

**Pond ecology survey
and
management suggestions
Cranberry Moss,
Alsager,
Cheshire**

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1 Introduction

- 1.1 “Cranberry Moss is a nature reserve about 1 mile west of the town centre (of Alsager) and its preservation will play an important part in the maintenance of the wildlife within the town.” Cheshire East Local Development Framework/Alsager Snapshot report (online 2/7/2016). The Local Nature Reserve was declared on 30 May 1999 and it is currently shown as a Local Nature Reserve on the UK Government’s (DEFRA) Magic mapping system.
- 1.2 Dave Bentley Ecology Services has been asked to conduct a pond ecology survey to evaluate the wetland habitat on site and to guide potential management works. Dave Bentley has surveyed thousands of ponds in NW England.

2 Methodology

- 2.1 A tracing of the existing pond area at Cranberry Moss was taken from online satellite images and this was used to guide mapping of the wetland habitats.
- 2.2 A botanical survey was undertaken in and around the pond and wetland area on 23 May 2016, and the habitat mapping was refined. Some aquatic plants were added later as they were revealed with the pond net.
- 2.3 A pond fauna survey was undertaken on 23rd May 2016 using a sturdy pond net. Pond vegetation and open water was swept with the pond net to capture animals. Where there was no surface water the ground was pressed on with the foot to push the vegetation surface below the water level and thus reveal animals to be taken in the pond net. Debris in the pond was examined for attached animals. Plants were lifted and examined for animals. Lesser Pond Sedge leaf litter was taken and shaken over a white tray in a search for animals. Reedmace heads were shaken over the tray. Some animals were recorded by direct observation. The vast majority of animals were released live to their habitats. Some animals requiring microscopical examination were retained and were preserved in alcohol. Microscopical examination was carried out using a stereo zoom microscope and a stereo compound microscope. Various keys and online sources were used to assist personal expertise. Amphibians were searched for using the pond net, taking adult newts and also amphibian larvae. Newt eggs were also searched for. Micro-crustaceans were collected with a pipette from pond water placed in the tray.
- 2.4 Measurements shown on the pond plan were measured using online satellite images.
- 2.5 Various online mapping/air photo sources were studied to consider the history of Cranberry Moss (particularly Cheshire Archives website).

3 History of Cranberry Moss as taken from online sources

- 3.1 The Cheshire Parish Map (1836-1851) names the site as Cranberry Moss Plantation. It is shown as woodland which stretches from Close Lane in the west to Cranberry Lane in the east, much larger than today’s nature reserve. A. Bryant’s map of 1831 is the earliest to indicate the Moss as woodland of this shape.

- 3.2 The earliest Ordnance Survey Map of 1876 shows a similarly sized woodland, called Cranberry Wood. This is now bisected with a north south drain and at least 3 field ditches trending from this ditch eastwards, beyond the woodland into the surrounding open land.
- 3.3 The 1898 Ordnance Survey map shows Cranberry Wood as a much reduced rectangle of woodland with enclosed fields encroaching substantially on the west and north east, and to a small extent in the east.
- 3.4 The 1909 Ordnance Survey map shows the site as rough grassland with scattered shrubs and calls it Cranberry Moss. The moss is much reduced in the north where there is now a house. The earlier losses in the east are now shown as part of the moss.
- 3.5 The 1938 Ordnance Survey map shows a second house on the north side of the Moss with the site still rough grassland and scattered shrubs.
- 3.6 The 1951 Ordnance Survey map shows just rough grassland on a Cranberry Moss now divided north to south between the two houses on the north side.
- 3.7 The 1954 Ordnance Survey map shows a subdivided field with rough grassland notation to the west and centre only, though Cranberry Moss is retained as a name. The housing on the south side is under construction.
- 3.8 The 1959-61 and 1963-67 Ordnance Survey maps show the housing to the south and east completed, though the Moss is still attached to the open countryside to the north, whilst ribbon development has carried on along Close Lane. The internal fences on the moss have gone.
- 3.9 The 1971-1973 Cheshire Count Air Survey (available to view on the Cheshire Archives website) shows the pond in a Moss of nothing more than recently mown grassland with tractor paths and cut hay. The open pond has an inundation area or ramp on its north east side where a block of Alder woodland currently exists. The northern quarter of the existing Moss appears to be rough grassland and a quarry, with a haul route down the western fringe of the Moss to the garage complex. The quarry pit is where, currently, there is wet woodland. The Moss is attached to the wider countryside to the north.
- 3.10 The 1974-87 Ordnance Survey map confirms the south western corner of the Moss lost to a garage cluster. Allotment Gardens now exist on the east side of the Moss. The housing on the west side of the Moss is complete. The two houses on the north side of the Moss both sit in large grounds, although the land to the north is now developed for housing cutting the Moss from the wider countryside.
- 3.11 The 1976 to 1989 Ordnance Survey map shows the eastern of the two large house plots on the north side now developed as housing.
- 3.12 The 1992 Ordnance Survey map shows the same position. The pond is indicated for the first time, whilst the allotment area is reduced in favour of the Moss.

