Ecological Management Plan

for

Mill Field, Charlbury
2025 -2030

Report to Charlbury Town Council
18 December 2024

Ref 2403

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Acknowledgements

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1. Introduction

1.1 Background

1.1.1 Mill Field is a narrow strip of grassland and associated habitats in the floodplain of the river Evenlode at Charlbury. It extends to approximately 3.42 ha. It was purchased by Charlbury Town Council (CTC) in the 1950s to provide an amenity asset for the residents of the town. Since then, it has been well used for a range of both formal and informal recreational and leisure activities, including river access for angling and canoeing, and as a green space for walking, games and picnicking. In recent years it has been the venue for the Charlbury Riverside Festival, Charlbury's free music festival.

1.1.2 Historically, Mill Field was part of a chain of low-lying riverside meadows along the Evenlode. It is likely to have been managed as a traditional hay meadow, with a hay cut taken in summer, followed by aftermath grazing. It is also likely that it would have supported a diverse neutral grassland flora. This would have been lost in the 1950s when the site is believed to have been agriculturally 'improved' by reseeding with ryegrass.

1.1.3 A management plan for Mill Field was prepared for CTC in 2018. This recommended *'a more sensitive approach for wildlife'* by reducing the number of grass cuts in 'Upper Field' (Compartment 3 in this report), from monthly to 2 to 4 cuts per year and by leaving Mid Field (Compartment 2 in this report) uncut from after the Riverside Festival in July until late September. It also recommended that the '*waterside boundaries'*, taken to be the fringing vegetation between the field and the river and Mill Cut, be left uncut for a width of 3m, apart from existing access points, both for wildlife and for their value as a security barrier during the Riverside Festival.

1.1.4 In 2021 CTC declared a climate and biodiversity emergency, and in January 2022 the Land and Nature Group of CTC presented a report to CTC (CTC, 2022) arguing that

> '*In the context of the climate and biodiversity emergency declared by Charlbury Town Council, a change in the management of grassy areas within the town is arguably the simplest opportunity to directly reduce carbon emissions, sequester carbon and improve biodiversity'.*

1.1.5 The report reviewed the management of nine grassy areas in the town, including Mill Field. It noted the recommendations in the 2018 management plan and went on to present a number of ''suggestions' for the future management of Mill Field. These 'suggestions' are presented in Appendix 4.

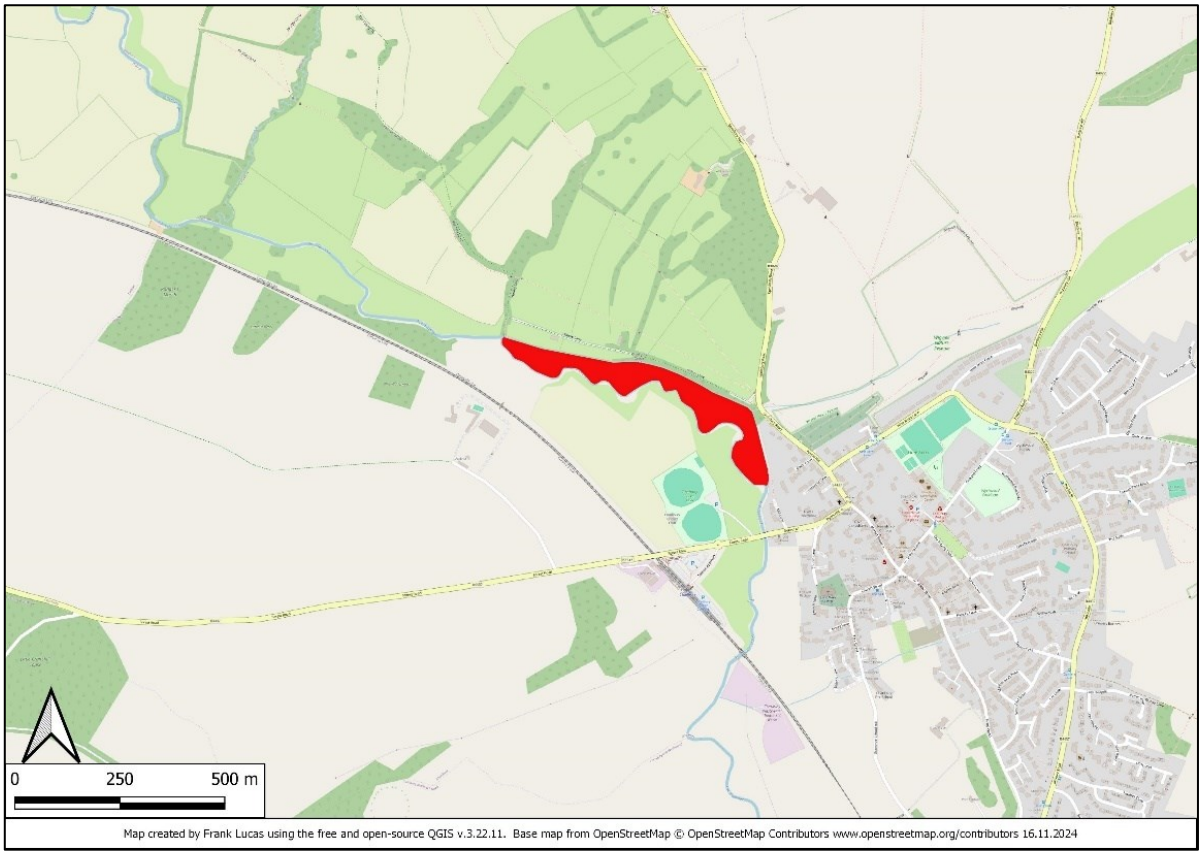
1.1.6 Picking up on the 'suggestions' in the 2022 report, measures were taken in autumn 2023 to increase the botanical interest of Upper Field/Compartment 3 by scarifying the grassland and sowing Yellow-rattle seeds. Shortly after the sowing, Mill Field was hit by flooding. It is unclear whether any of the seeds were able to overwinter and germinate but no evidence of Yellow-rattle was found during the field survey for this report in May 2024.

1.1.7 In early 2024 a review meeting was held between members of CTC and Wild Oxfordshire/Evenlode Catchment Partnership (ECP), at which it was agreed that a new ecological management plan should be prepared for Mill Field. ECP agreed to fund this.

1.2 Location and access

1.2.1 Mill Field lies a little to the north-west of the town of Charlbury in the West Oxfordshire District Council area. The centre of the site lies at NGR SP 35190 19935. The location is shown on Map 1.

Map 1: Mill Field Charlbury Location



1.2.2 Vehicular and pedestrian access to Mill Field is gained via a 3m wide bridge over the Mill Cut in the south-east corner of Mill Field. The bridge itself is accessed via a narrow track from Mill Lane which runs northwards from Dyers Hill, Charlbury.

1.2.3 Pedestrian access is also available via a footbridge over the Mill Cut at the extreme western end of the site. This footbridge allows a connection to Watery Lane, a restricted byway, and thence to the local public rights of way network.

1.2.4 With access points at both the eastern and western ends of Mill Filed, it is possible for the site to be used for circular walks connecting to local pubic rights of way. This significantly enhances the amenity value of the site.

