SINFIN MOOR PARK
LOCAL NATURE RESERVE
-
MANAGEMENT PLAN
2014-2023

On behalf of
DERBY CITY COUNCIL

December 2013

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Stage 1: Description

1.1 General Information

1.1.1 Location

The area covered by this management plan consists of three wildlife sites – Local Nature Reserve DE041 Sinfin Moor Lane Meadows, and Local Wildlife Sites DE089 Sinfin Moor Park and DE042 Sinfin Moor Lane Stream, which, plus the adjoining playing fields, lie between Sinfin and Chellaston on the southern outskirts of Derby, grid ref SK 350 313.

1.1.2 Summary Description

The approximately 38-hectare site (including the playing fields) lies at a height of around 45 metres above sea level. It consists of a mosaic of habitats: grassland including tall herb fen, wildflower-seeded grassland, improved agricultural meadows, semi-improved grassland, amenity grassland and scrub-invaded grassland. There are also mature hedges, more recently planted hedges, several small areas of planted trees and shrubs, small drains, a stream and a number of small ponds. It is bounded mostly by arable agricultural land to the south and east, a municipal golf course and some housing to the north and housing and a school to the west. The underlying geology is glacial lacustrine clay overlying Keuper Marl, creating a poorly drained site. Historically it is a wetland area subject to flooding, though drainage works over the years have reduced the incidence of recent floods. The soils are slightly acidic and peaty, but are waterlogged in places due to the poor drainage. The poor, peaty soils and generally wet character of the site led to its description as 'Sinfin Moor'. The north-eastern part of the site, occupied by playing fields with areas of tree planting and tall grassland, is built on a former waste tip which was subsequently landscaped.

1.1.3 Land Tenure

Owner of most of the site: Derby City Council, The Council House, Corporation Street, Derby, DE1 2XJ. The cycle path itself is owned by Derby City Council Highways Department.
Owner of 2 fields within the site boundary: Rolls Royce plc, PO Box 31, Derby DE24 8BJ.
Owner of Compartment 1 and the area known as 'The Triangle' of Compartment 2: Derby Homes, 839 London Road, Derby DE24 8UZ.
Plan 1 shows the ownership boundaries.
The site is managed by a partnership of Derby City Council, Derbyshire Wildlife Trust, Natural England, Rolls Royce, Friends of Sinfin Moor Park and Nature Reserve, Derby City Pond Warden Association, Severn Trent Water and neighbouring land managers.

1.1.4 Map Coverage

Ordnance Survey 1:50 000 Landranger Map Sheet 128
1:10 000 Sheets SK33 SW and SK33 SE

1.2 Environmental Information

1.2.1 Biological

1.2.1.1. Habitat Descriptions

The main habitat types are: wetland consisting of ponds, tall herb fen, streams and ditches; grassland comprising tall rank grassland/tall herb, scrub-invaded grassland, reseeded wildflower grassland, agricultural silage meadows, neutral grassland and amenity grassland with copses and shelterbelts; small woodlands including new tree planting areas; and hedgerows. These are shown on the Compartments and Existing Habitats plan. 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 supports more than 15 species of butterfly, mostly on the neutral and re-seeded grassland areas.

Bird records include grey heron, snipe, kingfisher, grasshopper warbler, song thrush, linnet, bullfinch, reed bunting, dunnock, willow tit, willow warbler, yellowhammer, kestrel and tawny owl.

In 2012, Derbyshire Wildlife Trust carried out a survey of four ponds, all of of which were found to support smooth newt during the amphibian breeding season. The largest and best-established pond in Compartment 2 was found in addition to be an important breeding site for common toad and common frog and to support a good range of aquatic invertebrates including five species of dragonflies and damselflies. Reed bunting were observed and are likely to be breeding there. One of the other smaller ponds also had common frog and a large diving beetle.

1.2.2 Cultural

1.2.2.1 Land Use

The site is currently used for walking, cycling, dog exercising and as a play area for children. It is bisected by a cycle track and the small surfaced road known as Sinfin Lane and also has many informal paths throughout. Lighting fires and tipping of garden and other rubbish is not uncommon. Before measures were put in place to help prevent this, part of the site was illegally used as a travellers' encampment.

1.2.2.2 Public Interest

The public have free access to the site at all times. There are both maintained and informal paths throughout.

An enthusiastic and knowledgable Friends group, known as the Friends of Sinfin Moor Park and Nature Reserve was formed in 2007 and is involved in the management of the site. The group provides training in conservation skills, educational visits to the Nature Reserve for schools, activities for young people as well as events for the wider community, such as health walks and café sessions.

Stage 2: Evaluation and Objectives

2.1 Conservation status of the site

Three Derbyshire County Wildlife Sites cover the site: Sinfin Moor Lane Meadows (DE041) covers most of the land to the west of Sinfin Moor Lane. To the east of the lane Sinfin Moor Park Wildlife Site (DE089) covers compartments 3, 5 and 7c), d) & f). Sinfin Moor Lane Stream (DE042) follows the north-eastern boundary of compartment 7. The land outside these areas has no current wildlife site status. The site was declared a Local Nature Reserve in June 2008. The site also holds a Regionally Important Geological site (RIG) described as “The shallow depression and underlying glacial deposits within the green wedges in the Sinfin Moor area”.

2.2 Evaluation of the features

The site covers an area of some 38 hectares, with a reasonable variety of habitats within the site; the most interesting botanically lying within the Wildlife Site areas.
The habitats on site fall into several UK BAP habitats, these include:

- Wildflower-rich grassland
- Standing open water - ponds
- Hedgerows
- Wet grassland

The site is important for birds with a considerable number of locally and nationally important species having been recorded: Long eared owl, which is of national significance, has been recorded, but it's current status is uncertain and needs to be confirmed. Grey heron, snipe, kingfisher and grasshopper warbler are all of county significance. Song thrush, linnet, bullfinch, dunnock and reed bunting are BAP priority species due to recent decline in numbers. Other species on the Birds of Conservation Concern (BoCC) 2002-2007 list found on the site are: willow tit, willow warbler, starling, yellowhammer and kestrel.
The largest pond, situated in Compartment 2, is of significant nature conservation value and meets the criteria as a UK Biodiversity Action Plan priority habitat as a priority pond.
The site is important for butterflies as more than 15 species occur, mostly on the neutral and re-seeded grassland areas.

The farmland and playing fields, although currently botanically relatively species-poor, should be seen in terms of their potential for habitat creation and enhancement.

2.3 Management Objectives

2.3.1 Objective: To maintain the existing habitats in favourable conservation status and enhance them where possible

Neutral Grassland should be mown once in late summer each year and the cuttings left to dry, ideally for a minimum of 48 hours and removed as soon as possible after that, to enable the plants to flower and set seed each year and for the seeds to fall in the fields. This could be considered as a kind of 'artificial' hay meadow management, as the crop will probably not be used, but the management allows maintenance of the fields with no degradation or loss of species. This regime will also give cover for as long as possible for any small mammals and ground nesting and low-nesting birds such as grasshopper warbler. In addition it will help control any competitive species such as nettles and also scrub seedlings and saplings that would otherwise begin to colonise. Leaving 3 metre unmown margins by all the field boundary hedges and blocks of scrub will enhance the neutral grassland habitat for small mammals and birds.
It is proposed to create some tall grassland from the currently short mown turf of the playing field surrounds. This will be designed to extend the existing areas of species-rich grassland, maximise the benefit of the small, planted copses and adjacent boundary hedges and to enhance the habitat for invertebrates, particularly butterflies, including the speckled wood butterfly, bees and other pollinators. This is not an expensive or labour intensive project (it should in fact save both mowing time and therefore money), but a small, permanent change in the mowing regime that could have wildlife benefits.

Agricultural Silage Meadows The goal for the silage meadows is for them to be returned to traditional late-cut hay meadows, aftermath grazed, and with no fertiliser inputs and wide margins against each hedge. This regime will enhance the species diversity of the meadows and provide cover for ground nesting birds and small mammals in spring and summer. Ideally, this would be funded by a Higher Level Scheme (HLS) of other future agri-environment agreement on the site.

Tall Rank Grassland/Tall herb should be maintained as a diverse mixture of tall grasses and tall flowering plants and kept free of scrub. There should be no mowing in these areas, as the value to wildlife here is the cover for birds, amphibians and small mammals at all times.

Mature trees and the ivy on them should be kept, leaving all fallen timber and standing dead wood *in situ* as this is a valuable fungi and invertebrate habitat. The areas of crack willow carr need management in order to extend the life of the mature trees and sustain the habitat. Pollarding of some of the younger stems and creation of a sustainable pollard cycle would increase habitat for invertebrates, bats and birds.

Open water habitats - The goal for the older ponds is to maintain them as amphibian breeding habitats with the same area of open water as at present and at least half the area of each pool free of emergent or floating vegetation,

debris and rotting vegetation. There should be some unshaded banks and at least one or two of the ponds should remain wet until at least mid summer. The newly created ponds need enlarging and/or deepening in some cases before they can be maintained as described above.
Ditches should be wet until at least mid summer and have some stretches of unshaded open water.
The agricultural ditches and main drain should be free of debris and colonising species, flowing freely at all times.

Scrub is to be maintained at a balanced level and as a variable-aged resource with flowers, fruit and some dead wood, while letting some light through to the ground. Scrub and tall hedgerows, particularly in conjunction with tussocky grassland is an important habitat for several bird species including song thrush and green woodpecker.

The balancing ponds field should be managed with the aim of maintaining the current extent of scrub without further encroachment and provide structure in a valuable scrub habitat.

Hedges form an extensive network throughout the site and should be managed to provide shelter and nest sites, flowers and fruit, with a variety of heights, ages and a good mixture of native species. Some of the hedges should be laid in rotation if suitable, others left to form tall dense hedgerows important to species like the lesser whitethroat and bullfinch. Buffer strips with tussocky grassland alongside provide foraging habitat.

Woodland
Maintain areas of woodland without loss of area or number of trees. This applies to the new plantings 'Jubilee Wood' and 'Redwood Arboretum' and existing woods 'Wayne's Wood' and other wooded areas of compartment 4; 'Dingly Dell', Compartment 2 wood and all wooded areas of Compartment 7.

2.3.2 Objective: Capital Projects for Habitat Creation

This objective can now be considered as low priority as much has already been achieved by work such as the recent creation of several ponds linking existing wetland habitat and the planting of new woodland areas. The priority should be to enhance existing habitats. Two opportunities for habitat creation, however, are:

2.3.2.1 Trees and Woodland

A further area of new native woodland could be created in the south-eastern field of Compartment 4 by allowing natural regeneration or by planting native species of trees and shrubs.
This will diversify the site by the creation of new habitat rare in the area and during the early stages of establishment will be attractive to birds such as the short-eared owl, which hunts over rough dense vegetation. Other species of recently planted and scrub woodland that may be attracted to the site include dunnock, bullfinch, willow warbler and lesser whitethroat.

2.3.2.2 Cornfield Annuals

The small area known as 'Coronation Meadow' in area 7, currently supporting ruderal species could be sown with cornfield annuals and managed to maintain as an area of annual species not represented elsewhere on the site.

