



**LINDSAY CARRINGTON ECOLOGICAL  
SERVICES LTD**

ECOLOGICAL MANAGEMENT PLAN  
MAYBUSH COPSE, CHIDHAM

FEBRUARY 2011

ON BEHALF OF CHICHESTER HARBOUR  
CONSERVANCY



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## Summary

1. Lindsay Carrington Ecological Services Limited were commissioned by Chichester Harbour Conservancy acting on behalf of a partnership made up of the Conservancy, Chichester Harbour Trust and Maybush Copse Friends to prepare this detailed Ecological Management Plan for Maybush Copse, Cot Lane, Chidham (Grid reference: SU 785 052). The Management Plan forms part of a scheme to create a new community woodland, for which planning permission was granted in 2010.
2. Maybush Copse is located approximately 600 metres from the Chichester and Langstone Harbour Special Protection Area (SPA) and Ramsar site, Solent Maritime Special Area for Conservation (SAC), and Chichester Harbour Site of Special Scientific Interest (SSSI). The copse is located on the Chidham peninsula south of the A259 at Hambrook.
3. A biodiversity assessment and targeted protected species surveys for bats and reptiles were undertaken in 2010 to provide baseline information on the site of the proposed development.
4. The production of this management plan is to ensure the site is managed and enhanced for the purpose of biodiversity and to benefit both local residents and wildlife. Management should also be based on an 'adaptive management' principle whereby the effectiveness of management is monitored, assessed and adapted if necessary.
5. The dominant tall ruderal habitat will be cut and woodland will be created throughout this area.
6. Areas of scrub will be managed to prevent encroachment into the grassland and woodland habitats.
7. Woodland shall be created, maintained and enhanced for the benefit of invertebrates, small mammals, reptiles, birds and bats. Native species will be planted including oak, hawthorn, field maple and ash.
8. Grassland areas will be seeded with wildflower mixes and managed on a regular basis.
9. Areas of rough grassland will be created along with hibernaculum to provide shelter and hibernation habitat for reptiles and amphibians. In addition three log piles and four logs buried up to 1 metre below ground will be provided.

10. The areas of woodland along the path ways will be created especially for butterflies with varying sward heights immediately adjacent to paths. Shrubs and trees planted will be of varieties that prevent people from entering the woodland and remain on the pathways.
11. Habitat creation for bats and birds will be provided in the form of wooden bird and bat boxes which the community will assist in building.

## 1.0 Introduction

Lindsay Carrington Ecological Services were commissioned by Chichester Harbour Conservancy to prepare this detailed Ecological Management Plan for Maybush Copse, Cot Lane, Chidham, (Grid Reference: SU 785 052).

The proposed site was purchased in April 2009 by Chichester Harbour Trust on behalf of the partnership made up of the Trust, Chichester Harbour Conservancy and local residents. The site has now been signed over on a 99-year lease to the Chichester Harbour Conservancy. The site will be managed by the newly formed Maybush Copse Friends whose committee includes members of the Chichester Harbour Trust, Chichester Harbour Conservancy, Southbourne Parish Council, Chidham and Hambrook Parish Council and community representatives. Planning consent for the proposed scheme was granted in November 2010.

In the past the site has been used as a brickfield, tip and caravan park, and has currently been unoccupied for some time which has resulted in ruderal and scrub habitat colonising. An Environmental report produced by Ashdown Site Investigation in May 2009 and subsequent sample testing in March 2010 found an above average level of lead and arsenic in some locations and a significant amount of glass at the surface and near-surface depths. Ashdown Site Investigation, with these findings in mind, went on to produce a risk assessment and remediation strategy in May 2010 which included a work suit to mitigate and reduce the risk to end users.

Through the newly formed Maybush Copse Friends, the aspiration for the site is to create a new community woodland for the benefit of local residents and wildlife alike this will be achieved through the habitat creation scheme. The Habitat creation scheme includes the creation of open-grassland, rough-grassland, scrub and woodland areas and the creation of informal woodland paths.

A biodiversity assessment report was compiled by Ed Rowsell from Chichester Harbour Conservancy detailing the results of a biodiversity survey, a suite of protected species surveys and recommendations for subsequent mitigation and compensation measures which was prepared in support of the planning application. The proposed site is situated approximately 600m from the Chichester and Langstone Harbour Special Protection Area (SPA) and Ramsar Site, Solent Maritime Special Area of Conservation (SAC), and Chichester Harbour Site of Special Scientific Interest (SSSI).

This ecological management plan has therefore been prepared to formalise proposals for the management of land within the site boundary for biodiversity. This plan covers a five year period and will mainly be implemented by the Chichester Harbour Conservancy and supported by the Maybush Copse Friends.

Baseline ecological information for the site is provided in Section 2 of this report, Section 3 sets objectives and targets and Section 4 details the proposed management prescriptions.

## 2.0 Baseline information

The baseline information provides a record of the site flora and fauna in 2010/early 2011, before the implementation of the woodland creation scheme.

The primary source of baseline information is from the suite of surveys undertaken by Ed Rowsell in 2010 and the site visit undertaken by Lindsay Carrington Ecological Services Ltd in February 2011. In addition, species records within a 10 km radius provided by Multi-Agency Geographical Information for the Countryside (MAGIC), and the National Biodiversity Network (NBN) have been included.

### 2.1 General information

The site at Maybush Copse, Cot Lane, Chidham (Grid reference: SU 785 052) is located in West Sussex. The site currently comprises a mixture of rabbit-grazed grassland; tall ruderal community colonised by burdock (*Arctium minus*), thistles (*Cirsium sp.*) and nettles (*Urtica dioica*); and areas of woody shrubs including hawthorn (*Crataegus monogyna*) and elder (*Sambucus nigra*). Blackthorn (*Prunus spinosa*) and hazel (*Corylus avellana*) coppice is found in a small area to the north east of the site. The site, outlined in Figure 1, is Maybush Copse, Chidham.



Figure 1: Location map and site boundary of Maybush Copse, Cot Lane.

## 2.2 Habitats

The biodiversity report produced in 2010 by Ed Rowsell has been provided as Appendix I to this report.

