

Friends of Park Fields



Management Plan For Park Fields Cowfield 2008



Prepared by Jim Hollinshead for and on behalf of the
Friends of Park Fields
November 2008

CONTENTS.

EXECUTIVE SUMMARY	1
1.0 AIMS.	1
2.0 MANAGEMENT POLICY.	1
2.1 Initial plans:	1
2.2. Interpretation and education and community use:-	1
3.0 MANAGEMENT PRESCRIPTIONS AND OPERATIONS	1
3.1 Grassland management	1
4.0 RESEARCH, SURVEY, MONITORING.	1
5.0 FUNDING	1
1.0 GENERAL INFORMATION.	2
1.1 Introduction.	2
1.2 Site Description and location.	2
1.3 Site definition and boundaries.	3
1.4 Access.	3
1.5 Paths.	3
1.6 Connectivity.	3
1.7 Legal and other official constraints and permissions.	3
1.8 Vision.	4
1.9 Aims.	4
2.0 ENVIRONMENTAL INFORMATION.	4
2.1 Physical.	4
2.2 Biological.	4
2.3 Habitats.	5
2.3.1 Mesotrophic Grassland.	5
2.3.2 Wet Grassland/Ponds.	5
2.3.4 Hedgerows/boundaries.	6
3.0 MANAGEMENT POLICY.	6
3.1 Initial plans	7
3.2 Interpretation and education and community use	7
4.0 MANAGEMENT PRESCRIPTIONS AND OPERATIONS	7
4.1 Grassland management.	7
4.2 Wetland management.	9
4.3 Fauna.	9
5.0 CULTURAL.	9
6.0 RECREATIONAL USE.	10
7.0 RESEARCH, SURVEY, MONITORING.	10
8.0 FINANCIAL PROVISION.	11
APPENDIX 1: Botanical survey and general observations	13
APPENDIX 2: Extract from UK Biodiversity Action Plan: Hedgerows.	19
APPENDIX 3: Extract from UK Biodiversity Action Plan: Lowland Meadows.	20
APPENDIX 4: Extract from UK Biodiversity Action Plan: Ponds.	22
FIGURES AND TABLES.	
Figure 1: Cowfield and Sportsfield.	2
Table 1: Summary management plan.	12

EXECUTIVE SUMMARY.

This management plan is produced and will be implemented by the Friends of Park Fields in cooperation with the Local Authority, advised by environmental professionals and academics. It will ensure a co-ordinated and consistent approach to management enhancing the Cowfield's biodiversity, passive recreational amenity and cultural value whilst preserving its essential landscape character.

1.0 AIMS.

- 1.1 To manage the space in a coordinated and consistent way through community involvement.
- 1.2 To improve the quality of the existing biodiversity by judicious creation of new habitats and features, in consultation with the local community.
- 1.3 To improve the local environment.
- 1.4 To promote the educational use of the site by local Primary and Secondary Schools, community groups and colleges.

2.0 MANAGEMENT POLICY.

- 2.1 Initial plans:
 - 2.1.1 To encourage the local community to take an active interest in the Cowfield.
 - 2.1.2 To implement sensitive management strategies to encourage the flora and fauna of a traditional lowland neutral meadow grassland (see Appendix 3), increasing the variety of wildflowers in the sward.
 - 2.1.3 To restore hedgerows (see Appendix 2), plant additional hedgerow trees and through creation of small, shallow and seasonal ponds and scrapes (see Appendix 4), enhance the overall biodiversity of the site.
- 2.2 Interpretation and education and community use:-
 - 2.2.1 Mowing of grass paths to allow free movement around the field.
 - 2.2.2 Maintenance of minimum possible appropriate restriction to public access.
 - 2.2.3 Provision of information on activities and wildlife observations.
 - 2.2.4 "Open days" and guided events as appropriate.
 - 2.2.5 Regular use by local schools and colleges for educational purposes.

3.0 MANAGEMENT PRESCRIPTIONS AND OPERATIONS

- 3.1 Grassland management will aim to increase species diversity by:-
 - 3.1.1 Timing of late season mowing after target plant species have flowered and set seed.
 - 3.1.2 Fertility reduction over time by removal of all cuttings.
 - 3.1.3 Reduction in vigour of competitive agricultural grass species by introduction of Yellow Rattle (*Rhinanthus minor*) into the sward as seed or plugs.
 - 3.1.4 Additional species introduction by slot sowing or container plant and plug planting into the grass sward as appropriate to the season, conditions and target species.

4.0 RESEARCH, SURVEY, MONITORING.

- 4.1 Detailed survey and analysis of soil nutrient status, vegetation, invertebrate, bird, bat and other mammal and amphibian species composition will take place from late winter/spring 2009, with annual monitoring thereafter. All survey results/species lists will be made as widely available as possible upon compilation.

5.0 FUNDING.

Basic funding for management, community and educational activities is provided by the Friends. In addition, support will be sought through proposed entry into Environmental Stewardship and application to funds such as the Heritage Lottery Fund, Million Ponds Campaign, and others as appropriate.

1.0 GENERAL INFORMATION.

1.1 Introduction

1.1.1 This management plan is being produced to ensure a co-ordinated and consistent approach to the management of The Cowfield as a public open space, managed to enhance the site's biodiversity and passive recreational amenity value, and preserve its essential landscape character.

1.1.2 Site Name: The Cowfield, Park Fields, Parkgate, Cheshire.

1.1.3 Management Plan produced by: Friends of Park Fields and implemented by the Friends in consultation and cooperation with the Local Authority, advised by Environmental professionals and academics from Liverpool John Moores University, Liverpool University and Cheshire Wildlife Trust.

1.2 Site Description and location.

1.2.1 The site is around 11.75 ha in extent and centred upon OSGB GR SJ284 783, 53° 17' 48.66" N, 3° 04' 28.91" W, between Parkgate Village and the Town of Neston. The site comprises typical Cheshire semi-improved hay-meadow/grazing pasture, and is situated between Wood Lane to the NE, the Wirral Way to the SW, a cycle/footpath to the NW, with amenity grassland and beyond this, housing to the SE (see aerial photo, fig.1). There were in the past at least two marl pit ponds, both of which have been filled, though evidence of their existence remains on site. There is evidence of a shallow pit, which may be the remnant of a WW2 AA gun pit in the NE quadrant of the site. One report claims the presence of remnants of ridge and furrow marks, though little if any evidence of this is currently discernible on the ground.



Figure 1: Cowfield and Sports field showing relationship to Parkgate and Neston, and main desire line path (red arrow) from SE to NW, exiting adjacent Parkgate Primary School.

