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# MELKSHAM PRIMARY SCHOOL

# ECOLOGICAL REPORT

# for

# ISG

# AUGUST 2023

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# ECOLOGICAL REPORT

## 1 INTRODUCTION

The purpose of this report is to provide an assessment of the impact on biodiversity of a proposal to construct a primary school at a site on the southern edge of Melksham. The site of the proposed school forms part of a much larger housing development and the proposal has a current planning consent. The school site was cleared and levelled as part of the establishment works for the wider development.

## 2 METHODS

An Extended Phase 1 site survey was carried out on 22nd August 2023. It covered vegetation types, plants, some groups of insects and birds. The site and surrounding areas were searched for badger setts and for other signs of badger activity, including paths, feeding signs and dung pits. A Habitat Suitability Index (HSI) was compiled for a nearby wetland. Habitat quality for other protected species was assessed. Information contained within the Ecological Assessment for the wider site (Ecology Solutions, 2014) and in subsequent surveys has also been used to inform this report.

A data search was carried out at Wiltshire and Swindon Biological Records Centre (WSBRC) who supplied details of designated sites and protected and notable species from all areas within one kilometre of the application site.

The survey site covered by this report consisted of the application site together with adjacent areas to a distance of approximately 100m and all survey and assessment work was carried out by Rupert Higgins MCIEEM, who has over 35 years' experience of similar work.

## 3 SURVEY RESULTS

### 3.1 Site Description

The survey site (grid reference ST910 626) consists of a large area that has been cleared and has since revegetated. Prior to development it consisted of species-poor arable fields. There are no hedges or trees on the survey site, or on its boundaries.

Neither the survey site itself nor any adjoining area has any nature conservation designation. The nearest site with a statutory designation for biological importance is Spye Park Site of Special Scientific Interest (SSSI), which is approximately 4.5km to the northeast and is designated for its alder and oak-dominated woodland and is of particular note for bryophytes and lichens.

The closest site with a non-statutory designation is the Bristol Avon River Local Wildlife Site (LWS), which is approximately 1.3km to the northwest and is designated for its riparian habitat and associated species.

## 3.2 Vegetation

The vegetation on the site consists entirely of ruderal vegetation, which has developed within the last two years. Large areas in the western and southern parts of the site are dominated by a mixture of fat-hen (*Chenopodium album*) and cockspur (*Echinochloa crus-galli*). There are few other species under this sward, but where the vegetation is more open on the edge of the area additional species include red dead-nettle (*Lamium purpureum*), scentless mayweed (*Tripleurospermum inodorum*), scented mayweed (*Matricaria chamomilla*) and shepherd's-purse (*Capsella bursa-pastoris*).

The remainder of the area has a more grassy sward, which includes large quantities of perennial rye-grass (*Lolium perenne*). Italian rye-grass (*Lolium multiflorum*), creeping bent (*Agrostis stolonifera*) and Yorkshire fog (*Holcus lanatus*). Prickly ox-tongue (*Helminthotheca ecioides*) is locally abundant and other frequent herb species include creeping buttercup (*Ranunculus repens*), common ragwort (*Jacobaea vulgaris*) and creeping thistle (*Cirsium arvense*).

## 3.3 Surrounding Areas

The site is bordered to the south by recently built housing, to the east by a road, beyond which there is a further area of housing, and to the west by an intensively managed maize field. To the north there is a strip of cleared land, similar to that on the survey site, which will be developed as an open space and habitat area. The north-western corner of this strip has a low-lying area, which was holding water at the time of survey. Vegetation here includes greater reedmace (*Typha latifolia*) and gypsywort (*Lycopus europaeus*). The roadside boundary along the northern edge of this strip has a line of bramble (*Rubus fruticosus agg*) with scattered shrubs of hawthorn (*Crataegus monogyna*) and dogwood (*Cornus sanguinea*); the western end of the boundary has a more continuous hedge with hawthorn, blackthorn (*Prunus spinosa*) and English elm (*Ulmus procera*). There is a clump of white poplar (*Populus albus*) on the north-eastern edge of the strip, adjacent to the roundabout. There is a flood compensation basin to the east of the roundabout, which was dry at the time of survey and supports wetland vegetation dominated by greater reedmace and hard rush (*Juncus inflexus*).

