

Report on Birds and Conservation at

HE HALL FARMS

MARDEN



Nectar crop grown for bees left as a food resource for birds and overwintering insects. A number of tractor-width swaths are cut through it to improve access for different species. *Photo: Jenny Morris*

2017

Background

HE Hall & Son Ltd¹ operates a number of formerly separate farms around the large village of Marden, Kent.

Little Mill and **Target Farms**, together with land adjacent to **Foundation Farm** are mixed fruit and arable farms covering 45Ha to the north of the village. Roughly 4Ha of a variety of Wild Bird Crops (WBCs) are planted annually to provide over-winter food to support birds, particularly farmland species, many of which are now red-listed, ie. on the red list of conservation concern².

The adjacent **Mill Farm** covers about 30Ha and was acquired in March 2015. It is mixed fruit and arable with a small plantation of native deciduous trees, generous areas of tall hedgerow and boundary vegetation, with patches of bramble scrub. The farm is bounded on one side by the Lesser Teise river and has several significant drainage channels, one of which fed the mill prior to its demolition a century ago. Much of 2015 was spent clearing the farm of substantial quantities of agricultural and other rubbish. The old mill stream was re-opened so that water can once again be diverted to a drain alongside an 4Ha field to the north of Hunton Road. In 2016-17 approximately 6Ha was planted with sunflowers as a WBC on land south of Hunton Road.



To the south of the village, **Poultry Farm** is 60Ha of mixed arable and fruit, with areas of woodland, grass leys and ponds reserved for wildlife. Field margins and hedgerows are actively managed to support wildlife along with other measures, eg. skylark plots in cereal crops. During 2016-17 approximately 2Ha of WBC were planted.

The Beech is a 15Ha area of arable land alongside the Lesser Teise, also located south of the village. Apart from the erection of two Barn Owl nestboxes in 2017, there has so far been no monitoring of its wildlife.

Intermittent bird ringing³ started at Little Mill and Poultry Farms in 2009. It increased during 2016 following the acquisition of Mill Farm with a further increase in 2017, principally at Poultry Farm.

¹ <http://www.hehall.co.uk/>

² Hayhow DB, Ausden MA, Bradbury RB, Burnell D, Copeland AI, Crick HQP, Eaton MA, Frost T, Grice PV, Hall C, Harris SJ, Morecroft MD, Noble DG, Pearce-Higgins JW, Watts O, Williams JM, *The state of the UK's birds 2017*. The RSPB, BTO, WWT, DAERA, JNCC, NE and NRW, Sandy, Bedfordshire.

³ Ringers are trained and licensed by The British Trust for Ornithology www.bto.org on behalf of DEFRA.

Conservation Developments in 2017

Wetland Construction

Between November 2016 and the end of 2017, a wetland was excavated at Mill Farm in the 4Ha field alongside the drain to the north of Hunton Road. It now takes take water from the re-opened mill stream mentioned above and the ditches alongside Pattenden Lane. It is designed to hold 20,000 cubic metres of water. Although primarily intended (and funded by KCC) for flood prevention, as it becomes established and the surrounding vegetation regenerates, wildlife, particularly birds, will benefit. It is important that this wildlife is closely monitored in order to gauge its value for local biodiversity at a time when South-East England in particular is under ever-increasing pressure from population increase and its attendant development.

At the time of writing (January 2018) South East Water is warning of water shortages in the coming summer. It is both ironic, therefore, that excavation work was beset with difficulties caused by heavy rain, but also timely if wildlife dependent on water is likely to be faced with a shortage in the coming months.



In June, some fifty members of The Marden Society enjoyed a guided tour of the work being carried out at Mill Farm, including the wetland development. A good deal of interest was shown in the conservation initiatives being undertaken, and a number of members have attended early morning ringing sessions at Poultry Farm to see firsthand how this valuable monitoring activity is carried out.

