

ECOLOGICAL SURVEY, CROWMARSH RECREATION GROUND **NATURE AREA**

November 2012

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Map 2 - Suggested Management, Nature Area, Crowmarsh Recreation Ground,
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Key to Map 2 – Suggested Management. Nature Area Crowmarsh Recreation Ground

Appendices

Note: Appendices supplied as Excel spreadsheets separate to the main text.

Appendix 1 – Survey Results, May 2012

Appendix 2 – Summary Table of Results, May 2012

Background

This survey was commissioned by Crowmarsh Parish Council to provide advice about the ecological condition and potential management of the area the Nature Area, the area of undeveloped area of rough grass and trees, to the west of the playing fields of Crowmarsh Recreation Ground. The report includes a summary of the survey results and management suggestions to maintain and improve the ecological quality of the site.

Survey Dates and Methods

The site was surveyed in May 2012, on two occasions – the first a short visit with representatives of Crowmarsh Parish Council and the second main visit later in the month. The survey method was simple – a walk around the site recording the species and habitats seen on site. In addition to visual records the water habitats were also surveyed briefly by netting to find out about the species of aquatic animals present. All records were made by Rod d’Ayala.

The main survey targets were plants divided into two categories of plants – wetland plants (those associated with damp and/or permanently wet areas) and “terrestrial” plants (plants more or less associated with drier ground conditions). Other species were recorded on an incidental basis only (with records for birds and invertebrates).

For the purposes of the survey the site was divided into seven recording areas based on a combination of vegetation type and/or other site features such as paths. One of these areas was sub-divided into two areas. More notable species were recorded as precise locations but most species were recorded to a generic (central) grid reference for the recording area. Some very mobile species were recorded as simply present on site rather than in a particular area.

The survey was by no means comprehensive. The weather conditions were dull and cool and far from ideal for most invertebrates – thus for example few butterflies were seen. However the survey provided a good indication of the general variety and diversity of species, particularly plants and therefore the type and ecological quality of the habitats on site.

Survey Results

(With reference to Appendices 1 and 2 and Map 1)

Summary Site Description

The site is broadly an upside down “L” in shape, adjoining the Thames (to the west) along the toe of the “L”. The main part of the site is separated from the Thames by the intensively managed (mostly short mown grass) camp site. To the east are the heavily managed playing fields, the main part of the Recreation Ground. To the north is short grazed riverside pasture

screened from the site by a tree lined (including Poplars) ditch. To the south is an open car park and south east an area mostly developed as housing.

The larger eastern part of the site (c. 200 metres by 100 metres) is easily accessed both from the open access sites to the west and east. The smaller part (Recording Area 4) of the site is c. 50 by 75 metres is more difficult to access as is separated by a wet part flooded shady wooded channel. This smaller area is a rough herb area dominated by a very small number of species of plant including abundant nettles. The upper central part area is a low lying inundation area presumably flooding on a regular basis at potentially all and any times of year. Typical wetland plants present include Meadowsweet and Angelica – but only in small quantities. The low lying channel dividing Recording Area 4 from the main part of the site forms a more or less distinct water body from the open water body to the south as it is linked by only a narrow linking channel. The trees growing in and around the channel are large mature or over mature Willows which are potentially valuable habitats in their own right – quite distinct and different from the other trees on site. Similar mature trees dominate the river bank, the southern section of this bank taking the form of a narrow backwater and the north a simple steep bank.

The north east corner of the main site (Recording Area 2) is an area of rough herb and grass which in the recent past has been used a dump / store area for bales of grass cut from the rest of the site. Bramble is abundant - one of the few areas on site where it is. The area is defined by the internal mown path – which controls the extent of and stops the spread of the bramble and rough herb. At its eastern end the rough herb and Bramble grades into the Willows shading the channel described above.

The western boundary of the main area (Recording Area 7) is a part open and part scrub fringed (a lot of Blackthorn) open water flooded channel. The banks of the channel are generally steep with only a narrow strip of marginal tall wetland plants and open water in its deeper parts. At its southern end the water body is much narrower and shallower and filled with wetland plants. This end has been used to dump cuttings, presumably derived from management of the Camp Site. This dumping is not desirable and should be stopped. There is quite a lot of litter in this area – in part paper etc blown in from the adjacent camp site but perhaps also washed in during flood events.

The south west corner of the site (Recording Area 6) is wet enough to support a good sized stand of Pond Sedge with other damp loving plants such as Wintercress in the adjacent area. This wet sedge habitat also extends eastwards and northwards following the line of another old channel / ditch. The south east corner of the site (Recording Area 5) is a wet low lying area with dense cover of scrub and trees, forming a band up to 40 metres wide defining the boundary of the site.

This wooded strip extends northwards along the eastern boundary of the site (Recording Area 1) – historically a hedge made up of trees and shrubs which has spread into the site. There is a variety of trees and shrubs including some mature trees and scrubby species such as

Blackthorn. At the north end of the hedge are three large mature Field Maples, probably big enough to be considered as features of conservation value in their own right. The width of the hedge is variable and in places is continuing to spread into the field as suckering Blackthorn – with this spread locally being stopped or slowed only by regular cutting of the circular internal path.

The largest Recording Area (Area 3) is the central part of the field. It is mostly higher than even the highest floods and thus drier grassland with some herbs – with planted native trees and shrubs in the form of small copses, stand alone trees and bands of planted trees. The selected trees and shrubs are native species but not necessarily typical of the type of habitat. Only small areas are lower lying and apparently damp at most with only short lived standing water at most.

Overall Species Summary

A total of 69 species were recorded in this survey – 57 plants and 12 other species. All species are common and/or widespread. For the size and location of the area the number of plant species is not high. The site in recent years at least has been subject of relatively little management

Terrestrial Plants

Of the 69 recorded species 44 have been classified as terrestrial plants, with these being made up of 9 typical of disturbed ground plants, 10 “typical” grassland herb species, 5 grassland grasses, 6 herbs typical of rough habitats or waysides and 14 woody species (trees, shrubs and Bramble). The drier open habitats are generally dominated by rough grasses and in some places around the margins of the site disturbed ground plants are also locally abundant. Otherwise so-called potentially “problematic weed” species such as Thistles etc were scarce. Only species typical of rougher / wayside habitats are anything like widespread, with many typical “better” grassland species for example being confined to one area and in some cases a very small number (perhaps even only one location. The most species rich areas for terrestrial plants were the large central open area of grassland with planted trees and shrubs – and the eastern boundary with its wide tree / shrub belt and adjacent margins (including the boundary with the short mown playing fields).

