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**MALFORD MEADOW  
CHRISTIAN MALFORD, WILTSHIRE  
HABITAT MANAGEMENT PLAN**



**On behalf of  
CHRISTIAN MALFORD PARISH COUNCIL**

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## **1 Introduction**

Christian Malford Parish Council has agreed with Wiltshire County Council the terms of a 25 year lease on approximately 4.5 hectares of land to the north of Church Road, which encompasses hedge-lined pasture between the River Avon in the west and The Green in the east (see Appendix A). This land is known as Malford Meadow and will be managed by the Parish Council as open access land for the enjoyment of residents in Christian Malford. A local residents group, the Friends of Malford Meadow (FoMM), was set up to support the project and provide advice to the Parish Council on the best ways to preserve, maintain and improve Malford Meadow for the benefit of the village now and for the future. The FoMM aims to provide advice on:

- The best ways to maintain and improve the Meadow;
- The best way to administer the fishing rights on the River Avon; and
- Conservation, environmental and general management of the Meadow.

The Parish Council will continue to be responsible for overall management of the Meadow and all policy decisions will be taken by the Council.

The FoMM, in its advisory role, considered it necessary to undertake a review of the ecological baseline of Malford Meadow, which in turn would begin to underpin a future site management plan. Stephen Dangerfield, a member of the FoMM, with assistance from Jonathan Adey, both independent ecological consultants, undertook a walkover ecological survey of the meadow combined with a review of existing wildlife records for the site obtained from the Wiltshire and Swindon Biological records Centre (WSBRC).

The findings of the study have been used to develop a habitat management plan for Malford Meadow which aims to manage and optimise benefits for habitats, wildlife and the local community interests. The habitat management plan sets out detailed management actions for the first 5 years, however, longer-term aspirations are dependent on rate of initial habitat change, requirements of the Parish Council and local community and availability of resources.

The plan is not a static document but instead will evolve and be updated over time as management is implemented and takes effect. It is recommended that management actions are routinely assessed and evaluated by the Parish Council and the FoMM, with the management plan updated every 3-5 years.

This management plan is structured as follows:

- Section 2: Baseline Conditions (status of habitats and wildlife currently found on site)
- Section 3: Site Management (actions required to manage different habitat types to meet site objectives)
- Section 4: Monitoring & Appraisal (surveys needed to monitor site development)
- Section 5: Programme of Management (timing of actions)
- Appendices (supporting figures and information)

## **2 Baseline Conditions**

### **2.1 Introduction**

An ecological baseline survey of Malford Meadow was undertaken on 13<sup>th</sup> July 2009, 21<sup>st</sup> August 2009 and 16<sup>th</sup> November 2009, and comprised a walkover of the whole study area. The survey focused on:

- A habitat survey to determine type, quality and extent of habitats present. Botanical lists of each habitat type were recorded, as far as possible given the one-off survey. Protected, rare/scarce and invasive plants were identified, as well as features such as variations in sward height, bare ground, dead wood, veteran trees etc.
- A survey to determine the presence of, or the potential for the study area and surrounding environs to support, protected and rare/scarce animals such as badger, bats, breeding birds, reptiles and amphibians etc. This included identifying the following:
  - ❖ Potential/actual badger setts, as well as latrines, tracks and other signs (foraging holes, pathways, hairs, etc)
  - ❖ Potential bat roosts in trees (with holes, cracks, heavy ivy cladding etc)
  - ❖ Potential reptile habitat
  - ❖ Waterbodies that had the potential to support great crested newt (*Triturus cristatus*) and/or water vole (*Arvicola terrestris*) and/or otter (*Lutra lutra*)
  - ❖ Potential terrestrial habitat for amphibians, particularly great crested newt, and links to other waterbodies in the vicinity

The Wiltshire and Swindon Biological Records Centre (WSBRC) was consulted with a request for any records of rare/protected species known to occur within a 500m buffer of Malford Meadow.

A summary of the ecological baseline based on a review of the existing records and results from the field survey is presented below. Each key habitat type identified is described separately, and mapped in Appendix A. The ecological baseline establishes the context for the subsequent habitat management recommendations.

Botanical species lists (including scientific names) for the hedgerows are provided in Appendix B. Information relating to the legal and planning status of habitats and wildlife is presented in Appendix C.

### **2.2 Site overview**

The study area and its immediate surrounding environs are not covered by any nature conservation designations. The majority of the study area is pasture comprising 3 fields of improved (nutrient enriched), neutral grassland. The site is bounded predominantly by hedgerows, although some of the southern side of the site comprises garden timber/wire fencing with ornamental planting forming the boundaries to residential housing. The western boundary is the River Avon, while the Pug Brook flows along the north-eastern boundary of the site. Mature trees are found along some of the hedgerows, while a mature oak is located in the eastern-most field.

## **2.3 Habitats and botany**

### **2.3.1 Grassland**

The three fields all comprise nutrient enriched grassland with a low species diversity which has very low ecological value (see Photographs 1-4 taken after a recent cut). The grasslands had been recently cut with arising left *in situ*. Dominant plant species in the grassland include common grass species such as common meadow grasses (*Poa* sp), rye grass (*Lolium perennis*), Yorkshire fog (*Holcus lanatus*), Timothy (*Phleum pratensis*), cock's-foot (*Dactylus glomerata*), bent grasses (*Agrostis* sp), meadow barley (*Hordeum secalinum*) with some patches of tufted hair grass (*Deschampsia cespitosa*).

Herbaceous plants comprise common species such as mouse ear (*Cerastium holosteoides*), chickweed (*Stellaria media*), clover (*Trifolium* sp), dandelion (*Taraxacum officinale* agg), creeping thistle (*Cirsium arvense*), creeping buttercup (*Ranunculus repens*), broad-leaved plantain (*Plantago major*), docks (*Rumex* sp), bush vetch (*Vicia sepium*) and field bindweed (*Convolvulus arvensis*) which are typical for this type of habitat in lowland Britain. Substantial areas of nettle/thistle occur in many locations throughout all three fields (see Appendix A) which demonstrates the high levels of nutrient enrichment.

Farmland is critical for a number of UK BAP priority species including many invertebrates, flowering plants, brown hare and farmland birds. However, the majority of the grassland is nutrient enriched with low botanical species diversity. As such the site is only likely to support an invertebrate population with low species diversity, which will have knock-on effects for predator species such as birds and mammals.



*Photograph 1: Field 1 looking north from the Church entrance*

*Photograph 2: Field 2 looking east from Field 1*





*Photograph 3: Western section of Field 3 looking east towards Wessex Water works*

*Photograph 4: Eastern section of Field 3 looking west from The Green entrance with nettle bed in fore of photograph*



### 2.3.2 Hedgerows

Seven hedgerows (H1 – H7) were surveyed (see Appendix A and botanical lists in Appendix B). The main findings are described below:

- H1: approximately 30m long at Church entrance. Overgrown, low species-diversity hedge of hawthorn, elder, privet and wych elm, with ivy and an understorey of bramble and occasional buddleia.
- H2: approximately 140m long forming the southern boundary of Field 1. Low species-diversity containing mainly hawthorn, privet and elder with some sycamore fronted with bramble and nettle. The hedge is fragmented with garden fencing and ornamental planting breaking it up.
- H3: approximately 130m long forming the northern boundary of Field 1. Overgrown hedge dominated by hawthorn with blackthorn, ash, elder, buckthorn and dog rose, and an understorey of bramble.
- H4: approximately 90m long forming the northern boundary of Field 2. Low-species diversity containing mainly hawthorn with elder and some suckering English elm. The hedge disappears with the next 60m of boundary along Field 3 formed from bramble/nettle or a post/rail fence.
- H5: approximately 130m long forming the western boundary of Field 3. This is a high, overgrown hedge associated with a hedgebank. The hedge contains 7 woody species including hawthorn, elder, elm, hazel, blackthorn, field maple (standard trees) and grey willow.
- H6: approximately 210m long forming the northern boundary of Field 3 and running adjacent to the Pug Brook. Overgrown hedge containing 8 woody species including



hawthorn, blackthorn, elder, dog wood, ash, sycamore, crack willow and field maple (standard trees).

