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Ecological Surveys • Habitat Management • Training • Legal Services

DISCUSSION PAPER
FOR CONSIDERATION OF
ECOLOGICAL MANAGEMENT PLAN
HARLTON CLUNCH PIT

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1.0 EXECUTIVE SUMMARY

1.1. This survey report covers the woodland on the area of land known as Harlton Clunch Pit, located to the south of the village of Harlton. The grid reference for the centre of the wood is 52°08'56.98"N, 0°01'50.91"E and the elevation falls from 63 metres (m) above sea level in the south to 48 m above sea level in the northern section of the wood. The area of the wood is just over 1.5 hectares (ha).

1.2. The surveys included an evaluation of ecological features and a visual tree assessment with the latter information recorded in Table 1, Appendix 1.

1.3. In general, the trees within the woodland are of an even age structure, with small pockets of younger pole stage trees and sporadic areas of scrub species present. As such the canopy structure is limited and offers very little diversification of habitats for wildlife.

1.4. The area, (at the time of the survey) appeared to be used infrequently by the public during the normal working week, apart from the early morning and late evening dog walkers. However, the area has become very popular at the weekend and is used by families, orienteering groups and mountain bike riders. Unfortunately, this over popularisation of the site probably coupled with added pressure from deer browsing has lead to its own set of problems, one of which is the reduction in quality and quantity of ground covering vegetation and plants within the site, and another one is the lack of natural regeneration of woodland species.

1.5. The owners of the site, Harlton Parish Council, are keen to actively manage the site and as such this document sets out the issues to be considered. Appendix 3 shows a Management Plan for consideration by the Parish Council.

2.0 ASSIGNMENT

2.1 The assignment was to:

1. Assess the current condition of the trees on site and record the findings
2. Determine whether or not the trees warrant removal on the grounds of Health and Safety
3. Plot the position of the trees on the attached drawing – Appendix 2
4. Recommend any immediate remedial pruning works to reduce Risk Levels to the general public
5. Undertake an ecological assessment of the site and identify possible measures for enhancement
6. Produce a Management Plan for the woodland

3.0 LIMITATIONS

1. No soil analysis was performed on site
2. No root, shoot or folia samples were taken for analysis from site
3. Decayed trees were not tested with scientific instruments to determine the extent of decay, nor were they climbed, but inspected from ground level.

4.0 METHODOLOGY

4.1. No topographical plan has been provided for this site. The position of the trees has been plotted with numbers, and these can be found in Appendix 2 Tree Location Plan. The tree numbers correlate to the data supplied in the Tree Survey in Table 1 - Appendix 1. Refer to Section 7 for the key to Table 1.

4.2. The position of the trees and crown canopy dimensions are approximate only.

4.3. The diameters of the trees were measured using an industry recognised girthing tape, at a height of 1.5 m from the ground.

4.4. Heights were recorded, where possible, using a Hagor hypsometer. Where it was not possible then a visual estimate of the height was made.

4.5 The ecological appraisal was undertaken by means of several walkover visits at varying times of the year to capture potential seasonal changes in the vegetation cover. In addition liaison was undertaken with Martin Johns, a local resident who is a keen naturalist and photographer and who has pictorially documented the flora and fauna of the site in a website.

5.0. ARBORICULTURAL APPRAISAL

5.1. The woodland growing in the old Clunch Pits at Harlton, in Cambridgeshire, comprises of a selection of broadleaved specimens. The four most common species, and their percentage of the overall canopy are, Ash (36.45%), Sycamore (32.3%), Horse chestnut (14.6%) and Elm (11.25%). The rest of the woodland consists of Crab Apple, Thorn, Beech, Hornbeam and Yew, with some Elder and Privet scrubland areas.

5.2. The site is just over 1.5 ha in area and is situated on a north facing slope, ranging from 63 m above sea level down to 48 m above sea level. The southern edge of the site is at the same elevation as the surrounding land. This plateau is

approximately 30 m wide, after which the ground falls away steeply to create two separate hollowed out quarried areas with spoil heaps dotted around, resulting in an uneven terrain. It is accessed via a tree covered track that runs south from the High Street in Harlton village.