- 3.13 Photographs of the pond from 1997 and 1998 found online show an open water body with fringing vegetation and a patch of water-lilies. There is immature surrounding tree planting.
- 3.14 Satellite images from 2003 show the garage complex is now housing, and the western large house plot is now developed for housing.

4 Survey findings

- 4.1 The results are tabulated in the table.

Physical

- 4.2 The open water measures about 17m by 26m. The wetland area measures about 45m by 47m, excluding anything north west of the boardwalk. The pond has a small island in the swamp in the eastern part. Water and silt depth were measured in 3 locations with 78cm water and 5cm silt to the north and 65cm water and 5cm silt to the south and in front of the platform 30cm water and 5cm silt over firm ground. The lack of silt shows the young age of the pond. Maybe it was dug through the mossland peat layer to remove underlying sand (nearby White Moss Quarry is a peat and sand quarry). The water is very clear and measurements were taken in open water near the bank. A pH of 6.73 was recorded, which is near neutral. The Electrical Conductivity, was 241 micro-Siemens, whilst the Total Dissolved Solids was 120 Parts Per Million, which are both lower than one might find in a typical fished pond or shaded pit, but comparable with other open water sites dug into substrate below peat.

Higher Animals

- 4.3 The survey revealed Smooth Newts and Frogs breed here. A search of rECOrd's Cranberry Moss wildlife records lists Frog. There are no Great Crested Newts or Toads. No evidence of fish was found. A local resident described seeing a large fish on several occasions several years ago. National Biodiversity Network Gateway online lists no species for Cranberry Moss.
- 4.4 Moorhen is present.
- 4.5 RECOOrd also lists Mole as present on the Moss.

Wetland Plants

- 4.6 45 Wetland plants and trees were located, which is a sizeable total. This includes six purely aquatic species – Water Soldier, Rigid Hornwort, Nuttall's Waterweed, Common Duckweed, Ivy-leaved Duckweed and Fringed Heartwort.
- 4.7 Fringed Heartwort is better known by its Latin name of *Ricciocarpos natans*. It is a small floating liverwort (c8mm across) and has only been found once before by Dave Bentley. It is classed as Nationally Scarce. It is known in a few Cheshire ponds. This is the main feature of interest of the pond. It grows in shallow water with Duckweeds on the south side of the pond.

- 4.8 Water Soldier is the spikey, floating plant currently occupying all of the open water of the pond. The plant is regarded as Near Threatened internationally and Nationally Rare in its supposed native habitats in the east of England from East Yorkshire to the Norfolk Broads. There is evidence of complete loss in much of its natural range. However it is often introduced to garden ponds and then cast into the wild. One source (Aquatic Plants in Britain & Ireland by Preston & Croft) suggests it may be native in Cheshire. We only have female plants in the UK meaning the plant does not seed, and some suggest that it may not be native to the UK because of this, although it was known to 17th Century English botanists. The probable young age of the pond (first appearing on air photographs in 1971-3) and the fact that the plant does not appear on the photographs from 1997 and 1998 shows this must be an introduction, and hence of little conservation interest. Note the plant is said to favour open ponds or ditches where reeds are suppressed by clearance. There is an example of where a Council owned pond in Penwortham, near Preston, was part cleared of this plant, and it was taken to a Council lake which lacked vegetation. The plant is now a serious problem in that lake, as told by satellite imagery. Here the plant was not found to support many aquatic invertebrate species, as its rigidity does not provide a diversity of habitat structures.
- 4.9 Nuttall's Waterweed is an alien plant listed on Schedule 9 of the Wildlife & Countryside Act. It is illegal to cause its spread. Its presence here is benign.
- 4.10 The major swamp and marsh plant present is Lesser Pond Sedge which is dominant to the west, north and south east of the open water. It forms a major invertebrate habitat for aquatic, marshland and terrestrial species.
- 4.11 Yellow Iris is the other major swamp species. It spreads by rooting across the water. The water, however, is too deep for the plant to close the open water area. Greater Reedmace is also present and this too is limited to the bank area due to the pond depth (c 0.78m).
- 4.12 Marsh Cinquefoil is always nice to encounter. It tends to inhabit older ponds so its presence here is a mystery. Perhaps this is an introduction too.
- 4.13 Water Avens is simply absent from most closed ponds in North West England so it must have been deliberately planted here. Dave Bentley knows of no other pond with this plant.
- 4.14 The remaining plant species are four common moss species, the grasses Creeping Bent, Yorkshire Fog, Floating sweet-grass, Reed Canary-grass and Rough Meadow-grass; the other sedges and rushes are Hairy Sedge, Jointed Rush and Soft Rush (Pendulous Sedge is found in the wet woodland); and the other forbs are Marsh-marigold, Wavy Bitter-cress, Cuckooflower, Great Willowherb, Short-fruited Willowherb, Meadowsweet, Cleavers, Common Marsh Bedstraw, Square-stalked St John's-wort, Greater Bird's-foot-trefoil, Tufted Forget-me-not, Amphibious Bistort, Creeping Buttercup and Nettle.
- 4.15 The wetland trees need to be controlled/removed urgently from the pond area. There are English Alder, Italian Alder and Grey Alder (from North America), plus Grey Willow, Goat Willow, Crack Willow, and an alien Weeping Corkscrew Willow. Wetland trees lower water tables, drop leaves and branches into the water, shade water and ground flora and

ultimately destroy their own habitat. Willows actually poison ponds. As they grow larger their adverse impact grows and the costs of removing them grows too.

