

WEST PARK MEADOW LOCAL NATURE RESERVE

MANAGEMENT PLAN 2015 - 2024

JAMES FRITH MCIEEM

Ecological Consultant

1 Ravensnest Cottages Ashover Chesterfield Derbyshire S45 0JP
E-mail: ravensnest@talktalk.net Tel: (01246) 591028

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Stage 1: Description

1.1 General Information

1.1.1 Location

West Park Meadow LNR is in Spondon on the eastern side of the Derby, and lies between West Park Academy's playing fields to the east and south, Acorn Way to the west and farmland to the north. The grid reference is SK 393 362.

1.1.2 Summary Description

The approximately 3.8 hectare (9.4 acre) site lies at a height of around 70 metres above sea level. It consists of grassland, woodland, scrub, hedges and a pond. It is bounded by arable agricultural land to the north, with the school playing fields of West Park Academy immediately adjacent on the east and south sides and a road forming the western boundary. The underlying geology is of soft red clays of the Mercia Mudstone Group (formerly known as Keuper Marl), a sequence of interbedded mudstones, siltstones and sandstones of Triassic period. The soil pH is neutral at around 6.5 - 7. A pond first appearing on an 1825 map still remains within the site, albeit re-constructed.

Ridge and furrow grassland on part of the site indicates its history as fields pre-dating the Enclosures Act of the mid-eighteenth century. Post-enclosure compartments 1, 2 and 3 continued to be farmed whereas compartments 4 to 7 became part of the parkland.

1.1.3 Land Tenure

Owner of the whole of the site: Derby City Council, The Council House, Corporation Street, Derby, DE1 2XJ. There are currently no tenancy agreements and no common rights.

1.1.4 Map Coverage

1:50,000 Landranger Map Sheet 128

1:25,000 Pathfinder Map Sheet 811

1:25,000 Explorer Map Sheet 259

1:10,000 Sheets SK33NE

Geological Survey:

Geological Map of Derbyshire 1973 1:100,000

Geological Survey of Great Britain (England and Wales) 1973 1:50,000

Historical maps

1963 1:25,000 Spondon area

1880 First edition of the OS Map

1825 Bromley's Survey Map and Terrier

1789 Enclosures Map

1.2 Environmental Information

1.2.1 Biological

1.2.1.1. Habitat Description

The main habitat types are: scrub, grassland; some on ridge-and-furrow; woodland, a pond and hedges.

These are shown on Map 1: Compartments and Existing Habitats. More detailed descriptions of each habitat can be found in the Prescriptions section in Stage 3 under the relevant Compartment heading.

1.2.1.2 Fauna

The site is known to support over 80 species of moth, some 19 species of aquatic invertebrates and around 11 species of butterfly. Records of 32 bird species include chiffchaff, blackcap, song thrush, mallard, dunnock, starling, house sparrow, blackbird and tawny owl.

In 2010, Derbyshire Wildlife Trust carried out a survey of the pond, which as well as the invertebrates, was found to support smooth newt, common frog, common toad and three-spined stickleback.

1.2.2 Cultural

1.2.2.1 Land Use

The site has 4 formal access points and a paved cycle path linking Acorn Way and West Road, as well as several more informal access routes and paths, mown, surfaced or otherwise. It is currently used for walking, cycling and as an informal recreation area, including dog exercising, by local residents.

1.2.2.2 Public Interest

The public have free access to the site at all times and it is well-used by local people. There are both maintained and informal paths throughout. A Friends group, known as Spondon Community Association (West Park Meadows Management Group Working Party) works with local people in the management of the site. West Park Community Academy immediately adjacent to the site also make use of the Reserve as an educational resource. Springfield Primary School has supported a number of plug-planting events.

Stage 2: Evaluation and Objectives

2.1 Conservation status of the site

The site has the statutory designation as a Local Nature Reserve, one of a small number within Derbyshire and was designated in November 1998. This status means that it is recognised as an area with wildlife features that are of special interest locally and has local people involved in its wildlife management. It is also a Wildlife Site (ref DE045) on the Wildlife Sites Register, a non-statutory designation but one that offers some protection through the planning process. The site forms part of the 55 hectare 'Green Wedge' between Spondon and Chaddesden and as such is protected by policies in the Derby City Local Plan.

2.2 Evaluation of the features

The site covers an area of 3.8 hectares and has a variety of habitats within it. The habitats on site include a number of UK BAP Priority Habitats, namely:

- Lowland Mixed Deciduous Woodland
- Standing open water - pond
- Hedgerows
- Lowland Meadows

The appendix of The Greenprint for Derby City lists UK or County BAP priority species found in Derby for protection and enhancement. From these it identifies 10 species which have specific needs for targeted action, some of which have been chosen because they are popular with local people or particularly characteristic of Derby. Species from that list found at West Park Meadows are song thrush and bluebell.

The site is valuable for birds with a number of locally and nationally important species having been recorded: Song thrush, dunnock, starling and house sparrow are UK BAP priority species due to recent decline in numbers. Other species on the Birds of Conservation Concern (BoCC) 2002-2007 list recorded on the site are: skylark (red list); green woodpecker, swallow and kestrel (amber list).

The site supports at least 11 species of butterfly and around 85 species of moth. The pond supports a good range of aquatic plant, invertebrate and amphibian species. The grassland, although currently botanically species-poor in parts, could be seen in terms of its potential for habitat enhancement.

2.3 Management Objectives

2.3.1 Objective: To maintain the existing habitats in favourable conservation status

Grassland The goal for the grassland is for its long term protection as grassland with no loss of area. This will require regular management. Grassland is found in Compartments 2, 3 and 4. All of these should be left

un-mown through spring and summer then mown once in late summer every year (half the area every year for Compartment 3) and the cuttings left to dry, ideally for a minimum of 48 hours, to enable the plants to flower and set seed each year and for the seeds to drop. All the cut material should then be removed as soon as possible. This can be considered as a kind of simulated hay meadow management, as the crop cannot be used, but the management allows maintenance of the grassland with no degradation or loss of species. It also gives cover for any small mammals for as long as possible and controls invasive and competitive species such as bramble, nettle and scrub saplings which would otherwise colonise. A strip of at least 2 metres in width around each mown area should be left un-mown - frequently this forms a strip between a path and the adjacent hedge or scrub habitat.