The site comprises 8acres (3.2 hectare) of land at Cot lane, Chidham. The remains of an old brick shower block was also present on site although all that remained at the time of the site visit in 2011 is the building floor/footprint. Habitats present on site include:

- Rabbit grazed grassland.
- Tall ruderal vegetation.
- Scrub.
- Woodland.

Descriptions of these habitats are noted below and within the Phase 1 map provided as Appendix II.

### 2.2.1 Grassland

The grassland community present on site (Photo 1) is of low botanical interest and is of a short sward height due to the intense rabbit grazing. Typical species in the grassland habitat are Yorkshire-fog (*Holcus lanatus*), cock's-foot (*Dactylis glomerata*), perennial rye-grass (*Lolium perenne*), creeping thistle (*Cirsium arvense*), creeping buttercup (*Ranunculus repens*), common ragwort (*Senecio jacobaea*) and cat's-ear (*Hypochaeris radicata*).



Photo 1: Grassland vegetation



Photo 2: Tall ruderal vegetation

### 2.2.2 Tall ruderal vegetation

The majority of the site supports a tall ruderal community (photo 2) which occupies the interface between the grassland and scrub / woodland habitat. Typical species in these areas are common nettle, thistle and burdock, all of which are very common and widespread.

### 2.2.3 Scrub

Patches of hawthorn and elder scrub are present across the site, along with individuals of these species. Dense areas of scrub are present along the west and north-western areas of the site (Photo 3).



Photo 3: Scrub habitat



Photo 4: Woodland

### 2.2.4 Woodland

Two small areas of woodland are present within the site boundary as follows:

- A small woodland (photo 4) is located within the north-east / east of the site adjacent to the site entrance. This area of woodland comprises mature stands of blackthorn and hazel coppice. The ground flora is sparse with locally abundant ivy (*Hedera helix*), frequent common nettle and occasional hart's-tongue (*Phyllitis scolopendrium*).
- The small woodland which is located along the northern boundary of the site is mainly composed of mature elder. No understorey is present and the ground flora is sparse with only occasional common nettle.

## 2.3 Fauna

Results of targeted protected species surveys that were undertaken during summer 2010, and previous records for the site within a 10 km radius of the site are summarised below.

### 2.3.1 Badgers

#### *Previous records*

No previous records of badgers within 10km of the site were revealed by the desk study.

*Results of 2010 survey*

Although the site has good potential to support badgers, no signs of badger were recorded during the site visit. Once implemented, the site management plan will have an overall positive effect on the mammal population.

### 2.3.2 Bats

*Previous records*

Table 1 below lists previous records of bat species listed on the NBN provided by The Bat Conservation Trust.

**Table 1: Bat species within a 10km radius of Maybush copse, Chidham**

Common name	Latin name	Status	Location
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Schedule 2, Habs Regs <sup>1</sup> , Schedule 5, WCA <sup>2</sup>	4 records at SU7106 , 2 record at SU7100 nearest record approximately 4.5km to west
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Schedule 2, Habs Regs, Schedule 5, WCA, UK BAP <sup>3</sup>	4 records at SU7100 approximately 6km to the west of the site.
Brown long-eared bat	<i>Plecotus auritus</i>	Schedule 2, Habs Regs, Schedule 5, WCA, UK BAP	2 records, 1 at SU788074 within 5km of the site.
Daubenton's bat	<i>Myotis daubentonii</i>	Schedule 2, Habs Regs, Schedule 5, WCA	2 records at SU7506, approximately 3km to west.
Serotine bat	<i>Eptesicus serotinus</i>	Schedule 2, Habs Regs, Schedule 5, WCA	15 records located within 5km of the site.
Noctule bat	<i>Myotis noctula</i>	Schedule 2, Habs Regs, Schedule 5, WCA, UK BAP	1 record at SU7100 and 1 record at SU7106. Both approximately 5km to the west of the site.

*Results of 2010 surveys*

The local licensed bat worker Nik Knight undertook a presence / absence bat survey at Maybush Copse on the existing brick shower block. No evidence of bat was recorded

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<sup>1</sup> Habs Regs: Conservation of Habitats and Species Regulations 2010.

<sup>2</sup> WCA: The Wildlife and Countryside Act (1981) (as amended)

<sup>3</sup> UK BAP: UK Biodiversity Action Plan

and the building was assessed as holding low to negligible potential for roosting bats. The shower block was subsequently demolished.

### 2.3.3 Birds

#### *Previous records*

Table 2 below lists previous records of protected / notable bird species which have been recorded on site during August – September 2009

**Table 2: Bird species recorded on Maybush copse, Chidham August – September 2009**

Common name	Latin name	Status	Location
Dunnock	<i>Prunella modularis</i>	Amber <sup>1</sup> list	On site
House Sparrow	<i>Passer domesticus</i>	Red <sup>2</sup> list	On site
Starling	<i>Sturnus vulgaris</i>	Red list	On site

#### *Results of 2010 survey*

Vegetation on site and surrounding the site provides ideal nesting habitat for a number of species. Species that have been recorded on site during the breeding season include turtle dove (*Streptopelia turtur*), common buzzard (*Buteo buteo*) and a range of common species.

### 2.3.4 Great crested newts

#### *Previous records*

There are no records of protected amphibian species and no suitable breeding ponds within 250m of the proposal site.

### 2.3.5 Reptiles

#### *Previous records*

A number of previous reptile records provided by the biological records centre were revealed during the data search and these are listed below in Table 3.

**Table 3: Reptile species recorded within 10km of the site**

Common ame	Scientific name	Status	Location
<b>Reptiles</b>			
Slow worm	<i>Anguis fragilis</i>	Schedule 5, WCA	2 records at SU7201 approximately 5km to W

<b>Common ame</b>	<b>Scientific name</b>	<b>Status</b>	<b>Location</b>
Grass snake	<i>atrix natrix</i>	Schedule 5, WCA	1 record SU7609, 1 record at grid ref SU7907 approximately 3km to the N of the site.
Common lizard	<i>Zootoca vivipara</i>	Schedule 5, WCA	2 records at grid ref SU7101 approximately 5km W.