1.2.2 The Cowfield, and the adjacent amenity grassland sports field (subject of application for designation to Village Green status and not part of this management plan) are Public Open Spaces owned by Ellesmere Port and Neston Borough Council (formerly Neston Urban District Council) since 1937. The Cowfield was farmed on a leasehold basis until 2005. The land is valuable as designated Green Belt land and, as such, is part of a green corridor between Neston and Heswall. It provides a much appreciated natural area for public enjoyment adjacent to residential areas and utilised for passive recreation (walking/dog walking/horse riding) and as a route between Neston and Parkgate, in particular for access to Parkgate Primary school. The site is adjacent to the Wirral Way and is accessed by a Cycle Way (National Cycle Path 56) and Bridle Way.

1.3 Site definition and boundaries.

1.3.1 Boundaries to the site are defined by a combination of fences and hedgerows. The Wood Lane/Cycle Way boundary (NE/NW) is defined by a fairly continuous hedgerow of variable (mainly poor) quality, comprised predominantly of Hawthorne (*Crataegus monogymna*), Blackthorn (*Prunus spinosa*) and Bramble (*Rubus fruticosus*) managed by flailing. The Boundary with the Wirral Way (SW) is fenced and has a bridle path adjacent, between the field and the Wirral Way embankment itself. The boundary with the Sports field amenity grassland to the SE is currently defined by post and wire fencing.

1.4 Access.

1.4.1 The site is freely accessible on foot, but access is restricted to vehicles and horses. Informal points of access are located along the post and wire boundary with the amenity grassland, and formal entrances adjacent the cycleway near the Brooklands Bridge arch of the Wirral Way and on Wood Lane. Gate access is present to the SE on Wood Lane.

1.5 Paths.

1.5.1 There are distinct desire line routes across the site formed by pedestrians to and from the various entrances, particularly NW/SE, used to access Parkgate Primary School from Neston (see arrow, Fig. 1). During very wet periods, the footpaths may become muddy, but for most of the year they are sufficient for the current level of traffic. During summer when vegetation growth peaks, the footpaths may become narrowed in some places; however they maintain their integrity all year round.

1.6 Connectivity.

1.6.1 The Cowfield/Parks Field site is very well connected to the surrounding public footpath, Bridle path and cycle path network, offering links to the wider countryside. Parkgate Parade is a 5-10 minute walk from the site with links to public transport and amenities. Neston town centre and train station is a 10-20 minute walk away with links to the bus and train network and offers a good range of amenities.

1.7 Legal and other official constraints and permissions:

1.7.1 There is a requirement contained within covenants relating to the Cowfield for a strip 12 feet wide (or, presumably, of such width as now constitutes the current local authority requirement for roadway provision) to be protected from any

development along the northern boundary of the Cowfield. The same covenants also specify that a stock-proof fence must be maintained along this boundary.

1.8 Vision.

1.8.1 *'To manage the Cowfield sympathetically, to enhance the site's biodiversity and passive recreational and amenity value, whilst preserving its essential landscape character for the quiet enjoyment of the local community.'*

1.9 Aims.

- To manage the space in a coordinated and consistent way through community involvement.
- To improve the quality of the existing biodiversity by judicious creation of new habitats and features, in consultation with the local community.
- To improve the local environment.
- To promote the educational use of the site by local Primary and Secondary Schools, community groups and colleges.

2.0 ENVIRONMENTAL INFORMATION.

2.1 Physical:

2.1.1 Underlying soils can be characterised as an agriculturally-improved grey-brown podsollic, or forest brown earth soil. The natural slope of the field is east-to-west towards the disused railway embankment, now the Wirral Way. This leads to impeded drainage in the bottom quarter of the field, giving a soil of weissenboden/gley characteristics and probably precludes any systematic recreational use of this lower area of the field without substantial drainage.

2.1.2 A very important issue for the Cowfield, (and the adjacent "Sports Field"), is that of its "open-outlook". The openness of the Park Fields site and the vista across the Dee marshes into Flintshire is valued and distinctive, a significant feature of the landscape character of the site. Importantly, feedback from the female membership of the Friends of Park Fields, is that most women in the area feel unsafe using the adjacent Wirral Way because of the enclosing effect of the tree canopy and shrubby understory. Part of their enthusiasm for the Park Fields, is that women feel much safer using it because they can see and be seen. It is therefore considered vital that this "open-outlook" is maintained in any enhancement of the Cowfield. The location of the field offers considerable scope for public participation and environmental education due to the adjacency of the site to recreational route ways and proximity to local Primary and Secondary schools.

2.2 Biological:

2.2.1 The site has been subject to little management for approximately two years. Prior to this, the grassland was managed mainly as pasture, at fairly low intensity and with little application of pesticides (probably no more than occasional spot application for control of notifiable weeds) and moderate fertiliser application. Regular silage/haylage crops were taken, usually taken in mid-season, with occasional later silage cuts.

2.3 Habitats:

2.3.1 Mesotrophic Grassland

2.3.1.1 Neutral grassland is the dominant vegetation on the site. Floral diversity is generally quite low, though variation in drainage across the site results in local variation in diversity and abundance of wildflower species. Due to the lack of management, the grassland is dense, probably currently too dense for breeding by ground nesting birds such as Sky Lark (*Alauda arvensis*). Rank weeds and suckering of shrubs such as Blackthorn (*Prunus spinosa*) from the adjacent hedge rows is becoming evident. The grassland constitutes an attractive habitat, especially in spring and early summer. There is abundant Sorrel (*Rumex acetosa*) and Meadow Buttercup (*Ranunculus acris*). Few plant species of special or outstanding conservation value are currently associated with the site, although a number of vertebrate (mammal and bird) and invertebrate species of concern are regularly or occasionally identified as present. (See botanical report, Appendix 1).

2.3.1.2 To maintain linkage to the field's previous grazing/hay-making use, provision will be made for a progressively improving wild-flower meadow area, as soil fertility is subject to a managed decline over time. The area available for this purpose is of a sufficient size to allow for undisturbed breeding by ground-nesting birds as a management objective, and to be, and remain, sufficiently attractive for an agricultural contractor to harvest an annual hay crop in late-July or August at no net cost to FoPF. Within the general regime of fertility reduction through two late annual mowings, some limited improvement to the floral diversity, "steering" the sward towards a target community typical of grassland of higher conservation value, could be achieved over time. It is recognised that this must be a long term aim. This will be done by additional planting and seeding, using a variety of methods, with stock and seed of local provenance. While there is clearly a cost implication in terms of both money and effort, the activities associated with this are precisely those in which volunteers, friends of the site, and local school children, could become involved, requiring minimal skill or training on the part of the volunteer and which would generate income as levels of support associated with the increased feeling of "ownership" such activities are known to promote, become translated into increased membership of the Friends (see section 8).