- H7: approximately 130m long forming the southern boundary of Field 3. Overgrown hedge of low-species diversity containing predominantly hawthorn and elder with a mature sycamore as a standard tree.



*Photograph 5: Hedgerow 1 at Church entrance*



*Photograph 6: Hedgerow 4 forming northern boundary of Field 2*



*Photograph 7: Hedgerow 5 (on left) looking north towards Pug Brook with Hedgerow 6 on the right of the picture*

The remaining southern boundaries along residential housing and the school comprise garden wood-panel fencing, post and wire fencing with ornamental garden planting of no or limited ecological value.

Climbers and ground flora associated with the hedgerows are very similar throughout the site. Most hedgerows support an understorey of bramble with climbing ivy, while white bryony and bittersweet occur in some locations. Ground flora is dominated by common grasses including false oat grass, meadow barley and Yorkshire fog as well as nettle, hogweed, hedge parsley, buttercups, bindweed, hedge garlic, cleavers, hedge woundwort, herb Robert, thistles, docks and plantains.

### 2.3.3 Trees

The only free-standing mature tree is a large mature, pollard oak located in Field 3 (see Appendix A and Photograph 8). This is believed to be 300-400 years old and will, or has the potential, to support interesting fauna including invertebrates, birds and bats.

Some of the hedgerows contain standard trees including crack willow, sycamore, ash and notably some field maples (see Photographs 9 and 10).

The River Avon bank supports four low crack willows (see Photograph 11). These trees have previously been pollarded but are now becoming overgrown and at risk of splitting.



*Photograph 8: Mature pollard oak with bat potential in Field 3*



*Photograph 9: Mature sycamore in Field 3*



*Photograph 10: Field maple standard in Hedgerow 5*



*Photograph 11: Pollarded crack willow alongside the River Avon*

#### 2.3.4 River Avon and Pug Brook

The River Avon runs adjacent to the western boundary of Field 1. The field slopes down to the river and supports a more diverse, semi-improved grassland community (see Photograph 12). Grass species present include cock's foot, Yorkshire fog, meadow fescue, false oat grass and tufted hair grass. Herbaceous plants include common species such as creeping buttercup (*Ranunculus repens*), bulbous buttercup (*Ranunculus bulbosus*), meadow vetchling (*Lathyrus pratensis*), bush vetch (*Vicia sepium*), ground ivy (*Glechoma hederacea*), sorrel (*Rumex acetosa*), hedge mustard (*Sisymbrium officinale*), hairy willowherb (*Epilobium hirsutum*), spear thistle (*Cirsium vulgare*), teasle (*Dipsacus fullonum*), hogweed (*Heracleum sphondylium*) and curled dock (*Rumex crispus*).

The river edge supports trees and shrubs including crack willow (*Salix fragilis*), ash (*Fraxinus excelsior*), elder (*Sambucus nigra*), goat willow (*Salix caprea*) and hawthorn (*Crataegus monogyna*) with an understorey of bramble (*Rubus fruticosus* agg) and dog rose (*Rosa canina* agg). The ground flora is dominated by nettle (*Urtica dioica*) and Himalayan balsam (*Impatiens glandulifera*) with species such as purple-loosestrife (*Lythrum salicaria*) along the river edge.



*Photograph 12: Grassland and trees/shrubs adjacent to the River Avon looking south towards the Church*

The Pug Brook, which was semi-dry at the time of the survey (see Photographs 13-14), runs along the northern boundary of Field 3. Trees lining the brook are as described for Hedgerow 6. Plants growing along and within the brook include common woodland and stream-side plants such as angelica, water figwort, wavy bitter-cress, pendulous sedge, hart's tongue fern, herb Robert, dog's mercury, water forget-me-not, meadowsweet, male fern, hairy willowherb and fool's watercress.



*Photographs 13 & 14:  
Pug Brook with areas of  
water pooling up and  
others drying out.*

### 2.3.5 Notable plants

All the higher plants recorded within the study area are common and none are listed in the Wiltshire Biodiversity Action Plan (BAP). The veteran oak is encompassed by the Ancient Trees HAP (see Appendix C). Himalyan balsam, which is a non-native and invasive species, is present along the River Avon (see Photograph 15).



*Photograph 15: Himalyan balsam  
growing alongside the River Avon*

## **2.4 Wildlife**

### **2.4.1 Badger**

Two signs of badger (*Meles meles*) foraging were recorded including a dug out wasps nest (see Photograph 16) in the north-west corner of Field 3 and a foraging hole alongside the River Avon. No badger setts were recorded in the study area. The WSBRC record a badger sighting on Wessex Water land in 2003.



*Photograph 16: Badger foraging hole in Field 3*

### **2.4.2 Bats**

One high potential summer bat roost was associated with the mature oak in Field 3 (see Photograph 8) due to the presence of cracks/fissures and rot holes. The pollarded crack willows along the River Avon (see Photograph 11) have some very low summer bat roost potential associated with the old cracked and ivy-clad boles, but not the pollard re-growth which is relatively new and therefore not associated with crevices and cracks which bats would use.

The linear habitats associated with the hedgerows and the River Avon will undoubtedly provide bat commuting routes and foraging habitat. However, the grassland interiors are of reduced value for foraging bats given their enriched status with low species diversity.

The WSBRC do not identify any known bat roosts within the site, but do record the presence of common pipistrelle bat (*Pipistrellus pipistrellus*) and brown long-eared bat (*Plecotus auritus*) in the vicinity of the study area. Both these species, and potentially others, are likely to commute or foraging over the study area.

### **2.4.3 Other mammals**

WSBRC identify the potential presence of water vole (*Arvicola terrestris*) along the Pug Brook, with individuals previously being recorded in 2002 and 2004. No signs of water vole were found along the River Avon within the study area.

No signs of otter (*Lutra lutra*) were observed in the study area, but it is impossible to get under the pollarded crack willows along the River Avon to check for potential holts. It is unlikely that these trees are used as otter holts, although otters probably are moving through the River Avon system and therefore may occasionally use the river bank in the study area to temporarily lie-up.

#### 2.4.4 Breeding birds

A formal bird survey was not undertaken but birds observed during the survey included common lowland farmland and hedgerow species (i.e. wood pigeon, greenfinch, blackbird, robin, wren, chaffinch, great tit, blue tit, dunnock etc). All these species are likely to forage and nest along and within the hedgerows, while it is possible that some ground nesting species may use the field interiors. Raptors such as barn owl, tawny owl, kestrel and buzzard are likely to be foraging over the study area. Notable bird species recorded during the walkover survey include bullfinch (UK BAP and Red List species).

