

**PROPOSED MEMORIAL GARDEN WITHIN
GRANGE HILL LOCAL WILDLIFE SITE,
WEST KIRBY, WIRRAL**

**LOCAL WILDLIFE SITE IMPACT
ASSESSMENT**

(APRIL 2018)

PUBLIC COPY



ces ecology
consultant ecologists

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Author: M. LAWTON

Date: 06/04/2018

Compiled by: M. LAWTON

Date: 06/04/2018

Checked by: L. OVERSTALL

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IMPORTANT

The original copy of this report contains sensitive ecological information regarding a legally protected species which has been subject to persecution in the past. References to this species have been removed from this copy of the report.

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1.0 INTRODUCTION

- 1.1 Cheshire Ecological Services Ltd. (CES), the consultancy arm of Cheshire Wildlife Trust, to which all profits are covenanted, was commissioned by the Parks and Countryside Local Area Team for West Kirby, Hoylake and Meols, to undertake an assessment of the proposal to create a Memorial Garden within Grange Hill Local Wildlife Site, West Kirby. CES was asked to:
- 1) Comment on the appropriateness of the garden proposal, in respect of:
 - a) the proposed character and setting of the garden in the context of Grange Hill,
 - b) the effect of the proposal on any wildlife present,
 - c) effects of the proposal on the purpose of the LWS designation of the site.
 - 2) Identify and comment on any specific part of the proposal which might have any negative impact on wildlife in:
 - a) the garden area
 - b) the wider hill
 - 3) Suggest specific amendments to the garden proposal in sufficient detail to:
 - a) mitigate any perceived negative effect on wildlife, and
 - b) enhance the proposal for the benefit of wildlife.
- 1.2 Local Wildlife Sites (LWS) are non-statutorily designated sites which collectively play a critical role in the conservation of the UK's natural heritage. They are afforded a level of protection via planning policies and planning guidance.
- 1.3 Administration of the Local Wildlife Sites system within the Cheshire region, including Wirral, is operated by the Cheshire region LWS Partnership. All LWSs that are selected, or de-selected, by the partnership are submitted to the relevant Local Authority for inclusion or deletion from their Local Development Plan.
- 1.4 Grange Hill LWS totals approximately 9.8 hectares and is situated in the north of West Kirby, Wirral. The proposed redevelopment of the Memorial Garden covers an area of approximately 0.4ha, representing less than 5% of Grange Hill LWS (refer to Appendix A: Site Location Plan).
- 1.5 Grange Hill LWS It is located approximately 0.9km east of the River Dee and lies within National Character Area 59: Wirral. The landscape of this area includes former large country estates, rural areas, natural coastal scenery and wooded sandstone ridges. The core of the area is comprised of mixed agricultural land. Lowland heathland is strongly associated with the underlying geology of the area with the sandstone outcrops supporting areas of mature woodland and extensive tracts of gorse-covered slopes. Small fragments of species-rich grassland remain. Less than 1% of the Natural Character Area is lowland dry acid grassland with 1% of the area remaining as heathland (Natural England, 2014).

- 1.6 As the site name suggests, Grange Hill LWS has a hill topography, with its east, north and western aspects falling from a central exposed plateau. Sandstone outcrops are found throughout the site, but most notably to the centre.
- 1.7 The data available to CES at the time of undertaking this impact assessment indicated that Grange Hill Local Wildlife Site was last re-surveyed in relation to its status as LWS for its botanical species in 2005. In 2005 its botanical situation was found to no longer merit classification as a Site of Biological Importance (former designation of LWS), however, the site appears to originally have been selected for its remnant lowland heath, grassland and broad-leaved woodland. The citation also mentions the geological interest of the LWS. There are exposures that show 'contact between the Bunter and Keuper sandstones, along with interesting sedimentary features'. The Grange Hill LWS citation, which we understand is a draft and not yet fully accepted by the Local Wildlife Sites partnership, can be found in Appendix B.
- 1.8 Since the 2005 botanical survey, new selection criteria for Local Wildlife Sites in the Cheshire Region have been adopted by the LWS Partnership (2012). These criteria consist of reduced thresholds for qualification for grassland habitats.
- 1.9 Therefore, in order to assess any potential impacts of the proposed Memorial Garden on the status of Grange Hill LWS, it would be necessary to gain up to date baseline information on the site in relation to the new selection criteria.

2.0 SURVEY METHODS

Extended Phase 1 Habitat Survey

- 2.1 As part of the impact assessment, a Phase 1 habitat survey was conducted within and adjacent to the area where the Memorial Garden development is proposed (approx. 0.4ha) on Wednesday 21st March 2018. The survey was undertaken by Matthew Lawton BSc (Hons) ACIEEM and Fiona Wood BSc (Hons).
- 2.2 The purpose of the survey was to gain baseline ecological information of the proposed area of works in order to identify whether any of the LWS habitat criteria would be met, and to make an informed assessment as to the possible impacts of the proposed Memorial Garden on the Local Wildlife Site and the wildlife within it. Detailed surveys for fauna species were not commissioned.
- 2.3 This survey involved the mapping of various habitat types in the area in addition to any habitat features and botanical species of conservation importance. A thorough walk-over survey was undertaken of the proposed Memorial Garden site. The methodology for this survey followed that described by the Joint Nature Conservation Committee (JNCC, 2010). Species lists of all botanical species recorded were compiled for each distinct habitat type or compartment.
- 2.4 Priority habitats, for which there is a national or local Biodiversity Action Plan (BAP) and those listed under Section 41 (S41) of the Natural Environment and Rural Communities

Act, 2006, were recorded as such where present. The UK BAP list of Priority habitats and species has now been superseded by the S41 list, however, as it is still widely recognised the two should be considered interchangeable.

- 2.5 The proposed Memorial Garden was compartmentalised into 13 compartments according to composition of habitat, with each area of habitat assessed against the LWS criteria.
- 2.6 The abundance of all recorded botanical species identified in potential Priority habitats was assessed using the DAFOR scale, as described by Sutherland (1996). The DAFOR scale is a broad interpretive assessment whereby the surveyor assigns one of the following categories to the abundance of the species; Dominant, Abundant, Frequent, Occasional or Rare.