2.3.2 Wet Grassland/Ponds

2.3.2.1 The soil Conditions in the bottom quarter of the field should be embraced and developed to support grassland species associated with wetter conditions. To maximise the biodiversity and landscape character of the site, small water bodies, not on the scale of a traditional Cheshire marl pit pond, but rather a cluster of small shallow ponds and seasonally wet scrapes will be created. Given the community involvement in the site and its proximity to leisure paths and residential areas, new ponds will be created with appropriate planting, using stock and seed of local provenance around the margins. This is considered necessary as a means of "buffering" the pond margins and enhancing the appearance of these features over the short term. Small wet-lands such as these are very important habitats. The depth of the water need not exceed 30/50cm, with many zones allowed to dry in the summer months. Further assistance and funding is available for this element of the project from a number of sources, notably advice and assistance from Liverpool John Moore University Ponds Research Unit and some funding via Ponds

Conservation, based in Oxford Brooks University, through their “Million Ponds Campaign”. The basic principle is to create zones with dry, wet, and partially wet characteristics to optimise the value for wildlife. “Woodpile” hibernaculae and patches of scrub will be established adjacent to these wetland areas to facilitate overwintering by amphibians such as newts and toads.

2.3.4 Hedgerows/boundaries.

2.3.4.1 The existing hedgerows have been managed by flailing and are consequently of moderate to poor quality, “gappy”, and generally quite species poor.

2.3.4.2 Restoration of the existing hedgerow boundaries will be undertaken through gapping up (planting of new hedging plants of appropriate species to produce a continuous hedge line), coppicing in sections where hedge plants are too mature to lay, laying remaining sections in the traditional style of the county, and planting of occasional hedge line standard trees of appropriate species, i.e. smaller growing selections from the typical hedgerow tree species of Cheshire. Species composition will be enhanced through introduction of typical woody hedgerow species under or un-represented in the existing species composition. The hedge base flora will be enhanced through planting and seeding with appropriate herb species, from stock and seed of local provenance.

2.3.4.3 Where the existing boundary consists of fence lines, these will be replaced by the planting of a species rich hedgerow, managed by annual cyclical trimming, one side of the hedge line trimmed per alternate year, gapping up to replace failed plants as necessary and with laying scheduled for a 15-20 year cycle. The development of the hedge base flora will be “kick-started” through planting and seeding with appropriate herb species, from stock and seed of local provenance. Planting of hedgerow standard trees in this section is open to consideration, but maintenance of the open aspect of the site will be the primary management consideration in this section.

2.3.4.4 Management of the hedge lines will be by cyclical laying and trimming. Laying of the existing hedge lines will be scheduled (subject to the availability of funding) at 25% annually until all existing hedges are laid and gapped up. Thereafter laying will take place on an approximate 15 year cycle. Between laying, annual trimming will take place on a cyclical basis, one side of the hedge line per alternate year.

2.3.4.5 Hibernaculae for the use of overwintering reptiles such as grass snake (*Natrix natrix*), Slow Worm (*Anguis fragilis*) and small mammals such as Hedgehog (*Erinaceus europaeus*) will be created along the hedge line boundaries within the hedge base.

3.0 MANAGEMENT POLICY.

3.0.1 The prime purpose of the meadow is for public enjoyment. Management should therefore not restrict but enhance this objective. Improving the quality of the grassland to increase the wildflowers, planting of trees and shrubs to provide cover and nesting sites for birds and the provision of seats in quiet locations will add to public enjoyment while enhancing the value for wildlife.

3.1 Initial plans:

3.1.1 To encourage the local community to take an active interest in the future of the “Cowfield”,

3.1.2 To implement sensitive management of the grassland to encourage flora and fauna of a traditional meadow.

3.1.3 To increase the variety of wildflowers by planting plugs into the grass sward.

3.1.4 To restore the hedgerows by replanting with native hedgerow trees and shrubs.

3.1.5 To plant additional standard hedgerow trees to provide feeding, roosting and breeding habitat for birds, bats and invertebrates.

3.1.6 To create small ponds and scrapes, and associated terrestrial habitats, in order to enhance the overall biodiversity of the site by inducing colonisation by amphibians, and aquatic insects and plants.

3.2 Interpretation and education and community use:-

3.2.1 Grass paths will be mown to allow people to walk freely around the field, along the existing desire lines.

3.2.2 Minimum possible restriction to public access will be maintained, subject to health and safety requirements relating to cyclical management practices, and the seasonal requirements of biodiversity management.

3.2.3 Information on activities on the site and wildlife observations will be made as widely available as possible through provision of notice boards, members/friends bulletins and regular contributions to local news papers and websites.

3.2.4 “Open days” and events will be organised as appropriate and as frequently as feasible subject to the availability of funds and the volunteer nature of the project.

3.2.5 Regular use by local schools and colleges for educational activities, practical management/conservation tasks and participation in scientific monitoring of wildlife will be positively encouraged.

4.0 MANAGEMENT PRESCRIPTIONS AND OPERATIONS

4.1 Grassland management.

Aim to increase species diversity by:-

4.1.1 Timing of late season mowing after target plant species have flowered and set seed.

4.1.2 Reducing fertility over time by removal of all cuttings, and encouraging and promoting the removal of dog faeces by dog walkers using the site.

4.1.3 Aiming to reduce the vigour of competitive agricultural grass species by introduction into the sward of parasitic Yellow Rattle (*Rhinanthus minor*) as seed, plugs or hay strewing.

4.1.4 Introducing additional species (forbs and selected grasses) into the sward by slot sowing or plug and container plant planting as appropriate to the season, conditions and target species. The aim will be to improve the aesthetic quality of the grassland, and enhance general biodiversity by increasing plant species diversity, inducing additional invertebrate species to colonise and “steering” the plant species composition towards an NVC community of higher conservation value than that currently existing on site.