Erection of Barn Owl nestboxes

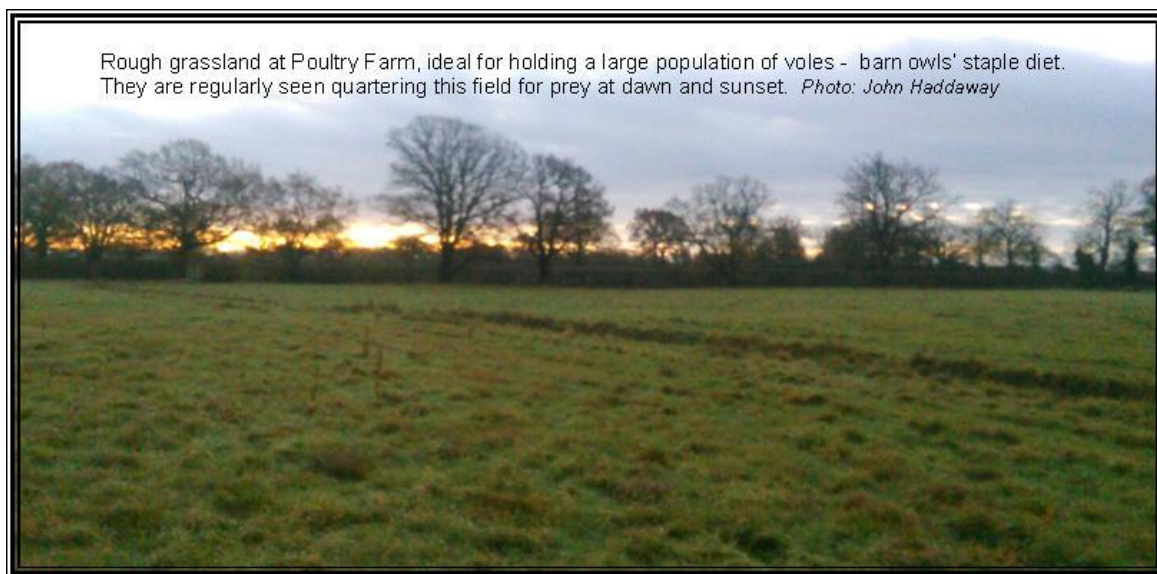
In January a team of volunteers erected fifteen nestboxes purchased from The Hawk and Owl Trust⁴ around the farms - thirteen for barn owl and one each for little owl and kestrel. Boxes were erected in areas close to suitable habitat for the intended species and where individuals had been regularly seen.

Ten boxes were used by birds. Surprisingly, two were used by barn owls for nesting⁵. This was unexpected as the species normally takes a period of time to become accustomed to a prospective nesting site. However, it is likely that the birds were inexperienced first-year breeders as they were only just starting their clutches when birds elsewhere in the county already had broods with young ready to fledge. It was disappointing, therefore, that the nests were subsequently abandoned. Several boxes were being used as roosting boxes,

⁴ <http://hawkandowl.org/>

⁵ Barn owls are designated Schedule 1 species under the Wildlife & Countryside Act 1981. Any worker inspecting their nest must be appropriately licenced. http://jncc.defra.gov.uk/PDF/waca1981_schedule1.pdf

and one as a larder – when inspected it had several freshly killed mice and voles stored in it. Three adults were ringed – two of which were young adults hatched in 2016.



Five boxes were used successfully by stock doves, several of which raised successive broods, and one was adopted by a mandarin duck⁶, a recently introduced species that has become naturalised, which successfully fledged eight young.

The little owl box was taken over by honey bees, eventually removed by a local beekeeper. European hornets occupied two barn owl boxes. The nests removed once the insects had completed their breeding cycle.



The boxes, with two existing barn owl nests inside barns, provided a large number of pellets. Some of these were opened up and analysed by children at Staplehurst Primary School. Remains of several species of mammal were identified, along with beetle elytra. Children were very enthusiastic about the activity so plans are being made to repeat the activity in 2018 in a more systematic way. Not only will this be a valuable scientific activity for the children, it will also help us to start to building a picture of small mammal distribution to the north and south of the village.

⁶ Like many ducks, mandarins nest in holes high up in trees. Within a day of hatching the ducklings jump out of the nest and follow an adult on foot to the nearest water.

Species Recording in 2017

As in the last two years, birds were the main focus due to the expertise available to carry out the recording, although a knowledgeable dragonfly enthusiast carried out monthly surveys to produce a baseline on which future changes can be measured. The result of bat and plant surveys carried out in 2016 at Mill Farm (the latter with additions from a second survey carried out in August 2017 by members of the Kent Field Club) can be found in Appendices 1, 2 & 3 below.

Bird species recorded at HE Hall & Son Ltd. Farms in 2017 and their conservation status

(Based on survey visits, three ringing sessions at Mill Farm and thirteen at Poultry Farm, and casual observations)