Limitations

- 2.7 The survey was undertaken outside the growing season, however plants were identified vegetatively and a good indication of habitat type and quality was obtained.

3.0 SURVEY RESULTS

Wider LWS

- 3.1 A walkover inspection of Grange Hill revealed that the wider Local Wildlife Site is dominated by gorse scrub with occasional broom and stands of bracken. Some common heather was observed and was thought likely to be remnants of the former heathland. Burnt gorse and a patch of charred remnants reveal that some fires have occurred within the recent past. Areas of semi-natural broadleaved woodland dominated by birch were also recorded on the lower slopes of the LWS.



Plate 1: Stands of bracken

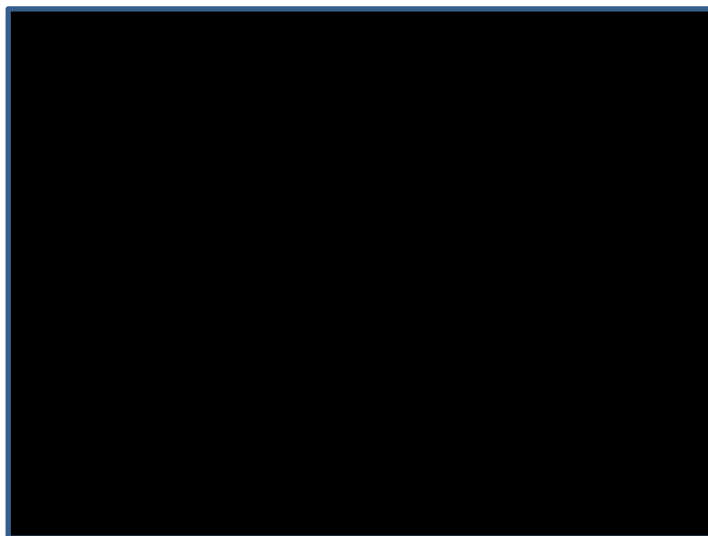


Plate 2: Stands of gorse

- 3.2



Several pairs of linnet were recorded during the survey, Linnet is a Priority species.



Land within the proposed Memorial Garden

- 3.3 The proposed Memorial Garden was divided into thirteen compartments according to their habitat composition. These compartments (Areas 1 – 13) are presented in Appendix C; Survey Area Breakdown Map.

Species Lists

- 3.4 Species lists for each of the compartments are given in Appendix D. Where habitats were likely to be Priority habitats or meet LWS criteria, species frequencies are presented.

Area 1:

- 3.5 Located to the north of the proposed Memorial Garden lies an area of gorse-dominated scrub underlain by semi-improved acid grassland of moderate species richness. Large areas of rock exposure are present.



Plate 4: Area 1

- 3.6 According to the LWS criteria, restorable grassland (criterion H11) is moderately species rich semi-improved grassland which has good potential to be restored to BAP quality grassland. To meet this criterion a grassland requires a minimum of four 'occasional' indicator species, but two or fewer from the lists given for neutral, acid, marshy or calcareous grassland. 'Restorable semi-improved grassland should have less than 30% cover of white clover and rye grass and generally host at least 3 of the following grasses: common bent, crested dog's-tail, false oat grass, meadow fescue, meadow foxtail, red fescue, sweet vernal grass, tufted hair grass'.
- 3.7 Recorded within Area 1 were the restorable grassland indicator species cat's-ear, selfheal, ribwort plantain and red clover, alongside the acid grassland indicator species sheep's sorrel. Sheep's fescue and creeping bent were also recorded.
- 3.8 Although an insufficient number of indicator species were recorded to meet LWS selection criterion H11, given that the survey was carried out outside of the growing season (and therefore some species may have been undetectable), it is considered likely that the grassland in this area meets the LWS criteria for restorable grassland and is therefore a constituent of the LWS.

Area 2:

- 3.9 Dense gorse scrub was recorded along the north-western edge of the proposed Memorial Garden. The non-native species alexanders, which thrives in coastal areas was frequent. The habitat is not of BAP quality and does not meet the LWS criteria.



Plate 5: Area 2

Area 3:

- 3.10 An east-facing slope of semi-improved acid grassland on rock exposure with signs of former terracing. The grassland merges to dense gorse scrub to the west. Benches are located at the bottom of the slope towards the surfaced path as well as at the top of the bank and overlooking the memorial.
- 3.11 Species recorded in Area 3 include Cheshire LWS criteria acid grassland indicator species sheep's sorrel and lichen, as well as restorable grassland indicator species ribwort plantain and cat's ear.
- 3.12 The LWS criterion (H9) for acid grassland or acid grassland/heathland mosaics requires a minimum of 'three 'occasional' acid grassland/heathland indicator species or four 'rare' acid grassland/heathland indicators.
- 3.13 It is considered likely that this area is a UK priority habitat and would meet the LWS criterion for acid grassland. Failing that, this sloped grassland is highly likely to meet the LWS criterion for restorable grassland. It is therefore a constituent of the LWS.



Plate 6: Area 3

Area 4:

- 3.14 Between the sloping acid grassland and the War Memorial, an area of semi-improved grassland was present. It is considered likely that topsoil was added to this part of the site in the past, resulting in a less diverse species composition in comparison to the adjacent acid grassland. With few grassland indicator species recorded and frequent perennial rye-grass, this area does not meet the LWS criteria.
- 3.15 Patches of bare ground were found alongside the path, which divides this area from the acid grassland. It should be noted that exposed earth can provide a valuable habitat for invertebrates, particularly solitary bees.



Plate 7: Area 4

Area 5:

- 3.16 Adjoined to Area 4, this area of grassland of approximately 20m² had a different appearance; it appeared not to have been improved to the same extent. Both acid and restorable grassland indicator species were present here. Perennial rye-grass was only frequent here along the very edge. Although not meeting the LWS criteria for acid or restorable grassland at the time of survey, the precautionary principle should be applied and this semi-improved grassland of moderate species richness should be viewed as being of LWS standard.