Tall Rank Grassland/Tall herb is found at the edges of all the mown areas forming a valuable tall cover area against the scrub, woodland and hedges. The objective is to maintain this habitat as tall grasses and tall flowering plants, free of scrub and bramble. Ideally the scrub clearance should be by hand, and only if this proves too much of a task should the tall grassland be mown to keep it scrub-free. The value to wildlife in the tall grassy edges is the cover for birds and mammals at all times. The presence of tall grassland will also provide nectar to benefit invertebrates, particularly butterflies, including the speckled wood butterfly, as well as providing shelter for small mammals.

Woodland The objective is to maintain the woodland without loss of area or number of trees. The importance in wooded Compartments 5 and 6 is the canopy of mature English oaks, elm and lime and the ground flora containing bluebells. The main intention is to retain the canopy cover of these native species in the long term by providing some appropriate young trees to become canopy trees when the existing ones die. Another important objective for the woodland areas is to retain the ground flora with a high proportion of native bluebell.

Pond The aspiration for the pond is to maintain it as an amphibian breeding habitat with a sufficient area of clean, un-polluted open water free of algae and emergent or floating aquatic vegetation, debris, litter and rotting plant material. There should be some unshaded banks, some open shallow water and some muddy margin. The populations of common frog, smooth newt, common toad, stickleback and breeding moorhen should be maintained. The area of common water-crowfoot cover should be maintained as should a band of emergent vegetation at the pond margins, particularly the northern bank.

The surrounding habitats should be maintained so as not to encroach or excessively shade out the pond by managing trees, scrub and bramble where necessary.

Scrub The goal for the scrub is to maintain the current cover consisting of native species. Ideally it should be as a variable-aged resource with flowers, fruit and some dead wood, while letting some light through to the ground. There should be no invasive or non-native species present. The scrub, particularly as it is in conjunction with tussocky grassland is an important

habitat, providing food and shelter for a variety of bird, small mammal and invertebrate species, as well as a breeding site for bird species such as blackcap.

Hedges The objective here, as with the scrub, is to manage the hedges to provide shelter and nest sites, flowers and fruit, and have a variety of heights, ages and a good mix of native species. Some of the hedges should be trimmed in rotation, others left to form tall shrubs important to species like the bullfinch. Buffer strips with tall grassland and tall herb alongside provides foraging habitat.

2.3.2 Objective: Capital Projects for Habitat Enhancement

The aspiration is to enhance the grassland areas to be more attractive and species-rich in native nectar-providing wildflowers. There is an opportunity for habitat enhancement by re-seeding into the currently species-poor areas of grassland and plug-planting into other areas. The re-seeding potential is greatest in Compartment 2 and part of Compartment 4, while other parts of Compartment 4 and Compartment 3 could be enhanced by plug-planting or planting larger pot-grown plants.

2.3.3 Objective: To encourage educational and responsible public use of the site.

The site's varied range of habitats and close proximity to two schools make it an ideal location for the involvement of schoolchildren in educational work. The more involved that children and students are in the active management and use of the site, the better the conservation message can be delivered. It may be possible for university students to access the University of Derby Research for Learning and Teaching Fund to support any research projects done on the site.

The site is also well used by the public and it would be valuable to use every opportunity to promote an understanding of the flora and fauna. Part of this objective should be to keep the public informed about events, management practices, volunteering opportunities and the wildlife on site. An important aspect of the responsible use objective is to maintain the site's infrastructure, including access, collecting litter and emptying dog waste bins regularly so that potential abuses do not become acceptable through familiarity. Evidence of vandalism and any accidental damage should be mended as soon as possible to demonstrate the caring attitude of the site managers and the majority of users of the site. Updated interpretive material on the display boards at access points and within the site would be useful to explain the value of the site. Derbyshire Mind's Enjoying Derby project has a programme of walks through Local Nature Reserves including West Park Meadow, and similar events would increase awareness of the reserve.

2.3.4 Objective: To carry out further survey, monitor key species and assess habitat condition

There are some gaps in our knowledge of the populations of a number of groups. Apart from plant, butterfly and moth records, recording of other groups has been patchy in the past, and key species, including bats roosting on the reserve and reptiles, may be being overlooked. Bats heard and/or seen

in the past include pipistrelle, noctule, soprano pipistrelle and serotine, but it is not known if these were roosting on site. These gaps need to be addressed during the 10 years of the plan. This may provide an opportunity for students at The University of Derby to undertake species recording and monitoring as part of their post-graduate studies.

It is essential to carry out regular monitoring of habitat condition to inform future management. The effectiveness of any management work carried out as part of the Management Plan should be monitored and reviewed as necessary.

It is also important to carry out regular monitoring of species to adapt future management. Species in particular need of monitoring are: Spanish bluebells in Compartment 6, adder's-tongue fern in Compartment 3 and all the pond fauna.

2.4 Description of Optimal State for the site

The ideal condition of West Park Meadows is a long term continuation of the valuable mosaic of habitats already present, with each habitat maintained in the best condition for wildlife and for public enjoyment. The ideal management is shown on Map 2 - Management Operations.

All the grasslands would be maintained in area and enhanced with nectar-rich species for butterflies and with attractive flowering species for public enjoyment. The currently species-poor grassland in Compartment 2 and part of Compartment 4 would revert by enhancement to attractive flower-rich meadows and be managed as traditional late cut meadows in future.

Compartment 3 grassland would have more structural variety and provide good cover for mammals and invertebrates. The existing tall rank grassland at the grassland edges would be maintained with the same area as current with no encroachment of scrub.

The woodland Compartments 5 and 6 would have a canopy of native species including elm, with good natural regeneration to replace them. The oaks would once again support a population of purple hairstreak butterflies. The ground flora would have a good cover with a high proportion of the native bluebell. Ivy in the woods and scrub areas having been allowed to increase would provide an excellent habitat for both birds and bats, an early source of berries when other food is in short supply and a source of nectar in autumn and winter.

The scrub and hedgerows would have wide tall herb/ tall grassy margins and would contain native species of varying ages, providing good berry and nut production, some protection for nesting birds and an all-year-round habitat with flowers from early spring through to late summer and with some fruit through the winter.