2.3.3 Objective: To encourage responsible use of the site.

The Friends Of Sinfin Moor Park and Nature Reserve group encourage active involvement and provide information in the café. The site is very well used by the public and it would be valuable to use every opportunity to promote an understanding of the wildlife. Access should be maintained, - all paths and desire lines need to be managed. Rubbish needs to be collected regularly to reduce this eyesore and potential health hazard and so it does not become acceptable through familiarity. Dog-waste bins should sited at access points and elsewhere throughout and be regularly emptied. They need to be located where they can be accessed by a vehicle to allow emptying. Interpretive material such as display boards at access points would be useful to explain the value of the site. Damage, whether deliberate or accidental 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.
Access arrangements on the site will need to be reviewed should the proposed Infinity Park development go ahead. The new development would potentially bring in more people from a different direction.

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

There are several important gaps in our knowledge of the recent status of key species of fauna on the site, namely: bats; invertebrates including butterflies, moths and dragonflies; breeding birds particularly to confirm the presence of long-eared owl; mammals and reptiles. A more exhaustive data trawl should be undertaken to research records for these groups and new surveys initiated to cover gaps in knowledge.
It is also important to carry out regular monitoring of species and habitat condition to inform future management. All amphibian records should be passed to the County Amphibian Recorder (Chris Monk).
Annual PSYM surveys of the ponds should be carried out annually in order to provide updated information to enable monitoring of the effectiveness of any management work and review as necessary. 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.
Encourage local recording groups e.g. LENS to use the site. Consider setting up training days for interested volunteers.

2.3.5 Objective: To develop the educational use of the site by schools and the general public

The large size of the site, its varied range of habitats and close proximity to schools makes it an ideal location for the involvement of schoolchildren in educational work. The amenity area, football pitches, cycle track and car park in the north attracts considerable numbers of people to the site again making it a good site for informal interpretation of its wildlife interest.

There is already a new play area for children of all ages and the park pavilion has been improved and now has a new paved terrace, and a café with ramped access where there is a monthly children's nature club and visitor wildlife and history information.

2.3.6. Objective: Securing external sources of funding

It is hoped that much of the proposed site management can be funded by a Higher Level Scheme (HLS) or other future agri-environment agreement such as the proposed New Environmental Land Management Scheme (NELMS). This would be an opportunity to carry out vital conservation works throughout the site within a 10 year scheme to support both land management and associated capital works.
Creation of new native woodland may be eligible for the Forestry Authority's England Woodland Grant Scheme (EWGS).

2.4 Description of Optimal State for the Site (Plan 3)

The ideal condition of Sinfin Moor is a long term continuation of the valuable mosaic of habitats already present, with each habitat maintained in the best condition for wildlife. The ideal layout is shown on the Desired Sate map.
The valuable species-rich grasslands would be larger in area and enhanced with nectar-rich species for butterflies.
The existing tall rank grassland is relatively stable and a valuable part of the variety of habitats on the site.
The currently species-poor improved silage fields would be managed as traditional late cut, low input hay meadows and revert over time or by enhancement to attractive flower-rich meadows.
There will be a new area of native woodland to further diversify the habitats present and provide foraging habitat for several species while in the early stages of growth.
It would be good to have at least some of the ponds holding water all year, forming a wetland 'corridor' along which species could colonise and supporting a good population of amphibians and invertebrates which would in turn support a greater diversity of bird species. The priority ponds for all-year water holding would be no. 9 'Secret Pond', no. 1 'Big Pond' and no. 2 'Doughnut Pond'.
There would be some crack willow carr with both mature trees and pollard trees as an excellent foraging habitat for reed buntings and warblers. Ivy would be allowed to increase as an outstanding habitat for birds and bats, an early source of berries when other food is scarce and a source of nectar in autumn.
The scrub and hedgerows would have wide grassy margins and contain a variety of native species of varying ages, providing good berry and nut production, good protection for nesting birds and all year round habitat with flowers from early spring through to late summer with fruit all winter.

Stage 3: Prescription

3.1 Project register and prescription

3.1.1. Habitat Management

Compartment 1
Description: Most of this compartment is composed of tall rank grassland /tall herb, derived from grassland after a long period of neglect. The main bulk of the vegetation is composed of robust plants of just a few forb species with a component of trailing or climbing species such as cleavers or field bindweed. The grasses are mostly false oat-grass, couch, Yorkshire fog, rough meadow grass and timothy. Also present are some species of neglect and/or poor management such as cow parsley, creeping thistle, cleavers, hogweed and nettle. There are also some wetland species such as great burnet and great willowherb. In the wetter areas the great willowherb forms dense stands with grasses only occasional. Mixed-species hedges form the boundaries to the fields and there is a stand of crack willow. Bramble is colonising from the hedgerows, forming some dense clumps, which signals the start of the next stage of natural development toward scrub, particularly in the central area. There is in addition a wet ditch with abundant great willowherb and a wetter area with hairy sedge in the central field.
There are several small recent areas of tree planting and one new native woodland (Jubilee Wood)
In the very south of the compartment is a small area of currently mown neutral grassland on a bank adjacent to the cycle path and near the school. Here there is a once seeded flower-rich sward with yarrow, oxeye daisy, self heal, speedwell, common bird's-foot-trefoil, red clover, white clover, lady's bedstraw and ribwort plantain amongst the grasses which are mostly false oat-grass, cock's-foot, rough meadow-grass and meadow brome.

There are 4 newly-created ponds in this compartment: Pond 7 is in the corner adjacent to the track. It is partly under the canopy of mature trees and scrub. It gets a lot of litter thrown in and also suffers from fallen branches, twigs and leaf mould from the trees. 2013 scrub clearance work has been useful in letting more light to the pond. It was however also strimmed all the way round, removing tall herb and bramble which allowed more disturbance and created an amphibian barrier between pond and terrestrial habitat. A preferred cutting method would be to strim just the south-facing side. There are some habitat piles of cut logs and larger logs allowed to rot down adjacent.
Pond 10 looks to hold water well. It consists of 2 deeper areas, one of which does dry out and a shallow central area that is also sometimes dry. Tall herb vegetation surrounds it, acting as useful amphibian cover. There is a crack willow copse on one side. The pond has some emergent reedmace (*Typha latifolia*), soft rush and reed sweet grass.
Pond 11 is a pond near the church, also surrounded by tall herb vegetation.
Pond 12 in the allotment corner is a well-established pond that looks to hold water much of the year. The surrounding vegetation consists of good dense amphibian cover, namely tall herb including great willow herb, creeping

buttercup, soft rush, hogweed, hairy sedge, nettle and coarse grasses with floating sweet-grass and duckweed in the pond.

Compartment Objectives:

- To manage the area as the current mosaic of habitats mostly tall unmanaged grassland but with ponds, wet tall herb fen along the ditches, an area of species-rich neutral grassland, scrub, woodland and willow carr.
- To maintain the trees and woodland areas, established and new.
- To maintain the ponds, both recent and more established and provide a terrestrial amphibian habitat with plenty of cover adjacent to them.
- To maintain and enhance the species-rich grassland area.

Prescriptions:

- Future management should seek to keep a balance between the component habitats. Individual habitats should generally maintain their structure without the need for management, but there is a danger that scrub and bramble will become more widespread. The aim should be to keep these to a maximum of 40% of the area. Scrub and bramble invasion should be monitored and controlled if necessary by hand cutting during the winter months, treating the cut stumps of the scrub with herbicide. This may need to take place every 3 years or so for the scrub. The bramble patches should be strimmed around the edges every year to prevent them taking over.

- Maintain the recently planted woodland areas – notably 'Redwood Arboretum' of 95 trees planted in 2009 to screen the Junior School buildings and 'Jubilee Wood', planted in 2012, a mixed woodland of some 600 trees. Other tree planting areas within Compartment 1 should also be maintained. In all areas this should be by done by strimming or hand cutting the vegetation for a diameter of at least 1 metre from around each stem in June and again in August *as a minimum*, for the years 2014 to 2016 and replacing all losses of trees each winter as necessary. This might include a selection of fruit trees for the Redwood Arboretum area. These would need to be maintained by proper pruning. Biodegradable mulch mats have been used in places, but have become swamped by rapid vegetation growth. These should be replaced or topped up to help keep competitive growth down.

  The ponds – the ones numbered 7 and 10 should have the fallen branches, leaf litter and dumped refuse removed regularly. The pond vegetation should be monitored and if required a proportion removed every 3 to 4 years to maintain an area of open water. Both ponds were strimmed all the way round in autumn 2013, thus causing a barrier from the amphibian point of view. Some surrounding vegetation should instead be left standing at the pond edge as amphibian terrestrial habitat. This should be on the side with the trees. Re-dredging both

ponds may be necessary after 2 or 3 years and should be undertaken in winter.

- The ponds numbered 12 in the allotment corner and 11 by the Catholic Church, should also be cleared of debris, fallen branches and refuse annually, the work to be undertaken between October and January. Surrounding vegetation should be cleared part way round the ponds, as above.
- Mow 'desire line' paths regularly to encourage their use and leave other areas less disturbed.
- The contract-mown verges alongside the paved cycle path, currently close-mown about 12 times a year right up to the hedges, should instead be mown for a strip of just 2 to 3 metres alongside the path with the hedge bottom allowed to grow tall.
- The small bank (Bank 'A' on plans) planted as a flower-rich grassland situated opposite the school is currently mown 12 times a year and the cuttings left. Apart from a 1 metre strip alongside the path, it should be left unmown through the summer but cut just once in autumn and the cuttings removed. This should maintain its wildflower diversity and prevent any scrub from colonising. The area unmown should extend back from the track as far as the concrete base site of the former house. To enhance the diversity and to look attractive close to the public path, plant plugs or pot-grown plants of cowslip and primrose could be added for an instant display of spring colour.

Compartment 2

Description:

The small triangular area known as 'The Triangle' at the side of the cycle track is grassy, with wild flowers as a minor component only. The grasses include Yorkshire-fog, common couch, ryegrass and rough meadow-grass; forbs include occasional hogweed, meadow crane's-bill, common dandelion, wood dock, ribwort plantain and creeping buttercup. The 2 to 3 metre wide strip alongside the path is kept short by regular mowing and the cuttings are left. Plant plugs were planted in 2010, but as the field was only subsequently mown once, few if any remain due to being smothered by the tall competitive grasses. There is a very small crack willow copse of just a few mature stems with ivy and bramble beneath, between The Triangle and the larger field known as 'Pond Meadow'. The trees overhanging The Triangle are kept trimmed back.

Pond Meadow is a mosaic of re-seeded and neutral grassland. The neutral component on the original substrate occurs mainly around the pond and is mostly grassy but with frequent forbs. Grass species include false oat-grass, ryegrass, cock's-foot, timothy, common bent, red fescue and giant fescue. Wild flowers are mostly taller species and include hogweed, teasel, great burnet, common knapweed, cow parsley and oxeye daisy. The re-seeded herb-rich areas in the north of this field has frequent forbs including common knapweed, meadow vetchling, field scabious, oxeye daisy, lesser trefoil and common bird's-foot-trefoil. 100 plugs of yellow rattle were planted here in April 2013; very few remain due to being swamped by more vigorous plants, including nettles, that look to be colonising parts of the field. The nettle

colonisation is a direct and undesirable result of enrichment from the cuttings that haven't been collected.

The main area of this compartment currently gets mown by a tractor-mounted mower. There is no management-led input to the timing of this and the cuttings are left *in situ*.

