

FERNWOOD COSTALL WOODS

WOODLAND MANAGEMENT PLAN

A report to:

Fernwood Parish Council

Rubys Avenue
Fernwood
Newark-on-Trent
NG24 3RS

By:

EMEC Arboriculture

(A Department of EMEC Ecology)
The Old Ragged School
Brook Street
Nottingham
NG1 1EA

Tel: (0115) 964 4828

E-mail: mail@emec-ecology.co.uk

Website: www.emec-ecology.co.uk



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1. INTRODUCTION

1.1 Site Details

- 1.1.1 EMEC was commissioned by Fernwood Parish Council to complete a woodland management plan of Fernwood Costall Woods. The woodland is located off Rubys Avenue in the centre of Fernwood Village, near Newark-on-Trent, Nottinghamshire. The woodland is approximately 0.8ha in area. A site location plan is shown in Figure 1, Appendix 1.
- 1.1.2 A General Tree Assessment was previously undertaken by Forest Farm Tree Services in November 2020 to highlight tree defects and outline tree works to remove health and safety risk posed by the trees. In addition, an ecological walk-over survey and bat surveys have been undertaken by EMEC, the results of which are presented in a separate report.
- 1.1.3 To inform this management plan, a baseline woodland survey was undertaken in early spring when woodland flowers are in flower. The survey recorded details on woodland structure, species present and current use. The survey was undertaken by Richard Anderton BSc (Hons), MSc, Dip Arb L4 (ABC), MCIEEM, TechArborA on the 20th of April 2023. Richard is an experienced ecologist and arboriculturist and holds a Professional Tree Inspection (PTI) certificate.

2. BASELINE ASSESSMENT

2.1 Woodland Survey

Fernwood Costall Woods is a small, planted community woodland, with hardstanding paths through the woodland. Amenity grassland and residential plots are present in the surrounding area. Photographs of the woodland are provided in Appendix 2.

The canopy tree species consists of a mix of primarily non-native ornamental species, with native species recorded rarely. The non-native species include western red cedar (*Thuja plicata*), Norway maple (*Acer platanoides*), Corsican pine (*Pinus nigra*), sycamore (*Acer pseudoplatanus*), cedar (*Cedrus* sp.), horse chestnut (*Aesculus hippocastanum*), turkey oak (*Quercus cerris*), tree of heaven (*Ailanthus altissima*) with two Wellingtonia (*Sequoiadendron giganteum*) on the woodland edge. Native canopy species include lime (*Tilia* sp.), beech (*Fagus sylvatica*) and oak (*Quercus robur*). Yew (*Taxus baccata*) is also present; these are slightly smaller trees but include a cluster on the west side of the woodland.

There is little understorey through the woodland, however some shrubs and young trees are present through this layer including holly (*Ilex aquifolium*), cherry (*Prunus* sp.), elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), box (*Buxus sempervirens*) and smaller cedars, western red cedar and yew.

The ground flora is typical of a disturbed, nutrient-rich soils. Using the DAFOR¹ scale, the following species were recorded in the ground flora;

Abundant: cow parsley (*Anthriscus sylvestris*), nettle (*Urtica dioica*).

Frequent: lesser celandine (*Ficaria verna*), cleavers (*Galium aparine*), wood avens (*Geum urbanum*), broad-leaved dock (*Rumex obtusifolius*), periwinkle (*Vinca* sp.), bramble (*Rubus fruticosus*), white-dead nettle (*Lamium album*), common ivy (*Hedera helix*), false oat-grass (*Arrhenatherum elatius*).

Occasional: ground elder (*Aegopodium podagraria*), dandelion (*Taraxacum officinale*), common chickweed (*Stellaria media*), hogweed (*Heracleum sphondylium*), cock's-foot (*Dactylus glomerata*), black horehound (*Ballota nigra*).

Rare: primrose (*Primula vulgaris*), garlic mustard (*Alliaria petiolata*), creeping thistle (*Cirsium arvense*), common comfrey (*Symphytum officinale*), common couch (*Elymus repens*), nipplewort (*Lapsana communis*), field bindweed (*Convolvulus arvensis*), white campion (*Silene latifolia*), common mallow (*Malva sylvestris*), wall barley (*Hordeum murinum*), shepherd's purse (*Capsella bursa-pastoris*).