5.3. The geology of the site consists of a sub base of chalk/clay, known as “clunch”, a soft building material traditionally used in East Anglia. The chalk is from the Lower Chalk of the Cretaceous period, approximately 143-65 million years ago. Over this is a thin Rendzina soil between 100 and 200 millimetres (mm) thick. The site is generally free draining due to the fissures in the chalk structure.

5.4. The majority of the trees are of a similar age structure and height, approximately 50-60 years old. There are pockets of Elder, Privet and Thorn (Black and Haw) scrub dotted around and an area to the south east of the site where pole stage Ash and Sycamore were noted.

5.5. This even age structure is typical of woodlands that were cleared out during World War II for timber, and then allowed to rejuvenate from the stumps. There is no documented evidence to quantify this theory, but Harlton Clunch Pit is littered with coppice stools which appear to be about this age.

5.6. The northern section of the wood, located in the older of the two Pits, has an abundance of Laburnum and Apple trees planted there. It is likely that these are self sown specimens, with the Apple trees probably brought in by birds from the many local orchards that used to be owned by the Chivers Company, made famous for its jams and marmalades.

5.7. The southern plateau consists of a predominantly Elm plantation with occasional Hornbeam and Sycamore interspersed. The trees are on average 12-15 centimetres (cm) in diameter and have a mean height of 8-10 m. Due to its exposure to the prevailing south westerly winds, the area has suffered extensive wind blow damage, and this coupled with the abundance of woodpecker holes in the trunks, has made the trees in this area susceptible to wind snap.

5.8. The overall site is used during the normal working week by early morning and late evening dog walkers, with the occasional visitor from the village or rambler using the public right of way, (which passes through the wood from the northwest corner down to the southeast corner). The area however is very popular at weekends and attracts families, orienteering groups and mountain bike riders. Over usage by these groups, and an increasing population of rabbits, has led to a reduction over the years of plant life and the natural regeneration of the trees taking place, and so to be able to re-establish this, certain management policies will need to be formulated and implemented by the Parish Council.

5.11. The over-usage by humans also has other ramifications, not least the risk associated with carrying out activities below tree canopies. As owners of the site the Parish Council have a legal duty under the Occupiers Liability Act 1957, amended 1984, to ensure they have fulfilled their Duty of Care so that the trees are managed, as far as reasonably practicable, to bring them into sound arboricultural condition. (Refer to Section 6 for a full explanation of the Act which relates to trees).

5.12. By commissioning this tree survey and acting on the recommendations made, Harlton Parish Council has demonstrated the commitment to satisfy their Duty of Care. However, this should not be regarded as a 'one off exercise', and an updated tree survey should be undertaken on an annual basis, or after storm force conditions occur, so that the Duty of Care is not breached (this can be likened to having an MOT on a car every 12 months to ensure the car is safe).

5.13. South Cambridgeshire Council has confirmed that the trees are not protected by any legal status under the Town and Country Planning Act, and as such the pruning and felling works can commence without permission from the LPA. It would be prudent for Harlton PC to re-check this with the council prior to carrying out any works, as the legal status may have changed between the date of this report and the date of felling.

5.14 Many of the trees are ivy clad. The dense evergreen foliage of ivy restricts light and air reaching the buds and leaves of the tree, thus reducing their photosynthetic properties and resulting in a canopy with sparse foliage cover. This in turn not only leads to the reduction of xylem and phloem cells reproducing and expanding to create new timber, but also a reduction in the capillary action of the tree to be able to transport water from ground level to the upper canopy. These reductions in the natural processes can lead to the untimely death of the tree due to stress. Once the tree becomes weak it also becomes a potential candidate for dropping branches and being blown over.

