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Report prepared for: Burston Farmers Ltd

For the Site of: Land at Weedon Road, Aston Abbots, Aylesbury, Bucks, HP22 4NQ

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Cherryfield Ecology has prepared this report for the named clients use only.

Ecological reports are limited in shelf life, Natural England usually expect reports for licenses to be no more than 12 months old and therefore should the project not proceed within 12 months of this report an updated survey should be undertaken in order to check for changes that may have occurred on site. Information is believed to be accurate at the time of survey; recommendations are made without bias based on good practice guidelines within the industry. However, species presence and ecological parameters can change over time.

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## Contents

1.0 Introduction .....	3
2.0 The Development Works.....	4
2.1 The Development Site .....	4
2.1.1 MAGIC.....	5
2.1.2 Evidence/ Potential for Protected Species.....	6
2.2 Proposed works .....	7
2.2.1 Potential impacts of the development works.....	8
3.0 Capital Works and Year 1 Management .....	10
4.0 Yearly Management Plan .....	14
4.1 Habitat Management - Year 2 to 30 .....	14
References.....	18

# Habitat Management Plan

## 1.0 Introduction

The client, Burston Farmers Ltd, has commissioned a habitat management plan at the site of Land at Weedon Road, Aston Abbots, Aylesbury, Bucks, HP22 4NQ, to support the creation of biodiversity units to be made available for off-site compensation under the Defra Metric.

The proposed works are as follows:

*Enhancement of the modified grassland to lowland meadow and the enhancement and addition of mixed scrub areas. Enhancements will also be carried out on the boundary hedgerows.*

The resulting management plan is based on general good practice.

## 2.0 The Development Works

### 2.1 The Development Site

A walkover of the site was undertaken on the 03/08/2023 to determine the classification and condition of the baseline habitats on site.

The site currently consists of an unmanaged field, previously used for arable crop/ temporary grass leys. Grass species present are dominated by perennial rye grass, with occasional Yorkshire fog, annual meadow grass, false oat grass and soft brome. There are several dry and bare patches, with succeeding forb species including creeping thistle (dominant), scentless mayweed, field forget me not, bristly oxtongue and ribwort plantain. Species count per m<sup>2</sup> averaged at 3/4, with perennial rye present in all quadrat samples.

A stream runs along the western boundary, with areas of tall ruderal and scattered scrub along its banks. The northern and southern boundaries are lined with native hedgerows with trees and the eastern boundary is lined with newly planted native-species rich hedgerow.