#### 2.4.5 Great crested newt and other amphibians

No great crested newt breeding ponds were located within the study area. However, ponds are present within 500m of the site (i.e. school pond and garden ponds along Church Road), which are known to support significant populations of breeding great crested newt. These sites have biological records from 1998, 2001 and 2002, and their presence was confirmed by Wessex Water (pers. comm., Mark Doughty, Senior Ecologist, 2009).

Although areas of Malford Meadow are considered suitable for supporting great crested newt in their terrestrial phase (foraging and/or hibernating) a newt trapping exercise covering part of the meadow, undertaken by Wessex Water during the summer 2008 and spring 2009, found no newts (pers. comm., Mark Doughty, 2009). Although this demonstrates that great crested newts are not abundant throughout Malford Meadow, it still does not totally rule out the possibility of some newts being present in the site. However, it is likely that the majority of newts are not migrating far from their breeding ponds, instead remaining in terrestrial habitat immediately adjacent to their ponds.

Other amphibians including smooth newt (*Triturus vulgaris*), common frog (*Rana temporaria*) and common toad (*Bufo bufo*) could also be foraging and/or hibernating in the study area.

#### 2.4.6 Reptiles

The presence of water (River Avon and Pub Brook) plus areas of longer grass, scrub/nettle beds and hedgerows provides good potential habitat for foraging reptiles including grass snake (*Natrix natrix*) and slow worm (*Anguis fragilis*). WSBRC confirm the historic presence of these species in the vicinity of the study area with records from 2001 and 2002.

#### 2.4.7 Invertebrates

A formal invertebrate survey has not been completed but species of dragonfly/damselfly (Odonata), butterfly (Lepidoptera) and grasshopper, bush-cricket and ground-hopper (Orthoptera) observed during the walkover survey are listed below.

##### Dragonfly and damselfly

- White-legged damselfly (*Platycnemis pennipes*)
- Banded demoiselle (*Calopteryx splendens*)
- Common blue damselfly (*Enallagma cyathigerum*)

##### Butterfly

- Comma (*Polygonia c-album*)
- Meadow brown (*Maniola jurtina*)
- Small tortoiseshell (*Aglais urticae*)
- Gatekeeper (*Pyronia tithonus*)
- Small skipper (*Thymelicus sylvestris*)

- Large skipper (*Ochlodes sylvanus*)
- Speckled wood (*Pararge aegeria*)
- Painted lady (*Vanessa cardui*)
- Ringlet (*Aphantopus hyperantus*)
- Green veined white (*Pieris napi*)
- Red admiral (*Vanessa atalanta*)

#### Bush-cricket

- Dark bush cricket (*Pholidoptera griseoptera*)

The majority of these species are common and widespread. The white-legged damselfly is uncommon in Great Britain, although it can be locally abundant on rivers and canals. Given the poor status of the grasslands the majority of species recorded were associated with the hedgerows and the strip of land adjacent to the River Avon.

## **2.5 Human pressures**

The site is currently used informally as a local amenity area with a low-level of human disturbance. The majority of people accessing the site are walkers/dog-walkers and the site currently does not suffer significant adverse impacts. However, some pressures do occur, which currently or could in the future impinge upon the aim to increase the biodiversity value of the site, including:

- *Dogs*: dog faeces are deposited within the site. This is unsightly, a health hazard, and may be adding to nutrient enrichment. This is likely to become a bigger issue in the future as the Parish Council actively seek to encourage more residents into the site; and
- *Grassland management*: the grasslands are currently nutrient-rich. The grassland was historically kept short through grazing or mowing, but has been neglected for the last few years. The grassland was mown again in 2009, but the grass cuttings were left *in situ* which is maintaining high levels of nutrients in the soil.

## **2.6 Site evaluation**

The study area and its immediate surrounding environs are not covered by any nature conservation designations. The majority of the study area comprises improved pasture, and there are no plants of any note. However, one hedgerow (H5) is considered to be species-rich, while the River Avon and the Pug Brook border parts of the site. 'Species-rich hedgerows', 'River, streams and associated habitats' and 'Farmland' are all local BAP habitats (see Appendix C).

There are very few signs of any wildlife of note. Legally protected mammals confirmed to be present include badger with a low level of foraging. Great crested newt could be present in their terrestrial phase and it is likely that grass snake and slow worm could also be present. Bat species are very likely foraging/commuting along boundary habitats, have a good potential for summer roosting in the mature oak in Field 3, and have a low potential for roosting in the crack willows along the River Avon. Breeding birds, including a few UKBAP/Red List species, will be nesting within the hedgerows, trees and along the riverbank. However, there are significant amounts of alternative habitat available adjacent to the study area for foraging and breeding species to use.

Based on the ecological survey and desk-based review of ecological records, the study area is considered to have an ecological value at the **Local scale**, and it is considered that the integrity of any surrounding habitats/communities/species would have no or limited reliance upon the habitats or species currently contained within Malford Meadow.

## **3 Site Management**

### **3.1 Introduction**

This Habitat Management Plan actively supports proposals for a Pocket Park (Christian Malford Village Plan Steering Group, May 2007) which established the vision of the site as providing easy access to the local countryside to provide opportunities for enjoyment and understanding of the 'Countryside on our doorstep'. Site objectives were to: enhance an area of living history within the village; provide safe access to the countryside and river including for those with children, those who are older and those with disabilities; provide educational opportunities; and develop a community conservation and ranger service.

The aim of this Habitat Management Plan is to enhance the ecological value of the site, whilst providing an area that is both attractive and educational for local residents in line with the Pocket Park vision. The key objectives of the Habitat Management Plan are to:

- Conserve and, where necessary, enhance existing features of ecological importance;
- Create new habitats that support national and local BAP targets;
- Manage the site for the benefit of nationally and locally important wildlife; and
- Provide an environment that is aesthetically appealing and educationally interesting.

This Habitat Management Plan sets out the recommended ecological management actions to fulfil the aims and objectives under the following headings:

- Grassland
- Hedgerows
- River Avon bankside
- Veteran trees
- Ecological features
- New habitats
- Local community

### **3.2 Grassland**

#### **3.2.1 Management aim**

The overall aim of habitat management for the existing improved (nutrient-rich) neutral grassland is to establish, through appropriate management, species-rich wildflower meadows. In practice, given the highly improved nature of the current grassland, this is likely to mean the establishment of semi-improved grassland that has a greater species-diversity than the current situation. Nevertheless this will support local BAP targets to restore neutral grassland from neglected areas, while encouraging wider species diversity within the site encompassing botany, mammals and bats, birds, amphibians, reptiles and invertebrates.

#### **3.2.2 Habitat management**

Cutting grass for visual amenity is a management procedure that acts immediately and equally on all plants within the sward, giving an equal height throughout. Regular cutting may dramatically affect the insect populations, often causing a rapid decline or extinction of an insect species in that sward. Leaving grass cuttings *in situ* re-cycles nutrients, maintaining the high-nutrient status of the site. To alleviate these harmful effects the long-term objective is to reduce grass cutting to a minimum with arising removed off-site.



To increase species richness various management options are available. Options differ in cost, labour-intensity and, potentially, effectiveness. The implemented solution may be different from the preferred solution depending on available resources, particularly funding, and particularly at this site given the inability to strip topsoil due to contractual issues associated with the site lease and the potential presence of great crested newt.

In an ideal world a solution would be implemented that has the greatest chance of a quick and successful alteration to meet target habitat conditions. However, given the constraints at this site, the preferred solution is probably to implement a step-wise approach. A less costly/labour-intensive option should be tried first, with more intensive expensive options being implemented only if subsequent monitoring shows that desired conservation objectives are not being met.