In addition to the above, non-native garden species had also clearly been planted within the woodland including Spanish bluebell (*Hyacinthoides hispanica*), non-native anemone (*Anemone* sp.), hyacinth (*Hyacinthus* sp.), winter aconite (*Eranthis hyemalis*) and garden tulip (*Tulipa* sp.).

At the time of survey, it was evident recent tree work had taken place within the woodland. A large tree has been felled within the western side of the site; lime, oak and yew have been planted in the available space, although a couple of these trees

¹ D – Dominant, A – Abundant, F – Frequent, O – occasional, R – Rare

are clearly struggling. Pollarding of trees has also occurred, with sculptures cut into the remaining wood. A double line of trees (lime and horse chestnut) forming a narrow avenue is present along the southern boundary. The eastern side of the site has dense, extensive Norway maple and sycamore regeneration / sapling growth.

On the northern side of the site, a new Wildlife Garden has been created; this was being worked on at the time of the woodland survey. In addition, a meadow with insect hotels adjoins the woodland on the south-west side. A grassland survey was not undertaken, however it appeared to contain false oat-grass, ladies bedstraw (*Galium verum*) and common knapweed (*Centaurea nigra*) amongst other species.

2.2 Wildlife

During the woodland survey, the following bird species were recorded within the woodland or along its boundary; goldcrest (*Regulus regulus*), chiffchaff (*Phylloscopus collybita*), blue tit (*Cyanistes caeruleus*), wren (*Troglodytes troglodytes*), great tit (*Parus major*), woodpigeon (*Columba palumbus*), blackbird (*Turdus merula*), robin (*Erithacus rubecula*), goldfinch (*Carduelis carduelis*) and house sparrow (*Passer domesticus*).

3. WOODLAND OBJECTIVES AND MANAGEMENT PLAN

3.1 Selecting Objectives

Fernwood Costall Woods covers a small area which limits the management options available; for example, traditional silvicultural management systems such as coppicing coupes on rotation are not considered appropriate for this woodland.

The woodland already provides good amenity value to the local community, with good quality paths through the woodland and short amenity grasslands with play areas in the surrounding landscape. As described in Section 2, a wildlife garden has also been created within an open area on the north side of the woodland which had community involvement.

Therefore, the following objectives have been designed to improve the woodland value in terms of woodland structure and ecology, while maintaining / complimenting the current amenity value. The woodland has been split into coupes using paths as boundary lines (as shown within the Site Plan: Figure 2, Appendix 1) to aid in assigning management tasks to areas.

3.2 Objectives & Management Details

Objective 1 Establish a woodland wildflower meadow

The woodland has high nutrient levels as indicated by the existing ground flora; it is difficult to reverse this without the striping of soils, which is not practicable or advisable within a woodland due to impacts to tree roots. It is however worth attempting to establish a woodland wildflower meadow. The central area of Coupe 1 has had some tree felling recently which has opened up the area; at the time of survey there were some bare patches of ground, but hogweed, nettle, cleavers, ground elder, broad-leaved dock, false oat-grass and cow parsley were also coming through. This area has potential to be established as a woodland wildflower meadow.

The seed mix 'Woodland and Heavy Shade Wildflower Seeds LW8M' (found at: www.wildflower.co.uk) would be a suitable seed mix to use at this location, any other seed mix selected should have a mix of shade tolerant native wildflower and grass species. The species mix is shown in Appendix 3.

Initially the ground should be cleared of vegetation and although full stripping of the topsoil is not advisable, the upper surface of the soil (to approx. 5cm depth) could be scraped away by hand using handheld tools. The exposed soil should then be cultivated. The seed should ideally be sown in autumn (September/October) when temperatures are consistently mild (above 8°C), and the soils are receiving rain. Sowing in spring (March/April) is also suitable however during dry springs, failure does occur unless supplementary watering is undertaken. The seed should be sown by hand at a rate of 5g/sqm. Mixing the seed with an inert carrier such as sharp seed may aid the sowing process. Once sown, good soil contact should be established by raking the area or lightly rolling the area.

During the first year it is important to control weed growth, therefore unwanted species should ideally be removed by hand or cut before they go to seed. The nurse grasses within the mix will also need cutting within the first year, and cuttings should be removed from site to prevent further nutrient build up. A second cut will be required in September / October to a height of approximately 10cm. The cuttings should be left after this cut for at least one week to allow the plants to dry and shed seeds back into the soil before being removed.

