



Ecological Enhancement and Management Plan & Landscaping Plan

Ref: 823	Walnut Tree Cottage
Client:	Vedia Mustafa
Date of Completion:	26/02/22 v1.1
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	Name	Company	Role
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REPORT REVIEW	Julia Blackwood	ECOassistance	Director

INTRODUCTION

This document has been prepared to support the following planning application at Walnut Tree Cottage, in Horton Kirby, Kent (Hereafter referred to as: the site):

Change of use of wilderness garden to a residential garden. Changes to garden levels to allow disabled access. Removing dead trees to replace with fruit-bearing trees. Creation of a small, outdoor living area with a children's playhouse¹.

This document has been prepared to address and discharge the following planning conditions:

2) Other than the removal of the proposed trees shown on plan 22-11-03 and site clearance no works shall commence until details of a habitat creation and simple management plan of these areas are submitted to the LPA for written approval. It must demonstrate that the measures detailed within the Preliminary Ecological Appraisal (Eco Assistance; August 2022) will be implemented. The development shall be carried out in accordance with the approved details and shall be maintained thereafter.

To ensure a net gain in biodiversity as supported by Policy SP11 of the Sevenoaks Core Strategy

3) Notwithstanding the approved plans, other than the removal of the proposed trees shown on plan 22-11-03 and site clearance no works shall commence until a detailed landscaping plan is submitted to and approved in writing by the Local Planning Authority together with a timetable for implementation. The details shall clearly indicate the trees to be retained and details of new proposed planting. The details shall include a site plan showing the location of new planting, which shall include planting along western and northern boundaries, the number of new trees and plants, their species, proposed heights and densities. The development shall be carried out in accordance with the approved details. If within a period of five years from the date of the completion of the development any of the trees or plants that form part of the approved details of soft landscaping die, are removed or become seriously damaged or diseased then they shall be replaced in the next planting season with others of similar size and species.

¹ Application no. 22/02801/FUL

To preserve the rural character of the area and Conservation Area as supported by Policies EN1 and EN4 of the Sevenoaks Allocations and Development Management plan.

This document has been informed by and considered in conjunction with the Preliminary Ecological Appraisal cited within the condition(s) above which contains ecological compensation and enhancement measures.

A full review of the site has been undertaken during multiple site visits in 2022.

The review provides suitable and well-adjusted biodiversity enhancement measures which adequately mitigate the potential losses identified and are capable of producing net gain if managed correctly.

This document provides a management plan, providing clarity on responsibilities, monitoring and management techniques as well as landscaping details.

The document has been compiled by Edward Clark who is a suitably experienced ecologist with over 20 years industry experience.

SITE DESCRIPTION AND CONTEXT

The site comprises an irregularly shaped parcel approximately 540m² in size, located in Horton Kirby, Kent.

The site is located in a rural setting surrounded in the wider area by mixed use agricultural farmland and village settlement. Figure 1 below is a satellite image which shows the context of the site within the wider area.

Figure 1: Location of site within the wider area



The site is partially located within Flood Zone 2. The site is proposed to be retained as garden space and no development is to be carried out that would adversely affect surface water drainage.

OBJECTIVES

The objectives of this EEMP are detailed below:

Description of features to be managed and created including measures to enhance the site for biodiversity as informed by the PEA.

Each of the ecological features has been considered and the aims and objectives for each of the features is given along with the ecological trends and constraints which could influence the management of the feature and meeting the objective.

Details are given of tree species, planting densities, specimen height and timetable of implementation. A summary of these are also provided in the appendix.