### *Results of 2010 survey*

A reptile survey performed by Ed Rowsell identified the presence of a ‘good’ population of slow worms using the guidelines from Froglife (1999). A good count refers to populations of between 5 and 20 individuals per hectare seen in one day. The presence of common toads has also been recorded on site. 59 slow worms and 19 toads were recorded and translocated from the survey site between June and October 2010.

## **3.0 Aims and objectives**

### **3.1 Rationale**

The rationale for the plan is to create a woodland for the benefit of the local community and wildlife, and to safeguard a suitable receptor site for the resident slow worm population. Management will be based on an ‘*adaptive management*’ principle whereby the effectiveness of management is monitored, assessed and adapted if necessary. This management plan prescribes management for a period of five years.

### **3.2 Objectives**

The following objectives have been set:

- 1) To safeguard a suitable receptor site for slow worms.
- 2) To create and maintain floristically diverse grassland habitat within the amenity areas, thus enhancing these areas for reptiles, bat species, small mammals, badgers, bird species and invertebrates
- 3) To create and maintain tussocky grassland for reptiles, as well as foraging birds, small mammals and invertebrates.
- 4) To create hibernation habitat and shelter for reptiles and amphibians within the relevant areas.

- 5) To maintain and enhance scrub habitat to benefit invertebrates, bat species, small mammals, reptiles and bird species.
- 6) To maintain and enhance the existing woodland habitat to benefit wildlife including bats, butterflies, small mammals and bird species.
- 7) To create and maintain woodland habitat to benefit wildlife including bats, butterflies, small mammals and bird species.
- 8) To create and maintain dead wood habitat within the woodland areas to benefit bat species, invertebrates, birds species and small mammals.
- 9) To create additional bird and bat habitat.
- 10) To provide opportunities for public enjoyment and education at the site
- 11) To provide opportunities for community engagement in the management of the site.
- 12) To remediate contamination at the site to remove any potential risk to end user.

## **4.0 Proposed management prescriptions**

The annotated plan in Appendix III summarises the management prescriptions described below for the site for the proposed community woodland. Appendix IV shows the plan for the Maybush Copse scheme proposal.

### **4.1 *Grassland creation and management***

#### ***Amenity grassland***

Amenity grassland incorporated into the design of the site will be seeded with a mix to encourage greater floral diversity and managed to provide a varied structure of grassland sward where possible. Amenity grassland will be created on the area of the site that has been subject to remediation through the provision of a soil cover system. This will also be of benefit to reptiles, certain invertebrates, birds and badgers.

This will be achieved by:

- 1) No additional ameliorant or artificial fertilisers will be added to the soil prior to sowing the grassland seed mix to ensure the low nutrient conditions that encourage floral diversity.

- 2) An EL1 flowering lawn mixture available from Emorsgate seed (<http://wildseed.co.uk/home>.) will be sown within the amenity area, preferably in spring or autumn.
- 3) Once a grassland sward is established the area will be managed as amenity grassland and regularly mown (e.g. on a weekly or fortnightly basis). The grassland will be left unmown from late June to late August to allow plants to flower.
- 4) This area of amenity grassland will not be treated with pesticides, particularly vermicides and no additional fertiliser will be added.
- 5) The floral diversity and the use of the site by target species (i.e. reptiles, Invertebrates and birds) will be monitored by undertaking surveys 3 and 5 years after creation. Monitoring will be undertaken by the community following a series of botanical training days and training on surveying the target species. Management will be adapted if necessary.

### ***Tussocky grassland***

Tussocky grassland will be created in areas surrounding the amenity grassland to ensure good quality reptile habitat is incorporated and maintained. This grassland will also be of benefit to certain invertebrates and birds.

Management of existing rough grassland will be achieved by:

- 1) Unwanted perennial weeds will be controlled through spot treatment with herbicides. This will be undertaken in Spring 2011 and again in Spring 2012 if necessary.
- 2) Tussocky grassland will be cut every two years between October and February to control scrub and bramble encroachment. This will be carried out in sections on a rotational basis with half of the area being cut in 2011, 2013 and 2015 and the other half being cut in 2012, 2014 and 2016. This will ensure that areas remain undisturbed in any one year.
- 3) Grassland management will be undertaken by community work parties.

## **4.2 Creation of hibernation habitat and shelter for reptiles and amphibians**

The incorporation of features for reptiles in the design is important as this will provide some compensation for the loss of reptile habitat. However, there are numerous added

benefits associated with the following prescriptions, providing foraging, shelter and hibernation habitat for amphibians (including the great crested newt), small mammals and invertebrates.

The following prescriptions will be followed:

- 1) A total of two hibernacula will be constructed within the woodland. The exact locations of these will be directed by a suitably experienced ecologist as it is important to ensure that areas of habitat of particular interest for other species, such as invertebrates, are not sacrificed for these features.
- 2) The dimensions of each hibernaculum will be of at least 1 by 2 metres and will follow the design provided below in Figure 2.
- 3) A total of three log piles will also be created within the site boundary using arisings from site clearance.
- 4) These features will be maintained in the long-term.
- 5) These features will be installed and maintained by the community.