There are 13 species of woody plant (trees, shrubs and Bramble) typical of drier ground recorded in this survey. Many of the individual trees and species are planted and/or introduced to the site. Trees on site prior to this planting were more or less confined to the boundaries of the site - and these hedges have spread to become wider strips as a result of the abandonment of regular grassland management.

Wetland Plants

In total 13 species of wetland plants were recorded, including two trees species (Willow sp. and Alder). All species were common and widespread – with Wintercress being the most common of the species present. The area with the most species was Area 3 (8 species) and Area 6 (south west corner Sedge bed). The most widespread species was Great Willowherb, which was recorded from 5 Areas. The total number of species of wetland was small and the site in its current condition at least is not a good site for this group of plants. Most of the species present were larger more robust type of plants typical of mature infrequently managed rough grass / herb habitats. Even the aquatic habitats were species poor, with only four species recorded from the relatively large open water habitat in Area 7.

Other Species

Incidental records were made for two other species groups, birds and terrestrial invertebrates. 7 species of bird were recorded – six residents and one summer migrant (Blackcap). All were common widespread species. Undoubtedly many more species are present in and will use the site at this and other times of the year. Five species of common widespread invertebrates were recorded including two butterflies. The weather on the day of the survey was not suitable for invertebrate activity and the site will again support many more species – with more targeted and potentially specialist surveys being needed to establish just how rich the site may or may not be.

A brief netting survey of the open water habitat in Area 7 found no aquatic invertebrates. Small aquatic animal life thrives where there is plenty where there is plenty of cover which provides cover for prey and predator, food and egg laying sites. Here as there were generally no water plants the only in water habitat (in the main open section of water) was a very narrow strip where the plants on the bank met the water line. Other factors may also work against a diverse fauna and flora. Clean (i.e. unpolluted) water is the most important factor in deciding the ecological health of aquatic habitats and it is possible that the water quality here is poor for more than one reason (see section below).

Public Access

Public access is very low key – in contrast to the heavy regular use of the adjacent sports pitches and camp site. Access is provided in the form a mown circular path around the outer edge of the main part of the site – with mown links to the west south of the Camp Site building and two entrances (one to north and one to south) off the playing fields. There is presumably some through traffic between the riverside facilities and main recreation ground. At the south end of the site the path goes through some low lying areas that even in summer can be flooded and impassable without wellington boots. Thus the site may well be less used overall than its location may initially suggest. It is used primarily by walkers, including dog walkers.

Factors Affecting Site Ecology and Management

Below are listed some of the main factors that will affect what management can and should be carried out in the “wild” end of Crowmarsh Recreation Ground.

Purpose of Management

The “wild” area of Crowmarsh Recreation Ground has historically been managed to as either pasture or a source of fodder (hay) by either cutting and/or grazing – with the purpose of the management being the maintenance of animals and/or production of meat. When this management ceased is not known, but it is true to say that the function of the site has changed – to one of management for nature conservation purposes with informal public access as a secondary purpose. Though grassland management for nature conservation may be similar to that for agricultural purposes it does not need to be the same if the desired habitats can be achieved in other ways.

Current and Possible Management

In the most recent years management has been very un-intensive and confined in large part to path cutting to facilitate public access. The reduction in intensity - or entire lack of management for the bulk of the site means that as a result of natural succession the open grassland habitats will change. The changes may be fast or slow, and may or may not follow the classic pattern of reversion to tall rank grassland and eventually scrub and trees. However, the dominance of dense turf with ranker grasses and tall herbs indicates that succession is taking place.

If habitats with a more diverse mix of plants, including some smaller species are desirable, then some management other than path cutting will be required. The boundary trees and scrub are in places advancing into the open habitats and these too will need some work (not just cutting but potentially complete removal and/or killing). If the current open habitats were managed it could stimulate smaller less competitive species to grow without the need for targeted panting as part of a habitat creation or restoration scheme.

It could be useful to review other historic management, for example the number and type of planted trees on site – and how these are managed. The chosen species include some atypical and out of place when compared with what we understand more natural habitats to be. Some trees could perhaps be managed by coppicing or pollarding to create alternative structures – currently all planted trees and shrubs are being managed by non-intervention. The “naturalness” of the site is one of issues that could be looked at in devising any new management strategy for the site.

Flooding

Flooding and other changes in water levels on site, has an impact on the both ecology of the site and public access. At times of high water public access can be difficult at the lower lying south end of the site. Being located in the floodplain the Environment Agency (EA) will have a view on any management that could change or alter its ability to flood and any knock on impacts for the surrounding area.

Wetland Habitat Habitat Restoration and Creation

There is plenty of scope to manage the existing wetland habitats, or adopt a more radical approach and restore / create new wetland habitats. Schemes that increase the local capacity for flood storage, should they be possible, could be looked on favourably by the EA. The survey did not find the current aquatic habitats to be particularly valuable ecologically. No freshwater invertebrates were recorded in the brief netting survey of the main channel and the number of wetland plant species on site was not high. Possible projects could include the creation of ponds, restoration of open water habitats in the old channels, opening up the heavily shaded section of channel at the north and/or south ends of the site or re-profiling the banks of the existing water bodies to create greater variety of structure including more extensive areas of shallow water. What work can be done will depend on the hydrology of the site and surveys will be needed prior to any work being done.

Water Quality

Three possible sources of pollution come to mind for the open water section of the channel in Area 7. Firstly any water that is derived directly from the Thames (during flooding events for example) will be high in both Nitrate and Phosphate – the River is not clean. The nitrate will be quickly lost, but any Phosphate remains. Locally a recent survey has shown Phosphate peaking at 1 mg / litre (phosphate as PO₄) and regularly reaching 0.5 mg/L – very high and high figures respectively (*pers comm.* Curt Lamberth, data from North Farm, Shillingford). The levels are high due to outflows into the river from sources such as sewage works, urban and agricultural run-off etc. Another very local source of direct pollution could be the camp site washroom – if its waste water flows directly into the channel this will top up potentially high existing nutrient levels making conditions very difficult indeed for most aquatic life. This will be especially true if the facilities include machines for washing clothes. A third possible source of pollution could be the contents of chemical toilets. The chemical used in these is lethal to aquatic life and it would not take much to wipe aquatic animal life. Occasional repeated doses of such chemicals could be enough to maintain permanently low levels of life in the channel.

Public Access

Assuming the type and level of public access is still acceptable – no major changes are required to the management of the site. To retain the most natural possible appearance and feel, the paths should be left un-surfaced. However, improvement could be made by altering the route of the paths such that they avoided the lowest areas of ground – which would mostly entail revision of the location of the internal path in the south east and south west parts of its route. The installation of a raised path or boardwalk in the lower areas is an alternative solution.

Incidental access by those using the camp site may also occur – but direct access is difficult as the water body sits between the site and main part of the field. If it is used by camp site residents then most access would be via the same route as the other local users. (See below for other potential impacts of camp site.)