4.1.5 Two cuts per year are required to make progress in fertility reduction and maintain an open sward analogous to a semi-improved hay meadow. The first will be made no earlier than the 3rd week of July, to allow seed to be set and ripen before mowing. The second will be made in September or early October according to prevailing weather conditions. These cuts will be carried out by a local agricultural contractor in return for collection of the resulting hay/haylage crop. The length of cut should be not longer than 6 inches, shorter if scarification and slot seeding or plug-planting are intended to follow soon after. Some areas should remain uncut to provide overwintering habitat for invertebrates and small mammals as well as seed heads for birds. These designated areas will be cut approximately every 3 years. A margin of at least 2m in width will be left adjacent to all hedge lines for use by ground nesting/feeding birds, invertebrates, small mammals, amphibians and reptiles.

4.1.6 The grass around the base of the hedge and in scrub areas will not be strimmed, as this will cause damage to the bark of the majority of trees and shrubs. Any necessary cutting in these areas will be done by hand by conservation volunteers.

4.1.7 There will be a general presumption against the use of herbicides throughout the site, reflecting both the incompatibility of pesticide use with much of the conservation management intended, and the fairly demanding requirements of current Health and Safety legislation and regulations relating to pesticide storage and application. However, on occasions it may be necessary to use limited and minimal amounts of herbicide for specific tasks. To meet the requirements of the law, any such treatment must be carried out by a suitably qualified person and herbicide use and application must accord with all relevant Health & Safety and COSHH guidelines. Competitive, rank and notifiable weeds will be removed prior to flowering and mowing, by hand where possible or required, or by treatment with spot applications of a suitable herbicide by a suitably qualified operative when absolutely necessary.

4.1.8 Only when a satisfactory management regime has been established will any introductions of wildflower plugs or pot grown plants be undertaken. Plugs/pot grown plants will be planted into discrete locations, pre-treated by turf removal or if absolutely necessary a spot application of contact herbicide to allow a “breathing space” for the plant to establish before facing competition from the surrounding sward.

4.1.9 Path mowing should take place monthly from April to October, to a width of approx. 1.5 - 2 metres.

4.1.10 After a suitable period of monitoring of soil fertility and progress with supplementation of the species composition of the sward through the above techniques, if an acceptable level of improvement in the sward has not been achieved, consideration will be given to more invasive treatment, such as deep inversion ploughing and re-seeding with a meadow seed mixture using seed of local provenance. Advice and assistance in this will be sought from Liverpool University, Landlife and Cheshire Wildlife Trust.

4.1.11 In addition, consideration will be given to management by late grazing at minimally low stocking levels, of areas suitable for ground nesting birds, as late grazing (preferably by cattle rather than sheep) produces the short, "tussocky" turf most suitable for this purpose. The site was grazed until 2005, though at a much higher stocking rate than would be appropriate for this purpose. A heritage breed such as Irish Moiled, Dexter and Longhorn would be suitable and available on hire or loan through connections with Cheshire Wildlife Trust and Liverpool City Council's Croxteth Country Park.

4.1.12 Cutting of the grass crop will be carried out in a "bird friendly" way, if and when ground nesting birds are induced to use the site. As young birds are very reluctant to run across open ground, the hay or silage will be cut from the centre of the field outwards. The aim should be to prevent the creation of islands of uncut hay or silage and the line of cutting from the middle outwards should leave an escape route through the uncut strip around the perimeter of the field.

4.2 Wetland management.

4.2.1 Any wetland areas (small ponds and scrapes) created will be managed with minimal intervention, aimed at prevention of invasion and establishment of over dominant herbaceous species such as *Typha* spp., scrubby, or woody plants such as Willow, Alder etc. No more than 30% vegetation clearance will take place in any year. The aim will be management of natural succession, rather than its interruption or prevention, with the aim to maximise the aquatic biodiversity value of the overall wetland component of the site, and replacement of wetland areas reverting to terrestrial habitat over time as necessary. Advice on pond and scrape creation will be sought from LJMU's Ponds Research Unit and Cheshire Wildlife Trust's Cheshire Ecological Services.

4.3 Fauna.

4.3.1 As yet no reliable detailed report regarding the fauna of the site has been produced; however Field Vole (*Microtus agrestis*), Brown Rat (*Rattus norvegicus*), Stoat (*Mustella erminea*), Fox (*Vulpes vulpes*) and a number of unconfirmed bat species are recorded as using the site.

5.0 CULTURAL.

5.1 The use of the field for quiet recreation and educational activities is a fundamental part of the management plan. In addition, where this is consistent with the central aim of biodiversity, enhancement, use of the site for cultural purposes

(e.g. by artists groups etc.) will be facilitated and encouraged wherever possible. The field is adjacent to the Sports field, which is regularly used for small scale sporting events and for horse riding, including an annual gymkhana. Consideration will be given to timing of Friends events relating to the site to coincide with such events.

6.0 RECREATIONAL USE.

6.1 Situated in a residential area the meadow is subject to considerable recreational pressure. Many local residents walk the meadow daily, either to exercise their dogs or for quiet enjoyment. Children use the mown paths to cycle and joggers to run. People rarely stray from the paths however, so the rough grassland remains relatively undisturbed other than by roving dogs.

6.2 However, since an objective of the biodiversity enhancement on site is the encouragement of ground nesting birds, and a pre-requisite for effective enhancement of the floral biodiversity of the site is managed reduction of soil nutrient status, there is a clear conflict of interest between biodiversity enhancement and dog walking. The structure provided by the existence of a substantial membership of the Friends organisation will be utilised to facilitate a discourse between dog walkers and the management committee, with a view to hopefully mutually acceptable and minimal restriction on access to dogs. In particular, such restriction is likely during the nesting season of any ground nesting bird species attracted to the site. Provision available for removal of dog faeces from the site by dog owners will be enhanced and the practice encouraged through explanation and information at entrances to the site.

7.0 RESEARCH, SURVEY, MONITORING.

7.1 Detailed survey and analysis of soil nutrient status will take place from spring 2009, with annual monitoring thereafter.

7.2 NVC survey and detailed annual monitoring of floral species composition and abundance in static quadrats will take place from spring 2009.

7.3 Surveys of the invertebrate community present on site will be undertaken during 2009, with monitoring to continue subject to the availability of suitable volunteer expertise or funding for professional survey.

7.4 Breeding bird survey will take place from spring 2009, with annual monitoring thereafter.

7.5 Monitoring of plant, amphibian and invertebrate communities present in created water bodies will be ongoing from their creation.

7.6 A bat survey will be made, with subsequent annual monitoring, from spring 2009.

7.8 A small mammal survey will be made during 2009, with annual monitoring thereafter.

7.9 All survey results and species lists will be made available upon compilation to the county recording centre (rECOrd), based at Chester Zoo, and to the National Biodiversity Network Gateway (a web based data portal, based at the Centre for Hydrology and Ecology, Monkswood), and any relevant specialist organisations with an interest at local or county level. An annual monitoring report will be published by the Friends of Park Fields as part of their annual report to members, and regular bulletins provided to the Friends membership circulated as widely as possible among the local community.