Plate 8: Area 5

Area 6:

- 3.17 An island bed of introduced shrub of rhododendron and cherry laurel was located within the large area of semi-improved grassland (Area 4) and close to the restorable/acid grassland (Area 5). This area does not qualify as LWS on account of its botanical or habitat composition



Plate 9: Area 6

Area 7:

- 3.18 To the north-east of the memorial, was poor semi-improved grassland which was dominated by perennial rye-grass with frequent cock's-foot. There were few forb species and those that were present were indicative of more enriched habitats. The grassland sloped down from the plateau merging to dense gorse scrub. The grassland was not a priority habitat and does not qualify as a LWS on account of its botanical or habitat composition.



Plate 10: Area 7

Area 8:

- 3.19 The War Memorial sits on top of a rock outcrop. Chasmophytes were recorded on the rock surface and on adjacent small areas of grass immediately to the south of the memorial. Ferns such as polypody were present on the rock surface, alongside several unidentified lichen species.



Plates 11 & 12: Area 8

- 3.20 Several rock outcrops were present across the site within the grassland, scrub, shrub and bracken habitats. Bryophytes and lichens were a feature on the rock surfaces across the site.
- 3.21 Under Local Wildlife Site criterion H22- Rock outcrop and stone structures ‘areas of rock, scree and stone structures supporting a rich assemblage of ferns, lichens and bryophytes will be selected as LWS’.
- 3.22 There did not appear to be a rich fern community, however, a detailed assessment of the lichen and bryophytes assemblage was not made. It is possible that the rock faces and outcrops of the site would meet criterion H22. Nevertheless, the rock outcrops are the reason for the site’s RIGS designation (Regionally Important Geological and Geomorphological Site).
- 3.23 Acid grassland indicator species stag’s-horn plantain and sheep’s sorrel were found in shallow areas of soil that had developed on part of the rock within Area 8. Restorable grassland indicator species ribwort plantain and cat’s-ear were recorded within the poor semi-improved grassland at the top of the rock. However, this area does not qualify as LWS on account of its botanical or habitat composition.



Plate 13: Grassland habitat in Area 8

Area 9:

- 3.24 Dense gorse scrub had recently been cleared from the part of this area located on top of the rock face. Many gorse stumps were still present. Around the stumps a poor semi-improved grassland was present. At the base of the ridge this area merged to a mix of non-native and native scrub and shrubs.



Plate 14: Area 9

- 3.25 The grassland was regenerating following the scrub removal and did not meet the LWS criteria at the time of survey. Areas of rocky outcrop with bryophytes and lichens were present amongst the grassland on this plateau. This area does not currently qualify as LWS on account of its botanical or habitat composition.

Area 10:

- 3.26 A mix of non-native shrub and native scrub was found in the central area of the proposed Memorial Garden redevelopment site. Species included rhododendron and cherry laurel with gorse and broom. This area does not qualify as LWS on account of its botanical or habitat composition.



Plate 15: Area 10

Area 11:

- 3.27 The south of the proposed area of works was dominated by gorse scrub with occasional broom and rare bramble (Area 12). The ground flora of this undulating area was comprised of woodland species. A large kapuka or New Zealand broadleaf tree *Griselinia littoralis* was present in the south-east. Despite being a semi-natural habitat, scrub is not a Priority habitat and therefore the LWS criteria does not apply directly to this area.



Plates 16 & 17: Area 11

- 3.28 Several rock outcrops were present within this area and included the large outcrop near the kapuka tree which continued into the 'quarry area'. Rock outcrops are the reason for the site's RIGS designation.

Area 12:

- 3.29 A small dry valley runs along the south west of the proposed development area and was dominated by bracken with patches of exposed soil and rocky outcrops with moss. This area does not meet the LWS criteria.



Plate 18: Area 12

Area 13:

- 3.30 This was a triangle of poor semi-improved grassland at the base of a rock outcrop that is referred to as the 'quarry area' in the proposed plans. The grassland did not meet the LWS criteria.
- 3.31 Several lichen species were present on the rockface. Hard fern was also recorded. The rock outcrops are the reason for the site's RIGS designation (Regionally Important Geological and Geomorphological Site).



Plates 19 & 20: Area 13

4.0 BASELINE INFORMATION

- 4.1 As part of the assessment, existing survey data available to CES was also reviewed to assess the status of species of fauna recorded within the LWS. Liverpool University undertook a survey for common lizard within the Local Wildlife Site on 2nd August 2013. Over the four hour survey period 22 sightings of common lizard were recorded.

- 4.2 Under LWS criterion S6: 'Reptiles', 'any site which supports a significant population of common lizards should be selected'.
- 4.3 Froglife Advice Sheet 10: Reptile Survey (1999), indicates that for common lizard, survey counts of 5 – 20 individuals indicates a 'Good Population' and >20 individuals indicates an 'Exceptional Population'. These figures are intended to be applied nationally and are not county or region specific.
- 4.4 Although it seems possible that some of the Liverpool University records may have been repeat sightings of the same individual, based on the extent and suitability of habitat at Grange Hill LWS for common lizard, it is considered likely that the site does support an 'Exceptional Population' of common lizard, and as such, qualifies under LWS criterion S6: Reptiles.
- 4.5 The proposed area of works provides some suitable habitat for common lizard and anecdotal evidence was provided by a member of the public of common lizard basking in the tops of gorse bushes within the proposed Memorial Garden area. However, modification of the Memorial Garden is considered unlikely to adversely affect the status of this species at the LWS on the whole given the quality of habitat currently present within this area (i.e. not optimal), and its relatively small size in relation to the wider LWS.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5.0 PROPOSED DEVELOPMENT

5.1 The Parks and Countryside Local Area Team Leader for West Kirby, Hoylake and Meols, has provided information on proposals for the Memorial Garden. The proposals for the site include:

- Resurfacing of many of the paths with a compacted 6mm to dust granite surface coating to form an all-ability path. Adding passing places to the pathways and creating new pathways. Positioning a Friends of Grange Hill (FoGH) noticeboard and passing place in the north of the site (Area 1). Plaining off any existing sandstone outcrops to create a uniform sub grade.
- Remodelling and levelling of the grass terraces (Area 3) to provide a seating and viewing area. Benches are proposed to be added to the area and part of it be re-turfed.
- Relevelling of grass and repair. Laying of some new turf using a mix of approximately 50% ryegrass and 50% Fescue (Areas 4 & 5).
- Removal of 'island bed' (Area 6) and creation of a small oval rockery style bed to be planted with low growing heather winter heath *Erica carnea* and dwarf ornamental grasses to symbolise the native hill planting.
- Retention of existing habitat to the east and north of the memorial (part of Area 1; Area 7).
- Clearance and levelling prior to creation of a new meadow using a Boston Seeds BS10M Coastal Areas 80/20 Wildflower Meadow mix after levelling, as well as creation of a new grassland area (within Areas 10 & 11).
- Formal garden area with roses and lavender hedges next to paths, supplemented with perennials and small shrubs (within Areas 4 & 10) .
- 'Winter' border with white bark birch trees and coloured bark *Cornus*, additional perennials and low shrubs (within Area 11).
- Spring and autumn planting with low maintenance shrubs and flowering perennials.
- Retention of existing trees and scrub in south of site, in an area in the east adjacent to the quarry edge and to the east of the quarry edge (Area 9).
- Shade-loving planting at base of quarry edge (Area 13). Proposed species include *Polystichum setiferum*, *Dryopteris affinis*, *Asplenium scolopendrium*, *Cornus Canadensis*, *Daphne odora* and *Leucothoe scarletta*.

On this understanding, the effects of the proposals have been predicted.

6.0 PREDICTED EFFECTS

6.1 The proposed positioning of the Friends of Grange Hill (FoGH) notice board and passing place within Area 1, where the grassland beneath the gorse scrub is likely to meet the LWS criteria, would remove some of this LWS quality grassland and increased trampling around the notice board is likely. Plaining-off areas of sandstone rock to create the pathway with new passing places would remove part of the geological interest for which the site has been selected as a RIGS (Regionally Importance Geological and Geomorphological Site).

- 6.2 Remodelling and levelling of the grass terraces within the good quality semi-improved acid grassland in Area 3 would result in a direct loss of this Priority habitat and LWS quality grassland, which within the Wirral National Character Area is described as comprising less than 1% of land coverage in the area.
- 6.3 The proposed re-levelling and addition of a rye grass fescue mix in Areas 4 and 5 would remove the patches of bare earth which are currently providing suitable habitat for invertebrates and basking lizard. Although much of this grassland has been reseeded in the past and is of low botanical interest, it would potentially result in the loss of the adjacent and more botanically interesting Area 5, which may meet the LWS criteria.
- 6.4 Removal of the existing island bed (Area 6) would be a positive step for nature conservation at the site. Eradication of the Wildlife & Countryside Act Schedule 9 invasive non-native species rhododendron (likely *ponticum*) and the non-native species cherry laurel would prevent them from spreading further across the LWS. Non-native species including the heather plant ‘winter heath’ have been included in the planting plan for this area. It is possible that winter heath may hybridise with the local heather species. It is also possible that this species would spread into the wider LWS.
- 6.5 Despite the species in the proposed wildflower meadow mix (Areas 10 & 11) being native and valuable as nectar plants for pollinators, the proposed mix would not be appropriate for an area which lies on acidic soils and not be in keeping with the natural flora of the LWS. An alternative acid grassland mix is recommended and is presented in Appendix E.
- 6.6 Within the proposed new grassland areas, removal of the existing non-native ornamental shrub species would be of benefit since it would aid to prevent their spread through Grange Hill LWS.
- 6.7 Removal of the native gorse and broom scrub, as well as the non-native/ornamental shrubs from Areas 10 and 11, would reduce the structural diversity of these areas that are currently used by common lizard for basking and sheltering. However, such losses are considered unlikely to adversely affect the status of common lizard at the LWS given the relatively small size of this area in relation to the wider LWS.
- 6.8 Levelling within Areas 10 and 11 would be likely to remove or cover over areas of rock exposure, which also provide basking areas for common lizard. However, again, this is considered unlikely to have significant impact on the lizard populations within the LWS as a whole given that the area covers only a small proportion of Grange Hill LWS.
- 6.9 As with the plaining of the rock along pathways, levelling to create the grassland would affect the geological interest of this RIGS site and remove a habitat for lichens and bryophytes.
- 6.10 The planting of native shade-loving fern species seems appropriate for the quarry area. However, planting of non-native shrubs in this area poses a risk of further spread into the LWS.

- 6.12 Removal of rock outcrops with features such as deep fissures during the winter period poses a risk of killing or injury to hibernating common lizard. Works during the reptile active period (typically April – September) would be of lower risk.

7.0 RECOMMENDATIONS

- 7.1 It is recommended that the positioning of the FoGH noticeboard and passing place should be moved to within Area 2 where the habitat is almost certainly not of LWS standard.
- 7.2 The area identified as acid grassland (Area 3) should be retained in its current form with the remodelling of the grass terraces not undertaken. This area is highly likely to meet the LWS acid grassland criteria and be an area of UK priority habitat. Current management appears to be keeping this area in good condition.
- 7.3 It is recommended that the potential LWS quality acid grassland in Area 5 is left untouched by re-levelling or reseeding. Provided the rye grass and fescue mix proposed to be sown in Area 4 is managed as lawn with regular cutting, there should not be an issue with this mix encroaching into the adjacent LWS quality grassland (cutting will suppress its spread).
- 7.4 Native species should be used in the planting of the new rockery area rather than non-native species. This would more accurately reflect native hill planting and would prevent hybridisation of non-native species with the native flora. Species such as common heather/ling (*Calluna vulgaris*), bell heather (*Erica cinerea*), western gorse (*Ulex gali*), cross-leaved heath (*Erica tetralix*), wavy hair-grass (*Deschampsia flexuosa*) and wood sage (*Teucrium scorodonia*) could be planted here. Preferably, plants of local provenance should be used to preserve regional genetic diversity and ensure resilience of the plants to the local conditions.
- 7.5 For Areas 10 and 11, rather than the creation of a new meadow area with the Boston Seeds BS10M Coastal Areas 80/20 Wildflower Meadow, it is recommended that an acid grassland is created from the species list provided in Appendix E. Although not as showy as the proposed coastal areas wildflower meadow mix, an acid grassland would be in keeping with the character of the LWS and more likely to prevail in the site conditions.
- 7.6 If replication of an acid grassland typical to the area is desired, a green hay could be taken and spread on the cleared proposed grassland area if a suitable donor site can be identified. This would ensure that local genetic diversity is retained should the imported species spread into the rest of the LWS.
- 7.7 Once established, the grassland should then be maintained through early season cuts up to early May, from which point no further mowing should take place until late August,

so as to allow the plants to flower and set seed. Cutting should continue into the autumn, until growth has subsided. All cuttings should be collected and composted away from this area in order to keep fertility low. N.B. an existing composting heap is located immediately adjacent (within Area 12). The first summer cut should be left for a few days before removal to allow seeds to dry and fall.

