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PROFESSIONAL ECOLOGICAL SOLUTIONS



ECOLOGY

TREE PROTECTION FENCING

SITE PREPARATION & CLEARANCE

HABITAT MANAGEMENT & ENHANCEMENT

Report	Dormouse Mitigation Strategy
Site Name	Land East of Posbrook Lane, Titchfield (57 units scheme)
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Client	Foreman Homes Ltd
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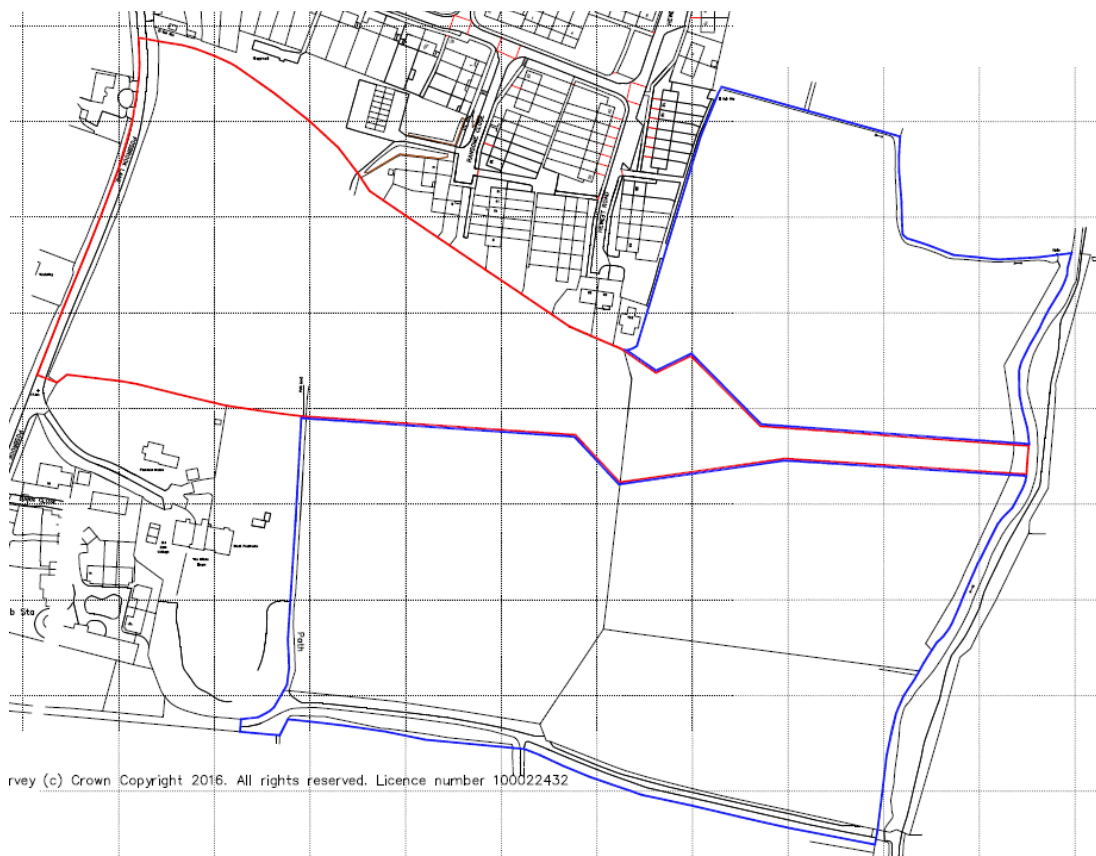
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1.0 INTRODUCTION

1.1 Summary

This document outlines the proposed strategy for the mitigation of the likely impacts to Dormice (*Muscardinus avellanarius*) as a result of the development of the land to the east of Posbrook Lane, PO14 4JD, (centred on OS grid reference SU537 051) (**Fig 1**). The presence of Dormice was confirmed during survey work undertaken by Ecosupport Ltd in 2017. Owing to the proposed access into the site, a section of hedgerow will need to be removed necessitating the requirement for a Natural England European Protected Species (EPS) development licence. This document will outline how the three tests will be satisfied under the Conservation of Species and Habitats Regulations (2010).