F = Flying over * = Probably/possibly breeding ** = Confirmed breeding

Green – least concern		
Cormorant <i>Phalacrocorax carbo</i>	Green Woodpecker <i>Picus viridis</i> *	Whitethroat <i>Sylvia communis</i> **
Mandarin Duck <i>Aix galericulata</i> **	Great Spotted Woodpecker	Reed Warbler <i>Acrocephalus scirpaceus</i>
Pheasant <i>Phasianus colchicus</i> *	<i>Dendrocopos major</i> *	Nuthatch <i>Sitta europaea</i>
Little Egret <i>Egretta garzetta</i>	Magpie <i>Pica pica</i> *	Wren <i>Troglodytes troglodytes</i> **
Grey Heron <i>Ardea cinerea</i>	Jay <i>Garrulus glandarius</i> *	Blackbird <i>Turdus merula</i> **
Red Kite <i>Milvus Milvus</i> F	Jackdaw <i>Corvus monedula</i> **	Robin <i>Erithacus rubecula</i> **
Sparrowhawk <i>Accipiter nisus</i>	Rook <i>Corvus frugilegus</i> **	Wheatear <i>Oenanthe oenanthe</i>
Buzzard <i>Buteo buteo</i>	Carrion Crow <i>Corvus corone</i> *	Stonechat <i>Saxicola torquata</i>
Hobby <i>Falco subbuteo</i>	Goldcrest <i>Regulus regulus</i> **	Pied Wagtail <i>Motacilla alba yarellii</i> *
Peregrine Falcon <i>Falco peregrinus</i> F	Blue Tit <i>Caerellus cyanistes</i> **	Chaffinch <i>Fringilla coelebs</i> **
Moorhen <i>Gallinula chloropus</i> **	Great Tit <i>Parus major</i> **	Brambling <i>Fringilla montifringilla</i>
Feral Pigeon <i>Columba livia</i> (domest.)	Swallow <i>Hirundo rustica</i> **	Greenfinch <i>Carduelis chloris</i> *
Woodpigeon <i>Columba palumbus</i> **	Long-tailed Tit <i>Aegithalos caudatus</i>	Goldfinch <i>Carduelis Carduelis</i> *
Collared Dove <i>Streptopelia decaocto</i> *	Chiffchaff <i>Phylloscopus collybita</i> **	Siskin <i>Spinus spinus</i>
Barn Owl <i>Tyto alba</i> **	Blackcap <i>Sylvia atricapilla</i> **	
Little Owl <i>Athene noctua</i> **	Garden Warbler <i>Sylvia borin</i> **	
Amber – moderate concern		
Mute Swan <i>Cygnus olor</i> F	Lesser Black-backed Gull	Treecreeper <i>Certhia familiaris</i> **
Mallard <i>Anas platyrhynchos</i> **	<i>Larus fuscus</i>	Dunnock <i>Prunella modularis</i> **
Shoveler <i>Anas clypeata</i>	Stock Dove <i>Columba oenas</i> **	Meadow Pipit <i>Anthus pratensis</i>
Kestrel <i>Falco tinunculus</i> *	Tawny Owl <i>Strix aluco</i> **	Bullfinch <i>Pyrrhula pyrrhula</i> **
Green Sandpiper <i>Tringa ochropus</i>	Swift <i>Apus apus</i>	Reed Bunting <i>Emberiza schoeniclus</i>
Black-headed Gull	Kingfisher <i>Alcedo atthis</i> **	
<i>Chroicocephalus ridibundus</i>	House Martin <i>Delichon urbicum</i> **	
Red – highest concern		
Grey Partridge <i>Perdix perdix</i>	Skylark <i>Alauda arvensis</i> *	Coal Tit <i>Parus ater</i>
Lapwing <i>Vanellus vanellus</i>	Starling <i>Sturnus vulgaris</i> *	Grey Wagtail <i>Motacilla cinerea</i> **
Herring Gull <i>Larus argentatus</i>	Fieldfare <i>Turdus pilaris</i>	House Sparrow
Turtle Dove <i>Streptopelia turtur</i> *	Song Thrush <i>Turdus philomelos</i> **	<i>Passer domesticus</i> **
Cuckoo <i>Cuculus canorus</i>	Redwing <i>Turdus iliacus</i>	Linnet <i>Carduelis canabina</i>
Lesser-spotted Woodpecker	Mistle Thrush <i>Turdus viscivorus</i> **	Lesser Redpoll <i>Acanthis cabaret</i>
<i>Dryobates minor</i> *	Spotted Flycatcher <i>Muscicapa striata</i> **	Yellowhammer <i>Emberiza citronella</i> **
Total species = 81		
Species recorded in 2016, but not recorded in 2017:	Snipe <i>Gallinago gallinago</i>	Mediterranean Gull
	Woodcock <i>Scolopax rusticola</i>	<i>Larus melanocephalus</i>
	Red-legged Partridge <i>Alectoris rufa</i>	Lesser Whitethroat <i>Sylvia curruca</i>

Little Mill, Target and Foundation Farms

Although two WBCs planted at Little Mill in the Autumn of 2016 were left in situ in Spring 2017 and the normal conservation measures of hedge maintenance and field margins were continued, the farms were not used for ringing or specific surveys, apart from the erection and monitoring of two barn owl nestboxes (see above). Nevertheless, casual observations confirmed the continued presence of a lesser-spotted woodpecker, probably nesting in the extensive garden at Little Pattenden, breeding little owls, wintering redwings and fieldfares, and a 300 strong flock of starlings. The pond at Target Farm has attracted a cormorant, and at least one pair of spotted flycatchers continue to nest in adjacent outbuildings. Red kites have been regular, if not frequent, flyover visitors; they land occasionally and it is hoped they will respond to the provision of rabbit and woodpigeon carcasses from an on-site hedgerow game business.

Artificial house martin nests on the Little Mill oast were occupied by an estimated ten pairs, in spite of competition from house sparrows. Several pairs constructed their own nests alongside the artificial ones.