Litter / Other Dumping

There is a significant litter problem on site in large part from litter derived from the adjacent camp site and perhaps the recreation ground. There is no obvious solution to this apart from stricter enforcement of littering rules on these sites and/or a more targeted approach to existing litter collections.

The random dumping of other materials from management activities elsewhere, such as the grass clippings in the south end of the old channel, should not happen. It may be possible to accommodate some material as wildlife habitat (e.g. breeding sites for Grass Snakes) but only by agreement using specified types and volumes of materials. Any future management of the site needs to include the storing / disposal of any cut material with the retention on site of at least some of the materials at strategic specified locations being the best way to minimise cost and maintain some useful wildlife habitats.

Resources

Whatever future management is adopted it needs to be within the scope of the available resources (financial, manpower) and at a sensible level with respect the current ecological condition of the site and the potential increases in its ecological value. The chosen regime needs to be detailed enough to maintain a variety of habitats yet not so detailed as to become difficult to follow and be too labour intensive. It is understood that for ongoing work the resources available, at least at present, are limited. (To be carried out by one person as part of his total annual work programme.) If funds could be obtained for one off capital projects these could be undertaken by external contractors without any impact on the existing personnel workload.

Suggested Management
(With reference to Map 1)

After due consideration of the survey results for the site and the possible factors influencing what work could be carried out the following management suggestions are made. Each task is described in turn, including a description of the target habitat, the type of management required and suggestion for the timing and methods to be used where useful. The management areas are described working anti-clockwise from the north east corner of the site.

Area 1 – Mature Hedge and Ditch with Trees

The original line of trees and shrubs in the hedge line requires no management. The mix of trees and shrubs is in good condition ecologically – it may no longer fit the classic description of a managed hedge but as it no longer needs to fulfil the function of a stock proof barrier and for example be of a particular (forcibly restricted) width. Similarly, there is no need to manage (restore) the overgrown silted up ditch that is contained within the hedge.

The outer edge of the woodland strip adjacent to the playing pitches of the recreation ground may need cutting back, should it start to encroach onto the playing fields. There is some variety of grasses and herbs growing on this side of the and there is potentially some ecological gain from managing a strip of the grassland less intensively. No scrub or trees should be allowed to colonise this “new” grassland, which should be managed by cutting. Depending on its botanical and/or other ecological value the suggested cutting regime could be by a nature conservation type hay cut (i.e. cut later in year in say September) - and if there is a significant amount of smaller herbs some cutting earlier in the year as well. The hedge line itself could be designated as a strip of longer grass / tall herb managed less intensively - with the suggested regime being a two year cutting cycle with half the area cut in March each year – and the uncut area cut the following year.

Within the Nature Area, for the strip between the original hedge line and mown circular path it is suggested that the current extent of scrub and trees is sufficient - and no further scrub or tree allowed. It is suggested the area of younger more recent scrub and trees is managed by rotational cutting. The inner zone closest to the original line of the hedge should be cut (to ground level) on an eight year cycle (suggested eight blocks) and the outer zone on a four year cycle (eight areas, two cut per annum). All scrub and/or tree cutting should be undertaken between October and February. The cut material should be stacked as a series of dense compact ongoing habitat piles, located at strategic sites for ease of work (to minimise the distance cut material needs to be moved). In general, if at all possible all other cut material (unless it has other specific uses) should also be retained on site and stacked as similar ongoing habitat piles at strategic locations for ease of working during site management. The remaining non wooded rough grass / herb habitats should be cut on a two year cycle (as described above) with any colonising trees or shrubs being removed (pulling / digging) when small, before they become established.

Within the existing hedge there are a small number of large / mature trees, which require no management (for nature conservation purposes).

Area 2 –Bramble and Rough Grass / Herb

This rough area is currently managed by non-intervention. Except for the purposes of controlling the potential invasion of the adjacent open grassland habitats by its rougher larger plants - a similar management regime is suggested, for the immediate future at least. It is suggested however that some intervention will be required at some time, such that it does not over time turn into an area of dense scrub / woodland. The current mix of bramble, rough grass and herb and occasional tree / shrub provides a good contrast to the large areas of open grass / herb to the south. The best area of Bramble on site is found in this management area. The past practice of dumping cut grass (in the form of bales) has provided good habitat and the same approach can continue to maintain ongoing habitat piles (as described above). When management is required it should be rotational / cyclic in nature to maintain the variety of habitats and prevent succession to a uniform dense woodland or scrub and the whole area should never be managed at any one time.

The northern end of the boundary hedge with the sports pitches, contained within Management Area 2, is made up of a thin line of more scattered trees, including a small number of large mature (veteran) Field Maples. These large trees are important features of the site and for nature conservation purposes require no management.

Heavily Shaded Drainage Channel, Between Areas 2 and 4

This section of drainage channel is heavily shaded by over mature Willows – providing a marked contrast to the open sunny sections of the channel to the south (Area 7). It is suggested that this habitat is retained but in a modified form. Large numbers of the stems should be managed by non-intervention – with the individual stems and trees as a whole being allowed to develop unhindered. They may split or break, fall and root themselves – with no specific structure is necessary or desirable.

The section of Willows at the south end of the block (closest to Management Area 7) and the south eastern edge (closest to the mown internal path) should however be pro-actively managed – in part to reduce any possibility of trees falls across the mown circular path or into the open water filled channel of Area 7 – but mostly to create and maintain an alternative woodland habitat. The individual stems can be either managed by coppicing or pollarding according to individual circumstances and resources.

The shaded section of the channel under the trees is continuous with the main open water section and will share any issues / problems with water quality – future management will need to take account of such issues (see discussion below).

Area 4 – Rough Grass, Rough Herb, Seasonally Flooded Channel, Riverbank and Backwater

The riverbank and backwater are uniformly clothed in trees and it is suggested that the habitat is diversified by dividing the trees into three more or less equal areas. One third should be left as it is – i.e. unmanaged mature trees allowed to develop as they will (except perhaps for reasons of public safety). One third should be managed by coppicing and/or pollarding on a rotational basis – perhaps on a five to 10 year cycle. The other third should be maintained by cutting on a short rotation (five year cycle or less) such that part of the riverbank and backwater are mostly open sunny habitats. It is suggested that the backwater is the main target for the latter more open woodland habitats.

The open part of the shady channel to the east, in the central part of Area 4 is only flooded at very high water levels and is currently dominated by rough herb, especially nettles. It is suggested that between 50% and 80% of this basin is dug out to increase the wetness of the habitat and try to promote a greater variety of plant species from the seed bank. The dug out spoil may need to be removed from the site, or at least piled up and/or spread over higher parts of the area. (Any work in this or any other area can only be carried out after detailed hydrological surveys to assess the feasibility of any proposed projects and after consultation and agreement with organisations including the Environment Agency.) If the area (for whatever reason) cannot be dug out, improvements in the botanical (and other) quality of the channel could perhaps be achieved by targeted cutting and/or less drastic turf stripping to control nettles and encourage other plant species.

