Module MOD007045 Assignment E010[[1]](#footnote-1)

Ecological Impact Assessment (EcIA) for a hypothetical development project in Cherry Hinton Chalk Pits

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# Introduction

* 1. This report details an ecology Phase1 habitat survey of Cherry Hinton Chalk Pits (East) and Lime Kiln Close Local Nature Reserve (The Spinney) on the South East side of Cambridge. The pits are former chalk quarries which provided building material for surrounding buildings and Cambridge Colleges. The East Pit was worked until the 1980s – Lime Kiln Close ceased quarrying 200 years ago.(“History of Cherry Hinton” n.d.)
  2. The survey area covers 12 hectares. It comprises 2 parts - the East Chalk Pit and Lime Kiln Close which together form a Local Nature Reserve. The LNR is managed by BCN Wildlife Trusts.
  3. The East Pit is also part of Cherry Hinton Chalk Pit SSSI with the West Pit on the other side of Lime Kiln Road. The SSSI was designated in 1986 under the Wildlife and Countryside Act 1981, on the basis of the presence of 4 rare plants found on the site - of which 3 are on the red list for plants. These are great pignut *Bunium bulbocastanum*, moon carrot *Seseli libanotis* and grape hyacinth *Muscari neglectum.* The other rare plant recorded is perennial flax *Linum perenne ssp. anglicum*.
  4. Together with Wandlebury and the Gog Magog Downs, Cherry Hinton CHCP is part of the Cambridge Living Chalk Landscape, an interconnected series of chalk grasslands to the South East of Cambridge including Wandlebury and Gog Magog hills, and Cherry Hinton Brook – a clear chalk stream which arises Spring Head – the village pond – 100m from The Spinney and drains into the river cam.

## Desktop research

I used the data from NBN Atlas(“NBN Atlas” 2017), DEFRAs MAGIC service(“MAGIC” 2013), and Cambridgeshire and Peterborough Environmental Records Centre(“Cambridgeshire & Peterborough Environmental Records Centre” 2010) to assess taxa observed within a 2km radius of the site.

## Habitat survey

The survey was conducted by a site visit on 8th February 2022. we were not able assess flowering plants or breeding birds.

The dominant landscapes are broadleaf woodland which forms x% of Lime Kiln Close and calcareous grassland in the East Pit. The pit is surrounded by chalk cliffs edged by scattered scrub and dense scrub and broadleaf woodland along the Lime Kiln Boundary

A detailed map of the habitat is shown in Figure 1.

The broadleaf woodland is dominated by Ash *Fraxinus excelsior* and Field Maple *Acer campestre.*

Dense scrub is largely bramble *Rubus ulmifolius* , blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna*  interspersed with mature ash trees.

### Phase-1 Habitat Map

Chart, surface chart

Description automatically generated

Figure 1 Habitat map

### Target notes

| Note | Description | x | y |
| --- | --- | --- | --- |
| 1 | Rabbit holes | 0.1717 | 52.1817 |
| 2 | Muntjac footprints | 0.1716 | 52.1824 |
| 3 | Green woodpecker sighting | 0.1711 | 52.1823 |
| 4 | Greenfinch singing from dense shrub | 0.1705 | 52.1817 |
| 5 | Buzzard sighting | 0.1714 | 52.1827 |
| 6 | Goldfinches | 0.1716 | 52.1826 |
| 7 | Possible badger sett | 0.1718 | 52.1825 |
| 8 | Wild cherry trees | 0.1719 | 52.1824 |
| 9 | Rabbit droppings | 0.1711 | 52.1833 |
| 10 | Red kite sighting over-flying chalk pits | NA | NA |

## Ecological impact of development

### Bats

Noctule *Nyctalus noctula,* Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle bats *Pipistrellus pygmaeus,* have been observed in the surrounding area and the woodland provides potential roosting sites. Bats are protected under the Wildlife and Countryside Act 1981, and Annex IV of the European Habitats Directive.

It is recommended that a bat survey be conducted…

### Birds

A number of protected bird species frequent the site or have been well recorded in the surrounding area. During the field visit, House sparrows *Passer domesticus* were noted in the wooded area and Greenfinch *Chloris chloris* was heard singing in the dense scrub at the north end of the chalk pit. The greenfinch is now a red-listed species.(Stanbury et al. 2021)

The full list of protected species potentially nesting in the area and surrounding fields is shown in the table.