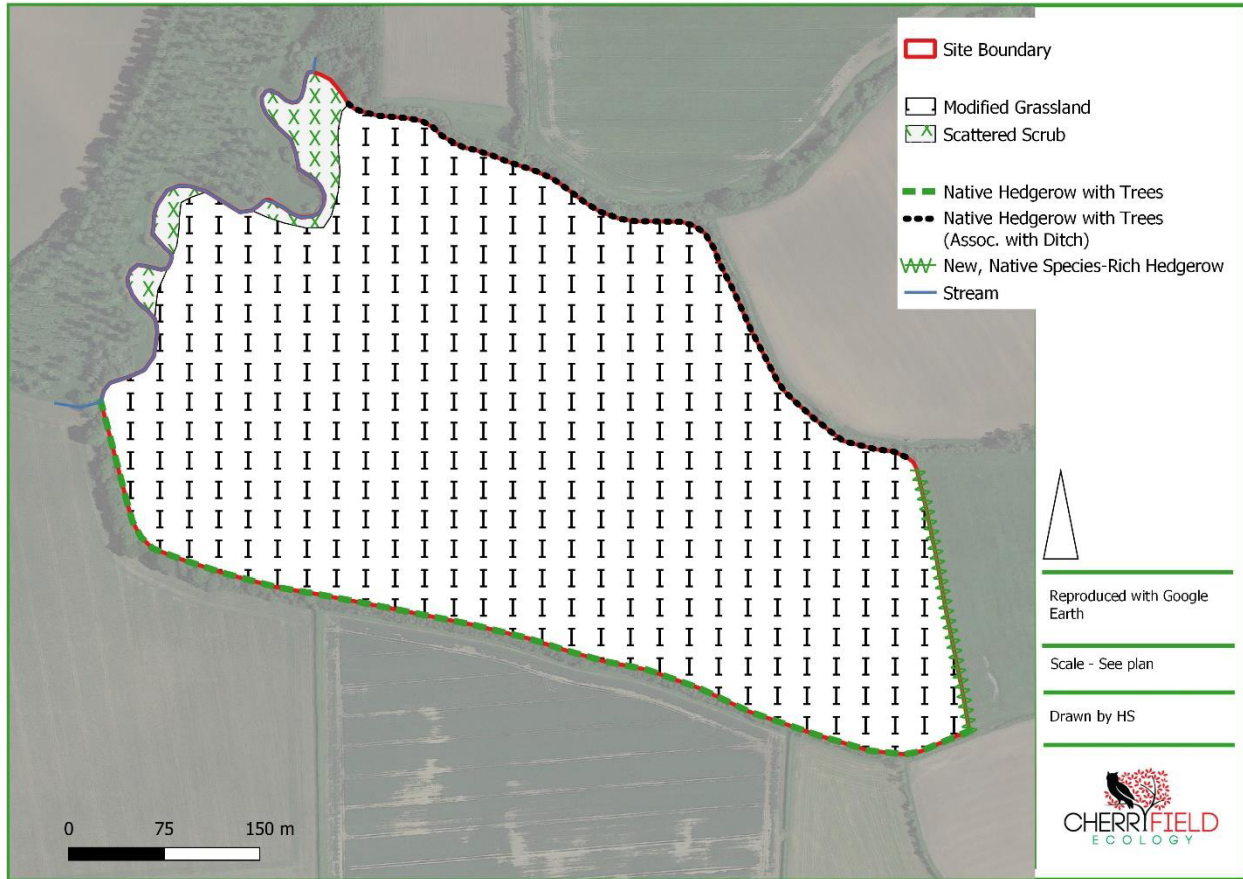


Figure 1: Baseline habitat plan

### 2.1.1 MAGIC

The following statutory sites and Natural England Protected Species (NEPS) have been located within the 2km search area (Figure 2).

Table 1: Magic search results

Receptor	Distance and Direction (m/Km)	Description
Statutory sites	n/a	n/a
Granted protected species licenses	n/a	n/a
Priority habitat	~1525m northeast	Wood-pasture and Parkland
	~775m southeast	Traditional orchard
	~1100m southeast	Deciduous woodland