- 7.8 Rock outcrops should be retained. These will continue to provide basking areas for common lizard, niches for certain plants, as well as being a geologically important feature of the site.
- 7.9 In the new areas of planting, it is recommended that the proposed non-native shrub planting is replaced with native shrub equivalent planting.
- 7.10 Compensatory measures to increase the value of the rest of the Local Wildlife Site for common lizard are also recommended to mitigate any adverse effects resulting from the proposed Memorial Garden. Common lizards benefit from a mosaic of scrub and open habitats. The walkover of Grange Hill did not reveal many areas of bare earth and only a few pockets of heather. Removal of patches of gorse to allow heathland to re-establish is likely to be beneficial to the common lizard population within the LWS, in addition to creating additional Priority habitat - lowland heathland.
- 7.11 The reestablishment of heathland can be promoted by clearing at ground level c.5m radius circles. Gorse should be cut and removed. Cuttings should not be burned in situ as the ashes/charcoal would likely increase soil fertility, which in turn creates suitable conditions for undesirable plants such as rosebay willowherb and bramble, which would impede the establishment of heather.
- 7.12 Ideally a layer of topsoil should be removed from the cleared areas to reduce fertility and increase the success of heathland reestablishment. However, disposal of the topsoil may be problematic. One option is the creation of hibernacula. Hibernacula, consisting of piles of logs mixed with earth, would provide suitable shelter, basking and potentially hibernation sites for common lizard.
- 7.13 The cleared patches should be located amongst the existing tall gorse scrub to allow the reptiles to utilise both the sheltered and exposed habitat mosaic. Scattering heather seed from existing heather plants into the cleared and prepared ground would encourage establishment of this desirable species, though care should be taken not to deplete the seed bank of any existing area colonised by heather.
- 7.14 Some patches should be maintained as bare earth to provide basking opportunities and a habitat for invertebrates. Long-term management would need to be established to ensure that both the bare patches and heathland areas do not revert back to gorse scrub. The Parks and Countryside Local Area Team or Friends of Grange Hill undertaking this work on rotation would ensure the permanent provision of open areas for common lizard.

- 7.15 To increase the quality of the habitat in Area 1, mowing of the grassland around the gorse scrub is recommended. Management should be the same as the management in the new grassland proposed for within Areas 10 and 11.



- 7.17 Removal of woody vegetation from March to September inclusive has the potential to result in damage or destruction of bird nests, eggs and/or young. This would be an offence. The recommendation is therefore made that all woody vegetation necessary to be removed is cleared outside of this period. If this is not possible, then surveys for nesting birds should be undertaken immediately ahead of the works.

8.0 SUMMARY

- 8.1 The area proposed for the new Memorial Garden contains compartments of land which likely meet the selection criteria for LWS on account of their habitat composition and botanical interest. This includes small areas of acid grassland, which is a habitat type recognised in the Wirral National Character Area and is regionally scarce. Any future re-colonisation of acid grassland (or any of its component species) at Grange Hill LWS will largely depend upon the retention of such remnant patches.
- 8.2 The areas of habitat that are recommend for retention should be incorporated into the new Memorial Garden. Other areas that do not meet, or are unlikely to meet LWS selection criteria under the habitat criterion are likely to support other qualifying species such as [REDACTED] and common lizard. However, if appropriate native species planting can be used and appropriate mitigation applied for these species of fauna, then adverse effects on these qualifying species are considered avoidable. The sites geomorphologic interest should also be protected.
- 8.3 It is concluded that current proposal would result in a localised but potentially significant adverse effect on Grange Hill LWS through the loss of important LWS and Priority habitats and exposed rock features. If the recommendations of this impact assessment can be implemented, then that effect may be appropriately mitigated.

9.0 REFERENCES

Cheshire Wildlife Trust (2014) Local Wildlife Site Selection Criteria for the Cheshire region. Covering the districts of Cheshire West and Chester, Cheshire East, Wirral, Halton and Warrington. Local Wildlife Sites Partnership

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Appendices

Appendix A: Site Location Map



CES Ecology
Bickley Hall Farm
Bickley
Malpas
Cheshire
SY14 8EF



Project: Grange Hill Garden Project


Map: Site Location Map


CES Ref: CES/1404/04-18/LO

Scale: Not to scale / Indicative

Date: April 2018

Legend

 Surveied Area

 Grange Hill Local Wildlife Site

Appendix B: Grange Hill Local Wildlife Site Citation

Site name: Grange Hill, West Kirby
Ward: West Kirby & Thurstaston
Area: 9.8 ha
Date of Notification: 1983
Date of Revision: 2017
Status: Owned by WMBC

Site code: B2
Grid Reference: SJ219871

Description:

Former remnant lowland heath (reason for citation), but now mainly a scrub of gorse (*Ulex europaeus*) and bracken (*Pteridium aquilinum*) with appreciable spreading amounts of bramble (*Rubus fruticosus* agg.); some grassland, by the war memorial and kept mown. Ivy (*Hedera helix*) is spreading rapidly from the southern boundary towards the war memorial and also occurs in other currently small areas. Heather (*Calluna vulgaris*), western gorse (*U. gali*) and bell heather (*Erica cinerea*) occur in very small amounts among gorse, on quarry edge and other places which are inaccessible to people. Broad-leaved woodland occurs on lower slopes and hollows, particularly west, south and old quarry (north). Sycamore (*Acer pseudoplatanus*) is dominant with silver birch (*Betula pendula*) and rowan (*Sorbus aucuparia*). Fires occur, sometimes frequently, during the summer.

Geological interest centres on the exposures showing the contact between the Bunter and Keuper sandstones, along with interesting sedimentary features.

The botanical situation no longer merits SBI classification; however a recent study by members of the University of Liverpool shows a very good number of Common Lizard (*Zootoca vivipara*); on the basis of these data Grange Hill will meet criteria for designation as a Local Wildlife Site; hence interim SBI status should be retained.