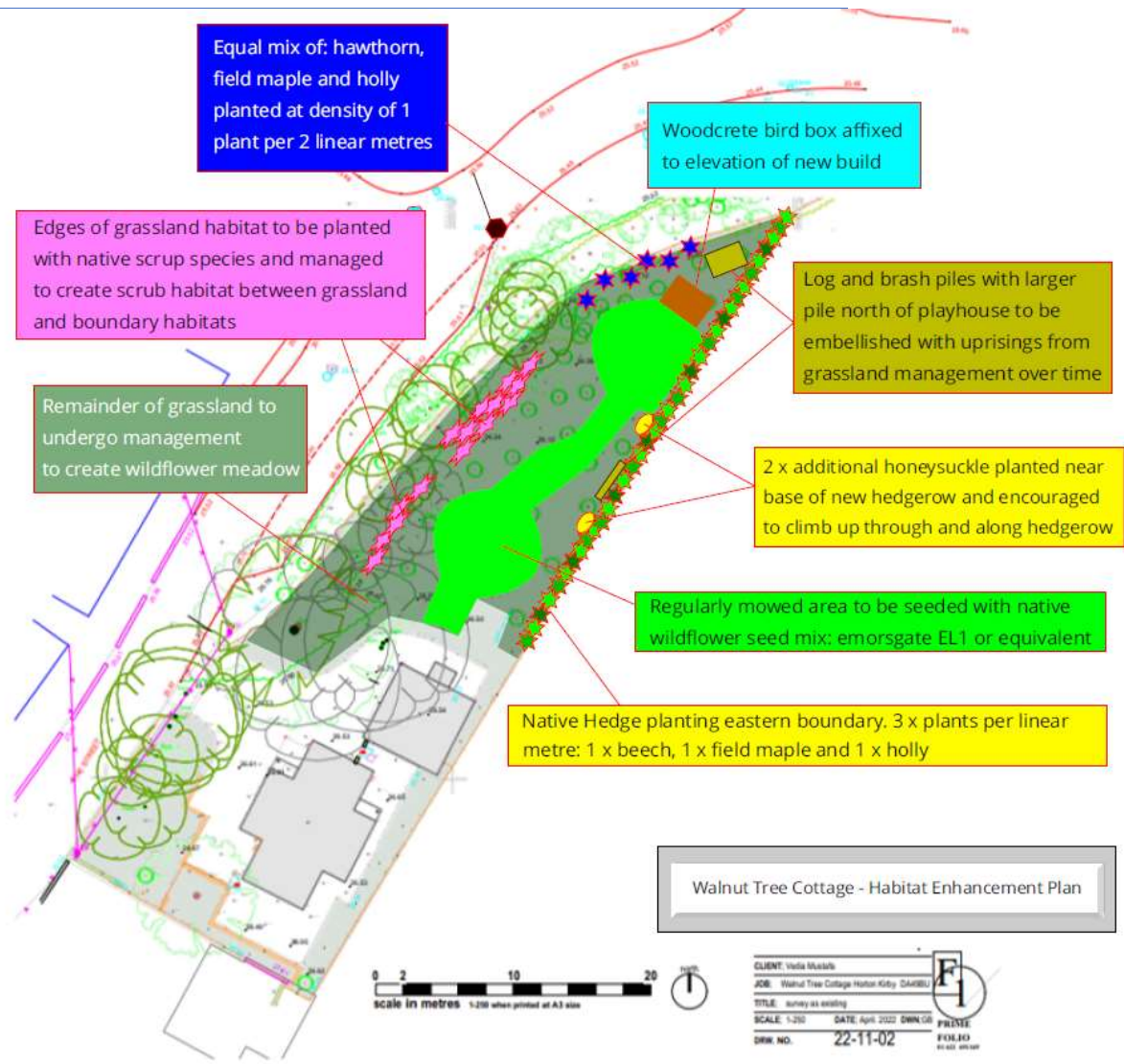
A plan for management of the features is provided along with prescriptions for management actions.

A summary of the proposed work plan with timings is provided.

LIMITATIONS

This report is based on the proposed development plans provided by the client to support the planning application (multiple drawings and plans were provided). Any future changes to the proposed development will need to be reflected in this EEMP to ensure all ecological features are adequately protected.