Figure 1. Redline location plan of the site.



1.2 Proposed Development

The development will consist of 57 residential dwellings with associated gardens, landscaping and drives with an access road linking the dwellings to Posbrook Lane.

1.3 Aims of the Mitigation Strategy

This Dormouse mitigation strategy details the measures, which will be implemented in order to ensure that the proposed development would fully comply with legislation and planning policy relevant to the protection of Dormice and form the basis of the European Protected Species (EPS) licence application. The two primary aims of the Dormouse mitigation strategy are:

- 1) To prevent the killing or injury of Dormice as a result of works
- 2) To ensure any adverse impacts from the development are adequately mitigated and compensated for to protect the Favourable Conservation Status (FCS) of the species.

2.0 RELEVANT LEGISLATION & POLICY

2.1 Legislation

Dormice are fully protected under the Wildlife and Countryside Act (1981 as amended) and the Conservation of Habitats Regulations (2017). Under these two pieces of legislation acting in parallel it is an offence to:

- Deliberately or intentionally kill, capture, injure or take a Dormouse;
- Deliberately disturb a Dormouse;
- Damage or destroy a breeding site or resting place of a Dormouse;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a Dormouse &
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead Dormouse or any part of a Dormouse.

2.2 Policy (Fareham Borough Local Plan)

'Policy DSP: 13 Nature Conservation

Development may be permitted where it can demonstrate that;

i) Designated sites and sites of nature conservation value are protected and where appropriate enhanced;

ii) Protected, priority and target species populations and their associated habitats, breeding areas, foraging areas and protected and where appropriate, enhanced;

iii) Where appropriate, opportunities to provide a net gain in biodiversity have been explored and biodiversity enhancements incorporated; and

iv) The proposal would not prejudice or result in the fragmentation of the biodiversity network.

Proposals resulting in detrimental impacts to the above shall only be granted where the planning authority is satisfied that;

i) Impacts are outweighed by the need for, and benefits of the development; and

ii) Adverse impacts can be minimised, and provision is made for mitigation and, where necessary, compensation for those impacts.

Enhancements that contribute to the habitat restoration targets (and population strengthening), set out in the HBAP will be supported.

2.3 Sources of Guidance and Best Practice

The Dormouse Conservation Handbook 2nd Edition (Bright et al., 2006) outlines the best practice guidelines for surveying and mitigating for any potential adverse impacts to Dormice resulting from development. Information from this book as well as knowledge gained from training delivered by Ian White MCIEEM from the Peoples Trust for Endangered Species (PTES) has informed this mitigation and compensation strategy.

3.0 SURVEY METHODS

The Phase I survey (Ecosupport Ltd Rev May 2017) identified suitable habitat for Dormice (*Muscardinus avellanarius*) in the form of mature hedgerows along with local records of Dormice presence (as indicated by HBIC records). Methodological guidance for Dormouse surveys is provided in the *Dormouse conservation handbook* (Bright *et al* 2006) where it is recommended that 50 nesting tubes be erected within all suitable habitats on site at approximately 20 m intervals. These tubes were placed out in April 2017 and checked until September (when a suitable survey effort score will have been achieved) or until evidence of Dormice is recorded.

3.1 Limitations

The survey work that informs this document was completed in 2017 and is therefore not from the most recent survey season (or from within 18 months as per updated CIEEM guidance¹. Notwithstanding this, given the site fidelity typically exhibited by Dormice (Bright *et al.*, 2006), it is not considered updated survey work was necessary nor would this have changed the proposed mitigation and compensation (as Dormice can still be assumed to be present on-site).

¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

4.0 BASELINE DATA AND LIKELY IMPACTS OF THE PROPOSALS

4.1 Suitable Habitat Description

Ideal Dormouse habitat consists of species such as Hazel (*Corylus avellana*), Hawthorn (*Crataegus mongyna*), Oak (*Quercus robur*), Bramble (*Rubus fruticosus*) and Honeysuckle (*Lonicera* spp.), as these species are all valuable food sources and provide connectivity between the canopy (Bright et al., 2006). The hedgerow on the eastern boundary of the site in particular is considered suitable for Dormice with it supporting a number of species of known benefit to Dormice as well as benefitting from linkages into the hedgerows / woodlands in the wider landscape. The hedgerow on the western part of the site whilst also supporting a good variety of native species (**Fig 2**), is however somewhat isolated for the other suitable habitat on site (which would reduce its suitability to support Dormice).

Figure 2. View of the hedgerow along the site's western boundary.



4.2 Status of Dormice

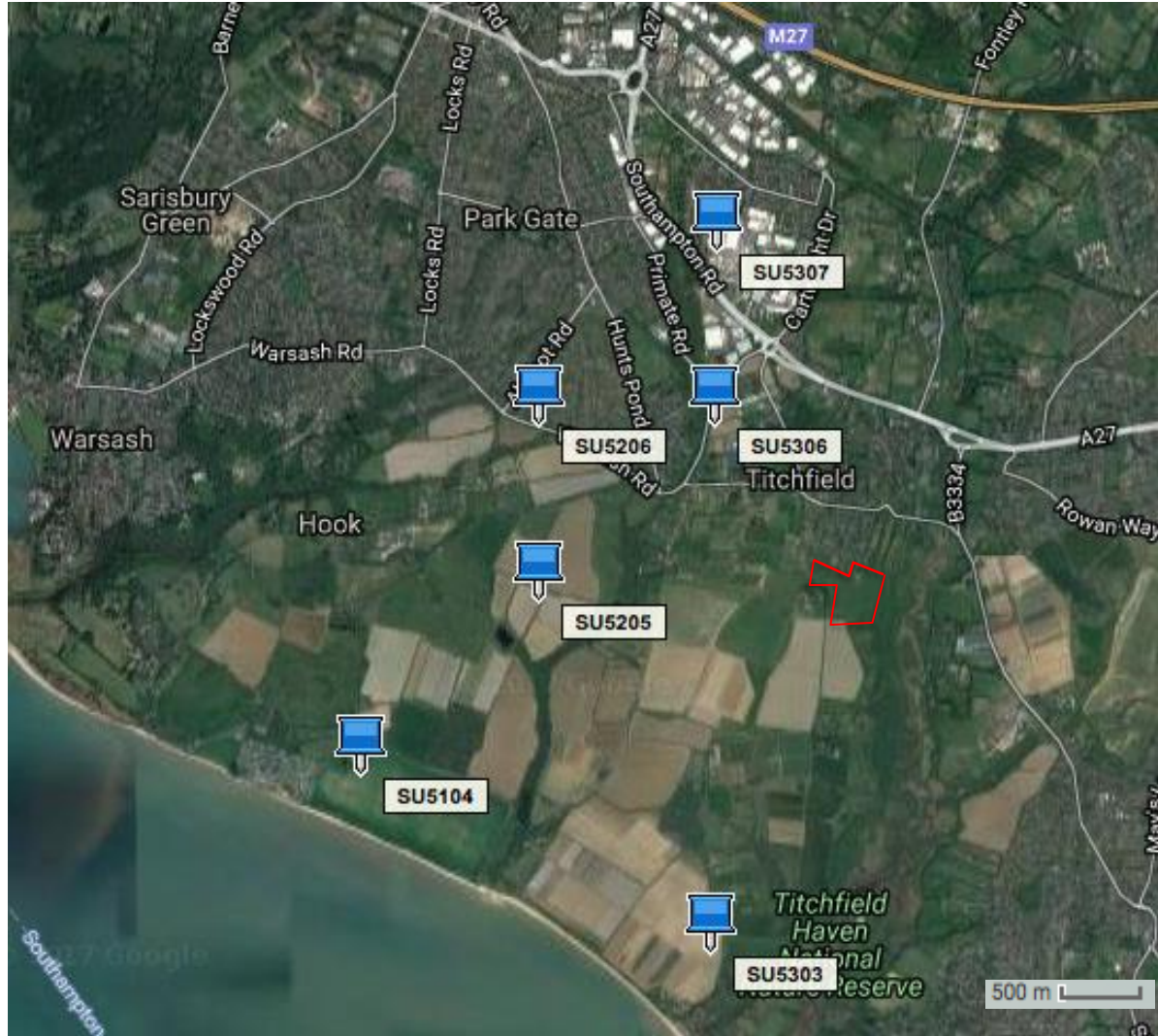
Over the last 100 years the Dormouse has suffered sharp declines in both numbers and distribution (Bright et al., 2006). Although still widespread in southern counties they remain patchily distributed and are all but absent from northern counties. Dormice will typically live at population densities of less than 10 adults per hectare, even in good habitat (Ewald, 2004).