5.16. A secondary effect ivy has on trees is to 'strangle' the trunks and branches and compress the cambium layer thus restricting the flow of xylem and phloem. The effects are then the same as in 5.15

5.17. The boundary trees of the woodland are encroaching onto neighbouring land in places. Under Common Law, this can be seen as an act of trespass and the neighbours have the right to remove all overhanging branches at the boundary point, ensuring that they offer the branches back to the owners.

6.0 ECOLOGICAL APPRAISAL

6.1 Evaluation

Size

The site is a relatively small area within the landscape.

Diversity

In general, the trees within the woodland are of an even age structure, with small pockets of younger pole stage trees and sporadic areas of scrub species present. As such the canopy structure is limited and offers very little diversification of habitats for wildlife. The ground flora is poor with limited diversity.

Naturalness

The woodland itself is likely to be a product of natural regeneration following cessation of quarrying. Some of the laburnum trees may have been deliberately planted. The well worn pathways and soil erosion from public pressures significantly reduces the impression of a natural environment

Fragility

The site is obviously degenerating due to the constant pressures of public usage in particular the cyclists which, probably exacerbated by deer browsing, results in very little natural regeneration of trees and/or ground flora. Martin Johns reports that within the past 10 years or so a significant amount of ground flora has been lost. Without significant management intervention it is likely that the tree canopy will continue to degenerate into senescence and be replaced by scrub habitat.

Rarity

The vegetation associations are common and typical of such areas in Eastern Britain.

Position in an Ecological Unit

The site is a small pocket of woodland within a predominantly arable landscape.

Potential Value

With restoration and management the diversity of the site could be enhanced, potentially increasing the current comparatively limited biodiversity value.

Intrinsic Appeal

The site has an intrinsic appeal as an area of natural interest within a large scale arable agricultural landscape particularly with dog walkers.

Species of note

Some trees do contain rot/woodpecker holes that could be exploited by bats and nesting birds. Evidence of an active badger sett was noted during the first survey visit but in subsequent visits this sett has ceased to display signs of activity.

7.0 FACTORS FOR CONSIDERATION OF MANAGEMENT OBJECTIVES

7.1 Given the level of public usage of the site it is essential that health and safety should be at the forefront of the minds of the Parish Council.

7.2 In addition to addressing the safety factors the Council has the choice of additional objectives which include:

- Seeking the regeneration of the woodland in terms of both trees and ground flora
- Enhancing the site for public recreation
- Enhancing the site for target species such as bats and birds

7.3 Legal Considerations

Occupiers Liability Act 1957 And 1984

The outline of these Acts that is relevant to tree management is as follows;

Occupiers Liability Act 1984

Tree Ownership: Legal Considerations, Liability & Insurance

In the UK, the occupier of a site has a duty of care to take reasonable steps to prevent or minimise the risk of personal injury or damage to property arising from the presence of any tree on the site, or from its breakage or uprooting. This duty is defined in Law, in particular by the Occupier's Liability Act (1957 and 1984) [207, 208] in the case of England and Wales. The earlier Act concerns the duty of care which occupiers have towards their visitors, while the later Act concerns their duty to other persons. To avoid Liability:

1. Tree Inspections

The law states trees must be inspected once a year. Trees must be inspected immediately if thought to be dangerous (e.g. after a storm). The purpose of inspections is to determine whether a tree could foreseeably cause harm by virtue of its size and physical condition. Signs that may help to recognise hazardous trees include:

- Fungal fruiting bodies at the tree base or on the tree stem may indicate decay.
- Soil cracks and heaving ground at the tree base. Abrupt bends resulting from past pruning may indicate a weakness.
- Tight or weak 'V' shaped forks.
- Broken branches.
- Cankers causing weakness.
- Loose bark.
- Damaged roots.

- Basal/stem/branch cavities will probably indicate decay.
- Crown dieback.
- Foliage small, sparse or pale.
- Tree leaf cover flushes late or early leaf fall.