The pond (Pond 1) is the best established and holds water for much longer than any of the other ponds, even though it does appear to dry out to a layer of wet mud at the end of a dry summer. It is dominated by stands of reedmace (bulrush) and common reed (*Phragmites*). Other emergent plants include occasional clumps of branched bur-reed, also jointed rush and common spike-rush. There is a small amount of the unusual common club rush at the northern end. There is some blanketweed (and a lot of rubbish and debris) in the pond itself. The pond is known to be a significant breeding site for common frog, common toad and smooth newt. Several species of dragonfly, damselfly, water beetle and the water stick insect have been noted here. Fringing vegetation includes purple-loosestrife, soft rush, hard rush and greater bird's-foot trefoil. There are saplings of goat willow, grey willow and crack willow to 2 metres tall as well as alders and 4 individual taller (6 metre) crack willows on the eastern bank. The western bank also has crack willows, and inclines up to a dry forb-rich grassland. Three locally-grown native black poplar saplings have been planted on the pond surrounds. As the pond supports such a range of aquatic plants, invertebrates, amphibians and birds, it is of significant nature conservation value.
Management work has been carried out annually on the pond since 2005 by the Friends of Sinfin Moor Park and members of the Derby City Pond Wardens Association, mostly removal of debris and litter and control of reedmace, common reed (*Phragmites*) and willow.

The southern end of the pond is adjacent to a small wooded area adjacent to the hedge on the southern boundary. Here there is mature crack willow, some branches of which are beginning to lean and fall; younger ash, field maple, a blackthorn thicket and some dead standing elm and younger elm still surviving. Although a small area, the ground flora is more characteristic of mature woodland than anywhere else on site and has ground ivy, wood dock, nettle, ivy and mosses. Some stacked sawn logs and a lying tree trunk are rotting down and becoming moss and ivy covered. There is a smaller area of crack willow carr on the western boundary of this field, where some of the willows lean and droop.

Compartment Objectives:

- To maintain and where possible enhance the flower-rich nature of the grassland through management by appropriate mowing and sowing or planting wildflowers.
- To maintain the pond as at least a seasonal water body, without loss of open water area.
- To maintain the woodland areas.

- To establish a tall grass base to all hedgerows, trees and copses as foraging habitat for birds and small mammals.

Prescriptions:

- Maintain 'The Triangle' and all the previously mown grassland areas north of the big pond (see Desired State map) by a single annual mowing in late August or September and *remove the cuttings* so they are not adding to fertility or physically suppressing growth. In this area, leave at least 1 metre of un-mown margins by all the hedges and trees, and 2 to 3 metres along the strip across the paved cycle path from 'The Triangle'.
- Once an appropriate mowing regime is established in these areas, plant wildflower plugs in order to enrich the sward. Suitable species include:

  Ox-eye daisy (*Leucanthemum vulgare*)
  Common knapweed (*Centaurea nigra*)
  Wild carrot (*Daucus carota*)
  Meadow buttercup (*Ranunculus acris*)
  Field scabious (*Knautia arvensis*)
  Selfheal (*Prunella vulgaris*)
  Meadow vetchling (*Lathyrus pratensis*)
  Lady's bedstraw (*Galium verum*)
  Red clover (*Trifolium pratense*)
  Rough hawkbit (*Leontodon hispidus*)

- Keep the area around the pond as tall un-mown grassland. Cut and remove hawthorn, goat willow and any other small saplings that are colonising, but not the recently planted black poplar saplings. Do not mow this area, except for hand-weeding around the black poplars which may need doing for 2 to 3 years to reduce competition and help them establish.
- Remove some of the reedmace ('bulrush') from the open water area of the pool and from a portion of the margins every year in November to February to maintain the current area of open water (approx a third of the pond area). Great care should be taken during the works to avoid removal of common club-rush which grows amongst the reedmace. Leave all plant material on the pond margins to allow invertebrates to recolonise for 24 hours and then remove from site. Remove all regenerating goat willow scrub and saplings and the 5 or so crack willow from the eastern margin of the pond and half of those on the western side in winter (November - February) to prevent any increase in shading and to minimise the effect of water loss as a result of uptake by the willows. Retain all the alders. Remove all rubbish regularly, avoiding disturbance during the amphibian breeding season ie February to July.
- Maintain extent of common reed (*Phragmites*) at current level as an important reed bunting habitat. The current extent could be marked with posts. Removal of the common reed where it is colonising into the pond, when advised by monitoring to be neccessary, should be between 31 October and 1 February.

- 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. This standard method 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.
- In the main block of woodland in the south of this compartment and in the small copse known as Dingly Dell, manage all trees by non-intervention including leaving all ivy on them, all fallen timber and all standing dead wood, unless there is a safety issue or branches fall into watercourses, ponds or block paths. Stack any cut or fallen timber into piles as habitat stacks to rot down naturally. Continue to remove any trees brought in and dumped.
- Maintain nest boxes in the wood by clearing them of debris every year in winter, preferably no later than early January, and if necessary protect from woodpecker and squirrel damage by reinforcing the entrance hole with a metal strip.

Compartment 3

Description: Across the lane from Compartment 2 lies Compartment 3, bounded on 2 sides by laneside hedges numbers 3 and 4 and on the other 2 sides by hedges 12 and 13. A new stile, path and bridge were erected on the laneside access in May 2013. The northern half of this field is tall grassland that has been maintained by a contractor mowing once, occasionally twice each year and leaving all the cuttings. This is not management-led and has happened as late as November by which time the grass is a thick wet thatch that is then left on site. It is now dominated by tall grasses mostly cocksfoot and false oat-grass and has some species of neglect and/or poor management such as cow parsley, creeping thistle, hogweed and nettle. There is wild carrot in one location in the eastern side. This grassland was formerly more diverse and contained common spotted-orchid. In May 2013, 200 yellow rattle plant plugs were planted in patches of 10, a few metres in from the path. Hardly any remain and none have managed to flower. Cowslips have also been planted in recent years, again few remain due to being swamped by competitive grasses and lying cuttings that rot and as well as forming a physical barrier to small plants, add to the nutrients in the field.
In the southern part of this field, trees have been planted to enhance the area of naturally regenerated, and locally quite dense, hawthorn scrub. The trees are now up to 5 metres tall and consist of field maple, hazel, crack willow, oaks and a species of alder.
Pond no. 8 or 'Meadow Pond' dug in 2011, lies near the eastern boundary. The surrounding area floods from the ditch and this has formed a seasonally wet area with hard rush, soft rush, reedmace, meadowsweet, false fox sedge and black grass.

Compartment Objectives:

- To enhance the flower-rich nature of the grassland through management by appropriate mowing and seed introduction.

- Allow the scrub area to develop, but do not allow it to extend into the open grassland.
- Maintain the new pond so that it has some open water, enough depth of water in spring and early summer to support breeding amphibians, and surrounding vegetation that provides a terrestrial amphibian habitat.
- Maintain wet grassland area adjacent to pond.

Prescriptions

- Manage the grassland by cutting and removing field-dried hay after 15 July each year to achieve a sward height of between 2 cm and 10 cm in October/November. As aftermath grazing is impractical in this field, the grass will need to be mown as late in the year as possible in order to achieve the desired sward height. If hay making proves totally impossible, after mowing, the arisings may be removed and composted.
- Leave at least 3 metre un-mown margins by all the hedges. These margins should be mown every third year to prevent scrub from establishing.
- Control undesirable species such as creeping thistle, spear thistle, common ragwort and common nettle, so that their cover is less than 1% of the grassland area.
- Once the appropriate late-mowing and cuttings removal regime has been set up, the following ideal enhancement prescriptions can be started:
    - Prepare the field for the introduction of seed by chain harrowing or other method of scarifying/breaking up the thatch of vegetation. Bare ground should ideally be around 50%. The accumulation of dead material (thatch) would prevent the re-establishment of yellow rattle and other perennials, resulting in a progressive loss of flowering plants. The action of hooves can be simulated by harrowing or scarifying. Late autumn is the best time to harrow as it creates gaps which remain open to flower seed germination from autumn through to spring.
    - By an agreed method, add suitable species to the field. Suitable species include:
      Ox-eye Daisy (*Leucanthemum vulgare*)
      Common Knapweed (*Centaurea nigra*)
      Wild carrot (*Daucus carota*)
      Meadow Buttercup (*Ranunculus acris*)
      Field scabious (*Knautia arvensis*)
      Selfheal (*Prunella vulgaris*)
      Meadow Vetchling (*Lathyrus pratensis*)
      Lady's Bedstraw (*Galium verum*)
      Red Clover (*Trifolium pratense*)
      Rough Hawkbit (*Leontodon hispidus*)

      The cheaper method of achieving this is to source some local species-rich hay and strew this on the field after mowing. Choose a sunny day in autumn and ensure a good spread of

hay across the area mown. Use 25 to 30 (small) bales on the whole mown area. The strewn hay should be turned at least once and as the field is not going to be grazed, the hay should then be removed. It may be possible to re-bale the hay for animal use.

A more expensive method is to buy a wildflower seed mix of the above species from a reputable supplier. Although more costly, this method would be less labour intensive as it avoids the need to turn, collect and remove hay. Prepare the ground in the same way as given above and hand-scatter the seed after the field is mown, 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, including Emorsgate's EM2F Standard General Purpose wildflowers. This is a wildflower-only mix to be sown into existing grassland The recommended rate of sowing is 15kg/hectare at a cost of around £130/kilo, although lower rates can be used.

If the winter following sowing is mild and has an extended growing season, mow once at the end of March if conditions allow and remove the cuttings. Leave until August/September, at which time manage the field by a single late hay cut as you would established grassland as described above.

- The scrub in the southern half of the field should be maintained as a variable-aged resource with flowers, fruit and some dead wood, while letting some light through to the ground. It should be maintained at a density of no more than 75% cover with frequent open glades. To achieve this, coppice hawthorn in rotation during winter, the best time being February and March after the winter crop of berries has been taken by birds. Do not treat the cut stumps. The whole coppice cycle is to be 15 years so there is always plenty of mature growth able to flower and have berries. Where space allows, stack cut material under shade of dense scrub to rot down. Chip and/or remove surplus material.

- Maintain new pond to have some open water by digging out to an additional depth of 50 to 75 cm and enlarging to keep the same shallow edge profile. Maintain as open wetland - remove goat willow, hawthorn and any other colonising scrub as necessary. Keep completely free of any colonising reedmace by annual total removal. Keep free of rubbish.

- Maintain wet grassland area adjacent to pond. Maintain as open grassland on the field side - remove goat willow, hawthorn and any other colonising scrub seedlings and saplings annually. Keep completely free of any colonising reedmace by annual total removal. This area of grassland relies on occasional flooding from the ditch, which needs to continue. Do not dig out, deepen or alter the course of

the ditch. Keep the area of tall herb and bramble adjacent to the pond in the field corner as tall cover, do not mow here.