Criteria for selection: (iv)

Habitats:

Scrub
Woodland - broadleaved (plantation)
Heathland - dry heath

Percentage:

<5%


Most recent survey:

Plants	2005
Invertebrates	1988
Birds	2007
Common Lizard	2013

CONFIDENTIAL:

Appendix C: Survey Area Breakdown Map



<div>CES Ecology</div> <div>Bickley Hall Farm</div> <div>Bickley</div> <div>Malpas</div> <div>Cheshire</div> <div>SY14 8EF</div> <div></div>	Project:	Grange Hill Garden Project	<div>Legend</div> <div><div><div></div>Survey Area</div><div><div></div>Compartment</div><div><div>1</div>Compartment Number</div></div>
	Map:	Survey Area Breakdown Map	
	CES Ref:	CES/1404/04-18/LO	
	Scale:	Not to scale / Indicative	
	Date:	April 2018	

Appendix D: Species Lists

Species Lists, Grange Hill Memorial Garden

Local Wildlife Site criteria semi-improved grassland species are highlighted in black, while acid grassland indicator species are highlighted in blue. Abundances of species are given on the DAFOR scale (**D**ominant, **A**bundant, **F**requent, **O**ccasional, **R**are)

Area 1

<i>Hypochaeris radicata</i>	Cat's-ear	O
<i>Festuca ovina</i>	Sheep's fescue	LF
<i>Prunella vulgaris</i>	Selfheal	R
<i>Senecio vulgaris</i>	Groundsel	R
<i>Smyrnum olusatrum</i>	Alexanders	LF
<i>Rumex acetosella</i>	Sheep's sorrel	LA
<i>Pentaglottis sempervirens</i>	Green alkanet	R
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Plantago lanceolata</i>	Ribwort plantain	F
<i>Stellaria media</i>	Common chickweed	R
<i>Geranium lucidum</i>	Shining crane's-bill	R
<i>Taraxacum agg.</i>	Dandelion	R
<i>Agrostis stolonifera</i>	Creeping bent	A
<i>Ficaria verna</i>	Lesser celandine	R
<i>Trifolium pratense</i>	Red clover	R
<i>Erophila verna</i>	Common whitlowgrass	O
<i>Rumex obtusifolia</i>	Broad-leaved dock	R
<i>Ulex europaeus</i>	Gorse	A
<i>Urtica dioica</i>	Common nettle	R
<i>Cardamine flexuosa</i>	Wavy bitter-cress	O
<i>Cerastium fontanum</i>	Common mouse-ear	R
<i>Rubus fruticosus agg.</i>	Bramble	R
Bryophyta spp.	Mosses	O

Area 2

<i>Smyrnum olusatrum</i>	Alexanders	F
<i>Dactylis glomerata</i>	Cock's-foot	A
<i>Stellaria media</i>	Common chickweed	D
<i>Agrostis stolonifera</i>	Creeping bent	R
<i>Plantago lanceolata</i>	Ribwort plantain	R
<i>Ulex europaeus</i>	Gorse	F
<i>Sorbus aria</i>	Whitebeam	R
<i>Galium aparine</i>	Cleavers	R

Area 3

<i>Hypochaeris radicata</i>	Cat's-ear	A
<i>Festuca ovina</i>	Sheep's fescue	D
<i>Smyrnum olusatrum</i>	Alexanders	R
<i>Dactylis glomerata</i>	Cock's-foot	R
<i>Plantago lanceolata</i>	Ribwort plantain	F
<i>Stellaria media</i>	Common chickweed	R
<i>Agrostis stolonifera</i>	Creeping bent	R
<i>Trifolium repens</i>	White clover	R

Bryophyta spp.	Mosses	F
<i>Lolium perenne</i>	Perennial rye-grass	R
<i>Geranium molle</i>	Dove's-foot cranesbill	R
<i>Poa annua</i>	Annual meadow grass	O
Lichen sp.	Lichen	R
<i>Rhytidiadelphus squarrosus</i>	Springy Turf-moss	O
<i>Vicia</i> sp.	Tare/vetch sp.	R
<i>Rumex acetosella</i>	Sheep's sorrel	F
<i>Digitalis purpurea</i>	Foxglove	R
<i>Ulex europaeus</i>	Gorse	LD

Area 4

<i>Poa annua</i>	Annual meadow grass	F
<i>Vicia</i> sp.	Tare/vetch sp.	R
<i>Geranium molle</i>	Dove's-foot cranesbill	R
<i>Plantago lanceolata</i>	Ribwort plantain	F
<i>Lolium perenne</i>	Perennial rye-grass	F
<i>Hypochaeris radicata</i>	Cat's-ear	R
<i>Bellis perennis</i>	Daisy	R
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Trifolium repens</i>	White clover	O
<i>Cerastium fontanum</i>	Common mouse-ear	R
<i>Rumex acetosella</i>	Sheep's sorrel	R
<i>Festuca ovina</i>	Sheep's fescue	R
<i>Rumex</i> sp.	Dock sp.	R

Area 5

<i>Plantago lanceolata</i>	Ribwort plantain	O
<i>Vicia</i> sp.	Tare/vetch sp.	R
<i>Festuca ovina</i>	Sheep's fescue	A
<i>Hypochaeris radicata</i>	Cat's-ear	O
<i>Agrostis stolonifera</i>	Creeping bent	F
Bryophyta spp.	Mosses	R
<i>Cerastium fontanum</i>	Common mouse-ear	R
<i>Ulex europaeus</i>	Gorse	R
<i>Trifolium repens</i>	White clover	O
<i>Rumex acetosella</i>	Sheep's sorrel	R
<i>Lolium perenne</i>	Perennial rye-grass	LF
Lichen sp.	Lichen	R

Area 6

'Island' of shrub with cherry laurel and rhododendron.

