**Annex 16: Great Crested Newt data:**
**- MM School survey 2002 (p.1)**
**- Whitcher Wildlife survey 2010 (p.54)**
**- Photos from Whitcher Wildlife survey & MMCG newsletter (p.61)**

# Maids Moreton School, Buckingham, Buckinghamshire

# Preliminary Ecological Appraisal and Preliminary Roost Assessment

For **Buckinghamshire Council**

23rd April 2020

Issue: 4


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**Limitations**
Ecological assessments can only assess a site at a particular time. This evidence can be used to draw conclusions as to the likely presence or absence of species (animals and plants), population size, use of the site by animals; it is neither definitive nor complete.

Any survey is a snapshot in time and should not be regarded as a complete study. Seasonality and weather conditions may also affect survey results.

The preparation of mitigation strategies, consultation exercise and submission of any licence applications cannot be relied upon until approved [licensed] in writing by third parties. Allowance must be made for both programme and financial change to projects as a result of application failure, amendment or refusal.

Every effort has been taken to provide an accurate assessment of the situation pertaining to this site and information available at the time of the preparation of this report, but no liability can be assumed for omissions, or subsequent changes to design and development.

Surveys have been based on anticipated work resulting from instruction and information supplied at the time of request. Additional works should be anticipated as surveys and proposals for the site progress.

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| **Report Details** | |
|---|---|
| **Site** | Maids Moreton Primary School, Buckingham, Buckinghamshire |
| **Report Title** | Preliminary Ecological Appraisal and Preliminary Roost Assessment |
| **Client** | Buckinghamshire Council |
| **Job number** | BCC 09 |
| **Issue Date** | 23rd April 2020 |
| | |
| **Data Search** | Buckinghamshire and Milton Keynes Environmental Centre |
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**Executive Summary**

Bernwood have been instructed to undertake a Preliminary Ecological Appraisal and Preliminary Roost Assessment (supported with a data search for historical species and site records) of the buildings and grounds of Maids Moreton Primary School, Buckingham. The proposals are to extend the school building to create additional office, classroom and library space.

There is a pond within the site boundary which will be lost to the proposed extension which has been found to contain great crested newt eggs. Recommendations are made for further great crested newt surveys or for the client to enrol in the local District Licensing Scheme.

The proposed extensions will result in the loss of two trees of low ecological value. Other trees and hedges around the site boundary should be retained and protected during construction works.

The school building has ‘Low’ potential to support roosting bats. Recommendations are made for an emergence/ re-entry survey of parts of the building to be affected by the works to determine the presence/ absence of bats.

To ensure a biodiversity net-gain as part of the proposals, it is recommended that the existing hedges are enhanced with native species planting and a new native species-rich hedgerow is planted along the playing field boundary.

## 1. Introduction

1.1. Bernwood have been instructed by Matthew Hayward on behalf of Buckinghamshire Council on 6th January 2020 to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) of the buildings and grounds of Maids Moreton School, Buckingham, Buckinghamshire MK18 1QA (SP 7040 3516) (Appendix 1). The aim of the assessments are to identify any ecological constraints to the development proposals, identify further survey effort required and provide recommendations on ecological enhancements which can ensure biodiversity net gain (CIEEM, 2017). As the proposed future plans for the school may affect buildings a Preliminary Roost Assessment was also conducted to determine bat interest, assess the school buildings' suitability to support bat roosts and assess impacts on any identified or potential bat roosts from the proposals.

1.2. The current proposals are to extend the school building in two places to create new classroom, office and library space (Appendix 2).

## 2. Legal Protection

2.1. The following information is a simplified summary of the legislation and the full text of the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2018 and other legislation together with current published guidelines should be consulted.

2.2. The finding of this report represents the professional opinions of qualified ecologists and does not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited in this report.

### *European Protected Species*

2.3. It is understood that 2017 Regulations will be further amended due to the proposed departure of the UK from the EU on the 31st January 2020. From that date the provisions in The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 will apply (see https://www.legislation.gov.uk/uksi/2019/579/contents/made). Existing protection for habitats and species including standards and assessment procedures will remain as they have been prior to the UK leaving the EU.

2.4. The 2017 Regulations and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 should be read together until further

clarification or changes are made available by the UK Government or legal case law.

2.5. All European Protected Species (EPS; great crested newts, bats, otter, white clawed crayfish, hazel dormice etc.) are protected under the Conservation of Habitats and Species Regulations 2018 (2018 Regulations) and the Wildlife and Countryside Act 1981 (as amended) (WCA 1981). It is an offence under section 41 of the 2018 Regulations to:

- deliberately capture, injure or kill any wild animal of a EPS;
- deliberately disturb a EPS (including in particular any disturbance which is likely to impair their ability to survive, breed or reproduce, rear or nurture their young; or to hibernate or migrate; or which affects significantly the local distribution or abundance of the species);
- deliberately take or destroy the eggs of a EPS;
- damage or destroy a breeding site or resting place of a EPS; or
- possess, control, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a EPS, or any part of, or anything derived from a EPS.

2.6. Section 9(4) (b) and (c) of the WCA 1981 makes it an offence to:

- intentionally or recklessly disturb a EPS while it is occupying a structure or place which it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any structure or place which any EPS uses for shelter or protection.

2.7. In order for otherwise illegal acts to proceed lawfully, an appropriate licence must be sought under the 2018 Regulations and WCA 1981. Licences for the purpose of development are currently determined by Natural England and must include an appropriate mitigation and monitoring scheme to secure the “favourable conservation status” of the species in the local area.

***Common species of reptiles***

2.8. Common species of reptiles (grass snakes, adder, slow worm and common lizard) are protected under the WCA 1981. These species receive partial protection under Section 9(1) and section 9(5). It is an offence to:

- Intentionally or recklessly kill or injure a common species of reptile; or
- sell, or attempt to sell a live or dead reptile or any part of or anything derived from it.

***Wild Birds***

2.9. Wild birds are protected under the WCA 1981. The basic principle of the Act is that all wild birds, their nests and eggs are protected by law and some rarer species are afforded additional protection. Wild birds are defined as those resident in or visitors to Great Britain, in a wild state (does not include poultry or game bird). Section 1(1) of the WCA 1981 states that it is an offence to intentionally or recklessly:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

2.10. Section 1(2) of the WCA 1981 states that it is an offence to possess or control any live or dead wild bird or any part of or anything derived from a wild bird or an egg or part of an egg of a wild bird.

2.11. It is an offence under section 1 (5) of the WCA 1981 to intentionally or recklessly:

- disturb 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;
- disturb dependent young of such a bird.

## 3. Planning

3.1. The local planning authority has the power to request information under Article 4 of the Town and Country (Planning Applications) Regulations 1988 (SI1988.1812) (S3) which covers general information for full applications.

3.2. The National Planning Policy Framework (NPPF) revised in 2019 requires the planning system and policies to balance economic, social and environmental factors of sustainable development. The environmental component of the NPPF states that any planning application must: "*contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy*". Chapter 15 (Conserving and Protecting the Natural Environment) includes the methods by which this is to be achieved, including:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value
- recognising the intrinsic character and beauty of the countryside

- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures

3.3. Planning permission should be refused if: significant harm from a development cannot be adequately avoided, adequately mitigated, or as a last resort compensated for. The presumption in favour of development does not apply where development requiring appropriate assessment under the Habitats Directive is being considered, planned or determined. Planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscape and nature conservation. Please see updated Planning Practice Guidance https://www.gov.uk/government/speeches/local-planning.

3.4. Section 99 of ODPM Circular 06/2005 states: It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted. However, bearing in mind the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by development. Where this is the case, the survey should be completed and any necessary measures to protect the species should be in place, through conditions and / or planning obligations, before permission is granted.'

3.5. Local authorities have a duty to consider the three derogation 'tests' of the Habitats Directive: no satisfactory alternative, imperative reasons of overriding public interest (including those of a social or economic nature or beneficial consequences for the environment) and that the favourable conservation status of the species will be maintained. If any of these requirements are not met, the local authority should refuse planning permission regardless of any commitment to obtain a Natural England licence.

## 4. Methodology

### *Data Search*

4.1. A data search was undertaken to inform this survey with the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC). A search for sites

and all protected species was requested within 1km of the site, extended to 2km for historical records of bats.

4.2. A search of MAGIC Map (magic.defra.gov.uk) for statutory sites within 5km, European Protected Species Licenses (EPSL's) within 2km and priority habitats within 1km was undertaken by Bernwood. It should be noted that recently (within the past two or three years) granted EPSL's may not yet be uploaded onto the MAGIC database.

***Preliminary Ecological Appraisal***

4.3. The purpose of the PEA is to establish the presence or potential presence of protected species and habitats to be present on or near to the site (zones of influence), and, specifically:

- Identify likely ecological constraints associated with proposals;
- Identify any mitigation measures likely to be required, following the 'mitigation hierarchy';
- Identify any additional surveys which may be required to inform a full ecological assessment;
- Identify opportunities offered by a project to deliver ecological enhancements CIEEM, 2017).

4.4. Habitats on site are assessed and mapped following the JNCC Phase I Habitat Survey methodology (JNCC, 2010). The survey was undertaken by J. Sowden MSc ACIEEM on 13th January 2020. Weather at the time of the survey was cool and overcast with some light rain. There had been heavy rain in the preceding days. Additionally, a follow up visit to the site to supervise archaeological investigations was carried out by E. Dickins MCIEEM (2019-43679-SCI-SCI) on 14th April 2020. A check of the school pond was undertaken during this visit.

***Preliminary Roost Assessment***

4.5. The purpose of the PRA is to assess whether there are actual or potential bat roosts present. If so, the assessment searches for evidence to indicate:

- which species are present
- an indicative roost size
- roost access points
- a roost type
- whether further survey effort is required in relation to the proposals.

4.6. The PRA was carried out by J. Sowden (2016-24351-CLS-CLS) following the Bat Conservation Trust (BCT) Good Practice Guidelines (2016). The building

was systematically searched internally and externally (from the ground) for evidence indicating the presence of bats (live and dead bats, staining at potential roost entry points, feeding remains, droppings and urine marks) and assessed for suitability to support bat roosts.

4.7. Equipment available for use during the PRA included ladders, high powered torches, binoculars, endoscope, digital camera and sample jars (for collecting droppings for subsequent DNA analysis if required).

***Habitat Suitability Index for Great Crested Newt***

4.8. The Habitat Suitability Index (HSI) for the great crested newt was developed by Oldham et al. (2000) as a method for estimating a waterbodies' suitability for supporting the species. The HSI incorporates ten suitability indices, all of which are factors thought to affect Great Crested Newts.

4.9. The HSI for Great Crested Newts is a measure of habitat suitability; it is not a substitute for newt surveys. In general, ponds with high HSI scores are more likely to support Great Crested Newts than those with low scores. However, the system is not sufficiently precise to allow the conclusion that any particular pond with a high score will support newts, or that any pond with a low score will not do so.

***Scientific Consultation***

4.10. In agreement with Conservation Evidence Bernwood, as Evidence Champions, will:

- ensure that, where possible, the mitigation work is designed around a scientifically testable approach, observing the Conservation Evidence approach to critical assessment, study design, analysis and reporting
- build into project planning processes and reports a requirement for ecologists to check the Conservation Evidence website for relevant evidence, and describe the findings in the report
- where possible, publish results reporting on any tests of conservation interventions whether successful or otherwise in agreement with the client in the Conservation Evidence journal and other peer reviewed journals.

## 5. Constraints and Limitations

5.1. Environmental records can provide an indication of the likely presence of a species on, or within proximity, to the site. The absence of records for protected species and sites does not necessarily indicate absence. The use of historical environmental records is not a substitute for appropriate surveys at

the correct time of year when informing land use change and development proposals.

5.2. Qualifications for historical records, e.g. if a bat was recorded roosting or flying, may not always be known.

5.3. Data search record accuracy is variable and will often range from 10km to 1m. Most commonly, accuracy will be within 10m or 100m. The original raw data from data searches should be consulted where the record accuracy is needed.

5.4. Every effort to ensure mapping accuracy is made; however, the exact locations of features should not be relied upon.

5.5. Bats are a highly mobile species and move throughout a landscape often using multiple roost sites (depending on the species). Bats may be found in any suitable roosting cavity or void at any time of the year.