MAGiC

Magic Map

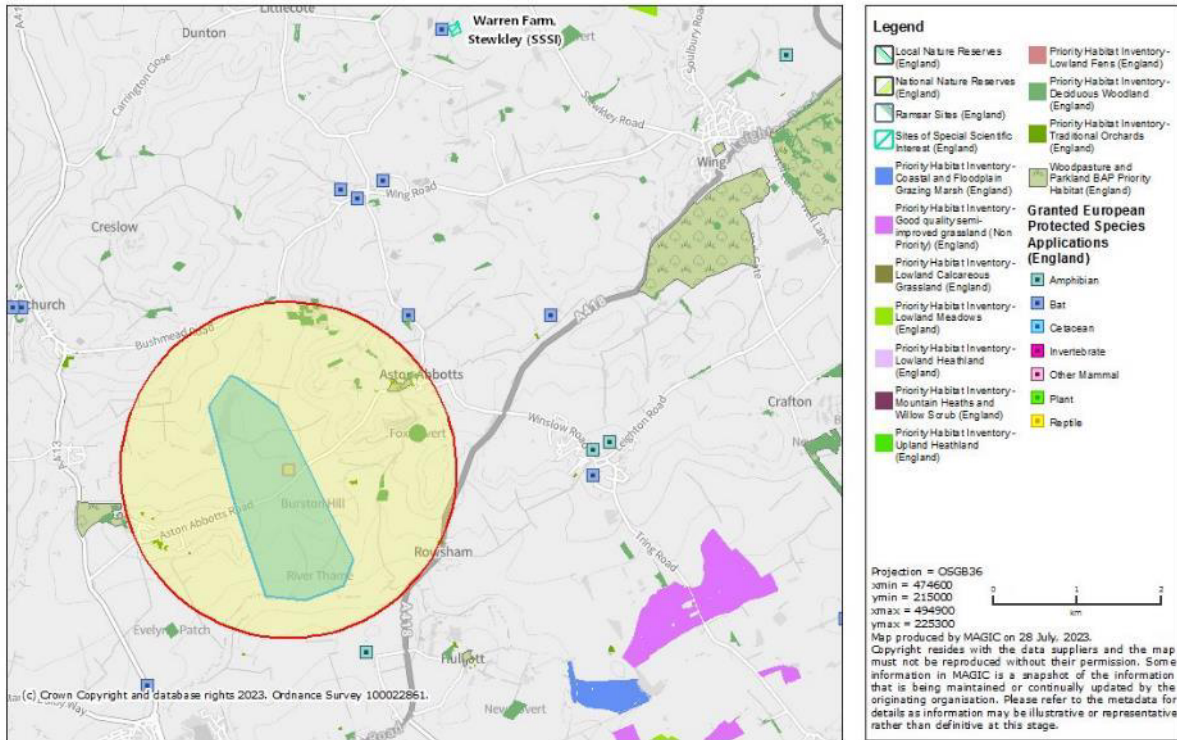


Figure 2: Magic Map Search

### 2.1.2 Evidence/ Potential for Protected Species

No evidence of protected species was found on site. Anecdotal evidence suggests the presence of a badger sett within the hedgerow boundary, however, this was not seen during the walkover survey. The trees and hedgerows provide high potential for breeding birds, with occasional bird boxes installed on boundary trees.

## 2.2 Proposed works

Enhancement works will be undertaken on site to create lowland meadow and a larger area of scrub, with additional enhancements carried out on the boundary hedgerows, with a view to selling the biodiversity units generated for off-site compensation purposes.

After enhancements, it is expected that the habitats on site will meet the following conditions:

Table 2: Criteria likely to be achieved post-development

Habitat (UKHabs)	Condition Score	Distinctiveness
Lowland Meadows	Good	V. High
Mixed Scrub	Good	Medium
Native Species-Rich Hedgerow with Trees	Good	High
Native Species-Rich Hedgerow with Trees (Assoc. with Ditch)	Good	V. High

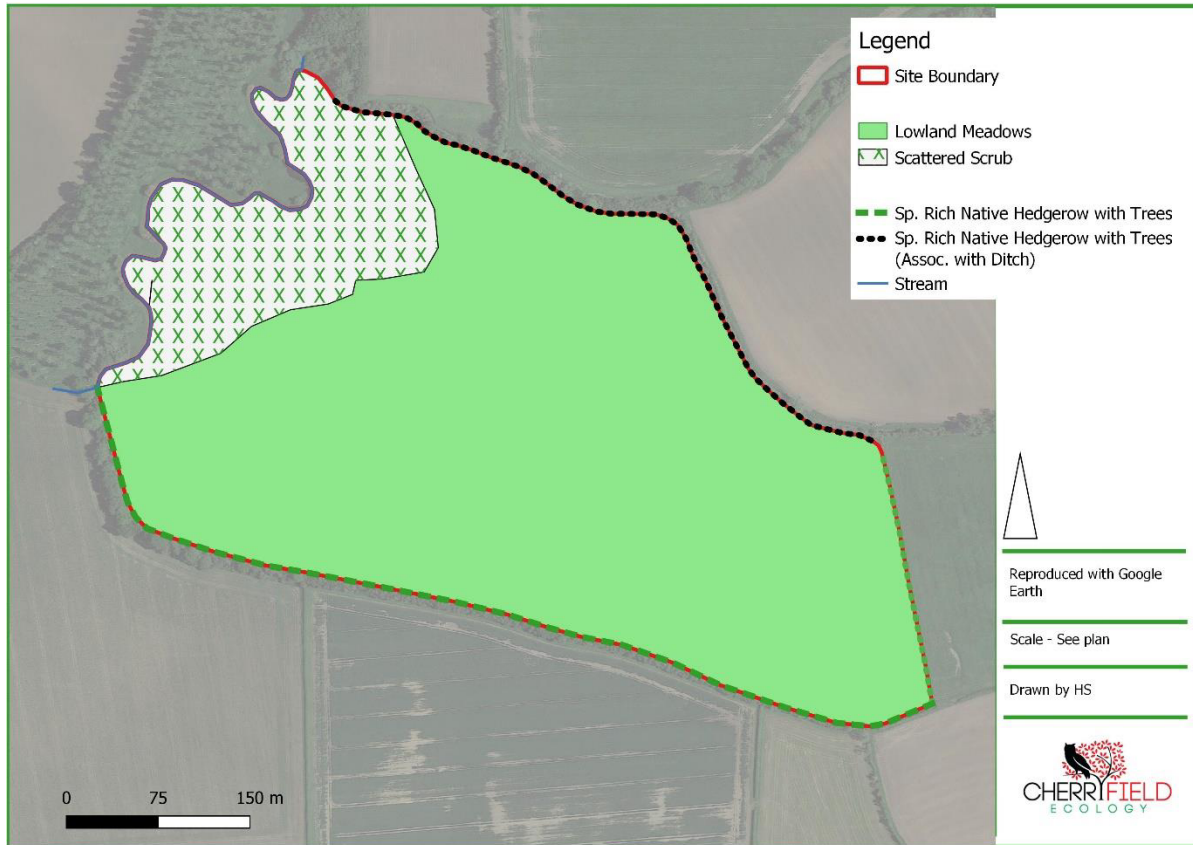


Figure 3: Proposed habitats plan

The proposed enhancements will result in the following:

Table 3: Change in Biodiversity Net Gain (BNG) on site

BIA Units	Total Net Unit Change	Total Net % change
Habitat Units	+168.96	378.33%
Hedgerow Units	+11.19	59.13%
River Units	n/a	n/a

### 2.2.1 Potential impacts of the development works

No development is to occur on site, with only enhancement works and additional planting undertaken, therefore, no habitat will be lost.



The potential impact on breeding birds which may be using the boundary trees/hedgerows can be avoided by undertaking the works outside of the nesting season (March to September inclusive).

Any vegetation clearance or new planting within the existing areas of scrub or the boundaries should be approached with care, and should a badger sett be found then no digging should occur within 30m of the sett entrances.

### 3.0 Capital Works and Year 1 Management

Table 3: Capital Works.

Work	Specification
<p><b>General Information</b></p>	<p>The owner is responsible for creating and maintaining all habitats. This will require annual monitoring by an ecologist (botanical specialist) to ensure the habitats are meeting the target form.</p>
<p><b>Capital Works</b> Grassland</p>	<p><b>Management of Lowland Meadow</b></p> <p>The soil mix for the area is loamy and clayey, so is likely to naturally have higher levels of potassium. Therefore it is recommended that a seed mixture such as <b>EM4 Meadow Mixture for Clay Soils</b> <u>OR</u> <b>EM3 Special General Purpose Meadow Mixture</b> is used (<a href="#">Emorsgate, 2023</a>).</p> <p><b>Ground Preparation</b></p> <p>Work must be undertaken to reduce the nutrient levels within the soil. No additional nutrients have been added to the soil within the previous 5 years (anecdotal evidence) and soil samples have been sent for analysis to determine the baseline nutrient level.</p> <p>Prepare in late summer by cutting low and/or grazing very hard. Then scarify hard with harrows or by raking, aiming to create around 50% bare soil. This is best done when the ground is dry. Sow on the surface in the autumn (September is the best month) using a complete meadow mixture at 4g/m<sup>2</sup>. Divide the quantity of seed and sow half in one direction over the entire area and the remainder across the whole area in the other direction. The seed must be sown on the surface and can be applied by seed drill, seed fiddle, or broadcast by hand. Then roll hard to firm back the soil and give good seed/soil contact. Continue cutting or grazing after sowing the seed, and until the end of March in the following year. From then on manage as a meadow, leaving it uncut each year till mid-summer.</p> <p>Yellow Rattle at up to 0.5g/m<sup>2</sup>, if not already in the standard mixture, will help to suppress some of the existing coarse grasses and assist in the establishment of the sown species.</p> <p><i>Preparing a seed bed on clay can be difficult, particularly on raw clay sub-soils low in organic matter. Clay soils are also prone to compaction and poor drainage. Well timed</i></p>

	<p><i>preparation and sowings are therefore important to successful establishment. As clay is unworkable when very wet or very dry, autumn sowings may not be possible. It is sometimes better to dig or plough the soil in the autumn, allow winter frosts to break down the clods, and prepare a seedbed in the spring.</i></p> <p><b>First Year Management</b></p> <p>Most of the sown meadow species are perennial and are slow to establish. Soon after sowing there will be a flush of annual weeds, arising from the soil seed bank. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are great for bugs, and they will die before the year is out. So resist cutting the annual weeds until mid to late summer, especially if the mixture contains Yellow Rattle, or has been sown with a nurse of cornfield annuals. Then cut, remove and compost. Early August is a good time. This will reveal the young meadow, which can then be kept short by grazing or mowing through to the end of March of the following year. Dig out any residual perennial weeds such as docks.</p>
<p><b>Capital Works</b> Mixed Scrub</p>	<p><b>Mixed Scrub Enhancement/ Creation</b></p> <p>It is proposed to increase the area of mixed scrub on site within the western end of the site.</p> <p>Features of good scrub include: (taken from <a href="#">Farm Wildlife</a>, 2023)</p> <ul style="list-style-type: none"> <li>• Sunny, sheltered scrub edges to provide a warm microclimate for insects and reptiles.</li> <li>• Scalloped edges increase the length of edge and provide shelter.</li> <li>• Sheltered rides through scrub (avoid creating openings that face the prevailing wind or where there are hibernacula present).</li> <li>• A patchwork of scrub and glades with diverse vegetation heights.</li> <li>• Bramble for nesting and feeding birds, and for insects.</li> <li>• Deadwood which supports fungi and invertebrates. You can provide deadwood by leaving dead trees or shrubs standing or by retaining small stacks of cut wood in dappled shade.</li> <li>• Bare ground, which is important for insects, reptiles and scarce plants. You can create it if scrub is being uprooted but avoid areas of archaeological importance and hibernation areas for reptiles.</li> </ul>