The Courts recognise that generally people do not have the expertise to look at symptoms and decide that a tree may be unsafe. It is therefore accepted that the occupier's duty of care to inspect trees can be fulfilled by employing a specialist to do this work. For insurance purposes written records of all such advice, or action taken on trees should be retained.

2. Remedial Works

As long as reasonable steps are taken to inspect trees and to carry out appropriate remedial action, if an accident does occur there will be a basis for demonstrating the duty of care was met. It is very important to have a routine proactive survey process in place, if a tree fails and causes damage to a third party - ***no system, no defence in court***. Before carrying out any work on trees it is advisable to check with the Local Planning Authority to ensure that the trees are not subject to a Tree Preservation Order (T.P.O) or within a Conservation Area. This would prevent any work on trees without the written consent from the Local Planning Authority. Under UK law, an occupier who fails to carry out remedial works to prevent a risk of harm to people or property can be empowered to carry out the work either through a Court Injunction or through a notice served on the occupier by the Local Authority under the Local Government (Miscellaneous Provisions) Act or Highways Act.

3. Insurance

Tree owners should ensure that their insurance policy specifically covers them against claims on persons or property arising from trees. Tree owners should also check with their insurers to ensure that they have adequate insurance that is appropriate to their trees, land and its use

7.4 Public and Regeneration Considerations

At this point in time it is unclear as to what level of funding the Council may attract; therefore this section is more for discussion rather than setting out management prescriptions for expensive options that are unlikely to be pursued. Once decisions have been made as to the practicalities of these management objectives then refined prescriptions can be drawn up.

It is clear that the site is in decline through the pressures placed upon it by the public and possibly to some extent by deer browsing. Whilst public footpaths do run through the site these are not adhered to and the entire site is threatened through public usage. According to local observers this decline has increased significantly within the past 10 years since the influx of trail bikers; if these activities are to be continued then there is little point in attempting to regenerate much of the site. In order to achieve regeneration it would be necessary to

fence off selected areas and undertake selective felling and ground flora management such as removal of the dense ivy cover. Such measures would let in light to hopefully stimulate the dormant seed bank while at the same time protecting any vegetation regeneration from public and deer pressures. Such a move is likely to prove unpopular with some of the current site users and may promote vandalism of the fencing which would need to be very robust. It is therefore suggested that a small area of the woodland is fenced off as an experimental plot to establish whether regeneration is likely. Based on the outcome of this, further decisions can be made in terms of further areas to be fenced off (if any) to encourage regeneration. At that stage a political decision as to whether biking activities should be prohibited with an active and effective enforcement of such a prohibition will be necessary.

There is scope for enhancing the site for public amenity use through the provision of a picnic table and benches and/or the provision of a vantage point bench at the Northern entrance where visitors can stop and rest and enjoy the views looking across to the North and East where Kings College Chapel is visible in the distance.

7.5 Enhancement for Target Species Considerations

In addition to encouragement of regeneration a simple option for enhancing the site for bats and birds and invertebrates is the provision of bat boxes and bird nest boxes complemented by habitat piles created from any logs and brush wood arising from the selective coppicing. In addition an active policy of retaining all dead wood on site should be adopted.

8.0. CONCLUSIONS

1. The Clunch Pit is located to the south of Harlton Village It is accessed via a tree covered, public footpath running from the High Street, which leads to the north western corner of the woodland. The official path passes through the centre of the woods and exits in the south eastern corner.
2. South Cambridgeshire Council have confirmed that none of the trees on site are legally protected by either a Tree Preservation Order or Conservation Area order; this should be re-checked prior to any pruning works being undertaken.
3. No soil or folia analysis was undertaken and trees were visually inspected from ground level only. No scientific or decay detection equipment was used to evaluate the extent of decay, but recommendations have been made, where appropriate, for further investigations to be undertaken.
4. The majority of the trees are of a similar age class and height, indicating that site has not been managed for several years.