## 6. Results and Discussion

### *Data Search*

6.1. The search of MAGIC map returned several statutory sites within 5km of the proposed development:

- Buckingham Sand Pit Local Nature Reserve (LNR), 720m to the south. The site is designated for displaying permanent exposures of Quaternary sediments.
- Foxcote Reservoir and Wood Site of Special Scientific Interest (SSSI), 970m to the north. The site is designated for containing an unpolluted reservoir supporting many species of overwintering wildfowl, meadows and broadleaved woodland.
- Coombes Quarry LNR, 3800m to the south east. The site is designated for it's botanical, geological and archaeological interest.
- Pitch Fields SSSI, 4800m to the south east. The site is designated for containing botanically rich meadows.

6.2. The BMERC data search revealed several non-statutory sites within 1km of the site:

- Wellmore Meadow (73C10) Biological Notification Site (BNS), 450m to the north east
- Foscott Meadow and Pit (73C06) BNS, 750m to the north east.

- Whittlewood Forest Biodiversity Opportunity Area (BOA), 750m to the north east.

6.3. There are no records for granted European Protected Species licenses (EPSL's) within 2km of the site visible on the MAGIC Map Licensing layer.

6.4. Deciduous woodland priority habitat is approximately 115m to the south of the site and an area of lowland wood-pasture/ parkland is present 450m to the north. The nearest area of listed Ancient Semi-Natural Woodland (ASNW) is 990m to the east.

6.5. A summary of relevant records from the BMERC data search is displayed in Table 1 below. A full list of protected and notable species is appended (Appendix 3).

Table 1. Summary of relevant data search results for birds (1km) and bats (2km) within 1km of the site. PBA: Protection of Badgers Act 1992. EPS: European Protected Species. WCA: Wildlife and Countryside Act 1981 Bdir1: EU Birds Directive Annex 1

| Species | Highest designation | Year of Record | Approx. distance from the site | Details |
|---|---|---|---|---|
| *Invertebrates* | | | | |
| Stag beetle *Lucanus cervus* | WCA Sch5, 9.5 (sale only) | 1998 | <1000m | - |
| *Amphibians* | | | | |
| Great crested newt *Triturus cristatus* | EPS | 2010<br>2010<br>2010 | <250m<br><250m<br><250m | Peak count of two adults<br>Peak count of 13 adults<br>Peak count of one adult |
| *Reptiles* | | | | |
| Adder *Viper berus* | WCA Sch 5 | 2010 | <1km | - |
| *Non-flying mammals* | | | | |
| Badger *Meles meles* | PBA | 2015 | Confidential | Sett |
| *Bats* | | | | |
| Daubenton's *Myotis daubentonii* | EPS | 2010 | >1km | Bat detector record (peak count of 113 recordings) |
| Natterer's *Myotis nattereri* | EPS | 2002 | >1km | - |
| Myotis species *Myotis sp.* | EPS | 2008 | >1km | Bat detector record (one bat) |
| Common pipistrelle *Pipistrellus pipistrellus* | EPS | 2004<br>2008 | <250m<br><1km | Roost (one bat)<br>Roost, 30 bats |

Table 1 continued.

| Species | Highest designation | Year of Record | Approx. distance from the site | Details |
|---|---|---|---|---|
| Soprano pipistrelle *Pipistrellus pygmaeus* | EPS | 2005<br>2012 | <250m<br>>1km | 4 bats<br>92 bats |
| Pipistrelle species *Pipistrellus sp*. | EPS | 2009 | <250m | Bat detector record (one bat) |
| Brown long-eared *Plecotus auritus* | EPS | 2001 | >1km | Droppings (roost) |
| *Birds* | | | | |
| Brambling *Fringilla montifringilla* | WCA Sch1 | 2002 | <500m | 3 individuals |
| Peregrine falcon *Falco peregrinus* | WCA Sch1 | 2010 | <500m | 1 individual |
| Red kite *Milvus milvus* | WCA Sch1 | 2014 | <500m | 1 individual |
| Fieldfare *Turdus pilaris* | WCA Sch1 | 2010 | <500m | 25 individuals |
| Redwing *Turdus iliacus* | WCA Sch1 | 2014 | <500m | 3 individuals |
| Barn owl *Tyto alba* | WCA Sch1 | 2008 | <500m | 1 individual |

***Preliminary Ecological Appraisal***

6.6. The site is approximately 0.72ha in size and primarily consists of a school building complex, playgrounds, landscaping and a playing field. Habitats are described in Table 2 below and mapped in Appendix 4. A list of botanical species is presented in Appendix 5.

6.7. The site lies on the south western edge of the village of Maids Moreton which borders the larger town of Buckingham to the south. Agricultural fields and along with small areas of woodland are further afield to the west with the Stowe Landscape Gardens approximately 3km to the north west.

Table 2. Habitat descriptions.

| Habitat | Description |
|---|---|
| Amenity grassland | Amenity grassland forms the majority of the school grounds including the playing field and landscaping areas (Figs 1 & 9). Generally, it is closely mown although areas around the pond and boundaries are slightly longer. The dominant grass species are perennial ryegrass *Lolium perenne* and fescue *Festuca* sp. The grassland appears relatively species poor with daisy *Bellis perennis*, white clover *Trifolium repens* and chickweed *Stellaria media* commonly found. |
| Buildings | Buildings are described in detail in the PRA (Section 6) below. |
| Hardstanding | Hardstanding in the form of tarmac road, path and playground is present around the school complex (Figs 2, 3 & 4). There is an area of gravel and paving slabs between the school building and pond. The surfaces appear to be in good condition with little in the way of cracks or crevices. |
| Pond | A small, lined pond is located just to the north of the school buildings (Figs 7 & 10). The pond is approximately 45m$^2$ in area and appears to be shallow (<25cm) with a large amount of leaf litter and is likely to dry up periodically with no obvious water supply other than surface run-off. There was very little in the way of emergent vegetation which was limited to a small clump of iris *Iris sp*. in the south western corner. The pond is partially shaded by a nearby willow *Salix sp.* tree. There is a dipping platform at the eastern end of the pond. Great crested newt eggs were confirmed present on the 14$^{th}$ April 2020 and there are anecdotal records of grass snake in 2019. Two plastic compost heaps are present to the south east which may provide suitable grass snake egg-laying substrate and amphibian refugia. |

Table 2. Continued

| Habitat | Description |
|---|---|
| Defunct species-poor hedge | A mixture of hedgerow and fencing forms the northern and south eastern boundaries of the site where the school grounds border gardens of adjacent properties (Fig 9). There is a mix of native and non-native species including hawthorn *Crataegus monogyna*, bramble *Rubus fruticosa* and Leyland cypress *Cupressus leylandii*. The hedges vary in height and width and do not form continuous linear features; they are interspersed with gaps and areas of various types of fencing. |
| Native intact hedge | A small hedgerow (1.5m tall, 1m wide) runs along the south western boundary of the site (Fig 1). There are two gaps where a road and a footpath provide access to the school grounds. The hedge appears to be heavily managed and contains a mixture of several native species including hawthorn, blackthorn *Prunus spinosa*, ash *Fraxinus excelsior*, spindle *Euonymus europeaea* and field maple *Acer campestre*. |
| Native hedge with trees | The westernmost section of the north western site boundary is bordered by a native overgrown hedgerow (Fig 6). There is a large mature ash tree on the western corner. Species present include ash, hawthorn and sycamore *Acer pseudoplatanus*. Ivy *Hedera helix* is growing over many of the trees. |
| Planted trees | Relatively immature ash, willow, beech *Fagus sylvatica* silver birch *Betula pendula* and apple *Malus sp.* have been planted around the school grounds (Fig 1). All of the trees within the site boundary are young and do not contain features suitable for roosting bats. They may offer potential for nesting birds and the willow adjacent to the pond (TN1) has a bird nest box attached to it. |
| Ornamental shrub planting | There are two small flowerbeds containing non-native ornamental species interspersed with bare soil. |

### *Preliminary Roost Assessment*

6.8. The buildings on site include the main school building complex and several garden-shed type structures as well as an octagonal outdoor learning shelter. None of the trees within the site boundary have features suitable for roosting bats. Results from the PRA are shown in Appendix 6.

*External Inspection*

6.9. The school is an irregularly shaped single storey building with a footprint of approximately 450m$^2$ and is in active use as a primary school. The building's style indicates a 1970/1980's construction date. Due to the complex nature of the roof structure, it was not possible to observe small sections of the roof and

external structure at the time of the survey visit due to obscured views from the ground.

6.10. The various sheds present within the school grounds are of single-skin wooden panel construction with pitched bitumen felt roofs. They offer negligible bat roosting potential and are not likely to be affected by the proposed works; they are therefore discounted from further consideration.

6.11. The school building is principally of brick construction and contains at least some areas of cavity wall. There are numerous PVC and metal-framed windows which appear to be in good condition.

6.12. A flat-roof plastic sheeting veranda is present on the eastern corner of the building.

6.13. The roof consists of a mix of flat and pitched areas. The pitched areas have large cement tiles which appear to be tight to each other and in good condition with no obvious gaps visible from the ground. There is an air vent at the ridge of the southern pitched roof section. The flat sections of the roof are covered with bitumen felt. There are plastic soffit boxes along the eaves of the pitched roof sections and painted wooden fascia board along the flat roof sections; this all appears to be tight against the wall and in good condition.

6.14. No evidence of bats was observed during the external inspection of the building.

*Internal Inspection*

6.15. The ground floor of the building is well lit and contains no obvious access points for bats. No evidence of bats was found.

6.16. There are three likely loft voids in the school building, of which two were accessible for inspection. Void 1 runs north west to south east in the northern half of the school. Void 2 is in the centre of the school building and is assumed to be present due to the pitched shape of the roof; there is no apparent access hatch visible with a suspended ceiling possibly covering it. Void 3 is present in the southern section of the school and runs from south west to north east. Voids 1 and 3 are described below:

- Void 1 can be accessed through two different access hatches in the north eastern and south western corners. The loft is approximately 22m x 10m and 1.8m from floor to ridge although a section of the north eastern

corner sits approximately 2m lower than the rest of the void. Most of the loft is un-boarded with thick rockwool insulation over wooden joists. Square, rough-cut timbers form the beam structure which includes rafters and a ridge beam (Fig. 11). Bitumen roof lining is visible and in good condition with the exception of one cut out area towards the southern area of the void where the roof tiles were visible (Fig. 13). A low density of scattered mouse droppings was present throughout the loft. A potential access point for bats is a ventilation pipe providing access into the loft at the northern end of the void; there were small bird droppings below this (Figs 5 &12). No evidence of bats was observed.

- Void 3 is accessed from a loft hatch in the eastern section of the building and is approximately 25m x 8m and 1.6m from floor to ridge. The void space is very similar to that of Void 1 (Fig. 15). Several mouse droppings were found near to the access hatch. No obvious access points for bats were visible and no evidence of bats was observed.

6.17. Following the Bat Conservation Trust Good Practice Guidelines (2016) the school building is assessed as having **'Low'** potential to support roosting bats due to the presence of at least one access point into Loft Void 1 and possible unseen features which were not visible from the ground. The wooden sheds and outdoor learning structure are considered to have **'negligible'** potential.

6.18. Photographs from the bat building inspection and ecological appraisal can be found below.

Figure 1: Amenity grassland and planted trees, south west of school building.

Figure 2: Hardstanding playground with view of sheds and outdoor learning shelter.

Figure 3: View of south western corner of school with non-native conifer due to be removed (TN2)

Figure 4: View of front car park and southern end of school building.

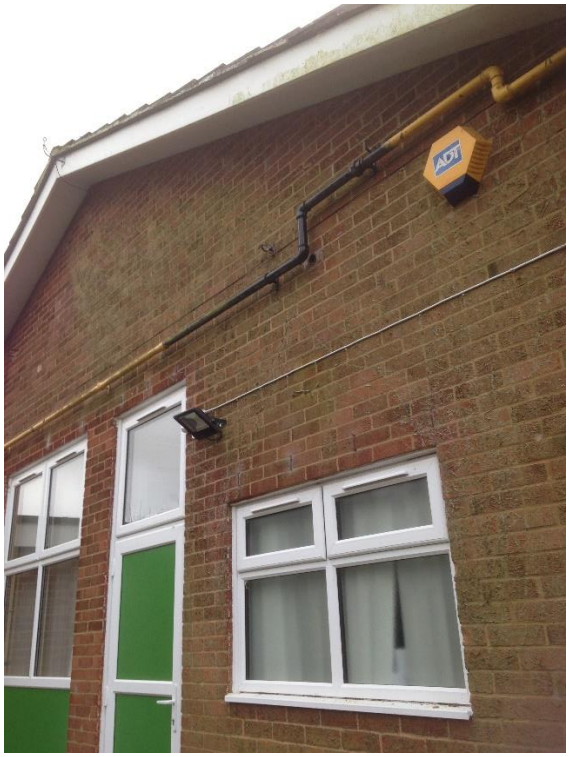


Figure 5: North western end of school building. Note hole in wall to left of security alarm box leading to loft void.