Invertebrates

- 4.16 70 invertebrate species were recorded in the wetland although 8 of these are terrestrial species. If we select just the species that were recorded by the 1000 ponds Pond *Life* Project Critical Biodiversity Survey of NW England 1995-1998 (Guest and Bentley), then this comes to 34 species which is an average total.
- 4.17 One Nationally Scarce species was found – the medium sized beetle *Hydaticus seminiger*. This has been found several times in Cheshire ponds in recent years. It is not uncommon to find one or more Nationally Scarce species in Cheshire ponds.
- 4.18 8 wetland molluscs found is a good total and does not suggest any lack of calcareous conditions which might be associated with peatland sites. The wetland snail *Euconulus alderii* (agg) is the least common (however it is possible that this might be the more common species *Euconulus fulvus*). More samples would be needed and just one juvenile was located.
- 4.19 The pond supports few water bug species – just a single Water Boatman was located (one animal of one species) and usually in open ponds several species are located.
- 4.20 Plenty of common marshland beetles were located but again few species that favour open water or swamp were found.
- 4.21 Few dragonfly species were found. Dragonflies do not do well where bird resting habitat (trees and shrubs) are close to ponds as birds can easily catch newly emerged dragonflies.
- 4.22 Netting through Water-soldier is rather difficult due to the plants being linked together. Because the plant totally occupies the pond it means that the habitat is uniform and thus animals cannot be targeted at the pond edge, for example. Yellow Iris is another plant that dominates the pond edge and this too is difficult to net as it thrusts rigid roots into the water and its leaves well out of the water. It is possible that more survey effort might reveal more species.
- 4.23 The wildlife records at rECOrd also include some moth records.

5 Management issues

- 5.1 Pond dipping. The marshland provides a good invertebrate habitat but the water area does not appear to be a rich invertebrate habitat. We know that one water-lily species has disappeared as the Water Soldier has spread (it is possible that it is hidden and still remains in a depleted population). The pond is not, for example, a good resource for pond dipping activities by children. It is too hard to find small animals. An alternative would be to create new safe habitats. Indeed there is already a boardwalk and this could be widened to allow the incorporation of a pond dipping platform and new pond alongside.