## 3.3 Birds

The only species on the site was goldfinch. A green sandpiper was present on the temporary wetland to the north-west, and wood pigeon in the white poplar clump.

## 3.4 Invertebrates

The following species were recorded on the site:

*Bombus pascuorum* bee; *Eristalis pertinax, Eristalis horticola, Helophilus pendulus* and *Episyrphus balteatus* flies; *Agriphila geniculea* moth; and meadow grasshopper, long-winged conehead and Roesel's bush-cricket.

*Sympetrum striolatum* dragonfly was seen over the temporary wetland; and species around the wetland area to the north-east of the site included *Eristalinus sepulcharis* fly.

### 3.5 Protected Species

No signs of badger activity were seen.

There are no buildings, trees or other potential bat roosts on the site.

Further details are given in the Assessment section below.

### 3.6 Data Search

WSBRC do not hold any records for the site itself. They hold the following records of protected species from the surrounding area:

Pipistrelle sp: A roost in the one kilometre grid square (monad) to the north-west, in 2005.

Common pipistrelle: A roost in the monad the north-west, in 2003; from a site approximately 750 metres to the north-west, in 2015; from a site approximately 800 metres to the south-west, in 2019; from a site approximately 250 metres to the west, in 2020.

Soprano pipistrelle: A roost in the monad to the north-west, in 2003; from a site approximately 800 metres to the west, in 2015; from a site approximately 650 metres to the north, in 2015; from a site approximately 700 metres to the south-west, in 2019; from a site approximately 250 metres to the west, in 2020.

Noctule bat: From approximately 1.2km to the north-west, in 2002.

Daubenton's bat: From approximately 1.2km to the north-west, in 2002.

Serotine bat: From a site approximately 300 metres to the west, in 2020.

Noctule bat: From a site approximately 300 metres to the west, in 2020.

Myotis bat sp: From a site approximately 650 metres to the south-west, in 2019.

Hedgehog: From approximately 100m to the north of the site, in 2007.

Great-crested newt: There are several records from the wider area, but most of these are from sites separated from the application site by major roads or by large areas of recent development. They include breeding records from sites approximately 550 metres to the south-east, in 2014; approximately 300 metres to the south-west, in 2012; and approximately 250 metres to the west, in 2019.

Slow worm: from a site approximately 500 metres to the south-west, in 2019.

The bat records above do not involve roosting bats.

In addition, the records centre hold large numbers of records from the surrounding area of birds that are widespread but of conservation concern due to recent population declines. There are also several records of notable invertebrates, which include a mixture of rare and widespread but declining species. There is no suitable habitat for most of these species either on or adjacent to the site. The only possible exception is cinnabar moth, as there is a moderately large population of this species' larval

foodplant on the site. However, none of the conspicuous larvae were seen during the site survey.

The records centre holds no records of reptiles from within the search area.

## 4 ASSESSMENT

The habitats on the site have been assessed in order to determine whether they are of nature conservation value in a national, regional or county context, are of either high or low value in a local context, or are of minimal nature conservation value. The assessment has used standard ecological criteria, including rarity, diversity, size and fragility. Reference has been made to suitable guidance, including the Natural Environment and Rural Communities (NERC) Act and the UK and Wiltshire Biodiversity Action Plans (BAPs). The value of the site for groups not surveyed, such as most invertebrates, has been assessed using information gathered on the nature and structure of the habitats present.

### 4.1 Habitats

The ruderal vegetation that dominates the site is dominated by a small number of species. The abundance of cockspur is unusual, but this is a non-native species, which is becoming much more frequent, and its frequency here is not of ecological significance. The other species recorded are all typical of disturbed, nutrient-rich soils and are all widespread. No species that are indicative of any priority habitat, or are otherwise of nature conservation value, are present. There are no features to suggest that the habitat is of significant value for invertebrates and all of the species recorded are common and widespread.

The habitats on the site are of minimal nature conservation value, as would be expected given its history of intensive agricultural management followed by severe disturbance.

### 4.2 Protected Species

There are no signs of badger activity on or around the site.