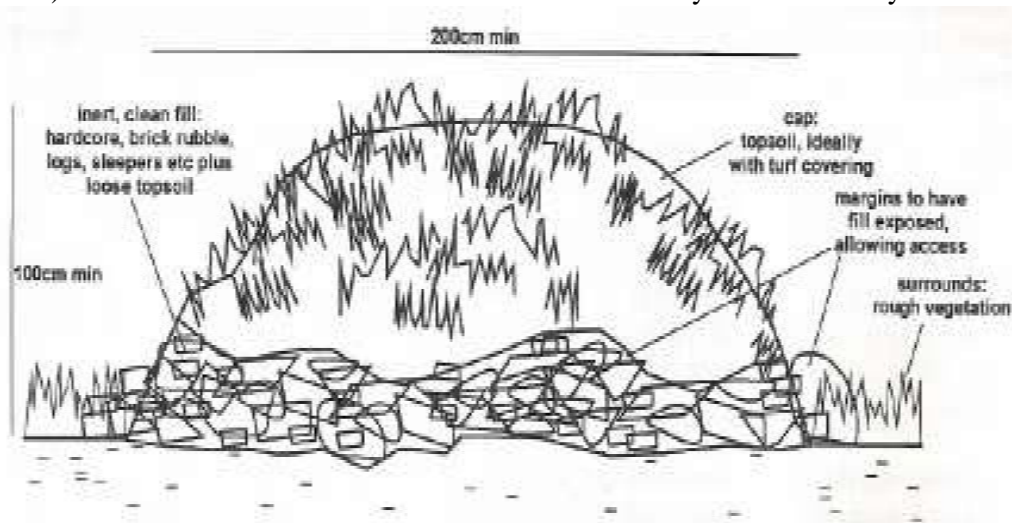


Figure 2: Design of hibernacula

### 4.3 Scrub management

Some scrub management may be required in order to prevent excessive scrub encroachment into the woodland and grassland habitat, thus maintaining a desirable mosaic of habitats.

The following prescriptions will be followed:

- 1) Scrub habitat will occupy a total area of 0.5ha on site. Scrub will therefore be removed outside of this area. Scrub levels will then be assessed in 3 and 5 years time. Where scrub occupies an area greater than 0.5ha scrub will be removed and scrub in designated grassland areas will be targeted.
- 2) Scrub will be cut using hand tools outside of the bird nesting season which runs from March to September. Where this is not possible a suitably qualified ecologist will check for the presence of nesting birds.
- 3) Larger pieces of cut material may be piled in a discrete corner on site to provide invertebrate habitat. Other arisings such as brash will be removed from site.
- 4) Stumps will be treated with a glyphosate based herbicide the following spring to prevent re-growth.
- 5) Scrub management will be undertaken by community work parties with the assistance of a professional qualified in the use of herbicide.

#### **4.4 Woodland creation and management**

A total area of 1.6ha of native broadleaved woodland will be planted across the site. Once the trees mature, these will enhance the site by providing excellent nesting and foraging habitat for a wide range of birds species, habitat for invertebrates, improve the bat foraging potential of the site and in the future provide opportunities for roosting bats.

The following prescriptions will be followed:

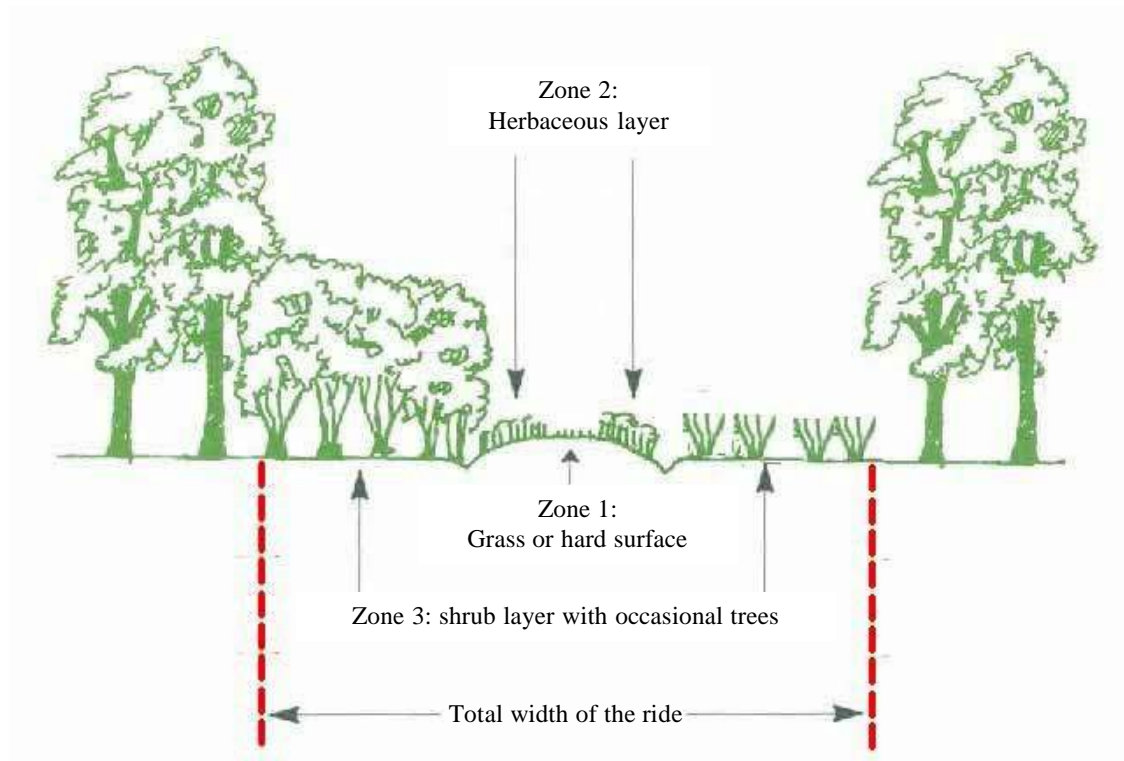
- 1) Areas proposed for planting will be cleared using a combination of spot spraying with herbicide and strimming to prepare the site for planting.
- 2) Trees will be sourced using the Woodland Trust's nominated nursery.
- 3) Whips of 40-60cm will be interspersed with several taller whips to provide a diverse structural height to the woodland when mature.
- 4) Species that will be used and their respective proportions are listed in table 4 below.