1.2.5 There are no public rights of way across Mill Field itself.

1.3 Topography and geomorphology

1.3.1 Mill Field is an island, bounded to the south and west by the river Evenlode and to the north and east by the Mill Cut, a medieval mill leat, which originally took water to a former corn mill. High water levels in the Mill Cut are maintained thanks to a weir on the river which lies immediately to the west of Mill field.

1.3.2 The site superficially appears to be flat but drains gently from north to south. It includes a number of small undulations and depressions which may indicate past land use or underlying geomorphology. Notable amongst these is a small linear feature that runs in a south-westerly direction from the Mill Cut near the boundary of Compartments 1 and 2. It is believed that this is the line of an historic overflow channel between the Mill Cut and the river.

1.4 Purpose and Scope of the Management Plan

1.4.1 The purpose of this management plan is to guide the ecological management of Mill Field, Charlbury for the period 2025 to 2030.

1.4.2 To achieve this it:

- Describes and evaluates the current ecological interest of the site
- Sets out a long term a long-term vision for the site
- Defines short-term objectives for the different habitat parcels present
- Describes the management prescriptions required to achieve those objectives.
- Makes recommendations for reporting, monitoring and review.

1.4.3 The Management Plan covers the terrestrial habitats and features at Mill Field. It does not cover the management of the river channel or the Mill Cut. It does not cover matters unrelated to the ecology of Mill Field.

2. Description and Evaluation

2.1 Habitats

2.1.1 A habitat survey of Mill Field was conducted in 2024 using the UKHab habitat classification system (UKHab, 2023). The survey methodology and results are described in Appendix 1 and shown on Map 2. A list of the species found during the survey is given in Appendix 2, using plant nomenclature from Stace (2019).

2.1.2 The survey identified 6 UKHab habitat types at Mill Field. These were:

- g4 19 108 Modified grassland, coastal and floodplain grazing marsh, frequently mown
- g3 10 16 Neutral grassland dominated by tall forbs and with scattered scrub
- w1g 29 Other broadleaved woodland plantation
- w1 34 Broadleaved woodland with ecologically valuable line of trees
- h3a6 Other Blackthorn scrub
- h3h Mixed scrub

Note: Habitat names are those used in UKHab (2023).

2.1.3 The largest single habitat at Mill Field is g4 modified grassland, covering approximately 2.31 ha and shown as Compartments 1, 2 and 3 on Map 2. This is a frequently mown, species-poor neutral grassland with fewer than 9 species per m^2. The sward is characterised by abundant Perennial Ryegrass and White Clover with a small range of additional species associated with high fertility, including Creeping Buttercup, Greater Plantain, Dandelion, Yorkshire Fog and Creeping Bent. The sward in Compartment 3 is more diverse than in Compartments 1 and 2. Compartment 3 includes scattered plants of Meadowsweet, Meadow Vetchling and Cuckoo-flower. Until recent years these three Compartments have been managed in a single block, but for the purposes of this management plan they are treated as three separate compartments because (a) Cpt 1 is managed by a different operator to Cpts 2 and 3 and (b) because of measures to increase the botanical diversity of Compartment 3.

2.1.4 Six areas around the perimeter of the field where it borders the river Evenlode and the Mill Cut were categorised as g3 16, neutral grassland dominated by tall forbs. These are Compartments 4, 8, 13, 17, 19 and 20 on Map 2. These compartments, together totalling approximately 0.26 ha, are dominated by tall perennial or biennial dicotyledons including Common Nettle, Great Willowherb and Cleavers. Scattered scrub has established in these compartments.

2.1.5 Dense scrub habitats, defined in UKHab (2023) as patches of shrubs <5 m in height with continuous (>75%) cover, have established in eight locations around the perimeter of the site where it borders the river Evenlode and the Mill Cut. These are Compartments 5, 6, 7, 10, 11, 12, 14, 16, and 18. Together they total approximately 0.66 ha.

2.1.6 Compartment 9, known as Campbell's Copse, was categorised as w1g, other broadleaved woodland plantation. This 0.2 ha woodland was created in 1995 when 250 broadleaved trees and shrubs were planted to commemorate the local naturalist and teacher WD (Bill) Campbell. It has diverse canopy and shrub layers, but given its age it lacks the ground flora typical of ancient or long-established secondary woodland.

2.1.7 Compartment 15 comprises a row of mature and closely spaced pollarded Crack Willows. Because of their age these are categorised as w1 34, an ecologically valuable line of trees. These pollards are in active management, showing a range of ages since last pollarding. This compartment covers approximately 0.14 ha.

2.2 Species

2.2.1 Locally Notable trees

2.2.1.1 In addition to the habitats at Mill Field, it was found during the field survey that the site supports a number of notable mature, possibly in some cases veteran, trees. These include Pedunculate Oak, pollarded Crack Willows and Ash trees. Some larger examples of other species, such as Hawthorn, may also be regarded as locally notable.

2.2.1.2 Because of their size and age, a number of these trees are developing characteristics that significantly enhance their ecological value, including splits, tears and other wounds where branches have dropped, and dead or decaying wood. These features provide opportunities for other species to survive and thrive, such as nesting opportunities for birds, roosting opportunities for bats and habitat for a range of invertebrates and fungi associated with dead wood.

2.2.1.3 In addition to these older trees, three Black Poplar trees have been planted in Middle Field/Cpt 2, close to Campbell's Copse. They were planted in 1995 at the same time that Campbell's Copse was established. These trees are notable because of their history.

2.2.2 Hemlock

2.2.2.1 On arrival at Mill Field, signs alert visitors to the presence of Hemlock (called 'Poison Hemlock' on the signs) and inform them that Charlbury Town Council is arranging the removal and composting of Hemlock growing on the field.

2.2.2.2 Hemlock is highly toxic. It is not a notifiable weed and there is no legal requirement to control it, but measures to eradicate it are being taken by CTC in recognition of the health risk it could pose to users of the site.