Stage 3: Prescription

3.1 Project register and prescription

3.1.1. Habitat Management

Compartment 1

Description

This is an area of mature (50 or 60 years old) hawthorn woodland/scrub with a low dense canopy and a sparse and patchy ground flora. Hawthorn-dominated, there are also saplings of yew, holly, sycamore, cherry, elder, ash and Norway maple. These saplings will eventually develop into trees that will overtop the hawthorn. The ground flora is dominated by ivy and also has bramble, wood avens, wood dock, male fern and hogweed with cock's-foot and false oat-grass at the edges. There are trampled informal pathways throughout the area and an overgrown public right of way running along the eastern boundary.

Compartment Objectives:

- Mostly treat as a non-intervention area.
- Maintain as 100% native tree and scrub cover with abundant ivy.
- Avoid future dominance of sycamore and Norway maple.
- Keep free of litter.

Prescriptions:

- In September when identification of the trees is easy, remove all the sycamore and Norway maple saplings and young trees. By removing these species, the trees that will overtop the hawthorn and characterise the woodland in future will be the native ones, mostly ash and cherry.
- Collect litter regularly.

Compartment 2

Description: This is a small, roughly triangular-shaped area consisting of species-poor grassland with a grassy, close-mown perimeter path. Before 1960 this compartment was farmland and from about 1960 to 2000 was closely mown. Grass species include meadow foxtail, cock's-foot, false oat grass and perennial ryegrass, with occasional forbs including meadow buttercup, cow parsley, common mouse-ear, meadow crane's-bill and dandelion.

Compartment Objectives:

- Maintain the whole of this area as a grassland.
- Enhance the flower-rich nature of the grassland through management by appropriate mowing and sowing.

Prescriptions:

- In the first year, within the whole of the area inside the mown perimeter paths, in late autumn heavily scarify with a tractor-mounted or pedestrian power-harrow to skim the surface and leave 50% bare ground.
- Purchase suitable wildflower and grass mix and broadcast the seed, bulked up with a suitable inert carrier such as sawdust or sand, to make it easier to see it when sown.
- A suitable seed mix from a reputable local company is the N1 General Purpose Meadow Mixture from Naturescape, which contains 15 wildflower species and 6 species of grass in the proportion of 80% grasses to 20% wildflowers. The sowing rate is 50 kilos to the hectare. It would be advisable to measure the exact area after scarifying, so the correct amount of seed can be purchased. The sowing can be done in autumn or spring, and should only need to be done once.
- Maintain the whole of the area of grassland inside and outside the paths by a single annual mowing in late August or September and collecting and removing the cuttings so they are not adding to fertility or physically suppressing growth. This needs to be done every year. Leave an un-mown strip against the hedges.

Compartment 3

Description: This is an area of species-poor grassland, with taller, coarser vegetation than the adjacent Compartment 4 giving it less of a meadow appearance. Grasses include mostly tall coarse species including couch, cock's-foot, false oat-grass and Yorkshire-fog with herbs including frequent cow parsley, hogweed and white clover, locally frequent rosebay willowherb, field bindweed and creeping thistle and occasional bramble, smooth tare, broad-leaved dock and meadow vetchling. Here the soil structure looks to be slightly different to the rest of the site, being wetter with a more clayey nature. There is scattered hawthorn scrub and saplings of sycamore and ash. Some planting of wildflower seeds suitable for clay soils were sown in the recent past. Adder's-tongue fern was noted in one location in this area in the past. While not a species-rich area, it does have a value as habitat for invertebrates and small mammals.

Compartment Objectives:

- Maintain the current extent of the open grassland.
- Maintain as open grassland by controlling tree, scrub and bramble colonisation and limiting any increase in shading.
- The grass is managed to maximise structural variety so that not all of it is cut in any one year.
- Enhance the species composition of the area by planting tall species of wildflowers suitable for damp conditions.
- Maintain population of adder's-tongue fern
- Maintain access paths.

Prescriptions

- In the first winter, remove all the saplings and any young trees from the grassland area. The individual mature hawthorn shrubs, the cherry trees and all the rose should be left, but other young trees should be removed before they begin to over-shade the area. This work should be done in late autumn and early winter, and is a suitable task for a volunteer group. If the mowing proves to be not enough to control saplings and bramble from encroaching in future years, repeat the removal work.
- Monitor population of adder's-tongue fern.
- In subsequent years, mow just half of the area, and collect and remove the cuttings. In Year 1, mow the eastern side, in Year 2 mow the western side and time this to coincide with the hedge trimming in that part, so the hedge work and the mowing are done in the same year.
- To enhance the species diversity, plant pot-grown plants suitable for damp conditions that can hold their own in tall coarse vegetation. Suitable species include meadowsweet, wild angelica and great burnet.
- Mow all grassy paths regularly in summer as at present.

Compartment 4

Description This is an area of grassland, the northern part between the paved cycle path and woodland Compartment 5 lying on remnants of ridge-and-furrow land. Grass species in this part include false oat-grass, cock's-foot and Yorkshire-fog with forbs including occasional meadow crane's-bill, common knapweed, white clover and bird's-foot trefoil. There are localised patches of cowslip, great burnet, hay rattle and lady's bedstraw. There is a 1.5 to 2-metre wide mown grassy strip against the paved cycle path, as well as other mown and informal paths, mostly around the edges of the area. The southern, larger portion of this area between the pond and woodland Compartment 5 is rather more species-rich, with a greater proportion of fine grasses including common bent, and a greater proportion of the forbs than found in the northern part, including more frequent knapweed and meadow crane's-bill, as well as additional species including common cat's-ear, agrimony and smooth tare. The boundaries of Compartment 4 against scrub, woodland and hedges comprises an un-mown strip of tall rank grassland and tall herb with hogweed and tufted vetch, rosebay willowherb in patches and in some places colonising bramble and scrub.

Compartment Objectives:

- To manage with no loss of grassland area and no loss of grassland species.
- To maintain the flower-rich status of the grassland through management by appropriate mowing.
- To enhance the species-richness by seed sowing the less flower-rich areas (see Map 2 - Management Operations) and planting wildflower plants and plugs in areas not re-seeded.
- To establish a tall grass margin to all boundary hedgerows and copses as foraging habitat for birds and small mammals.