**Table 4: Species and their quantities**

Common name	Latin name	Proportions
Oak	<i>Quercus robur</i>	850
Ash	<i>Fraxinus excelsior</i>	200
Hazel	<i>Corylus avellana</i>	850
Field Maple	<i>Acer campestre</i>	850
Hawthorn	<i>Crataegus monogyna</i>	600
Blackthorn	<i>Prunus spinosa</i>	450
Alder Buckthorn	<i>Rhamnus frangula</i>	150
Guelder Rose	<i>Viburnum opulus</i>	150
Dogwood	<i>Cornus sanguine</i>	150
Goat willow	<i>Salix caprea</i>	100
Spindle	<i>Euonymus europaeus</i>	100
Holly	<i>Ilex aquifolium</i>	50

- 5) Trees will be planted at a density of 2,500 trees per hectare at 2 metre intervals in straight lines. Trees will be planted in straight lines to aid management and overtime through natural failure and thinning management a more natural pattern will emerge.
- 6) Planting will take place using the slit planting method by contractors and volunteers. Each tree will be supported by a bamboo cane and protected by a spiral rabbit guard. Oak (*Quercus robur*) and ash (*Fraxinus excelsior*) trees will be protected using tubex shelters.
- 7) For the first five years weeding will be carried in a 1metre radius around each tree to ensure the growth of the trees. This will be achieved through a combination of spot spaying with herbicide and through hand-pulling / using hand tools.
- 8) Once trees begin to grow tubes, stakes and spiral guards will be removed to allow continuous growth. Rotational coppicing will be undertaken once the woodland has begun to establish. Monitoring visits should determine at which point establishing a coppicing regime is appropriate although it is estimated that year 5 (2016) would be a good starting point. Coppicing will be carried out to thin blocks of woodland which will encourage light to reach the woodland floor to encourage a diverse ground flora to develop.
- 9) A series of pathways will be created throughout the woodland. These will be marked out prior to planting. Species such as hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and holly (*Ilex aquifolium*) will be planted alongside pathways as a passive visitor management technique. This is important to ensure that areas within the woodland are left relatively undisturbed, thus maximising the site as a refuge for wildlife.

- 10) The wheelchair friendly path will be surfaced with fittleworth stone, whilst the permissive footpaths will be surfaced with woodchip illustrated as Zone 1 on Figure 3. This surfacing will provide a physical barrier between contaminated soil and users of the site as well as helping to maintain structural diversity within the woodland.
- 11) A strip either side of zone 1 will be mown annually in September and all arisings will be removed from site. This will form zone 2 as indicated on Figure 3.
- 12) Shrubs within Zone 3 will be coppiced on an eight year rotation. Only a third of the entire length will be coppiced in any one year. The implementation of this does, however, fall outside of the five years covered by this plan.
- 13) Monitoring of the pathways in years 3 and 5 will inform adaptive management of the woodland. Maintaining the diversity of structure along the paths will benefit a range of species including invertebrates, bats, other small mammals, badgers and birds. Surveys will trigger a change in the intensity of scrub clearance and zone management as appropriate.
- 14) The prescribed management adjacent to footpaths will also help to maintain a constant and dense cover from re-growth / stems following coppicing or cutting which will help to restrict access to un-remediated areas of the site within the planted woodland.
- 15) Monitoring will include botanical surveys and butterfly transects. Where botanical diversity within the herbaceous layer is low this may trigger an additional over-sow with an appropriate seed mix. The survival of planted shrubs within the shrub layer will also be assessed and shrubs will be replaced where necessary. The change in diversity of butterflies will assess the effectiveness of the woodland enhancement. Where no significant change is noted this may trigger a oversowing of the herbaceous layer with different seed mix to provide food plants suitable for different species.
- 16) Woodland planting and subsequent aftercare and management will be undertaken by community work parties.
- 17) Monitoring will also be undertaken by the community following a series of combined plant and butterfly survey and identification training days.



**Figure 3: Diagram of the zoning of a ride**

English Woodland Grant Scheme (2005). *Managing woodland open space for wildlife*.  
www.forestry.gov.uk

#### **4.5 Perimeter management**

The perimeter of the site is approximately 800metres in length and currently comprises mature boundary trees including oak, poplar (*Populus sp.*) and willow (*Salix sp.*). To strengthen the existing boundary the following prescriptions will be followed to enhance the site by providing additional nesting and foraging habitat for a wide range of birds species, habitat for invertebrates, improve the bat foraging potential of the site and in the future provide opportunities for roosting bats.

- 1) The perimeter will be strengthened by the additional planting of oak and ash to form standards. Planting will take place following the measures described in Section 4.4 above and include the use of tree guards and maintaining a 1 metre radius free of weeds for the first 5 years.
- 2) A varied structure will be created along the perimeter with the addition of hedgerow species planted and will include a mixture of the following native species: hazel (*Corylus avellana*) (40%), field maple (*Acer campestre*) (20%), goat willow (*Salix caprea*) (20%) and hawthorn (20%).

- 3) Planting and subsequent aftercare and management will be undertaken by community work parties.

#### **4.6 Creation and maintenance of dead wood habitat**

Dead wood habitat is a valuable feature for a wide range of species and groups of species. The larva of many invertebrate species depend on dead wood for survival, whilst features suitable as bird nesting and bat roosting habitat such as crevices and rot holes are often associated with standing dead wood.

The following prescriptions will be followed within the relevant areas:

- 1) The dead wood on trees within the perimeter will be retained where possible, and tree surgery works will only take place where there is an over-riding risk to public safety.
- 2) A total of three log piles will be created within the site boundary using arisings from site clearance. These will be placed within the scrub areas created to the north of the site. The exact locations will be directed by a suitably qualified ecologist.
- 3) Four 'logs' will be buried up to one metre below the earth's surface thus providing essential larval habitat. The stag beetle is just one of the species whose larval stage will benefit from these features. The logs will be placed within the woodland habitat.
- 4) The log piles will be created and maintained by the community.

#### **4.7 Creation of additional bat roosting and bird nesting habitat**

Although the mature trees on site provide opportunities for roosting bats and nesting birds, the site can easily be enhanced further by erecting bat and bird boxes.

Boxes can be obtained from numerous suppliers however the community can be involved in building wooden bat and bird boxes. Designs for bird boxes can be obtained from BTO (British Trust for Ornithology) at [www.bto.org/nbw/index.htm](http://www.bto.org/nbw/index.htm) and bat box designs can be obtained from BCT (Bat Conservation Trust) at [www.bats.org.uk](http://www.bats.org.uk). The number of boxes should be determined purely by the public interest during bat and bird box making days organised by the community.