### **Years 1 - 3**

For the first 3 years the current management regime of the improved grassland should be changed from sporadic mowing with grass cuttings left on-site to a cut 2-3 times per year with grass cuttings removed off-site.

This option although attractive from a cost view-point is also associated with a high degree of uncertainty with respect to achieving the conservation objectives. The existing high level of nutrients, generally species poor grassland, and unknown seed bank may prevent the grassland reverting to a species-rich habitat.

Ideally all 3 improved grassland fields would be managed this way with all grass cuttings removed off-site. However, if the cost of removing the grass is prohibitive for the whole site a number of sub-options are available, as follows:

- The grass from all 3 fields could be stock-piled in a designated and securely fenced area within the site. However, although some stock-piling of grass is good for wildlife such as grass snake, there will be a significant amount of grass to store. This may not be acceptable from a visual, health & safety or local nuisance (odour) view-point.
- The grass from only one priority field (probably Field 3) could have grass cuttings removed off-site, while the other two fields are managed as at present. This will not improve the botanical diversity of the two fields with unchanged management.
- The grass from Field 3 could be collected and stock-piled or re-distributed over the other two fields. This will not improve the botanical diversity of the two sacrificial fields.

The extensive beds of nettle and thistle should be spot treated with a contact herbicide to try to suppress the vigorous growth of these weeds.

If only Field 3 can be managed by removing grass cuttings in the early phases, it would be hoped that at some point in the future the grass sward of Field 3 will improve to enable the grass to be collected and sold as a hay crop. When this situation arises, or constraints such as funding are eased, the removal of grass cuttings could be applied to Fields 1 and/or 2. Again, all grass cuttings could be removed from these two fields or, alternatively, cuttings from Field 1 could be stored/re-distributed over Field 2. This would continue until Field 1 has also reached a state where grass cuttings can be sold as a hay crop. The last field (Field 2) could then be managed by removing cuttings.

This is a long-term strategy that could take up to 15 years to see all three fields returned to a more semi-improved, wildflower-rich state.

The narrow strip of semi-improved grassland alongside the River Avon should have one annual cut in July-August. Grass cuttings should be removed off-site or stockpiled.

### **Years 3 onwards**

Following a review of the grassland after the first 2-3 years a decision can be taken on how to proceed. The altered cutting regime may be leading to desired habitat changes, and therefore the decision may be taken to continue this new cutting regime into the future.

Alternatively, the altered cutting regime may not be bringing about habitat changes as quickly as hoped. In this instance the management may again be altered to for a method that provides a better chance of obtaining increased species diversity, such as harrowing the ground and re-seeding.

Firstly, the grassland would be cut and harrowed to break up the existing sward. This would be followed, preferably, by seeding or, alternatively, planting of wildflower plugs. The seed/plant mix would use native species and ideally would include yellow rattle (*Rhinanthus minor*). Yellow rattle is a partially parasitic, grassland annual that once established in a grassland can reduce the competitive vigour of certain grasses by up to 50%, thus benefiting other sown wild flowers.

Seed mixes or plant plugs must be obtained from a reputable seed house such as Emorsgate ([www.wildseed.co.uk](http://www.wildseed.co.uk)). The seed mixes must be compatible with local conditions, and should comprise approximately 80% grasses to 20% wildflowers, as grasses form the matrix in which broad-leaved herbaceous plants are distributed naturally.

Different seed mixes can be used reflecting local site conditions or target habitats. The following seed mixes from Emorsgate could be considered:

- Emorsgate EM2 (standard general purpose meadow mix): contains species that are characteristic of traditional meadows across a wide range of soil types
- Emorsgate EM4 (meadow mix for clay soils): contains a good range of the wild flowers and grasses once common in unimproved flower-rich meadows
- Emorsgate EM5 (meadow mix for loamy soils): contains a good range of the wild flowers and grasses of unimproved lowland meadows in low lying areas
- Emorsgate EM8 (meadow mix for wetlands): contains species that are more tolerant of frequent water inundation, which are good for areas prone to water-logging

The seed will be sown on the existing grassland that has been harrowed. Seed should be sown at the rate specified by the seed-house (usually 4g/m<sup>2</sup> / 40 kg/ha). The ground must then be rolled to ensure good contact between seed and soil. Seeds would be sown between the end of August and mid-September.

For the first 1-2 years after sowing a minimum of three cuts will be undertaken when the crop exceeds 15cm, with the cuttings removed off-site. Once the grassland is established the area will be cut once a year. The annual grass cut should take place between July to late August, which will avoid the bird nesting season. If suitable the cut grass could be collected (baled) and sold, or alternatively collected and removed to a habitat stockpile. The cutting can be carried out by using various pieces of equipment including rotary sit-on mowers or tractor mounted mowers.

Removal and disposal of the cuttings should be carried out immediately after any cutting has taken place. This prevents the thick cut material from killing the underlying vegetation by over shadowing it, and reduces the amount of nutrients from entering the soil encouraging the more vigorous grass species from developing. Weed control using herbicide should also be implemented when required.

The grass cutting should leave strips (1-2m) of tall uncut grasses in front of the hedgerows, which will provide refugia for animals such as voles, shrews, slow worm and insects. This adds further diversity to the habitat mosaic.

More detailed information on locations, methods of seeding and appropriate seed mixes will be provided if and when this management regime is implemented.

### **3.3 Hedgerows**

#### **3.3.1 Management aim**

The aim of management of the existing hedgerows is to enable them to remain as thick hedgerows, therefore avoiding it becoming top heavy, leggy and dying back or converting to a tree-line as is happening in places. Management will aim to enhance species and structural diversity of the existing hedgerows to support local BAP targets to restore degraded hedgerows, and provide habitat for target species such as breeding birds, bats and invertebrates.

#### **3.3.2 Habitat management**

##### ***Existing hedgerow***

The existing overgrown hedgerows should be managed to create a dense bushy structure which can be maintained at a height of 2-3m.

Hedges that are considered suitable for laying (partially cut and laid horizontally) should be managed this way to maximise structural diversity. A hedging specialist should be consulted to identify the hedgerows that naturally lend themselves to this form of management, and to advise on the most appropriate style of hedge laying. Ideally the following hedgerows should be laid to open views into and across the site:

- Hedgerow 1: allowing a better view into the site from Church Road
- Hedgerow 3: allowing better views along the river valley from Field 1
- Hedgerow 4: allowing better views across the surrounding farmland from Field 2
- Hedgerow 5: allowing better views across the surrounding farmland from Field 3

Once laid hedges can be maintained by light trimming and can last up to 50 years before needing to be laid again.

Other hedgerows, or hedgerows that are not considered possible to hedge-lay, should be managed by cutting (including some pollarding and coppicing as appropriate), with advice sought from a hedging specialist as required. The following cutting regime should be implemented:

- Cuts to the top of the hedge will be made on a three-year rotation with the sides managed less intensively. This will allow the sides to thicken-up and to maintain an 'A' shape, which is the best shape possible for wildlife. The cut will not reduce the hedge height lower than 2m, and top level should be varied and not uniform
- Cutting will take place after August and before March to avoid the bird nesting season: ideal timing would be in February to maximise retention of any berries
- Hedgerow cutting will be staggered, ensuring that some hedgerow on-site remains untouched during the growing season, which will vary the structure of the hedgerows and always allow some sections to develop berries thereby benefiting a wider range of wildlife

- The semi-mature and mature trees, including ash and field maple, can be allowed to mature and be appropriately managed, such as pollarding, adding structural diversity
- Crack willows in Hedgerow 6 should be managed by pollarding to improve condition and increase longevity
- Some thorn, willow, elder and hazel can be coppiced to add structural diversity and open up the hedgerow if required (see below regarding the Pug Brook).

