pond margins
7	Clear trees around some of the pond banks to reduce leaf litter in the pond, improve water quality and increase abundance of aquatic plants. Remove existing leaf litter to improve water quality
8	None
9	Fence part of pond perimeter to prevent livestock access, reducing grazing pressure and disturbance and improve aquatic plant abundance.
10	Fence part of pond perimeter to prevent livestock access, reducing grazing pressure and disturbance. This will improve water



Pond Number	Suggested Management/ Actions
	quality and improve aquatic plant abundance.
11	Clear trees and vegetation around some of the pond banks (particularly the southern bank) to reduce leaf litter in the pond, improve water quality through removal of leaf litter and increase abundance of aquatic plants.
12	Clear trees and vegetation around some of the pond banks (particularly the southern bank) to reduce leaf litter in the pond and improve water quality.
13	Clear trees and vegetation around some of the pond banks (particularly the southern bank) to reduce leaf litter in the pond, improve water quality and increase abundance of aquatic plants.
14	Fence off part of the pond to prevent waterfowl access and increase abundance of aquatic plants. This will require fencing through the pond itself. Consider treatment of invasive species (New Zealand Pigmyweed).
15	Clear trees and vegetation around some of the pond banks to reduce leaf litter in the pond, improve water quality and increase abundance of aquatic plants. Remove litter within the pond.
16	Plant reed bed to filter run off from septic tank. Dig out part of the pond to increase depth and amount of water held and remove some vegetation. Consider treatment of invasive species (New Zealand Pigmyweed).
17	None - commercial fishing pond
18	Consider digging out part of the pond to increase size and prevent regular drying out. Care should be taken to protect livestock.
19	Clear trees and vegetation around some of the pond banks to reduce leaf litter in the pond, improve water quality and increase abundance of aquatic plants. Consider digging out the pond to remove leaf litter, increase depth and reduce drying out.
20	Consider digging out the pond to remove leaf litter, increase depth and reduce drying out.
21	Reduce Fish numbers or fence off part of the pond to prevent fish access
22	Reduce Fish numbers or fence off part of the pond to prevent fish access Consider digging out the pond to increase depth and prevent infilling. Duckweed can be kept under control through regular removal.
23	Fence part of pond perimeter to prevent livestock access, reducing grazing pressure and disturbance and improve aquatic plant abundance and water quality.
24	Fence part of pond perimeter to prevent livestock access, reducing grazing pressure and disturbance and improve aquatic plant abundance and water quality
25	Fence part of pond perimeter to prevent livestock access, reducing grazing pressure and disturbance and improve aquatic plant abundance and water quality



Pond Number	Suggested Management/ Actions
26	Dig out part of the pond to increase size and reduce drying out.
27	Consider treatment of invasive species (New Zealand Pigmyweed).
28	Reduce Fish numbers. Fence off part of the pond to prevent fish and wildfowl access and increase abundance of aquatic plants.
29	None - Lined Tank - no management possible.
30	Clear trees around some of the pond banks to reduce leaf litter in the pond, improve water quality and increase abundance of aquatic plants.

6 FUTURE DEVELOPMENT AND SURVEY REQUIREMENTS

This section of the report identifies opportunities for residential development within the parish, details any restrictions to development related to ecology and outlines the likely detailed ecological surveys that may be required for future planning applications. This section identifies those areas where development would have the lowest biodiversity impacts, however the selection of sites for development requires more detailed and wide-ranging assessment of the full range of potential effects.

6.1 Opportunities for Development

6.1.1 Residential Development

The majority of the parish comprises large expanses of agricultural farm land with little ecological value. From a biodiversity perspective, development within such areas will have lower impacts on wildlife than development in areas of woodland, ponds or wetland.

6.1.2 Renewable Energy

Ashton Hayes village is currently aiming to be the country's first carbon neutral village. Part of this process is the encouragement of renewable energy. Some houses within the parish (around Peel Hall) have ground level solar panels, providing renewable energy and reduced carbon footprint to those homes.