### Mammals

During the site visit I found evidence of a (probably inactive) badger sett. Badgers *Meles meles* are protected by the Protection of Badgers Act 1992. Although there are no records of badgers it is recommended.

Hedgehogs *Erinaceous europaeus* are also found in the area and are protected under the Wildlife and Countryside Act (schedule 6).

There have been European Water Vole sightings along Cherry Hinton Brook - a chalk stream

### Plants

### Bryophytes

The survey site is well known for its variety of mosses (Bryophytes) and lichens with over 150 species noted. In particular the Chalk screw-moss *Tortula vahliana* has been recorded and the pits are one of very few sites in England where this rare moss is found.[[2]](#footnote-2)

### Scoping matrix

|  |  |  |  |
| --- | --- | --- | --- |
|  | Pre development | Demolition and Construction | Post development |
| Avoid | Retain e.g. grassland/ hedgerows/habitats  TPOs  Hedgehog surveys (post reptile fencing) | Protect with screening/ fencing | Long term Mx strategy |
| Mitigate | Bats – licence  Alternate roost/ boxes  Incorporate roosts  Works outside sensitive periods  GCN/reptiles – licence  Move animals  Monitor  Reptile fencing  Translocation  Hedgehogs/ dormice - licence  Badgers - setts under DEFRA licence | Soft-strip and monitor  Replacement roosts  No capture for 7 days  Watching brief  Searches for hedgehogs  Safe excavation works | Monitoring  Lighting  Permeable fencing |
| Compensate |  | New planting to encourage  Alternative badger setts  New planting |  |
| Enhance |  | Green infrastructure – roofs / walls  Sustainable drainage  Lighting schemes  Hedgerow infill  Refugia |  |

### Scientific rationale for impacts

Conservation evidence

## References

“Cambridgeshire & Peterborough Environmental Records Centre.” 2010. 2010. https://www.cperc.org.uk/.

“History of Cherry Hinton.” n.d. Cherry Hinton. Accessed February 23, 2022. https://www.cherryhintonvillage.co.uk/history.

“MAGIC.” 2013. 2013. https://magic.defra.gov.uk/.

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Stanbury, Andrew, Mark Eaton, Nicholas Aebischer, Dawn Balmer, Andy Brown, Andy Douse, Patrick Lindley, Neil McCulloch, David Noble, and Win Ilka. 2021. “Data from: The Fifth Review of Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and Second IUCN Red List Assessment of Extinction Risk of Birds for Great Britain.” Dryad. http://datadryad.org/stash/dataset/doi:10.5061/dryad.cc2fqz672.

## Annex

NBN atlas lists observations of 1044 distinct species within 2km of the Chalk Pits

### Table 1 Protected species observed within 2km of the Cherry Hinton Chalk Pits

| common\_name | scientific\_name | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Common Toad | Bufo bufo | 4 | 6 | 0 | 2 | 0 | 0 | 3 | 8 | 4 | 1 |
| Sparrowhawk | Accipiter nisus | 25 | 26 | 13 | 17 | 15 | 16 | 20 | 13 | 10 | 10 |
| Skylark | Alauda arvensis | 2 | 9 | 2 | 16 | 9 | 2 | 2 | 2 | 1 | 6 |
| Kingfisher | Alcedo atthis | 4 | 2 | 0 | 2 | 2 | 3 | 10 | 3 | 3 | 2 |
| Swift | Apus apus | 3 | 3 | 2 | 9 | 5 | 1 | 2 | 3 | 3 | 0 |
| Stock Dove | Columba oenas | 5 | 12 | 9 | 5 | 0 | 1 | 7 | 5 | 3 | 4 |
| Yellowhammer | Emberiza citrinella | 3 | 6 | 0 | 11 | 4 | 1 | 0 | 0 | 0 | 1 |
| Kestrel | Falco tinnunculus | 2 | 1 | 5 | 5 | 3 | 4 | 4 | 0 | 2 | 4 |
| Greenfinch | Chloris chloris | 47 | 38 | 28 | 36 | 32 | 30 | 25 | 26 | 17 | 27 |
| Linnet | Linaria cannabina | 2 | 4 | 0 | 10 | 6 | 1 | 5 | 4 | 2 | 1 |
| House Martin | Delichon urbicum | 1 | 2 | 0 | 4 | 2 | 1 | 2 | 0 | 2 | 0 |
| House Sparrow | Passer domesticus | 38 | 33 | 17 | 26 | 22 | 16 | 23 | 18 | 18 | 16 |
| Grey Partridge | Perdix perdix | 1 | 1 | 0 | 2 | 3 | 1 | 1 | 1 | 0 | 2 |
| Starling | Sturnus vulgaris | 43 | 44 | 34 | 36 | 37 | 33 | 36 | 34 | 32 | 31 |
| Redwing | Turdus iliacus | 9 | 9 | 9 | 4 | 2 | 4 | 4 | 6 | 2 | 2 |
| Buzzard | Buteo buteo | 0 | 1 | 0 | 4 | 4 | 0 | 5 | 5 | 1 | 3 |
| Corn Bunting | Emberiza calandra | 0 | 3 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 1 |
| Herring Gull | Larus argentatus | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 6 |
| Cetti’s Warbler | Cettia cetti | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 2 |
| Small Tortoiseshell | Aglais urticae | 4 | 3 | 0 | 4 | 6 | 9 | 8 | 7 | 4 | 4 |
| Red Fox | Vulpes vulpes | 2 | 0 | 0 | 0 | 0 | 3 | 3 | 7 | 7 | 5 |
| West European Hedgehog | Erinaceus europaeus | 6 | 9 | 2 | 9 | 16 | 21 | 8 | 14 | 19 | 63 |
| Common Pipistrelle | Pipistrellus pipistrellus | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| Pipistrelle | Pipistrellus pipistrellus | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 0 | 0 |
| European Water Vole | Arvicola amphibius | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 0 |
| Soprano Pipistrelle | Pipistrellus pygmaeus | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| Noctule Bat | Nyctalus noctula | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