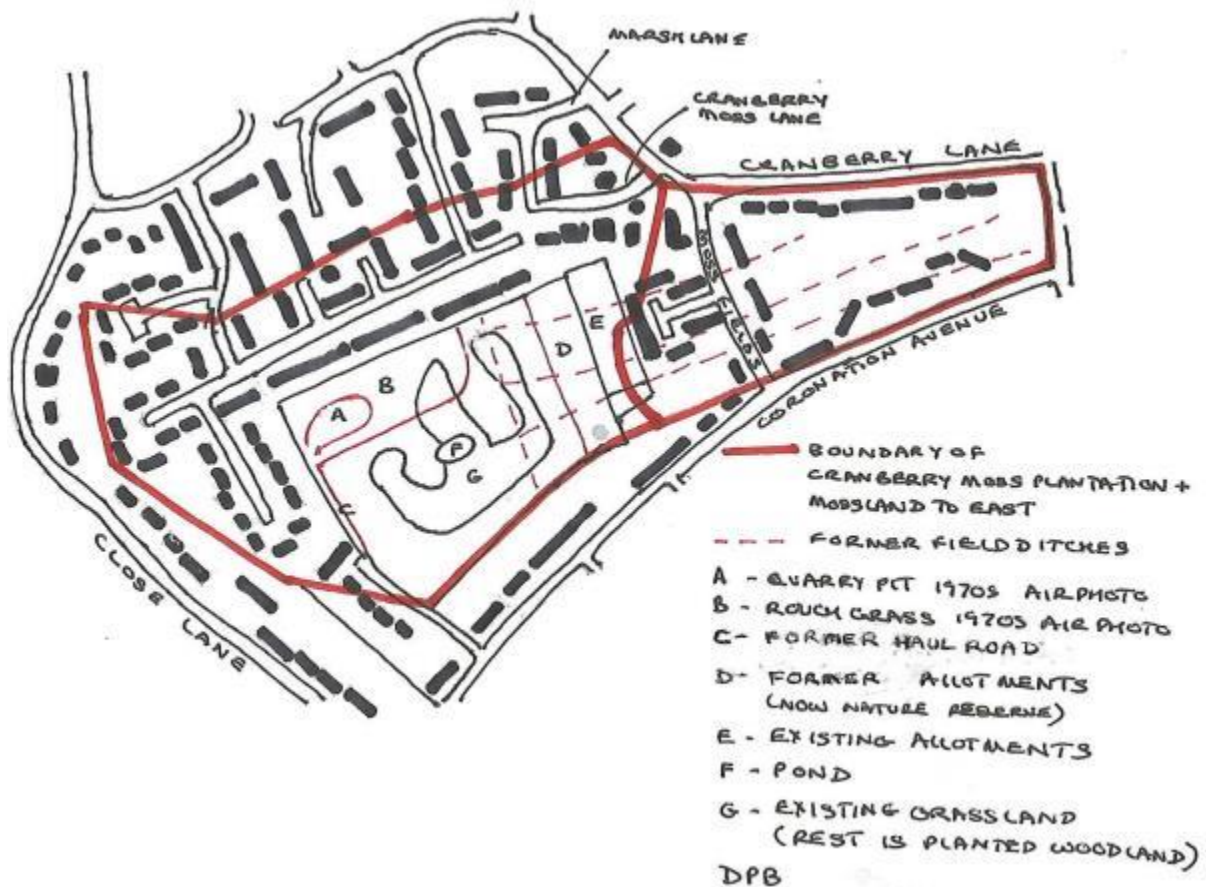
- 5.2 Water Soldier. If the idea is to create an area of open water this will require regular management year on year as Water-soldier is quick to recolonise. It would be a simple matter, say to hire Conservation Volunteers. One could pull, out using rakes, Water Soldier and place it on a tarpaulin and then drag it to an area of brambles where it can be dumped. It would be necessary to check for nesting birds in the clearance and deposition areas before starting work. Plants other than Water-soldier and Nuttall's Waterweed should be returned to the water (with any loosened animals) where hopefully they will have the room to spread.
- 5.3 Angling and plant dumping. Any management would be undone if fish were to be introduced. Anglers bring litter, wildlife hazards and illegal fish introductions. As the public become more interested in the pond, and as it becomes more accessible, opportunities for dumping cast offs from garden ponds increase. This brings the risk the dumping of alien invasive species. Sound Common in Cheshire had a wonderful peatland pond that was excavated by machine by a residents' group. They destroyed the pond's ecology, filled the pond with lilies and fish and the alien invasive New Zealand Pigmyweed now coats the banks – a tragedy.
- 5.4 Bramble encroachment. Bramble is encroaching the sedge bed to the north of the pond. After checking for nesting birds these plants should be pulled up.
- 5.5 Trees. Whilst trees and ponds do not mix well, several tree species are particularly problematic. If young trees are allowed to grow into large trees a small problem becomes a problem that is very hard and expensive to overcome. Of particular concern are the Weeping Willow, Crack Willow, Grey Willow and English Alder that grow within the wetland. These should be removed as a priority. The *Prunus* on the north east bank will also prove to be a problem (Wild Plum or Blackthorn) as *Prunus* spreads by suckering and soon becomes a thicket which eliminates ground cover. The inclusion of Italian and Grey Alders in the planting scheme was an error. These non-native species require constant suppression, and where this does not happen, they soon change the character of wet woodland. The alien trees should be removed from the whole Nature Reserve. It would be best to spray-paint them or tape them to identify them in full leaf and then have them removed outside the bird breeding season. Once the alien trees are removed consideration can be given to thinning or removing other trees growing nearer the pond. Priorities – trees within the pond and on the banks; next alien trees throughout the reserve; finally reduce/remove the two blocks of woodland adjacent the pond.
- 5.6 Potential for new pools. It may be possible to create new pools on either side of the existing boardwalk. If these are shallow they should attract marsh plants and form the sort of habitat that would allow them to be netted to catch small animals. The work could involve adding to the boardwalk to create a platform and rail. The adjacent trees would need to be cut back. The new pool(s) would be in damp grassland adjacent to wet woodland. The base of the new hollows probably need not be more than 0.5m below the existing surface. The banks not edging the platform should be sloping to allow for escape of children and animals.
- 5.7 No plants should be bought in without checking with the County Ecologist that the species are appropriate and checking that the supplier stocks the same and not a similar species and

that the supplier does not have contaminated stock. In the past dirty suppliers have been responsible for the spread of New Zealand Pigmyweed.