Populations are adversely affected by weather and climate changes, habitat deterioration, fragmentation and isolation and inappropriate habitat management (Bright et al., 2006). In particular, the fragmentation of woodland and connecting hedgerows is one of the principal factors in declining numbers through leaving isolated non-viable populations. The cumulative effect of these impacts is a 52% decline in numbers over the last 25 years (JNCC, 2010)

4.3 Nearby Records

The data search obtained from Hampshire Biodiversity Information Centre identified a number of records of Dormice with a 2km radius (**Fig 3**).

Figure 3. Existing Dormouse records in relation to the site location (GridReferenceFinder).



4.4 The Status of Dormice on the Site

4.4.1 Survey Results

During a check carried out in May 2017, Adam Jessop BSc (Hons) MSc (working under the license of Sophie Hughes Natural England License holder for Dormice) identified a nest indicative of a Dormouse within one of the tubes located along the eastern edge of the wider site (**Fig 4**).

Figure 4. Approximate location of the nest tube with a probable Dormouse nest in.



The approximate total length of the hedgerow within which the nest was found measures 539.26m. Given the area of habitat available on site and the typically low population densities of Dormice (average of 2.2 / ha Bright et al., 2006), the site is not considered likely to support a large population.

4.4.2 Interpretation / Evaluation of Results

It is considered that there are insufficient resources on site to support a breeding population of Dormice, however given the linear nature of the corridor running parallel to the River Meon it is considered highly likely that Dormice are using the site transiently. Using the valuation criteria outlined within CIEEMs *Guidelines of Ecological Impact Assessment in the United Kingdom* (2018) and considering the relatively widespread distribution of Dormice within Hampshire, the site can be considered to be of at least **Local - District Value** for Dormice.

5.0 IMPACT ASSESSMENT IN ABSENCE OF MITIGATION

If the proposed development was to proceed without suitable mitigation and compensation, it would likely result in an offence being committed under the Wildlife and Countryside Act (1981 as amended) and the Conservation of Habitats Regulations (2010) through potentially killing, injuring and disturbing Dormice and damaging a place of rest.

Further indirect impacts may occur through the isolation of species, which may be left within part of the retained hedgerow. In conjunction these impacts, if left unmitigated, may adversely affect the local conservation status of Dormice populations and affect the long-term sustainability of the population.

5.1 Short-term Impacts

5.1.1 Loss of Habitat

Subject to a successful EPS licence application the works will involve the removal of a short stretch of hedgerow along Posbrook Lane. Based on the proposed site access plan produced to support the application by Odyssey, once the visibility splays have been accounted for, it is estimated the total loss of hedgerow habitat will be approximately 130 m² (see **Fig 5** below).

Figure 5. Approximate extent of the western boundary hedgerow (running parallel to Posbrook Lane) that will require removal (shaded in red) for site access and visibility splays.



5.1.2 Disturbance

Disturbance impacts on the local Dormouse population are likely to occur during the construction works related to the development. There is anticipated to be an increased level of disturbance (noise, vibration and visual) to any Dormice present within the hedgerows and woodland from the movement of any heavy machinery and the presence of construction workers. Furthermore, it is likely there will be an increase in dust deposition on vegetation and an increase in localised light pollution from the construction area.