June 29, 2012[EXTENDED PHASE 1 HABITATSURVEY ]grass snake and adder. Only part of subsection9(1) and all of sub-section 9(5) of the WCA apply. These prohibit the intentionalkilling and injuring and trade (i.e. sale, barter, exchange, transporting for sale andadvertising to sell or to buy). The habitats for these widespread species are not protected.Therefore, in practice this requires a reptile protection scheme before implementing aplanning permission. No specific licence is required. It is not an offence under the Wildlifeand Countryside Act 1981 to possess these animals.The rarer reptiles require a protection and conservation scheme, and Natural England maynot grant such licences unless they are assured that protection and conservation isguaranteed.Red squirrels the red squirrel (Sciurus vulgaris) is protected under Schedules 5 and 6 ofthe Wildlife and Countryside Act 1981 (as amended) (WAC). Under this legislation it isillegal to "intentionally kill, injure or take" or "damage, destroy or obstruct" access to anystructure or place used for shelter or protection, or to disturb any animal while it is in adrey.Water voles are one of the priority species identified in the UK Biodiversity Plans. Since1998 the water vole has received legal protection through being added to Schedule 5 ofthe Wildlife and Countryside Act 1981 (as amended) in respect of Section 9 (4). The watervole has recently gained additional protection through the amendment of Schedule 5byStatutory Instrument 2008 No. 431. The water vole and its habitat now receive fullprotection. Prior to this the water vole only had limited protection. It is now an offence to:• Intentionally kill, injure, or take a water vole from the wild• Intentionally or recklessly damage, destroy or obstruct access to any structure orplace used for shelter or protection.• Intentionally or recklessly disturb water voles whilst occupying a structure or placeused for that purpose.• Possess or sell any part of the live or dead water vole• Publish or cause to be published any advertisement which conveys the buying orselling of water voles.In certain cases, listed below, licenses may be granted by Natural England to permitactivities outlawed by the Act:-• Scientific or educational purposes