The Pug Brook is currently bordered by hedgerow on both sides (Hedgerow 6 located on-site) and is therefore very enclosed (see photographs 13 and 14). Selectively removing or thinning some sections of Hedgerow 6 would open up the brook and increase light levels. This in turn would enhance botanical diversity within and along the banks of the brook. The hedgerow could be thinned by selectively removing or coppicing some of the dense blackthorn or hawthorn.

Trees managed as pollards should be re-pruned approximately every 5 years. To ensure compliance with the Wildlife and Countryside Act, 1981 (as amended) all works involving tree felling, coppicing, pollarding and tree limb removal must be undertaken outside the bird breeding season, which is generally considered to be from early March to August, with works best undertaken in the late autumn. All trees should be inspected prior to works to assess potential for bat roosts.

A 2m buffer zone of grass will be left uncut bordering hedges, which will be managed as per the recommendations for wildflower grassland management (see Section 3.2).

### ***New hedgerow***

Gaps in existing hedgerows, missing sections of hedgerow (i.e. between Hedgerow 4 and 5) or boundaries that are just fenced can be in-filled or re-planted as hedgerow using whips. Species for in-filling should be selected to replicate species rich hedgerows found locally and sourced from a reputable nursery. The existing hedgerows are dominated by hawthorn and blackthorn with other species such as elder, field maple, hazel and elm. These should form the basis for in-fill planting (see table below).

### ***Native hedgerow planting specification***

Species		Relative planting %
Blackthorn	<i>Prunus spinosa</i>	30
Hawthorn	<i>Crataegus monogyna</i>	30
Hazel	<i>Coryllus avellana</i>	10
Field maple	<i>Acer campestre</i>	10
Buckthorn	<i>Rhamnus catharticus</i>	5
English elm or wych elm	<i>Ulmus procera</i> or <i>Ulmus glabra</i>	5
Elder	<i>Sambucus nigra</i>	5
Spindle	<i>Euonymus europaeus</i>	5
English oak	<i>Quercus robur</i>	Standard
Ash	<i>Fraxinus excelsior</i>	Standard

Whips will be planted in three alternative rows at 0.5m centres. Small groups of the same species will be planted along the line of the hedgerow to give good heterogeneity. The whips will be mulched and protected using tree guards. Planting will take place between November

and March. Newly planted areas should be inspected regularly. Once it has been established that trees and shrubs have taken sufficiently and are 'outgrowing' their tree guards any remaining tree stakes and tree guards can be removed. The timing of the removal of protective fencing is likely to be when the posts start to rot.

Once established the hedgerow will be allowed to develop into a dense bushy structure with foliage down to ground level maintained by an appropriate management regime (as described for the existing hedgerows).

### **3.4 River Avon bankside**

#### **3.4.1 Management aim**

The aim of management of the river bank is to maintain habitat structure and diversity, open views and access, appropriately manage public health & safety issues, and control localised spread of invasive plants.

#### **3.4.2 Habitat management**

Four pollarded willows located along the river bank (see photograph 11) will be re-pollarded. The works will secure habitat status and longevity of the crack willow by removing existing pollard re-growth and retaining the bole. This will avoid further splitting of trunks/branches in the future, and reduce risk for public health & safety.

Two hawthorn shrubs located along the river bank will be low-coppiced to open up the river bank and allow management of ruderal/invasive plants.

The proposed tree/shrub works will be undertaken as per works described in Section 3.3, taking into consideration breeding birds and potential roosting bats. The works will be completed during November-February, with the trees being carefully section-felling by hand.

Some of the removed willow poles will be cut into 1m long lengths and stacked in appropriate places around the site to create habitat log piles and wildlife refugia (locations will be defined on site).

The ruderal (i.e. bramble) and invasive (i.e. Himalayan balsam) plants will be carefully removed by hand cutting and hand pulling/digging. The plant material will be burnt on-site (away from the watercourses). The plant management will be undertaken during February-March before the bird breeding season and before the plants set seed. This management will need to be repeated every year for the first few years, but hopefully will be reduced after the plant growth has been suppressed.

### **3.5 Veteran trees**

Management of the veteran oak tree aims to improve the condition and longevity, and increase habitat structural diversity in line with local BAP targets.

The veteran oak tree should be retained and protected. Some management, potentially including crown thinning of dead wood (although some of the dead branches should be retained), may be required in the future to increase the longevity of these trees. A qualified arboriculturalist should be consulted to assess the current health status of the oak and to advise on appropriate management in the form of tree surgery.

The protection of breeding birds and the potential for summer bat roosts will need to be assessed and suitable mitigated prior to any works proceeding.

### **3.6 Ecological features**

Creation of ecological features in the site aims to diversify habitat niches available as refugia for various target species, particularly amphibians, reptiles and invertebrates.

A proportion of felled timber and brush-wood generated through routine site management (i.e. hedgerow cutting or tree management) can be stacked in suitable areas of the site such as at the base of the hedgerows, in field corners etc. These decaying wood piles will provide ideal habitat for saproxylic invertebrates (feed on deadwood), fungi and mosses. The log piles will also provide shelter for a wide variety of wildlife including frogs, toads and slow worm.

Some grass clippings can be stockpiled in suitable areas away from the watercourses, which will provide additional habitat for grass snake.

The construction of bespoke over-wintering hibernacula within the site (i.e. adjacent to hedgerows) will encourage the use of the area by amphibians and reptiles. Hibernacula should consist of piles of rubble up to 0.5m high which are covered with top-soil and allowed to vegetate up naturally. Small entrances should be kept open at ground level using angled flagstones or similar. These would be important if a new pond was created on-site in the future (see Section 3.7).

### **3.7 New habitats**

The priority of habitat management in the first 5 years is to maintain and enhance the grasslands, hedgerows and boundary watercourses. However, in the longer-term there may be opportunities to create new, additional and complementary, habitats within the site. The final choice of habitat will need to be reviewed given local site conditions, preferences of the Parish Council and local community, and available resources.

Potential habitat creation ideas are summarised below. More detailed information on construction methods and planting specifications would be established if and when a particular habitat type is chosen for creation.

#### ***Wildlife pond***

Ponds could be created specifically to support invertebrates and amphibians (including great crested newt). This not only creates habitat diversity but provides foraging habitat for BAP target species such as bats, mammals, birds and reptiles. A wildlife pond should be no more than 0.75m deep, and margins should be landscaped and contoured to provide a wide range of slopes and water depths to establish a continuum from open water to wet/dry grassland and encourage the development of diverse emergent and submerged vegetation. Ponds can be created as both permanent water features or as ephemeral features that dry out in the late summer months. Ideally a combination of both would be created to maximise habitat and species diversity.

Permanent ponds could be used as a recreational/educational resource for the local community. A 'pond dipping' platform could be constructed on the edge of the pond with a safe path leading to it.

#### ***Scrub/woodland***

The creation of low-level scrub would create structural (both lateral and vertical) and habitat diversity by providing either a more sinuous edge to the existing linear hedgerows or by providing stand-alone thickets. Scrub planting could be focused on creating a thicket of predominantly thorn and other woody species found in the hedgerows.