A similar cutting regime of early spring (March) and autumn (September/October) should be adopted in the following years, with cuttings being removed, however the autumn cut should always leave cuttings for at least a week before being removed to allow the next generation of seeds to be shed into the soil. Ongoing weed control may also be appropriate.

Objective 2 Control non-native flora and increase abundance of native woodland flowers

A number of non-native garden flower species were recorded during the survey which are assumed to have been planted by local residents. These are not such an issue when present in small, isolated areas, and do provide nice aesthetics. Therefore, at present, removal / control measures are not recommended, however monitoring is recommended and if any such species start to spread quickly and reduce the area of native ground flora, then removal of such flora is recommended.

The one species that is however recommended for removal is the non-native Spanish bluebell, as it can spread quickly but also hybridise with our native bluebell and thereby oust the native species. Therefore, the existing bluebells within the woodland should be dug out and removed from site (including the bulbs) in the early spring when their leaves and flowers are obvious. Native bluebells are present within the seed mix outlined in Objective 1, and also within the seed mix outlined below. Therefore, if removal of the current Spanish bluebells doesn't occur, hybridisation is likely to occur. Once the native species become established, the aesthetics that bluebells provide will be restored.

In order to increase the abundance of native woodland flowers, it is recommended a woodland wildflower seed mix is sown. Suitable locations for this mix are within Coupe 2 where there is no scrub or understorey layer, and ground flora primarily consists of cow parsley. Therefore, it is a little lighter here and the flower mix is likely to reach its full potential. In addition to this, grassy margins around the woodland edge (particularly the southern edge) or areas free of scrub within the woodland centre, may also benefit from such sowing.

The seed mix 'Woodland and Heavy Shade Wildflower Seeds LW8P' (found at: www.wildflower.co.uk) would be a suitable seed mix to use at this location, any other seed mix selected should have a mix of shade tolerant native wildflower. Unlike the meadow mix, this is purely a wildflower mix. The species mix is shown in Appendix 3.

Like the meadow mix, the seed should be sown in spring or autumn, however at a rate of 3g/sqm. As this is an overseeding strategy, cultivation of the soil is not essential, however control of the existing flora may help the flowers become

established. For example, the cow parsley in Coupe 2 could be thinned by removing some plants by hand or cutting in the spring and autumn to prevent smothering, as could grassy margins where the seed is sown (to a height of approximately 10cm). Cow parsley itself is beneficial to many insects and provides nice aesthetics to a woodland when in flower, so attempts to fully remove this plant isn't advisable. Sowing at a time the soil is moist and raking the area may help the seeds make good contact with the soil for germination. Once established, these areas will not require continued mowing like the meadow.

Objective 3 Improve understorey layer

There is little understorey to the woodland and so it lacks that diverse woodland structure, and there are few young trees providing the next generation which will eventually replace older trees. Therefore, planting to improve the woodland structure is recommended.

Coupe 3 currently consists of dense Norway maple and sycamore saplings along with young but established trees of these species; these are non-native species. They spread and grow quickly and have large leaves which open earlier than native canopy species such as oak and ash, thereby creating dense shade through woodland to the detriment of native woodland flowers. This area provides potential planting locations for shrub and small tree species if the Norway maple and sycamore can be controlled. In addition, Coupe 1 provides a suitable location for shrub planting, however this should avoid the meadow area described in Objective 1 and the west side of the wood where the area is heavily shaded by yew, making successful growth unlikely.

Initially the Norway maple and sycamore saplings and young specimens in Coupe 3 should be coppiced and herbicide applied to the stumps to reduce the chance of vigorous regrowth. The existing small native tree species listed within the woodland description (Section 2) should be retained (mainly yew and holly therefore not included in recommended species), along with patches of bramble which provide good opportunities for faunal species such as nesting birds. The bramble on site currently consists of small patches, however monitoring will be required to ensure it does not smother newly planted shrubs and wildflower areas.