June 29, 2012[EXTENDED PHASE 1 HABITATSURVEY ]• Purposes of ringing or marking• Conserving wild animals or introducing them into a particular area• Preserving public health or public safety• Preventing the spread of disease• Preventing serious damage to any form of property or to fisheriesIt is essential that water vole surveys, mitigation design and implementation are taken intoaccount at an early stage to avoid significant costs and delays.Wild birds -The Wildlife and Countryside Act (WCA) 1981, states that all wild birds areprotected. Under the WCA, it is an offence to kill, injure or take any wild bird, to takedamage or destroy the nest of any wild bird, or to take or destroy the egg of any wild bird.A special penalty is levied to any of the above offences being committed in conjunctionwith a bird listed on Schedule 1 of the WCA. It is also an offence if a person disturbs anybird listed on Schedule 1 while it is building a nest, is on or near a nest containing young,or disturbs dependent young of such a bird.The recent Countryside and Rights of Way Act 2000, has made it an offence tointentionally or recklessly disturb Schedule 1 species as above, and also an offence tointentionally or recklessly take, damage or destroy the nest of any wild bird or its eggs ordependent young.BAP (Biodiversity Action Plan) species -These are bird species of conservation concern(see below for definitions), which are selected as priority species under one or more of thefollowing criteria: species which are globally threatened and species which are rapidlydeclining in the UK, i.e. by more than 50% in the last 25 years.An action plan for each of these species has been developed to set specific, measurable,achievable, realistic and time-bounded targets for the species concerned. Each plan hasbeen costed and then finalised by consensus across the full range of statutory and non-statutoryorganisations represented on the UK Biodiversity Group. The BAP identifies thework that is necessary to improve the adverse status of these species.Birds of conservation concern: 2002 -2007: The leading governmental and nongovernmentalconservation organisations in the UK have reviewed the population status of

June 29, 2012[EXTENDED PHASE 1 HABITATSURVEY ]the birds that are regularly found here. Three lists have been produced that comprise of thefollowingRed list species are those that are Globally Threatened according to IUCN criteria; thosewhose population or range has declined rapidly in recent years; and those that havedeclined historically and have not shown a substantial recovery.Amber list species are those with an unfavourable conservation status in Europe; whosepopulation or range has declined moderately in recent years; those whose population hasdeclined historically but made a substantial recent recovery; rare breeders and those withinternationally important or localised populations.Green list species are species that fulfil none of the above criteria. These species are notincluded in the evaluation.The lists update earlier assessments, Birds of conservation concern and Birds ofconservation importance, which were published in 1996. The population status of birds isreviewed every five years to keep track of changes in abundance and range. The new listsare based on the most up-to-date information available.White-clawed crayfish are protected under Schedule 5 of the Wildlife and CountrysideAct 1981 (as amended), Appendix III of the Berne Convention 1982 and Annexes II and Vof the Conservation of Habitats and Species Regulations 2010. The species has also beenincluded in the IUCN Red Data List, and has been selected for special conservationmeasures within the UK Biodiversity Action Plan Steering Group Report 1995.Invertebrates –there are few species which are listed in the UKBAP or that have statutoryprotection. Many species are thought to be rare and/or vulnerable. These species areknown as Red Data Book (RDB) species. Red Data Book Species are often listed withinLBAPs. Within this classification there are various grades of ecological sensitivity based onthe frequency of occurrence within 10km squares of the National Grid:• Rare/Vulnerable Species -occurs in 15 or fewer 10km squares• Nationally Notable (Scarce) –occurs in 16 to 100 10km squares• Nationally Notable (Scarce) Category A -occurs in 30 or less 10km squares• Nationally Notable (Scarce) Category B -occurs between 31 and 100, 10kmsquares

June 29, 2012[EXTENDED PHASE 1 HABITATSURVEY ]PROTECTION OF ANIMALSAll animals are protected by the Animal Welfare Act 2006, which prohibits unnecessarysuffering, cruelty and mistreatment. For example releasing a great crested newt in such away as to cause undue suffering may be an offence under the Abandonment of AnimalsAct 1960. In addition to the above, there are various statutory provisions relating to thetransport of animals, designed to ensure their welfare.PLANT PROTECTIONStatutorily protected plants are listed in Schedule 8 of the WCA. With reference todevelopment these plants do tend to be very rare and not frequently encountered, forexample the bluebell statutorily protected, but this prohibits commercial bulb picking fromthe wild rather than to prohibit development.INVASIVE PLANT SPECIESThere is a category of plants whereby if they were introduced or caused to spread into thewild it would be deemed an offence under the WCA. Japanese knotweed (Fallopiajaponica), Himalayan balsam (Impatiens glandulifera) and Giant hogweed (Heracleummantegazzianum) are listed under the WCA as invasive non-native species (part 2, Section14), including a large list of additional species added to Schedule 9 in April 2010. Theseprovisions are necessary to prevent the establishment of non-native species which may bedetrimental to our native wildlife.Japanese knotweed has an extensive root system and new plants can regenerate rapidlyfrom the smallest fragments of rhizome. Himalayan balsam is a prolific seed producer andmay sow up to 500 seed per plant which are catapulted up to 7metres from the parentplant. Giant hogweed poses health issues through the production of toxic sap which mayirritate human skin and cause painful burs and blistering which may become moreaggravated after exposure to light, in some cases long-term photo-sensitivity may bediagnosed. Material containing these species is classed as controlled waste under theEnvironmental Protection Act (Duty of Care) Regulations 1991. The disposal of such wasterequires that all parties follow a strict code of practice and maintain adequate recordsregarding their conduct.HEDGEROWSThe Hedgerow Regulations are made under Section 97 of the Environment Act 1995 andcame into operation on 1st of June 1997. They aim to protect important hedgerows in thecountryside by