Figure 6: View of north eastern boundary hedge with trees (from north).

Figure 7: View of pond and surrounding habitat. North eastern aspect of school building.

Figure 8: Eastern end of south eastern aspect of school building.

Figure 9: View of south eastern site boundary and amenity grassland playing field.

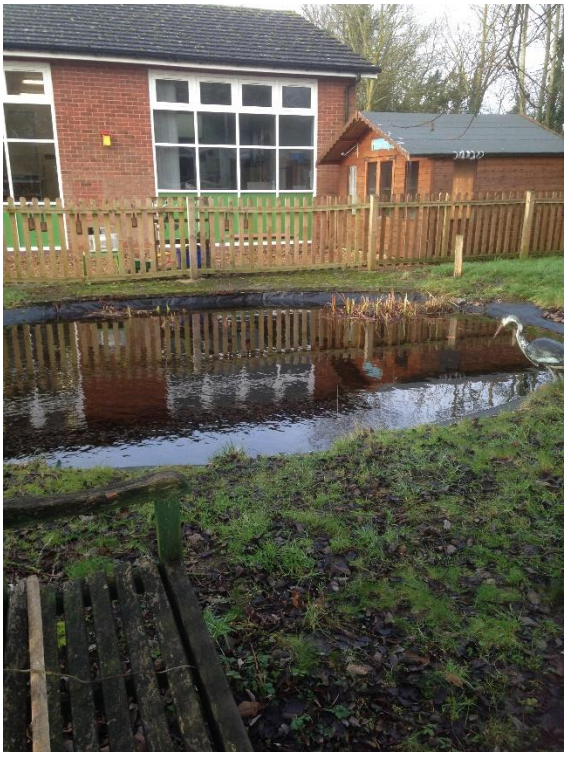


Figure 10: School pond.

Figure 11: Internal of Void 1.

Figure 12: Ventilation pipe hole into Void 1. Note bird droppings underneath.

Figure 13: Torn roof felt lining exposing roof tiles, Void 1.

Figure 14: Evidence of cavity wall at north western gable, Void 1.

Figure 15: Internal of Void 3.

Figure 16: Off-site pond (175m north west) off Scott's Lane with previous records for great crested newt.

## 7. Conclusions and Discussion

### *Designated Sites*

7.1. The development proposals are unlikely to have a negative impact on any designated sites due to the small-scale nature of the scheme. The site is a sufficient distance from the nearest designated site (450m) to indicate impacts from construction such as noise and pollution are unlikely to have any adverse effect.

### *Habitats*

7.2. Habitats within the site boundary are generally of low ecological value. The grassland is relatively native species-poor and appears to be regularly mown. The boundary hedges are relatively species poor. The pond is not considered to meet the criteria for the pond Priority Habitat definition. Two trees are due to be removed as part of the extension proposals; these are a willow near to the school pond (TN1) and a non-native conifer to the west of the school building (TN2). Both of the trees which will be lost are relatively young and of low ecological value.

### *Invertebrates*

7.3. Habitats within the site boundary are unlikely to offer important habitat for rare or notable invertebrate species. No further action with regards to invertebrates is advised at this time.

### *Amphibians*

7.4. Five records for great crested newt were returned from BMERC. There is a pond on site which will be lost as part of the development proposals. There are at least six other ponds within 500m of the site boundary (Appendix 7). Records from BMERC indicate that some of these ponds (including the on-site pond) have historically support great crested newt (most recently in 2010). Most of the site, including the areas of proposed development footprint lie within a ‘red’ zone in the local District Licensing scheme (Nature Space UK).

7.5. The shallow, lined pond within the site boundary was assessed using the Habitat Suitability Index (HSI) (Oldham et al. 2000) and was given the score of 0.58 which equates to ‘Below Average’ suitability. Two accessible nearby ponds which are known to support great crested newts were also visited and given HSI scores (Appendix 8).

7.6. The pond within the development footprint was found to contain great crested newt eggs on a subsequent site visit by Emily Dickins MSc MCIEEM on 15th

April 2020 therefore this pond is a confirmed great crested newt breeding pond.

7.7. Terrestrial habitats within the site boundary are largely sub-optimal for great crested newts in their terrestrial life phase. The majority of the site consists of hardstanding, building and amenity grassland which offers negligible potential to support the species. The boundary hedges do offer some potential for foraging and sheltering great crested newts.

7.8. As the proposals will require the removal of the school pond, this will result in the loss of breeding and resting habitat and could, in the absence of mitigation cause harm to great crested newts. Further survey effort will be required to determine the likely status of the species at the site or enrolment into the local District Licensing scheme.

***Reptiles***

7.9. Records for adder were returned from the data search within 1km of the site. Habitats within the site are generally well-managed and offer low potential to support reptile species. Anecdotal reports indicate that grass snake are utilising the pond. nd two adjacent compost heaps (all within the development footprint). Measures must be put in place during site clearance to ensure that reptiles are not harmed.

***Birds***

7.10. No evidence of WCA Schedule 1 listed birds was found at the site and habitats are considered to be unsuitable for these species; however, the hedges, shrubs and trees offer good nesting habitat for common garden birds. There is also evidence that birds are accessing Void 1 and a possibility that common garden birds such as wren *Troglodytes troglodytes* may use this and any other gaps in the building for nesting. Site clearance works should therefore be timed to avoid the times of year when birds are most likely to nest, if this is not possible then ecological supervision will be required to ensure active nests are not damaged or destroyed.

***Non-flying Mammals***

7.11. There are nearby records for badger. Land within the site boundary is considered to offer sub-optimal foraging and sett building habitats. No evidence of badger was found within the site boundary and this species can be discounted from further consideration at this time.

***Bats***

7.12. The BMERC data search revealed records for several species of bats within the locality, with the nearest a common pipistrelle roost approximately 120m to the south. The main school building is evaluated as having a 'Low' potential under the BCT Good Practice Guidelines (2016) to support roosting bats in its current condition. The various sheds and outdoor learning structure have 'Negligible' potential under the BCT Guidelines to support roosting bats.

7.13. The details of the proposed extension to the school building are yet to be finalised although there is likely to be some works where the extensions will join the existing school building. Further survey effort of these areas is recommended to ensure that bats will not be affected by the works. Any additional lighting required must be designed to reduce impacts on bats through the avoidance of lighting any areas of habitat which may provide foraging or commuting habitat such as hedgerows and trees.

## 8. Recommendations

8.1. Whilst the design of the proposed extension works has not yet been finalised, at this stage it appears that the majority of habitats that will be lost are of low ecological value (hardstanding, amenity grassland and planted trees) with the exception of the school pond.

8.2. The hedgerows and retained planted trees are to be protected during the construction phase of the works. Root Protection Areas are to be implemented in line with trees in relation to design, demolition and construction (BS 5837:2012). The development works at the site provides opportunities to enhance the hedges with native species planting. Establishing native species-rich hedgerows around the north eastern and south eastern boundaries would significantly increase the biodiversity value of the site.

8.3. Great crested newt are confirmed to be present and breeding within the school pond. Other ponds within close proximity to the site boundary may also be used by great crested newts for breeding and foraging. A European Protected Species License (EPSL) will be required for works to proceed lawfully. There are two options and it is for the client to decide which approach to proceed with, informed by the project timescales, costs and impacts on ecological features:

- Survey and assessment followed by an application for an A14 great crested newt derogation licence (EPSL) if necessary: To inform an A14

license ponds within 500m which are connected to the site through suitable habitat will need be surveyed to establish presence/ absence and population size. Four to six surveys will be required (depending if great crested newts are present in the pond) for each pond and these surveys can be conducted between mid-March and mid-June. If great crested newts are present within the local area or the on-site pond then it is likely that a mitigation licence will have to be applied for from Natural England. The mitigation required under the licence will depend upon the results of the surveys, however, it is likely to involve exclusion fencing and a translocation exercise. To compensate for the loss of the existing on-site pond, it is likely that a mitigation pond will be required to be constructed within the school grounds along with the creation of adjacent terrestrial habitat suitable for great crested newt. Post-development monitoring is also likely to be required. The licence can only be sought after full planning consent has been granted and takes 30+ working days to determine.

- The District Licensing (DL) approach: This will negate the need for newt surveys. The developer will be required to make two contributions to the local DL scheme. An initial fee will be required for the Nature Space Partnership to evaluate the scheme's impacts upon great crested newt and their habitats in order to calculate the second-stage fee which is dependent on the scale and nature of the works and evaluation of great crested newt presence in the local area. As the site is within a 'Red' zone, there will be a requirement for mitigation measures including exclusion fencing and a translocation exercise as well as special measures when removing the pond. Post-development monitoring will not be required. Further information can be found at www.naturespaceuk.com/.

8.4. Site clearance should be conducted at an appropriate time of year (i.e. September-October) to ensure that reptiles are not harmed. Clearance should be conducted under the direct supervision of a suitably experienced Ecological Clerk of Works and will involve the hand removal of sensitive areas of habitat adjacent to the pond including the compost heaps and dipping platform.

8.5. One bat emergence or re-entry survey is recommended to determine the presence/ reasonable absence of bats within the areas of the school building which will be impacted by the extension works. This must be carried out in the optimal survey season (May to August). The number of surveyors required will

be dependent on the extent of the buildings to be affected. If bats are observed to be roosting within the building, then further surveys and licensing will be required for works to proceed lawfully; this is likely to have cost and timescale implications for the project.

8.6. If works include the removal of vegetation or work on the building during months which birds are likely to nest (March-August), they should be timed to avoid this season if possible (the same applies for removing the nest box on the willow at TN1). If works must take place between March and August, a check by a suitably qualified ecologist must be conducted no more than 24 hours prior to works commencing. If nesting birds are observed, then works in the vicinity of the active nest must cease temporarily until the nest is no longer active and the young have fully fledged.

## 9. References and Further Reading

CIEEM (2015). What to expect from a bat survey: A guide for UK homeowners. [online] http://www.cieem.net/data/files/Bat_Survey_Guidelines_for_UK_Home_Owners_2015.pdf

Collins, J (ed.) (2016). Bat surveys for professional ecologists: good practice guidelines (3rd edition). The Bat Conservation Trust, London.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal 10(4), 143-155.

Natural England (2015). Protected Species and Site: How to review planning proposals. [online] https://www.gov.uk/guidance/protected-species-and-sites-how-to-review-planning-proposals

Russ, J. (2012). British Bat Calls: A guide to species identification. Pelagic Publishing, Exeter.