8.0 Financial Provision.

8.1 Basic financial provision for the management of the Cowfield is available from the Friends of Park Fields. Currently, membership generates an income in the region of £1,000 pa. Membership is increasing and outgoings are minimal since the administration and running of the association is on a voluntary basis. Additional funds will be also generated through events and sponsorships, though at this stage projections of potential income are problematic.

8.2 As soon as a management agreement can be made between the Friends and the LA as land owners, steps will be taken to begin the process of entering the land into Environmental Stewardship, initially at Entry Level, later Higher Level, which will help significantly with funding if the application is successful.

8.3 Approaches will also be made to the heritage lottery, Landfill Communities Fund and other grant awarding bodies, such as The Million Ponds Campaign as already mentioned. Application will also be made to a range of grant awarding bodies for relevant items of expenditure and habitat creation activities.

Table 1: Summary management plan.

Tasks	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Action by
First mowing													Agricultural Contractor
Second mowing													Agricultural Contractor
Ragwort control													Volunteers
Litter pick													Volunteers
Check fences, gates etc													Volunteers/designated site warden.
Floral surveys													Volunteers/Students from Liverpool and Liverpool John Moores Universities
Trim hedge													Agricultural Contractor
Invertebrate Surveys													Volunteers/Students from Liverpool and Liverpool John Moores Universities
Bird surveys	OW	OW	OW	BBS	BBS	BBS			OW	OW	OW	OW	Volunteers/Students from Liverpool and Liverpool John Moores Universities/ RSPB
Mammal surveys													Volunteers/Students from Liverpool and Liverpool John Moores Universities
Amphibian surveys													Volunteers/Students from Liverpool and Liverpool John Moores Universities

OW = Over Wintering birds **BBS** = Breeding Bird Survey

Appendix 1

Botanical survey and general observations by Dr. Hilary Ash made in May/June 2007, with additional notes by Ann Parkes (local resident).

PARKFIELD, PARKGATE. SJ284784

Botanical Survey 21/5/07 with additions 21/6/07.

Hilary J. Ash

Species abundance is estimated within the habitat on the DAFOR scale: D=dominant, A=abundant, F=frequent, O=occasional, R=rare, L=locally.

Species list for field and hedge bottoms:

<i>Achillea millefolium</i>	Yarrow	O
<i>Aegopodium podagraria</i>	Ground Elder	R
<i>Agrostis capillaris</i>	Common Bent	F
<i>Agrostis stolonifera</i>	Creeping Bent	O, LA
<i>Alliaria petiolata</i>	Hedge Garlic	R
<i>Alopecurus pratensis</i>	Meadow Foxtail	A
<i>Anthriscus sylvestris</i>	Cow Parsley	O
<i>Arrhenatherum elatius</i>	false oat-grass	R
<i>Artemisia vulgaris</i>	Mugwort	R
<i>Avena sativa</i>	Oat	O
<i>Bromus hordeaceus</i>	Lop-grass	O, LA
<i>Bromus sterilis</i>	Barren Brome	R
<i>Cerastium fontanum</i>	Mouse-ear Chickweed	O
<i>Cirsium arvense</i>	Creeping Thistle	R
<i>Dactylis glomerata</i>	Cocksfoot	A
<i>Daucus carota</i>	Wild Carrot	R
<i>Elymus repens</i>	Couch Grass	O, LD
<i>Festuca rubra</i>	Red Fescue	O
<i>Galium aparine</i>	Cleavers	O
<i>Galium mollugo</i>	Hedge Bedstraw	R
<i>Geranium dissectum</i>	Cut-lvd Cranesbill	O
<i>Heracleum sphondylium</i>	Hogweed	R
<i>Holcus lanatus</i>	Yorkshire fog	O
<i>Holcus mollis</i>	Soft grass	F, LD
<i>Lapsana communis</i>	Nipplewort	R
<i>Lolium perenne</i>	Ryegrass	F, LA
<i>Pentaglottis sempervirens</i>	Green Alkanet	R
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Plantago major</i>	Plantain	O, LF
<i>Poa pratensis</i>	Smooth Meadow-grass	O
<i>Poa trivialis</i>	Rough Meadow-grass	F, LA
<i>Quercus sp.</i>	Oak seedling	R
<i>Ranunculus acris</i>	Meadow Buttercup	F
<i>Ranunculus repens</i>	Creeping Buttercup	F, LA

<i>Rumex acetosa</i>	Sorrel	A
<i>Rumex crispus</i>	Curled Dock	O
<i>Rumex obtusifolius</i>	Broad-leaf Dock	O
<i>Sisymbrium officinalis</i>	Hedge Mustard	O
<i>Sonchus oleraceus</i>	Smooth Sowthistle	R
<i>Stachys sylvatica</i>	Hedge Woundwort	R
<i>Stellaria graminea</i>	Lesser Stitchwort	O
<i>Stellaria media</i>	Chickweed	R
<i>Taraxacum agg.</i>	Dandelion	O, LF
<i>Trifolium pratense</i>	Red Clover	O
<i>Trifolium repens</i>	White Clover	O
<i>Urtica dioica</i>	Stinging Nettle	O, LA
<i>Vicia sativa</i>	Common Vetch	O

Local resident Ann Parkes noted the following additional species for the field and surrounding hedgerows:

Goosefoot (<i>Chenopodium</i> sp.)	Corn Spurrey (<i>Spergula arvensis</i>)
Red Campion (<i>Silene dioica</i>)	Celandine (<i>Ranunculus ficaria</i>)
Fumitory (<i>Fumaria</i> Sp.)	Cuckoo-flower (<i>Cardamine pratensis</i>)
Shepherd's Purse (<i>Capsella bursa-pastoris</i>)	
Bird's-foot Trefoil (<i>Lotus corniculatus</i>)	
Cranesbill (<i>Geranium</i> sp.)	Spurge (<i>Euphorbia</i> sp.)
Willow-herb (<i>Epilobium</i> sp.)	Common Toadflax (<i>Linaria vulgaris</i>)
Speedwell (<i>Veronica</i> sp.)	Valerian (<i>Centranthus</i> Sp. or <i>Valeriana</i> sp.)
Field Scabious (<i>Knautia arvensis</i>)	Ox-eye Daisy (<i>Leucanthemum vulgare</i>)
Ragwort (<i>Senecio</i> sp.)	Burdock (<i>Arctium</i> sp.)
Knapweed (<i>Centaurea</i> sp.)	Perennial Cornflower (<i>Centaurea Montana</i>)

Boundaries:

South (between Cowfield and sports field): old post and barbed wire fence, lined with rough grassland, stinging nettle, hogweed and common vetch.