Prescriptions:

- Manage by a single annual mowing in late August or early September and collect and remove the cuttings so they are not adding to fertility or physically suppressing plant growth. Leave at least 2 metres of unmown margins by all the hedges, woodland edges and scrub.
- Note the locations of cowslips and other plants of interest. In the least species-rich part of Compartment 4 (see Map 2) carry out the following works:
 - Prepare the chosen areas for the introduction of seed by heavily scarifying with a tractor-mounted or pedestrian power-harrow to skim the surface, break up the vegetation and leave around 50% bare ground. Late autumn is the best time to carry out the work as it creates gaps which remain open to seed germination from autumn through to spring.
 - By one of the methods described below, add plant species to the field:

The cheaper method is to source some local species-rich hay and strew this on the field after mowing and scarifying. Choose a sunny day in autumn and ensure a good spread of hay across the area prepared. A spreading rate of about 50 small bales to the hectare should be used. The bales should be scattered about and turned by machine at least once to ensure good seed drop. Collect and dispose of hay after use. Mow once at the end of the following March and remove the cuttings to reduce weeds and encourage the sward to tiller out. Leave until August/September, then manage the field by a single late hay cut as you would with an established grassland as described above. In the second and subsequent summers mimic traditional late-cut hay meadow management.

A more expensive but less labour-intensive method is to buy a wildflower seed mix including the above species from a reputable supplier. Although more costly, this method avoids the need to source, spread, turn, collect and remove the hay. It also avoids adding undesirable species such as docks and thistles. Prepare the ground in the same way as above and hand-scatter the seed after the field is mown and scarified, bulked up with an inert carrier such as coloured sand or sawdust, for ease of visibility while scattering. Choose a dry sunny day in autumn or spring so the seed germinates and does not rot.

There are several propriety seed mixes that are suitable, such as the N1F General Purpose Mix Flowers from Naturescape, which contains 15 wildflower species. This is a wildflower-only mix for sowing into existing grassland. The recommended rate of sowing is 15kg/hectare, although lower rates can also be successful. The cost is £70/kilo. The exact areas should be measured following the scarifying treatment, so the right amount of seed can be purchased.

- Plant wildflower plugs in order to enrich the sward in species-poor but non-productive areas of Compartment 4 that are not to be re-seeded (see Map 2). Maintain these areas in future years by mowing as above. Suitable species include:
 - Ox-eye Daisy (*Leucanthemum vulgare*)
 - Cowslip (*Primula veris*)
 - Primrose (*Primula vulgaris*) - plant at edges near scrub.
 - Field scabious (*Knautia arvensis*)
 - Lady's Bedstraw (*Galium verum*)
 - Rough Hawkbit (*Leontodon hispidus*)
 - Tufted vetch (*Vicia cracca*)
- To establish a tall grass perimeter with no encroachment of scrub leave at least a 2 metre margin unmown all round the perimeter of the area against the hedges, woodland and scrub. Using hand tools, clear the scrub and bramble from this area each year in the autumn or winter. Only if this proves insufficient to control the encroachment of scrub and bramble or the work proves too time-consuming for doing by hand should a tractor-mounted flail be used to do the cutting.

Compartment 5 (known as 'Top Copse')

Description: Part of the Georgian Spondon Field House's parkland and present by 1825, this small copse of mature woodland consists of a canopy of English oak, with an understorey of cherry, English elm, wych elm, ash, field maple, hazel and elder. Some of the elms are dying of Dutch elm disease. A few elms of a disease-resistant variety *Ulmus japonica*, 'Sapporo autumn gold' have been planted amongst brambles at the woodland edge. There is very little natural regeneration of native species within the copse, but for 2 or 3 oak saplings. The copse has a sparse, trampled ground flora of ivy, wood avens, bluebell, cow parsley, wood dock and coltsfoot.

Compartment Objectives:

- Maintain the current area of woodland.
- Maintain the cover of oak and elm trees in the canopy and understorey with no increase in invasive or non-native species.
- Retain at least one example of every tree species currently present.
- Maintain the cover of ground flora including bluebells.
- Protect the existing disease-resistant young elm trees
- Maintain some dead standing and lying wood.

Prescriptions:

- Plant 6 young English oaks to provide the next generation of canopy trees. Plant as 2-metre standards. Maintain by clearing around the base regularly until established.
- Plant approximately 6 of the disease-resistant elms: *Ulmus japonica*, 'sapporo autumn gold' within the woodland where any gaps in the canopy open up within the next 10 years, perhaps through loss of elms by disease. Maintain the young trees by

clearing the vegetation from around their base regularly until well-established.

- Twice each summer clear all vegetation, including brambles, from around the base of each recently-planted young elm and English oak tree for a diameter of 2 metres around each trunk. Work to be done by hand using tools such as lopping shears.
- Position permanent wooden marker posts on the boundary of Compartment 5 woodland and Compartment 4 meadow to delineate the extent of the woodland to help manage as at current area with no loss or encroachment into the grassland.
- Leave all standing dead wood (if not considered a safety hazard) and all lying dead wood in place.
- Create log piles for any brashing, and branches felled for safety reasons. Tie down to prevent unauthorised removal.

Compartment 6

Description: This woodland also dates back to the original Georgian parkland once here, and is now an area of mature English oak-dominated woodland with some lime and ash and one mature sycamore. The understorey includes hawthorn, cherry, elm, sycamore and ash, but no regenerating oak. The ground flora is of cow parsley, bramble, bluebell (both the native English species and Spanish bluebell), wood avens, ivy, lesser celandine, red campion, and creeping soft grass.

Compartment Objectives:

- Maintain the current area of woodland.
- Retain at least one example of every tree species present as climate change proofing - we do not yet know which species will thrive in future conditions.
- Prevent an increase in the cover of invasive species such as sycamore.
- Maintain the cover of English oak and lime trees in the canopy.
- Maintain the cover of ground flora including English bluebells.
- Ensure future canopy cover of English oak.
- Maintain some dead standing and lying wood.
- Increase proportion of native English bluebells to the introduced Spanish bluebells.

Prescriptions:

- Carry out heavy thinning of the sycamore saplings, keeping just 1 or 2 to keep the full spectrum of species.
- Create some dead standing timber by using ring-barking as a tool to thin some of the sycamores.
- Plant 6 English oak saplings to compensate for lack of natural regeneration of this species and to ensure their future presence in the canopy. Plant 2-metre tall standards and maintain them by clearing around the base regularly until established, replacing losses if necessary.