Site Layout: Habitat Enhancement Plan



TREE PLANTING AND SCRUB CREATION

Ecological Enhancement Measure	What?	Why?	Where?
Tree planting and scrub creation	Significant additional native tree planting.	To provide nesting bird and foraging bat habitat Sheltering opportunities for mammals.	Site boundaries Grassland edge habitats
<p>Habitat Ambition :</p> <p>The aspiration is for the creation of native species tree lines and hedgerows with additional scrub habitats to provide a graduation of valuable habitat features within the site.</p> <p>Standard Trees :</p> <p>A total of six standard trees planted along the northern boundary will include two hawthorn (<i>Cretaeagus monogyna</i>), two holly (<i>Ilex aquifolium</i>) and two field maple (<i>Acer campestre</i>).</p> <p>All trees planted along the northern boundary will be at least 150cm in height.</p> <p>Native Hedgerow:</p> <p>A mixed species hedgerow comprising a total of 90 plants will be planted along the length of the eastern boundary. The hedgerow will comprise an equal mix of beech (<i>Fagus sylvatica</i>), field maple and holly. After establishment the hedgerow can be further improved by planting an additional 2 x wild or common honeysuckle (<i>Licera spp.</i>) near to the base and encouraging these to grow through the hedgerow.</p> <p>All trees planted along the eastern boundary will be at least 40-60cm in height and planted in a double staggered row at a density of three plants per linear metre.</p>			

Native Scrub :

The understory of the existing western boundary feature should be planted to include a mix of common buckthorn (*Rhamnus cathartica*), elder (*Sambucus nigra*) osier (*Salix viminalis*) and holly. Each scrub area as indicated in Figure 2 will include two of each of the above species which will be at least 40-60cm in height when planted.

Habitat Establishment :

Tree planting is best carried out from late October through to late February to allow young trees to establish roots before summer droughts, however if the area is prone to flooding or seasonally wet, planting should be delayed to avoid these periods, as planted trees can be damaged and uprooted by high water flows.

Similarly, in prolonged periods of hot weather new planting should be irrigated.

Tree planting will be carried out in the first planting season after levelling of the land to provide access has taken place.

Avoid planting in straight lines. For scrub, ideally plant at over 5m spacings, but including some clumps for diversity.

Open mesh tree tubes should be used and robust stakes for standard trees, to offer protection during establishment.

<p>Trees should be regularly checked following flooding or periods of prolonged rainfall.</p>
<p>Monitoring :</p> <p>Visual inspections to be made as per program by the landowner who is responsible for delivering the habitat improvements.</p> <p>Once level of habitat complexity achieved implement management plan as set out below to prevent succession resulting in biodiversity reduction.</p>
<p>Management :</p> <p>All management activities should avoid the nesting bird season – March to August inclusive.</p> <p>The habitat will take time to establish and complexity will develop over a number of years through natural succession.</p> <p>Management should be reviewed annually and a decision made at which stage to halt succession to achieve the greatest ecological diversity.</p> <p>Healthy standard trees should be allowed to mature.</p> <p>Damaged or distressed individuals should be replaced within the first available growing season.</p> <p>The eastern hedgerow should be maintained at between 1-3m tall to prevent overshadowing of the grassland areas.</p> <p>The woody element of scrub planting should be maintained at between 1-3m tall to prevent the natural transition of the habitat to woodland.</p> <p>An edge habitat of bramble and tussocky grasses should be allowed to form between pockets of scrub or along the edge of continuous areas of planting with open grassland, but management is required to prevent the encroachment of scrub into these open areas which will reduce the wildlife value of both habitats.</p>

Management Period		Management Plan
Year 1	Winter	Planting – to take place as soon as possible after groundworks to level the site
	Spring	
	Summer	Visual inspection and provide support as required. Landowner
	Autumn	
Year 2	Winter	Cut previous seasons growth by half – not including standard trees which should be allowed to mature.
	Spring	
	Summer	
	Autumn	Monitor encroachment from competing species and cut back as required. Landowner