A new woodland copse could be created to allow in the future a mature tree canopy to become established. The woodland could be established as a community woodland allowing the local people to get involved in choosing and planting trees. Tree species could be labelled as an educational resource. Management of the woodland would be undertaken using similar techniques to those discussed in Section 3.3, allowing some tree specimens to reach mature standards while managing other species and the understorey by pollarding, coppicing and thinning.

### **Orchard**

Traditional orchards are now listed as priority habitats in the UK Biodiversity Action Plan. Orchards and the species they support are becoming increasingly rare. Community orchards can offer places for quiet contemplation and centres for local festivities. Orchards support biodiversity, act as reservoirs for local varieties of fruit, re-connect people with where food comes from, and bring communities together to share knowledge and horticultural skills.

## **3.8 Local community**

The Friends of Malford Meadow (FoMM) has already been established with the objective of representing the local community and advising the Parish Council on preferred management of the site. Although the FoMM are responsible for advising on site management, it is recommended that a culture of guardianship by all residents (i.e. actively encouraging all residents to monitor and protect the site and its habitats) should be fostered.

The site vision as defined within the Pocket Park proposal and the Wiltshire BAP sets objectives for raising awareness and improving understanding of wildlife and nature conservation. In addition, pressures associated with dog fouling could be effectively managed through programmes of awareness-raising within the local community. It is therefore recommended that the following actions are considered as part of the overall site management:

- Provision of appropriate signs at site entrances that designate the area as Malford Meadow helping to establish site identity and ownership by local people.
- Provision of information/interpretation boards at entrances into the site displaying information on a variety of topics, which should concentrate on flagship or highly visible aspects which people can readily identify with. Topics could include:
  - ❖ habitats (river, veteran tree, hedgerow, meadows)
  - ❖ species (amphibians, bats, birds, butterflies, dragonflies)
  - ❖ history and tradition (hedge laying, historic settlements, ridge & furrow)
- Provision of suitable entrance gates and footpaths through the site that provide a route through the entire site and linking The Green to Church Road. The gates and footpaths should be suitable to allow older people, mothers with push-chairs and less able-bodied persons to access and enjoy the site.
- Provision of appropriate parkland furniture or structural artwork that meets the needs of the local residents, adds to the aesthetic and educational value of the site, and is in keeping with the rural aspects of the site. For example, this could include wooden benches, wood sculptures or a statement piece such as a green-oak bench encircling the base of the mature oak.
- Provision of a Malford Meadow information pack to all residents. The pack can provide information on the site, its habitat and wildlife, management issues, key dos and don'ts (e.g. clean up after dogs, pick up litter etc).

- Setting up a wildlife reporting system via the Christian Malford website whereby people using the Malford Meadow site can record and report any wildlife sightings such as birds, mammals, dragonflies, butterflies etc. This will not only allow people to connect better with the site but will provide valuable information which can feed into future site management decisions.
- Actively involve the local community in site management and maintenance under the control of the Parish Council/FoMM. For example, involving residents with invasive plant control or involving the local school in any future planting.

#### **4 Monitoring and Appraisal**

The habitat management being advocated as part of this plan will take some time to take effect, and it is impossible to predict accurately the rate of change/establishment and the subsequent response of wildlife.

The main objective of management during the first 5-10 years is to ensure the successful establishment of all the desired habitat status or habitat-types, whereas years 10+ are related more to maintaining a diverse, robust and maturing habitat mosaic for the benefit of wildlife and the local community. The main focus in the early stages of the site management is to suppress more vigorous, less desirable plant species, whilst encourage a more diverse species rich environment.

However, to identify whether or not the longer-term nature conservation objectives have been achieved it is essential to develop a post-scheme monitoring and appraisal programme, which would include auditable, scheme-specific success criteria as well as identified remedial actions and their triggers if the scheme is not performing as planned. However, the principles of 'adaptive management' should be applied to the scheme, which is to say that the site should be allowed to naturally adjust through time as opposed to being viewed as a static state.

The first five-ten years will be a particularly critical period, by the end of which the majority of habitat should have reached a desired condition. Thus, it is during these years that it is critical to undertake monitoring and analysis to assess how the site is adapting and how wildlife is responding.

Although monitoring is a critical and integral component of the whole scheme implementation, it is not to say that it has to be overly time consuming and therefore expensive. A reasonably low level monitoring can be undertaken as long as the critical aspects are encompassed. An annual review of habitat extent and quality should be undertaken by an ecologist in late spring/early summer to review habitat establishment/survival as well as habitat development and diversification from the original baseline conditions.

In addition to habitats it is also recommended that at the same time an assessment for the presence of rare and protected mammals such as badger, water vole etc, and botanical surveys detailing species present and commenting on abundance are undertaken.

Further surveys could be completed at various points during the management of the site depending on available resources and habitats established, including:

- Bat activity survey following a transect across the site. This should be undertaken on at least two evenings in the summer, with surveys also incorporating the potential bat roost trees to confirm any roosting activity



- Basic bird census (modified Common Bird Census) survey following a transect across the site. Three separate surveys should be undertaken (in good weather) at least 4 weeks apart in March/April; April-mid May; and mid May-late June.
- Amphibian breeding surveys of any ponds created. Surveys would comprise four separate visits (between April and June) to determine presence and absence
- Reptile survey of appropriate habitats using refugia tiles to provide cover and basking opportunities for reptiles. The survey should be conducted during April
- Invertebrate survey carried out in May; June/July; and August/September to cover a full season. The surveys should focus on a number of invertebrate groups such as butterflies and dragonflies/damselflies

Some ecological surveys should try to use local volunteer organisations or local specialists (i.e. local bat group) where the surveyors are trusted. However some surveys can only be completed under licence (i.e. great crested newt) and may therefore require a professional ecologist.

Findings from ecological surveys should be reported back to the Parish Council and the FoMM to enable decisions to be made on future management and spend of resources.

Remedial management must be linked to clear triggers, and generally should only be undertaken if intervention is needed due to unexpected habitat development or changes that have occurred to create a significant and unwanted risk. For example, the failure of habitat establishment or the presence of invasive/exotic/unwanted species.