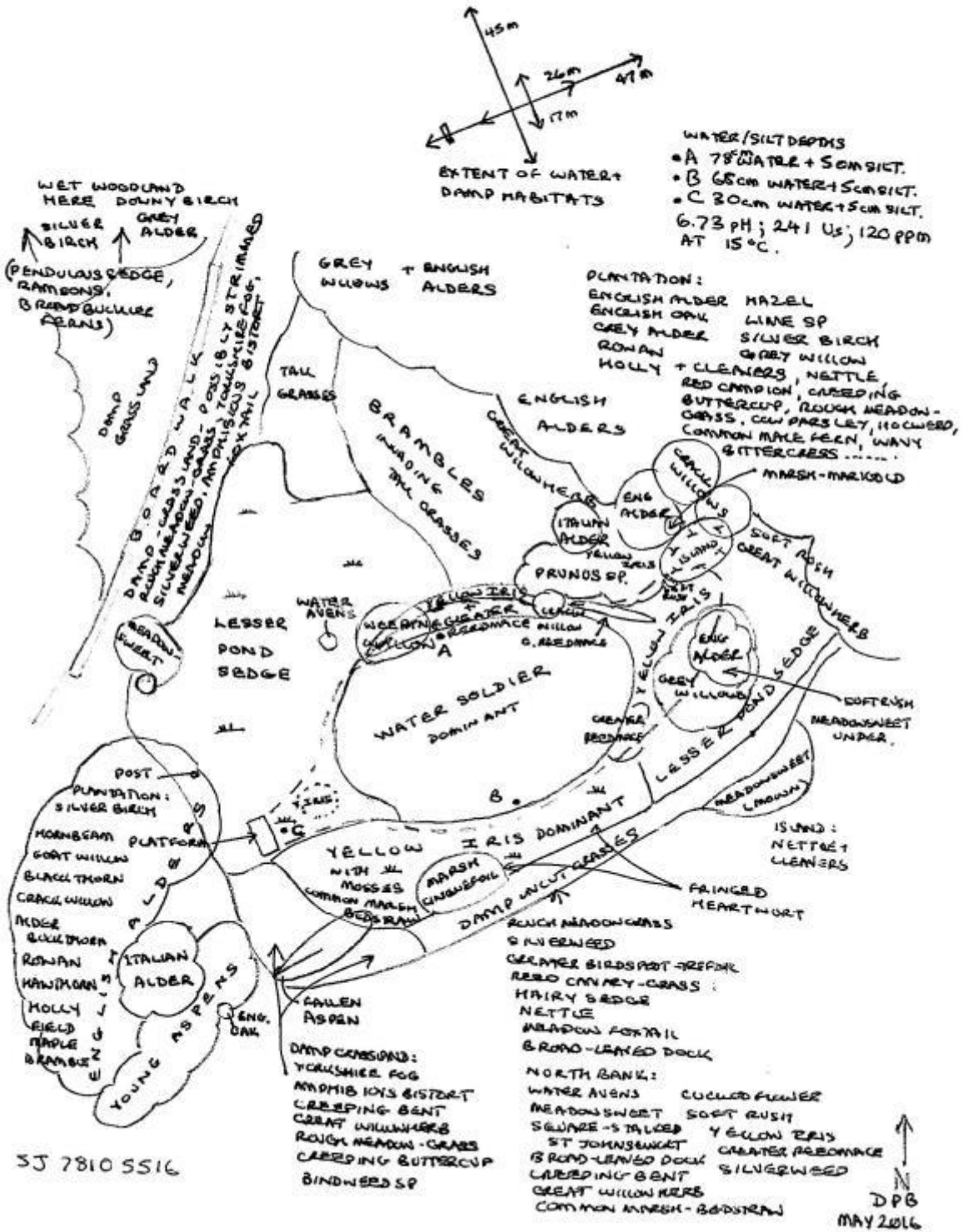
- 5.8 Timber disposal. Felled trees should be logged up and made into habitat piles. Brash can be placed on top and then soil from the new excavations can cover them to create caverns for amphibians etc to hibernate in. The best hibernacula are a mix of stones and timber, soil and voids, covered with geotextile membrane (even old carpet or sheet), and then capped with soil, leaving gaps at the base.
- 5.9 Existing platform and dipping area renovation. The existing platform seems to be sound and might be cleaned up. The photographs from 1997/8 show that it was purpose built as a dipping platform alongside a specially created shallow bay. Lesser Pond Sedge has closed up the area. The bay could be cleared of vegetation to recreate the shallow open water area.
- 5.10 Mossland restoration. It would be interesting to strip off patches of topsoil in large and small areas, in grassland or in wooded area, to see if any of the lost mossland seedbank will allow a habitat to regenerate. If bare areas are created they might naturally colonise or perhaps heather cuttings could be taken at heather seeding time in an experiment to recreate a mossland/heathland. The advice of Rangers who have supervised the mossland /heathland restoration work at Sound Common should be sought.

Dave Bentley

Location plan, Pond plan, Tables, Photographs, Blank plan for management planning follow:



LOCATION PLAN



POND PLAN

CRANBERRY MOSS, ALSAGER, CHESHIRE - POND SURVEY - DAVE BENTLEY ECOLOGY SERVICES					
BOTANY SURVEY		Date of survey 23 May 2016 Page 1 of 3			%
Codes in columns: d = dominant, a = abundant, f = frequent, o = occasional, r = rare, v = very, l = locally, p = present					488
Status - C = Common, LC = Local, A = Alien, NC = Notable in Cheshire, NR = Nationally Rare, NT = Nationally Threatened,					Chesh
NS = Nationally Scarce					ponds
Habitat - A = aquatic, W = wetland, G= generalist, T = terrestrial					in
GRID REF: SJ 7810 5516					which
TOTAL NO OF WEILAND PLANT TAXA = 45				Cheshire	species
NO OF SUBMERGED/FLOATING TAXA = 6		Habitat	DAFOR	Status	found
SUBMERGED/FLOATING PLANT TAXA:					
<i>Ceratophyllum demersum</i>	Rigid Hornwort	A	o	LC	3.48
<i>Elodea nuttallii</i> A	Nuttall's Waterweed	A	r	A	4.71
<i>Lemna minor</i>	Common Duckweed	A	olf	C	68.03
<i>Lemna trisulca</i>	Ivy-leaved Duckweed	A	o	C	34.43
<i>Stratiotes aloides</i>	Water Soldier	A	d	NR/NT	1.64
<i>Ricciocarpos natans</i>	Fringed Heartwort	A	olf	NS	2.05
OTHER BRYOPHYTE TAXA:					
<i>Brachythecium rutabulum</i>	Rough-stalked Feather-moss	G	olf	C	
<i>Calliergonella cuspidata</i>	Pointed Spear-moss	W	olf	C	
<i>Kindbergia praelonga</i>	Common Feather-moss	G	olf	C	
<i>Leptodictyum riparium</i>	Kneiff's Feather-moss	W	olf	C	
OTHER AQUATIC/WEILAND PLANTS:					
<i>Agrostis stolonifera</i>	Creeping Bent	W	olf	C	43.03
<i>Caltha palustris</i>	Marsh-marigold	A	lo	C	7.38
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	W	lf	C	19.26
<i>Cardamine pratensis</i>	Cuckooflower	W	olf	C	25.20
<i>Carex acutiformis</i>	Lesser Pond Sedge	A	va	C	3.69
<i>Carex hirta</i>	Hairy Sedge	W	lo	C	13.93
<i>Carex pendula</i>	Pendulous Sedge	W	lo	C	0.00
<i>Epilobium hirsutum</i>	Great Willowherb	W	olf	C	51.23
<i>Epilobium obscurum</i>	Short-fruited Willowherb	W	o	C	11.89
<i>Filipendula ulmaria</i>	Meadowsweet	W	olf	C	5.94
<i>Galium aparine</i>	Goosegrass	G	lf	C	2.05
<i>Galium palustre</i>	Marsh Bedstraw	W	olf	C	48.36
<i>Geum rivale</i>	Water Avens	W	vlf	L	0.00
<i>Glyceria fluitans</i>	Floating Sweet-grass	A	lo	C	44.06
<i>Holcus lanatus</i>	Yorkshire Fog	W	olf	C	47.54
<i>Hypericum tetrapterum</i>	Square-stalked St John's-wort	W	lo	C	1.64
<i>Iris pseudacorus</i>	Yellow Iris	A	a	C	24.80
<i>Juncus articulatus</i>	Jointed Rush	A	lf	C	27.25
<i>Juncus effusus</i>	Soft Rush	A	ovlf	C	75.41
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil	W	lf	C	14.75
<i>Myosotis laxa</i>	Tufted Forget-me-not	W	o	C	41.39
<i>Persicaria amphibia</i>	Amphibious Bistort	A	olf	C	9.63
<i>Phalaris arundinacea</i>	Reed Canary-grass	A	lo	C	23.98
<i>Poa trivialis</i>	Rough Meadow-grass	W	o	C	31.97
<i>Potentilla palustris</i>	Marsh Cinquefoil	A	lf	C	7.17
<i>Ranunculus repens</i>	Creeping Buttercup	W	olf	C	60.45
<i>Typha latifolia</i>	Greater Reedmace	A	olf	C	34.22
<i>Urtica dioica</i>	Nettle	G	o-lf	C	23.98
WEILAND TREES & SHRUBS:					
<i>Alnus cordata</i> A	Italian Alder	W	o	A	0.00
<i>Alnus glutinosa</i>	Alder	W	old	C	14.55
<i>Alnus incana</i> A	Grey Alder	W	o	A	0.00
<i>Salix caprea</i>	Goat Willow	G	o	C	0.61
<i>Salix cinerea</i>	Grey Willow	W	o	C	44.06
<i>Salix fragilis</i>	Crack Willow	W	o	C	7.17
<i>Salix matsudana cultivar A</i>	Weeping Corkscrew Willow	W	r	A	0.00
OTHER WOODY TAXA:					
<i>Acer campestre</i>	Field Maple	T	r	C	
<i>Betula pendula</i>	Silver Birch	T	olf	C	
<i>Betula pubescens</i>	Downy Birch	T	o	C	
<i>Corylus avellana</i>	Hazel	T	o	C	
<i>Crataegus monogyna</i>	Hawthorn	T	o	C	
<i>Frangula alnus</i>	Alder Buckthorn	T	r	C	
<i>Carpinus betulus</i>	Hornbeam	T	o	C	
<i>Ilex aquifolium</i>	Holly	T	o	C	
<i>Populus tremula</i>	Aspen	T	lo	C	
<i>Prunus avium</i>	Wild Cherry	T	o	C	
<i>Prunus spinosa</i>	Blackthorn	T	lo	C	