There are several records of bats in the surrounding area. There are no potential bat roosts on the site. Features such as hedges or tree lines, which could be important for commuting bats, are also absent. The ruderal vegetation on the site is not likely to provide bat foraging habitat of any significant value due to its history as a maize field and recent origin following earth-moving, which will inevitably have had an adverse impact on insect populations.

The 2014 surveys recorded great crested newt in two ponds that are just over 250 metres west of the site and it was confirmed that these sites were still occupied in 2016. The data search returned records from these ponds in 2019 from two survey visits of two adults and one adult respectively, suggesting that the population here is small. It was concluded in the 2016 report that there was no realistic chance that these animals would use the terrestrial habitats on the survey site, largely because of the inhospitable nature of the intervening habitats. This continues to be the case, with the

fields between the site and the ponds subject to regular cultivation and other intensive agricultural activities. Soil stripping and earth moving, under the existing planning consent, have made the site less suitable for great crested newt than it was in 2014. There has since been some habitat creation in the surrounding area. The attenuation basin to the east of the site was dry at the time of survey and the vegetation it supports, particularly a continuous cover of hard rush across the floor of the basin, indicates that it holds water for very short periods only. The smaller area to the west of the site was holding some water at the time of survey and the absence of terrestrial vegetation from parts of the floor of the pond suggest that it holds water for greater lengths of time than does the other basin. However, the depth of water was less than 5cm throughout and submerged and floating vegetation are entirely absent. This suggests that it dries out for considerable periods of each year. The HSI for the pond (shown at Appendix 1) gives a score of 0.54, in the “below average” range. This low score, combined with the very recent origin of the pond and its position between a maize field and an area that has recently been subject to major earth moving, means that the probability of great crested newts using the feature is extremely low. The terrestrial habitat on the application site, consisting of recently developed ruderal vegetation, has very low suitability for great crested newt.

The recent history of earth-moving, and the previous cultivation of the land, mean that the site is unsuitable for reptiles. There are no habitats with potential for reptiles, from which colonisation could have occurred, in areas adjacent to the site.

There are no wetland, hedgerow or scrub habitats on the site, meaning that it has no potential for species such as dormouse or water vole.

### 4.3 Surrounding Areas

The site does not border any site with a nature conservation designation and there are no semi-natural habitats or other features of ecological importance in surrounding areas. The scrub and remnant hedgerow along the roadside boundary described above would not be affected by the proposals.

Green sandpiper is a Schedule 1 species, but this protection relates to its breeding sites only and the record here concerns a transient migrant. The area of wetland is of minor importance to this and other wetland bird species, and probably to invertebrates.

## 5 IMPACTS

The proposals involve the construction of a single form entrance primary school on part of the site.

Features in the nearby area, such as the roadside hedge and the wetland attenuation ponds, would not be affected.

### 5.1 Habitats

Loss of the ruderal vegetation currently present on the site would not have any significant adverse impact.

There would be no impacts on the other features present in the surrounding area.

There are no priority habitats, or habitats that are otherwise of value, in the areas surrounding the site and no potential for off-site adverse impacts.

### 5.2 Protected Species

There are no potential impacts on protected species other than a low risk that nesting birds will be affected.

### 5.3 Priority Species

There are no potential impacts on priority species.

## 6 MITIGATION

The proposals would not have any significant ecological impact and there is no requirement for mitigation, apart from avoidance of potential impacts on birds.