Compartment 4

Description: In the south of Sinfin Moor lies compartment 4, which consists of one large field, used as a balancing pond for flood alleviation, and two smaller ones to the east. They each consist of scrub-invaded, unmanaged grassland with Yorkshire-fog, red fescue and cock's-foot as the most frequent grass species. Forbs are occasional only and include smooth tare, creeping buttercup, selfheal and hoary ragwort, the latter indicating a once more open sward. The hawthorn shrubs range from 30 cm to 3 metres in height and are scattered at varying density throughout. There are some indications of past scrub management such as a long, straight-sided cut in the hawthorn that was a bird netting ride. The balancing pond field has a copse known as 'Wayne's Wood' in the north-west corner with mature aspen, crack willow, horse chestnut and ash. There is also a small planted area of guelder-rose, ash, hawthorn, alder and aspen near the southern boundary and a further area in the south-east corner with aspen, hawthorn, a maple species, ash and dogwood. Grasshopper warbler, a UK BAP species has been recorded here. The roadside hedge, hedge 8, has been recently laid.

Compartment Objectives:

- Manage the area in such a way that is compatible with its operational role in flood alleviation.
- Maintain tussocky open grassland favoured by grasshopper warbler in the balancing pond field and the adjacent triangular-shaped field immediately to the east.
- Maintain the current extent of scrub in the Balancing Pond field without further encroachment. Scrub to have a variety of ages.
- Maintain Wayne's Wood as mixed woodland. There is an opportunity to enhance the beauty of this wood by planting snowdrop bulbs here. This will provide an early supply of nectar to insects such as bees and will be an attractive winter display.
- Encourage the southern of the two lane-side fields to develop into scrub woodland by regeneration and tree and shrub planting considered in the future to assist the establishment of the required mix.

Prescriptions:

- Instate a programme of extensive summer grazing to maintain the open grassland. Graze with around 6 cattle of hardy native breed that thrive on coarser vegetation, from 1 July until the hay has been collected from the hay meadows in compartment 6, at which time the cattle should be moved off to graze the meadows. Additional autumn grazing after the meadows are grazed down is permissible as long as the cattle have access to dry ground in a wet year. This will allow the cattle handling pens to be used so TB testing can take place before the cattle are moved off the site. There should then be no further grazing until the following summer. In the absence of grazing, there is no

practical alternative for grassland management as the area is too uneven and irregular in shape to mow.

- To support the new grazing regime, a new access gate and cattle-handling facilities including a cattle crush and pens should be provided in the north-east corner of the balancing pond field as marked on Plan 3. A water supply must also be provided. Fencing should be erected along the boundaries where necessary.
- The balancing pond scrub should be maintained at its current (2013) levels, as a variable-aged resource with flowers, fruit and some dead wood, while letting some light through to the ground. It should be maintained at a density of no more than 60% with frequent open glades. The proposed cattle grazing may help prevent scrub increase, but it should be monitored and a further programme of scrub coppicing undertaken if needed. If scrub control proves necessary, as well as removing young plants at the edges, coppice chosen dense stands of hawthorn and in rotation during winter - the best time being February and March after the winter crop of berries has been taken by birds. Do not treat the cut stumps The whole coppice cycle is to be 15 years so there is always plenty of mature growth able to flower and have berries. Where space allows, stack cut material under shade of dense scrub to rot down. Chip and/or remove surplus material.
- Fence 'Wayne's Wood' from the rest of the field to prevent livestock from browsing and to allow natural regeneration of trees. Provide access stile. Plant native snowdrop bubs (Galanthus nivalis) bought from a reputable supplier that guarantees UK grown native bulbs, such as Naturescape or the British Native Wildflower Shop. Plant as many as can be afforded - 500 bulbs should cost around £40.
- If self setting in the south-eastern field is slow and if funds allow, create a new lowland mixed broadleaved woodland in by planting the following trees and shrubs:

  High Forest Species:
  Pedunculate oak (*Quercus robur*)
  Ash (*Fraxinus excelsior*)
  Mid-strata species:
  Silver birch (*Betula pendula*)
  Rowan (*Sorbus aucuparia*)
  Field maple (*Acer campestre*)
  Wild cherry (*Prunus avium*)
  Holly (*Ilex aquifolium*)
  Shrub Layer species:
  Hazel (*Corylus avellana*)
  Dogwood (*Cornus sanguinea*)
  Guelder-rose (*Viburnum opulus*)
  Blackthorn (*Prunus spinosa*)
  Hawthorn is already present and does not need to be included in the planting mix.

  All these species are suitable for the neutral pH loams and clays on site. They should be of local provenance to conserve local genetics.

They should not be planted in straight lines but rather in groups of the same species of 5 plants at approx. 2 metre centres. Plants to be 60 to 90 cm (45 cm and pot grown for the holly) and pit planted. Build in to the design of the new wood some clearings and 2 metre wide meandering paths. Paths to be kept mown for a 1 metre width. Shrubs to be planted towards the edges of the planted area and around the glades for a woodland edge effect. Small glades should be left unplanted.

- Keep free of weeds for a diameter of 1 metre around each tree for 3 years following planting until the young trees are established. Replace losses in the first winter following planting.

- If planted at a density of 1,600 plants to the hectare, with up to 40% open ground and up to 25% shrubs, the planting may be eligible for the Forestry Authority's England Woodland Grant Scheme (EWGS) to help with the costs.

Compartment 5

Description: This triangular field is mainly a mosaic of re-seeded and neutral grassland. The tall neutral grassland areas are mostly south of the bunds and are generally more grass dominated than the re-seeded areas and consist of mostly rough meadow-grass, false oat-grass, Yorkshire-fog and ryegrass with cow parsley, ribwort plantain, white clover, hogweed and locally, teasel. North of the bund, the re-seeded areas have locally frequent forbs including white clover, meadow crane's-bill, common bird's-foot-trefoil, meadow vetchling and common knapweed. Bee orchids have been noted in two locations here. Scrub is beginning to re-invade this area since it was last controlled. There are large banks of bramble on the bund and to the north of the 'String of Pearls' ponds. The current management looks to be mowing a central area late on in the autumn, but is a poor management tool as it is a fairly high cut that goes over the top of scrub and tall plants without affecting them, and leaves all the cuttings *in situ*. There is currently no close-mown strip next to the path.

There are now 7 small ponds within this compartment, some recently excavated and some more established; all were created as wildlife ponds. The small shallow pond - pond number 2, by the footbridge into Compartment 3 is known as 'Pancake Pond'. Despite being connected to the ditch, it looks to be only seasonally water holding, being wet and muddy through to mid summer. Aquatic plant species consists of abundant Canadian pondweed and some floating leaved amphibious bistort and it has been colonised by a species of stonewort (a calcified green algae); fringing vegetation includes greater pond sedge, field horsetail, hard rush, sharp-flowered rush, false fox-sedge and ragged-robin, with a bank of brambles on the playing field side and hawthorn scrub on the southern bank. A few plants of common meadow-rue (*Thalictrum flavum*) - classed as locally declining - have been identified in the vegetation surrounding the pond. It is thought to be a frog and smooth newt breeding site and has pond skaters and whirlygig beetles early in spring while there is still open water present and damselflies and dragonflies all summer. It is connected to the ditch along the hedge line to the west.

Immediately adjacent to Pancake Pond lies pond number 4 'Doughnut Pond', created in 2009, which appears to be winter water-holding to the top of its banks. It has a small island and is connected to the adjacent ditch for in/out flow. It was widened and deepened in 2010. Small amounts of jointed rush, hard rush and false fox sedge occur at the margins. Great willowherb and greater pond sedge are more abundant as fringing vegetation. A 2010 survey identified smooth newts and a large diving beetle.
The eastern pond, number 3 or colloquially 'Mississippi Mud' is more of a seasonally wet, shallow scrape, long and narrow in shape and often completely dry by early summer. There is no aquatic vegetation, but fringing hard rush, false fox-sedge and ragged-robin with dry species-rich grassland on the banks with creeping cinquefoil, toadflax, ox-eye daisy, lesser trefoil and wild carrot. Goat willow appears to be starting to invade the pond surrounds, and the pond itself, a clear indication of it not being water-holding for much of the year.
Ponds numbered 5, 6, 13 and 14, known collectively as the 'String of Pearls' were created in 2011. They are all very small and shallow and seem to be dry much of the year and only some of them water-holding even in winter. Smooth newts have been noted in ponds 5 and 6. Number 13 pond is very small and is becoming colonised by willow. Pond 14 was dug by hand because of the overhead power lines, hence is also very small and looks to be permanently dry and now just a grassed-over hollow.
There is also a small area of young trees in this compartment, consisting of up to 4-metre tall hawthorn, alder, oak, hazel, field maple and ash. It is adjacent to hedge H11 and surrounds 4 mature crack willows.

Compartment Objectives:

- To maintain and where possible enhance the flower-rich nature of the grassland north of the bund, through management by mowing, scrub control and sowing or planting wildflowers.
- Manage the grassland south of the bund as tall un-managed grassland, mowing only a 1 metre strip alongside the main path.
- To maintain or enhance all the ponds to allow enough water to be retained in them for long enough for them to achieve amphibian breeding success.
- Allow the small tree planting area to develop without intervention, but do not allow it to extend into the open grassland.

Prescriptions:

- North of the bund, maintain existing grassland by annual mowing (as apposed to 'topping') in late August or September and removing cuttings so they are not adding to the fertility. Invading scrub should be cut very low to the ground every year before mowing, to enable the mowing to take place. Leave 3 metre unmown margins by all the hedges and around ponds, these to be cut once every 3 years to prevent scrubbing up. Leave also the single crab apple tree near the 'String of Pearls' ponds.
- Once a regime of late annual mowing has been set up, plant wildflower plugs in order to enrich the sward. Maintain these areas by mowing as above. Suitable species include:

Ox-eye Daisy (*Leucanthemum vulgare*)
Common Knapweed (*Centaurea nigra*)
Wild carrot (*Daucus carota*)
Meadow Buttercup (*Ranunculus acris*)
Field scabious (*Knautia arvensis*)
Selfheal (*Prunella vulgaris*)
Meadow Vetchling (*Lathyrus pratensis*)
Lady's Bedstraw (*Galium verum*)
Rough Hawkbit (*Leontodon hispidus*)

- Keep the area south of the bund and around all the ponds as tall grassland. Each year, cut and remove hawthorn, goat willow and any other small saplings that are colonising, but do not mow, except for a 1 metre strip alongside the path, which should be kept close-mown by a 6 times a summer cutting regime, or as required.
- All ponds: Keep all the existing ponds free from colonising scrub by removing saplings as soon as they develop. Monitor for amphibians and send results to the County Amphibian Recorder.
- Additional work by individual pond:
  Pond 2: Increase the depth by excavating by an additional 50 to 75 cm, particularly in the eastern end, work to be done during autumn. Monitor the population of common meadow-rue in the vegetation surrounding the pond.
  Pond 3: Dig out and remove hawthorn and willow scrub and saplings from around the pond. Work to be undertaken outside of bird breeding season. Increase the depth of at least part of the pond to ensure it is water-holding for long enough for amphibians to breed successfully.
  Pond 4: Monitor the water-holding capacity of the pond following the 2010 deepening work, excavating again if necessary.
  Ponds 5, 6, 13 and 14: If these ponds are to function as a wildlife resource, they all need to be enlarged and deepened to ensure they hold water for long enough to be a useful amphibian breeding habitat. These ponds lie close to the margin of the area that was filled with household refuse, that now forms the bank up to the playing fields. There is some risk of exposing contaminated material. For this reason enlarge the ponds in a southerly direction away from the field edge, rather than the preferred direction towards the bank..