CRANBERRY MOSS, ALSAGER, CHESHIRE - POND SURVEY - DAVE BENTLEY ECOLOGY SERVICES					
Date of survey 23 May 2016 Page 2 of 3		Habitat	DAFOR	Status	
<i>Prunus sp</i>	Blackthorn/Plum	T	lo	C	
<i>Quercus robur</i>	Pedunculate Oak	T	o	C	
<i>Rubus fruticosus</i> agg.	Bramble	T	olf	C	
<i>Sorbus aucuparia</i>	Rowan	T	o	C	
<i>Tilia sp</i>	Lime sp	T	r	C	
TERRESTRIAL PLANTS:					
<i>Allium ursinum</i>	Ramsons	T	lf	C	
<i>Alopecurus pratensis</i>	Meadow Foxtail	T	o	C	
<i>Anthriscus sylvestris</i>	Cow-parsley	T	o	C	
<i>Calystegia sp</i>	Bindweed	T	olf	C	
<i>Dryopteris dilatata</i>	Broad Buckler Fern	T	lo	C	
<i>Dryopteris filix-mas</i>	Common Male Fern	T	lo	C	
<i>Epilobium montanum</i>	Broad-leaved Willowherb	T	lo	C	
<i>Festuca rubra</i>	Red Fescue	T	o	C	
<i>Geranium robertianum</i>	Herb Robert	T	o	C	
<i>Heracleum sphondylium</i>	Hogweed	T	o	C	
<i>Lonicera periclymenum</i>	Honeysuckle	T	lo	C	
<i>Potentilla anserina</i>	Silverweed	T	olf	C	
<i>Rumex obtusifolius</i>	Broad-leaved Dock	T	o	C	
<i>Silene dioica</i>	Red Campion	T	o	C	
CRANBERRY MOSS, ALSAGER, CHESHIRE - POND SURVEY - DAVE BENTLEY ECOLOGY SERVICES					
WETLAND INVERTEBRATE SURVEY		Date of survey 23 May 2016			
Codes in columns: d = dominant, a = abundant, f = frequent, o = occasional, r = rare, v = very, l = locally, p = present					
Status - C = Common, LC = Local, A = Alien, NC = Notable in Cheshire, NS = Nationally Scarce					%
Habitat - A = aquatic, W = wetland, G= generalist, T = terrestrial					1628
GRID REF: SJ 7810 5516					NW
DATE OF 1st SURVEY (2015)					ponds
DATE OF 2nd SURVEY (2015)					in
POND NUMBER					which
TOTAL INVERTEBRATE SPECIES = 70					Cheshire
TOTAL INVERT SPECIES (1995 TAXA LIST) = 34					species
		Habitat	DAFOR	Status	found
LUMBRICIDAE/LUMBRICULIDAE:					
<i>Eiseniella tetraedra</i>	Square-tailed Worm	W	vo	C	
<i>Lumbriculus variegatus</i>	Oligochaete Worm	A	o	C	
TRICLADIDA:					
<i>Dugesia lugubris/polychroa</i>	Flatworm	A	o	C	8.48
<i>Polycelis tenuis/nigra</i>	Flatworm	A	o	C	33.91
HIRUDINEA:					
<i>Erpobdella octoculata</i>	Leech	A	o	C	19.96
MOLLUSCA:					
<i>Lymnaea stagnalis</i>	Great Pond Snail	A	f	C	19.29
<i>Gyraulus albus</i>	White Ramshorn	A	r	C	23.40
<i>Hippeutis complanatus L</i>	Flat Ramshorn	A	r	C	17.32
<i>Pisidium milium</i>	Oblong Pea Mussel	A	vo	C	?
<i>Musculium lacustre</i>	Lake Orb Mussel	A	f	C	15.54
<i>Succinea putris</i>	Large Amber Snail	W	o	C	?
<i>Aegopinella pura</i>	Sriate Glass Snail	T	o	C	
<i>Euconulus alderi agg</i>	Tawny Glass Snail	W	r	LC	2.27
<i>Deroceras laeve</i>	Marsh Slug	W	r	C	
OTHERS:					
<i>Myrmica ruginodis</i>	Long-spined Red Ant	T	o	C	
<i>Lithobius microps</i>	15-legged Centipede	T	r	C	
<i>Julus scandinavicus</i>	Brown Scored Millipede	T	vo	C	
<i>Polydesmus angustus</i>	Flat-backed Millipede	T	r	C	
ARANEAE:					
<i>Pirata piraticus & cf piraticus</i>	Trident Wolf Spider	W	o	C	
<i>Tetragnatha sp (exp/pin)</i>	Long-jawed Web-spinner	W	o	C	
<i>Clubiona phragmitis</i>	Reedbed Spider	W	r	LC	
MICRO-CRUSTACEA:					
<i>Daphnia obtusa</i>	Big-mouthed Water Flea	A	r	C	
<i>Simocephalus expinosus</i>	Blob-eyed Water Flea	A	o	C	
<i>Cyclops spp</i>	Cyclopic Copepod	A	o	C	
<i>Ergasilus spp</i>	Parasitic Copepod	A	r	C	
<i>Cypridopsis vidua</i>	Small Banded Ostracod	A	f	C	