5Ha of sunflowers were planted as a WBC at Foundation Farm and by the end of the year were attracting significant numbers of finches: several flocks amounting to an estimated 500 - 1000 birds were observed in December. These were principally chaffinches with an estimated 100 bramblings and a smaller number of greenfinches. Although sunflowers are better suited to larger finches, linnets and yellowhammers were also present, along with blue and great tits, house sparrows and collared doves and woodpigeons.

A 40-strong lapwing flock was present in January, moving between Foundation and Mill Farms.

Mill Farm

Along with other species, hundred-strong flocks of chaffinches and linnets were recorded using the sunflower WBC in the early part of the year. The presence of water, however, greatly increases the species richness to be found here. Eleven species of dragon and damsel flies have been identified this year, as well as a possible (but, in early October, late) sighting of an emperor dragonfly.



Kent Field Club⁷ members also identified a number of new species of plants and invertebrates. These included *Bombus humilis* or *B. muscorum* : both are very similar species of carder bee. It is not possible to differentiate between them without trapping, but although they are widespread they are scarce in the UK. Both are Red Data Book species.

Turtle Doves

As it already has breeding turtle doves, Mill Farm was again one of a number of farms in mid- and west Kent to host a supplementary feeding scheme to stem the decline of this red-listed species⁸. The UK has lost ninety percent of its turtle doves in the last twenty years. It is thought that lack of agricultural weeds on intensively farmed land is a major factor in their decline as they are taking too long to get into breeding condition when they first return from their sub-Saharan African wintering grounds. The purpose of the trial, therefore, is to assess the extent to which the provision of additional seeds influences their breeding success. Although research is ongoing, preliminary results suggests there is a positive impact, but the extent to which disease is encouraged by feeding in this way, and therefore bringing a negative influence to bear, is still being investigated. From the results of surveys carried out by volunteers in the locality, Marden and the surrounding area has been declared one of twelve turtle dove friendly zones (TDFZ) in Kent.



⁷ <https://www.kentfieldclub.org.uk/>

⁸ <http://www.operationturtledove.org/>

Poultry Farm

Hedgerows, field margins and rough grassland are well-established to support wildlife, with overwinter stubbles left where possible. As a result, farmland birds including yellowhammer, linnet, reed bunting and barn owl are doing particularly well there (see ringing totals below). The WBC grew particularly well and as soon as Autumn temperatures started to drop it attracted flocks of birds, many hundreds strong. Chaffinches, linnets, greenfinches, reed buntings and yellowhammers could be seen in profusion. Along with the good numbers of bramblings in the flocks, many of these birds will be winter migrants from northern Europe. The stubbles and rough grassland also attract skylarks, meadow pipits and stonechats.

Good evidence (nests) has been found that the field margins are used by harvest mice – no doubt along with other mice, voles and shrews that attract the barn owls and kestrels regularly seen hunting there. Another notable visitor to a field where stubble had been allowed to regenerate through the summer was a fallow deer.

Bird Ringing

Bird ringing⁹ has been carried out by ringers licensed by the BTO. Birds are trapped in mist nets and fitted with small, uniquely numbered leg rings. Biometric details (wing length and mass, feather moult etc.) are recorded along with the age and sex of the bird before releasing it. The data are used by the BTO to track birds' movements, migration routes and survival rates. Nestboxes on the farm are also monitored to provide further information on reproductive success. All the data are fed into a national database to indicate demographic trends which help explain changes in population levels. Conservation decisions can then be based on sound scientific information. The data also provide evidence for the effectiveness of conservation measures being taken on the farm, ie. the provision of suitable habitat and food resources (plants and insects) to support birds' breeding and survival.

In 2017 the principle focus for ringing was at Poultry Farm. A total of 933 birds were handled, (852 of these were new birds and had rings fitted. 80 had been ringed previously on the farm, and one ringed elsewhere). This provided evidence that certain species (eg. barn owl and yellowhammer) were actually breeding on the farm and that many others (eg. brambling and linnet) were using the farms' resources for winter survival.

BIRDS RINGED IN 2017 (additional re-trap numbers in brackets)							
Barn Owl	3	Fieldfare	1	Lesser Repoll	4	Song Thrush	13 (2)
Blackbird	18	Goldcrest	4	Linnet	163 (2)	Starling	3
Blackcap	1	Goldfinch	4	Long-tailed Tit	5	Stonechat	1
Blue Tit	144 (38)	Greenfinch	19	Meadow Pipit	2	Stock Dove	14 (3)
Brambling	1	Great Tit	56 (10)	Nuthatch	4	Treecreeper	1
Bullfinch	1	Green Woodpecker	2	Redwing	4	Whitethroat	1 (1)
Chaffinch	83	House Sparrow	4	Reed Bunting	38 (1)	Woodpigeon	1
Chiffchaff	11	Kestrel	1	Robin	16 (11)	Wren	8 (1)
Dunnock	29 (5)	Kingfisher	1	Rook	1	Yellowhammer	190 (6)

Of farmland species, notable absentees are tree sparrow *Passer montanus* and corn bunting *Miliaria calandra*. Attempts to attract tree sparrows over the 2016/17 winter were unsuccessful. However, both species are also missing from much of Kent and the UK, but it is hoped that conservation measures on the farm will continue to improve the habitat to encourage their return. What is notable, though, is the prevalence of yellowhammers, linnets and reed buntings (forty-six of the latter have already been ringed in the first two weeks of 2018).