	<ul style="list-style-type: none"> <li>• Recently disturbed areas provide bare ground and support food and forage plants for insects e.g. ground-ivy, dead-nettles, ragworts, willowherbs, speedwells.</li> <li>• Open areas with tall herbs such as hogweed, cow parsley, thistles, ragworts and teasel. These provide pollen, nectar and overwintering sites for insects, and seeds for birds.</li> <li>• Areas of coarse tussocky grassland to provide summer nesting habitat for bumblebees, refuge areas for amphibians and reptiles and winter shelter for many insects.</li> </ul> <p><b>Planting new scrub:</b></p> <p>November to March is the best time to plant. Try to plant scrub species that create a blossom sequence between March and May (cherry, plum, willows, blackthorn, crab apple, wild pear and hawthorn are a good mix to achieve this).</p> <p>Planting in rows will create wind tunnels and should be avoided. Instead, scallop the edges of stands, mix species randomly to create diversity or plant in clumps to create a natural appearance. Any unplanted gaps will infill naturally.</p> <p>Shrubs are vulnerable to browsing by livestock, deer and rabbits during establishment. You can protect small numbers of plants with spiral guards or tubes. Larger areas may need fencing to protect them from rabbits and/or deer as required.</p>
<p><b>Capital Works</b> Hedges and Trees</p>	<p><b>Hedgerows/Trees</b></p> <p>It is proposed to increase the variation of species within the hedgerows to enhance them to ‘species-rich’ and to manage the hedgerows to reduce the amount of ‘gappiness’ at the base - particularly within the hedgerow along the southern boundary.</p> <p>Any existing gaps in the hedgerows should be planted up with species other than hawthorn and blackthorn to increase species diversity, and space should be created where appropriate to allow for further new planting. Suitable hedgerow species include:</p> <ul style="list-style-type: none"> <li>▪ Hazel (<i>Corylus avellana</i>)</li> <li>▪ Holly (<i>Ilex europaeus</i>)</li> <li>▪ Wild privet (<i>Ligustrum vulgare</i>)</li> <li>▪ Field maple (<i>Acer campestre</i>)</li> <li>▪ Guelder rose (<i>Viburnum opulus</i>)</li> <li>▪ Wayfaring tree (<i>Viburnum lantana</i>)</li> </ul>

	<ul style="list-style-type: none"><li>▪ Dog rose (<i>Rosa canina</i>)</li><li>▪ Spindle (<i>Euonymus europaea</i>)</li></ul> <p>A hedgerow should include 5 or more woody species within a 30m length in order to be classified as <b>species-rich</b>.</p>
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## 4.0 Yearly Management Plan

### 4.1 Habitat Management - Year 2 to 30

Table 5: Years 2 to 30 Habitat Management Actions

Habitat	Management	When
<p>Management of Lowland Meadow</p>	<p><b>Management Once Established</b></p> <p>In the second and subsequent years sowings can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing or grazing.</p> <p>Meadow grassland is not cut or grazed from spring through to late July/August to give the sown species an opportunity to flower (and to avoid disturbing ground nesting birds). After flowering in July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.</p> <p>Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.</p>	<p>Annually</p>