CRANBERRY MOSS, ALSAGER, CHESHIRE - POND SURVEY - DAVE BENTLEY ECOLOGY SERVICES					
Date of survey 23 May 2016 Page 3 of 3		Habitat	DAFOR	Status	%
MALACOSTRACA:					
<i>Philoscia muscorum</i>	Common Striped Woodlouse	T	o	C	
<i>Oniscus asellus</i>	Common Shiny Woodlouse	T	o	C	
<i>Asellus aquaticus</i>	Common Hog-louse	A	f	C	59.71
<i>Crangonyx pseudogracilis</i>	American Freshwater Shrimp	A	o	A	33.66
EPHEMEROPTERA:					
<i>Cloeon dipterum</i>	Pond Olive Mayfly	A	r	C	43.55
ODONATA:					
<i>Aeshna cyanea</i>	Southern Hawker Dragonfly	A	lo	C	12.04
<i>Coenagrion puella</i>	Azure Damselfly	A	f	C	26.11
<i>Pyrrosoma nymphula</i>	Large Red Damselfly	A	Adult	C	12.84
HEMIPTERA:					
<i>Zicrona caerulea</i>	Blue Shield Bug	W	r	LC	
<i>Macustus grisescens</i>	Leafhopper	T	r	LC	
<i>Chartoscirta cincta</i>	Dark-antennaed Shore Bug	W	r	C	
<i>Hesperocorixa linnaei</i>	Lesser Water Boatman	A	r	C	11.36
<i>Nepa cinerea</i>	Water Scorpion	A	o	C	20.33
<i>Notonecta nymphs</i>	Backswimmer	A	o	C	?
TRICHOPTERA:					
<i>Limnephilus flavicornis</i>	Caddis	A	o	C	5.96+
Small sand case	Caddis case	A	r		7.43
COLEOPTERA:					
<i>Halipilus - ruficollis gp</i>	Halipilus Beetle (unidentified)	A	r		10.07
<i>Hydaticus seminiger NS</i>	Diving Beetle	A	r	LC(NS)	2.33
<i>Hydroporus planus</i>	Diving Beetle	A	o	C	44.16
<i>Anacaena limbata</i>	Scavenger Beetle	A	o-f	C	30.71
<i>Enochrus coarctatus L</i>	Scavenger Beetle	A	r	C	14.13
<i>Enochrus testaceus L</i>	Scavenger Beetle	A	r	C	10.07
<i>Helophorus brevipalpis</i>	Scavenger Beetle	A	r	C	45.58
<i>Helophorus minutus & cf minutus</i>	Scavenger Beetle	A	r	C	14.80
<i>Megasternum concinnum (obscurum)</i>	Scavenger Beetle	A	r	LC	2.64
<i>Plateumaris sericea L</i>	Reed Beetle	W	o	NC	0.37
<i>Galerucella nymphalae/sagittariae</i>	Leaf Beetle	W	r	LC	1.96
<i>Cyphon variabilis</i>	Scirtid Beetle	W	r	LC	2.33
<i>Anisosticta 19-punctata LN</i>	Water Ladybird	W	o	C	14.62
<i>Agonum thoreyi</i>	Brown Ground Beetle	W	r	C	
<i>Stenus bifoveolatus Male</i>	Camphor Beetle	W	r	C	
<i>Stenus cincindeloides Male</i>	Camphor Beetle	W	r	C	
<i>Stenus solutus Male L</i>	Camphor Beetle	W	vo	LC	
<i>Acrotrichis sp</i>	Feather-wing Rove Beetle		r		
<i>Lathrobium brunnipes</i>	Ridge-tipped Rove Beetle	W	r	C	
<i>Rugilus rufipes</i>	Narrow-necked Rove Beetle	W	r	LC	
<i>Aleocharinae - elongate</i>	Brown Rove Beetles (various)	W	r		
DIPTERA LARVAE:					
<i>Chironomous</i>	Non-biting Midge Bloodworm	A	o		
<i>Orthocladinae</i>	Non-biting Midge	A	r		
<i>Ceratopogonidae - Bezzia type</i>	Biting Midge	A	r		
<i>Syrphidae (unidentified)</i>	Rat-tailed Maggot Hoverfly	A	r		
<i>Limoniidae- 5 lobed</i>	Short-palped Crane fly	A	vo		
<i>Stratiomyidae</i>	Soldierfly	A	r		
COLLEMBOLA (selected):					
<i>Sminthurides aquaticus</i>	Squat Water Springtail	A	o	C	
HIGHER ANIMALS					
Smooth Newt adult (males/females)			1m3f		
Ordinary Newt eggs			p		
Common Frog tadpoles			4		
Moorhen			p		



Pond 26 May 1997 (from www.alsager.com)(above) Platform and bay to rear (from south)



Pond Nov 1998 (from www.alsager.com)(above)(from south west)



Pond from west (from platform) 23 May 2016 (above)



Pond from east (from island) 23 May 2016 (above)



Damp grassland east of boardwalk 23 May 2016 (above)



Damp grassland west of boardwalk 23 May 2016 (above)



Leaves and cones of Italian Alder (above)



Leaves of Grey Alder (above)



Blank plan for management planning

END