- Leave all standing dead wood (if not considered a safety hazard) and all lying dead wood in place to rot down.
- Plant native bluebell bulbs.
- No removal of Spanish bluebells is considered necessary currently, but monitor the cover of Spanish bluebells for possible future control in case of an increase.

Compartment 7

Description

Created as a feature of the Georgian parkland and restored in the 1990s, the pond is over 1000 square metres in area. It lies in the south-east corner of the reserve with surrounding habitats consists of broadleaved woodland, scrub, bramble and grassland, much of which is useful amphibian terrestrial habitat. The pond base is mostly clay/silt. There are several species of emergent, floating-leaved and submerged plants, 3 of these being considered uncommon locally: greater spearwort, common water-crowfoot and rigid hornwort. Floating-leaved species also include water starwort, white water-lily and common duckweed. Emergent vegetation consisting of reed sweet-grass with yellow iris and water forget-me-not forms a broad band around the pond margins, especially on the northern bank. Fringing vegetation consists of great willowherb, wood dock, creeping thistle and grasses including couch. The pond supports populations of common frog, smooth newt, common toad, three-spined stickleback and 19 taxa of invertebrates. Wildfowl include a pair of moorhen and a pair of mallard that regularly breed there, nesting amongst the iris and reed sweet-grass. The PSYM score (a standard method comparing ecological quality compared to ponds nationally) is 72%, i.e. 'fair' ecological condition making it one of the better scoring of Derby's city ponds.

Compartment Objectives:

- Maintain water levels with no loss of area of open water, reduction in water quality, ecological condition or number of plant species present.
- Maintain the populations of common frog, smooth newt, common toad, three-spined stickleback, invertebrates and wildfowl including moorhen.
- Maintain populations of locally uncommon plant species - greater spearwort, common water-crowfoot and rigid hornwort.
- Prevent anaerobic conditions, nutrient build-up, algal bloom and loss of light to the pond by removal of some of the submerged plants as well as decaying plant material.
- Prevent litter and discarded items becoming a danger to wildlife and unsightly by removal of rubbish several times a year.
- Prevent shading and encroachment by surrounding vegetation.

Prescriptions:

- In autumn or early winter remove short sections of the marginal vegetation on rotation, mostly the reed sweet-grass and yellow iris to keep the emergent plants in a band of about 4 metres.

- In autumn or early winter, remove up to a third of the current amount of the submerged species. Be sure to maintain populations of the locally uncommon plant species whilst doing so.
- All plant material removed to be stacked on the margins for 48 hours, then taken off site.
- Remove all litter, debris etc. from pond several times a year, working from a dingy if necessary, work to be done between August and December to avoid disturbing any breeding or active amphibians.
- Monitor the overflow chamber/silt trap for trapped amphibians regularly, especially during the spring breeding period.
- Maintain or mend if necessary the rails around the overflow chamber.
- Manage bramble, scrub and cut back trees where necessary to prevent them encroaching in to the pond or shading it out, with the work being carried out in autumn or early winter.
- Annual PSYM (Predictive System for Multimetrics) surveys of the pond should be carried out during June, July or August, to provide updated information to enable monitoring of the effectiveness of management and review it as necessary.

Hedgerows

Description: **H1** lies alongside the paved cycle path and forms the site's northern boundary against adjacent farmland. It is now a tall, dense, trimmed barrier of mostly hawthorn, but also contains elm, ash, elder, ivy, honeysuckle and hazel. There are a few small fenced gaps and for part of the length there is an internal mesh fence. The very narrow strip of ground flora against the paved cycle path consists of tall herbs such as cow parsley, nettle, creeping thistle and white dead nettle, and grasses including false oat-grass and Yorkshire fog. The ground flora looks to have been both mown and sprayed during the summer of 2015.

H2 forms the boundary between Compartments 3 and 4. It comprises tall, currently unmanaged hawthorn with some elder, elm, bramble and mature oaks. The ground flora is tall and unmanaged, consisting of a broad strip up to the mown path of Compartment 4 on one side and grading into the scrub woodland of Compartment 1 on the other side. It consists of cock's-foot, couch, false oat-grass, creeping thistle, dense stands of rosebay willowherb; bramble and nettle.

H3 is the western boundary of the site against Acorn Way. Approximately 20 years old, it is a dense, trimmed mix of hawthorn, rose, guelder rose, hazel, field maple and ash with cherry trees. There is a mown grassy path alongside it, with a 1 to 2-metre wide strip of tall herb and tall grasses between hedge and path. This comprises cow parsley, field bindweed, hedge bindweed, false oat-grass, Yorkshire fog, couch, hogweed, nettle, bramble and meadow vetchling. This hedge has been managed by laying in the past and is currently trimmed every year.

H4 is in Compartment 2 and forms the site's southern boundary against the school playing field. It consists of a dense hawthorn with elder, rose, bramble, ash, elm, blackthorn and field maple, with standards of elm and field maple. There is a strip of grassland/tall herb alongside the hedge, then a mown grassy path. The western half of the hedge looks to be older than the eastern end. The grassland/tall herb alongside comprises cow parsley, blackthorn suckers, meadow buttercup, ribwort plantain, cock's-foot, false oat-grass and rough meadow grass.

H5 is a remnant, very gappy hedge with mature trees and a dry ditch, forming the southern boundary of the site against the thin strip of Compartment 6 woodland. Species here are hawthorn, oak, sycamore, ash, elder, bramble and rose. The ground flora is mostly nettle and bramble with some bluebell, creeping soft-grass and cow parsley.

H6 is the eastern boundary of the site, comprising tall, unmanaged hawthorn and blackthorn with rowan, rose and sycamore. The blackthorn forms dense stands in places and is suckering out into the grassland of Compartment 4. The hedge lies alongside a grassy mown path, and between the hedge and the path the vegetation comprises a broad strip of abundant creeping thistle with couch, perennial ryegrass, field bindweed, bramble, blackthorn (seedlings and saplings from suckers) and cleavers.