5.2 Long-term Impacts

5.2.1 Fragmentation & Isolation

As the proposals will require the removal of a section of the hedgerow, Dormice may not be able to reach the other section of hedgerow and may be left isolated without mitigation (although this stretch of hedgerow along Posbrook Lane is already somewhat isolated from surrounding hedgerows).

5.2.3 Disturbance

In the long term there may be operational impacts from noise associated with the new housing development. However, as dormice are nocturnal it is anticipated that this will be most likely to occur for a short period in early evening when residents return home or during good weather in the summer months (when residents are more likely to use their gardens). There may also be additional impacts from an increase in external, lighting associated with the development.

6.0 RECOMMENDED ACTIONS TO MITIGATE & COMPENSATE

The development of the site is likely to result in adverse impacts to Dormice. Therefore, as a fully protected species, in order to fully comply with relevant legislation, it is necessary to implement a full mitigation strategy. Works as outlined below will need to take place under an EPS granted by NE once full planning permission for the site has been issued.

6.1 Works to be Carried Out by a Suitably Qualified Ecologist (SQE)

6.1.1 Timing, Methods & Capture

Prior to clearance commencing, 5 Dormouse nest boxes will be installed within the retained hedgerows / along the site's eastern boundary, to increase the carrying capacity of the retained (and later enhanced and extended) habitats for Dormice. These will also act as receptors for any Dormice found during the sensitive clearance works (outlined below).

All habitat clearance will adopt the following methodology where by a single stage removal methodology is recommended due to the limited amount of vegetation requiring removal:

- Fingertip search of all vegetation to be cleared, by the licenced ecologist, immediately prior to clearance commencing (on the same day and every day clearance occurs). If any Dormice are found, these will be caught by the ecologist where possible and relocated (with their nest if present) to the nest boxes previously erected within the so they are as close as possible to their original location, but within contiguous habitat. If any active Dormouse nests containing dependent young are identified (or active bird nests), clearance will not proceed in this area; provision will be made for the nest to be retained in situ and within contiguous habitat until the young have been fully weaned and allowed to disperse naturally (informed by the licenced ecologist).
- The licenced ecologist will deliver a toolbox talk to the vegetation clearance contractors, detailing the sensitive measures required. The ecologist will then supervise all vegetation clearance. No clearance will be undertaken without the supervision of the ecologist.
- Hand tools will be utilised to sensitively cut vegetation down to ground level in a single stage. This will be undertaken in a directional fashion to passively encourage dormice to move away from the works area towards retained, suitable habitat along the eastern and western boundaries. All arisings will be moved away from the hedgerows immediately to an area of within the arable field, and will then be chipped and immediately removed from site. Care will be taken to ensure displaced Dormice do not have to travel more than 50m to retained habitats (this will be possible within all area of vegetation requiring removal due to the small scale of clearance required). In line with the recommendations within Bright et al., (2006) no more than 50 m² of habitat will be cleared in a single day.
- Roots can then be excavated immediately, again under the full supervision of the licenced Ecologist. Root excavation must be undertaken by mid-October to prevent the potential foruse by hibernating Dormice.

To mitigate for the short impacts of disturbance during the construction process, a buffer zone around the hedgerows adjacent to development will be demarcated prior to construction works commencing with a robust fence. In addition to this signage will be erected along the fencing explaining the sensitivity of the area to disturbance and a toolbox talk will be given to all contractors.

6.2 Operational Impacts

6.2.1 Protection of Existing Features

Prior to construction works commencing the retained hedgerows / tree lines will be protected via the installation of heras fencing (or similarly robust construction fencing) covered with dust sheets and with regular information signage installed. Access will not be permitted behind this fencing by construction personnel. This will protect Dormouse habitat from direct damage/disturbance and dust.