East along Wood Lane: clipped hedge, mostly blackthorn in northern half and bramble in southern, with some hawthorn, dog rose, elder and sycamore. Blackthorn is suckering out into Cowfield. Hedge bottom of tall herb/rough grass: stinging nettle, cow parsley, meadow foxtail, cocksfoot, ribwort, false oat-grass, cleavers, bindweed.

A few gaps, filled with post and wire fencing.

North: footpath fenced off with post and rail/barbed wire. Western end has ca. 100m of hedge, unclipped. Mostly hawthorn with some elder, sycamore and ivy.

West: relatively new post and wire fence separating new bridleway parallel to Wirral Way. Scattered plants of hedge garlic, cow parsley, sycamore, oak, cherry, elder, etc.

Sports field: usual sports turf of ryegrass/meadow grass/white clover with dandelions and daisies.

Invertebrates

Both surveys were done on fairly cloudy but warm days and relatively few insects were seen.

21/5: "White butterfly", Bumble Bee, Crane flies, a leaf bug and cuckoo-spit.

21/6: red admiral 1 (*Vanessa atalanta*)

Small Tortoise-shell 4 (*Nymphalis -aglais-urticae*)

Comma 1 (*Polygonia c-album*)

Meadow Brown 17 (*Maniola jurtina*)

Large Skipper 9 (*Ochlodes sylvanus*)

Peacock caterpillars (*Inachis Io*) (many)

Hoverfly 2

Nursery-web spider (many)

Cuckoo-spit (a frog-hopper) abundant

Jewel beetle

Garden snail

Peacock, red admiral, small tortoiseshell and comma feed on stinging nettle as caterpillars. There are a number of sunny nettle clumps across the field and especially near Wood lane. Skippers and meadow brown feed on grasses as caterpillars.

All will fly to surrounding land to seek nectar from flowers.

The flora is fairly poor in good nectar-providing flowers, which will restrict the variety and quantity of invertebrate life. The one patch of hedge bedstraw, in flower on 21/6, had hoverflies on it, which were not seen anywhere else in the field.

BIRDS

Bird data from local resident Ann Parkes and local birder Mike Mahe, (the latter gathered in course of surveys for CAWOS breeding and wintering atlas, 2005-6.)

Heavy dog walking use is restricting the number of birds using the field itself during parts of the day. All the records apply to the general area, so including the hedges and Wirral Way as well as Cowfield itself, since birds need a range of habitats. For example, the finches are likely to appear in autumn to feed on seeding grasses and thistles.

Red = red list of conservation concern

Amber = amber list of conservation concern

Carrion crow (*Corvus corone corone*)

Magpie (*Pica pica*)

Black-headed gull (*Chroicocephalus ridibundus*)

Green woodpecker (*Picus viridis*) Amber

Curlew (*Numenius arquata*) (30+ in winter on fields of Leighton Hall Farm)

Skylark (*Alauda arvensis*) (formerly nesting on Cowfield) Red

Song Thrush (*Turdus philomelos*) Red

Mistle Thrush (*Turdus viscivorus*)

Redwing (*Turdus iliacus*)

Fieldfare (*Turdus pilaris*)

House Sparrow (*Passer domesticus*) Red

Starling (<i>Sturnus vulgaris</i>)	Red
Yellowhammer (<i>Emberiza citronella</i>)	Red
Swallow (<i>Hirundo rustica</i>)	
Swift (<i>Apus apus</i>)	
House Martin (<i>Delichon urbica</i>)	
Goldfinch (<i>Carduelis carduelis</i>)	
Chaffinch (<i>Fringilla coelebs</i>)	
Linnet (<i>Carduelis cannabina</i>)	
Greenfinch (<i>Carduelis chloris</i>)	
Kestrel (<i>Falco tinnunculus</i>)	
Red kite (<i>Milvus milvus</i>) (over-flying rarity)	
Sparrow Hawk (<i>Accipiter nissus</i>)	
Buzzard (<i>Buteo buteo</i>)	
Little Owl (<i>Athene noctua</i>)	
Partridge (<i>Alectoris rufa</i>) (species unidentified)	
Pheasant (<i>Phasianus colchicus</i>)	

COMMENTS AND SUGGESTIONS - In no particular order. From Hilary Ash with help from Colin Wells (RSPB) and Mike Maher.

1) The grassland is a typical Cheshire semi-improved hay-meadow/grazing pasture, with much sorrel and buttercup. It is not particularly valuable in conservation terms, but is an attractive amenity, especially in spring/early summer. It has presumably been managed at low intensity with little use of herbicides (probably just to control docks, thistles and ragwort), and moderate applications of fertiliser. The wild flowers are patchy - some parts have many, others very few (especially the northern half, and some western parts). Damp patches are marked by creeping buttercup +/- creeping bent. A few dry patches support red fescue and common bent.

2) The grassland has not been managed for about 2 years and is now too dense for breeding skylark. If left unmanaged it will change only slowly, but will steadily get more coarse, reducing the content of wild flowers and increasing the amount of rough, tussocky grasses (cocksfoot, false-oat). The long vegetation is likely to become a fire risk in prolonged dry periods especially in August and late winter. There may be a problem with increase of notifiable weeds (docks, thistles - at the moment ragwort appears to be absent), which will need to be addressed as there is farmland adjacent. Over a long time, some tree colonisation is likely by big-seeded species such as oak and hawthorn, but colonisation by trees is not easy in dense grassland. However, the dense grassland is good for small mammals such as voles and their predators (owls, kestrels) and as such is useful habitat.

Halewood Triangle Country Park, Liverpool, when I knew it some years back, was a large un-mown grassland - try getting in touch with Liverpool's Ranger Service to get some relevant experience (www.liverpool.gov.uk).

3) As an alternative to no management, possible agricultural management could take the form of:

Hay cut July (before school holidays) with aftermath cut as silage in Sept. OR
 Silage cuts June and Sept. This removes much of the visual attraction, so it may be possible to cut half one year, half the next, using the diagonal desire line as the

divider, to retain some long grass at any one time.