The remaining part of Management Area 4, the area of rough grass and herb surrounding the extension of the channel up to the adjacent woodland habitats can be treated as one management area. It is suggested that the area is cut on a two year rotation, with one half cut in one year and the other cut the next. It is suggested that the grassland / herb habitat is divided into at least four areas with two cut per year.

Area 7 – Open Water Channel and Banks

Clean water is the most important factor in maximising the ecological quality of freshwater habitats. Only if water is clean will the diversity of species be maximised. It is suspected that the water in this channel is not clean for more than one reason (see above) and it would be useful to carry out a formal investigation of its water quality, before, and to inform, any work to improve the habitat is undertaken.

A simple measure to potentially improve the habitat of the main open water channel (water quality permitting) would be to in part re-profile the more or less uniform steep bank. Some steep sections should be retained while others are made less steep including some more of less flat areas. To create the maximum variety of habitat some areas should be above water and some submerged. The levels need to take into account seasonal and other variations of the water level – deliberately making areas that are very shallow (say 10 cm deep) and areas

that dry out on a seasonal basis. The area between the high and low water level is called the drawdown zone and is potentially a rich habitat potentially including a number specialist species. It is suggested the bank on the camp site side of the channel is left steep to deter access.

Depending on the results of a water quality survey, there is one possible management option to help control problems from waste water from the camp site wash house. One or more sections of the channel could be in-filled to create two or more separate water bodies such that the polluted water from the wash house cannot enter directly the main water body. The flow out of the wash house pond would be forced by overland flow over the top of the soil bund, with the bund area being at least 10 metres square in area to maximise its efficiency.

Of the other potential water quality problems described above possible solutions include the following. The problem of generally poor water quality will be difficult to solve and management of the water body will have to be adapted for it. If there is a problem with other pollution from the camp site (e.g. chemical toilet contents) then a strict policy of off-site disposal will need to be enforced.

In part the banks are covered by dense (mostly Blackthorn) scrub right up to the bank of the channel - and up to adjacent mown circular path. Without management the Blackthorn will continue to spread and dominate more of the bank. It is suggested that the Blackthorn is not allowed to expand any further. Some cutting back along its leading edges may help stop or slow its spread and if resources allowed a larger part of the scrub (perhaps 50%) could be managed by cyclic cutting by either longer and/or shorter rotational cutting (see Area 1 above).

The open long herb / grass areas should be managed such that any colonising trees are removed, but otherwise the area managed extensively and cut on a longer rotation – over a 3 to 5 year cycle.

Area 6 – Sedge Beds, Open Grassland and Scattered Trees

This Management Area is designated as an area of open habitat including grassland and sedge bed – retaining any existing tree or scrub cover but with no expansion of woody species.

The drier grassland areas should be managed by cutting on a two year cycle, with half the area cut each year in March. Any trees or shrubs should be removed (annual work).

The wetter areas including dense uniform sedge beds do not need regular management. Any trees or shrubs should be removed (annual work). Occasional cutting is all that is required, on a three to five year cycle.

Area 5 – Damp Scrub and Woodland

Management Area 5 is dominated by scrub with occasional trees – Blackthorn is abundant and dominant. Without further management the scrub and trees will continue to spread into the adjacent open habitats - and as for other parts of the site it is suggested that scrub and trees are pegged at their current levels with no further expansion allowed. The existing structure of the scrub is very uniform - and the following suggestions are made to diversify its structure. The same management could be applied to the contiguous area of scrub that has developed east of the original line of the hedge and ditch.

The margins of the scrub could be diversified by cutting a series of bays on the outside (north) edge of the block. After the initial clearing each bay should be cut again on a cycle – the number of years between each cut yet to be decided but probably between three and six years.

Within the block, linked glades focussed on the drainage ditches could be cut into and through the central areas of the block with the cut stumps being killed by chemical treatment and/or dug out, to prevent their re-growth. Whenever possible the cut material should be stacked as habitat to provide as much deadwood as possible. Wet woodland is an uncommon habitat – and even a small area of young woodland like this will provide habitat variation and a possible site for wet woodland species.

Area 3 – Grassland with Trees and Shrubs, Wet Low Lying Areas

This is the largest of the management areas and is primarily open (i.e. non-wooded) habitat. It is suggested that it should remain as such, with no further tree or shrub planting or new colonisation by natural generation. There is little or no ecological gain to be made from actively managing any of planted trees and shrubs and they should for the foreseeable future be managed by non-intervention (unless management is required for any other purposes).

Three simple management regimes are suggested for the grassland / herb areas. It is suggested that the regime is carried out for a three year period initially, after which the grassland should be surveyed again and the management regime revised if one or more of the suite of plants present were significant enough to require an alternative management method. Currently the site does not support a large number of plant species, and is dominated by tall and/or rank species. The proposed management regime is designed to create a more diverse sward suitable for, and to encourage a greater variety, of grassland species.

The following regimes are suggested. The southern end of the site could be managed as shorter grassland cut twice a year in early March and September / October. The grassland at the north end of the site should be managed as longer / rougher grass managed on a two year cycle with half the area cut in any given year in March. Most of the other remaining grassland, including path margins and largest part of the more central areas (apart from around the existing or any new damp or wet habitats) should be managed by cutting in July

(akin to a hay meadow) and also if required a second cut either in autumn or spring if required.

All the cut grass should be picked up and (space or other factors allowing) be stacked on site as permanent ongoing compact habitat piles located in strategic locations to minimise the work required to clear the site.

Cutting should go close to but not necessarily right up to the individual planted trees and groups of trees and shrubs. It is suggested that a strip of grass / tall herb up to 2 metres wide is left around the compact groups of trees and shrubs – and for lines of more scattered trees cutting can take place between and closer to the trees, taking care not to damage the trees in the process (some long grass around the individual trees can be retained).

Around the existing shallow damp areas – and in future any new ponds (see below) a narrow strip of vegetation should be managed by cutting on a two year cycle with half the area cut in September / October in any given year. The best location for such habitats would be the central part of Management Area 3 - aerial photographs appear to show the pattern of an old channel in this area. The small existing damp hollows towards the north end of the Area 3 are very shallow and currently support a minimal wetland plant flora. They could be enhanced (made wetter) by general deepening and/or the removal of the higher drier banks between the lowest spots. Alternatively or as well as this, other standing water bodies could be created within the central strip. Any such project will require a more detailed hydrological survey.