Although by no means scientifically sound, it is interesting to compare totals for three species with those for the whole of Kent in 2015¹⁰ (the most recent yearly figures available). Whereas blue tits are possibly the most-ringed birds in the UK, and reflected in Kent's totals too, the fact that Marden's numbers of two red-listed species of conservation concern exceed those of the ubiquitous tit indicates that these birds are particularly well catered for on the farms.

	Kent 2015	Marden 2017
Blue Tit	3524	144
Linnet	71	163
Yellowhammer	47	190

Two of the re-trapped birds are of note. A reed bunting trapped in December had been originally ringed just sixteen days earlier thirty-seven kilometres away in West Sussex. It indicates that many species move significant distances across the landscape and therefore depend on food being widely available in the

⁹ <https://www.bto.org/volunteer-surveys/ringing>

¹⁰ Privett, K. et al., (2017), Kent Bird Report 2015, The Kent Ornithology Society.

countryside, not just on nature reserves. The second is a Common Whitethroat. Re-trapped at Mill Farm in May. It had originally been ringed, as a second-year bird, in June the previous year on the same site. In between it had migrated to the Sahel region of central Africa for winter, and returned to Mill Farm again to breed for a second time.

Of interest too is the movement of a two year-old blue tit. This bird was first ringed, newly fledged, at Mill Farm in 2015, then trapped again twice at the same place in 2016. In May 2017 it was trapped for a fourth time – but in the author's garden five miles away in East Farleigh!



Other Taxa

Flora

As mentioned above, members of Kent Field Club spent a day with botanist Sue Buckingham at Mill Farm in August to add to her survey list from 2016. Their efforts were rewarded with additional species and the total identified now stands at 203. Fortunately the scarce small teasel *Dipsacus pilosus* is still present in good numbers.

The updated list can be seen in Appendix 1.

Invertebrates



In spite of the weather being breezy and overcast (not the best for identifying insects) some interesting species were identified by the Kent Field Club members. As well as the Carder Bees mentioned above, which have benefitted from the rough grass meadowland still extant at Mill Farm, nineteen other invertebrate species were found, and are listed in Appendix 2. Species recorded this year are:

Meadow Grasshopper *Chorthippus parallelus*
 European Garden spider *Aranarius diadematus*
 Fresh water Hog-louse *Asellus aquaticus*
 Hover-fly *Volucella inanis*
 Spangle Gall *Neuroterus quercusbaccarum*
 Knopper Gall *Andiscus quercuscalicis*
 Silk Button Gall *Neuroterus numismalis*

Bedeguar (Robin's pincushion) *Diplolepis rosae*
 Common Carder Bee *Bombus pascuorum*
 Buff-tailed Bumblebee *Bombus terrestris*,
 Red-tailed Bumblebee *Bombus lapidarius*,
Bombus humilis or *B. muscorum*
 European Hornet *Vespa crabro*

Odonata

This year we have benefitted from having a knowledgeable dragonfly enthusiastic carrying out monthly surveys during the summer. Species recorded this year are:

Banded Demoiselle <i>Calopteryx splendens</i>	Migrant Hawker <i>Aeshna mixta</i>
Beautiful Demoiselle <i>Calopteryx virgo</i>	Brown Hawker <i>Aeshna grandis</i>
Large Red Damselfly <i>Pyrrosoma nymphula</i>	Southern Hawker <i>Aeshna cyanea</i>
Azure Damselfly <i>Coenagrion puella</i>	Common Darter <i>Sympetrum striolatum</i>
White-legged Damselfly <i>Platycnemis pennipes</i>	Black-tailed Skimmer <i>Orthetrum cancellatum</i>
Golden-ringed Dragonfly <i>Cordulegaster boltonii</i>	Emperor Dragonfly <i>Anax imperator</i>

With more ponds to explore on other farms, and the new wetland development, the list will hopefully grow in coming years.