- 1) Bat boxes should be sited as high as possible on mature trees, at a height of 5 metres where possible. At least 1 metre beneath the bat box should also be ensured (created through removal of branches if necessary) to allow ample space for bats to emerge from the boxes.

- 2) Bird boxes should be sited in a variety of locations to suit the habitat requirements of difference bird species.

#### **4.8 Striking a balance for people and wildlife**

The Maybush Copse scheme is to create a wildlife friendly habitat as well allowing the local residents to enjoy this area of open space. To create a balance between people and wildlife the following prescriptions will be followed:

- 1) Paths will be maintained.
- 2) Regular litter picks to be undertaken by volunteers.

#### **4.9 Adaptive management**

Adaptive management is extremely important to ensure that prescribed management is achieving the desired effect and that the targeted benefits to wildlife and people are being achieved. In certain cases monitoring and trigger points for action have been included in the above prescriptions. However, the following general monitoring will be undertaken 3 and 5 years following management of the site commencing to evaluate the overall effectiveness of this management:

- 1) Botanical;
- 2) Badger;
- 3) Reptile;
- 4) Bird;
- 5) Bats foraging;
- 6) Invertebrate.

Monitoring will be largely undertaken by the local community through a series of training days aimed at establishing the knowledge required to achieve the adaptive management approach without a requirement for specialist / consultants input. Management prescriptions will be re-evaluated based on the results of these. Examples of the type of changes that may be required are:

- 1) Reduce or increase frequency of rotational coppicing of woodland.
- 2) Reduce or increase cutting regime of scrub and rough grassland.

## 5.0 Implementation plan summary

The Management Plan requirements are summarised below. All work will be undertaken by members of the Chichester Harbour Conservancy and local residents with input from a suitably qualified ecologist:

What	Where	When
Amenity grassland enhancement	Existing and created amenity areas	Sown in spring or autumn. Regularly mow on but relax from late June. Monitoring to take place 3 and 5 years.
Tussocky grassland	Surrounding amenity grassland	Cut every 2/3 years between October and February in sections.
Reptile/amphibian hibernation and shelter habitat	Woodland and scrub	Tree log piles and two hibernaculas created during habitat creation.
Scrub management	South of northern boundary	Cut outside of bird nesting season which runs from March-September and any stumps treated with glyphosate during spring.
Woodland creation	Woodland surrounding tussocky and amenity grassland	Weeding for first 5 years around newly planted trees.
Pathways	Woodland	Shrubs coppiced on 8 year rotation around pathways. Monitoring of pathways in year 3 and 5 through botanical and butterfly transect.
General enhancement	All relevant areas	Three log piles created and four logs to be buried 1 metre below surface. Install bat and bird boxes.
Review: Adaptive management	All relevant areas	3 & 5 years following completion

## 6.0 References

- Ed Rowsell (2010). *Biodiversity report*. Chichester Harbour Conservancy
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- Froglife (1999). Reptile surveys. *An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. (Advice Sheet 10).
- Joint Nature Conservation Committee (1990). *Handbook for Phase I Habitat Survey*. JNCC.
- Multi-Agency Geographical Information for the Countryside (MAGIC) Website at [www.magic.gov.uk](http://www.magic.gov.uk)
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## **APPENDIX I: Biodiversity report**

### **Biodiversity report for Maybush Copse Community Woodland Project**

**Produced by Ed Rowsell, Conservation Officer, Chichester Harbour Conservancy**

#### ***Introduction***

This document forms a scoping assessment of the potential nature conservation impacts arising from the creation of a new community woodland, with associated access infrastructure, at Maybush Copse, Cot Lane, Chidham. The conclusions are drawn from a combination of desktop study, site surveys and the long-term observations of the Conservation Officer.

Maybush Copse is located on the Chidham peninsula south of the A259 at Hambrook. The site is approximately 600m from the Chichester and Langstone Harbour Special Protection Area (SPA) and Ramsar Site, Solent Maritime Special Area for Conservation (SAC), and Chichester Harbour Site of Special Scientific Interest (SSSI).

This proposal by its very nature will seek to provide the best opportunities for wildlife in the context of quiet public enjoyment of the site. It is a prerequisite that the wildlife interest of the site will not be harmed and indeed that all suitable enhancements and management for wildlife will be instigated. A range of habitats and other features will be created and appropriately managed, which will benefit a range of wildlife. A site management plan will be developed to ensure the site is managed to best practice, a suitable monitoring programme is introduced and that the plan can adapt to issues arising from the monitoring findings.

#### ***Scoping***

The sections which follow are a systematic consideration of the potential impacts to nature conservation features arising from the proposed conversion. If relevant, details of the assessments undertaken and the conclusions drawn regarding likely adverse impacts, both within the construction phase and the operational use of the buildings, are also detailed.

#### ***Designated sites***

##### ***European and internationally important sites***

The proposal site is within 600m of the Chichester and Langstone Harbour SPA/Ramsar site. The designation was established for the occurrence of qualifying numbers of certain

over-wintering birds, a qualifying assemblage of over-wintering wetland birds and for the presence of three species of terns in the breeding season.

Significant numbers of waterfowl, including SPA interest features, utilise Nutbourne Bay for feeding and roosting, which at its closest point is approximately 600m distant from the proposal.

Tern nesting colonies are 3.3km distant at the closest point.

The Solent Maritime SAC is designated for its intertidal habitats including saltmarsh, sand and mudflats. The SAC boundary is approximately 600m distant at its closest point.

### ***Construction phase***

Construction operations will involve the import and levelling of material for the soil cover system as outlined in the scheme of works. These works will be of relatively high intensity, but short duration. The remaining works will be of a very low intensity and involve no major engineering works.

**SPA/Ramsar Overwintering waterfowl**-It is not anticipated that significant or even measurable impacts will occur during the construction phase of this project. The site is located adjacent to a relatively busy road and the duration, scope and scale of the proposal is insignificant in this context.