Public Access

Public access should continue to be provided on an informal basis by the provision of a mown path – following a route as, or similar to, that on the survey date. Immediately adjacent to the paths to ensure easy access more frequent mowing may be required than the designated management specified above – but any such mowing should take into account any good herb rich areas and cutting only the longer / ranker areas that may impede access. It will also be necessary in places to cut back (ideally kill) encroaching (Blackthorn) scrub where it is tending to grow into the path.

To date it has not been necessary to install any artificial path surfaces, despite the potential problems with access when conditions are wet. The two most problematic areas are the low point at the access point adjacent to the camp site - and the low lying area just inside the hedge at the southern entrance off the playing field. It is difficult to devise a route that avoids these wet spots.

Resources

Outlined above is a comprehensive plan that includes active management of a large part of the site. This plan is far removed from the current level of activity with regular work being more or less confined to the cutting of the circular path. None of the suggested management

is particularly intensive but overall there would need to be a large increase in resources management effort if the proposed scheme was to be adopted.

The plan can be adopted in stages allowing a staged increase in the resources to be budgeted in over a number of years. As most of the work rotational on cutting cycles between 2 and 10 years the work load is not as bad as it may seem to be on initial approach. External sources of labour could include Conservation Volunteers such as the local Green Gym or Oxford Conservation Volunteers.

Should resources be limited the suggested priorities for the site are as follows:

- The halting of any further advance of Blackthorn scrub or other natural colonisation of trees into the open habitats
- No further deliberate planting of trees or shrubs.
- The central area of grassland (Management Area 3) the first area to be managed as it is most likely to create the best conservation gain in the former of more diverse grassland swards.
- The creation of additional still water habitats, away from any potential sources of pollution (i.e. most probably in the central part of Area 3) would also be potentially very valuable. Any such work would need a good hydrological survey and very careful planning.
- The marginal habitats are of lower management priority and could be included later as other areas came under control and/or as other resources (perhaps one off grants) became available.

Species Surveys

The survey undertaken for this report was sufficient to devise the suggested management. If some or all of the suggested management is adopted then further surveys will be useful, with the distribution of species being recorded such that any changes (hopefully improvements) to the flora or fauna of the site can be identified and correlated with the management undertaken.

It would be expected that if some cutting was undertaken there would be an improvement in the flora at least as some of the less competitive species of plants were given more opportunities to grow, e.g. Cuckoo Flower and Meadow Vetchling, which were only seen at one location each, in the main central part of the site (Management Area 3). Recording would also pick up on the emergence of “new” species that are currently rare and present on site only as vegetative plants or perhaps only in the seed bank.

Information on other species groups should also be collected, as they will all help to identify improvements in the site and in future guide longer term approaches to its management.

Species Group	Common name	Scientific Name	All	Area 1	Area 2	Area 2 Hedge	Area 3	Area 4	Area 5	Area 6	Area 7	Site in General	Total	Species Type (Plants Only)
Bird	Mallard	<i>Anas platyrhynchos</i>	1	0	0	0	0	0	0	0	1	0	1	
Bird	Greenfinch	<i>Carduelis chloris</i>	1	0	0	0	0	0	0	0	0	1	1	
Bird	Wood Pigeon	<i>Columba palumbus</i>	1	0	0	0	0	0	0	0	0	1	1	
Bird	Crow	<i>Corvus corone ssp corone</i>	1	0	0	0	0	0	0	0	0	1	1	
Bird	Chaffinch	<i>Fringilla coelebs</i>	1	0	0	0	0	0	0	0	0	1	1	
Bird	Blackcap	<i>Sylvia atricapella</i>	1	0	0	0	0	0	0	0	0	1	1	
Bird	Blackbird	<i>Turdus merula</i>	1	0	0	0	0	0	0	0	0	1	1	
Sub-Total			7	0	0	0	0	0	0	0	1	6	7	
Invertebrate	Orange Tip	<i>Anthocharis cardamines</i>	1	1	1	0	0	0	0	0	0	0	2	
Invertebrate	Brown Lipped Snail	<i>Cepaea nemoralis</i>	1	0	0	1	0	0	0	0	0	0	1	
Invertebrate	Seven Spot Ladybird	<i>Coccinella 7-punctata</i>	1	0	1	0	0	0	0	0	0	0	1	
Invertebrate	Peacock	<i>Inachis io</i>	1	0	0	0	0	0	0	0	1	0	1	
Invertebrate	Spider	<i>Pisaura mirabilis</i>	1	0	1	0	0	0	0	0	0	0	1	
Sub-Total			5	1	3	1	0	0	0	0	1	0	6	