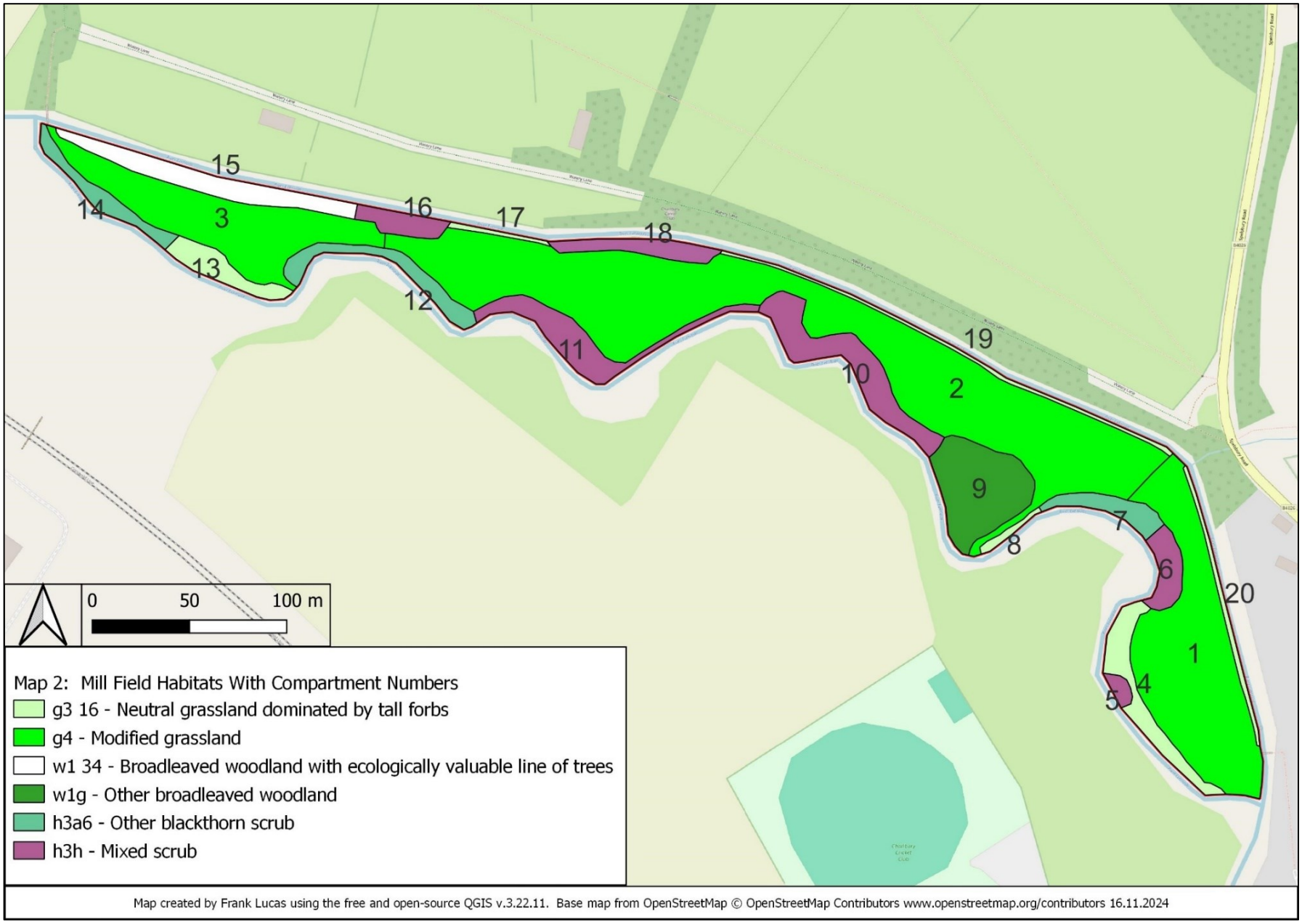
2.2.2.3 During the field survey, Hemlock was found to be widespread around the perimeter of Mill field, predominantly in tall forb and scrub habitats. A composting site for Hemlock was found at approximate NGR SP 34967 19978.

2.3 Ecological Evaluation

2.3.1 Mill Field has no statutory designations (see 3.1.2) and all of the habitats at Mill Field are common and widespread in the local area. As such they are considered to be of no more than local importance for biodiversity.

2.3.2 The locally notable trees at Mill Field were not surveyed and categorised individually during the field survey because of time constraints, but they are considered to be important features of the site which need to be conserved.

Map 2: Mill Field Habitats with Compartment Numbers



3. Vision and Habitat Management Objectives

3.1 Vision

3.1.1 Policies in the Charlbury Neighbourhood Plan 2031 (West Oxfordshire District council (2021) at https://www.westoxon.gov.uk/media/0pthvr5t/made-charlbury-neighbourhood-plan-2031-14-06-2021.pdf) identify Mill Field as Local Green Space (Policy NE7) and show that it lies within the Evenlode Blue/Green Corridor (Policy NE6). Together these designations provide recognition of the importance of Mill Field for public leisure and recreation, and for its role in allowing wild animals and plants to move freely between sites in the local area.

3.1.2 The Neighbourhood Plan also shows that Mill Field does not fall within an Oxfordshire Conservation Target Area (CTA) and that it has no formal designation as a wildlife site. It is however shown as Coastal and Floodplain Grazing Marsh, a '*section 41 Habitat of Principal Importance*', on the Defra MAGiC site (https://magic.defra.gov.uk/MagicMap.aspx accessed 25-11-2024). This categorisation should be considered as a recognition of its geomorphological position, rather than its existing ecological interest.

3.1.3 Recognising these factors, Charlbury Town Council will aim to enhance biodiversity at Mill Field whilst retaining the amenity value of the site, by pursuing the following vision:

Mill Field will be a key location in Charlbury's Evenlode Valley blue/green corridor, which will develop as a place where wildlife can thrive, whilst continuing to provide excellent opportunities for leisure and recreation.

3.2 Objectives 2025-2030

3.2.1 Overall objective 2025-2030

3.2.1.1 The overall objective for Mill Field from 2025 to 2030 will be to maintain its ecological and amenity value whist achieving a measurable increase in botanical interest in Upper Field/Compartment 3.

3.2.1.2 This objective will be achieved by the continuation of existing management regimes for the majority of the site whilst introducing new meadow plant species to Upper Field (Cpt 3) and modifying the management regime to encourage these species to survive and thrive.

3.2.2 Compartmental Management Objectives

3.2.2.1 Compartments 1 and 2, Lower Field and Middle Field: Current habitat g4 19 108 Modified grassland, coastal and floodplain grazing marsh, frequently mown.

Objective 1: Maintain Cpts 1 and 2 as g4 19 108 Modified grassland, coastal and floodplain grazing marsh, frequently mown, to serve as amenity grassland for general leisure and recreational use and as a venue for the Charlbury Riverside Festival.

3.2.2.2 Compartment 3, Upper Field: Current habitat g4 19 108 Modified grassland, coastal and floodplain grazing marsh, frequently mow.

Objective 2: Increase botanical diversity in Cpt 3 by 2030, to the point where the sward meets the UKHab definition of g3c Other neutral grassland. This to be achieved by the planting of meadow plant species appropriate to g3c Other neutral grassland, and by modification of the mowing regime to enable these species to establish and prosper.

3.2.2.3 Compartments 4, 8, 13, 17, 19 and 20: Current habitat g3c 16 Other neutral grassland dominated by tall forbs.

Objective 3: Mainatain Cpts 4, 8, 13, 17, 19 and 20 as g3c 16 Other neutral grassland dominated by tall forbs, covering current extent and in current condition.

3.2.2.4 Compartments 5, 6, 7, 10, 11, 12, 14, 16, and 18: Current habitats h3a6 Other Blackthorn scrub and h3h Mixed scrub.

Objective 4: Maintain Cpts 5, 6, 7, 10, 11, 12, 14, 16, and 18 as h3a6 Other Blackthorn scrub and h3h Mixed scrub, covering current extent. Diversify age structure by rotational cutting of c10% by area each year. NB. Dense scrub is defined in UKHab as '*patches of shrubs that are <5 m in height with continuous (>75%) cover*'.

3.2.2.5 Compartment 9, Campbells Copse: Current habitat w1g 29 Other broadleaved woodland plantation.

Objective 5: Continue to develop Cpt 9 as w1g Other broadleaved woodland plantation, to become mature woodland with dense coppice and scrub understory around the perimeter.