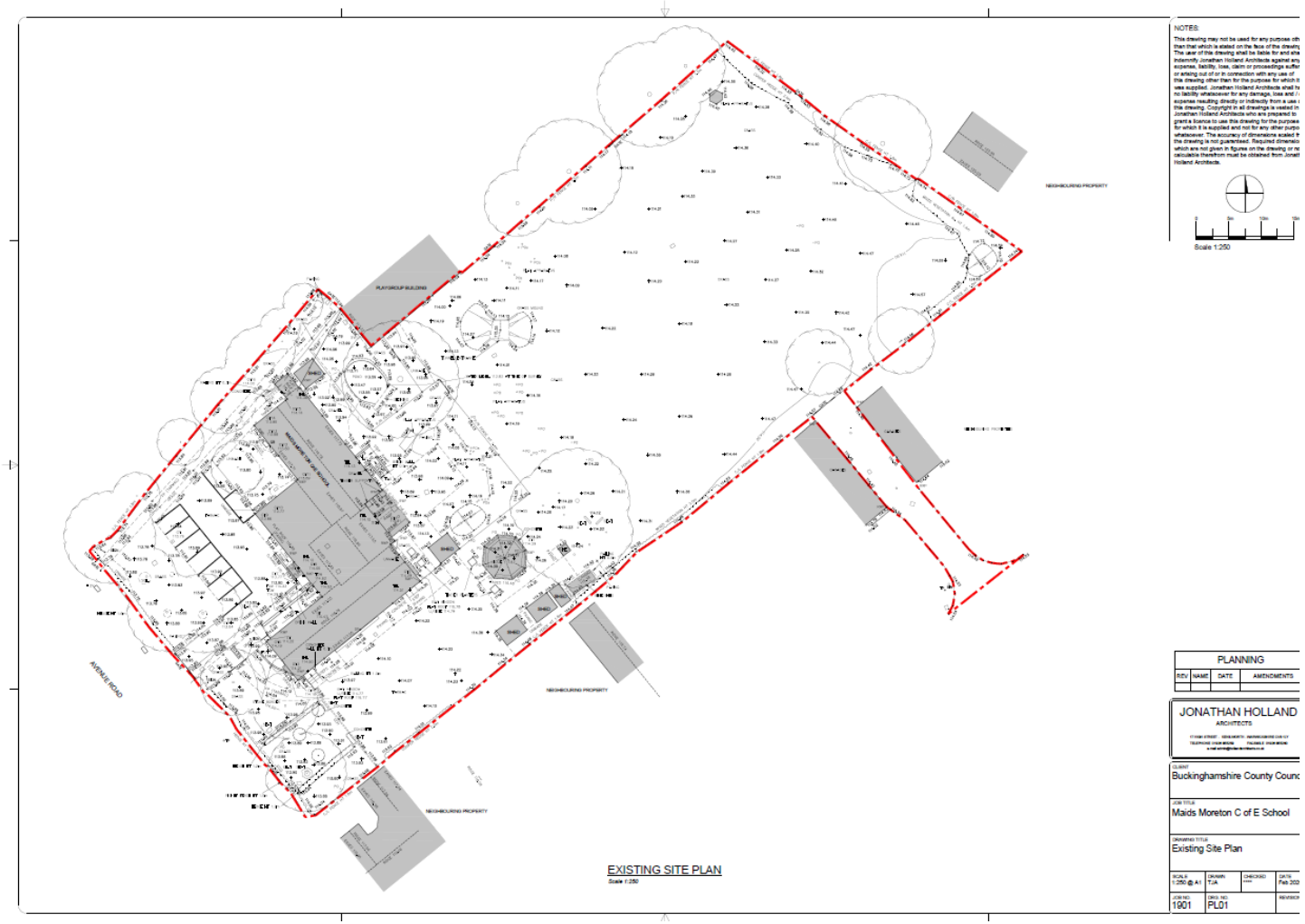
Scott, C. (2014) Software download link (BitBucket): https://bitbucket.org/chrisscott/batclassify/downloads

Scott, C. & Altringham, J. (2014) WC1015 Developing effective methods for the systematic surveillance of bats in woodland habitat in the UK. Downloadable from: http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&

Location=None&Completed=0&ProjectID=178

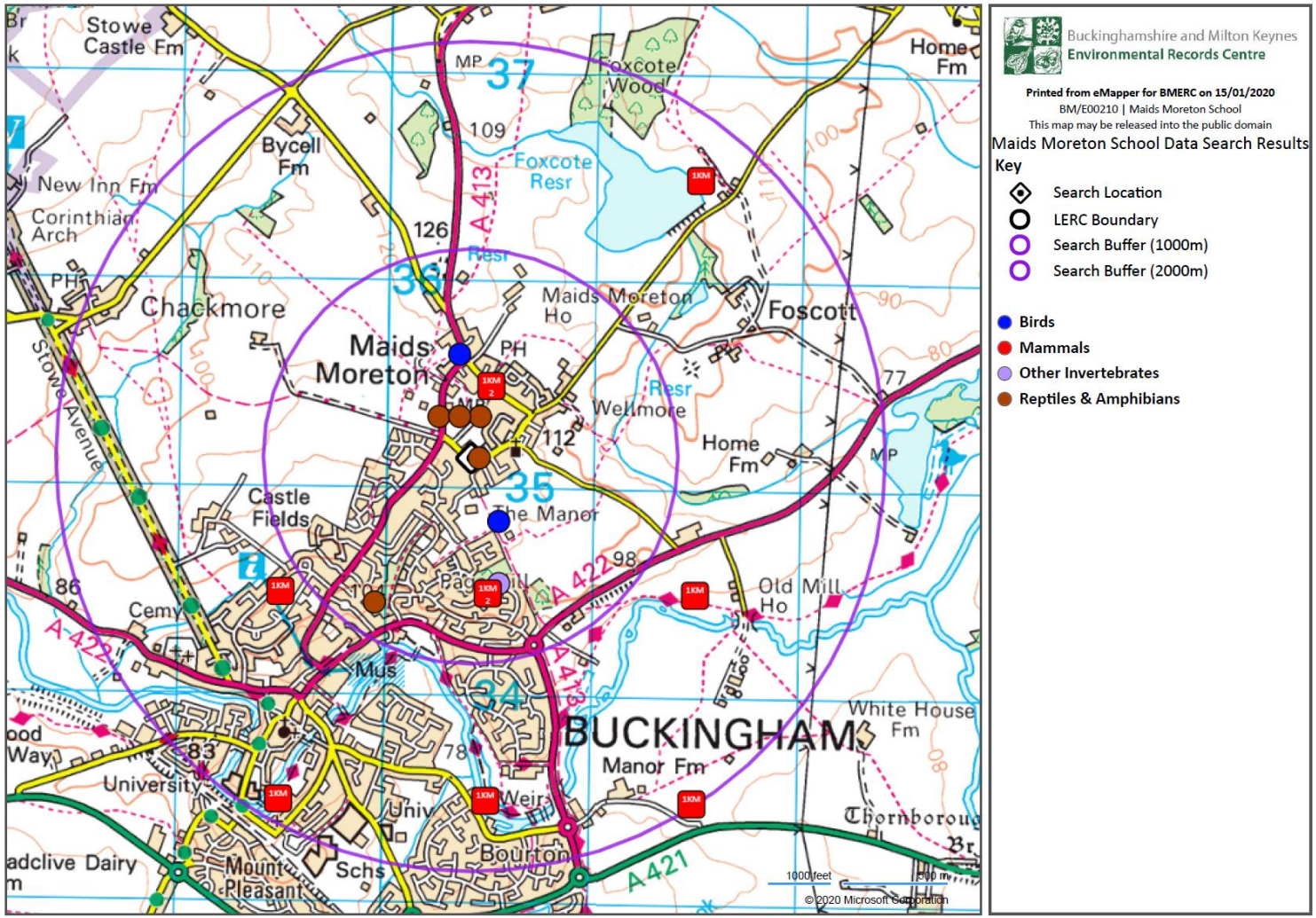
**Appendix 1.** Site location in relation to surrounding landscape.

**Appendix 2.** Existing and proposed plans.




PROPOSED SITE PLAN
Scale 1:250

**Appendix 3.** Data search results.



| Search Location | Grid Reference |
|---|---|
| Maids Moreton School | SP7040735158 |

**Species Set - Bats**

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Chiroptera* (Bat) | SP6934 | 2 records, both on 25/10/2000 | 2 | Roost | -Withheld- | -Withheld- | D0008/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP6933 | 6 records, between 04/02/1988 and 16/09/1988 | Present | | -Withheld- | -Withheld- | D0008/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP7136 | 3 records, all in 1972 | 1 | Reported to recorder | -Withheld- | -Withheld- | D0002/001/01, D0001/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP6934 | 3 records, all on 25/10/2000 | Present | | -Withheld- | -Withheld- | D0002/001/01, D0001/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP7033 | 2 records, both on 22/07/2002 | 2 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP7033 | 2 records, both on 22/08/2002 | 2 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP7033 | 2 records, both on 22/07/2002 | 2 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP7034 | 2 records, both on 12/07/1983 | 150 | | -Withheld- | -Withheld- | D0008/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP7033 | 2 records, both on 18/07/2002 | 2 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP6934 | 4 records, between 21/08/2008 and 20/08/2009 | 1; 2 | Standard Survey | -Withheld- | -Withheld- | D0012/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP6933 | 2 records, both on 15/08/2004 | Present | Standard Survey | -Withheld- | -Withheld- | D0012/001/01 | Bonn, EPS, WCA5 |
| *Chiroptera* (Bat) | SP6934 | 2 records, both on 28/08/2006 | 4 | Standard Survey | -Withheld- | -Withheld- | D0012/001/01 | Bonn, EPS, WCA5 |
| *Myotis* (Myotis Bat species) | SP6933 | 2 records, both on 15/08/2005 | 1 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Myotis* (Myotis Bat species) | SP6934 | 4 records, between 24/09/2008 and 30/10/2008 | 1; PresentAdult | In Flight/Bat detector | -Withheld- | -Withheld- | D0008/001/01, D0015/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Myotis daubentonii* (Daubenton's Bat) | SP6933 | 2 records, both on 15/08/2005 | 1 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Myotis daubentonii* (Daubenton's Bat) | SP7033 | 2 records, both on 04/07/2002 | 1 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Myotis daubentonii* (Daubenton's Bat) | SP7136 | 2 records, both on 21/04/2005 | 10 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Myotis daubentonii* (Daubenton's Bat) | SP6934 | 12 records, between 06/08/2008 and 24/08/2010 | 107; 66; 113; 67; 84; 104 | Standard Survey | -Withheld- | -Withheld- | D0012/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Myotis nattereri* (Natterer's Bat) | SP6933 | 2 records, both on 25/07/2002 | 1 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Nyctalus noctula* (Noctule Bat) | SP7235 | 2 records, both on 03/07/1973 | PresentAdult | | -Withheld- | -Withheld- | D0015/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP6933 | 10 records, all on 15/08/2005 | 1 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP6934 | 4 records, between 24/09/2008 and 30/10/2008 | 6; PresentAdult | In Flight; Dung/Droppings/Frass /Pellet, etc. | -Withheld- | -Withheld- | D0008/001/01, D0015/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP6934 | 2 records, both on 27/07/2001 | 1 | Dung/Droppings/Frass /Pellet, etc. | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP6933 | 2 records, both on 02/07/2012 | Present | Dung/Droppings/Frass /Pellet, etc. | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP7034 | 2 records, both on 29/08/1996 | 3 | | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Pipistrellus* (Pipistrelle Bat species) | SP7233 | 2 records, both on 26/01/1985 | 1 | | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP7035 | 3 records, all on 26/04/2009 | 1Adult | | -Withheld- | -Withheld- | D0002/001/01, D0001/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP7035 | 2 records, both on 08/08/2007 | PresentAdult | Dung/Droppings/Frass /Pellet, etc. | -Withheld- | -Withheld- | D0006/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP7235 | 2 records, both on 03/07/1973 | PresentAdult | | -Withheld- | -Withheld- | D0015/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus* (Pipistrelle Bat species) | SP6933 | 8 records, between 15/07/2003 and 14/07/2008 | 3; 4; 5 | Standard Survey | -Withheld- | -Withheld- | D0012/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP6933 | 2 records, both on 25/07/2002 | 1 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP6934 | 2 records, both on 24/07/2013 | 10 | Roost | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP6934 | 4 records, between 14/06/2004 and 14/09/2004 | 50; 2 | Roost/Bat detector | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP6934 | 2 records, both on 07/05/2008 | 30 | Roost | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP7034 | 2 records, both on 11/07/2002 | 1 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP7035 | 4 records, all on 25/04/2004 | 1; 5 | Roost; In Flight/Bat detector | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP7033 | 6 records, between 01/07/2002 and 11/08/2002 | 10; 5 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP7035 | 2 records, both on 08/08/2007 | PresentAdult | Bat detector | -Withheld- | -Withheld- | D0006/001/01 | Bern, Bonn, EPS, HDir, WCA5 |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Pipistrellus pipistrellus* (Pipistrelle) | SP6933 | 4 records, between 27/04/2010 and 23/06/2010 | 1Adult; 2Adult | Bat detector | -Withheld- | -Withheld- | D0015/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP6934 | 2 records, both on 24/09/2008 | PresentAdult | Bat detector | -Withheld- | -Withheld- | D0015/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pipistrellus* (Pipistrelle) | SP6933 | 10 records, between 15/07/2003 and 14/07/2008 | 5; 30; 8; 15; 13 | Standard Survey | -Withheld- | -Withheld- | D0012/001/01 | Bern, Bonn, EPS, HDir, WCA5 |
| *Pipistrellus pygmaeus* (Soprano Pipistrelle) | SP6934 | 2 records, both on 30/10/2008 | Present | In Flight/Bat detector | -Withheld- | -Withheld- | D0008/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Pipistrellus pygmaeus* (Soprano Pipistrelle) | SP6933 | 2 records, both on 04/06/2005 | 1 | Roost | -Withheld- | -Withheld- | D0008/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Pipistrellus pygmaeus* (Soprano Pipistrelle) | SP7035 | 2 records, both on 21/04/2005 | 4 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Pipistrellus pygmaeus* (Soprano Pipistrelle) | SP7136 | 2 records, both on 21/04/2005 | 5 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Pipistrellus pygmaeus* (Soprano Pipistrelle) | SP7134 | 2 records, both on 21/04/2005 | 5 | In Flight | -Withheld- | -Withheld- | D0008/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Pipistrellus pygmaeus* (Soprano Pipistrelle) | SP6934 | 2 records, both on 06/08/2012 | 92Adult | | -Withheld- | -Withheld- | D0005/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Pipistrellus pygmaeus* (Soprano Pipistrelle) | SP6933 | 8 records, between 15/07/2003 and 24/07/2006 | 2; 1; 6 | Standard Survey | -Withheld- | -Withheld- | D0012/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |
| *Plecotus auritus* (Brown Long-eared Bat) | SP7133 | 4 records, all on 29/05/2001 | Present | Dung/Droppings/Frass /Pellet, etc. | -Withheld- | -Withheld- | D0008/001/01, D0015/001/01 | BAP, Bern, Bonn, EPS, HDir, S41, WCA5 |