## **5 Programme of Management**

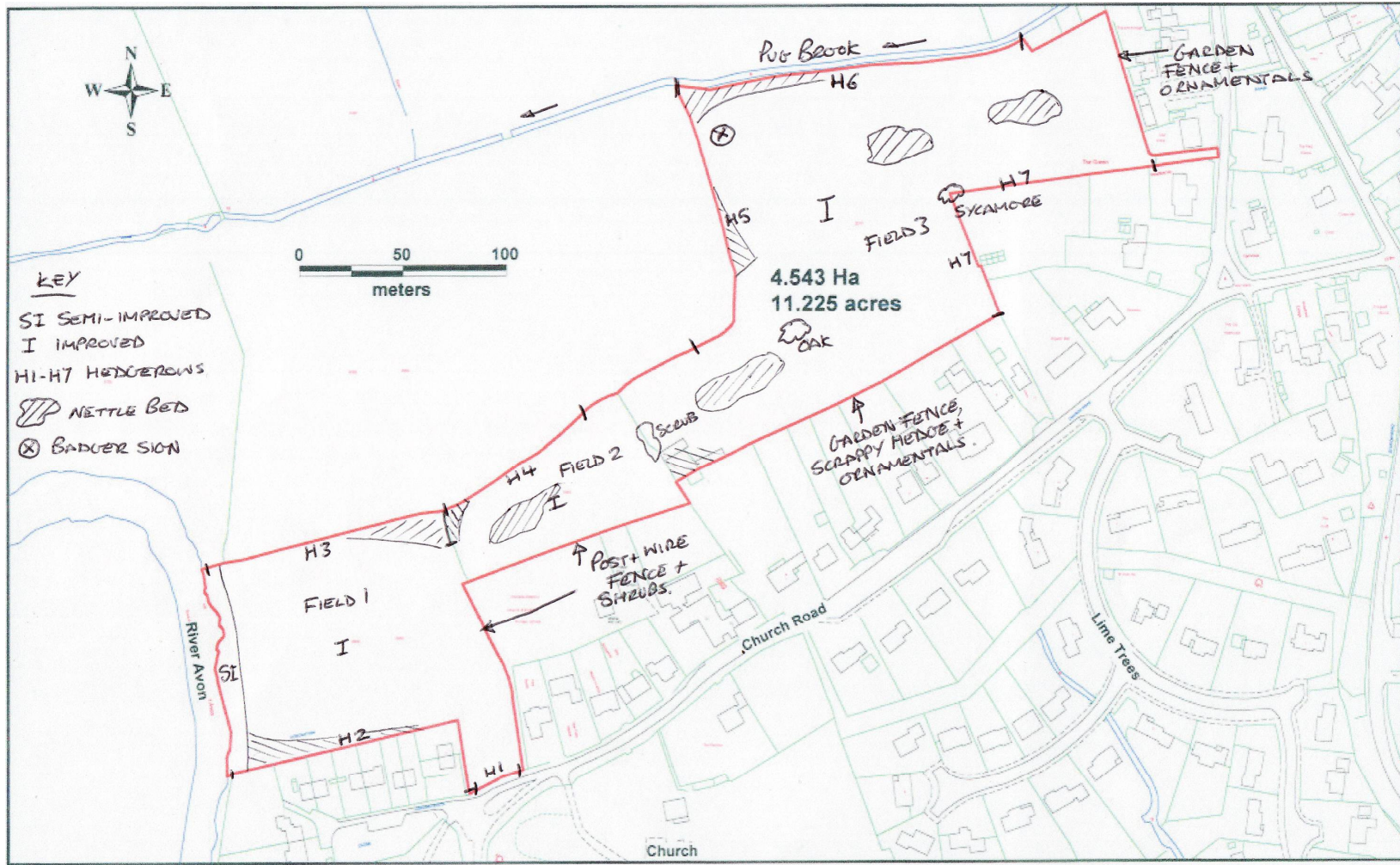
A 5-year programme of works is provided in the table below. This programme identifies key management actions required for the initial management to establish good habitat status, as well as on-going habitat maintenance. The optimum month(s) to undertake each management action have been identified.

**Programme of habitat management**

Ref.	Management activity	Years				
		1	2	3	4	5
<b>Grassland management</b>						
G1	Cutting improved grass	3 cuts per year	3 cuts per year	3 cuts per year	Review and adapt management	3 cuts per year
G2	Spot herbicide spray nettle beds	Apr-May	Apr-May	Apr-May	Review & adapt management	
G3	Cutting semi-improved grassland	1 cut in Jul-Aug	1 cut in Jul-Aug	1 cut in Jul-Aug	1 cut in Jul-Aug	1 cut in Jul-Aug
G4	Seeding of improved grassland				Possibly Aug-Sep	Possibly Aug-Sep
<b>Hedgerow management</b>						
H1	Existing hedge laying	Hedgerow 1 Jan-Feb	Hedgerow 3 & 4 Jan-Feb	Hedgerow 5 Jan-Feb		
H2	Existing hedge cutting	Hedgerow 6 Jan-Feb	Hedgerow 7 Jan-Feb			
H3	Hedgerow thinning			Hedgerow 6 Jan-Feb		
H4	Hedgerow tree pollard & coppice		Dec-Feb	Dec-Feb		
H5	Planting new hedgerow	Hedgerow 4-5 Jan-Mar / Nov-Dec	Hedgerow 4-5 Jan-Mar / Nov-Dec	Other boundaries Jan-Mar / Nov-Dec	Other boundaries Jan-Mar / Nov-Dec	
H6	New hedgerow inspection		May-Jul	May-Jul	May-Jul	May-Jul
H7	New hedgerow cutting					Jan-Feb
<b>River Avon bank management</b>						
R1	Pollard willows & coppice thorn	Nov-Feb				
R2	Ruderal & invasive plant removal	Feb-Mar	Feb-Mar	Feb-Mar	Review & adapt management	

Ref.	Management activity	Years				
		1	2	3	4	5
<b>Veteran tree management</b>						
V1	Management of veteran oak	Assess status & health	Implement management			
<b>Ecological features</b>						
E1	Stack wood piles	X	X	X		
E2	Stockpile some grass cuttings	X	X	X	X	X
E3	Create hibernacula		X		X	
<b>Local community features</b>						
C1	Signage and information boards	X	X			
C2	Gates and footpaths	X	X			
C3	Parkland furniture		X		X	
C4	Site information pack	X			X	
C5	Wildlife reporting system	X				

Appendix A Site Plan with Habitat Notes



Scale:  
 Date: 03/03/2008

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## Appendix B Hedgerow Botanical Lists

### Woody species

Common name	Scientific name	H1	H2	H3	H4	H5	H6	H7
<i>Length (m)</i>		<b>30</b>	<b>140</b>	<b>130</b>	<b>90</b>	<b>130</b>	<b>210</b>	<b>130</b>
Ash	<i>Fraxinus excelsior</i>			X			X	
Blackthorn	<i>Prunus spinosa</i>			X		X	X	
Buckthorn	<i>Rhamnus catharticus</i>			X				
Crack willow	<i>Salix fragilis</i>						X	
Dog rose	<i>Rosa canina</i> agg			X				
Dogwood	<i>Cornus sanguinea</i>						X	
Elder	<i>Sambucus nigra</i>	X	X	X	X	X	X	X
Elm	<i>Ulmus procera</i>				X	X		
Field maple	<i>Acer campestre</i>					X	X	
Grey willow	<i>Salix cinerea</i> agg					X		
Hawthorn	<i>Crataegus monogyna</i>	X	X	X	X	X	X	X
Hazel	<i>Corylus avellana</i>					X		
Privet	<i>Ligustrum vulgare</i>	X	X					
Sycamore	<i>Acer pseudoplatanus</i>		X				X	X
Wych elm	<i>Ulmus glabra</i>	X						
<i>Total number of woody species</i>		<b>4</b>	<b>4</b>	<b>6</b>	<b>3</b>	<b>7</b>	<b>8</b>	<b>3</b>