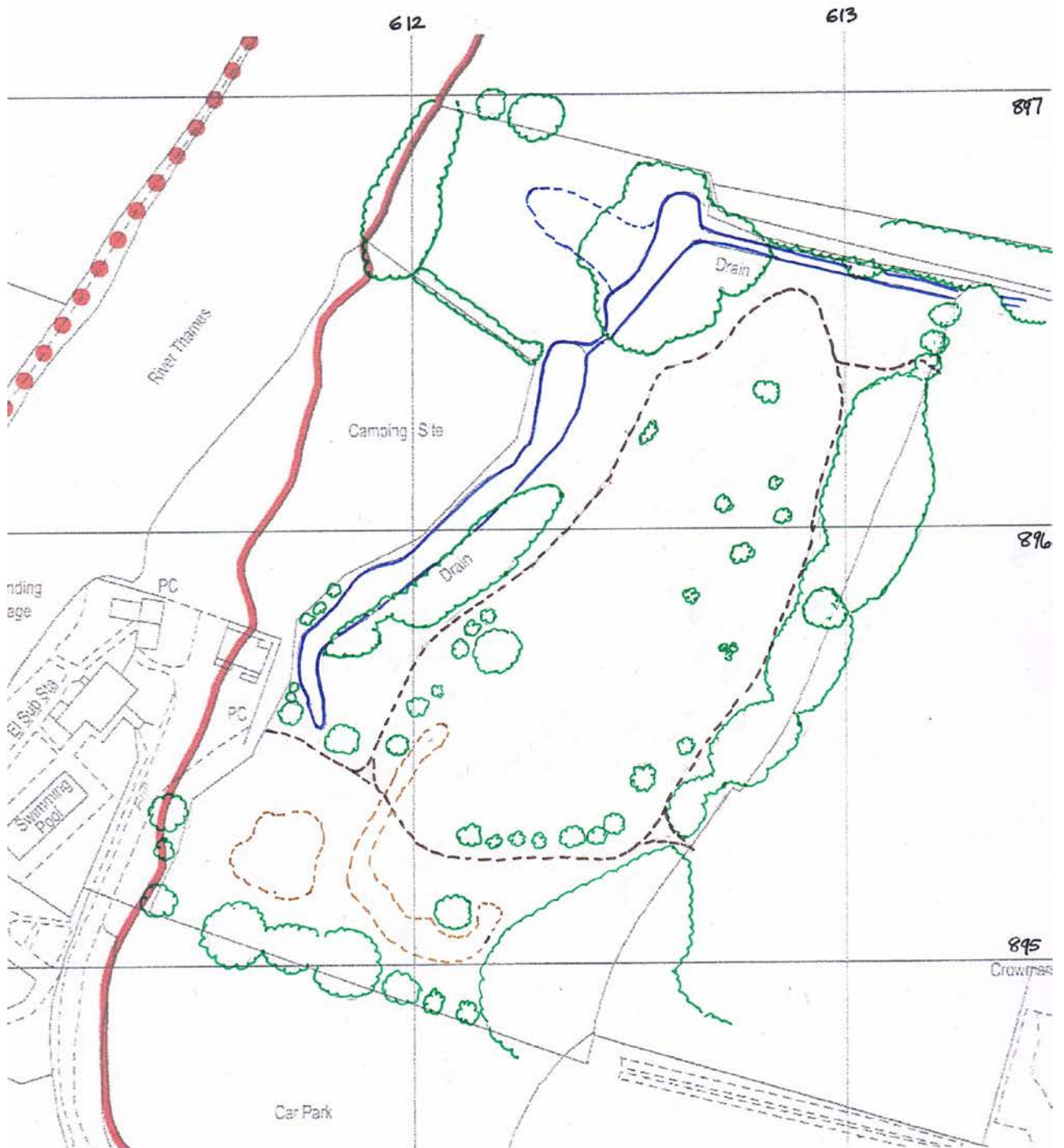
Plant	Field Maple	<i>Acer campestre</i>	1	0	1	1	1	0	1	0	0	0	4	Tree / shrub/ bramble
Plant	Yarrow	<i>Achillea millefolium</i>	1	0	0	1	0	0	0	0	0	0	1	Grassland herb
Plant	Meadow Foxtail	<i>Alopecurus pratensis</i>	1	1	1	0	1	1	0	0	0	0	4	Grass
Plant	Hedge Parsley	<i>Anthriscus sylvestris</i>	1	1	1	0	1	1	0	0	1	0	5	Rough wayside herb
Plant	Burdock Sp.	<i>Arctium sp.</i>	1	0	0	0	0	1	0	0	0	0	1	Disturbed ground
Plant	Lords and Ladies	<i>Arum maculatum</i>	1	0	1	0	0	0	0	0	0	0	1	Rough wayside herb
Plant	Daisy	<i>Bellis perennis</i>	1	1	0	0	0	0	0	0	0	0	1	Grassland herb
Plant	Silver Birch	<i>Betula pendula</i>	1	0	0	1	0	0	0	0	0	0	1	Tree / shrub/ bramble
Plant	Wetted Thistle	<i>Carduus acanthoides</i>	1	0	0	0	0	1	0	0	0	0	1	Grassland herb
Plant	Creeping Thistle	<i>Cirsium arvense</i>	1	0	0	0	1	0	0	0	0	0	1	Disturbed ground
Plant	Spear Thistle	<i>Cirsium vulgare</i>	1	1	0	0	0	0	0	0	0	0	1	Disturbed ground
Plant	Hawthorn	<i>Crataegus monogyna</i>	1	1	0	1	0	0	1	1	1	0	5	Tree / shrub/ bramble
Plant	Cocksfoot	<i>Dactylis glomerata</i>	1	0	1	0	0	0	0	0	0	0	1	Grass
Plant	Meadow / Tall Fescue	<i>Festuca pratensis / arundinacea</i>	1	1	0	0	1	0	0	0	0	0	2	Grass
Plant	Red Fescue	<i>Festuca rubra agg.</i>	1	1	0	0	1	0	0	0	0	0	2	Grass
Plant	Ash	<i>Fraxinus excelsior</i>	1	1	0	0	0	0	0	0	0	0	1	Tree / shrub/ bramble

Plant	Cleavers	<i>Galium aparine</i>	1	1	1	0	1	1	1	1	0	0	6	Disturbed ground
Plant	Dovesfoot Cranesbill	<i>Geranium molle</i>	1	1	0	0	0	0	0	0	0	0	1	Disturbed ground
Plant	Meadow Cranesbill	<i>Geranium pratense</i>	1	1	1	0	1	0	0	0	0	0	3	Grassland herb
Plant	Ground Ivy	<i>Glechoma hederacea</i>	1	1	0	1	0	0	1	0	0	0	3	Rough wayside herb
Plant	Hogweed	<i>Heracleum sphondylium</i>	1	1	1	0	0	1	0	0	0	0	3	Rough wayside herb
Plant	White Dead Nettle	<i>Lamium album</i>	1	1	0	0	0	0	0	0	0	0	1	Disturbed ground
Plant	Meadow Vetchling	<i>Lathyrus pratensis</i>	1	0	0	0	1	0	0	0	0	0	1	Grassland herb
Plant	Rough Meadow Grass	<i>Poa trivialis</i>	1	1	1	0	1	0	0	0	0	0	3	Grass
Plant	Poplar	<i>Populus sp.</i>	1	0	0	1	1	0	0	0	0	0	2	Tree / shrub/ bramble
Plant	Creeping Cinquefoil	<i>Potentilla reptans</i>	1	0	0	0	1	0	0	0	0	0	1	Grassland herb
Plant	Blackthorn	<i>Prunus spinosa</i>	1	1	0	1	1	0	1	0	1	0	5	Tree / shrub/ bramble
Plant	Meadow Buttercup	<i>Ranunculus acris</i>	1	0	0	0	1	0	0	0	0	0	1	Grassland herb
Plant	Bulbous Buttercup	<i>Ranunculus bulbosus</i>	1	1	0	0	0	0	0	0	0	0	1	Grassland herb
Plant	Lesser Celendine	<i>Ranunculus ficaria ssp ficaria</i>	1	1	0	0	0	1	0	0	0	0	2	Rough wayside herb
Plant	Creeping Buttercup	<i>Ranunculus repens</i>	1	0	0	0	1	0	1	0	0	0	2	Grassland herb
Plant	Purging Buckthorn	<i>Rhamnus catharticum</i>	1	1	0	0	0	0	0	0	0	0	1	Tree / shrub/ bramble
Plant	Dog Rose	<i>Rosa canina agg.</i>	1	1	0	0	0	0	0	1	0	0	2	Tree / shrub/ bramble