June 29, 2012[EXTENDED PHASE 1 HABITATSURVEY ]controlling their removal through a system of notification to the LocalPlanning Authority.A hedgerow can only be considered for classification as “important” if it, or the hedgerow ofwhich the section belongs to is over 20m in length (or which meets a hedgerow at eitherend) and has existed for 30 years or more.WATERCOURSESWorks that may have an impact upon water courses are covered by the Environment Act1995. The broad remit of the Act covers all aspects of water bodies, and includes waterquality, conservation, fisheries and navigation amongst others. In addition to theEnvironment Act there are locally relevant Land Drainage Byelaws. The Environment Agency North West Region Land Drainage Byelaws 1979 covers issues such as issuanceof Consents for carrying out works on or nearby to a water course. The client needs to beaware that the Environment Agency should be consulted as theyhave a statutory interestin works affecting water bodies. The Environment Agency has a duty to promote theconservation of flora and fauna that are dependent upon water bodies

Generallywoodland areas are considered to have a high conservation value fortheir flora and fauna species they support and form important features within thelandscape. Fauna species may include breeding birds, badger, amphibians,roosting bats and other invertebrates. It is advised that works affecting woodlandareas may need to take into account the above listed species prior to works.

Scrub is present in both dense and scattered form throughout the development siteand the 30metre buffer. Scrub habitats can be valuable for birds (breeding andforaging), invertebrates and foraging bats, including small mammals and/amphibians (foraging and hibernating). Overall it is considered the loss of smallareas of scrub to development is negligible.

Common toad is a species of Principle Importance and a material consideration forplanning.

The 30metre buffer and the wider survey area site contain habitats suitable tosupport badger.

In general the trees present within the development site areyoung in age and do not contain the features that would provide suitable batroosting habitat.

Habitats within the wider survey area are present that could support water vole(Arvicola amphibius). The wider survey area contains several drainage ditches butmost of these are heavily shaded with a shallow water depth and area consideredtocontain low potential to support water voles.

It is best practice to avoid and minimise disturbance to habitats of ecologicalinterest and although there are no legal requirements upon UK and LocalBiodiversity Action Plan Habitats, the planning authority has to take intoconsideration loss of overall biodiversity to development.

It is recommended that all development works near to woodland takes great careto avoid impact or to ensure the absolute minimum of disturbance. The woodlandnoted at TN15 provides a feature linking to other wildlife habitats within the localarea. Ideally this woodland should be retained and protected during thedevelopment works.

Scrub areas are relatively common throughout the survey area. This can be avaluable wildlife habitat, particularly for breeding birds. It is recommended thatscrub is retained where possible.

ny trees that are affected by development should be checked prior to anyworks, to see if they fall under any Tree Preservation Order’s (TPO).

No evidence of great crested newt was discovered at this site. Therefore, thereare no apparent implications with regards to great crested newts and developmentat this site.

As badgers are a highly transient species, then as best practice any developmentmust be mindfulof the potential for badgers being discovered at all times. If abadger sett is identified or suspected during the works then all works must ceaseand the ecologist notified for advice.

However, should the proposed development affect suitable foraging habitat it isrecommended that retained habitats be enhanced to support foraging bats.Furthermore, mitigation for loss of the water body should be undertaken andprovision for foraging bats should be considered within this mitigation.

The proposed development site is in close proximity to drainage and it is thereforeimportant that suitable anti-pollution measures are implemented, prior to anyworks.

he works should be carried out according to BS 5837: 2012 Trees in relation to construction recommendations. Trees located within the30metre buffer should also be subject to tree protection measures.

Installation of bat boxes of trees to be retained and within any new buildworks at the site. Bat boxes should be placed away from well lit areas, atsuitable locations.

Installation of nesting bird boxes.

1. [↑](#footnote-ref-1)
2. <https://species.nbnatlas.org/species/NHMSYS0000310798> [↑](#footnote-ref-2)