**Climbers and ground flora**

Barren brome	<i>Bromus sterilis</i>
Bittersweet	<i>Solanum dulcamara</i>
Black horehound	<i>Ballota nigra</i>
Bramble	<i>Rubus fruticosus</i> agg
Broad-leaved dock	<i>Rumex obtusifolius</i>
Broad-leaved plantain	<i>Plantago major</i>
Butterfly bush (buddleia)	<i>Buddleja davidii</i>
Cleavers	<i>Gallium aperine</i>
Creeping buttercup	<i>Ranunculus repens</i>
Cuckoo pint	<i>Arum maculatum</i>
Dandelion	<i>Taraxacum</i> agg
Dog violet	<i>Viola riviniana</i>
False oat grass	<i>Arrhenatherum elatius</i>
Field bindweed	<i>Convolvulus arvensis</i>
Hairy willowherb	<i>Epilobium hirsutum</i>
Hedge garlic	<i>Alliaria petiolata</i>
Hedge parsley	<i>Torilis japonica</i>
Hedge woundwort	<i>Stachys sylvatica</i>
Herb Robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum sphondylium</i>
Ivy	<i>Hedra helix</i>
Meadow barley	<i>Hordeum secalinum</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Nettle	<i>Urtica dioica</i>
Spear thistle	<i>Cirsium vulgare</i>
White bryony	<i>Bryonia dioica</i>
Wood dock	<i>Rumex</i>
Yorkshire fog	<i>Holcus lanatus</i>

## **Appendix C            Biodiversity Legislation and Planning**

### **Badger**

Badgers are legally protected under the 'Protection of Badgers Act 1992'. As such it is an offence to:

- Wilfully kill, injure or take a badger, or attempt to kill, injure or take a badger [Section 1];
- Possess a dead badger, or any part of/anything derived from a dead badger [Section 1];
- Cruelly ill-treat badgers, or dig for a badger [Section 2];
- Intentionally or recklessly damage a sett or any part of it, or destroy a sett [Section 3]; and
- Intentionally or recklessly obstruct access to or any entrance of a sett, cause a dog to enter a sett, or disturb a badger whilst it is occupying a sett [Section 3].

The Protection of Badgers Act (1992) defines a sett as 'any structure or place that displays signs indicating current use by a badger'. Natural England's interpretation of this definition encompasses any sett, which shows recent signs of having been occupied.

Under Section 10(1) of the Protection of Badgers Act 1992 licences may be issued by Natural England to interfere with a badger sett for the purposes of development as defined by Section 55(1) of the Town and Country Planning Act 1990.

### **Bats**

Bats (Chiroptera) are afforded protection through their inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act 2000 (CRoW) and the Conservation (Natural Habitats, &c) Regulations 1994. The relevant parts of the legislation, with regard to this scheme, make it an offence to:

- Intentionally kill, injure or take a bat;
- Intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection; or
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.

All bats are the subject of a Species Action Plan in the Wiltshire Biodiversity Action Plan. Common pipistrelle is also a priority species in the Action for Biodiversity in the South West due to the fact that this species is believed to have undergone a significant decline in numbers since the 1970s.

Developments that compromise the protection afforded to bats under the provisions of the Conservation (Natural Habitats, &c.) Regulations 1994 will require a licence to do so lawfully from Natural England (NE).

### **Great crested newt**

Great crested newt is protected under Schedule 5 of the Wildlife and Countryside Act 1981, as amended. This has recently been amended by the Countryside and Rights of Way (CRoW) Act, 2000 [Section 9]. This makes it an offence to:

- Intentionally kill, injure or take a great crested newt [Section 9 (1)]
- Possess or control any live or dead specimen or anything derived from a great crested newt [Section 9 (2)]

- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt [Section 9 (4) (a)]
- Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose [Section 9 (4) (b)].
- Further protection is afforded under the EU Habitats and Species Directive, 1992 which is implemented in the UK under Annex II and Annex IV of the Conservation Regulations (Natural Habitats & c.) 1994. Regulation 39 of the Directive makes it an offence to:
  - Deliberately capture or kill a great crested newt [Regulation 39 (1) (a)]
  - Deliberately disturb a great crested newt [Regulation 39 (1) (b)]
  - Deliberately take or destroy the eggs of a great crested newt [Regulation 39 (1) (c)]
  - Damage or destroy a breeding site or resting place of a great crested newt [Regulation 39 (1) (d)].

Note that under Regulation 9 (1) (d) of the Conservation Regulations, 1994 it is an offence to damage or destroy a breeding place or resting site regardless of whether the act was deliberate or not.

### **Breeding birds**

All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act, 1981 as amended. This act makes it an offence to:

- Intentionally, or recklessly, kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird

### **Reptiles**

All six native species of reptile to the UK are protected under the Wildlife and Countryside Act 1981, as amended. They are protected against intentional killing and injuring and trade (i.e. sale, barter and exchange, transporting for sale and advertising to sell or buy). However, the handling and translocation of these reptiles does not require a licence.

### **Biodiversity Action Plan Features**

In recent times there has been a large decline in biodiversity in the UK. In 1994, following the Rio Earth Conference, the UK Government published a national Biodiversity Action Plan (UKBAP). This was followed by the publication of a number of Local Biodiversity Action Plans (LBAP), which identified those habitats and species relevant to the local context. Of relevance to this project is the Wiltshire Biodiversity Action Plan.

These LBAPs set out a number of Habitat Action Plans (HAP), covering both 'broad habitat types' and 'priority habitats', and Species Action Plans (SAP). HAPs and SAPs potentially relevant for this site and scheme (either already present or potentially could be created) include:

#### Farmland

Farmland is critical for a number of UK BAP priority species including many invertebrates, flowering plants, brown hare and farmland birds. The Wiltshire BAP has an objective to maintain and enhance populations of relatively common farmland species.



### Species-rich hedgerows

Boundary features, including hedgerows, are extremely important habitats providing linkages across the landscape and between other habitats. Such features facilitate the movement and dispersal of species across the landscape, promoting more sustainable populations by linking populations as well as habitats. Hedgerows are listed as a UK BAP Priority Habitat, whilst the Wiltshire BAP has a HAP covering species-rich hedgerows. Within the UK BAP species-rich hedgerows are defined as those which contain 5 or more native woody species on average in a 30 metre length. Based on this criterion, Hedgerow 5 is considered to potentially be species-rich. The Wiltshire BAP has objectives to restore degraded hedgerows.

### Rivers and streams

Rivers, streams and their associated habitats provide important wildlife corridors, linking fragments of semi natural habitat in intensively farmed or built up areas and facilitating the movement of species. The Wiltshire BAP has objectives for rivers and streams to: increase the length of channel with a full range of characteristic natural features; protect and restore the natural ecological functioning of floodplain habitat; and reduce current area adversely affected by alien invasive plant species.

### Wood-pasture, parkland and ancient trees

Veteran trees are defined as trees that are of interest biologically, culturally or aesthetically because of their age, size or condition. A veteran tree is any tree which has passed its mature stage (such as the oak at Malford Meadow), whilst an ancient tree is any tree which is typically over 500 years old. Wood-decay invertebrate and epiphyte communities are uniquely species-rich, and a high percentage of rare and threatened dead wood species are now associated with ancient and veteran trees. The Wiltshire BAP has an objective to maintain, protect and manage veteran and ancient trees.

### Standing open water

Standing open water includes, amongst other things, natural woodland ponds and temporary pools in hollows, and man-made features such as gravel pits, farm ponds, dew ponds, garden ponds and ditches. Open water is a scarce habitat in Wiltshire and its conservation importance has not been fully assessed. The number of ponds in the county has declined over the last century. The Wiltshire BAP has an objective to expand this habitat type within Wiltshire.

### Bats

All 15 species of bat found in Wiltshire are covered by a Habitat Action Plan in the Wiltshire BAP. The Wiltshire BAP has two main objectives for bats including: to maintain and where possible increase existing bat populations; and to increase awareness and understanding of all bat species among all sectors of society.