Area 7

<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Plantago lanceolata</i>	Ribwort plantain	O
<i>Smyrniololus</i>	Alexanders	R
<i>Trifolium repens</i>	White clover	F
<i>Cerastium fontanum</i>	Common mouse-ear	R
<i>Lolium perenne</i>	Perennial rye-grass	D
<i>Poa annua</i>	Annual meadow grass	R
<i>Taraxacum</i> agg.	Dandelion	R
<i>Rumex obtusifolius</i>	Broad-leaved dock	R
<i>Galium aparine</i>	Cleavers	R

Area 8

Rocky outcrop and shallow areas of soil:

<i>Blechnum spicant</i>	Hard fern
<i>Rumex acetosella</i>	Sheep's sorrel
<i>Festuca ovina</i>	Sheep's fescue
<i>Cerastium fontanum</i>	Common mouse-ear
<i>Plantago lanceolata</i>	Ribwort plantain
Lichen spp.	Lichen spp.
Fern sp.	Ferns sp.
<i>Plantago coronopus</i>	Stag's-horn plantain
<i>Lolium perenne</i>	Perennial rye-grass
<i>Erophila verna</i>	Common whitlowgrass

Grassland on top of rock:

<i>Plantago lanceolata</i>	Ribwort plantain	A
<i>Geranium molle</i>	Dove's-foot cranesbill	R
<i>Poa annua</i>	Annual meadow grass	O
<i>Hypochaeris radicata</i>	Cat's-ear	R
<i>Trifolium repens</i>	White clover	O
<i>Smyrniololus</i>	Alexanders	R
<i>Taraxacum</i> agg.	Dandelion	R
Bryophyta spp.	Mosses	R
<i>Dactylis glomerata</i>	Cock's-foot	R
<i>Lolium perenne</i>	Perennial rye-grass	F
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Erophila verna</i>	Common whitlowgrass	R
<i>Sonchus oleraceus</i>	Smooth sow thistle	R
<i>Festuca ovina</i>	Sheep's fescue	F

Area 9

<i>Teucrium scorodonia</i>	Wood sage	R
<i>Primula</i> sp.	Primrose sp. (planted)	R
<i>Digitalis purpurea</i>	Foxglove	R
<i>Hyacinthoides</i> sp.	Bluebell sp.	R
<i>Agrostis stolonifera</i>	Creeping bent	F

<i>Smyrniolum olusatrum</i>	Alexanders	O
<i>Rubus fruticosus</i>	Bramble	R
<i>Holcus lanatus</i>	Yorkshire fog	R
<i>Senecio vulgaris</i>	Groundsel	O
<i>Erica</i> sp. (possibly <i>Erica carnea</i>)	Heather sp. (possibly Winter heath)	R
<i>Stellaria media</i>	Common chickweed	R
<i>Hypochaeris radicata</i>	Cat's-ear	R
<i>Ulex europaeus</i>	Gorse (Cut stumps)	-
<i>Festuca ovina</i>	Sheep's fescue	O
<i>Dactylis glomerata</i>	Cock's-foot	O
<i>Taraxacum</i> agg.	Dandelion	R

Below the rockface was shrub of rhododendron, cherry laurel, broom and gorse.

Area 10

<i>Cytisus scoparius</i>	Broom
<i>Rhododendron ponticum</i>	Rhododendron
<i>Cotoneaster</i> sp.	Cotoneaster sp.
<i>Rubus fruticosus</i>	Bramble
<i>Ulex europaeus</i>	Gorse
<i>Quercus ilex</i>	Holm oak
<i>Prunus laurocerasus</i>	Cherry laurel

Area 11

<i>Cytisus scoparius</i>	Broom	O
<i>Ulex europaeus</i>	Gorse	D
<i>Rubus fruticosus</i>	Bramble	R
<i>Dryopteris dilatata</i>	Broad buckler fern	R
<i>Hedera helix</i>	Ivy	R
<i>Smyrniolum olusatrum</i>	Alexanders	R
<i>Geum urbanum</i>	Wood avens	R
<i>Geranium robertianum</i>	Herb robert	R
<i>Anthriscus sylvestris</i>	Cow parsley	O
<i>Teucrium scorodonia</i>	Wood sage	O

Area 12

<i>Digitalis purpurea</i>	Foxglove	A
<i>Rubus fruticosus</i>	Bramble	F
<i>Ulex europaeus</i>	Gorse	A
<i>Rumex acetosella</i>	Sheep's sorrel	LA
<i>Cotoneaster</i> sp.	Cotoneaster	R
<i>Quercus robur</i>	Oak	R
<i>Sorbus latifolia</i>	Whitebeam	R
<i>Pteridium aquilinum</i>	Bracken	D
<i>Epilobium</i> sp.	Willowherb	R
<i>Smyrniolum olusatrum</i>	Alexanders	R
Bryophyta spp.	Mosses	F

Appendix E: Recommended Planting List

Recommended Planting List for Acid Grassland

Forbs

<i>Stachys officinalis</i>	Betony
<i>Vaccinium myrtillus</i>	Bilberry
<i>Sedum acre</i>	Biting stonecrop
<i>Lathyrus linifolius</i>	Bitter vetch
<i>Erigeron acris</i>	Blue fleabane
<i>Plantago coronopus</i>	Buck's-horn plantain
<i>Lotus corniculatus</i>	Common bird's-foot trefoil
<i>Centaureum erythraea</i>	Common centaury
<i>Helianthemum nummularium</i>	Common rock-rose
<i>Erodium cicutarium</i>	Common stork's-bill
<i>Vaccinium vitis-idaea</i>	Cowberry
<i>Vaccinium oycoccos</i>	Cranberry
<i>Empetrum nigrum</i>	Crowberry
<i>Succisa pratensis</i>	Devil's-bit scabious
<i>Euphrasia</i> spp.	Eyebrights
<i>Campanula</i> spp.	Harebell
<i>Galium saxatile</i>	Heath bedstraw
<i>Veronica officinalis</i>	Heath speedwell
<i>Calluna vulgaris</i> / <i>Erica cinerea</i> / <i>E.tetralix</i>	Heathers
<i>Galium verum</i>	Lady's bedstraw
<i>Leontodon saxatilis</i>	Lesser hawkbit
<i>Pedicularis sylvatica</i>	Lousewort
<i>Polygala</i> sp.	Milkwort sp.
<i>Viola lutea</i>	Mountain pansy
<i>Pilosella officinarum</i>	Mouse-ear hawkweed
<i>Leontodon hispidus</i>	Rough hawkbit
<i>Jasione montana</i>	Sheep's bit
<i>Rumex acetosella</i>	Sheep's-sorrel
<i>Teesdalia nudicaulis</i>	Shepherd's cress
<i>Thymus</i> spp.	Thymes
<i>Potentilla</i> spp.	Tormentil (s)
<i>Viola</i> spp.	Violets
<i>Thymus polytrichus</i>	Wild Thyme
<i>Teucrium scorodonia</i>	Wood Sage

Grasses

<i>Agrostis capillaris</i>	Common Bent
<i>Deschampsia flexuosa</i>	Wavy Hair-grass
<i>Festuca ovina</i>	Sheep's-fescue

NB. Native harebell, heather, eyebright, milkwort, thyme and tormentil species which are suitable for acid soils should be used.