5. There is a small area of pole stage Ash and Sycamore growing in the south east sector of the woodlands on a steep slope. These provide a lower canopy layer and habitat strata for birds.
6. There are sporadic areas of a scrub layer, consisting mainly of Elder, Hazel, Privet, Laburnum, Hawthorn and Blackthorn
7. The northern section of the wood has a profusion of Apple and Laburnum trees dotted around, while the southern plateau consists chiefly of Elm coppice
8. There has been a considerable amount of windblow and windsnap within the trees on this plateau due to the south-westerly winds blowing straight across the open fields to the south.
9. Soil structures are thin, overlying the clunch at a depth of only a few centimetres in places. Nutrients are likely to be leached out quickly and the ground is likely to be free draining due to the open structure of the clunch.
10. The woodland area appears to be lightly used by the public between Monday and Friday, save for the occasional dog walker, however at the weekend it is transformed into a popular well used recreational site for families, orienteering groups, mountain bike users etc.
11. By becoming a victim of its own popularity, the ground flora and fauna have become compromised, and according to some locals that were interviewed, the woodland is a shadow of its former self, as many of the plants that were once abundant are no longer present.
12. There are many unofficial paths within the woods, created by the general public over a number of years. These have led to the public entering into previous vegetation rich areas and destroying the habitats by constant trampling down of the plants.
13. Due to the significant human and herbivore pressures on the site it is considered that attempts to encourage regeneration will meet with limited success unless the target areas are protected from these pressures. However before embarking on an expensive fencing programme it is advised that a small experimental plot is established where the effect of coppicing and fencing protection can be studied in microcosm to establish whether a wider regeneration scheme is desirable and/or likely to be effective.
14. Policy Decisions will need to be taken as to the level of funding that should be made available for management of the woodland and also how public pressures should be managed. The success or otherwise of the experimental coupe will inform these decisions.
15. Some suggestions for future management of the woodland are highlighted in the 5 Year Management Plan in Appendix 3 and Table 1 (Table of works).

FIELD DATA- TABLE 1, APPENDIX 1.

Explanatory Information

Two versions of the tree survey have been supplied, one for printing purposes and an MS Excel spreadsheet to be used as a live document for management purposes. The data filter selection at the top of each column has been selected to allow the reader to filter out any combination of factors required. The cells containing the column headings have also been frozen so the rest of the spreadsheet can be scrolled through whilst still viewing the column heading.

Tree Number

Tree numbers are as per the Tree Location Plan – Appendix 2.

Species

Listed in the schedule as Common name and Latin name.

<i>Common name</i>	<i>Latin name</i>
Apple (Crab)	Malus sylvestris
Ash	Fraxinus excelsior
Beech	Fagus sylvatica
Elder	Sambucus nigra
Elm	Ulmus spp
Hawthorn	Crataegus monogyna
Hornbeam	Carpinus betulus
Horse chestnut	Aesculus hippocastanum
Red Horse chestnut	Aesculus x carnea
Sycamore	Acer pseudoplatanus
Yew	Taxus baccata

Height (m)

Height of tree in metres. Where possible measured with a hypsometer and where access is not possible an estimate given

Dia @ 1.5 m high (cm)

Diameter of the tree, measured at 1.5 m above ground level. On sloping ground, the 1.5 m is measured on the top side of slope.

Crown spread

Distance from the eastern edge of the canopy to the western edge of the canopy, measured in meters. Distances are approximate.

Works Required

A simple, easy to follow, tick box system showing the general work categories required on the trees. Where an "X" has been inserted this indicates that this type of work is required. A numerical figure in the final column indicates the height the tree should be pollarded to.

Additional Comments

Any other informative comments about the trees' condition.

Risk

A risk level based on the quality and condition of the tree on the DAY OF INSPECTION. These levels are likely to change as the trees grow older due to physiological and structural changes within the trees. These include die back of branches and whole canopies due to increased drought conditions and old age, broken branches due to storm conditions, unstable root systems and fallen trees due to windblow, degradation of timber and integral strength of the trunk due to decay from fungal activity, compression of soil from human activity causing anaerobic conditions and suffocating the roots, a sudden increase in the number of people using the site for recreational purposes during the week days, etc.