As well as residential development, sites could be selected within the parish to install solar panels or other renewable energy systems. As with residential development, more detailed and comprehensive assessments of suitable sites is required, however, such systems could be installed providing renewable energy to the village, reducing the carbon footprint further and helping the village towards achieving its carbon neutral target.

Selection of sites for ground level solar panels should focus on sites with low ecological value (agricultural land). For ease of maintenance, nothing can be allowed to grow up underneath the panels. Semi-hard surfacing or gravel is often required underneath the panels as well as the application of herbicides beneath the panels. It is possible to include areas of close mown amenity-turf between the rows of panels. Ground level solar panel sites are therefore of low ecological value.

6.2 Restrictions to Development

From an ecological perspective, restrictions to development are based on the relative value of the habitats and species present within the parish.

There are large areas of the parish, identified above, which offer little ecological value. However, some areas, particularly the areas of broad leaved woodland, ancient woodland, hedgerows, ponds and brooks represent a diversity of habitat, which are considered ecologically valuable. Development within and around these areas should be restricted, where possible, in favour of development in improved grassland and arable farmland.

Constraints to development from protected species are dependent on the species involved and the nature and design of the development.

Planning Guidance requires protected species licencing, repeated survey effort or pre-construction translocation works if development takes place in the following areas:

- within 30m of an active Badger Sett;
- within 10m of a ditch or brook containing Water Voles or Otters;
- within 500 m of any pond containing Great Crested Newts; or
- removal of trees or buildings suitable for roosting bats.

6.3 Future Survey Requirement

6.3.1 Introduction

The walkover survey carried out in September and October 2013 and the Background Data Search have identified the presence of protected species within the parish and the presence of habitats suitable for protected species. This is not a substitute, however, for detailed ecological surveys.

Any future development may require one or more of the following surveys, with reports provided as part of the planning application. The need for these or any other surveys would have to be assessed on a case-by-case basis. Involving an ecologist at an early stage of site selection and layout masterplanning can often result in avoiding negative effects on protected species and other wildlife, and save time and cost in the development process by avoiding the need for lengthy surveys.

6.3.2 Botanical Surveys

Extended Phase 1 Habitat Survey – Initial botanical survey required to map habitats within the development site (http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf). Ideally carried out between May and September, but can be carried out year round although out of season surveys may be inadequate at some sites.

Hedgerow Survey – May be required if hedgerows are to be wholly or partially lost. Carried out between May and September.

6.3.3 Protected Species Surveys

Badger – survey of all land within the development site and within 30 m of the development site for signs of use (latrines, paths, footprints, hairs) by Badger, including Badger setts. Can be carried out year round, however if sett closure is required, licence applications take six weeks and sett closure takes three weeks. Sett closure can only take place between July and November inclusive.

Bats – initial assessment of trees and buildings within the development site for suitability for roosting bats. Assessment of hedgerows and woodland edges for suitability for commuting bats. Follow on detailed activity surveys may be required if suitable roosting features or commuting routes are found. Initial assessment carried out year round, activity surveys may require one survey between May and August and two further surveys any time between May and September. Guidance on survey requirements can be found from the Bat Conservation Trust (<http://www.bats.org.uk/pages/batsurveyguide.html>).

Great Crested Newts – survey of all ponds within 500 m of any development for presence of Great Crested Newts – four visits carried out in March – June (two visits carried out between Mid-April and Mid-May). If Great Crested Newts are recorded, a further two visits (one between Mid-April and Mid-May) are required.

Otter and Water Vole – carried out year round on any watercourse or ditch within 50 m of the development site.

Nesting Bird Checks – required for the removal of vegetation or ground clearance between March and August inclusive.

Wintering Bird Survey – required if development land is assessed as being of importance for wintering birds. One visit per month between September and March.