Hedge Objectives:

- All hedges should be managed to provide shelter and nest sites for birds, and be able to produce flowers and fruit, with a variety of heights, ages and a good mixture of native species. Some of the hedges should therefore be trimmed in rotation; others left unmanaged to form tall dense hedgerows or a line of shrubs with plenty of fruit in autumn and winter. Dense cover is important to species like the blackcap, lesser whitethroat and bullfinch. Some structural variety could usefully be added by not trimming all of a hedge in any one year. It is not a top priority to gap up hedges that have just a few gaps. It is not important for stock-proofing the site and does not compromise the ecological value to have a few small gaps.
- Buffer strips with tussocky grassland alongside the hedge provides foraging habitat for birds and small mammals.

Prescriptions:

- Trimming: All hedges currently trimmed - **H1**, **H3** and **H4** - should continue to be trimmed but only one half of each hedge should be done in any given year, and selected 'standard' trees growing through the hedge should be left. Work to be carried out in late winter. **H4** could be laid rather than kept trimmed if desired.
- The remaining hedges - **H2**, **H5** and **H6** should be left as tall wide hedges to provide shelter and food for birds.
- Hedge **H1** could be gapped up if desired. Add the following native shrubs to gap up any gaps:
Hawthorn (*Crataegus monogyna*)

Blackthorn (*Prunus spinosa*)

Crab apple (*Malus sylvestris*)

Hazel (*Corylus avellana*)

Field Maple (*Acer campestre*)

Wild rose (*Rosa canina*)

Guelder rose (*Viburnum opulus*)

Holly (*Ilex aquifolium*)

Plants to be 60 to 90 cm (45 cm and pot grown for the holly), pit planted in a staggered double row of 6 to 9 plants to the metre, with 30 cm between rows. Keep plants weed free for 2 to 3 years until established, by weeding at least 3 times during each summer. Replace losses in the first winter following planting. A thick layer of mulch can be useful in suppressing weed growth.

- Leave an un-mown strip of at least 3 metres against hedges where possible. In some areas with paths immediately adjacent, i.e. Compartment 2, this will not be practical due to lack of space, so the tall grassy margin could be reduced to 1 to 2 metres. No herbicides should be used to maintain the paths.
- All hedgerows - clear up all dumped rubbish regularly.

Year	1	2	3	4	5	6	7	8	9	10
H1	G, T 1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2
H2										
H3	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2
H4	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2	T1/2
Or H4	L1/2	L1/2				T1/2	T1/2	T1/2	T1/2	T1/2
H5										
H6										

T = Trim

G = gap up

L = lay

(See 10 Year Work Plan for more details)

3.1.2 Public and educational use

A Friends group, known as Spondon Community Association (West Park Meadows Management Group Working Party) is involved in the management of the site, working with DPV (Derby Parks Volunteers), Derby City Council and local people.

The Derby Green Spaces Forum is made up of groups and organisations including Derby City Council, Derbyshire Wildlife Trust, pond wardens, tree wardens and TCV. It is committed to providing opportunities and supporting

action for wildlife in the City of Derby. The aim of the partnership is to work with local people and communities to enable everyone in the City to have access to wildlife, for their enjoyment and for protection and improvement of biodiversity. The West Park Meadows management group should maintain contact with the Forum and could receive help through working together with them.

The site is well used by the public and it would be valuable to use every opportunity to promote an understanding of the flora and fauna. The public should be kept informed about events, management practices, volunteering opportunities and the wildlife on site. Access should be maintained, - all the grassy paths and desire lines need to continue to be managed by close-mowing through spring and summer. Litter should be collected regularly to reduce this eyesore and so it does not become acceptable through familiarity. Dog-waste bins should be sited at access points and elsewhere throughout and be regularly emptied. Updated interpretive material on the display boards at access points and within the site would be useful to explain the value of the site. Evidence of vandalism and any accidental damage should be mended or replaced as soon as possible to demonstrate the caring attitude of the site managers and the majority of users of the site.

Site managers should seek the involvement of the Education Authority in helping to ensure that the potential of the nature reserve is realised, that its facilities are adequate and that National Curriculum targets are served. An annual mailing of basic literature about Local Nature Reserves in the area should go to all local schools. The site can offer individuals and communities opportunities for involvement at all levels whether it is nature-spotting, recording the wildlife, or taking part in organised events.

3.1.3 Survey, monitor key species and assess habitat condition

Survey for roosting bats, especially near the pond. Survey for adder's-tongue fern. Annual PSYM surveys of the pond should be carried out in order to provide updated information. This is a standard method that provides an assessment of the ecological quality of a site compared to ponds nationally. It requires basic environmental information including identification of the plant species and invertebrate groups found at the site. All amphibian records should be passed to the County Amphibian Recorder at Matlock.

3.2 Natural and Man-induced trends

Natural trends: If unmanaged, the natural trend would be for wildflowers to decline as grasses take over in all areas of grassland. The grassland itself would decline in area as hawthorn scrub and bramble encroach, a rapid process already underway in many places. This would result in large areas of scrub and bramble becoming dominant and shading out the grassland species. The scrub itself is likely to eventually become woodland. Elm will probably continue to die in the woods and be replaced in the canopy by rapidly growing species such as sycamore. The pond will silt up and vegetate over in time. The hedges will grow to full natural height of the trees and

shrubs and become a tall line of trees with thickets formed from suckering blackthorn covering large areas.

Man-induced trends: The area is small and less able than a larger area to withstand heavy multiple uses. The current use of the site looks to be having some limited adverse impact on the wildlife interest, including heavy trampling around some parts of the pond and in the scrub and woodland areas; dogs off leads causing disturbance; littering, fire sites etc.

Due to climate change, the following changes may occur in Derby: increased summer temperatures, milder winters, reduced summer rainfall and increased winter rainfall. Harmful impacts of climate change can include extreme weather events like the heat wave in Derby in 2003, the severe snow experienced in 2010, or the exceptionally cold spring in 2013. Benefits may include a longer, warmer growing season, but the weather extremes caused by climate change cannot yet be fully predicted.

3.3 Management Constraints

3.3.1 Legal Obligations:

The Wildlife and Countryside Act 1981 and subsequent amendments has relevant sections and should be consulted. There is an obligation not to disturb or damage protected species including birds in the nesting season, badgers, bats and newts.

Occupiers' Liability Act 1984 is an act of Parliament of the UK covering the occupiers of land and refers to the duty of care owed by land owners and occupiers to those who come onto their land, including trespassers.