| Notable Species | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Species Name** | **Grid Reference** | **Date** | **Abundance** | **Record/Sample Type** | **Site Name** | **Notes** | **Dataset ID** | **Lists** |
| *Acanthis cabaret* (Lesser Redpoll) | SP703356 | 2 records, both on 14/12/2015 | 7Adult | | Maids Moreton | | D0003/001/01 | BAP, S41, UKBR |
| *Alauda arvensis* (Skylark) | SP703356 | 6 records, between 12/05/2015 and 03/04/2016 | 1Adult; 2Adult | | Maids Moreton | | D0003/001/01 | BAP, BDir2.2, RD1-VU, S41, UKBR |
| *Alcedo atthis* (Kingfisher) | SP703356 | 10 records, between 08/03/2015 and 03/04/2016 | 1Adult | | Maids Moreton | | D0003/001/01 | BDir1, Bern, UKBA, WCA1.1 |
| *Alcedo atthis* (Kingfisher) | SP7035 | 4 records, between 20/04/2014 and 13/07/2014 | 1Adult | | Maid's Moreton | | D0003/001/01 | BDir1, Bern, UKBA, WCA1.1 |
| *Anthemis cotula* (Stinking Chamomile) | SP699344 | 3 records, all on 29/06/1994 | 1 | | Buckingham Sandpit LNR | | D0002/001/01, D0001/001/01 | RD1-NT, RD1-VU |
| *Anthus pratensis* (Meadow Pipit) | SP703356 | 10 records, between 19/04/2015 and 29/12/2016 | 2Adult; 1Adult; 3Adult; 10Adult | | Maids Moreton | | D0003/001/01 | Bern, UKBA |
| *Anthus pratensis* (Meadow Pipit) | SP7035 | 2 records, both on 26/10/2014 | 3Adult | | Maid's Moreton | | D0003/001/01 | Bern, UKBA |
| *Briza media* (Quaking-grass) | SP710354 | 5 records, between 18/04/1988 and 02/06/1988 | 1; Present | | Wellmore Meadow | | D0002/001/01, D0009/001/01, D0001/001/01 | RD1-NT |
| *Briza media* (Quaking-grass) | SP711357 | 5 records, between 08/12/1978 and 18/08/1987 | 1; Present | | Foscott Meadow & Pit (west) | | D0002/001/01, D0009/001/01, D0001/001/01 | RD1-NT |
| *Bufo bufo* (Common Toad) | SP711357 | 8 records, between 08/12/1978 and 1988 | Present; 1 | | Foscott Meadow & Pit (west) | | D0009/001/01, D0002/001/01, D0001/001/01 | BAP, Bern, S41, WCA5 |
| *Bufo bufo* (Common Toad) | SP713356 | 8 records, between 04/10/1979 and 1988 | Present; 1 | | Foscott Meadow & Pit (east) | | D0009/001/01, D0002/001/01, D0001/001/01 | BAP, Bern, S41, WCA5 |
| *Catabrosa aquatica* (Whorl-grass) | SP699348 | 3 records, all on 26/05/1982 | 1 | | Field between Buckingham & Maids Moreton | | D0002/001/01, D0001/001/01 | RD1-NT |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Cerastium semidecandrum* (Little Mouse-ear) | SP712349 | 3 records, all on 03/07/1982 | 1 | | Verge Mills Lane, Maids Moreton | | D0002/001/01, D0001/001/01 | LI[County Scarce] |
| ***Chiroptera*** **(Bat)** | SP7034 | **2 records, both on 12/07/1983** | **150** | | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bonn, EPS, WCA5** |
| ***Chiroptera*** **(Bat)** | SP6934 | **4 records, between 21/08/2008 and 20/08/2009** | **1; 2** | **Standard Survey** | **-Withheld-** | **-Withheld-** | D0012/001/01 | **Bonn, EPS, WCA5** |
| *Chroicocephalus ridibundus* (Black-headed Gull) | SP703356 | 2 records, both on 25/10/2015 | 80Adult | | Maids Moreton | | D0003/001/01 | BDir2.2, RD1-VU, UKBA |
| *Chroicocephalus ridibundus* (Black-headed Gull) | SP7035 | 2 records, both on 19/01/2014 | 150Adult | | Maid's Moreton | | D0003/001/01 | BDir2.2, RD1-VU, UKBA |
| *Cygnus olor* (Mute Swan) | SP703356 | 2 records, both on 22/02/2015 | 12Adult | | Maids Moreton | | D0003/001/01 | BDir2.2, Bonn, UKBA |
| *Emberiza citrinella* (Yellowhammer) | SP703356 | 10 records, between 22/02/2015 and 29/12/2016 | 10Adult; 1Adult; 2Adult | | Maids Moreton | | D0003/001/01 | BAP, Bern, S41, UKBR |
| *Emberiza citrinella* (Yellowhammer) | SP7035 | 6 records, between 27/04/2014 and 26/10/2014 | 2Adult; 1Adult | | Maid's Moreton | | D0003/001/01 | BAP, Bern, S41, UKBR |
| *Emberiza schoeniclus* (Reed Bunting) | SP703356 | 18 records, between 20/06/2015 and 29/12/2016 | 2Adult; 1Adult; 3Adult | | Maids Moreton | | D0003/001/01 | BAP, Bern, S41, UKBA |
| *Emberiza schoeniclus* (Reed Bunting) | SP7035 | 4 records, between 16/02/2014 and 04/05/2014 | 1Adult; 3Adult | | Maid's Moreton | | D0003/001/01 | BAP, Bern, S41, UKBA |
| *Erinaceus europaeus* (Hedgehog) | SP698345 | 6 records, between 07/07/2010 and 27/02/2012 | PresentAdult; 1 | | Moreton Road, Buckingham | | D0001/001/01, D0002/001/01 | BAP, Bern, RD1-VU, S41 |
| *Erinaceus europaeus* (Hedgehog) | SP699344 | 6 records, between 11/08/2010 and 05/09/2010 | 1 | | Buckingham sand pit | | D0001/001/01, D0002/001/01 | BAP, Bern, RD1-VU, S41 |
| *Erinaceus europaeus* (Hedgehog) | SP703350 | 3 records, all on 25/04/2009 | 1Adult | | Garden in Maids Moreton | | D0001/001/01, D0002/001/01 | BAP, Bern, RD1-VU, S41 |
| ***Falco peregrinus*** **(Peregrine)** | SP7034 | **4 records, between 10/04/2010 and 14/04/2010** | **1** | | **-Withheld-** | **-Withheld-** | D0003/001/01 | **BDir1, Bern, Bonn, CITES, WCA1.1** |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| ***Falco subbuteo*** **(Hobby)** | SP7035 | **2 records, both on 13/09/2016** | **1Adult** | | **-Withheld-** | **-Withheld-** | D0003/001/01 | **Bern, Bonn, CITES, WCA1.1** |
| *Falco tinnunculus* (Kestrel) | SP699344 | 2 records, both on 30/10/2011 | PresentAdult | Standard Survey | Buckingham Sandpit LNR | | D0008/001/01 | Bern, Bonn, CITES, RD1-VU, UKBA |
| *Falco tinnunculus* (Kestrel) | SP703356 | 4 records, between 16/05/2015 and 27/11/2016 | 1Adult | | Maids Moreton | | D0003/001/01 | Bern, Bonn, CITES, RD1-VU, UKBA |
| *Falco tinnunculus* (Kestrel) | SP7035 | 6 records, between 05/05/2013 and 02/08/2014 | 1Adult; 2Adult | | Maid's Moreton | | D0003/001/01 | Bern, Bonn, CITES, RD1-VU, UKBA |
| *Fragaria vesca* (Wild Strawberry) | SP7035 | 3 records, all in 1974 | 1 | | Foxcote Reservoir SSSI | | D0001/001/01, D0002/001/01 | RD1-NT |
| *Fragaria vesca* (Wild Strawberry) | SP699344 | 4 records, between 30/10/2011 and 07/04/2012 | Present | Standard Survey | Buckingham Sandpit LNR | | D0008/001/01 | RD1-NT |
| *Fringilla montifringilla* (Brambling) | SP705348 | 2 records, both on 24/12/2002 | 3 | | Maids Moreton | | D0003/001/01 | WCA1.1 |
| *Hyacinthoides non-scripta* (Bluebell) | SP703352 | 3 records, all in 1982 | 1 | | Hedgerow Scotts Lane, Maids Moreton | | D0002/001/01, D0001/001/01 | WCA8 |
| *Hyacinthoides non-scripta* (Bluebell) | SP7035 | 3 records, all in 1974 | 1 | | Foxcote Reservoir SSSI | | D0002/001/01, D0001/001/01 | WCA8 |
| *Hyacinthoides non-scripta* (Bluebell) | SP706352 | 3 records, between 1982 and 1984 | 1 | | St. Edmund's Churchyard, Maids Moreton | | D0002/001/01, D0001/001/01 | WCA8 |
| *Knautia arvensis* (Field Scabious) | SP713356 | 5 records, between 04/10/1979 and 18/08/1987 | 1; Rare | | Foscott Meadow & Pit (east) | | D0002/001/01, D0001/001/01, D0009/001/01 | RD1-NT |
| *Knautia arvensis* (Field Scabious) | SP707345 | 2 records, both on 16/09/1996 | 1 | | Holloway Hedge, Buckingham | | D0010/001/01 | RD1-NT |
| *Lissotriton vulgaris* (Smooth Newt) | SP704354 | 9 records, all in 1998 | 2Adult Male; 5; 1Adult Female | Other trap | Land off Scotts Lane, Maids Moreton | | D0002/001/01, D0001/001/01 | Bern, WCA5 |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Lissotriton vulgaris* (Smooth Newt) | SP702353 | 4 records, between 08/05/2010 and 24/05/2010 | 1Adult Female; 2Adult Male | Bottle trap | Pond at Maids Moreton | | D0006/001/01 | Bern, WCA5 |
| *Lissotriton vulgaris* (Smooth Newt) | SP704351 | 14 records, between 27/04/2010 and 24/05/2010 | 25Adult; 6Adult Female; 15Adult; 10Adult; 20Adult; 50Adult; 9Adult Male | Torch Count | Pond at Maids Moreton School | | D0006/001/01 | Bern, WCA5 |
| *Lissotriton vulgaris* (Smooth Newt) | SP704353 | 16 records, between 27/04/2010 and 24/05/2010 | 8Adult Male; 1Adult Male; 1Adult Female; 4Adult Male; 4Juvenile; 2Adult Male | Bottle trap | Pond at Maids Moreton | | D0006/001/01 | Bern, WCA5 |
| *Lucanus cervus* (Stag Beetle) | SP705345 | 4 records, between 01/04/1998 and 25/05/1998 | Present | | Buckingham, 8 Fleet Close | | D0012/001/01 | BAP, Bern, HDir, RD2-NB, RD2-NS, S41, WCA5 |
| ***Meles meles*** **(Badger)** | SP6934 | **5 records, between 07/07/2010 and 07/04/2012** | **PresentAdult; Present** | **Standard Survey** | **-Withheld-** | **-Withheld-** | D0008/001/01, D0001/001/01, D0002/001/01 | **Bern, PBA** |
| ***Meles meles*** **(Badger)** | SP7035 | **3 records, all on 12/02/1998** | **3Sett** | | **-Withheld-** | **-Withheld-** | D0001/001/01, D0002/001/01 | **Bern, PBA** |
| ***Meles meles*** **(Badger)** | SP7034 | **3 records, all in September 2015** | **PresentSett** | | **-Withheld-** | **-Withheld-** | D0001/001/01, D0002/001/01 | **Bern, PBA** |
| ***Milvus milvus*** **(Red Kite)** | SP7035 | **2 records, both on 26/08/2009** | **1** | | **-Withheld-** | **-Withheld-** | D0003/001/01 | **BDir1, Bonn, CITES, WCA1.1** |
| ***Milvus milvus*** **(Red Kite)** | SP7035 | **4 records, between 30/03/2012 and 24/01/2014** | **1Adult** | | **-Withheld-** | **-Withheld-** | D0003/001/01 | **BDir1, Bonn, CITES, WCA1.1** |
| ***Milvus milvus*** **(Red Kite)** | SP7034 | **2 records, both on 14/05/2004** | **1** | | **-Withheld-** | **-Withheld-** | D0003/001/01 | **BDir1, Bonn, CITES, WCA1.1** |
| *Motacilla cinerea* (Grey Wagtail) | SP703356 | 8 records, between 18/10/2015 and 27/11/2016 | 1Adult | | Maids Moreton | | D0003/001/01 | Bern, RD1-NT, UKBR |
| *Motacilla cinerea* (Grey Wagtail) | SP7035 | 2 records, both on 04/05/2014 | 1Adult | | Maid's Moreton | | D0003/001/01 | Bern, RD1-NT, UKBR |
| *Motacilla flava* (Yellow Wagtail) | SP703356 | 2 records, both on 12/05/2015 | 1Adult | | Maids Moreton | | D0003/001/01 | BAP, Bern, RD1-NT, S41, UKBR |
| ***Myotis daubentonii*** **(Daubenton's Bat)** | SP6934 | **12 records, between 06/08/2008 and 24/08/2010** | **104; 67; 107; 84; 66; 113** | **Standard Survey** | **-Withheld-** | **-Withheld-** | D0012/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Ononis spinosa* (Spiny Restharrow) | SP7035 | 3 records, all in 1974 | 1 | | Foxcote Reservoir SSSI | | D0002/001/01, D0001/001/01 | RD1-NT |