4) DOGS. Very few dog faeces were observed, and dog bins are provided on the sports field. If the field were to be returned to agricultural management, dog usage would have to be confined to defined areas which were not used for agriculture, as dog worms can be passed to stock. This is less likely with silage/hay usage. Uncontrolled dogs running around in packs are a hazard to people and wildlife and should be discouraged, preferably by the dog walkers policing themselves, but some form of bye-law to say that dogs "must be kept under control" may help. Dogs may not be compatible with ground-nesting birds such as skylark or partridge, should the grassland be returned to a state where these can nest. Even the best-behaved dog, if running off a lead, will disturb a sitting bird and probably eat eggs. The field is large, and some form of partition between a dog area and non-dog area is desirable, not just for wildlife but also for young families who want to avoid any risk of dog faeces. However maintenance of the dog area may be problematic, as everyone has problems getting such areas mown if the grass is unusable for silage. This may not matter if the area is regarded as primarily for dog exercise and is left un-mown - but the fire risk remains.

5) Diagonal desire-line path. This is obviously well used, and it may be advisable to try to get permissive footpath status for it from the County Council. If the field were used solely as a mowing field, this should be compatible. However litter needs to be rigorously controlled, as a discarded can will do expensive damage to mowing machinery. The presence of this path obviously makes any stock grazing difficult, because of disturbance to the animals especially by dogs (horses are even worse than cattle for this). Fencing off the desire line on both sides may be possible.

6) Blackthorn is rapidly suckering out from the Wood lane hedge into Cowfield now it is unmanaged, and will need to be restricted somehow. If the path remains well used and is mown 4-6 times a year this may suffice. That would allow a broad blackthorn strip to develop from the hedge which would be useful to small birds (and makers of sloe gin).

7) Paths - currently just trodden. What happens when they develop muddy bits and hollows? Who is to do any maintenance?

8) Keeping vehicles off paths - is there a mountain bike/motorbike problem yet or might one develop? Keeping them out would need proper gates.

9) Parking on Wood Lane is obviously very limited, and it is anyway important to discourage the sort of dog owner who parks up and stays in the car, letting dogs run uncontrolled.

10) Pollen from a large field if left un-mown or managed for hay may be unpopular with hay fever sufferers.

11) Hedge along Wood Lane - could be gapped up with planting of hawthorn/hazel/holly as liked.

12) Value for invertebrates could be increased by planting in competitive wild

flowers that are good nectar sources such as knapweed and scabious - but only if the management is compatible with their flowering times. If you want to explore this, contact me or Landlife (The National Wildflower Centre, Liverpool, 737-1819 - pay it a visit)

13) If there is any enthusiasm in the community for tree planting, it would be perfectly possible to put small copses or a community orchard in the corners without disturbing the open aspect. Similarly a hedge could replace the dilapidated fence between Cowfield and the sports field, as long as management can be agreed.

14) Encourage the school and Ranger Service to use the area as part of their educational work - this may reduce/avoid litter and vandalism.

Appendix 2

(Extract from UK Biodiversity Action Plan

(<http://www.ukbap.org.uk/default.aspx>)

Hedgerows

The definition of this priority habitat has been amended from the pre-existing Habitat Action Plan for ancient and/or species rich hedgerows (<http://www.ukbap.org.uk/UKPlans.aspx?ID=7>).

A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less than 20m wide (Bickmore, 2002). Any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country. Climbers such as honeysuckle and bramble are recognised as integral to many hedgerows, however they require other woody plants to be present to form a distinct woody boundary feature, as such they are not included in the definition of woody species. The definition is limited to boundary lines of trees or shrubs, and excludes banks or walls without woody shrubs on top of them.

Based on an analysis of Countryside Survey data, using the threshold of at least 80% cover of any UK native woody species, it is estimated that 84% of countryside hedgerows in GB would be included.

Appendix 3

Extract from UK Biodiversity Action Plan (<http://www.ukbap.org.uk/default.aspx>)

Lowland Meadows

The definition of this habitat remains unchanged from the pre-existing Habitat Action Plan (<http://www.ukbap.org.uk/UKPlans.aspx?ID=10>) a summary of which appears below. Following the 2007 review, occurrences of this habitat on roadside verges are also covered by the definition.

A wide-ranging approach is adopted in this plan to lowland grasslands treated as lowland meadows. They are taken to include most forms of unimproved neutral grassland across the enclosed lowland landscapes of the UK. In terms of National Vegetation Classification plant communities, they primarily embrace each type of *Cynosurus cristatus* - *Centaurea nigra* grassland, *Alopecurus pratensis* - *Sanguisorba officinalis* floodplain meadow and *Cynosurus cristatus* - *Caltha palustris* flood-pasture. The plan is not restricted to grasslands cut for hay, but also takes into account unimproved neutral pastures where livestock grazing is the main land use. On many farms in different parts of the UK, use of particular fields for grazing pasture and hay cropping changes over time, but the characteristic plant community may persist with subtle changes in floristic composition.

In non-agricultural settings, such grasslands are less frequent but additional examples may be found in recreational sites, church-yards, roadside verges and a variety of other localities. Excluded from this plan are maritime grassland communities confined to coastal habitats (which will be covered in maritime cliff and machair action plans), *Anthoxanthum odoratum* - *Geranium sylvaticum* grasslands (which are treated in a companion action plan for upland hay meadows) and *Molinia* - *Juncus* pastures (which are covered in the purple moor grass and rush pasture (*Molinia-Juncus*) plan).

As indicated in the Habitat Statement included in *Biodiversity: the UK Steering Group Report, Vol 2* (1995), unimproved neutral grassland habitat has undergone a remarkable decline in the 20th century, almost entirely due to changing agricultural practice. It is estimated that by 1984 in lowland England and Wales, semi-natural grassland had declined by 97% over the previous 50 years to approximately 0.2 million ha. Losses have continued during the 1980s and 1990s, and have been recorded at 2 -10% per annum in some parts of England. Extensive agricultural modification of unimproved grasslands has also been recorded in Scotland between the 1940s and 1970s. Recent conservation survey findings in Britain and Northern Ireland reveal that the impact has been pervasive, and an estimated extent of less than 15,000 ha of species-rich neutral grassland surviving today in the UK is given in the Habitat Statement.