<p>Management of Mixed Scrub</p>	<p><b>Scrub management:</b></p> <p>Cutting most species of scrub encourages re-growth, and is useful for maintenance and restoration. Cutting scattered small patches will diversify scrub structure.</p> <p>Cutting should take place between September and February to avoid the bird breeding season, but care must also be taken to avoid disturbing other species including reptiles and amphibians. Cut areas of scrub in a rotation, aiming to retain all ages.</p> <p>The rough grassland areas within scrub require mowing to maintain their open nature and encourage flowering herbs. Rotational mowing of less than 50% of the area per year will retain some areas for insects to overwinter. Mow in late summer or autumn after flowers have set seed. If you can, mow in November or December to avoid damage to reptiles.</p>	<p>Annual on a rotational basis.</p> <p>Scrub typically matures in 15 years, so cut 1/15th every year or 1/5th every third year, for example. No more than 50% of the area of scrub should be managed in any one year.</p>
<p>Management of Hedgerows</p>	<p>The Hedgerow management cycle shown below should be used to assess and manage retained and newly planted hedgerow in order to maintain the condition level identified in the condition assessment.</p>	<p>Annually on a 2-3 year rotation.</p>

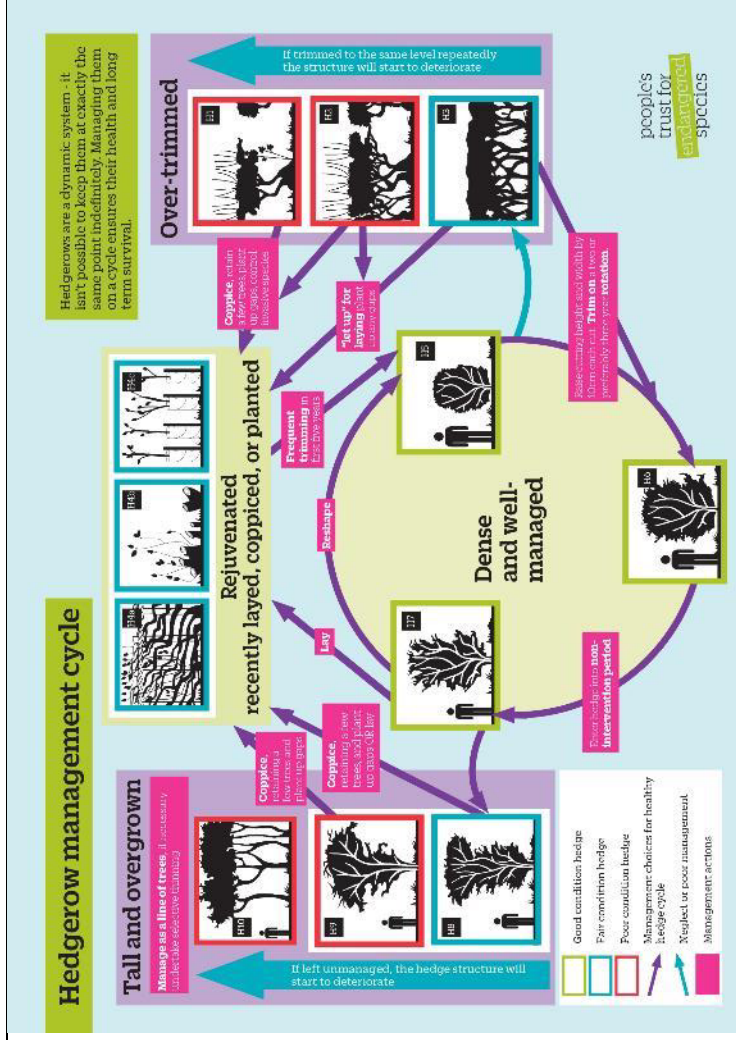


Figure 4: Hedgerow management cycle (<https://hedgerowsurvey.ptes.org/>)

Trimming hedges on a two- or three-year rotation, targeting different sections each year, will make sure there are always flowers for pollinators in spring and berries for birds in autumn. Hedges cut every three years can produce two and a half times as many blossoms as those cut annually. Rotational cutting can also save time and money that would be invested in annual cutting.

If pruning of the existing trees is required then pruning should be undertaken in late autumn to early winter.



	<ul style="list-style-type: none"><li>• Natural fracture cuts and coronet pruning should be considered wherever suitable as this provide features for wildlife.</li></ul>	
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## References

Emorsgate Seeds, (2023), Sowing and Aftercare- Mixtures, online at <https://wildseed.co.uk/additional-information/sowing-and-aftercare-mixtures/> accessed report date.

Farm Wildlife, (2023), Scrub, online at <https://farmwildlife.info/how-to-do-it/existing-wildlife-habitats/scrub/> accessed report date.

Soilscapes (2023) Soilscapes Map, online at <https://www.landis.org.uk/soilscapes/#> accessed report date.

The Great British Hedgerow Survey (2019), People's Trust for Endangered Species, online at <https://hedgerowsurvey.ptes.org/>, accessed report date.