| *Passer domesticus* (House Sparrow) | SP706351 | 3 records, between November 1979 and April 1980 | 1 | | TETRAD SP73C - Vague Site | | D0002/001/01, D0001/001/01 | BAP, S41, UKBR |
| *Phylloscopus trochilus* (Willow Warbler) | SP703356 | 4 records, between 10/04/2011 and 19/04/2015 | 1; 2Adult | | Maids Moreton | | D0003/001/01 | UKBA |
| *Pinus sylvestris* (Scots Pine) | SP703352 | 3 records, all in October 1982 | 1 | | Hedgerow Scotts Lane, Maids Moreton | | D0002/001/01, D0001/001/01 | RD2-NS |
| ***Pipistrellus* (Pipistrelle Bat species)** | SP6934 | **2 records, both on 27/07/2001** | **1** | **Dung/Droppings/Frass /Pellet, etc.** | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus* (Pipistrelle Bat species)** | SP7034 | **2 records, both on 29/08/1996** | **3** | | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus* (Pipistrelle Bat species)** | SP7035 | **2 records, both on 08/08/2007** | **PresentAdult** | **Dung/Droppings/Frass /Pellet, etc.** | **-Withheld-** | **-Withheld-** | D0006/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus* (Pipistrelle Bat species)** | SP7035 | **3 records, all on 26/04/2009** | **1Adult** | | **-Withheld-** | **-Withheld-** | D0002/001/01, D0001/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus pipistrellus* (Pipistrelle)** | SP6934 | **2 records, both on 24/07/2013** | **10** | **Roost** | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus pipistrellus* (Pipistrelle)** | SP6934 | **4 records, between 14/06/2004 and 14/09/2004** | **50; 2** | **Roost/Bat detector** | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus pipistrellus* (Pipistrelle)** | SP6934 | **2 records, both on 07/05/2008** | **30** | **Roost** | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus pipistrellus* (Pipistrelle)** | SP7034 | **2 records, both on 11/07/2002** | **1** | **In Flight** | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus pipistrellus* (Pipistrelle)** | SP7035 | **4 records, all on 25/04/2004** | **1; 5** | **Roost; In Flight/Bat detector** | **-Withheld-** | **-Withheld-** | D0008/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| ***Pipistrellus pipistrellus*** **(Pipistrelle)** | SP7035 | **2 records, both on 08/08/2007** | **PresentAdult** | **Bat detector** | **-Withheld-** | **-Withheld-** | D0006/001/01 | **Bern, Bonn, EPS, HDir, WCA5** |
| ***Pipistrellus pygmaeus*** **(Soprano Pipistrelle)** | SP7035 | **2 records, both on 21/04/2005** | **4** | **In Flight** | **-Withheld-** | **-Withheld-** | D0008/001/01 | **BAP, Bern, Bonn, EPS, HDir, S41, WCA5** |
| ***Pipistrellus pygmaeus*** **(Soprano Pipistrelle)** | SP6934 | **2 records, both on 06/08/2012** | **92Adult** | | **-Withheld-** | **-Withheld-** | D0005/001/01 | **BAP, Bern, Bonn, EPS, HDir, S41, WCA5** |
| *Plantago media* (Hoary Plantain) | SP711357 | 5 records, between 08/12/1978 and 18/08/1987 | 1; Present | | Foscott Meadow & Pit (west) | | D0002/001/01, D0009/001/01, D0001/001/01 | RD1-NT |
| *Plantago media* (Hoary Plantain) | SP713356 | 8 records, between 04/10/1979 and 13/05/2000 | 1; Present | | Foscott Meadow & Pit (east) | | D0002/001/01, D0009/001/01, D0001/001/01 | RD1-NT |
| *Plantago media* (Hoary Plantain) | SP7035 | 2 records, both on 29/07/2017 | Present | Native | Maids Moreton (SP73C) | | D0007/001/01 | RD1-NT |
| *Plantago media* (Hoary Plantain) | SP706352 | 2 records, between 24/04/1984 and 26/04/1984 | Present | | St. Edmund's Churchyard, Maids Moreton | | D0009/001/01 | RD1-NT |
| *Poecile montanus* (Willow Tit) | SP706351 | 3 records, between November 1979 and April 1980 | 1 | | TETRAD SP73C - Vague Site | | D0002/001/01, D0001/001/01 | BAP, Bern, RD1-EN, S41, UKBR |
| *Potentilla erecta* (Tormentil) | SP7035 | 3 records, all in 1974 | 1 | | Foxcote Reservoir SSSI | | D0001/001/01, D0002/001/01 | RD1-NT |
| *Potentilla erecta* (Tormentil) | SP711357 | 5 records, between 08/12/1978 and 18/08/1987 | 1; Present | | Foscott Meadow & Pit (west) | | D0001/001/01, D0002/001/01, D0009/001/01 | RD1-NT |
| *Prunella modularis* (Dunnock) | SP706351 | 3 records, between November 1979 and April 1980 | 1 | | TETRAD SP73C - Vague Site | | D0002/001/01, D0001/001/01 | BAP, Bern, S41, UKBA |
| *Pyrrhula pyrrhula* (Bullfinch) | SP703356 | 8 records, between 19/07/2015 and 14/12/2015 | 2Adult; 1Adult | | Maids Moreton | | D0003/001/01 | BAP, S41, UKBA |
| *Rana temporaria* (Common Frog) | SP699344 | 2 records, both on 07/04/2012 | PresentEgg | Standard Survey | Buckingham Sandpit LNR | | D0008/001/01 | Bern, HDir, WCA5 |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Rana temporaria* (Common Frog) | SP704346 | 2 records, both in 2008 | PresentAdult | Daytime observation | Watchcroft Grove, Maids Moreton | | D0008/001/01 | Bern, HDir, WCA5 |
| *Rana temporaria* (Common Frog) | SP713356 | 8 records, between 04/10/1979 and 1988 | Present; 1 | | Foscott Meadow & Pit (east) | | D0009/001/01, D0002/001/01, D0001/001/01 | Bern, HDir, WCA5 |
| *Rana temporaria* (Common Frog) | SP701346 | 3 records, all on 14/08/2018 | 1Adult | | Carisbrooke Court, Page Hill | | D0002/001/01, D0001/001/01 | Bern, HDir, WCA5 |
| *Silene flos-cuculi* (Ragged-Robin) | SP699348 | 3 records, all on 26/05/1982 | 1 | | Field between Buckingham & Maids Moreton | | D0002/001/01, D0001/001/01 | RD1-NT |
| *Sterna hirundo* (Common Tern) | SP703356 | 2 records, both on 12/05/2015 | 1Adult | | Maids Moreton | | D0003/001/01 | BDir1, Bern, RD1-NT, UKBA |
| *Sturnus vulgaris* (Starling) | SP706351 | 3 records, between November 1979 and April 1980 | 1 | | TETRAD SP73C - Vague Site | | D0002/001/01, D0001/001/01 | BAP, BDir2.2, RD1-VU, S41, UKBR |
| *Sturnus vulgaris* (Starling) | SP703356 | 2 records, both on 28/12/2015 | 100Adult | | Maids Moreton | | D0003/001/01 | BAP, BDir2.2, RD1-VU, S41, UKBR |
| *Tiphia minuta* (Small Tiphia) | SP699344 | 2 records, both on 19/06/1999 | 1Adult Female | Netted | Buckingham sand pit | | D0007/001/01 | RD2-NB |
| *Tringa ochropus* (Green Sandpiper) | SP703356 | 2 records, both on 23/08/2015 | 2Adult | | Maids Moreton | | D0003/001/01 | Bern, Bonn, RD1-EN, UKBA, WCA1.1 |
| *Triturus cristatus* (Great Crested Newt) | SP704351 | 12 records, between January 2010 and 24/05/2010 | PresentAdult; 1Adult Male; 1Adult Female; 2Adult Female | Daytime observation; Torch Count | Southall, Maids Moreton | | D0008/001/01, D0006/001/01 | BAP, Bern, EPS, HDir, S41, WCA5 |
| *Triturus cristatus* (Great Crested Newt) | SP704354 | 9 records, between November 1997 and 1998 | 4Adult Male; 1Adult Female; 1 | Other trap | Land off Scotts Lane, Maids Moreton | | D0002/001/01, D0001/001/01 | BAP, Bern, EPS, HDir, S41, WCA5 |
| *Triturus cristatus* (Great Crested Newt) | SP703353 | 2 records, both in February 1998 | Present | | Paddock, Maids Moreton | | D0015/001/01 | BAP, Bern, EPS, HDir, S41, WCA5 |
| *Triturus cristatus* (Great Crested Newt) | SP702353 | 2 records, both on 05/05/2010 | 1Adult Male | Bottle trap | Pond at Maids Moreton | | D0006/001/01 | BAP, Bern, EPS, HDir, S41, WCA5 |
| *Triturus cristatus* (Great Crested Newt) | SP704353 | 18 records, between 27/04/2010 and 24/05/2010 | 2Adult Male; 2Adult Female; 1Adult Male; 1Adult Female; 3Adult Female; 9Adult Male; 4Adult Female | Bottle trap | Pond at Maids Moreton | | D0006/001/01 | BAP, Bern, EPS, HDir, S41, WCA5 |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Turdus iliacus* (Redwing) | SP703356 | 10 records, between 18/10/2015 and 27/11/2016 | 8Adult; 150Adult; 10Adult; 30Adult; 50Adult | | Maids Moreton | | D0003/001/01 | BDir2.2, RD1-CR, UKBR, WCA1.1 |
| *Turdus iliacus* (Redwing) | SP7035 | 4 records, between 07/04/2012 and 26/10/2014 | 2Adult; 3Adult | | Maid's Moreton | | D0003/001/01 | BDir2.2, RD1-CR, UKBR, WCA1.1 |
| *Turdus philomelos* (Song Thrush) | SP700346 | 2 records, both on 12/05/2000 | 1Adult | | Woodlands Gres, Buckingham | | D0001/001/01 | BAP, BDir2.2, RD1-NT, S41, UKBR |
| *Turdus philomelos* (Song Thrush) | SP703356 | 18 records, between 20/06/2015 and 07/05/2016 | 1Adult; 2Adult; 3Adult; 4Adult | | Maids Moreton | | D0003/001/01 | BAP, BDir2.2, RD1-NT, S41, UKBR |
| *Turdus philomelos* (Song Thrush) | SP7035 | 8 records, between 16/02/2014 and 26/10/2014 | 1Adult; 2Adult | | Maid's Moreton | | D0003/001/01 | BAP, BDir2.2, RD1-NT, S41, UKBR |
| *Turdus philomelos* (Song Thrush) | SP699344 | 3 records, all on 29/06/1994 | 1 | | Buckingham Sandpit LNR | | D0001/001/01, D0002/001/01 | BAP, BDir2.2, RD1-NT, S41, UKBR |
| *Turdus philomelos* (Song Thrush) | SP706351 | 3 records, between November 1979 and April 1980 | 1 | | TETRAD SP73C - Vague Site | | D0001/001/01, D0002/001/01 | BAP, BDir2.2, RD1-NT, S41, UKBR |
| *Turdus pilaris* (Fieldfare) | SP703356 | 12 records, between 08/03/2015 and 27/11/2016 | 10Adult; 200Adult; 20Adult; 150Adult | | Maids Moreton | | D0003/001/01 | BDir2.2, RD1-PX, UKBR, WCA1.1 |
| *Turdus pilaris* (Fieldfare) | SP7035 | 2 records, both on 07/04/2012 | 30Adult | | Maid's Moreton | | D0003/001/01 | BDir2.2, RD1-PX, UKBR, WCA1.1 |
| *Turdus pilaris* (Fieldfare) | SP705348 | 2 records, both on 02/01/2010 | 25 | | Maids Moreton | | D0003/001/01 | BDir2.2, RD1-PX, UKBR, WCA1.1 |
| *Turdus torquatus* (Ring Ouzel) | SP703356 | 2 records, both on 07/08/2015 | 1Adult | | Maids Moreton | | D0003/001/01 | BAP, Bern, RD1-VU, S41, UKBR |
| *Turdus viscivorus* (Mistle Thrush) | SP706351 | 12 records, between December 1979 and March 1980 | 1 | | TETRAD SP73C - Vague Site | | D0002/001/01, D0001/001/01 | BDir2.2, RD1-VU, UKBR |
| ***Tyto alba* (Barn Owl)** | SP7034 | **2 records, both on 22/01/2008** | **1** | | **-Withheld-** | **-Withheld-** | D0003/001/01 | **Bern, CITES, WCA1.1** |
| *Vanellus vanellus* (Lapwing) | SP703356 | 2 records, both on 07/02/2016 | 100Adult | | Maids Moreton | | D0003/001/01 | BAP, BDir2.2, Bonn, RD1-EN, RD1-VU, S41, UKBR |
| *Vanellus vanellus* (Lapwing) | SP7035 | 4 records, between 19/01/2014 and 29/11/2014 | 4Adult; 80Adult | | Maid's Moreton | | D0003/001/01 | BAP, BDir2.2, Bonn, RD1-EN, RD1-VU, S41, UKBR |