Appendix F: Legislation

Species/Habitat	Protected by:	UK BAP	Local BAP
Nesting birds	Section 1 of the <i>Wildlife and Countryside Act</i> , 1981	Dependent on species	Dependent on species
'Widespread' reptiles	Provisions 1 and 5 of Section 9 of the <i>Wildlife and Countryside Act</i> , 1981 (as amended) Section 41 of the <i>Natural Environment and Rural Communities (NERC) Act</i> , 2006	Yes	Dependent on species
Rhododendron	Section 14 of the <i>Wildlife and Countryside Act</i> , 1981 (as amended)	No	No

The Conservation of Habitats and Species Regulations, 2017

European protected species are listed on Schedule 2 of the *Conservation of Habitats and Species Regulations* 2010. Those species listed on Schedule 2 are protected under Regulation 41, which refers to the protection of wild animals of a European Protected Species. The following is a summary of the offences listed under Regulation 41, however, the *Conservation Regulations* should always be referred to for the exact and current wording:

Under Regulation 41 of the *Conservation of Habitats and Species Regulations*, 2010 it is an offence to –

- deliberately capture or kill a wild animal of a European protected species;
- deliberately disturb wild animals, in particular any disturbance which is likely:
 - to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or
 - to impair their ability, in the case of animals of a hibernating or migratory species, to hibernate or migrate;
 - to affect significantly the local distribution or abundance of the species to which they belong
- deliberately take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.
- keep, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a European protected species, or any part of, or anything derived from, such an animal.

Wildlife and Countryside Act, 1981 (as amended)

British protected species of animal are listed on Schedule 5 of the *Wildlife and Countryside Act*, 1981 (as amended). Those species listed on Schedule 5 are protected under Part 1, Section 9, which refers to the protection of certain wild animals. The following is a summary of the offences listed under Section 9; however the Act should always be referred to for the exact and current wording:

Under Section 9 of the *Wildlife and Countryside Act*, 1981 (as amended) if any person –

- intentionally kills, injures or takes any wild animal included in Schedule 5;
- has in his possession or control any live or dead wild animal included in Schedule 5 or any part of, or anything derived from such an animal;

- intentionally or recklessly damages or destroys, or obstructs access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection;
- disturbs any such animal included in Schedule 5 while it is occupying a structure or place which it uses for that purpose;
- sells, offers or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in Schedule 5, or any part of, or anything derived from, such an animal; or,
- publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things, he shall be guilty of an offence.

Wildlife and Countryside Act, 1981 (as amended) - Birds

All species of wild bird, their nests and eggs are protected under Section 1 of the *Wildlife and Countryside Act, 1981* (as amended); therefore surveys are required to check for their presence where they are likely to be disturbed for any reason.

The following is a summary of the offences listed under Section 1; however the Act should always be referred to for the exact and current wording:

Under Section 1 of the *Wildlife and Countryside Act, 1981* (as amended), if any person:

- Intentionally kills, injures or takes any wild bird;
- Intentionally takes, damages or destroys the nest of any wild bird while that nest is in use or being built;
- Intentionally takes or destroys an egg or any wild bird, he shall be guilty of an offence;
- Has in his possession or control any live or dead wild bird or any part of, or anything derived from, such a bird; or
- Has in his possession or control an egg of any wild bird or any part of such an egg, he shall be guilty of an offence.

Schedule 1 (Part 1 and Part 2) of the *Wildlife and Countryside Act, 1981* (as amended) lists bird species that receive special attention under Section 1. Any person convicted of an offence listed above, in respect of a bird included in Schedule 1 or any part of, or anything derived from, such a bird; the nest of such a bird; or an egg of such a bird or any part of such an egg, shall be liable to a special penalty.

Also, if any person intentionally or recklessly disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or disturbs dependent young of such a bird, he shall be guilty of an offence and liable to a special penalty.

Schedules 1, 2, 3 and 4 of the *Wildlife and Countryside Act, 1981* (as amended) list different species of bird and different Parts of Section 1 of the Act refer to different offences which may be committed in relation to the varying Schedules. The following is a summary of the type of protection offered to species of wild bird listed on each of the Schedules, however the Act itself should always be referred to for the exact and current wording and full species lists:

Schedule 1: Birds which are protected by special penalties:

Part 1: At all times.

Part 2: During the close season.

Schedule 2: Birds which may be killed or taken:

Part 1: Outside the close season.

- Part 2: By authorised persons at all times.
- Schedule 3: Birds which may be sold:
 - Part 1: Alive at all times if ringed and bred in captivity.
 - Part 2: Dead at all times.
 - Part 3: Dead from 1st September to 28th February.
- Schedule 4: Birds which must be registered and ringed if kept in captivity.

The Natural Environment and Rural Communities (NERC) Act, 2006 (as amended)

The following is a summary of the *Natural Environment and Rural Communities (NERC) Act, 2006 (as amended)*, the *NERC Act* itself should be referred to for the exact and current wording:

- Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity;
- In complying with the above, a Minister of the Crown, government department or the National Assembly for Wales must in particular have regard to the United Nations Environmental Programme Convention on Biological Diversity of 1992;
- Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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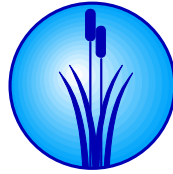
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ces ecology
consultant ecologists

Bickley Hall Farm
Bickley, Malpas
Cheshire SY14 8EF

Tel: 01948 820229

Email: info@ces-ecology.co.uk
Web: ces-ecology.co.uk