Compartment 6

Description: These are three semi-improved species-poor agricultural silage meadows. They are currently mown by mid June each year and not grazed at all. The fields are very similar to each other, with a productive sward consisting of cock's-foot, ryegrass, false oat-grass and timothy as the dominant grasses. here are few forbs composed mainly of locally frequent creeping buttercup; occasional hogweed, cow parsley, dandelion, common ragwort and marsh ragwort; and rare meadow buttercup, ladies bedstraw and sorrel.

The surrounding hedgerows and those between the fields are tall and unmanaged with an unusual amount of crab apple amongst the hawthorn. Meadowsweet and great willowherb line the ditch alongside hedge H11.

Compartment Objectives:

- To enhance the flower-rich nature of the grassland in 2 of the fields through management by appropriate mowing, grazing and seed introduction. This regime would provide cover for ground nesting birds and young hares in spring and summer, reduce the fertility and provide ideal conditions for the spread of wildflowers into the meadows.
- Maintain the hedgerows with a wide grassy un-mown margin adjacent to each one.

Prescriptions:

- Manage the grassland by cutting and removing field-dried hay after 15 July each year to achieve a sward height of between 2 cm and 10 cm in October/November.
- The fields should be aftermath grazed with the 6 or so cattle that have been grazing the balancing ponds field in late summer for a few weeks in order to achieve the desired sward height in autumn.
- To support the new grazing regime, a water supply must be provided and fencing should be erected along the boundaries where necessary.
- Control undesirable species such as creeping thistle, spear thistle, common ragwort and common nettle, so that their cover is less than 1% of the grassland area.
- Adjust current mowing regime to leave 3 to 5 metre margins unmown along the hedges and ditches. These margins may be topped every third year to prevent scrub from establishing.
- As soil fertility declines, diversify the sward. By an agreed method, add suitable species to the field, either by sowing with a wildflower mix or scattering locally-sourced species-rich hay. Suitable species include:

  Ox-eye Daisy (*Leucanthemum vulgare*)
  Common Knapweed (*Centaurea nigra*)
  Wild carrot (*Daucus carota*)
  Meadow Buttercup (*Ranunculus acris*)
  Field scabious (*Knautia arvensis*)
  Selfheal (*Prunella vulgaris*)
  Meadow Vetchling (*Lathyrus pratensis*)
  Lady's Bedstraw (*Galium verum*)
  Red Clover (*Trifolium pratense*)
  Rough Hawkbit (*Leontodon hispidus*)

  The cheaper method of achieving this is to source some local species-rich hay and strew this on the field after mowing, although this may well introduce undesirable species as well. Choose a sunny day in autumn and ensure a good spread of hay across the area mown. Use approx 40 bales per field. The strewn hay should be turned at least once and can be collected or left for the cattle to trample and graze, which actually helps to plant the seeds in the hay.

  A more expensive method is to buy a wildflower-only seed mix of the above species from a reputable supplier. This is a more costly method at. Prepare the ground well by harrowing to create gaps in the sward,

so there is up to 50% bare ground, and hand-scatter the seed. It should be bulked up with an inert carrier such as coloured sand or sawdust, for ease of visibility while doing the scattering. Choose a dry sunny day in autumn before the cattle are put on, or a day in spring so the seed germinates and does not rot.

Compartment 7

Description: This large compartment in the north of the site is mainly composed of short regularly mown grass laid out as a playing field with football pitches. Around this are quite extensive areas of semi-natural grassland, scrubby grassland and small mixed-species copses and shelterbelts. There is a new (2011) BMX cycle track and near to this is a small area of ruderals and some perennials of disturbed ground known as 'Coronation Meadow'. The plants are either self seeded or grown from a bird/game cover mixture that was seeded into former spoil and topsoil. Species here include teasel, scentless mayweed, chicory, clovers, mugwort, groundsel and mustard. This area has received no management to date but is a valuable wildlife resource and should be managed as an asset to the nature reserve.

The various areas of the compartment around the outside of the mown playing fields are labelled a) to f) - see Compartments and Existing Habitats map for locations.

In area a) between the strip of woodland and the northern boundary hedge (H22) there is a north-facing partly shaded bank with false oat-grass, cocksfoot and timothy dominating with few forbs, mostly nettle and creeping buttercup. This is not currently mown regularly. The ditch alongside hedge H22 is becoming colonised by Himalayan balsam, an invasive non-native species. At b) there are small south-facing unmown banks with tall grasses as in a) but more herb-rich with common knapweed, ladies bedstraw, yarrow, common bird's-foot trefoil and one large patch of marjoram. The more level areas between copses are mown up to 15 times a year right up to the base of the trees. Area c) has a mosaic of open grassland and scrub. On the eastern fringe of the playing field is a steep unmown bank sloping down to a hawthorn hedge forming the site boundary. Here the dominant grasses are false oat-grass and cock's-foot with abundant forbs, possibly enhanced by sowing in the past, given the inclusion of several forms of common knapweed, including the rayed form. Other herbs here are meadow crane's-bill, upright hedge-parsley, yarrow, cowslip, field scabious, marjoram, greater knapweed and betony. The grassy level part of area c) along the compartment's southern boundary is currently close-mown up to 15 times a year. Area d) is a small area with a good current balance of grassland and scattered hawthorn scrub. The grassland has fine grasses and herbs such as ribwort plantain, red clover, wild carrot, common knapweed and teasel. The scrub looks to be colonising the grassland and will need to be controlled.

The playing field has a number of mixed species copses and shelterbelts planted around all but its southern side. At e) there is a line of trees against the housing and golf course on the northern boundary. Species include wild cherry, aspen, white poplar, field maple, whitebeam, rowan and hawthorn. Elsewhere on the playing field surrounds are planted small copses of mixed species including ash, balsam-poplar, small-leaved lime, crack willow, alder

and silver birch all aged 20 to 35 years old. On the western edge of the playing field are small areas of mature crack willow carr. Area f) has a mosaic of dry grassland and wetter tall herb fen. The grasses are mostly false oat-grass, tufted hair-grass, and cocksfoot. There are typical wetland species such as meadowsweet, marsh horsetail and great willowherb. In the wettest areas these form dense stands with meadowsweet dominant and grasses only occasional. There are scattered hawthorn and willow shrubs. The drier banks nearest the playing field have teasel, rosebay willowherb and nettle also forbs including common bird's-foot-trefoil and knapweed. Pond no. 9, or 'Secret Pond', is situated in the south of this section. It is some 25 metres in length and has a ridge in the middle. It is concealed in an area of tall herb fen and encroaching willows.

Compartment Objectives:

- To create some tall grassland from the currently close-mown turf of the playing field surrounds. This is designed to extend the existing areas of species-rich grassland, maximise the benefit of the small planted copses and boundary hedges here and to enhance the habitat for invertebrates, particularly butterflies. This is not an expensive or labour intensive project (it should in fact save both mowing time and therefore money), but a small, permanent change in the mowing regime could have enormous wildlife benefits.
- To control scrub from encroaching on to open grassland.
- Grassland enhancement: Areas b) and d) could be enhanced by planting nectar-rich species such as marjoram as food source for butterflies. Area f) should be maintained as a diverse mixture of tall grasses and tall flowering plants and kept free of scrub. There should be no mowing in this area, as the value to wildlife here is the cover for birds and small mammals at all times.
- Maintain 'Coronation Meadow' as an area of annuals, which is a habitat not found elsewhere on the reserve.
- Maintain mature trees including crack willows and undertake some new tree planting.
- The pond should be managed so that it has some open water.

Prescriptions:

- Grassland: Alter the mowing regime on the playing field to leave more extensive edge areas unmown. The unmown areas should have a single autumn cut and the cuttings removed. (The current regime is a 12 to 15 times a year mowing, which may increase to once a week on the playing fields, and the short clippings left *in situ*.) The areas to be treated in this way are shown on the Desired State plan.
  Area f) should be maintained as a diverse mixture of tall grasses and tall flowering plants and kept free of scrub. There should be no mowing in this area, as the value to wildlife here is the cover for birds and small mammals at all times.
  The 5 metre strip of tall grassland against hedge H18 should not be mown at all**,** so the blackthorn in the hedge can be allowed to sucker out and form a dense copse.

Undertake some small scale planting of more marjoram and some wild carrot and teasel in areas 7b), c) and d).

- Scrub: In winter cut and remove in a coppice rotation hawthorn, goat willow and any other small saplings colonising the small area 7d) to prevent any increase in scrub cover. While removing new growth, remove also some of the existing hawthorn to maintain the cover at about 20% of the area. Two sprawling bramble patches in d) should not be allowed to increase in area.
  Area c) has a mosaic of open grassland and scrub, but in places the scrub is encroaching at the expense of the grassland and needs controlling. Cut and remove approximately two thirds of invasive hawthorns within area 7c) and nine tenths of the willows in area (f) in winter. This should be permanently cleared to allow more of the neutral grassland to develop and is distinct from the cyclical coppicing to maintain uneven-aged scrub, as here the aim is to prevent it from regrowing. Use glyphosate weedkiller marketed as 'Roundup' or 'Timbrell' immediately after cutting (i.e. within a few hours). Cut low to the ground to allow any future mowing. All cut material should be removed. Leave all the apple and crab apple trees in area 7c).

- Pond: The pond in f) should be managed so that it maintains some open water. All reedmace should be removed annually and emergent vegetation monitored and approximately half of it cleared if it starts to encroach on the open water. All willows encroaching on the pond area should be removed.

- Annual meadow: Maintain 'Coronation Meadow' as an area of annual flowers by raking off and removing the dead vegetation and rotovating it every spring. Seed of cornfield annuals such as corn marigold, corn cockle, field poppy and cornflower should be hand sown in spring to maintain an attractive and colourful annual display in a habitat not represented elsewhere on the nature reserve.

- Continue to pollard all trees that are currently pollarded, but do not undertake any new pollarding, unless there is a safety issue with a particular tree.

- The mature poplars alongside the BMX cycle track represent a resource drain for little or no conservation gain and could be removed and replaced with a variety of species including aspen, balsam poplar and alder.

Hedgerows

Description: **H1** Approximately 25 years old, this tall mixed-species hedge is now an outgrown line of young trees 2 or 3 rows wide forming a tall dense tangled barrier. It runs alongside the tarmac cycle path adjacent to Compartment 1, there is one gap where there is a wet ditch and also a short

length of dead hedging to fill a gap. The species include dogwood, guelder rose, field maple, hazel, ash, hawthorn and blackthorn. There is also dog rose and bramble throughout with ground flora of nettle, cleavers, wood dock, cow parsley, hedge woundwort and great willowherb. All the fruiting shrubs produce large numbers of berries in winter.

H2 This hedge is also around 25 years old and consists of a wide line of trees with little ground flora beneath and the school fence along one side. Species include field maple, crab apple, hazel, crack willows (as mature trees), guelder rose and goat willow.

Alongside of the lane is **H3** a hawthorn hedge with a lot of elder, this has been laid in the past and is now kept trimmed by a tractor-mounted flail mower to a height of 1.5 to 2 metres. It is currently trimmed on the track side and top once a year in August. A new stile was put in to the entrance of Compartment 3 in May 2013. It has an approximate10 metre gap near the lane corner with just bramble, nettle and bindweed, other lengths have lengths of dead laid hawthorn stems and some smaller gaps. There are no mature trees in this stretch of hedge.