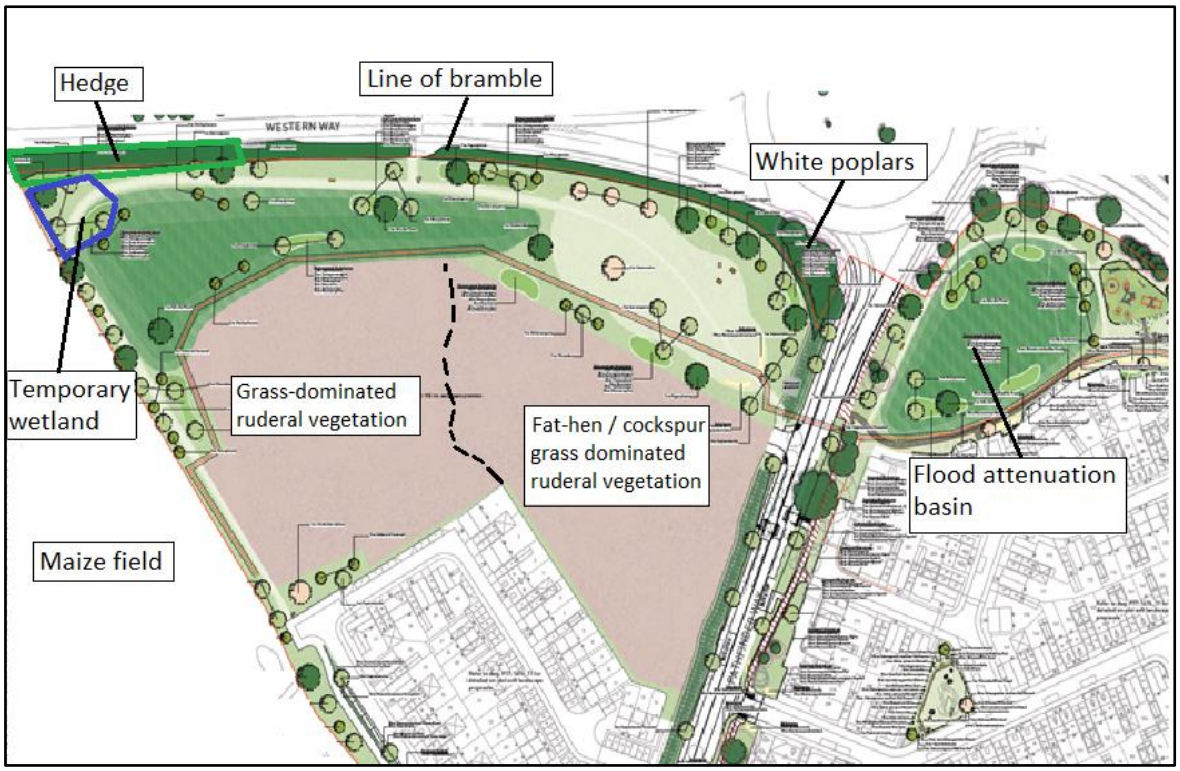
There is at present no potential nesting habitat for birds on the site but this may develop if the site is unmanaged until development commences. Impacts on nesting birds would be avoided by carrying out any removal of woody or dense tall herb vegetation between 1st October and 1st March. If this is not possible the vegetation will be checked by an ecologist before works commence; if occupied nests are found then works in the area, as identified by the ecologist, will cease until a further check has shown the area to be clear of active nests.

## 7 ENHANCEMENT

There is potential to provide ecological enhancement on the site. A nature area will be included within the school grounds and will be designed to combine wildlife habitats with educational and recreational use. Bird and bat boxes will be installed on the building. Landscaping of the site will provide species of value to wildlife. These measures will result in a site of greater value for wildlife than is provided by the ruderal vegetation currently present, or the maize fields that preceded it.

Rupert Higgins

Wessex Ecological Consultancy
22nd August 2023



Map 1: Features mentioned in report / vegetation

# APPENDIX 1 HSI ASSESSMENT

| ARGUK GCN HSI Calculator | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Pond Name | | | | | | | |
| | Grid Ref | ST9096 6273 | | | | | | |
| SI No | SI Description | SI Value | SI Value | SI Value | SI Value | SI Value | SI Value | SI Value |
| 1 | Geographic location | 1 | | | | | | |
| 2 | Pond area | 0.8 | | | | | | |
| 3 | Pond permanence | 0.1 | | | | | | |
| 4 | Water quality | 0.33 | | | | | | |
| 5 | Shade | 1 | | | | | | |
| 6 | Water fowl effect | 1 | | | | | | |
| 7 | Fish presence | 1 | | | | | | |
| 8 | Pond Density | 0.8 | | | | | | |
| 9 | Terrestrial habitat | 0.33 | | | | | | |
| 10 | Macropyhyte cover | 0.3 | | | | | | |
| | **HSI Score** | **0.54** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |
| Pond suitability (see below) | | Below Average | | | | | | |

| Categorisation of HSI Score by Lee Brady |
|---|
| **HIS Score** |
| < 0.50 |
| 0.50 - 0.59 |
| 0.60 - 0.69 |
| 0.70 - 0.79 |
| > 0.80 |

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