Plant	Bramble	<i>Rubus fruticosus</i> <i>agg.</i>	1	1	1	1	0	0	0	0	0	0	3	Tree / shrub/ bramble
Plant	Curled Dock	<i>Rumex crispus</i>	1	0	0	0	1	0	0	0	0	0	1	Disturbed ground
Plant	Broad leaved Dock	<i>Rumex obtusifolius</i>	1	0	1	0	0	0	0	0	0	0	1	Disturbed ground
Plant	Wood Dock	<i>Rumex sanguineus</i>	1	0	0	0	1	0	1	0	0	0	2	Rough wayside herb
Plant	Weeping Willow	<i>Salix x.</i> <i>Babylonica</i>	1	0	0	0	1	0	0	0	0	0	1	Tree / shrub/ bramble
Plant	Elder	<i>Sambucus nigra</i>	1	1	0	0	0	0	0	0	1	0	2	Tree / shrub/ bramble
Plant	Dandelion	<i>Taraxacum officinale</i> <i>agg.</i>	1	0	1	0	1	0	0	0	0	0	2	Grassland herb
Plant	Small Leaved Lime	<i>Tilia cordata</i>	1	1	0	0	0	0	0	0	0	0	1	Tree / shrub/ bramble
Plant	English Elm	<i>Ulmus procera</i>	1	0	0	1	0	0	0	0	0	0	1	Tree / shrub/ bramble
Plant	Nettle	<i>Urtica dioica</i>	1	1	0	1	1	1	1	1	0	0	6	Disturbed ground
Plant	Guelder Rose	<i>Viburnum opulus</i>	1	0	0	0	1	0	0	0	0	0	1	Tree / shrub/ bramble
Sub-Total			44	24	12	10	21	8	8	4	4	0	91	
Wetland Plant	Alder	<i>Alnus glutinosa</i>	1	0	0	0	1	0	0	0	0	0	1	Tree / shrub
Wetland Plant	Angelica	<i>Angelica sylvestris</i>	1	0	0	0	1	1	0	1	0	0	3	Herb
Wetland Plant	Wintercress	<i>Barbarea vulgaris</i>	1	0	0	0	1	1	0	1	0	0	3	Herb
Wetland Plant	Cuckoo Flower	<i>Cardamine pratensis</i>	1	1	0	0	1	0	0	1	0	0	3	Herb
Wetland Plant	Greater Pond Sedge	<i>Carex riparia</i>	1	0	0	0	0	0	0	1	1	0	2	Sedge

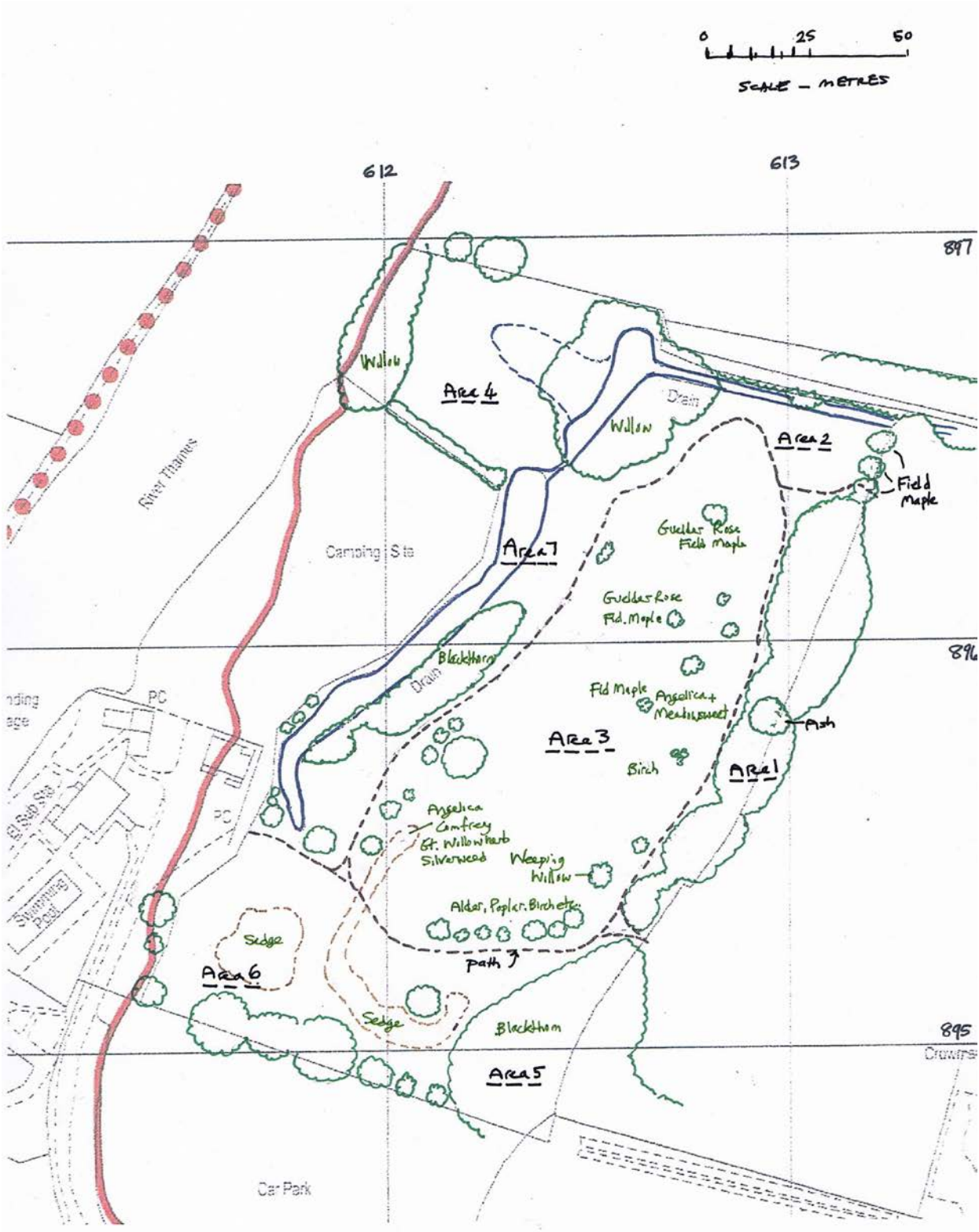
Wetland Plant	Great Willowherb	<i>Epilobium hirsutum</i>	1	0	1	0	1	1	0	1	1	0	5	Herb
Wetland Plant	Meadowsweet	<i>Filipendula ulmaria</i>	1	1	0	0	1	0	0	0	0	0	2	Herb
Wetland Plant	Reed Sweet Grass	<i>Glyceria maxima</i>	1	0	0	0	0	0	0	0	0	0	0	Grass
Wetland Plant	Purple Loosestrife	<i>Lythrum salicaria</i>	1	0	0	0	0	0	0	0	1	0	1	Herb
Wetland Plant	Reed Canary Grass	<i>Phalarus arundinacea</i>	1	0	0	0	0	0	0	0	1	0	1	Grass
Wetland Plant	Silverweed	<i>Potentilla anserina</i>	1	0	0	0	1	0	0	1	0	0	2	Herb
Wetland Plant	Willow sp	<i>Salix sp</i>	1	0	0	0	0	1	0	0	0	0	1	Tree / shrub
Wetland Plant	Common Comfrey	<i>Symphytum officinale</i>	1	1	1	0	1	0	0	0	0	0	3	Herb
Sub-Total			13	3	2	0	8	4	0	6	4	0	27	
Overall Total			69	28	17	11	28	12	8	10	10	6	130	