**Breeding terns**- no likely significant effects due to distance from the proposed site.

**SAC habitats**- designated interest features will not be affected directly or indirectly.

### ***Operation phase***

The planned use as a community woodland will provide recreational opportunities for the local community. It is not anticipated that this will lead to increased disturbance to interest features on the nearby European site. In addition, given the scope and scale of the use, and opportunities for awareness-raising, it is felt to be very unlikely to have a significant effect.

**SPA/Ramsar Overwintering waterfowl.** It is not envisaged that increased access to the site will result in significant disturbance to interest features. The site is contained within a shelterbelt of trees and the planned tree planting which will further reinforce this containment. The site is accessed via a relatively busy road. An increase in visitor numbers will be contained to within the community woodland and will predominately be local users. It is also envisaged that the site may deflect a proportion of users that would ordinarily have used the coastal path, by providing a public open space facility within the Parish, thereby potentially reducing recreational disturbance on the designated site. The management of the site will enable it to form part of the Conservancy's wider education

and awareness raising programme. It is therefore anticipated that overall this proposal will benefit SPA/Ramsar interest features through increase awareness and deflection of users from the coastal path.

**Breeding terns-** no likely significant effects due to distance from the proposed site.

**SAC habitats-** designated interest features will not be affected directly or indirectly.

### ***SSSI and L R***

The site falls within 600m of Chichester Harbour Site of Special Scientific Interest (SSSI). The SSSI citation notes the importance of the site for over-wintering waders and wildfowl, intertidal habitats and unimproved grassland.

### ***Construction and Operation***

The proposal involves no direct loss or impact on any designated habitats. Potential impacts to over-wintering waders and wildfowl are addressed under SPA/Ramsar.

It is considered that this proposal will have no significant impact on the SSSI designation.

### ***Species and habitats***

#### ***Bats***

A bat survey has been undertaken by Nik Knight, the local licensed bat worker. The survey found that there is no evidence that bats currently use the old shower block structure and that the proposal has no adverse significance for the local or national bat population.

Precautionary mitigation measures will be implemented and the demolition of the washhouse will be carried out outside of the bat hibernation period (November 1<sup>st</sup> to March 1<sup>st</sup>) with contractors advised of the appropriate precautions. Any work to mature trees will be preceded by a visual survey of suitability for bats, and the results appropriately acted upon.

Future opportunities for the installation of bat boxes will be investigated

#### ***Other mammals***

Common mammals such as bank vole, common shrew and fox have been recorded during site visits. No protected mammal species were noted or are likely to occur on the site.

Once implemented, the site management plan will have an overall positive effect on the mammal population. There is no likely significant adverse effect on mammals of conservation concern.

### ***Breeding birds***

Disturbance of breeding birds is an offence under section 1 of the Wildlife and Countryside Act 1981. Nesting habitat exists for birds within and around the site and a number of species have been noted within the breeding season including turtle dove, common buzzard and a range of common species.

The overall project will be of net benefit to most of the species currently using the site, and any aspects of the construction phase likely to cause disturbance to nesting species will be appropriately mitigated. This will include removal of suitable habitat in affected areas outside of the nesting season and timing of works. It is not envisaged that the construction phase will have a significant effect on the local bird population and in the longer term the site will be under positive conservation management.

Future opportunities for the installation of bird nesting boxes will be investigated; management specifically for target bird species will be instigated through a site management plan.

### ***Reptiles and Amphibians***

All native reptile species are protected under the Wildlife and Countryside Act 1981. Additionally certain species of amphibian are protected under the Conservation (Natural Habitats, etc.) Regulations 1994 and the Bern Convention.

There are no records of protected amphibian species and no suitable habitat within 250m of the proposal site.

The site has been surveyed to HGBI guidelines and has indicated that the site holds a good population of slow worm; one record of grass snake was also noted. The cover system that is required to mitigate site contamination issues has the potential to harm protected reptiles.

In order to protect the reptile population from this element of the operation and in line with HGBI guidelines; vegetation was sensitively cut to 10cm height using hand tools in the affected areas to encourage reptiles to disperse. Subsequently a reptile fence has been installed (to Highways Agency specification) surrounding the affected areas and an in-situ reptile translocation programme is in progress. Refugia have been placed at appropriate density in the translocation area and the site visited in suitable weather conditions to catch animals and remove them to suitable habitat on the safe side of the reptile enclosure. Vegetation management has continued in order to assist the removal operation. Reptile removal will continue until we can be reasonably satisfied that the site

is clear of reptiles. If deemed necessary, a destructive search will be undertaken prior to the cover system operation. The reptile fence will be maintained until all potentially damaging operations have been completed. It will then be removed enabling reptiles to re-colonise once habitat develops.

The site design incorporates areas to be specifically managed as reptile habitat and other enhancements are planned including the creation of hibernacula. The enhanced management and secure ownership by an environmentally-focussed partnership will secure the reptile site into the future.

All data is available on request and will be submitted to the Sussex Biological Records Centre.

It is therefore concluded that this proposal has no likely potential negative impact on protected reptiles or amphibians, and indeed will result in a net benefit.

### ***Botanical***

Walk over surveys have been undertaken at the site which concluded that no plant species of conservation concern have been recorded, or are likely to occur, within the proposal site. The proposed habitat creation scheme and ongoing site management will increase the diversity of plant species and habitats, without affecting any species of conservation concern.

No likely negative effect to botanical diversity is envisaged.

### ***Invertebrates***

Invertebrates such as red admiral, comma and small copper butterflies and common darter and emperor dragonflies have been noted during site visits. No protected invertebrate species were noted or are likely to occur on the site.

Once implemented, the proposed habitat creation scheme and ongoing positive conservation management will have an overall positive effect on the invertebrate population. There is no likely significant adverse effect on invertebrates of conservation concern.

### ***Habitats***

No UK Biodiversity Action Plan priority or Conservation (Natural Habitats, etc.) Regulations 1994 Annex 1 habitats are located within, or will be affected by, the proposed works.

***Data, records and monitoring***

All of the records generated through the development of the community woodland proposals will be held within the Chichester Harbour Conservancy recorder database and will also be shared with the relevant county recorders and SXBRC through existing data exchange agreements.