The plan concentrates on meadows and pastures associated with low-input nutrient regimes, and covers the major forms of neutral grassland which have a specialist group of scarce and declining plant species. Among flowering plants, these include

fritillary *Fritillaria meleagris*, Dyer's greenweed *Genista tinctoria*, green-winged orchid *Orchis morio*, greater butterfly orchid *Platanthera chlorantha*, pepper saxifrage *Silaum silaus* and wood bitter vetch *Vicia orobus*. Lowland meadows and pastures are important habitats for skylark and a number of other farmland birds, notably corncrake which has experienced a major range contraction across the UK. The overall outcome of habitat change in the lowland agricultural zone is that *Cynosurus - Centaurea* grassland, the mainstream community of unimproved hay meadows and pastures over much of Britain, is now highly localised, fragmented and in small stands. Recent estimates for cover in England and Wales indicate that there is between 5000-10,000 ha of this community in total. There is an especially important concentration in Worcestershire and other particularly important areas include south-west England (Somerset, Dorset and Wiltshire), the East Midlands & East Anglia (Leicestershire, Northamptonshire, Cambridgeshire and Suffolk), in various parts of Wales and in West Fermanagh and Erne Lakeland in Northern Ireland. In certain areas, such as in the old district of Brecknock in Powys, remnant examples are locally aggregated. Scotland is estimated to have between 2000-3000 ha of this community, with particular concentrations in the crofting areas of Lochaber, Skye and the Western Isles. Local data for Northern Ireland are less complete, but the West Fermanagh and Erne Lakeland ESA in NI contains an important concentration of the resource.

Unimproved seasonally-flooded grasslands are less widely distributed. They have lower overall cover, but there are still a few quite large stands. *Alopecurus - Sanguisorba* flood-meadow has a total cover of <1500 ha and is found in scattered sites from the Thames valley through the Midlands and Welsh borders to the Ouse catchment in Yorkshire. These include well-known but now very rare Lammas meadows, such as North Meadow, Cricklade, and Pixey and Yarnton Meads near Oxford, which are shut up for hay in early spring, cropped in July, with aftermath grazing from early August; nutrients are supplied by flooding episodes in winter. *Cynosurus - Caltha* flood-pasture is also now scarce and localised, with probably <1000 ha cover in England and Wales. Scotland is estimated to have 600-800 ha of this community.

It will be important to ensure that such periodically flooded grasslands are taken into account during implementation of the action plan for coastal and floodplain grazing marshes; actions in the two plans need to be closely integrated.

Agricultural intensification has led to the extensive development of nutrient-demanding, productive *Lolium perenne* grasslands. These are managed for grazing and also silage production which has widely replaced traditional hay-making. Where fertiliser input is relaxed or in swards which have only been partially improved, *Lolium - Cynosurus* grassland is common; in many respects this is intermediate between improved and unimproved lowland neutral grasslands but has few uncommon species and is generally of low botanical value.

Appendix 4

Extract from UK Biodiversity Action Plan

(<http://www.ukbap.org.uk/default.aspx>)

Ponds

(<http://www.ukbap.org.uk/library/UKBAPPriorityHabitatDescriptionsfinalAllhabitats20081022.pdf#P>)

Correspondence with existing habitat/s

- UK BAP broad habitat: Standing open waters and canals
- Phase 1: G1 Standing water
- NVC: Various aquatic, swamp and fen communities; OV28-OV35; and others
- Annex I: Includes H3170 Mediterranean temporary ponds; H3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflora*) (part); H3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoeto-Nanojuncetea* (part); H3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. (part); H3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation (part); and H3160 Natural dystrophic lakes and ponds (part)

Description

Ponds, for the purpose of UK BAP priority habitat classification, are defined as permanent and seasonal standing water bodies up to 2 ha in extent which meet one or more of the following criteria:

- Habitats of international importance: Ponds that meet criteria under Annex I of the Habitats Directive.
- Species of high conservation importance: Ponds supporting Red Data Book species, UK BAP species, species fully protected under the Wildlife and Countryside Act Schedule 5 and 8, Habitats Directive Annex II species, a Nationally Scarce wetland plant species, or three Nationally Scarce aquatic invertebrate species.
- Exceptional assemblages of key biotic groups: Ponds supporting exceptional populations or numbers of key species. Based on (i) criteria specified in guidelines for the selection of biological SSSIs (currently amphibians and dragonflies only), and (ii) exceptionally rich sites for plants or invertebrates (i.e. supporting ≥ 30 wetland plant species or ≥ 50 aquatic macroinvertebrate species).
- Ponds of high ecological quality: Ponds classified in the top PSYM category ("high") for ecological quality (i.e. having a PSYM score $\geq 75\%$). [PSYM (the Predictive System for Multimetrics) is a method for assessing the biological quality of still waters in England and Wales; plant species and / or invertebrate families are surveyed using a standard method; the PSYM

model makes predictions for the site based on environmental data and using a minimally impaired pond dataset; comparison of the prediction and observed data gives a % score for ponds quality].

- Other important ponds: Individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context e.g. pingos, duneslack ponds, machair ponds.

Priority habitat ponds can be readily identified by standard survey techniques such as those developed for NVC, Common Standards Monitoring, the National Pond Survey or for specific species groups. Ponds will need to be distinguished from other existing priority habitat types. The general principle to be applied is that where the standing water element is functionally a component of another priority habitat and that priority habitat definition takes account of the standing water element then it should be treated as part of that habitat. For example small waterbodies within blanket bog should be considered as part of the blanket bog priority habitat, but ponds in heathland (which are not dealt with through the heathland HAP) should be considered under the pond priority habitat. Agreement has been reached with the lake HAP group that the pond priority habitat will cover most water bodies up to 2 ha while the lake priority habitat will cover most water bodies greater than 2ha. As with other potentially overlapping priority habitat types a small proportion of cases will need to be individually assessed to decide how they are best dealt with.

Ponds are widespread throughout the UK, but high-quality examples are now highly localised, especially in the lowlands. In certain areas high quality ponds form particularly significant elements of the landscape, e.g. Cheshire Plan marl pits, the New Forest ponds, pingos of East Anglia, mid-Wales mawn pools, the North East Wales pond landscape, the forest and moorland pools of Speyside, dune slack pools, the machair pools in the Western Isles of Scotland, and examples of Habitats Directive Annex I pond habitats across Northern Ireland.

Estimates, based on the relatively small pond data sets currently available, suggest that around 20% of the c.400,000 ponds outside curtilage in the UK might meet one or more of the above criteria.

An inventory of ponds, including many high quality sites, has been established as part of the National Pond Monitoring Network and work is in progress to add further known sites to this database. This is publicly accessible (for non-sensitive sites/species) at www.pondnetwork.org.uk. Currently about 500

high quality sites are listed on this database. The National Pond Monitoring Network (NPMN) will provide the main mechanism for monitoring priority habitat ponds. The NPMN was established in 2002 as a partnership of organisations involved in pond monitoring led by the Environment Agency and Pond Conservation.