3.2.2.6 Compartment 15: Current habitat w 34 Line of ecologically valuable trees.

Objective 6: Maintain Cpt 15 as w 34 Line of ecologically valuable trees covering current extent and condition by rotational pollarding.

3.2.3 Species Management Objectives

3.2.3.1 Locally Notable Trees:

Objective 7: Maintain locally notable trees as key ecological and landscape features through appropriate protection and management, including pollarding or tree surgery as required. Note this objective applies to individual notable trees outside of Cpt 14.

3.2.3.2 Hemlock:

Objective 8: Eradicate Hemlock from the site by 2030.

4. Action Plan

4.1 Compartments

4.1.1 Cpts 1 and 2, Lower Field and Middle Field:

Continue current amenity grassland management, with monthly mowing between March and October each year, leaving arisings *in situ*.

Ensure fringing tall forb and scrub vegetation bordering the river and the Mill Cut does not encroach further into the grassland, by close mowing to the current boundary between the field and adjacent tall forb and scrub habitats.

4.1.2 Cpt 3, Upper field:

Introduce a management regime akin to traditional hay making, accepting that labour constraints and lack of livestock for grazing will need to be compensated for.

Check the compartment in April 2025 for the presence of Yellow Rattle and to note the height of the sward.

Mow the whole compartment for hay in late July each year, leaving arisings in place for one week or more to allow any seeds to ripen and fall. If labour is available, turn the hay (known as 'tedding') once or twice during this time to encourage the ripening and shedding of seeds by some of the species present. Thereafter, rake up the cut material and either remove from site or stack into compost piles in adjacent scrub or tall forb compartments.

Mow again in late September or October each year, when ground conditions allow, and remove arisings.

At the same time as the mowing of Cpts 1 and 2 each month, mow a path for walkers c.4m wide (two passes of a mower 2m wide) and parallel to the Mill Cut, passing through Cpt 3 to the footbridge at the western end of the site. This is to reduce trampling and dog fouling in the centre of the compartment.

If no Yellow-rattle is found in April 2025, in late summer (Aug/Sept) 2025, continue measures begun in autumn 2023 to establish Yellow-rattle on the site as a means to control the vigour of grasses. Use a garden soil rake to remove dead grass and break open small patches of ground (c.50 cm x 50cm) across the site, focussing on areas with lower fertility, indicated by place with lower-growing sward height. Hand broadcast Yellow-rattle seeds, ideally locally sourced, into the patch and trample in. For further information see https://www.plantlife.org.uk/how-to-grow-yellow-rattle/ . Review success by surveying for the presence of Yellow-rattle plants again in May 2026. Decide then whether to continue with Yellow-rattle introduction.

In late summer (Aug/Sept) 2025, plant container-grown pots of some of the more robust plant species, ideally locally sourced, typical of lowland hay meadows/neutral grassland into Cpt 3. Species chosen should be capable of competing in the sward found in Cpt 3. Potential species may include, but need not be limited to, Ox-eye Daisy, Great Burnet, Common Knapweed, Meadow Buttercup, Birds-foot trefoil and Devil's-bit Scabious. Plant between 10 and 20 9 cm pots of each species, concentrating initially on areas of lower fertility, indicated by place with lower-growing grass sward height.

Monitor establishment of pot-grown plants in May 2026 and May 2027. Review progress in summer 2027 and decide whether to continue with pot-grown plantings.

Repeat habitat survey in summer 2029 using UKHab habitat classification, to see if categorisation as g3c Other neutral grassland has been achieved

4.1.4 Compartments 3, 7, 12, 16, 18, 19: g3c 16 Other neutral grassland dominated by tall forbs

No intervention in the period 2025-2030.

4.1.5 Compartments 5, 6, 7, 10, 11, 12, 14, 16, and 18: Other Blackthorn scrub and mixed scrub.

Rotational cutting of approximately 10% by area (c.0.06 ha) each year to diversify age structure whilst maintaining as dense scrub, defined as shrub species <5 m high with >75% cover.

Survey scrub compartments annually in late summer to choose sections which are approaching 5m in height. Cut these to ground level in autumn or winter, when ground conditions allow. Cut material may be chipped on site, stacked on site or removed from the site. Care to be taken to ensure that cut material is not carried into the River Evenlode by winter flooding. Notable trees, including notable examples of species typically thought of as scrub species, such as Hawthorn, should be recorded on the notable tree inventory (see 4.2.1 below) and left standing.

4.1.6 Compartment 9: w1g Other broadleaved woodland plantation

A suitably qualified Responsible Person must be appointed to monitor growth of canopy trees annually to ensure no risks to health and safety from dead or dying limbs. Deal with H&S issues as required, otherwise no intervention. Seek to retain standing dead wood where it does not pose a risk to H&S. Stack any cut material in the woodland and allow to decay on site.

Once, during the period 2025-2030, coppice the Hazel and cut back scrub species on the northern perimeter of Campbell's Copse during the winter months, to encourage dense growth at and near ground level. This to provide nesting and feeding opportunities for birds, and pollen, nectar and berry sources for a range of species. Precise timing in the 5-year period is not critical and this work can be fitted in with scrub management regime. Larger cut material to be stacked in the woodland and allowed to decay on site. Small arisings ('lop and top') may be burnt or chipped on site, stacked on site or removed from the site. Care to be taken to ensure that cut material is not carried into the River Evenlode by winter flooding.

4.1.7 Compartment 14: A row of c.20 pollarded crack willows

Pollard two trees each autumn/winter to maintain the structural diversity of the group. Operators to ensure that the trees are cut back to the previous cut points, retaining the knuckle on the stem for future growth. Arisings may be burnt or chipped on site, stacked on site or removed from the site. Care to be taken to ensure that cut material is not carried into the River Evenlode by winter flooding.

4.2 Species

4.2.1 Locally Notable Trees

4.2.1.1 It is beyond the scope of this report to provide advice on the management of individual notable trees. To provide a baseline for future management it is recommended that an inventory of locally notable trees should be created in 2025 and used to guide future

management. Future management should aim to conserve the tree and its key features, whilst ensuring that it remains safe and does not present a risk to users of Mill Field. Specialist advice should be sought.

4.2.1.2 The inventory should include the following information:

- Date of recording and name and contact details of recorder
- Tree species
- Location (10 figure Ordnance Survey grid reference)
- Girth (m), and height at which girth recorded (m), normally chest height (1.5m).
- Height or, for pollards, height to knuckle or growth point.
- Whether alive or dead
- Whether standing or fallen
- Condition, to include Percentage of dead wood in the crown (<10%, 10 to <50%, >50% to 90%, >90%), presence of hollowing branches, whether the trunk is hollowing, holes or water pockets and presence of fallen dead wood on the ground.
- Other obvious species dependant on or resorting to the tree, including epiphytes (mosses, lichens, ferns), fungi, invertebrates, roosting bats or nesting birds.

4.2.1.3 In addition to these records, a photographic record should be made of the trees themselves and any features of interest that they have, such as hollows, rot-holes or fungal fruiting bodies.