| Species Name | Grid Reference | Date | Abundance | Record/Sample Type | Site Name | Notes | Dataset ID | Lists |
|---|---|---|---|---|---|---|---|---|
| *Vanellus vanellus* (Lapwing) | SP705348 | 2 records, both on 05/04/2010 | 1 | | Maids Moreton | | D0003/001/01 | BAP, BDir2.2, Bonn, RD1-EN, RD1-VU, S41, UKBR |
| *Vipera berus* (Adder) | SP699344 | 3 records, all in April 2010 | Present | | Buckingham sand pit | | D0002/001/01, D0001/001/01 | BAP, Bern, S41, WCA5 |

| Invasive Non-native Species | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Species Name** | **Grid Reference** | **Date** | **Abundance** | **Record/Sample Type** | **Site Name** | **Notes** | **Dataset ID** | **Lists** |
| *Cotoneaster horizontalis* (Wall Cotoneaster) | SP707345 | 16/09/1996 | 1 | | Holloway Hedge, Buckingham | | D0010/001/01 | INNS, WCA9 |
| *Crocosmia pottsii x aurea = C. x crocosmiiflora* (Montbretia) | SP699344 | 2 records, both on 29/06/1994 | 1 | | Buckingham Sandpit LNR | | D0002/001/01, D0001/001/01 | INNS, WCA9, WFD[Low] |
| *Lamiastrum galeobdolon subsp. argentatum* (Variegated Yellow Archangel) | SP699344 | 2 records, both on 29/06/1994 | 1 | | Buckingham Sandpit LNR | | D0001/001/01, D0002/001/01 | INNS, WCA9 |
| *Parthenocissus quinquefolia* (Virginia-creeper) | SP699343 | 16/10/2005 | Present | Planted | Buckingham Northwest (SP63X) | | D0007/001/01 | WCA9 |

| Sites - 5 records | |
|---|---|
| Local Nature Reserves intersecting 1000m buffer | Buckingham Sand Pit (1083175) (719m) |
| Local Geological Sites intersecting 1000m buffer | Buckingham Sand Pit LNR (AV16) (719m) |
| Biological Notification Sites intersecting 1000m buffer | Wellmore Meadow (73C10) (468m), Foscott Meadow and Pit (73C06) (747m) |
| Biodiversity Opportunity Areas intersecting 1000m buffer | Whittlewood Forest (726m) |

**Local Nature Reserves**

| Site Code | Site Name | Grid Reference |
|---|---|---|
| 1083175 | Buckingham Sand Pit | SP699344 |

**Biological Notification Sites**

| Site Code | Site Name | Broad Habitat | Description |
|---|---|---|---|
| 73C10 | Wellmore Meadow | Basic Grassland | Ridge and furrow field 'divided' in two by a very open hawthorn hedge. Wet area and stream along southern edge, probably the site of a spring. The fields are likely to be flooded in winter. Half of the site is used for a hay cut before grazing (1988). |
| 73C06 | Foscott Meadow and Pit | Basic Grassland | Meadow with old pits in northern part and numerous anthills on slope. Brook along southern and eastern edge is now overgrown with thistles. The field is grazed by cattle. Calcareous clay reflected in species present. Stream fairly species rich (1987). |

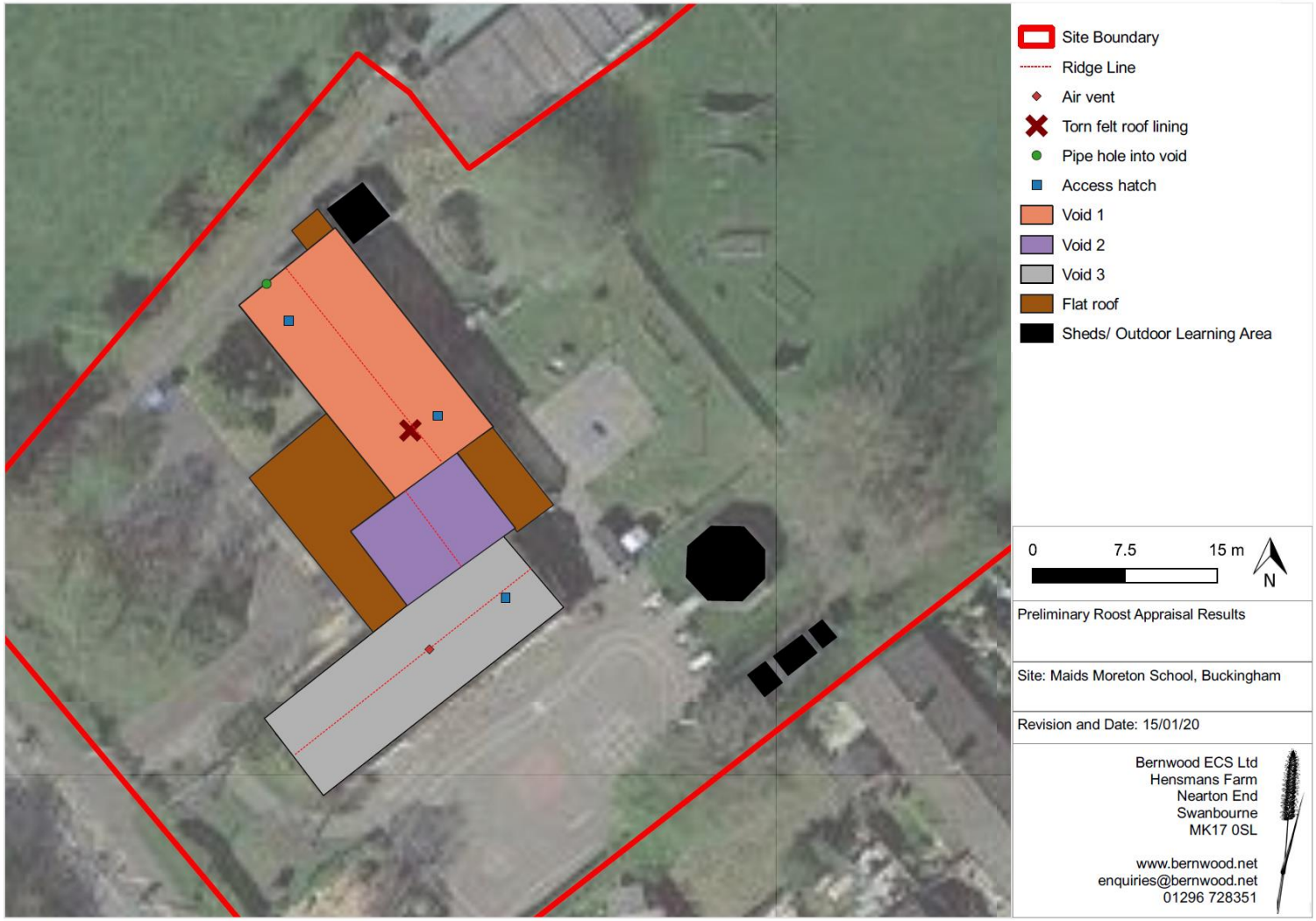
| Priority Habitats | | | | |
|---|---|---|---|---|
| Habitat | Distance | Area | Coverage | At Point |
| Lowland wood-pasture and parkland | 490m - 526m | 1.816 | 0.578% | No |

**Appendix 4.** Habitats plan.

**Appendix 5.** Botanical species list

| Family | Common Name | Latin name |
|---|---|---|
| Aquifoliaceae | Holly | *Ilex aquifolium* |
| Araliaceae | Ivy | *Hedera helix* |
| Asteraceae | Daisy | *Bellis perennis* |
| Betulaceae | Common hazel | *Corylus avellana* |
| Celastraceae | Spindle | *Euonymus europaea* |
| Cupressaceae | Leyland cypress | *Cupressus leylandii* |
| Fabaceae | White clover | *Trifolium repens* |
| Fagaceae | Beech | *Fagus sylvatica* |
| Lamiaceae | Ground ivy | *Glechoma hederacea* |
| | Self-heal | *Prunella vulgaris* |
| Oleaceae | Ash | *Fraxinus excelsior* |
| Poaceae | Fescue | *Festuca* sp. |
| | Rye grass | *Lolium perenne* |
| Polygonaceae | Common sorrel | *Rumex acetosa* |
| Ranunculaceae | Creeping buttercup | *Ranunculus repens* |
| Rosaceae | Hawthorn | *Crataegus monogyna* |
| | Blackthorn | *Prunus spinosa* |
| | Bramble | *Rubus fruticosa* |
| | Dog rose | *Rosa canina* |
| | Rowan | *Sorbus aucuparia* |
| Rubiaceae | Cleavers | *Galium aparine* |
| Sapindaceae | Field maple | *Acer campestre* |
| | Sycamore | *Acer pseudoplatanus* |

**Appendix 6.** Building inspection results.



**Appendix 7.** Ponds within 500m.

**Appendix 8.** Habitat Suitability Index Score Data.

**ARGUK GCN HSI Calculator**

| | Pond Name | School Pond | Scott's Lane Pond | Duck Lane Pond |
|---|---|---|---|---|
| | Grid Ref | SP70403517 | SP70433536 | SP70283531 |
| SI No | SI Description | SI Value | SI Value | SI Value |
| 1 | Geographic location | 1.00 | 1 | 1 |
| 2 | Pond area | 0.10 | 0.6 | 0.6 |
| 3 | Pond permanence | 0.50 | 1 | 0.5 |
| 4 | Water quality | 0.67 | 0.67 | 0.67 |
| 5 | Shade | 1.00 | 0.6 | 0.6 |
| 6 | Water fowl effect | 1.00 | 1 | 1 |
| 7 | Fish presence | 1.00 | 1 | 1 |
| 8 | Pond Density | 0.80 | 0.8 | 0.8 |
| 9 | Terrestrial habitat | 0.33 | 1 | 1 |
| 10 | Macropyhyte cover | 0.50 | 0.7 | 0.5 |
| **HSI Score** | | **0.58** | **0.82** | **0.74** |
| Pond suitability (see below) | | Below average | Excellent | Good |

Categorisation of HSI Score by Lee Brady

| **HIS Score** | **Pond Suitability** |
|---|---|
| < 0.50 | Poor |
| 0.50 - 0.59 | Below average |
| 0.60 - 0.69 | Average |
| 0.70 - 0.79 | Good |
| > 0.80 | Excellent |

Based on ARGUK advice note 5 - Great Crested Newt Habitat Suitability Index

email attachment 11 July 2010

Whitcher Wildlife survey
June 2010
(Pages relevant to GCNs only)

# Whitcher Wildlife Ltd.
# Wildlife Consultants.

## MAIDS MORETON.
## GREAT CRESTED NEWT SURVEY.

**Ref No:-** **100441.**

**Date:** **8th June 2010**

Cliff Edge, Cliff Road, Darfield, Barnsley, S73 9HR.
Tel. 01226 753271. Fax. 01226 270993.
info@whitcher-wildlife.co.uk www.whitcher-wildlife.co.uk
Company No. 4401613.