Saplings should be planted within the winter dormant period (November to March) within a small hand dug pit and backfilled. The vegetation immediately around the sapling should first be cleared to prevent competition. The shrub saplings should be planted 1-2m apart, whereas small tree species should be spaced at least 5m apart. A cane and spiral guard can be placed around the saplings for support and protection, as well as bark chip around the base to suppress weeds and prevent moisture loss. The following species mix is recommended;

Shrubs:

| | | |
|------------|---------------------------|-----|
| Crab apple | <i>Malus sylvestris</i> | 20% |
| Hawthorn | <i>Crataegus monogyna</i> | 30% |
| Hazel | <i>Corylus avellana</i> | 30% |

Small Trees:

| | | |
|-------------|---------------------|----|
| Wild cherry | <i>Prunus avium</i> | 5% |
|-------------|---------------------|----|

| | | |
|--------------|-------------------------|----|
| Rowan | <i>Sorbus aucuparia</i> | 5% |
| Field maple | <i>Acer campestre</i> | 5% |
| Silver birch | <i>Betula pendula</i> | 5% |

Aftercare will be required to ensure the shrubs and trees become established including watering during dry periods, topping up of mulch and spot applying herbicide to weeds if they start to dominate (care needs to be taken to ensure the saplings themselves are not sprayed). The cane and spiral guard can be removed once the sapling is established.

Objective 4 Increase percentage cover of native canopy species long-term

A general tree assessment was undertaken during 2020 in which dangerous trees were highlighted and felling has subsequently been carried out. Planting of replacement canopy tree species has taken place in these areas, with oak, lime and yew the species selected. However, the woodland still has a high proportion of non-native ornamental species within the canopy. Native species are preferred, although many of the existing trees are semi-mature to mature and offer good amenity value.

It is understood felling of a further six trees will take place following the negative result of bat surveys. Therefore, if growing space allows, it is recommended these are replaced by a native canopy species, ideally pedunculate oak. These trees should be of larger stock and have a suitable tree support, ground preparation and aftercare as can be seen is the case with the existing newly planted trees.

Similarly, in future years when further health and safety assessments of trees are made, it is recommended any non-native trees highlighted for felling are replaced by a native canopy species. In addition, if a native canopy species is found to have defects, a reduction of the tree should be selected as a management strategy wherever possible rather than a complete fell. In most cases this will likely remove the risk and allow the tree to rejuvenate, thereby retaining the ecological value.

A full health and safety assessment wasn't made during the woodland survey, however the "black exudation" noted within the 2020 survey was seen on trees 830 and 837, both of which are labelled as Norway maple. In addition, a sycamore (tree tag 836) was seen to have a snapped leader. These trees, along with some of the other young to semi-mature sycamores, could be candidates for removal and replacement with native trees in the future as they are unlikely to provide good amenity value in the long-term.

Objective 5 Enhance woodland for wildlife

The provision of bat and bird boxes were discussed within the ecological walkover and bat activity survey report; further details are provided here. It is recommended two 'Improved Crevice Bat Boxes' and two 'Improved Cavity Bat Boxes' are installed within the woodland. These should be spaced evenly through the woodland and healthy, mature trees should be selected for installation to ensure long-term value from the boxes. They should be positioned at least 4m from the ground on south-west or south-east facing aspects with a clear flightpath the box entrance. Areas well-lit by streetlights should also be avoided.

In addition, four 'Vivara Pro Seville Woodstone Bird Nest Boxes' (two with a 28mm diameter nest hole and two with a 32mm diameter hole) should be installed around the woodland. These should be installed at least 3m up the tree and placed on a north through to east aspect to avoid prevailing wind/rain. All bird and bat boxes should be installed using aluminium nails and can be purchased from www.nhbs.com.

Where tree felling occurs, a proportion of the resulting wood could be retained to form habitat piles made up of a stack of larger logs and brash, providing a home for invertebrates, small mammals and amphibians. Where a tree species without adventitious buds (thereby not being able to regrow from bare wood) is felled, it is recommended the lower 3-4m of the stem is retained as standing deadwood rather than removing the tree completely; this will provide valuable habitat for deadwood invertebrates and the birds that feed on them.

3.3 Monitoring

It is important to monitor progress towards the final objectives of the management plan as adjustments to management practices can be made where certain actions haven't worked /aren't achieving the desired effect. It is also a chance to review the objectives themselves as new opportunities may become apparent.

Objective 1 & 2 *Wildflowers*

The wildflowers sown as part of Objectives 1 and 2 should establish quickly if the methods above are followed and weeds are controlled. Therefore, after two growing seasons, it is recommended a survey of the woodland flora is conducted. If there is still low coverage of desired species, it is recommended supplementary overseeding is conducted. Sowing should occur in mild conditions during the autumn / spring when the soil is moist. Raking the area will help the seeds make good contact with the soil for germination.