Butterflies and Moths

As before, in the absence of a knowledgeable surveyor, casual sightings make up the list of observations. Species recorded at Mill and Poultry Farms are:

Brimstone <i>Gonepteryx rhamni</i>	Meadow Brown <i>Maniola jurtina</i>
Comma <i>Polygonia c-album</i>	Gatekeeper <i>Pyronia tithonus</i>
Large White <i>Pieris brassicae</i>	Common Blue <i>Polyommatus icarus</i>
Orange Tip <i>Anthocharis cardamines</i>	Small Skipper <i>Thymelicus sylvestris</i>
Peacock <i>Aglais io</i>	Speckled Wood <i>Pararge aegeria</i>
Red Admiral <i>Vanessa atalanta</i>	Cinnabar <i>Tyria jacobaeae</i>
Small White <i>Pieris rapae</i>	Six-spot Burnet <i>Zygaena filipendulae</i>

Mammals

A brief visit by a mammalogist confirmed evidence of harvest mice *Micromys minutus* in the form of used nests at Poultry Farm. Apart from the fallow deer *Dama dama* also seen there, no further mammal species have been added to the existing list. Hopefully a thorough analysis of barn owl pellets by pupils at Staplehurst School will shed more light on resident small rodents and insectivores. Although two American mink were seen at Mill Farm early in the year, one was shot and none have been seen since. However, it is unlikely they have been eradicated, so the presence of water vole *Arvicola amphibious* remains a hope rather than expectation. Hazel (common) dormouse *Muscardinus avellanarius* has been recorded in the area in the past and could well be present on all the farms. Hopefully an appropriately licensed person will be available in the coming year to carry out a survey for them and other small mammal species.

Species recorded this year are:

Grey Squirrel <i>Sciurus carolinensis</i>	American mink <i>Neovison vison</i>
Rabbit <i>Oryctolagus cuniculus</i>	Shrew <i>Sorex spp?</i>
Fox <i>Vulpes vulpes</i>	Mole <i>Talpa europaea</i>
Badger <i>Meles meles</i>	Harvest Mouse <i>Micromys minutus</i>
Stoat <i>Mustela ermine</i>	Bank Vole <i>Myodes glareolus</i>
Weasel <i>Mustela nivalis</i>	Fallow Deer <i>Dama dama</i>

There have been no reports of bats this year. However, it is assumed that those reported in the survey of Mill Farm carried out in 2016 by members of Kent Bat Group¹¹ are still present. Although fewer species than might have been expected were found on the night the survey was conducted, four were detected using the site: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Daubenton's *Myotis daubentonii* and brown long-eared *Plecotus auritus*. Their report is attached in Appendix 3.

Reptiles and Amphibians

The only species recorded this year are: Frog *Rana temporaria* and marsh frog *Pelophylax ridibundus*. Evidence of toad *Bufo bufo* breeding was gathered during the plant survey in 2016, but since then no other records have been collected.

As with other taxa, a proper survey of all the sites is required as there are almost certainly other species present.

Fungi

No records have been made, and a survey is required.

Ray Morris
January 2018

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¹¹ <http://www.kentbatgroup.org.uk/>

APPENDIX 1

Vascular plant list for Mill Farm, 08 Aug 2016 (Sue Buckingham) and 19 August 2017 (Kent Field Club)