4.2.1.4 Further information on the recording of notable trees is available on the Ancient Tree Inventory web site (see https://ati.woodlandtrust.org.uk/ accessed November 2024)

4.2.2 Hemlock

4.2.2.1 CTC wish to undertake Hemlock eradication from Mill Field in-house, and to do this by physical removal, rather than the use of herbicides.

4.2.2.2 Hemlock is highly toxic. It has a two-year life cycle, growing from seed in year one, then flowering and setting seed in year two, after which the plant dies. Seeds can germinate immediately they fall or they may lay dormant for anything up to six years. Plants that are cut before setting seed can re-grow from their tap root and flower again the following year.

4.2.2.3 Advice on Hemlock and Hemlock control is available from specialist weed control companies (see for example https://www.taylor-weed-control.co.uk/news/post/how-to-get-rid-of-hemlock#:~:text=Hemlock%20cannot%20be%20burned%20as,of%20harmful%20weeds%20like%20hemlock. and https://environmentcontrols.co.uk/target-weeds/hemlock-control/ both accessed November 2024) and from other authorities such as Norwich City Council (see https://www.norwich.gov.uk/hemlockadvice#:~:text=Dig%20out%20all%20the%20plant,the%20area%20for%20seedling%20growth. accessed November 2024) and Peterborough City Council (see https://www.peterborough.gov.uk/council/planning-and-development/conservation-trees-and-hedges/hemlock-advice accessed November 2024).

4.2.2.4 Based upon the ecology of the plant, and the advice in these and other sources, a protocol for Hemlock control at Mill Field has been prepared. This can be found in Appendix 3.

4.2.2.5 To oversee the control and eradication of Hemlock at Mill Field, CTC should appoint a Responsible Person who must ensure that control is undertaken safely and effectively and in accordance with the protocol in Appendix 3.

5. , Reporting, Monitoring and Review

5.1 Reporting

5.1.1 To track progress and maintain focus, an annual record should be kept of the management work completed in accordance with the action plan described in Section 4. The record should include information on what management was done, who it was done by, when it was done and which compartment(s) were affected.

5.1.2 The record should also identify any variation in management activity, including any constraints or difficulties, resulting in management work not being completed, or done differently. It should describe any potential consequence.

5.2 Monitoring and Review

5.2.1 Alongside the annual record of management work completed, the annual programme of monitoring activity should be recorded. As with the management work, this too should describe what was done, by who, when it was done and in which compartments, but in addition it should also describe and evaluate progress towards the achievement of objectives set out in Section 3.2.

5.2.2 To evaluate progress towards the achievement of objectives, CTC will need to agree performance metrics and key performance indicators (KPI's). To assist with this a provisional framework for reporting metrics and KPI's is given in Appendix 5, though it must be emphasised that this requires further development.

5.2.3 Once developed, this reporting framework should allow an adaptive management approach, where future management and monitoring is finessed to

5.2.4 A full review, including a repeat habitat survey using UKHab habitat categorisation should be undertaken in 2029 to inform the next Management Plan.

Ends

6. References

Charlbury Town Council (2021). Charlbury Neighbourhood Development Plan 2031. Charlbury Town Council (at https://charlbury-tc.gov.uk/neighbourhood-plan/)

Charlbury Town Council (2022). Grass Cutting in Charlbury 2022. Report to Charlbury Town Council from the Land and Nature Group dated 23.01.202. Accessed at https://charlbury-tc.gov.uk/wp-content/uploads/minutes-agendas-newsletters/Reports_2022-01-26.pdf on 01 Dec 2024

Stace, C.A. (2019) New Flora of the British Isles 4th Edition, C&M Floristics

UKHab Ltd (2023). UK Habitat Classification Version 2.0 (at https://www.ukhab.org)

Appendix 1: Ecological Survey and Habitat Mapping

A.1 Methodology

A.1.1 The field survey followed the approach described for the UKHab UK habitat classification (UKHab Ltd, 2023).

A.1.2 Broad habitat units and compartments were identified during a preliminary orientation visit in February 2024. Following this the main field survey was undertaken on 10 May 2024 and additional surveys to check matters of detail were undertaken on 31 October and 01 November 2024.

A.1.3 During the field survey, the main plant species for each compartment were recorded, and habitats were mapped onto paper maps. Specific locations and boundaries between compartments were identified in the field by reference to OS 1:25,000 Landranger maps and by use of Google Maps GPS on Samsung Galaxy Tab Active3 tablet. All accessible parts of the site were visited. No attempt was made to compile a fully comprehensive plant species list.

A.1.4. For the field survey a Minimum Mappable Unit (MMU) area of 25m^2 (0.0025 ha) was observed. Areas of habitat smaller than 25m^2 were incorporated into the most appropriate neighbouring compartment, observing the convention that where at least 70% of a land parcel was identifiable as a particular habitat then the whole parcel was categorised as that habitat.

A.1.5 Following the field surveys, land parcels were mapped in QGIS using Ordnance Survey OpenStreetMap as a base map. Habitats were categorised to their closest UKHab habitat (UKHab, 2023), up to and including UKHab level 5 where appropriate, together with required essential secondary codes and appropriate additional secondary codes.

A.2 Scope and Limitations of the Survey

A.2.1 Mapping accuracy

A.2.1.1 Mapping in the field was undertaken using GPS on a Samsung Galaxy Tab Active3 with more accurate location detection enabled. Grid references were taken using the Grid Ref OS Android app. In open areas these devices may provide accuracy approaching 3 – 4 m, but this cannot be guaranteed.

A.2.1.2 Whilst care was taken to ensure accuracy in mapping it should be noted that all stated mapped areas should be regarded as indicative, not definitive.

A.2.2 Site accessibility

A.2.2.1 A single main path runs the length of the site and internal site accessibility on foot to the main parts of the site was generally very good, with no fences or boundaries to limit access.

A.2.2.2 This was not the case where the majority of the narrow strips of fringing vegetation bordered the banks of the river and the Mill Cut. Dense scrub and tall forb vegetation in these locations made it difficult, sometimes impossible, to locate the precise waterside boundary of the habitats.

A.2.2.3 The banks of the river and the Mill Cut were accessible in a limited number of places where mowing has maintained a grassland sward and supressed scrub and tall herb vegetation.

These access points did allow some limited visual access to the edges of the watercourse in the immediate vicinity.

A.2.2.4 These limitations means that the widths of the perimeter habitats was unable to be mapped accurately, providing an additional reason for the stated areas, particularly of perimeter habitats, to be taken as indicative not definitive.

A.3 Results of Ecological Survey

A.3.1 Habitats Overview

A.3.1.1 The habitat survey identified 6 UKHab habitat types at Mill Field. These were:

- g4 Modified grassland – c.2.31 ha.
- g3 16 Neutral grassland dominated by tall forbs – c.0.26 ha.
- w1g Other broadleaved woodland – c.0.2 ha.
- w1 34 Broadleaved woodland with ecologically valuable line of trees – c.0.14 ha.
- h3a6 Other Blackthorn scrub – c.0.2 ha.
- h3h Mixed scrub – c.0.37 ha.