The Equality Act 2010 (replacing the Disability Discrimination Act 1995)

This legislation applies to organizations providing goods, services or facilities direct to the public. Local Nature Reserves are not exempt from the Act and it will need to be considered as regards signs, information media, access and volunteer and other opportunities at West Park Meadow. LNRs are an opportunity for everyone to enjoy nature and all LNRs should provide safe and reasonable access for people with disabilities, in keeping with the site conditions. Information points and signage should indicate which parts are accessible.

Health and Safety The Health and Safety at Work etc Act 1974 is an Act of Parliament and is the main piece of UK health and safety legislation. It places a duty on all employers 'to ensure, so far as is reasonably practicable, the health, safety and welfare at work' of all employees. Most of the legislation regarding health and safety is aimed at the workplace and volunteers are not covered. It is, however, good practice to comply, and consider safety while training, or using equipment, tools and first aid equipment. The Management of Health and Safety at Work Regulations 1992 introduced the need for a risk assessment. Groups undertaking work at West Park Meadow should therefore always undertake a risk assessment, be insured, given appropriate training, clear safety instructions and have a first-aid certificate holder present.

Natural Environment and Rural Communities (NERC) Act 2006 replaced Section 15 of the National Parks and Access to the Countryside Act 1949. Local Authorities have a duty to conserve biodiversity. LNRs like West Park Meadow play a key role in helping Local Authorities meet their biodiversity duty under Section 40 of the NERC Act 2006.

National Parks and Access to the Countryside Act 1949 - Section 21 of this Act gives Local Authorities the power to acquire, declare and manage nature reserves. West Park Meadows should be managed in accordance with the Act. Natural England can advise on site management of LNRs.

3.3.2 Consultations:

As West Park Meadow LNR is not an SSSI then there is no mandatory requirement for Natural England to be consulted about work done on the site or about its management. It is not a legislative requirement, but is good practice, for Natural England to be consulted on the site's Management Plan.

Natural England must be consulted however if there is a proposed development on the LNR that will have an impact on the site and/or if the development is likely to result in part or all of the LNR being de-declared.

The Environment Agency should be consulted on all works affecting a watercourse or within 50m of one.

3.3.3 Cost

Items such as wildflower seed are expensive and without extra money may be difficult to afford. There is no automatic entitlement to grants for LNRs and currently a shortage of Government funds.

Dogs fouling the grassland meadow areas prevents the use of the mown grass as hay for animal feed, which would otherwise have been sold to recoup some of the costs.

3.3.4 Knowledge There is a lack of up to date information about several groups of species, e.g. breeding birds and mammals. This makes comprehensive planning for wildlife on the site difficult and key species may have been missed.

3.3.5 Disturbance Continuous disturbance by the general public with dogs off leads is a constraint in considering management issues, particularly the usefulness of the pond as an amphibian refuge and the use of all the habitats by shy species of birds including dunnock, mistle thrush, blackcap and jay. The lighting of fires occurs occasionally and these can destroy habitats and damage soil structure.

3.3.6 Practical constraints

Work such as litter clearance, raking up of grass cuttings and scrub and bramble clearance is very labour intensive and time specific and it may prove difficult to get the labour just when it is needed. Some of the work however, should be suitable for community groups and volunteers.

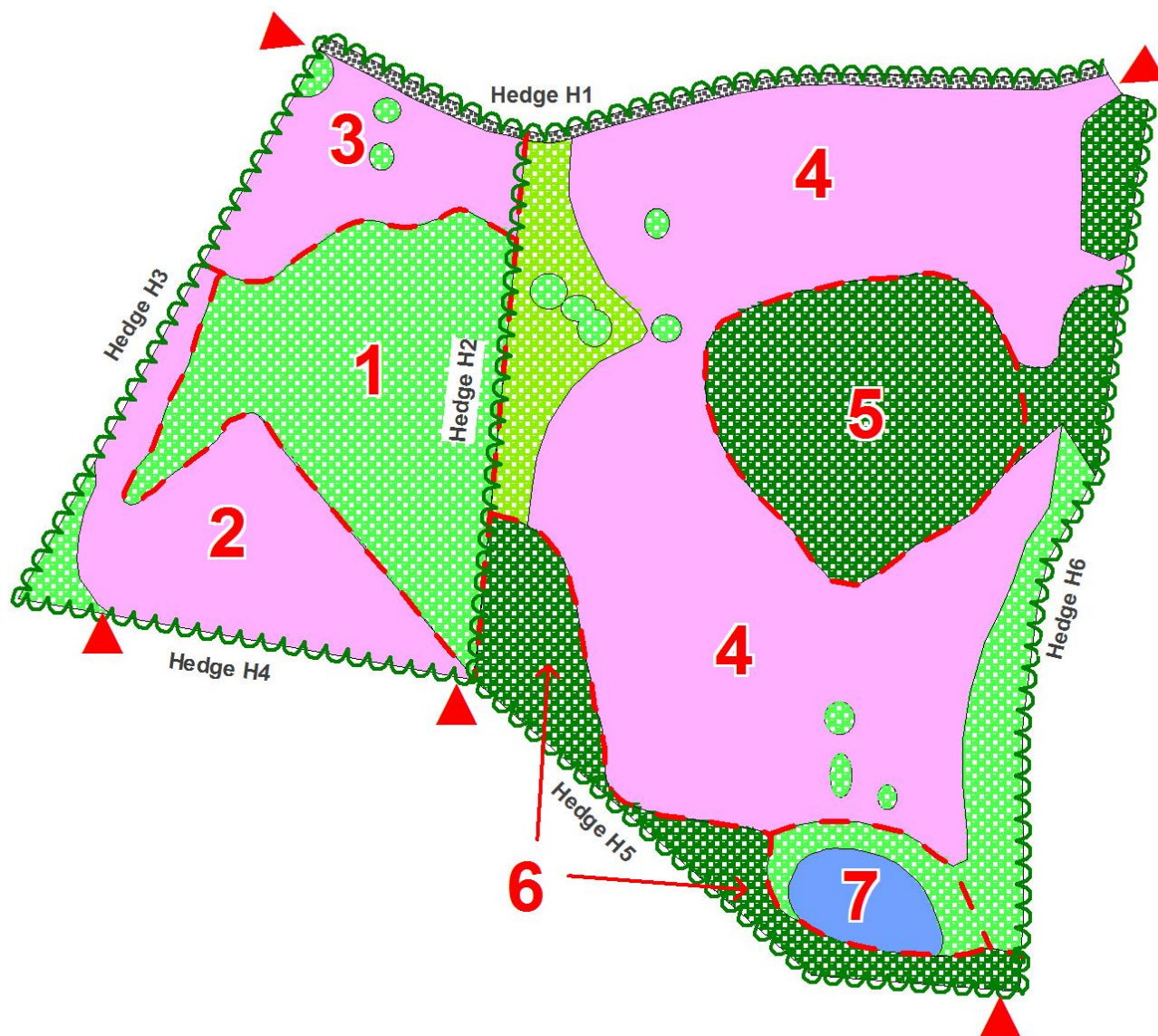
The mowing of the meadow areas is very weather-dependant, even though the crop is not to be used for animal feed. Working in wet weather would also make the raking up and disposing of the hay much more difficult.