Taxon	Vernacular	Date	Comment
<i>Acer campestre</i>	Field Maple	08 Aug 2016	
<i>Achillea millefolium</i>	Yarrow	08 Aug 2016	
<i>Agrimonia eupatoria</i>	Agrimony	08 Aug 2016	
<i>Agrostis capillaris</i>	Common Bent	08 Aug 2016	
<i>Agrostis gigantea</i>	Black Bent	19 Aug 2017	
<i>Agrostis stolonifera</i>	Creeping Bent	08 Aug 2016	
<i>Alisma plantago-aquatica</i>	Water-plantain	08 Aug 2016	
<i>Alliaria petiolata</i>	Garlic Mustard	19 Aug 2017	
<i>Alnus glutinosa</i>	Alder	08 Aug 2016	
<i>Alopecurus myosuroides</i>	Black-grass	08 Aug 2016	
<i>Alopecurus pratensis</i>	Meadow Foxtail	08 Aug 2016	
<i>Anagallis arvensis</i> subsp. <i>Arvensis</i>	Scarlet Pimpernel	19 Aug 2017	
<i>Angelica sylvestris</i>	Wild Angelica	08 Aug 2016	
<i>Anisantha sterilis</i>	Barren Brome	08 Aug 2016	
<i>Anthriscus sylvestris</i>	Cow Parsley	08 Aug 2016	
<i>Arctium lappa</i>	Greater Burdock	08 Aug 2016	
<i>Arrhenatherum elatius</i>	False Oat-Grass	08 Aug 2016	
<i>Artemisia vulgaris</i>	Mugwort	19 Aug 2017	
<i>Arum maculatum</i>	Lords-and-Ladies	08 Aug 2016	
<i>Asparagus officinalis</i>	Garden Asparagus	08 Aug 2016	
<i>Asplenium scolopendrium</i>	Hart's-tongue	08 Aug 2016	
<i>Atriplex patula</i>	Common Orache	08 Aug 2016	
<i>Atriplex prostrata</i>	Spear-leaved Orache	08 Aug 2016	
<i>Avena fatua</i>	Wild-oat	08 Aug 2016	
<i>Ballota nigra</i>	Black Horehound	08 Aug 2016	
<i>Borago officinalis</i>	Borage	08 Aug 2016	Probably with birdseed mix
<i>Brachypodium sylvaticum</i>	False-brome	08 Aug 2016	
<i>Brassica nigra</i>	Black Mustard	08 Aug 2016	
<i>Bromus commutatus</i>	Meadow Brome	19 Aug 2017	
<i>Calystegia sepium</i>	Hedge Bindweed	08 Aug 2016	
<i>Capsella bursa-pastoris</i>	Shepherd's-purse	08 Aug 2016	
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	19 Aug 2017	
<i>Cardamine flexuosa</i>	Wavy Bitter-cress	19 Aug 2017	
<i>Carex pendula</i>	Pendulous Sedge	08 Aug 2016	
<i>Carex remota</i>	Remote Sedge	08 Aug 2016	
<i>Centaurea nigra</i> agg.		19 Aug 2017	
<i>Centaureum erythraea</i>	Common Centaury	08 Aug 2016	
<i>Cerastium fontanum</i>	Common Mouse-ear	08 Aug 2016	
<i>Chenopodium album</i>	Fat-hen	08 Aug 2016	
<i>Chenopodium polyspermum</i>	Many-seeded Goosefoot	08 Aug 2016	
<i>Cichorium intybus</i>	Chicory	19 Aug 2017	
<i>Cirsium arvense</i>	Creeping Thistle	19 Aug 2017	
<i>Cirsium vulgare</i>	Spear Thistle	08 Aug 2016	
<i>Clematis vitalba</i>	Traveller's-joy	19 Aug 2017	
<i>Conium maculatum</i>	Hemlock	08 Aug 2016	
<i>Convolvulus arvensis</i>	Field Bindweed	08 Aug 2016	
<i>Cornus sanguinea</i>	Dogwood	08 Aug 2016	
<i>Corylus avellana</i>	Hazel	08 Aug 2016	
<i>Crassula helmsii</i>	New Zealand Pigmyweed	08 Aug 2016	Abundant along the entire length of a recently dug channel at approx. TQ95 4585. An extremely invasive non-native species.
<i>Crataegus monogyna</i>	Hawthorn	08 Aug 2016	
<i>Crepis capillaris</i>	Smooth Hawk's-beard	08 Aug 2016	
<i>Cuscuta campestris</i>	Yellow Dodder	19 Aug 2017	In abundance on Guisottia (Niger)

			plants which had been sown to provide winter seed for birds, Mill Farm. TR7325 4546
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	08 Aug 2016	
<i>Dipsacus pilosus</i>	Small Teasel	08 Aug 2016	A massive population of plants on the bank of a drain of the Lesser Teise at TQ7341 4567 also more plants as result of clearance of stream-side vegetation under a power line at TQ7381 4595 and a third patch by Teise bridge and road at TQ737 456 all on Mill Farm. (Currently recorded from only a dozen or so sites in Kent, so this surely one of the largest).
<i>Dryopteris dilatata</i>	Broad Buckler-fern	08 Aug 2016	
<i>Dryopteris filix-mas</i>	Male-fern	08 Aug 2016	
<i>Elytrigia repens</i>	Common Couch	08 Aug 2016	
<i>Epilobium ciliatum</i>	American Willowherb	08 Aug 2016	
<i>Epilobium hirsutum</i>	Great Willowherb	08 Aug 2016	
<i>Epilobium tetragonum</i>	Square-stalked Willowherb	08 Aug 2016	
<i>Equisetum arvense</i>	Field Horsetail	08 Aug 2016	
<i>Euonymus europaeus</i>	Spindle	08 Aug 2016	
<i>Eupatorium cannabinum</i>	Hemp-agrimony	08 Aug 2016	
<i>Euphorbia helioscopia</i>	Sun Spurge	08 Aug 2016	
<i>Fallopia convolvulus</i>	Black-bindweed	08 Aug 2016	
<i>Filipendula ulmaria</i>	Meadowsweet	08 Aug 2016	
<i>Fraxinus excelsior</i>	Ash	08 Aug 2016	
<i>Fumaria officinalis</i>	Common Fumitory	08 Aug 2016	
<i>Galeopsis bifida</i>	Bifid Hemp-nettle	08 Aug 2016	
<i>Galium album</i>	Hedge Bedstraw	08 Aug 2016	
<i>Galium aparine</i>	Cleavers	08 Aug 2016	
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	08 Aug 2016	
<i>Geum urbanum</i>	Wood Avens	08 Aug 2016	
<i>Glechoma hederacea</i>	Ground-ivy	08 Aug 2016	
<i>Gunnera tinctoria</i>	(Giant-rhubarb)	08 Aug 2016	Planted along streamsides in at least 2 places
<i>Hedera helix</i>	Common Ivy	08 Aug 2016	
<i>Helminthotheca echioides</i>	Bristly Oxtongue	19 Aug 2017	
<i>Hesperis matronalis</i>	Dame's-violet	19 Aug 2017	
<i>Holcus lanatus</i>	Yorkshire-fog	08 Aug 2016	
<i>Hordeum secalinum</i>	Meadow Barley	19 Aug 2017	
<i>Humulus lupulus</i>	Hop	08 Aug 2016	
<i>Humulus lupulus</i>	Hop	19 Aug 2017	
<i>Hyacinthoides non-scripta</i>	Bluebell	08 Aug 2016	
<i>Hypericum perforatum</i>	Perforate St John's-wort	19 Aug 2017	
<i>Hypericum perforatum</i>	Perforate St John's-wort	19 Aug 2017	
<i>Hypericum tetrapterum</i>	Square-stalked St John's-wort	19 Aug 2017	
<i>Hypochaeris radicata</i>	Cat's-ear	19 Aug 2017	
<i>Iris pseudacorus</i>	Yellow Iris	08 Aug 2016	
<i>Juncus conglomeratus</i>	Compact Rush	19 Aug 2017	
<i>Juncus effusus</i>	Soft-rush	08 Aug 2016	
<i>Juncus inflexus</i>	Hard Rush	08 Aug 2016	
<i>Kickxia elatine</i>	Sharp-leaved Fluellen	19 Aug 2017	
<i>Lactuca virosa</i>	Great Lettuce	08 Aug 2016	
<i>Lamium album</i>	White Dead-nettle	19 Aug 2017	
<i>Lamium purpureum</i>	Red Dead-nettle	08 Aug 2016	
<i>Lapsana communis</i>	Nipplewort	08 Aug 2016	
<i>Lathyrus pratensis</i>	Meadow Vetchling	08 Aug 2016	
<i>Lemna gibba</i>	Fat Duckweed	19 Aug 2017	
<i>Lemna minor</i>	Common Duckweed	08 Aug 2016	
<i>Lemna minuta</i>	Least Duckweed	19 Aug 2017	