Note: Habitat names are those used in UKHab (2023)

The largest extend of habitat on site is UKHab g4 Other neutral grassland. This is a species-poor grassland on neutral soils. The second largest habitat by area is UKHab xxxxxx Broadleaved Plantation Woodland. This After this there are areas of UKHAb Blackthorn Scrub and Mixed Scrub, and areas of UKHab xxxx Neutral grassland domnated by tall herb growth. These habitats are describesd in trunt

A2.1.2 UKHab Other Neutral Grassland

A.3.2 Habitats by Compartment.

Table 1 below lists the habitat compartments identified at Mill Field, showing their UKHab habitat type and giving a brief description of the plant species in the compartment.

Table A.1: Habitat Compartments with description

Cpt No.	UKHab Habitat Type	Habitat Description
1	g4 Modified grassland	Species poor neutral grassland managed for amenity purposes. Dominated by Perennial Rye grass, with locally abundant White clover and Creeping Buttercup, with frequent species including Cock's-foot, Annual Meadow grass, Dandelion, Greater Plantain, Broadleaved Dock and Hogweed.
2	g4 Modified grassland	As for Compartment 1.
3	g4 Modified grassland	Similar to neutral grassland in compartment 1, but with greater diversity of grasses and forbs. Dominated by Perennial Rye-grass with locally abundant Meadow Foxtail, Creeping Buttercup and White Clover. Frequent to occasional Dandelion, Broadleaved Dock, Meadowsweet and Hogweed. Meadow Vetchling and Field Horsetail rare. A single plant of Cuckoo-flower located in May visit.
4	g3 10 16 Grassland dominated by tall forbs with scattered scrub.	A fringe of tall forbs between Cpt 1 and the river Evenlode, varying in width from approximately 4 to 15 metres. Locally dominated by Common Nettle, Cleavers and Great Willowherb with other tall forbs frequent to locally abundant, including Meadowsweet,

Cpt No.	UKHab Habitat Type	Habitat Description
		Hemlock, Hogweed, Comfrey and Broadleaved dock. Occasional species include Wild Angelica, Burdock, Wild Teasel, Redshank and White Dead-nettle. Beneath the tall forbs, shorter species have established, locally dominated by Common Ivy and Ground-ivy. This compartment includes occasional scattered scrub with Hawthorn rising to 4 m and Bramble. Two large pollarded Crack Willows on the edge of the river, both unpollarded for many years and starting to break apart. The canopy of these trees shades the river completely in this area.
5	h3h Mixed scrub	Mix of Willow and Blackthorn scrub.
6	h3h Mixed scrub	Dense mixed scrub with locally dominant Blackthorn, Bramble and Buckthorn with a large Crack Willow to c8m towards the northern end of the compartment. The field layer under dense scrub includes Common Ivy and Ground-ivy. Where scrub is more open, tall forbs dominate with locally dominant Common Nettle, Great Willowherb and Cleavers in mix with occasional Cock's-foot, Hogweed, Broadleaved Dock, Burdock and Wild Angelica.
7	h3a6 Other Blackthorn scrub	Predominantly dense Blackthorn scrub fringing the river, with Common Ivy field layer and occasional other scrub species including Willow and Hawthorn. Where the scrub is more open the area is locally dominated by tall forbs including Common Nettle and Cleavers with occasional other species including Hogweed, Broadleaved Dock and Wild Angelica. This area includes a small group of young Crack Willows pollarded to 1 m height in winter 2023/24 and regrowing vigorously at time of survey.
8	g3 10 16 Grassland dominated by tall forbs with scattered scrub.	A narrow strip of tall forb vegetation bordering the river and varying in width between approximately 1 to 2 m. Largely dominated by Common Nettle with abundant other tall herbs, including Hogweed, Cleavers, Great Willowherb and Broadleaved Dock. Additional species include occasional Wild Angelica, Bramble, Common Comfrey and Bittersweet.
9	w1g 29 Other broadleaved woodland plantation	A broadleaved woodland plantation, planted in 1995, consisting of a range of broadleaved trees rising to approx. 12 metres, with canopy species including Ash and Wild Cherry and occasional Pedunculate Oak, Hornbeam and Small-leaved Lime. Understory includes a mix of smaller tree species including Field Maple and Hazel, with small stands of scrub apparently planted in single-species blocks around the edges of the compartment including Dogwood, Buckthorn, Spindle, Guelder-rose and Wayfaring tree. Occasional Holly, Elder and Bramble on the fringe of this compartment appear to be self-set. The dense canopy has resulted in a field layer locally dominated by bare ground and Common Ivy, with frequent Wood Avens. A single planted Wild Service-tree was found to the Western side of this compartment, at approx. OS grid reference SP 35252 19859
10	h3h Mixed scrub	A dense mosaic of co-dominant Bramble and Blackthorn scrub with additional species including Dogwood and occasional Hawthorn. In

Cpt No.	UKHab Habitat Type	Habitat Description
		more open areas a tall forb community is locally dominated by great willow-herb and Common Nettle with frequent Cleavers and occasional Hogweed, Broadleaved Dock and Hemlock. Large Crack Willows occur along in the river bank in this compartment.
11	h3h Mixed scrub in mosaic with g3 16 neutral grassland dominated by tall forbs.	A mosaic of scrub and tall forb vegetation. Scrub locally dominated by Blackthorn and Dogwood. Tall forb vegetation dominated by Common Nettle and Great Willowherb. Occasional Sycamore sapling. The scattered mature trees in this compartment include Willows and Ash.
12	h3a6 Other Blackthorn scrub	Dominated by dense suckering Blackthorn scrub with occasional Hawthorn, Buckthorn and sycamore saplings, with a field layer dominated by Common Ivy and Ground-ivy. Small open areas in the compartment are locally dominated by Common Nettle, Cleavers and creeping thistle with occasional additional species Including Hemlock.
13	g3 10 16 Other neutral grassland dominated by tall forbs with occasional scattered scrub.	Tall forbs locally dominated by Common Nettle, Great Willowherb and Cleavers with a range of occasional species including Hogweed, Wild Angelica, and Broadleaved Doc. The river bank in this compartment supports a number of mature trees including willow and ash with occasional scrub including Hawthorn, Buckthorn and Sycamore saplings.
14	h3a6 Other Blackthorn scrub	Dominated by Blackthorn scrub rising to 5 m with a field layer including ivy and Ground-ivy. Additional woody species include Crack Willow, Hawthorn and occasional Hazel and Ash. This compartment includes patches of more open areas locally dominated by Common Nettle and Great Willowherb, with abundant Cleavers and occasional additional species including Meadowsweet, Broadleaved dock, Wild Angelica, Marsh thistle, Hogweed and Field Horsetail. At the time of the November field visits, material from the scarifying of compartment had been stockpiled in this area.
15	w 34 Ecologically valuable line of trees	A row of c.20 mature pollarded Crack Willows, some showing signs of having been pollarded in recent years, with a field layer below of tall forbs locally dominated by Common Nettle and Great Willowherb, with Meadowsweet locally abundant and frequent Creeping Thistle, Hogweed, Broadleaved dock and Cleavers. Additional species include occasional Marsh thistle, Common Teasel, Wild Angelica and Hemlock. This compartment includes scattered scrub including Blackthorn, Hawthorn and Dog rose. This area varies in width from 4 to 6 metres. This area also includes a number of ancient/veteran pollarded Ash with potential bat roost features.