Year 3	Winter	Understory / scrub - Trim
	Spring	
	Summer	Visual inspection and provide support as required including replacing failed trees. Landowner
	Autumn	Understory / scrub - Trim previous season's growth (September onwards)
Year 4	Winter	Understory / scrub - Trim
	Spring	
	Summer	
	Autumn	Understory / scrub - Trim previous season's growth (September onwards)
Year 5	Winter	Understory / scrub - Trim
	Spring	
	Summer	Visual inspection and provide support as required including replacing failed trees. Landowner
	Autumn	Understory / scrub - Trim previous season's growth (September onwards)

Wildflower Meadow within outer grassland area

Ecological Enhancement Measure	What	Why	Where	When
Wetland Wildflower Meadow	A sown wildflower meadow comprising a suitable mix tolerant to seasonal flooding such as Emmorsgate EM8 or equivalent.	Enhance the biodiversity value of the grassland.	In the grassland areas outside the main pedestrian 'lawn' as indicated with dark green shading on habitat enhancement plan.	After groundworks to level site completed.
<p>Habitat Ambition :</p> <p>The creation of a grassland with good structural sward and diversity of botanical species which provides foraging and sheltering opportunities for a range of taxa including invertebrates, hedgehogs, fox, badger and bats.</p> <p>Grassland height maintained to prevent overshading and to provide open sunny glades.</p>				

Establishment :

Strim hard, mow and or dig/rotovate existing areas of rank grassland to reduce and remove vegetation then rake and/or scarify to make a suitable seedbed.

Sow during March and April or in September depending on ground conditions. Do not sow meadow seed mixtures until after groundworks have been completed. Where ground has become compacted dig over or rotovate. Do not sow into waterlogged soils as this may cause the seed to rot particularly during winter months.

Do not incorporate manure or fertiliser as high fertility encourages excessive vigour in grasses that then crowd out the wildflowers.

For areas where soils have been excavated allow four to six weeks for the soil to settle and for any weed seeds to germinate. Hoe these off before sowing.

Large areas can be sown by hand quite easily and this avoids disturbance to the seed bed.

Rates will vary between individual mixes but, as a rough guide, pure wildflower seed should be sown at 1g per sq m (¼oz per 5 sq yd) and wildflower and grass seed mixes at 5g per sq m (½oz per sq yd). These tiny amounts can be difficult to broadcast evenly so mix the seed with silver sand to make it easier to handle. Follow specific instructions for the meadow seed mix purchased.

To further ensure that the seed is scattered evenly, sow half lengthways and the remaining half widthways. Rake or roll in lightly to give good contact between the seed and the soil, water thoroughly and leave them to grow naturally.

Protect the seed with netting if birds prove to be a problem.

Monitoring :

Regular monitoring of the wildflower area should be undertaken to determine whether spot treatment of weed species is required or whether mowing and/or cutting should be employed to help control aggressive species ensuring that the sward develops towards the habitat ambition.

Management :

Annual management by mowing or grazing is essential to the maintenance of structure, balance and diversity in grassland.

Without management grassland becomes coarse and rank, loses both diversity and interest, and will eventually turn into scrub or woodland.

The aftercare of sown grassland has two components:

- first year management
- management of established grassland.

These two phases of management require different mowing regimes.

First year management (New Meadows) :

Meadow mixtures are composed mainly of perennial grass and wild flower species which take at least a full year to establish from sowing. Do not expect plants to develop enough to flower in their first summer.

To encourage perennial flowers and grasses to make good root development, it is important to mow the meadow regularly in the first year after sowing. This will help maintain balance between faster growing grasses and slower developing wild flowers

In the first summer meadow mixtures sown onto bare soil are frequently dominated by a flush of annual weeds which come from the soil. Regular mowing will remove annual weed competition and prevent them seeding.