H4 and **H5** are similar hedges on both sides of Sinfin Lane. They are mostly hawthorn with some elder, laid in the past and since kept trimmed to a height of about 1.5 to 2 metres. They have some rose, bramble and bindweed throughout, the ground flora is mostly nettle, false oat-grass and cleavers. Two ash standards in **H4** have suffered damage in the past by careless hedge flail mowing and have some rot where bark is missing.

H6 is a tall unmanaged line of hawthorn with some elder and dog rose dividing two scrub-invaded, currently unmanaged fields. There is no fence here.

Hedges **H7** and **H8** line Sinfin Lane on opposite sides in the south east of the site. They are mostly hawthorn, laid some years ago and since allowed to grow out, now reaching 6 metres in height. They both get trimmed on the track side by a tractor-mounted flail mower at the time the grass is cut in August. **H7** has a wet ditch on the lane side. There is some elder, dog rose, bramble, hazel and elm with ground flora of ivy, red campion, great willowherb and nettle. Mature trees are occasional and include ash, elm with and crack willow. The length of **H8** alongside the small triangular field at the corner of the lane has been recently laid or coppiced with some of the hawthorns allowed to grow tall as standards. There is a group of hawthorns covered in ivy at the junction with hedge **H6**.

H9, H10, H11 and **H20**
These are similar tall, outgrown, unmanaged hedges surrounding and dividing the Compartment 6 improved silage meadows, and consist of mostly hawthorn with frequent crab apple (particularly in **H10** and **H20**), and occasionally elder, ash, dog rose and bramble with crack willow in **H9** and **H10**. Hedges **H9** and **H11 also** have wet ditches alongside. The ground flora is of false oat-grass and nettle and some meadowsweet and great willowherb

in the ditch by **H11**. **H10** has about 40% gaps and has the highest proportion of crab apple. None are fenced and all are mown almost up to the hedge bottom from the silage fields side.

H12 and **H13** are similar unmanaged tall field hedges consisting of mostly hawthorn with some elder and ground flora of false oat-grass and nettle.

H14
This unmanaged hedge forming the site boundary against the allotment gardens adjacent to Compartment 1 is mostly hawthorn to 4 metres tall with some elder, willow species and alder. There is also ivy, dog rose and bramble.

H15 is some 40 metres of hawthorn hedge between the lane and the power line and thereafter this field edge is a ditch.

H16
This is more of a trimmed woodland edge than a separate hedge and consists of mostly hawthorn with ash standards and a clump of crack willow and forms the site boundary on the southern side of Compartment 2. As it lies alongside a small copse it has a more characteristic woodland ground flora than many of the other hedges on site: there is frequent ivy, ground ivy, nettle, hedge woundwort and wood dock. It is ploughed right up to the hedge bottom on the southern side (outside the site).

H17
This southern site boundary hedge is mostly a thick line of hawthorn with elm and ash standards with some elder. This is not owned by Derby City Council. It lies alongside a large drain owned and maintained by Severn Trent.

H18 is the hedge to the west of the playing field and is mostly young hawthorn with a ditch alongside. There is an area of crack willow carr with blackthorn and a line of mature crack willows, some of these look to have been pollarded in the past.

H19
The hedge along the northern boundary of Compartment 2 is a tightly trimmed hawthorn hedge with a wooden fence.

H20 is 'Crab Apple Hedge' described with hedges 9, 10 and 11 above.

H21 is the south-western site boundary, consists mostly of a double row of outgrown hawthorn with some elder and one mature ash. It lies alongside a shallow dry ditch. Ground flora is mostly nettle and ivy.

H22 is the northern boundary hedge against the golf course. A ditch runs alongside it, just outside the site boundary. This hedge is all hawthorn, which has been laid at some time in the past, creating a dense barrier with no gaps. There is a single blackthorn and the occasional rose. An informal path runs alongside the hedge. The ground flora is mostly false oat-grass, cleavers,

Yorkshire-fog and nettle. In summer 2013 there was some Himalayan balsam on the banks at the north western end.

H23 is the eastern site boundary hedge, lying at the foot of the species-rich bank in Compartment 7c. It is mostly tall unmanaged hawthorn with several small gaps.

H24 is on the western side of Compartment 2 main field and consists of a ditch and line of gappy overgrown hawthorns, spreading into the field with a small willow carr area. The ditch itself is at best seasonally wet and contains dominant great willowherb with occasional soft rush, cleavers, bramble, bittersweet, meadowsweet and reedmace. It widens out into a tree planting area at the southern end where there is more crack willow, ash, oak, hawthorn and blackthorn.

H25 runs alongside Sinfin Lane and is a tall outgrown mostly hawthorn hedge, now a line of trees trimmed by tractor flail on the lane side only. It has a dead-hedged and planted 20 metre length filling a gap. There is a wooden post and rail fence alongside. Other species include hazel, maple, rose and elder, all of which are providing plenty of berries or nuts.

Objectives:
All hedges should be similarly managed to provide shelter and nest sites, flowers and fruit, with a variety of heights, ages and a good mixture of native species. Some of the hedges should be laid in rotation, if suitable, others left to form tall dense hedgerows important to species like the lesser whitethroat and bullfinch and with plenty of fruit in autumn and winter. Buffer strips with tussocky grassland alongside provides foraging habitat for birds and small mammals.

Prescriptions:

- Cut and lay 25 metres of hedge number **H7** and continue to cut and lay or coppice 25 metres of **H8** each year as far as the end of the City Council ownership in each case. Leave the stand of hawthorns covered in ivy in **H8** at the junction of **H6**. Continue the good practice of selecting stems of hawthorn or other species if present, to be left as standards.
- Lay approximately one quarter of the length of hedge **H17** and **H18** every third year; and up to half of hedge **H22** in each of the first two or three years. The work should be done by traditional methods of hedgelaying using hand tools, work to be done in winter, preferably February or later when the berries have been available to birds all winter and before the nesting season starts. Add the following mix of native shrubs to gap up any gaps at time of laying for all these hedges, and also to infill the gaps in other hedges whether laid or not: Hedges **H3**, **H10** and **H11** could be usefully gapped.
  Hawthorn (*Crataegus monogyna*) 60%
  Blackthorn (*Prunus spinosa*) 15%
  and the remaining 25% a mixture of:
  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. (Rabbit guards are not considered necessary.) Keep plants weed free for 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.

- After replanting the gaps in hedge **H3** as above, **H3**, **H4** and **H5** can be flail trimmed as at present, as there is plenty of fruit-bearing scrub immediately adjacent and while not a conservation ideal, it is a road safety issue to keep the hedges close-trimmed.
- Any annual trimming work can be done by machinery from the lane and can continue to be done in late summer after the nesting season is over, as the hedges cannot bear fruit under the current regime, but plenty of adjacent un-trimmed shrubs can. The hedges would be improved by the elders being removed and the gaps re-planted with a native species. The hedge tops could also be left un-mown for 2 or 3 years to improve the hedges as a wildlife resource.
- The small ditch alongside hedge **H22** will need to be kept clear of cuttings from the hedge and should not be blocked or damaged by any hedge work.
- The Himalayan balsam at **H22** will need to be controlled by hand-pulling the young plants as early in the summer as possible, and certainly before they flower. Any plants that have flowered should be taken away, as the seeds will continue to ripen after the plant has been pulled up.
- Leave an unmown strip of at least 3 metres against hedges where possible. In some of the smaller areas, i.e. 'The Triangle' in 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. The altered mowing regime in area 7 should leave a 5 metre strip of tall grassland against hedge **H18** where the blackthorn should be allowed to sucker out and form a dense copse. **H18** needs no other management.
- There is an opportunity to install a bird feeding station behind parts of **H25**, where it provides good views from Sinfin Lane. It will need to be kept well supplied with food during the winter months.

- All other hedges should be maintained as tall wide hedges to provide shelter and food for birds. Those with ditches alongside should have the ditches cleared as necessary to maintain existing depth and width. Clear up all dumped rubbish regularly.

3.1.2 Educational Use

The Friends of Sinfin Moor Park are proactive and take every opportunity to promote an understanding of the Park's wildlife value. Part of the group's Vision Statement is to see the Park used as an educational resource. There is a children's nature club on the 3rd Sunday of the month and nature events for children in the school holidays. In partnership with Groundwork and local schools, The Friends group have produced a Environmental Activities Pack, providing activities and resources to support visits to the Nature Reserve. There is a community cafe in the community centre, open every Saturday and one Wednesday a month, all proceeds going towards improving the Park. Events for the wider community include health walks, guided walks, bike rides and cafe sessions. The Friends Group also provide training in conservation skills, such as hedgelaying, coppicing, fencing and pond creation, through the Trust for Conservation Volunteers (TCV) and Derbyshire Conservation Volunteers. This could be extended to encourage local recorders to use the site for training and species identification.

The Derby Green Spaces Forum, which is made up of groups and organisations including Derby City Council, Derbyshire Wildlife Trust, pond wardens, tree wardens and TCV 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 green spaces, for their enjoyment and for protection and improvement of biodiversity. The Friends of Sinfin Moor Park have become a significant part of the Derby Wild Spaces Forum and through their work have been able to achieve substantial gains as more people realise the importance of the nature reserve in Sinfin.

The site is ideal for the location of on-site interpretive material but this should be carefully planned and positioned to give interesting information without drawing undue attention to areas best kept undisturbed such as the tall herb fen 7f). Interpretive boards could be located at key entrance points.

While encouraging public access onto the site the following should be addressed:

All paths and desire lines need to be maintained.

Regular rubbish collection and appropriate siting of bins, including dog waste bins, is important to maintain the area for public use.

Regular safety checks will be needed of trees, water bodies, access infrastructure and paths with appropriate management if necessary.

When the Infinity Park is created there will be new pressures and opportunities for access and interpretation. These will need to be reviewed as the development progresses.

3.2 Natural and man-induced trends

Natural trends: The natural trend will be for wildflowers to decline as grasses take over in all currently species-rich areas of unmanaged grassland. The grassland itself will decline as scrub encroaches, a relatively rapid process already underway in many areas. Colonisation by hawthorn and goat willow in all grassland areas if left unmanaged will result in large areas of scrub becoming locally dominant and shading out the more interesting grassland and wetland species. The ponds and ditches will silt up over time with the loss

of open water areas, accelerated by the increase in vegetation. Reedmace (bulrush) encroachment in the pond in area 5 is rapid and the result will be total dominance of a large area by reedmace alone. All hedgerows will grow out to full natural height of trees and shrubs and become a tall line of trees with gaps beneath and any species that 'sucker' such as blackthorn will form thickets alongside the hedge line.

Man induced trends: Falling ground water levels is a national problem caused by increased water consumption and is likely to limit the ability to maintain wetland features, particularly during the summer months. This could be exacerbated by the proposed Infinity Park development immediately adjacent. Water tables are already thought to have declined in the last 20 years causing wetland habitats to dry out and show loss of species. Due to climate change, the following changes may occur in Derby: increased summer temperatures of 2.5 degrees, 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.
The current use of the site looks to be having some adverse impact on the wildlife interest, including heavy trampling around ponds, dogs off leads causing disturbance, illegal travellers' temporary encampments causing rutting, overgrazing, littering, fire sites etc.

3.3 Management Constraints

3.3.1 Legal obligations:
The Wildlife and Countryside Act 1981 and subsequent amendments has relevant sections and must be consulted, for example there is an obligation not to disturb or damage protected species including birds in the nesting season, badgers, bats and newts.