6.2.2 Cat Predation

To mitigate against any potential operational impacts, the immediate edge (1 – 2m) of new hedgerow (as per **Fig 7** below) will be planted with up with thorny species which will act as a deterrence to cats as well. Species that will be used can include:

- Hawthorn (*Crataegus monogyna*)
- Blackthorn (*Prunus spinosa*)
- Dog Rose (*Rosa canina*)

6.2.2 Lighting

A document (*Guidance Note 08/18 Bats and Artificial Lighting in the UK*) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats (which by extension, will also act to mitigate against impacts to Dormice). The key recommendations within this document have been outlined below and will be implemented provided there are no conflicts with any legal limits of illumination (in which case a suitable compromise should be reached). A sensitive lighting strategy to adhere to the recommendations below (with a light spill contour plan) should be secured via a suitably worded condition of planning,

'Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:

- *All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used. LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.*
- *A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.*
- *Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).*

- *Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.*
- *The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.*
- *Column heights should be carefully considered to minimise light spill.*
- *Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.*
- *Luminaires should always be mounted on the horizontal, i.e. no upward tilt.*
- *Any external security lighting should be set on motion-sensors and short (1min) timers.*

As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed (**Fig 6**). This may be appropriate to use on the road adjacent to the northern boundary and where the turning point is at the eastern end of the site.

Figure 6. (a) Shield ‘barn doors’ (b) cowl hood; (c) shield and; (d) external louvre Images from ILP (2018).



6.3 Habitat Compensation / Enhancement

The loss of approximately 130m² of hedgerow along the western boundary (as detailed within **Fig 5**) will be compensated for by a combination of infill planting on existing gappy hedgerows and the planting of approximately 1500m² of new hedgerow along the southern boundary of the new housing development which extends to the north into the BCA (**Fig 7**).

Figure 7. Compensatory hedgerow planting along southern extent of the site, extending to the north east (indicated with red dashed line). The hedgerow will be approximately 500m in linear length which is planted at an average width of 3m will provide approximately 1500m² of habitat (a net gain of 1370m²).



This will contain a native species assemblage with a similar species composition to the existing hedgerows on-site (so will include Hazel, Hawthorn, *Malus* spp, Blackthorn, *Salix* spp, Dog Rose, Dogwood, *Quercus* spp and occasional planting of Honey Suckle (*Lonicera periclymenum*)). The hedgerow will be a minimum width of 3m with plants planted at a density of at least 4 / m².

All shrubs/trees used for the planting will be of at least a size of 90 – 120 cm bare root plants with 1 in 50 plants used a standard tree (250 cm minimum height). Native climbers will be planted as required and favourable to the planting arrangements of the other shrubs/trees. The use of guards and canes will be included to protect new plantings. Planting will aim take place during the first late autumn-winter period available after the EPS licence has been granted to allow adequate time for establishment.

NB the new hedgerow along the backs of plots 29 – 42 will be OUTSIDE of the close board fence that demarcates the end of their gardens and as such will be outside of their ownership / management responsibility.

6.4 Post Development Management and Site Safeguard

6.4.1 Funding and Responsibilities

The responsibility for carrying out the management works and to provide funding lies with the developer Foreman Homes. The management will be funded by Foreman Homes a period of no less than five years following the completion of the development. The responsibility will eventually be passed onto the resident's management company.

6.4.2 Outline Management Recommendations

Management of the newly planted area(s) will incorporate the following:

- Weeds will be suppressed with the use of chippings. Some additional weed control may be required which will be achieved through strimming or spot spraying with an herbicide, specifically glyphosate.
- There will be a non-intervention of trimming or reduction during the first 5 years of growth. Spiral guards and canes can be removed in year 5.
- Thereafter coppicing and trimming techniques can be used at 3-4 yearly intervals to reduce height and width of planting areas. All trimming and coppicing should take place during the winter period (January–February) so that nesting birds are not impacted upon.

Although regular management can be detrimental to Dormice through reducing the availability of flowers and fruits, it is important to ensure it is of optimal suitability. To that end the newly planted areas (once established) will have alternate small sections cut each year, with hedgerow sections only cut at intervals between 3 and 5 years (Bright et al., 2006). It is not considered necessary to cut back the existing hedge as it is noted that uncut hedgerows are more likely to be occupied by Dormice (Bright et al, 2006) and there are no issues with stock proofing relevant.

7.0 REFERENCES

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