It is planned that on-site monitoring will continue to assess the effect of management measures and react as necessary. Again all records generated will be submitted to relevant bodies.

***Conclusion***






It is concluded that the proposed scheme has limited potential to impact upon designated sites, protected species or wider nature conservation interests. Indeed, it is envisaged that the proposal will lead to benefits for nature conservation, both within Maybush Copse and the wider area through the deflection of users from more sensitive sites, positive site management and the role the site will play in awareness raising and education.

## APPENDIX II: Phase 1 Habitat map

Baseline habitats in 2010 pre woodland creation scheme.



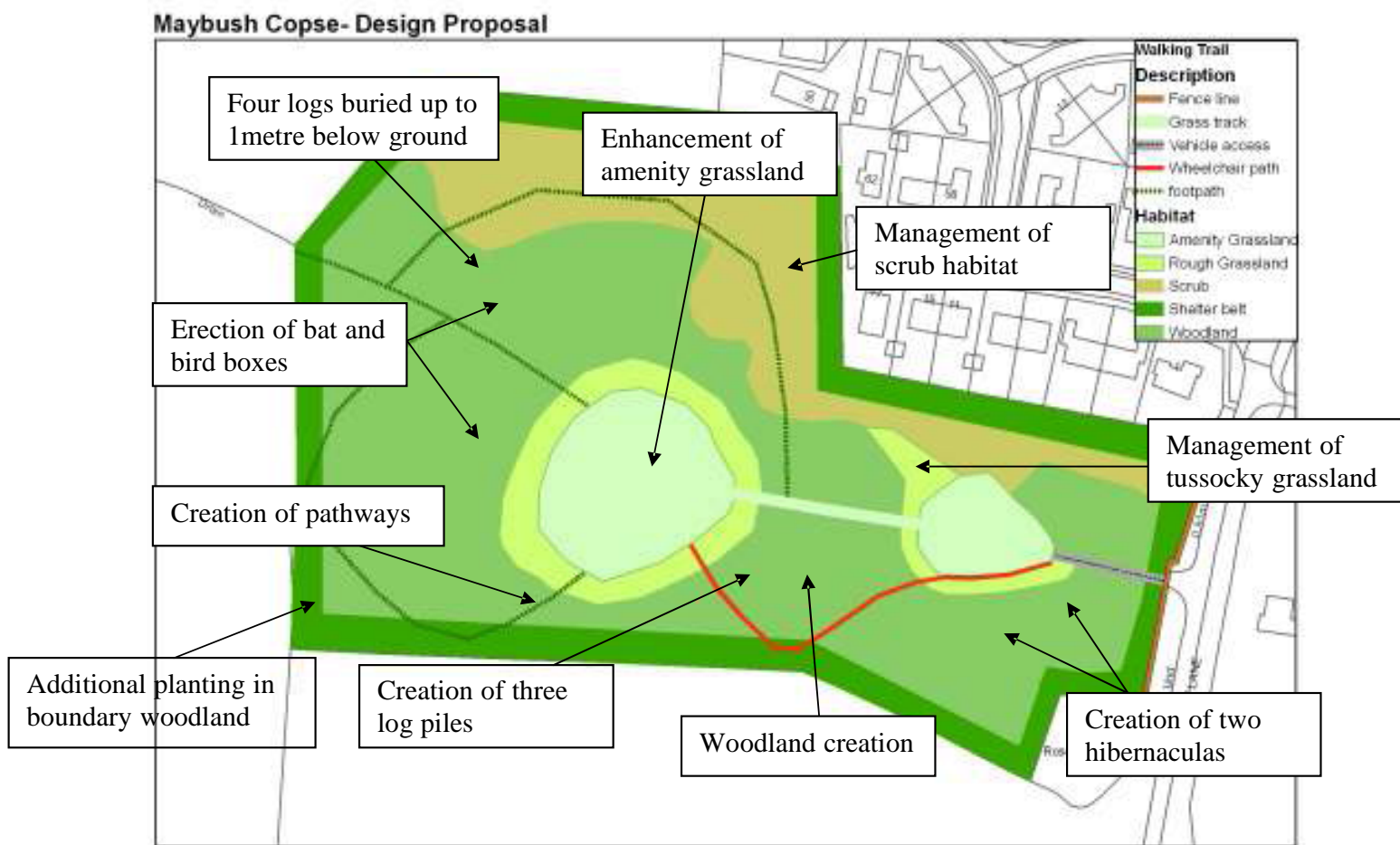
Key to Phase 1 Habitat map

	Woodland
	Scrub
	Ruderal vegetation
	Amenity grassland
	Target note

Target notes to Phase 1 Habitat Map

Target note	Description
1	Small woodland comprises of mature elder ( <i>Sambucus nigra</i> ). No understorey layer is present and the ground flora is sparse with occasional common nettle ( <i>Urtica dioica</i> ).
2	Small woodland comprises mature stands of blackthorn ( <i>Prunus spinosa</i> ) and hazel ( <i>Corylus avellana</i> ) coppice. Ground flora is sparse with locally abundant ivy ( <i>Hedera helix</i> ), frequent common nettle and occasional hart's-tongue ( <i>Phyllitis scolopendrium</i> ).
3	Scrub. Patches of hawthorn ( <i>Crataegus monogyna</i> ) and elder scrub are present across the site, along with individual species. Dense areas of scrub are present along the west and north western areas of the site
4	Ruderal vegetation. Typical species in these areas are common nettle, creeping thistle ( <i>Cirsium arvense</i> ) and burdock ( <i>Arctium minus</i> ), all of which are very common and widespread.
5	Amenity grassland. Yorkshire fog ( <i>Holcus lanatus</i> ), cock's-foot ( <i>Dactylis glomerata</i> ), perennial rye-grass ( <i>Lolium perenne</i> ), creeping thistle, creeping buttercup ( <i>Ranunculus repens</i> ), common ragwort ( <i>Senecio jacobaea</i> ) and cat's-ear ( <i>Hypochaeris radicata</i> ) are present

### APPENDIX III: Management prescriptions



## APPENDIX IV: Maybush Copse Scheme Proposal