- H: High [works to be undertaken within 2 months]
- M: Medium [works to be undertaken within 6-12 months]
- L: Low [works to be undertaken within 36 months]

Bat Potential

The likelihood of bats using the tree for roosting purposes, which will increase if loose bark or woodpecker holes are present.

- H: High
- M: Medium
- L: Low

Woodpecker holes

Indicates as a simple Yes/No whether or not the tree has got woodpecker holes in the trunk, either new or old ones.

APPENDIX 3

5 YEAR WOODLAND MANAGEMENT PLAN

SITE: HARLTON CLUNCH PIT, HARLTON, CAMBRIDGESHIRE

This programme of works is intended to be used as a basis for managing the woodlands growing in the former Clunch Pit site, south of Harlton village, Cambridgeshire. The items marked thus *, have specific time scales associated with them, while all other recommendations can be moved depending upon labour and financial availabilities.

Where reference is made to tree risk levels, these can be found in Table 1, Appendix 1.

2011

Summer

- *Carry out recommended works to High Risk trees
- Remove all rope swings from the trees and trim back branches that have been compromised so that they cannot be re-used for swings.

Autumn

- Apply to the Forestry Commission for grant aid
- Contact the Public Rights of Way (PROW) department of Cambridgeshire County Council (CCC), to see if funding is available for pruning the trees overhanging the footpath.
- Also apply to CCC for the provision of gates at both entrance points to the woods. These gates will have to be designed to prevent cyclists accessing the site and durable enough to withstand any attempted vandalism.

Winter

- *Carry out recommended works to Medium Risk trees.
- Cut trunks into 3-4M lengths and stack in habitat piles to block off unofficial cycle routes
- Sever ivy stems from 50% of the trees severely affected by mature ivy encroachment.-it maybe possible to get a small volunteer work group set up in the village to carry out this work.
- Carry out an eradication programme of the rabbits on site.
- Remove any storm damaged trees.

- Install gates that do not allow the passage of a bike through them at both entrance points to the woodlands, if the application to CCC was successful.

2012

Spring

- No works allowed during breeding season (unless emergency works are found)

Summer

- If funding from CCC, and grant aid application to the FC have been successful, then fencing works can commence in preparation for the following planting season. If funding has not been secured then this can be deferred to the following year



Autumn/Winter

- Begin to carry out suggested works to the Low Risk trees
- Select mature good quality Elm trees to be retained on the southern plateau for woodpecker sites and re-coppice the remaining Elm trees down to 200mm high
- Plant up designated areas if funding has been successful.
- Fell dead/ dying laburnum and apple trees in the northern section of the woodland and stack as habitat piles on site
- Remove any storm damaged trees

2013

Spring

- No works allowed during the breeding season (unless emergency works are found)

Autumn

- Continue working through the list of Low Risk trees.
- Fence and plant up areas if not completed in the previous year
- Carry out second rabbit eradication works if required.

2014

Spring

- No works allowed during the breeding season (unless emergency works are found)

Summer

- Assess the success of the rabbit eradication programme. If successful then natural regeneration of certain trees may be present in the less

used areas. Where these seedlings are identified they should be protected with 1.2M high shrub/tree guards and the area for up to 300mm all round hand weeded to remove any competition. **Winter**

- Remove any trees or branches damaged in storms.
- Continue working through the list of Low Risk trees.
- Check and replace any damaged tree guards.

2015

Spring

- No works allowed during the breeding season (unless emergency works are found)

Summer

- Assess the growth of the protected natural regeneration and increase the amount of tree shelters to protect new seedlings

Winter

- Remove any trees or branches damaged in storms.
- Continue working through the list of Low Risk trees.
- Check and replace any damaged tree guards.

These are only suggestive date and can be changed around if conditions dictate.