Monitoring of the non-native garden species through the woodland should be undertaken annually. This could include recording the patch size or percentage cover of these plants. If such plants start to dominate an area, digging up and composting the plant is recommended.

Objective 3 & 4 *Trees & shrubs*

There may be loss of newly planted shrubs and trees within the first couple of years of planting due factors such as drought, poor stock, smothering by weeds / bramble, unsuitable planting locations, poor ground preparation etc. Following the planting and aftercare instructions in this management plan will greatly reduce the percentage of loss. Nevertheless, if loss does occur, the dead specimens should be removed and replaced, with the new plants receiving suitable aftercare.

Objective 5 *Wildlife*

If the client is interested in establishing biological records for the woodland, the bird and bat boxes could be checked annually by a licensed ecologist at a time of

year they are likely to be in use. This would ideally be spring for bird boxes and spring through to autumn for the bat boxes.

4. MANAGEMENT SCHEDULE

| Objective | Action | Year 0 | | | | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | | Year 5 | | | | Year 6 | | | | Year 7 | | | | Year 8 | | | | Year 9 | | | | Year 10 | | | |
|--|--|--------|---|---|---|--------|---|---|---|--------|---|---|---|--------|---|---|---|--------|---|---|---|--------|---|---|---|--------|---|---|---|--------|---|---|---|--------|---|---|---|--------|---|---|---|---------|---|---|---|
| | | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W | S | S | A | W |
| 1 | Prepare ground and sow seed mix | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Weed control | | | x | | x | x | x | | x | x | x | | x | x | x | | x | x | x | | x | x | x | | x | x | x | | x | x | x | | x | x | x | | x | x | x | | | | | |
| | Spring cut: arisings removed | | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | | | | |
| | Autumn cut: arisings left for seed drop before removal | | | | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | | |
| | Monitoring | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Survey coverage of desired species | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplementary overseeding if required | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Removal of Spanish bluebells | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Sow woodland wildflower mix | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Hand removal / cutting control of dominant flora | | | | | | | x | | x | | x | | x | | x | | x | | x | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Monitoring | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Monitor coverage of non-native garden flora & remove if | | | | | | | x | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | x | | | | | | | |
| | Survey coverage of desired species | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplementary overseeding if required | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Coppice non-native saplings & young trees & apply | | | | x | | | | | | | x | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | x | | | | |
| | Plant native shrubs and small trees | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Top up mulch & weed control (where necessary) | | | | | | | | | x | | | | x | | | | x | | | | x | | | | | | | | | | | | | | | | | | | | | | | |
| | Water during dry periods (where necessary) | | | | | | | x | | | | x | | | | x | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Remove spiral guards and canes once established | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Monitoring | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Replace dead specimens where necessary | | | | | | | | | | | | x | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Planting of native canopy species following removal of large | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Top up mulch & weed control (where necessary) | | | | | | | | | | | x | | | | x | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Water during dry periods (where necessary) | | | | | | | x | | | | x | | | | x | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Remove tree support once established | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | |

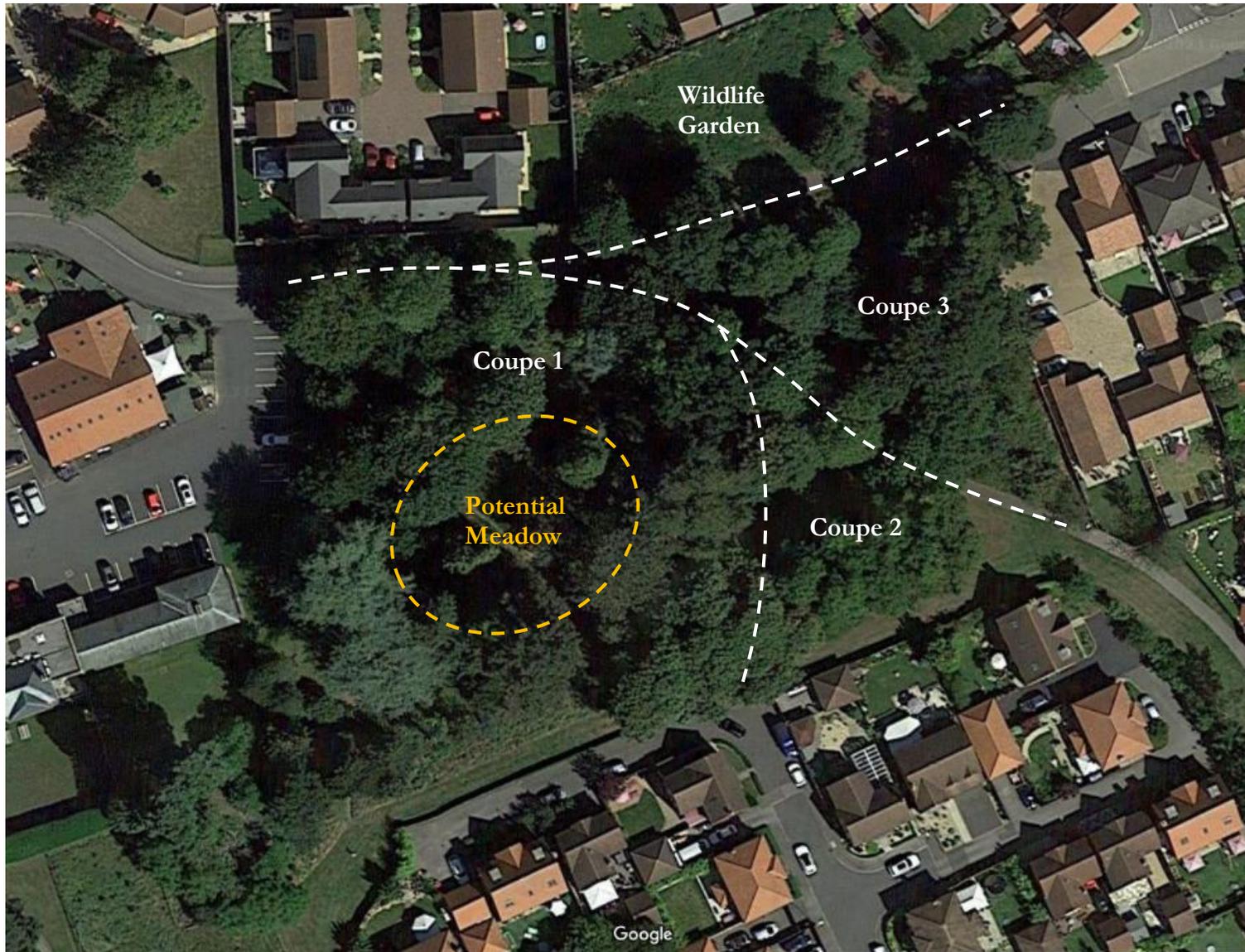
APPENDIX 1: FIGURES

Figure 1: Site Location Plan



(Imagery ©2021 Google, Imagery ©2021 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2021)

Figure 2: Site Plan



(Imagery ©2021 Google, Imagery ©2021 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2021)

APPENDIX 2: PHOTOGRAPHS





APPENDIX 3: WILDFLOWER SEED MIXES

Woodland and Heavy Shade Wildflower Seeds LW8M – Wildflower Meadow

LW8 Woodland & Heavy Shade 80/20 Wildflower Meadow

LW8 contains twenty four native British wildflowers and grasses typically found in woodland and areas of heavy shade.

Consisting of 80% grass and 20% wildflowers, LW8 creates a permanent meadow with flowers from May to October. Suitable for creating habitats in woodland clearings or areas that are in shade for prolonged periods.

LW8 supports bees, butterflies and other pollinators as 81% of the wildflowers included in this mixture are recommended by the Royal Horticultural Society (RHS) as 'Perfect for Pollinators'.