# 1. INTRODUCTION.

1.1. A previous ecological survey in connection with the proposed development at Maids Moreton Hall identified a number of ponds in the surrounding area and reports of great crested newts. Further surveys were therefore recommended to determine whether great crested newts are present on and around the site.

1.2. Whitcher Wildlife Ltd has been commissioned to carry out further surveys of all ponds around the site in line with the English Nature Great Crested Newt Mitigation Guidelines.

1.3. These surveys were carried out between mid March and mid June 2010 and this report outlines the findings of those surveys and makes appropriate recommendations.

1.4. Great crested newts are protected under both British and European legislation. Appendix I of this report provides details of that protection and some basic guidelines into great crested newts and their behaviour to assist the reader of this report to understand the contents.

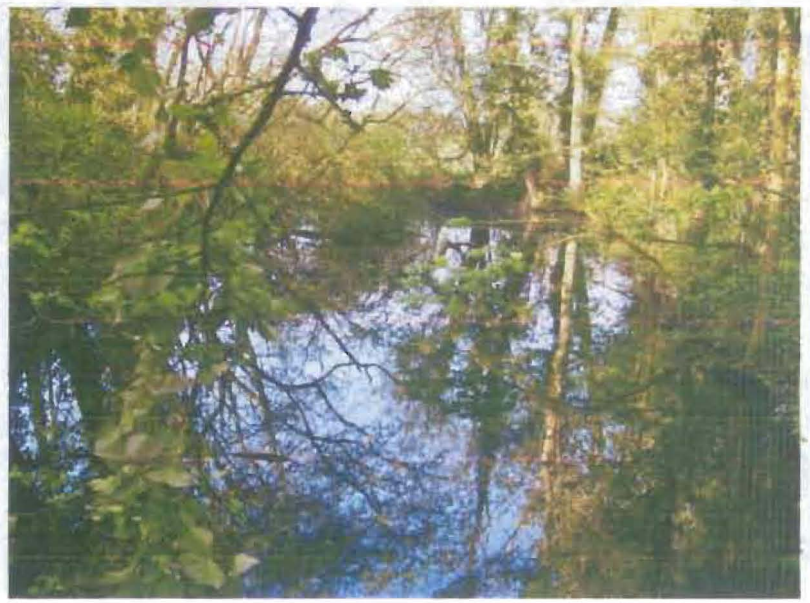
**********

*3.2. Pond 1.*

This is a medium sized pond located in an area of grazing fields. The pond is surrounded by bramble and hawthorn scrub on all except the eastern end. The pond contains abundant emergent vegetation with marginal vegetation on approximately 15% of the pond margin.

*3.2. Pond 2.*

This pond is located in an area of woodland and is totally surrounded by trees. The pond contains no emergent vegetation and there is minimal marginal vegetation.



### *3.3. Pond 3.*

This is a very small pond that is fed from a ditch alongside the adjacent road. A ditch has been dug from this pond, possibly due to drainage problems and flooding on the adjacent road. The pond is now completely dry.

### *3.4. Pond 4.*

This is a school pond, located within the grounds of Maids Moreton Primary School. The pond has a liner and is very full of assorted water plants.

### *3.5. Other Ponds.*

Local residents report a number of garden ponds within the village where newts have been found. It is not known where these ponds are located and therefore there was no access during the surveys.

### *3.2. Great Crested Newt Survey Results.*

The tables below provide the survey results for each of the ponds surveyed.

#### 3.2.1. Pond 1

| **Survey Date** | | 27th April | 4th May | 5th May | 11th May | 24th May | 8th May |
|---|---|---|---|---|---|---|---|
| **Weather** | | Warm and dry | Cool with breeze, | Cool and dry. 7°C. | Mild and dry. 9°C. | Warm and dry. 11°C. | Warm and wet. 12°C. |
| **Surveyors** | | Derek<br>Ruth | Derek<br>Steve | Ruth | Ruth<br>Jenny | Ruth<br>Jenny | Ruth<br>Jenny |
| **Bottle Traps** | **Traps** | 40 | 40 | 40 | 40 | 20 | 20 |
| | **Results** | 9 MGCN<br>4 FGCN<br>8MS | 2 MGCN<br>2 FGCN<br>1 FS | 1 MGCN<br>1 FGCN<br>1 MS<br>1FS | 2 MGCN<br>3 FGCN<br>2 MS<br>1FS | 2 MGCN<br>4 MS | 1 MS<br>4 S EFTS |
| **Torch Search** | | Nil | Nil | Nil | Nil | Nil | Nil |
| **Egg Search** | | Nil | Nil | Nil | Nil | Nil | Nil |

#### 3.2.2. Pond 2

| **Survey Date** | | 27th April | 4th May | 5th May | 11th May | 24th May | 8th May |
|---|---|---|---|---|---|---|---|
| **Weather** | | Warm and dry | Cool with breeze | Cool and dry. | Mild and dry. 9°C. | Warm and dry. 11°C. | Warm and wet. 12°C. |
| **Surveyors** | | Derek<br>Ruth | Derek<br>Steve | Ruth | Ruth<br>Jenny | Ruth<br>Jenny | Ruth<br>Jenny |
| **Bottle Traps** | **Traps** | 20 | 20 | 20 | 20 | 20 | 20 |
| | **Results** | Nil | Nil | 1 MGCN | Nil | 2 MS | 1 FS |
| **Torch Search** | | Nil | Nil | Nil | Nil | Nil | Nil |
| **Egg Search** | | Nil | Nil | Nil | Nil | Nil | Nil |

### 3.2.3. Pond 3

| Survey Date | | 27th April | 4th May | 5th May | 11th May | 24th May | 8th May |
|---|---|---|---|---|---|---|---|
| Weather | | Warm and dry | Cool with breeze | Cool and dry. | Mild and dry. 9°C. | Warm and dry. 11°C. | Warm and wet. 12°C. |
| Surveyors | | Derek | Derek | Ruth | Ruth | Ruth | Ruth |
| | | Ruth | Steve | | Jenny | Jenny | Jenny |
| Bottle Traps | Traps | Dry | Dry | Dry | Dry | Dry | Dry |
| | Results | | | | | | |
| Torch Search | | | | | | | |
| Egg Search | | | | | | | |

### 3.2.4. Pond 4

| Survey Date | | 27th April | 4th May | 5th May | 11th May | 24th May | 8th May |
|---|---|---|---|---|---|---|---|
| Weather | | Warm and dry | Cool with breeze | Cool and dry. | Mild and dry. 9°C. | Warm and dry. 11°C. | Warm and wet. 12°C. |
| Surveyors | | Derek | Derek | Ruth | Ruth | Ruth | Ruth |
| | | Ruth | Steve | | Jenny | Jenny | Jenny |
| Bottle Traps | Traps | 0 | 0 | 0 | 0 | 0 | 0 |
| | Results | 0 | 0 | 0 | 0 | 0 | 0 |
| Torch Search | | 1MGCN 2FGCN 50+ s | 9 MS 6 FS | 1 MGCN 25 S | 20 S | 1 MGCN 10 S | 1 FGCN 15 S |
| Egg Search | | Nil | Nil | Nil | Nil | Nil | Nil |

**********

# 4. EVALUATION OF FINDINGS.

4.1. Great crested newts have been found present in all three ponds surveyed.

4.2. Pond 1 has a peak count of thirteen great crested newts therefore has a medium population. Ponds 2 and 4 have peak counts of one and three great crested newt respectively and therefore have small population of great crested newts.

4.3. No newt eggs were identified in any of the ponds but smooth efts were identified in pond 1 during the last survey confirming that smooth newts are breeding in the pond.

4.4. Smooth newts were identified in ponds 1, 2 and 4.

**********

## 5. RECOMMENDATIONS.

5.1. It is recommended that a Natural England European Protected Species Licence is applied for to cover the proposed works.

5.2. It is recommended that all details of the proposed works are provided including all work areas and timings to use as part of the licence application. It takes up to 30 days for Natural England to issue a licence.

5.3. It will be necessary to exclude great crested newts from the site prior to the works commencing. This will involve the erection of temporary amphibian fencing around all work areas with pitfall traps. The pitfall traps will need to be checked on a daily basis until a minimum of thirty days with overnight temperatures over 5°C has passed and five consecutive days with no capture of great crested newts. Only once this time period has elapsed can the works commence on the site.

5.4. Although smooth newts are not a protected species the great crested newt mitigation will also mitigate for smooth newts.

**********

Ruth Georgiou.
08.06.2010.

Natural England GCN Survey Licence Number: 20091639.

# APPENDIX II. HABITAT SUITABILITY INDEX SCORES.

The following table shows the Habitat Suitability Index Scores for each of the ponds. This is a method of calculating the potential presence of great crested newts in a pond by awarding points against specified criteria.

| HSI | | Pond 1 | Pond 2 | Pond 3 | Pond 4 |
|---|---|---|---|---|---|
| $SI_1$ | Location | 1 | 1 | 1 | 1 |
| $SI_2$ | Pond Area | 1 | 1 | | 0.4 |
| $SI_3$ | Pond Drying | 1 | 0.9 | Dry | 1 |
| $SI_4$ | Water Quality | 1 | 0.33 | | 1 |
| $SI_5$ | Shade | 1 | 0.2 | | 1 |
| $SI_6$ | Fowl | 1 | 0.67 | | 1 |
| $SI_7$ | Fish | 1 | 0.67 | | 1 |
| $SI_8$ | Ponds | 1 | 1 | | 1 |
| $SI_9$ | Terrestrial Habitat | 1 | 1 | | 0.67 |
| $SI_{10}$ | Macrophytes | 0.7 | 0.3 | | 0.9 |
| Total score | | 0.96 | 0.62 | | 0.87 |
| Presence | | Excellent | Average | | Excellent |

1 = optimal
1 = rarely
1 = abundant + diverse invertebrates
0.33 = low - few submerged plants
1 = full shade
1 = absent, except moorhens
1 = absent
0.67 = possibly
1 = good
0.67 = moderate

# MAIDS MORETON CONSERVATION GROUP

Newsletter 19. Sept 2010

Visit the Website

MMCG Newsletter Sept 2010
with photos of GCNs observed

MAIDS MORETON
CONSERVATION
GROUP

**Autumn Meetings**
Thurdsday 23rd September
Thursday 21st October
Thursday 18th November
at
7.30pm
in
Village Hall

## GREAT CRESTED NEWTS HEADHUNT

.Members of MMCG were up extra early one April morning this year to watch the results of the Great Crested Newts hunt. The previous night Derek Whitcher (wildlife consultant) and his assistants had placed bottles in the various ponds surrounding Scotts Lane to catch GCNs and conduct a 'headhunt'. Whitcher Wildlife Ltd. had been commissioned by the owners of Maids Moreton Hall.

Great Crested Newts were found in three ponds, including 13 in the pond at the far end of Scotts Lane. Derek advised that the pond needed careful clearing to let more light into the centre to improve the habitat area. We took pictures of a male and female which were about 10cm/4" long. Both had spring-time orangey-yellow colouring underneath, and the male had very distinct crests along his back. He truly looked like a small dragon!

# MAIDS MORETON CONSERVATION GROUP

Newsletter 19. Sept 2010

Visit the Website
www.maids-moreton.org.uk
Read our minutes

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