Mow to a height of 40-60mm. Ideally collect and remove arisings to avoid leaving behind a damaging mulch of decomposing cut grass. Place uprisings onto habitat/log pile in north of site. If you can mow frequently enough it may be possible to disperse the cuttings without leaving a mulch.

Mowing can start as soon as there is enough growth of either weeds or sown species to take a cut.

Repeat at six-to-eight week intervals, and repeat every two months throughout the first summer.

Established meadows :

These can be cut at a number of times in the year, depending on the vigour of the meadow and which types of flowers wish to be encouraged.

The key cuts of the season fall roughly into three times of year and a perennial meadow can be managed effectively with one or more of these cuts;

- Spring cut - this is useful for meadows where grass growth is very lush. Cut back to height of 7.5cm (3in) only and complete this cut no later than the end of April.
- Main summer cut - this is also referred to as the 'hay cut' and removes the bulk of the material, allowing it to either be baled or composted. This cut is done between late June and the end of August; the earlier cutting favours spring flowers such as cowslips, fritillary, lady's smock, selfheal and bugle; the later cutting favours summer flowers such as knapweed, devil's bit scabious and lady's bedstraw.
- Autumn cut - particularly useful for fertile sites, one or two cuts between the end of August and late November removes surplus growth and helps keep grasses at bay to allow the wildflowers to persist.

Any cut that produces substantial clippings should have the clippings removed and composted in the north of the site.

General tips

It is usually a good idea to leave the initial mowings in situ for a few days to allow seed to drop to the ground but then it is important to collect mowings to reduce soil fertility.

Watering and feeding

A wildflower area doesn't require any additional watering or feeding. This could alter the natural balance of plants in the area. Many native flowers colonise poor land and the addition of extra nutrients and water will only encourage excessive vigor in the grasses, which will consequently out-compete the more desirable flowering plants.

Problems :

The main problem that is likely to be encountered is an abundance of weeds or dominant grasses. (only remove the majority / do not remove all as they represent valuable species habitat)

Perennial weeds - docks and thistles – pull by hand before they set seed.

Where grasses become dominant, sowing the annual wildflower, yellow rattle (*Rhinanthus minor*) which is semi-parasitic on grasses can be of benefit. This should be sown in August and requires regular mowing through the early spring until around March.

Management Period		Management Plan
Year 1	Winter	Groundworks to level land
	Spring	Ground preparation Seeding
	Summer	Cut at six-to-eight week intervals, and repeat every two months throughout the summer.
	Autumn	
Year 2	Winter	
	Spring	Repair any trampling, abrasion or scalping. Cut – no later than end of April
	Summer	Visual inspection. Hand removal of weeds if required. Cut – between late June and end of August
	Autumn	Visual inspection & hand removal of weeds if required. Cut once or twice - end of August to Late November.
Year 3	Winter	
	Spring	Repair any trampling, abrasion or scalping.
	Summer	Visual inspection & hand removal of weeds if required.
	Autumn	Visual inspection & hand removal of weeds if required.
Year 4	Winter	
	Spring	Repair any trampling, abrasion or scalping.
	Summer	Visual inspection & hand removal of weeds if required.
	Autumn	
Year 5	Winter	
	Spring	Repair any trampling, abrasion or scalping.
	Summer	Visual inspection and assessment of wildflowers. Plan for any improvements provided. Hand removal of weeds if required.
	Autumn	