Mixture Contents:

| Common Name | Latin Name | Quantity | Flowers | Height | Type |
|------------------------------|----------------------------------|----------|-----------|-------------|-----------|
| 1 Agrimony, Common | <i>Agrimonia eupatoria</i> | 1.8% | Jun - Sep | 50 - 150cm | Perennial |
| 2 Angelica, Wild | <i>Angelica sylvestris</i> | 0.6% | Jul - Aug | 100 - 200cm | Perennial |
| 3 Avens, Wood | <i>Geum urbanum</i> | 1% | Jun - Sep | 30 - 60cm | Perennial |
| 4 Bedstraw, Hedge | <i>Galium mollugo</i> | 1.8% | Jun - Oct | 10 - 50cm | Perennial |
| 5 Bellflower, Nettle-leaved | <i>Campanula trachelium</i> | 0.2% | Jul - Sep | 60 - 100cm | Perennial |
| 6 Betony | <i>Stachys officinalis</i> | 1% | Jul - Sep | 25 - 50cm | Perennial |
| 7 Bluebell | <i>Hyacinthoides non-scripta</i> | 0.6% | Apr - Jun | 25 - 50cm | Biennial |
| 8 Buttercup, Meadow | <i>Ranunculus acris</i> | 1% | May - Jun | 30 - 100cm | Perennial |
| 9 Champion, Red | <i>Silene dioica</i> | 1% | Apr - Sep | 60 - 90cm | Perennial |
| 10 Clary, Wild | <i>Salvia verbenaca</i> | 0.8% | May - Aug | 30 - 40cm | Perennial |
| 11 Columbine | <i>Aquilegia vulgaris</i> | 0.2% | Jun - Aug | 80 - 120cm | Perennial |
| 12 Foxglove, Wild | <i>Digitalis purpurea</i> | 0.6% | Jun - Aug | 50 - 100cm | Biennial |
| 13 Hedge Parsley, Upright | <i>Torilis japonica</i> | 1.2% | Jul - Aug | 30 - 80cm | Annual |
| 14 Meadowsweet | <i>Filipendula ulmaria</i> | 1% | Jun - Aug | 80 - 200cm | Perennial |
| 15 Mustard, Garlic | <i>Alliaria petiolata</i> | 1.6% | Apr - Jul | 40 - 90cm | Biennial |
| 16 Ragged Robin | <i>Lychnis flos-cuculi</i> | 0.8% | May - Aug | 30 - 90cm | Perennial |
| 17 Sage, Wood | <i>Teucrium scorodonia</i> | 0.4% | Jun - Oct | 25 - 50cm | Perennial |
| 18 St John's-wort, Hairy | <i>Hypericum hirsutum</i> | 0.4% | Jul - Aug | 60 - 100cm | Perennial |
| 19 Teasel | <i>Dipsacus fullonum</i> | 1% | Jul - Aug | 100 - 200cm | Biennial |
| 20 Vetch, Bush | <i>Vicia sepium</i> | 0.4% | May - Jul | 40 - 50cm | Perennial |
| 21 Vetch, Tufted | <i>Vicia cracca</i> | 0.4% | Jun - Sep | 100 - 150cm | Perennial |
| 22 Wild Garlic / Ramsons | <i>Allium ursinum</i> | 0.2% | Apr - Jun | 30 - 50cm | Perennial |
| 23 Woundwort, Hedge | <i>Stachys sylvatica</i> | 1.4% | Jun - Sep | 50 - 100cm | Perennial |
| 24 Yarrow | <i>Achillea millefolium</i> | 0.6% | Jun - Oct | 20 - 100cm | Perennial |
| Bent, Common | <i>Agrostis castellana</i> | 4% | | 50 - 100cm | Grass |
| Fescue, Chewings | <i>Festuca rubra, commutata</i> | 21.6% | | 30 - 70cm | Grass |
| Fescue, Slender Creeping Red | <i>Festuca rubra, litoralis</i> | 32% | | 10 - 20cm | Grass |
| Meadow Grass, Wood | <i>Poa nemoralis</i> | 8% | | 10 - 30cm | Grass |
| Sweet Vernal-grass | <i>Anthoxanthum odoratum</i> | 2.4% | | 30 - 60cm | Grass |
| Tufted Hair-grass | <i>Deschampsia cespitosa</i> | 12% | | 30 - 120cm | Grass |

‘Woodland and Heavy Shade Wildflower Seeds LW8P’ – Wildflowers Only

LW8 Woodland & Heavy Shade 100% Wildflower Seed Mix

LW8 contains twenty four native British wildflower species, consisting of mainly perennial species to create a permanent area of pure wildflowers.

The species included in this mixture create an attractive display from May to October and is suitable for creating habitats in wooded areas. It is ideal for use in situations where shade may be heavy or prolonged.

LW8 supports bees, butterflies and other pollinators as it contains 81% of species recommended by the Royal Horticultural Society (RHS) as ‘Perfect for Pollinators’.