Cpt No.	UKHab Habitat Type	Habitat Description
16	h3h Mixed scrub	Mixed scrub including willow, Blackthorn and Hawthorn within a mosaic of tall forbs including Common Nettle, Cleavers, Hogweed and Hemlock. Two ancient/veteran pollarded Ash trees with potential bat roost features occur in this compartment.
17	g3 10 16 Other neutral grassland dominated by tall forbs with occasional scattered scrub.	Dominated locally by Great Willowherb and Common Nettle and Bramble with frequent Cleavers and White Dead-nettle. Approximately 2 m wide.
18	h3j Willow scrub	Locally dominate by willows, including Crack Willow, Goat Willow and a hybrid willow. In more open areas tall forbs are locally dominated by Common Nettle with abundant Cleavers and Great Willowherb with occasional Hogweed and White Dead nettle.
19	g3 10 16 Other neutral grassland dominated by tall forbs with occasional scattered scrub.	Locally dominated by Common Nettle, Cleavers Great Willowherb and Bramble with occasional species including Common Comfrey, Broadleaved dock, Creeping Thistle, Hogweed, Meadowsweet, Hemlock and Smooth Sow-thistle. This compartment area varies in width from 2 To 6 metres. Occasional scrub includes willow and Hawthorn.
20	g3 10 16 Other neutral grassland dominated by tall forbs with occasional scattered scrub.	Dominated by tall herbs, principally Common Nettle and Cleavers with frequent Hogweed, Common Comfrey, Broadleaved Dock, Creeping Thistle and Great Willowherb. Occasional White Dead-nettle and Cock's-foot. Occasional scrub in this area includes Hawthorn, Buckthorn, Bramble and elder. The area varies in width from approximately 2 to 4 m.

A.3.3 Species

A.3.3.1 Notable trees

In addition to the habitats at Mill Field, it was found during the field survey that the site supports a number of notable mature, possibly in some cases veteran, trees. These include Pedunculate Oak and pollarded willows and Ash.

Because of their size and age, a number of these trees are developing characteristics that significantly enhance their ecological value, including cracks and tears and other wounds where branches have dropped, and dead or decaying wood. These features provide opportunities for other species to survive and thrive, such as nesting opportunities for birds, roosting opportunities for bats and food to a range of invertebrates and fungi associated with dead wood.

In addition to these older trees, three Black Poplar trees have been planted in the open field close to Campbell's Copse. They were planted in 1995 at the same time that Campbell's Copse was established.

A.3.3.2 Hemlock

Hemlock was found to be widespread around the perimeter of Mill field, predominantly in tall forb and scrub habitats.

A composting site for Hemlock was found at approximate NGR SP 34967 19978.

Appendix 2: Species Named in the Text

Common name	Scientific name
Ash	*Fraxinus excelsior*
Bird's-foot Trefoil	*Lotus corniculatus*
Bittersweet	*Solanum dulcamara*
Black poplar	*Populus nigra*
Blackthorn	*Prunus spinosa*
Bramble	*Rubus fruticosus agg*
Broadleaved Dock	*Rumex obtusifolius*
Buckthorn	*Rhamnus cathartica*
Burdock	*Arctium sp*
Cleavers	*Galium aparine*
Cock's-foot	*Dactylis glomerata*
Common Bent	*Agrostis capillaris*
Common Comfrey	*Symphytum officinale*
Common Dandelion	*Taraxacum officinale*
Common Ivy	*Hedera helix*
Common Knapweed	*Centaurea nigra*
Common Nettle	*Urtica dioica*
Common Sow-thistle	*Sonchus oleraceus*
Cow Parsley	*Anthriscus sylvestris*
Crack Willow	*Salix fragilis*
Creeping Bent	*Agrostis stolonifera*
Creeping Buttercup	*Ranunculus repens*
Creeping Thistle	*Cirsium arvense*
Cuckoo-flower	*Cardamine pratensis*
Devil's-bit Scabious	*Succisa pratensis*
Dog Rose	*Rosa canina*
Dogwood	*Cornus sanguinea*
Elder	*Sambucus nigra*
Field Horsetail	*Equisetum arvense*
Field Maple	*Acer campestre*
Field Scabious	*Knautia arvensis*
Ground-ivy	*Glechoma hederacea*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Hemlock	*Conium maculatum*
Hogweed	*Heracleum spondylium*
Holly	*Ilex aquifolium*
Hornbeam	*Carpinus betulus*
Great Burnet	*Sanguisorba officinalis*
Great Willowherb	*Epilobium hirsutum*
Greater Plantain	*Plantago major*
Guelder-rose	*Viburnum opulus*
Marsh Thistle	*Cirsium palustre*
Meadow Buttercup	*Ranunculus acris*
Meadowsweet	*Filipendula ulmaria*

Meadow vetchling	*Lathyrus pratensis*
Ox-eye Daisy	*Leucanthemum vulgare*
Perennial Rye-grass	*Lolium perenne*
Pedunculate oak	*Quercus robur*
Red fescue	*Festuca rubra*
Redshank	*Persicaria maculosa*
Spear Thistle	*Cirsium vulgare*
Small-leaved Lime	*Tilia cordata*
Smooth Sow-thistle	*Sonchus oleraceus*
Spindle	*Euonymous europaeus*
Sycamore	*Acer pseudoplatanus*
White Clover	*Trifolium repens*
Wayfaring Tree	*Viburnum lantana*
White Dead-nettle	*Lamium album*
Wild Cherry	*Prunus avium*
Wild Teasel	*Dipsacus fullonum*
Wild Angelica	*Angelica sylvestris*
Wild Service-tree	*Sorbus torminalis*
Wood Avens	*Geum urbanum*
Yellow-rattle	*Rhinanthus minor*
Yorkshire fog	*Holcus lanatus*

Appendix 3: Protocol for Hemlock Control at Mill field, Charlbury

The Context:

1. Hemlock is a member of the carrot family. It looks similar to Cow Parsley, being tall and with an umbel of white flowers, but with slender smooth green stems which are usually spotted or streaked with red, purple or pink. Hemlock is highly toxic to humans and animals and Hemlock poisoning occurs after ingesting any part of the plant. Both the growing and cut dried parts of the plant are poisonous, including seeds, flowers, leaves, roots etc. These contain toxic alkaloids which can be fatal to humans and animals, even in small amounts.