Disability Discrimination Act 1998. Provisions under this Act will need to be considered as regards signs, information media, access and volunteer and other opportunities.

Planning Permission This may be needed for operations considered as engineering works such as constructing scrapes and ponds.

Health and Safety 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 in training, 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 should therefore always undertake a risk assessment, be given appropriate training and clear safety instructions and have a first-aid certificate holder present.

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

3.3.3 Cost
Without HLS funding, much of the work is likely to prove prohibitively expensive, especially the grazing, meadow management and re-seeding projects, as these require costly labour and capital works and items such as fencing, water supply, cattle handling facilities and wildflower seed.

3.3.4 Knowledge. There is a lack of up to date information about several groups of species, e.g. breeding birds; butterflies and other invertebrates; and mammals in general including bats and water voles. This makes comprehensive planning for wildlife 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 several management issues, particularly the usefulness of ponds and surrounding terrestrial habitat as an amphibian refuge. Dogs are also a potential disturbance to ground nesting birds. Any cattle grazing the site would need to be docile and tolerate loose dogs.
The lighting of fires occurs occasionally and these can destroy habitats and damage soil structure.

3.3.6 Practical constraints:
It may prove difficult finding a local farmer willing and able to carry out the proposed hay meadow management, rather than the less weather dependent, more profitable and less labour intensive silage making in Compartment 6.
The cattle grazing proposals may also cause practical difficulties, as the project needs a small number of cattle to be available for a short specified time, and they will need to be checked on regularly, moved as required, TB tested before moving on and off site, etc.
Work such as litter clearance, raking up of grass cuttings and scrub clearance is very labour intensive and time specific. It may prove difficult to get the labour just when needed. Work such as scrub clearance and tree planting however, may be suitable for community groups and volunteers.

3.4 Management and Funding Opportunities.

There is an exciting opportunity for funding through an HLS agreement, hopefully in the near future. This would enable so much of the vital work to be done including the introduction of grazing into Compartment 4, mowing for hay and aftermath grazing in Compartment 5 as well as hedge work, pond maintenance etc as described in the individual compartment prescriptions.

4. 10-YEAR WORK PROGRAMME, Years 1 to 5

Compartment	Management Prescription	Priority		Year 1	Year 2	Year 3	Year 4	Year 5
		Essential	Desirable					
Compartment 1	Control bramble	●			✓			✓
	Mow flower-rich bank in early autumn	●		✓	✓	✓	✓	✓
	Plant wildflower plugs		●		✓			
	Mow desire line paths	●		✓	✓	✓	✓	✓
	Weed around all young trees twice	●		✓	✓	✓		
	Pollard willows		●		✓			
	Remove some of pond vegetation	●				✓		
	Clear leaf litter and debris from ponds	●		✓	✓	✓	✓	✓
	Re-dredge ponds 7 and 10		●			✓		
Compartment 2	Mow species-rich grassland in early autumn	●		✓	✓	✓	✓	✓
	Plant wildflower plugs		●		✓			
	Hand weed young black poplars	●		✓	✓	✓		
	Remove colonising scrub around pond	●		✓			✓	
	Control reedmace to 2/3 cover of pond in November	●		✓	✓	✓	✓	✓
	Remove colonising common reed from pond (timing advisory)	●				✓		
	Control goat willow on pond surrounds	●		✓	✓	✓	✓	✓
	Carry out nest box maintenance		●	✓	✓	✓	✓	✓
	Carry out annual pond PSYM surveys		●	✓	✓	✓	✓	✓

Compartment	Management Prescription	Priority Essential	Priority Desirable	Year 1	Year 2	Year 3	Year 4	Year 5
Compartment 3	Mow northern half grassland in late summer and remove cuttings	●		✓	✓	✓	✓	✓
	Hay strewing or reseeding, northern part		●		✓			
	Wet grassland scrub control	●		✓	✓	✓	✓	✓
	Mow hedge margins to control scrub	●				✓		
	Maintain scrub by coppicing		●		✓		✓	
	Maintain southern half grassland by scrub control	●		✓	✓	✓	✓	✓
	Maintain pond by reedmace control and litter removal	●		✓	✓	✓	✓	✓
Compartment 4	Install water supply, fencing, gate, cattle handling facilities		●	✓				
	cattle grazing 4 to 6 weeks, summer		●	✓	✓	✓	✓	✓
	Coppice scrub in balancing ponds field	●		✓	✓	✓	✓	✓
	Plant trees and shrubs in south eastern field		●				✓	
	weed around all new trees	●					✓	✓

Compartment	Management Prescription	Priority Essential	Priority Desirable	Year 1	Year 2	Year 3	Year 4	Year 5
Compartment 5	Mow species-rich grassland north of bund in early autumn, remove cuttings	●		✓	✓	✓	✓	✓
	Plant wildflower plugs north of bund		●			✓	✓	✓
	South of bund: mow only a 1m strip along path. Remove scrub from tall grassland	●		✓	✓	✓	✓	✓
	Remove colonising scrub in and around all ponds	●	✓	✓	✓	✓	✓	✓
	Mow hedge margins to control scrub	●				✓		
	Monitor ponds for amphibians		●	✓	✓	✓	✓	✓
	Enlarge and deepen ponds 2, 5, 6, 13 and 14		●	✓				
Compartment 6	Measure soil phosphate index		●	✓				
	Mow tall grassland in late August	●		✓	✓	✓	✓	✓
	Alter mowing regime to leave 3 to 5 m unmown by hedges	●		✓	✓	✓	✓	✓
	Mow hedge margins to control scrub	●				✓		
	Reseed with wildflower seed or species-rich hay		●					✓
	Aftermath graze with cattle		●	✓	✓	✓	✓	✓

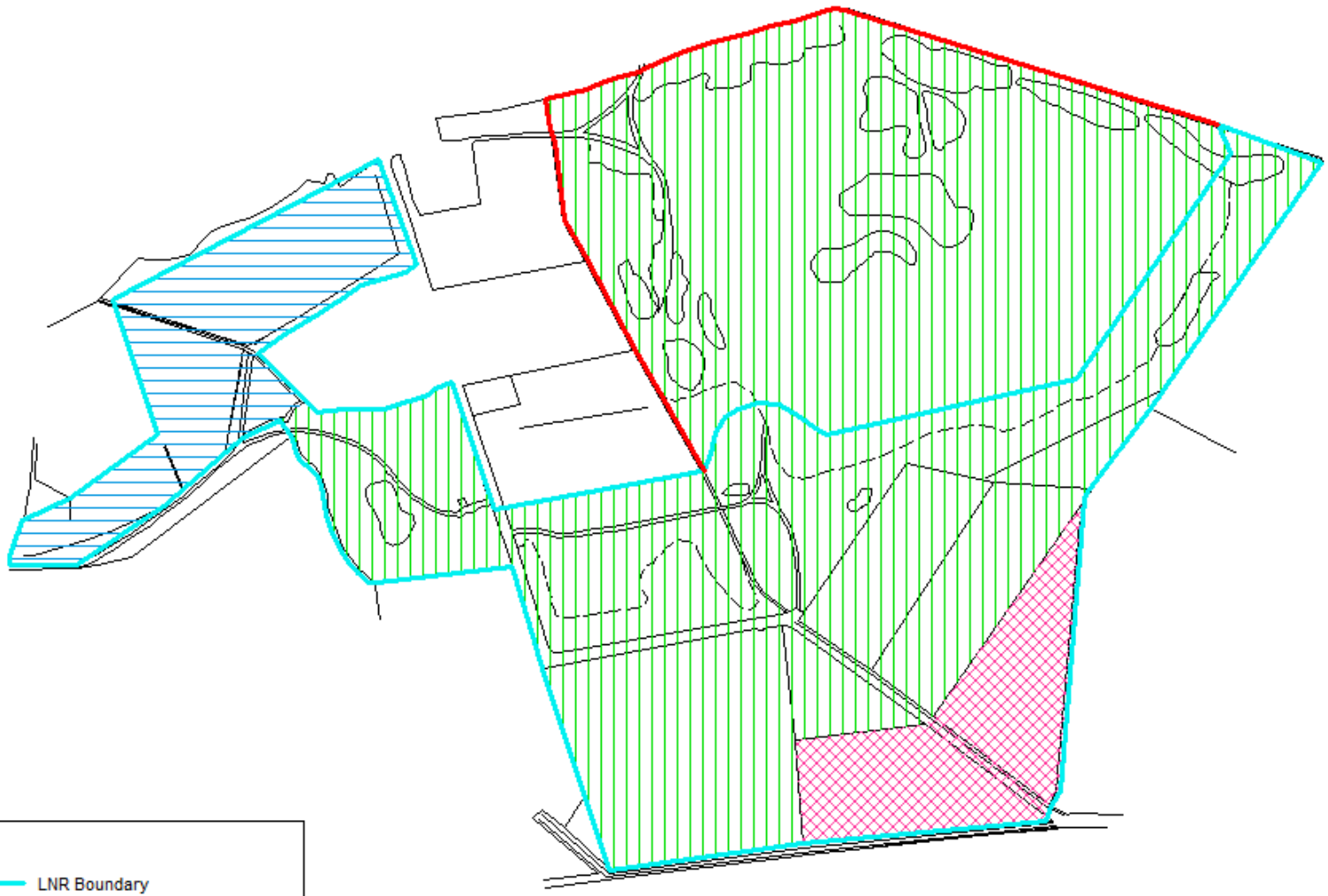
Compartment	Management Prescription	Priority		Year 1	Year 2	Year 3	Year 4	Year 5
		Essential	Desirable					
Compartment 7	Control invading scrub in grassland	●		✓	✓	✓	✓	✓
	Remove reedmace and scrub from pond and surrounds	●		✓	✓	✓	✓	✓
	Leave enhanced grass margins unmown	●		✓	✓	✓	✓	✓
	Maintain Coronation meadow as an area of annuals: rotovate and seed		●	✓	✓	✓	✓	✓
	Plant marjoram, wild carrot and teasel in grassland areas b), c) & d)		●			✓	✓	✓
	Fell and replant trees by cycle track		●			✓		
	Maintain crack willow currently pollarded by pollarding	●				✓		
Hedgerows	Cut and lay 25 m of H7 & H8		●	✓		✓		✓
	Cut and lay half of hedge H22		●	✓	✓			
	Remove elders from H3 and gap up hedges H3, H10 and H11		●		✓			
	Cut and lay ¼ of length of H17 & H18		●		✓			✓
	Mow the enhanced margins by all hedges (except H18) to control scrub	●			✓			
	Maintain all other hedges as tall wide hedges, clear ditches to existing depth and clear rubbish	●		✓	✓	✓	✓	✓