3.4 Management and Funding Opportunities

- For details of possible funding available through government departments visit www.gov.uk there is a subscription charge for use of the website. Other grants that may be available:
- Amphibian and Reptile Group (ARG): Grants may be available for small pond creation and management projects for amphibian and reptile species. The website is www.arguk.org
- Countryside Stewardship is a 2015 Government land management scheme replacing Environmental Stewardship, which is now closed

to new applicants. Countryside Stewardship can provide incentives for land managers to look after their environment, and funding for capital items. The scheme is to be jointly run by Natural England, Forestry Commission England and the Rural Payments Agency (RPA) on behalf of Defra. Further information on Countryside Stewardship is available at: www.gov.uk/countryside-stewardship. Natural England will handle all initial Countryside Stewardship enquiries and can be contacted by telephone: 0300 060 3900 or email: enquiries@naturalengland.org.

- Community Awards – some funds are specifically for local community groups.



Map 1. Compartments and existing habitats

KEY



Grassland

Mature woodland

Scrub



Hedgerow

Tall grassland/tall herb

Pond



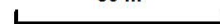
Access point

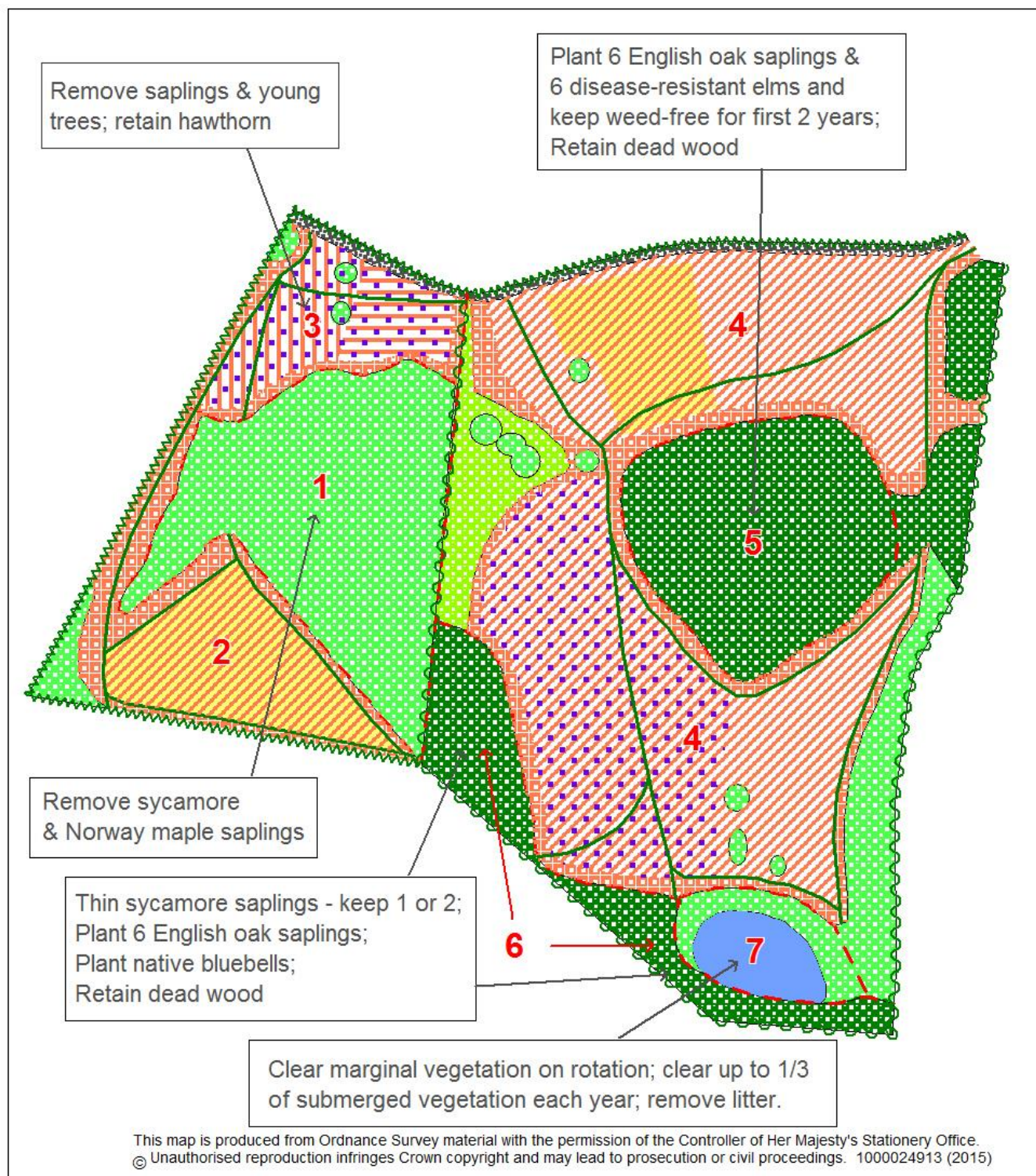


Compartment boundary



50 m





Map 2. Management Operations

KEY

	Mow every year		Hand remove saplings and bramble		Mow paths every 2 weeks
	Mow even years		Sow wildflower seed		Maintain as trimmed hedge
	Mow odd years		Plant wildflower plugs		Keep as tall unmanaged hedge