Mixture Contents:

| Common Name | Latin Name | Quantity | Flowers | Height | Type |
|-----------------------------|----------------------------------|----------|-----------|-------------|-----------|
| 1 Agrimony, Common | <i>Agrimonia eupatoria</i> | 9% | Jun - Sep | 50 - 150cm | Perennial |
| 2 Angelica, Wild | <i>Angelica sylvestris</i> | 3% | Jul - Aug | 100 - 200cm | Perennial |
| 3 Avens, Wood | <i>Geum urbanum</i> | 5% | Jun - Sep | 30 - 60cm | Perennial |
| 4 Bedstraw, Hedge | <i>Galium mollugo</i> | 9% | Jun - Oct | 10 - 50cm | Perennial |
| 5 Bellflower, Nettle-leaved | <i>Campanula trachelium</i> | 1% | Jul - Sep | 60 - 100cm | Perennial |
| 6 Betony | <i>Stachys officinalis</i> | 5% | Jul - Sep | 25 - 50cm | Perennial |
| 7 Bluebell | <i>Hyacinthoides non-scripta</i> | 3% | Apr - Jun | 25 - 50cm | Biennial |
| 8 Buttercup, Meadow | <i>Ranunculus acris</i> | 5% | May - Jun | 30 - 100cm | Perennial |
| 9 Champion, Red | <i>Silene dioica</i> | 5% | Apr - Sep | 60 - 90cm | Perennial |
| 10 Clary, Wild | <i>Salvia verbenaca</i> | 4% | May - Aug | 30 - 40cm | Perennial |
| 11 Columbine | <i>Aquilegia vulgaris</i> | 1% | Jun - Aug | 80 - 120cm | Perennial |
| 12 Foxglove, Wild | <i>Digitalis purpurea</i> | 3% | Jun - Aug | 50 - 100cm | Biennial |
| 13 Hedge Parsley, Upright | <i>Torilis japonica</i> | 6% | Jul - Aug | 30 - 80cm | Annual |
| 14 Meadowsweet | <i>Filipendula ulmaria</i> | 5% | Jun - Aug | 80 - 200cm | Perennial |
| 15 Mustard, Garlic | <i>Alliaria petiolata</i> | 8% | Apr - Jul | 40 - 90cm | Biennial |
| 16 Ragged Robin | <i>Lychnis flos-cuculi</i> | 4% | May - Aug | 30 - 90cm | Perennial |
| 17 Sage, Wood | <i>Teucrium scorodonia</i> | 2% | Jun - Oct | 25 - 50cm | Perennial |
| 18 St John's-wort, Hairy | <i>Hypericum hirsutum</i> | 2% | Jul - Aug | 60 - 100cm | Perennial |
| 19 Teasel | <i>Dipsacus fullonum</i> | 5% | Jul - Aug | 100 - 200cm | Biennial |
| 20 Vetch, Bush | <i>Vicia sepium</i> | 2% | May - Jul | 40 - 50cm | Perennial |
| 21 Vetch, Tufted | <i>Vicia cracca</i> | 2% | Jun - Sep | 100 - 150cm | Perennial |
| 22 Wild Garlic / Ramsons | <i>Allium ursinum</i> | 1% | Apr - Jun | 30 - 50cm | Perennial |
| 23 Woundwort, Hedge | <i>Stachys sylvatica</i> | 7% | Jun - Sep | 50 - 100cm | Perennial |
| 24 Yarrow | <i>Achillea millefolium</i> | 3% | Jun - Oct | 20 - 100cm | Perennial |

QUALITY ASSURANCE:

TITLE: Fernwood Costall Woods: Woodland Management Plan

SUBMITTED TO: Fernwood Parish Council

ISSUE AND REVISION RECORD:

Contract Number: #859

Revision Number: 1

Description: Final Report

Date: 30th June 2023



Disclosure: the information, data, evidence, advice and opinions which have been prepared and provided are true, and have been prepared and provided in accordance with the Arboricultural Association’s Code of Ethics and Professional Conduct. I confirm that the opinions expressed are my true and professional bona fide opinions.

AUTHOR

Name

Signed

Richard Anderton
BSc (Hons), MSc, Dip Arb L4 (ABC), MCIEEM, TechArborA

INTERNAL REVIEWER

Name: Jake Hill BSc (Hons) ACIEEM, Ecologist

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