10-YEAR WORK PROGRAMME, Years 6 to 10

Compartment	Management Prescription	Priority		Year 6	Year 7	Year 8	Year 9	Year 10
		Essential	Desirable					
Compartment 1	Control bramble	●			✓			✓
	Mow flower-rich bank in early autumn	●		✓	✓	✓	✓	✓
	Mow desire line paths	●		✓	✓	✓	✓	✓
	Pollard willows		●	✓				✓
	Remove some of pond vegetation	●		✓			✓	
	Clear leaf litter and debris from ponds	●		✓	✓	✓	✓	✓
Compartment 2	Mow species-rich grassland in early autumn	●		✓	✓	✓	✓	✓
	Remove colonising scrub around pond	●			✓			✓
	Control reedmace to 2/3 cover of pond in November	●		✓	✓	✓	✓	✓
	Remove colonising common reed from pond (timing advisory)	●		✓			✓	
	Control goat willow on pond surrounds	●		✓	✓	✓	✓	✓
	Carry out nest box maintenance		●	✓	✓	✓	✓	✓
	Carry out annual pond PSYM surveys		●	✓	✓	✓	✓	✓
Compartment 3	Mow northern half grassland in late summer and remove cuttings	●		✓	✓	✓	✓	✓
	Wet grassland scrub control	●		✓	✓	✓	✓	✓
	Mow hedge margins to control scrub	●				✓		
	Maintain scrub by coppicing		●	✓		✓		✓
	Maintain southern half grassland by scrub control	●		✓	✓	✓	✓	✓
	Maintain pond by reedmace control and litter removal	●		✓	✓	✓	✓	✓

Compartment	Management Prescription	Priority Essential	Priority Desirable	Year 6	Year 7	Year 8	Year 9	Year 10
Compartment 4	Maintain fencing, gate and cattle handling facilities		●	✓				✓
	Cattle grazing 4 to 6 weeks, summer		●	✓	✓	✓	✓	✓
	Coppice scrub in balancing ponds field	●		✓	✓	✓	✓	✓
Compartment 5	Mow species-rich grassland north of bund in early autumn, remove cuttings	●		✓	✓	✓	✓	✓
	South of bund: mow only a 1m strip along path. Remove scrub from tall grassland	●		✓	✓	✓	✓	✓
	Remove colonising scrub in and around all ponds	●	✓	✓	✓	✓	✓	✓
	Mow hedge margins to control scrub	●		✓			✓	
	Monitor ponds for amphibians		●	✓	✓	✓	✓	✓
	Maintain depth of ponds 2, 5, 6, 13, 14		●	✓				✓
Compartment 6	Measure soil phosphate index		●	✓				
	Mow tall grassland in late August	●		✓	✓	✓	✓	✓
	Alter mowing regime to leave 3 to 5 m unmown by hedges	●		✓	✓	✓	✓	✓
	Mow hedge margins to control scrub	●		✓			✓	
	Aftermath graze with cattle		●	✓	✓	✓	✓	✓

Compartment	Management Prescription	Priority		Year 6	Year 7	Year 8	Year 9	Year 10
		Essential	Desirable					
Compartment 7	Control invading scrub in grassland	●		✓	✓	✓	✓	✓
	Remove reedmace and scrub from pond and surrounds	●		✓	✓	✓	✓	✓
	Leave enhanced grass margins unmown	●		✓	✓	✓	✓	✓
	Maintain Coronation meadow as an area of annuals: rotovate and seed		●	✓	✓	✓	✓	✓
	Plant marjoram, wild carrot and teasel in grassland areas b), c) & d)		●			✓	✓	✓
	Fell and replant trees by cycle track		●			✓		
	Maintain crack willow currently pollarded by pollarding	●				✓		
Hedgerows	Cut and lay 25 m of H7 & H8		●	✓		✓		✓
	Cut and lay half of hedge H22		●	✓	✓			
	Remove elders from H3 and gap up hedges H3, H10 and H11		●		✓			
	Cut and lay ¼ of length of H17 & H18		●		✓			✓
	Mow the enhanced margins by all hedges (except H18) to control scrub	●			✓			
	Maintain all other hedges as tall wide hedges, clear ditches to existing depth and clear rubbish	●		✓	✓	✓	✓	✓



KEY

- LNR Boundary
- Derby City Council
- Derby Homes
- Rolls Royce

Plan 1. Boundaries and Ownership

Not to scale

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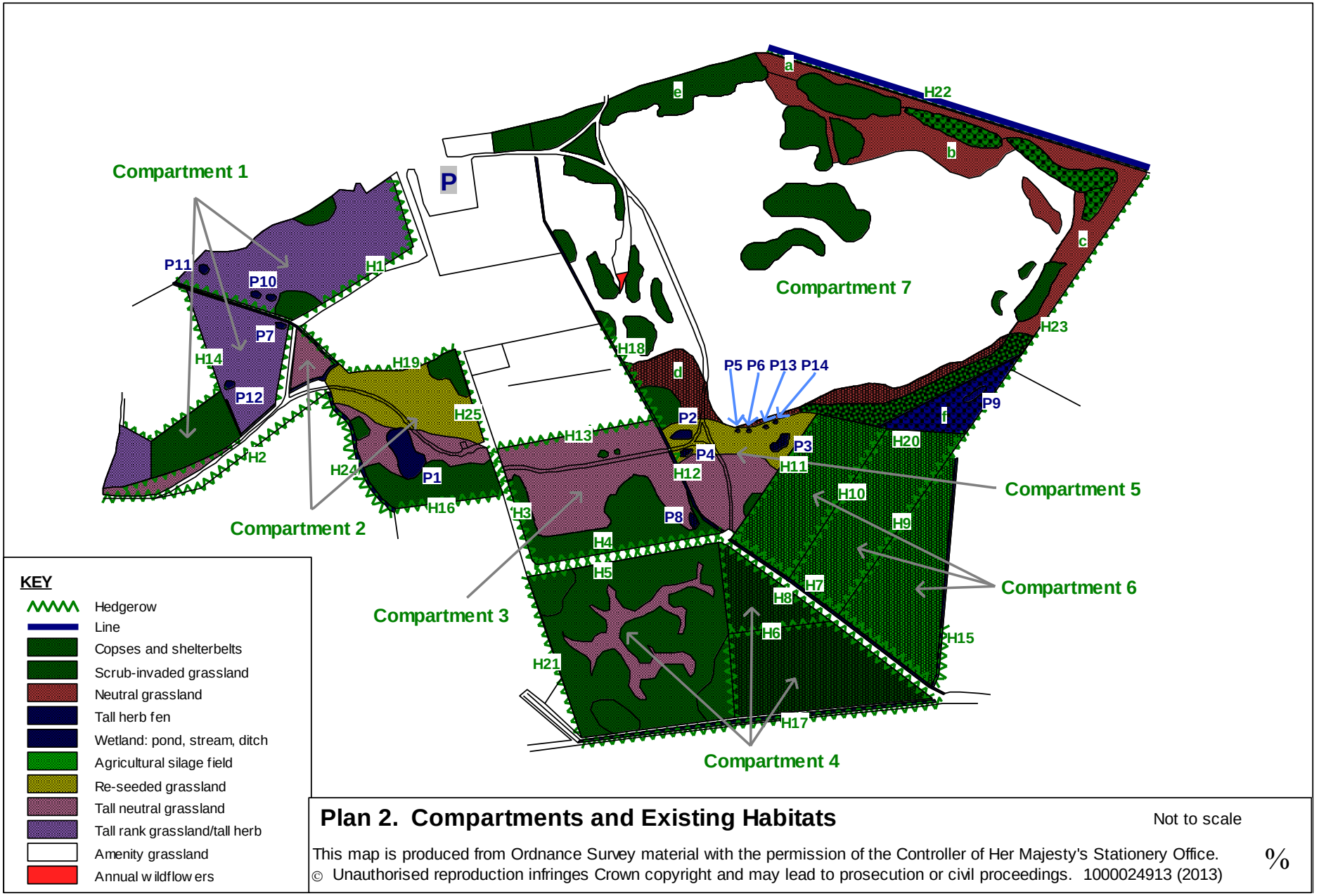

Plan 2. Compartments and Existing Habitats

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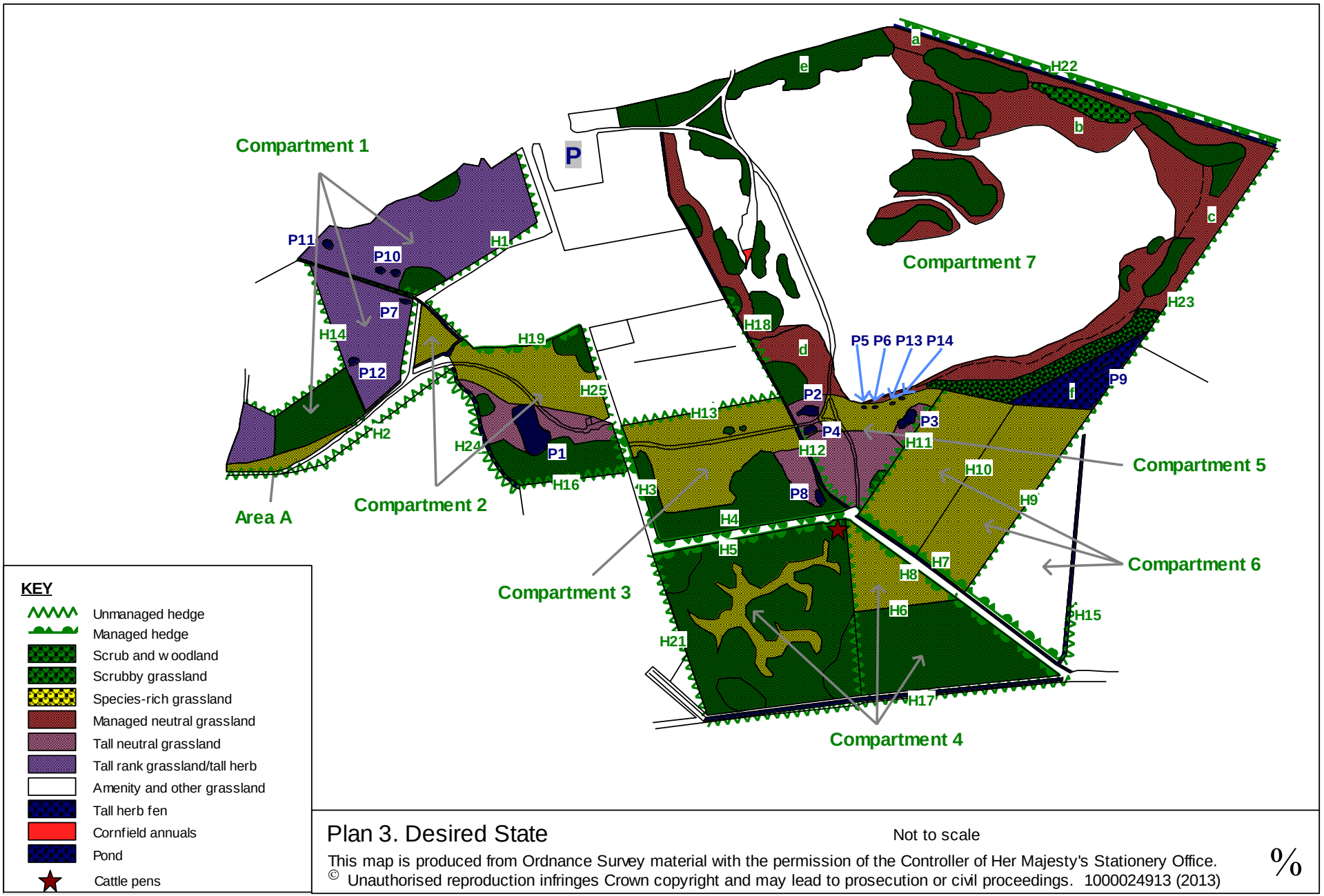

Plan 3. Desired State

Not to scale

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