Base map



NATURE AREA, CROWMARSH RECREATION GROUND

Map 1

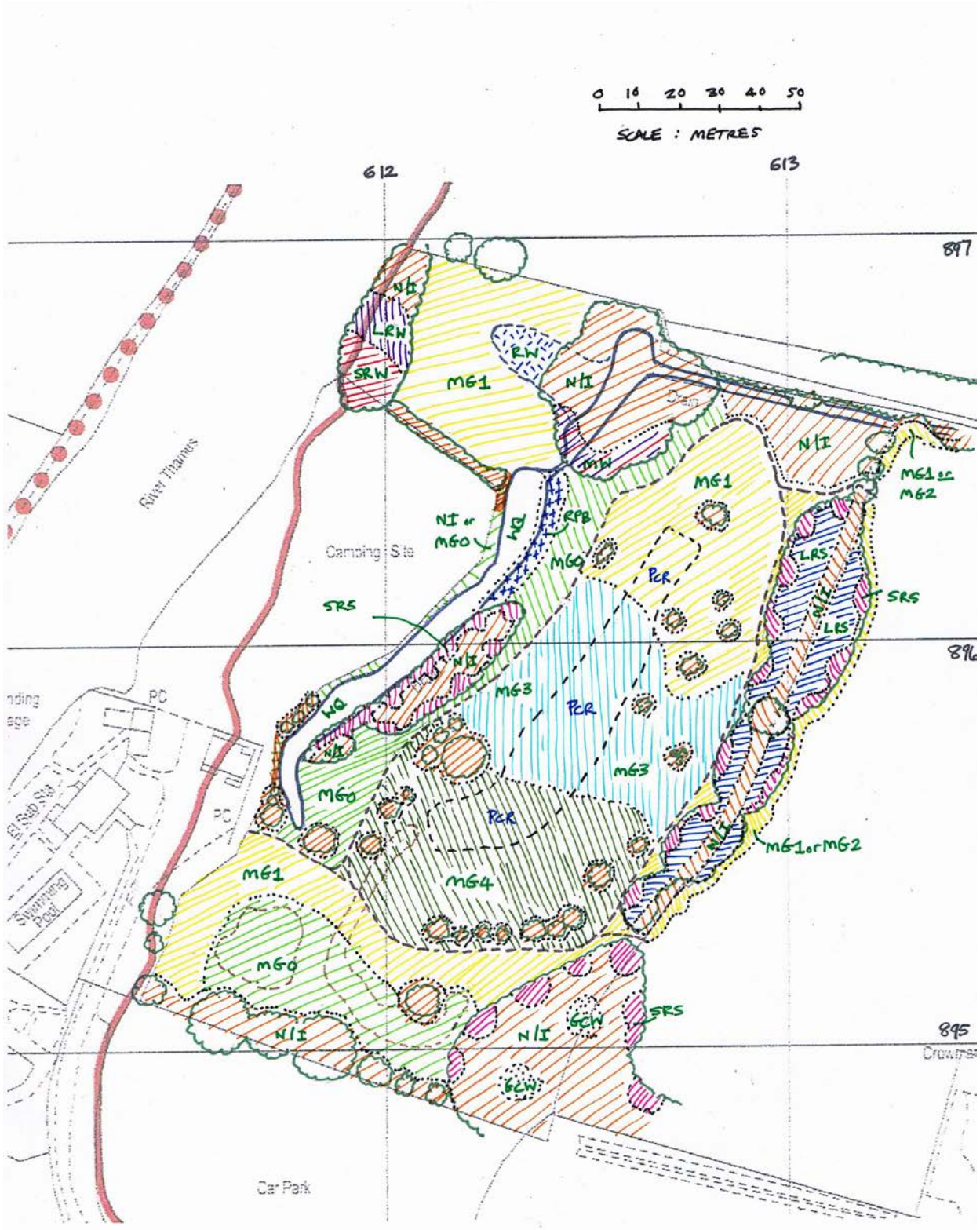


MAP 1 NATURE AREA, CROWMARSH RECREATION GROUND

INDICATIVE

RDA 11/2012

Map 2



INDICATIVE

MAP 2 NATURE AREA, CROWNMARSH RECREATION GROUND

SUGGESTED MANAGEMENT

RDA 11/2012

Key to Map 2 – Suggested Management. Nature Area Crowmarsh Recreation Ground

Non-Intervention Habitats

N/I Any habitat which requires no management for nature conservation purposes for the immediate future at least (Note – management may be required for other reasons however e.g. public safety.) – Orange Cross Hatching

Grassland Habitats

- MG0** Tall / rough grassland managed by cutting in March on 3 to 5 year cycle – Pale Green Cross Hatching
- MG1** Tall / rough grassland managed by cutting in March on 2 year rotation – Yellow Cross Hatching
- MG2** Medium grassland all cut in September every year – Yellow Cross Hatching
- MG3** “Hay meadow” grassland two thirds cut on rotation in July, with additional cut in September / October or March if required – Pale Blue Cross Hatching
- MG4** Shorter grassland all cut in March and September / October every year – Grey Cross Hatching

Scrub / Woodland Habitats

- LRS** Long rotation scrub / wood edge cut on 8 year rotation between November and February – Dark Blue Cross Hatching
- SRS** Short rotation scrub / wood edge cut on 4 year rotation between November and February – Pink Cross Hatching
- LRW** Woodland managed by cutting on rotation of 5 to 10 years – Purple Cross Hatching
- SRW** Woodland managed by cutting on rotation of 5 years or less – Red Cross Hatching
- MW** Managed woodland cut on rotation yet to be decided – Red / Purple Cross Hatching
- GCW** Creation of permanent glades – Brown Dots

Wetland Habitats

- RPB** Re-profile bank – Blue Crosses
- RW** Re-wetting e.g. by digging out – Blue Dashes
- WQ** Water quality survey required
- PCR** Possible pond creation / restoration area