2. The symptoms of Hemlock poisoning may be displayed at any time from 30 minutes of ingestion up to 3 hours, depending on the extent of contact or the amount ingested. The toxins affect the nervous and respiratory systems and can lead to respiratory failure. Symptoms may include trembling, burning sensation in digestive tract, increased salivation, dilated pupils, muscle pain and weakness, decreased heart rate, loss of speech, convulsions and unconsciousness. **Seek medical attention immediately if you experience any symptoms or think you have ingested Hemlock.**

The Protocol

1. Measures to control and eradicate Hemlock at Mill Field, Charlbury will be overseen by a Responsible Person appointed by Charlbury Town Council, who must ensure that control is undertaken safely and effectively, in accordance with this protocol
2. Control will only be undertaken by experienced operators authorised in writing by Charlbury Town Council.
3. Hemlock control will be undertaken twice a year until eradication has been achieved. The first control period will be in early summer, before the Riverside Festival, when plants that germinated in the previous autumn or winter are large enough to pull and may be flowering, but before they set seed. The second control period will be in late summer, when plants which have germinated in the spring or summer of the current year are large enough to pull.
4. Hemlock will be controlled at Mill field by hand pulling or digging up plants, ensuring that all parts of the plant, including the tap root, are gathered. Herbicides will not be used for the control of Hemlock at Mill Field.
5. Digging may be done with a spade or border fork, or by a trowel or weeding device designed to dig out dandelions or similar plants by the tap root. Care must be taken to minimize soil disturbance as this can encourage germination of seeds at infested sites.
6. Appropriate personal protective clothing must be worn at all times when controlling Hemlock. This will include gloves, long sleeved shirts or jackets, long trousers, socks and shoes or boots, to protect the skin from the sap. If larger quantities of Hemlock (one small rubble sack full or more) are to be cleared at any one time, protective eyewear and a face mask (recommended FFP2 or above) must be worn, to prevent exposure of eyes and lungs to any sap droplets.
7. All collected plant material must be bagged for transportation in rubble sacks or similar. Collected material must be moved to a designated site on Mill Field for composting. The designated site should be clearly labelled, ideally secure from disturbance or interference, and at low risk of being swept away in flooding.
8. Hemlock plants must not be burned. This includes not putting Hemlock plants onto fires created for other purposes, e.g. the disposal of cut scrub or brash. This will prevent any accidental inhalation of toxic fumes.

Appendix 4: 'Suggestions' for the Management of Mill Field made by Charlbury Town Council Land and Nature Group 26 01 2022.

a. Maintain the waterside boundaries as now by leaving 3m wide strips of vegetation uncut all year round to provide safe habitat for wildlife.

b. Take an annual hay cut from Mid Field prior to the Riverside Festival in July and then leave it uncut, just like the field by Centenary Woodland.

c. Mow a wide path through both fields the width of two tractor cuts to provide easy routes for people to pass each other and to avoid specific paths being worn.

d. Restore the traditional meadow flora in Mid Field by spreading chopped up green hay collected from local meadows together with fresh yellow rattle seed, this would need to happen in July prior to the Riverside festival and the crowds of people would help trample the seeds into the soil (like the traditional herd of cows). This would considerably increase the biodiversity and wildlife interest making the site much more interesting to both people and wildlife.

e. Increase the biodiversity of Upper Field by leaving the grass in the bend of the river to grow uncut, allowing a tussocky grassland to develop, the Meadowsweet to flower, and seedling shrubs to grow – this would provide a much more varied habitat for small mammals and also invertebrates to overwinter and complete their life cycles. To prevent encroachment of waterside vegetation into this grassland a perimeter path the width of one tractor cut could be mown around the longer vegetation which would provide an interesting walk nearer the river as an alternative to the path going straight through the field.

4. **Mill Field Picnic Area and Lane – Cotswold Landscaping**. As well as Lower Field, the contract includes the small patch of grass at the end of Mill Lane by the bridge next to the old millstone set in the wall. Lower Field is quite a large area, *<u>suggest</u> dividing it into two - the lower third nearest the picnic benches and bridge continuing to be closely mown using the small situpon mower and the remaining two-thirds to be included in the management as for Mid Field by a different contractor*. The flora in the larger area could then be restored as per Mid Field with a tractor mown path around it to prevent encroachment of waterside vegetation into the grassland; this perimeter path around the longer vegetation would provide a short circular walk around this part of the field making it much more varied and interesting than it is now.

Appendix 5: Provisional Framework for Reporting Metrics and Key Performance Indicators

Location or feature	Objective No.	Activity	Metric	Key Performance Indicator	Reporting	Notes
Cpts 1 and 2	1. Maintain Cpts 1 and 2 as g4 19 108 Modified grassland, coastal and floodplain grazing marsh, frequently mown	Grass cutting	Frequency of cutting.	Monthly cuts between March and October each year.	Report outcome annually.	
Cpt 3 2: Increase botanical diversity of Cpt 2 to the point where the sward meets the UKHab definition of g3c Other neutral grassland.		Grass cutting	Frequency of cutting. Removal of arisings.	Cut in April, July and September each year. Arisings removed after each cut.	Report outcome annually	
		Sowing Yellow-rattle seeds.	Number of 0.5mx0.5m patches where Yellow-rattle planted in autumn 2025 and 2026.	Flowering spikes of Yellow-rattle found on site in May 2025, May 2026 and May 2027.	Report outcome annually in 2025, 2026 and 2027. T.b.a. beyond 2027.	If no Yellow-rattle spikes found by May 2027, review approach and potentially abandon further attempts to establish.
		Planting plugs of meadow species	Number of plugs planted in autumn 2025, 2026 and 2027	Number of plants of each planted species established and growing by May of following year.	Report outcome annually in 2025, 2026 and 2027 T.b.a. beyond 2027. Full habitat survey using UKHab classification to be completed in 2029.	Review progress in 2027 and agree next steps.
Cpts 4, 8, 13, 17, 19 and 20:	3 Mainatain as g3c 16 Other neutral grassland dominated by tall forbs, covering current extent and in current condition.	No intervention	Total area and condition of habitat present on site in 2029	Total area and condition of habitat present on site in 2029	Report outcome in 2029.	

Location or feature	Objective No.	Activity	Metric	Key Performance Indicator	Reporting	Notes
Cpts 5, 6, 7, 10, 11, 12, 14, 16, and 18	4. Maintain as current habitats h3a6 Other Blackthorn scrub and h3h Mixed scrub, covering current extent. Diversify age structure by rotational cutting of c10% by area each year.	Cut 10% by area (c.0.06 ha) each year.	Area of scrub cut each year.	Total area of this habitat present on site in 2029 to be c.0.66 ha. Structural diversity of this habitat in 2029	Report outcome annually.	
Cpt 9	5. Continue to develop as w1g Other broadleaved woodland plantation, to become mature woodland with dense coppice and scrub understory around the perimeter.	Scrub cutting around northern perimeter.	Area of scrub cut.	Area of scrub cut before 2029.	Report outcome annually (inc. no action in reporting year).	
Compartment 15	6. Maintain as w 34 Line of ecologically valuable trees covering current extent and condition	Pollarding Crack Willows	Number of trees pollarded each year.	2 trees pollarded each year.	Report outcome annually.	
Notable trees	7. Maintain as key ecological and landscape features through appropriate protection and management, including pollarding or tree surgery as required.	To be determined following creation of Notable Tree Inventory in 2025.	To be determined following creation of Notable Tree Inventory in 2025.	To be determined following creation of Notable Tree Inventory in 2025.	To be determined following creation of Notable Tree Inventory in 2025.	
Hemlock	8. Eradicate Hemlock from the site by 2030.	Manual pulling of Hemlock in early summer and autumn.	Quantity of Hemlock pulled in each session	Reduced quantity of Hemlock pulled in each control session. No Hemlock on site by December 2029.	Report outcome annually.	