Wildflower Meadow within central grassland 'lawn' area

Ecological Enhancement Measure	What	Why	Where	When
Wetland Wildflower Meadow	A sown wildflower meadow comprising a suitable mix tolerant to regular mowing such as Emmorsgate EM1 or equivalent.	Enhance the biodiversity value of the grassland.	In the central grassland area which links the property and the children's playhouse as indicated on habitat enhancement plan with light green shading.	Following completion of groundworks to level site.
<p>Habitat Ambition :</p> <p>The creation of a grassland with a good diversity of botanical species which provides a garden area and also foraging opportunities for invertebrates.</p> <p>Grassland height maintained more regularly than the outer grassland habitats to restrict majority of human activity and disturbance to this area and retain outside habitats for wildflowers.</p>				
<p>Establishment :</p> <p>As above:</p> <p>Strim hard, mow and or dig/rotavate existing areas of rank grassland to reduce and remove vegetation then rake and/or scarify to make a suitable seedbed.</p> <p>Sow during March and April or in September depending on ground conditions. Do not sow into waterlogged soils as this may cause the seed to rot particularly during winter months.</p> <p>Do not incorporate manure or fertiliser as high fertility encourages excessive vigour in grasses that then crowd out the wildflowers.</p> <p>For areas where soils have been excavated allow four to six weeks for the soil to settle and for any weed seeds to germinate. Hoe these off before sowing.</p> <p>Sow with emorsgate EM1 or equivalent which contains slow growing grass species.</p> <p>Central lawn area can be mowed more regularly to make it more suitable for garden use.</p>				

Log and brash habitat piles for invertebrates

Ecological Enhancement Measure	What	Why	Where	When
Habitat Piles	Habitat piles comprising a base of logs and twigs embellished with uprisings from grassland maintenance over time.	Enhance the site for small mammals, amphibians and invertebrates.	One small pile along the base of the eastern hedgerow and one larger pile in the northern corner of the site.	After hedgerow planting has taken place.
<p>Habitat Ambition :</p> <p>Create a diverse range of habitat types and sheltering opportunities within the site as well as promoting invertebrates.</p>				

Bird box

Following completion of the children's playhouse a multipurpose bird box of the woodcrete type to ensure longevity will be affixed to the north facing elevation of the building.

Nest boxes can be cleaned periodically every 2-3 years between October and March to maintain their suitability for nesting. A screenshot of an example of a suitable nest box: Vivara Pro Seville 28mm Woodstone Nest Box which is currently available from NHBS.com is provided in the appendix.

FUTURE HABITAT MANAGEMENT

In order to ensure that the EEMP remains relevant to the development and management of habitats and species within the site, a review will be undertaken after the second and fifth year of habitat management works for each ecological enhancement feature.

The landowner will send photos of the habitats within the site to ECOassistance after the second and fifth years to ensure that enhancements and management are in keeping with this EEMP. ECOassistance will offer support.

After the fifth year ECOassistance will provide a brief summary report to the client with any further suggestions for future habitat management. This should be made available to the Local Planning Authority on request.

Appendix

Summary of planting/landscaping details

Native standard trees (north)

A total of six trees planted along the northern boundary will include:

2 x hawthorn (*Crataegus monogyna*),

2 x holly (*Ilex aquifolium*)

2 x field maple (*Acer campestre*).

All trees planted along the northern boundary will be at least 150cm in height. Avoid planting in straight lines.

Mixed species hedgerow comprising a total of 90 plants to be planted along the length of the eastern boundary.

30x beech (*Fagus sylvatica*),

30 x field maple

30 x holly and holly

All trees planted along the eastern boundary will be at least 40-60cm in height and planted in a double staggered row at a density of three plants per linear metre.

+ 2 x wild or common honeysuckle (*Licera spp.*) planted at base.

Native scrub patches

Two patches of scrub each to include:

2 x common buckthorn (*Rhamnus cathartica*),

2 x elder (*Sambucus nigra*)

2 x osier (*Salix viminalis*)

2 x holly.

Each plant will be at least 40-60cm in height when planted.

Inner grassland 'lawn area':

Wildflower meadow mix tolerant to regular mowing such as Emmorsgate EM1 or equivalent. Follow instructions on product for density.

Outer grassland area:

Wildflower meadow mix tolerant to seasonal flooding such as Emmorsgate EM8 or equivalent. Follow instructions on product for density.

Habitat Piles

Logs at base to allow drainage and to be added-to with uprisings resulting from site maintenance.

Examples of suitable bird box and log piles