<i>Lepidium coronopus</i>	Swine-cress	19 Aug 2017	
<i>Lepidium didymum</i>	Lesser Swine-cress	19 Aug 2017	
<i>Linaria vulgaris</i>	Common Toadflax	08 Aug 2016	
<i>Linum usitatissimum</i>	Flax	08 Aug 2016	crop relict
<i>Lolium multiflorum</i>	Italian Rye-grass	19 Aug 2017	
<i>Lolium perenne</i>	Perennial Rye-grass	19 Aug 2017	
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	08 Aug 2016	
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil	08 Aug 2016	
<i>Lycopus europaeus</i>	Gypsywort	08 Aug 2016	
<i>Lysimachia nemorum</i>	Yellow Pimpernel	08 Aug 2016	
<i>Lysimachia nummularia</i>	Creeping-Jenny	19 Aug 2017	
<i>Lysimachia vulgaris</i>	Yellow Loosestrife	08 Aug 2016	Recorded from only around a couple of dozen sites in Kent and rarely ever as abundant as here.
<i>Lythrum salicaria</i>	Purple-loosestrife	08 Aug 2016	
<i>Matricaria chamomilla</i>	Scented Mayweed	08 Aug 2016	
<i>Matricaria discoidea</i>	Pineappleweed	08 Aug 2016	
<i>Medicago lupulina</i>	Black Medick	08 Aug 2016	
<i>Mentha aquatic</i>	Water Mint	08 Aug 2016	
<i>Mercurialis perennis</i>	Dog's Mercury	08 Aug 2016	
<i>Myosotis arvensis</i>	Field Forget-me-not	08 Aug 2016	
<i>Nuphar lutea</i>	Yellow Water-lily	08 Aug 2016	
<i>Oenanthe crocata</i>	Hemlock Water-dropwort	08 Aug 2016	
<i>Panicum miliaceum</i>	Common Millet	08 Aug 2016	from a birdseed sowing
<i>Papaver rhoeas</i>	Common Poppy	08 Aug 2016	
<i>Persicaria hydropiper</i>	Water-pepper	08 Aug 2016	
<i>Persicaria maculosa</i>	Redshank	08 Aug 2016	
<i>Petasites fragrans</i>	Winter Heliotrope	08 Aug 2016	
<i>Phalaris paradoxa</i>	Awned Canary-grass	08 Aug 2016	from a birdseed sowing
<i>Phleum bertolonii</i>	Smaller Cat's-tail	19 Aug 2017	
<i>Phleum pratense</i>	Timothy	19 Aug 2017	
<i>Pimpinella major</i>	Greater Burnet-saxifrage	08 Aug 2016	
<i>Plantago major</i>	Greater Plantain	08 Aug 2016	
<i>Poa annua</i>	Annual Meadow-grass	08 Aug 2016	
<i>Poa trivialis</i>	Rough Meadow-grass	08 Aug 2016	
<i>Polygonum aviculare</i>	Knotgrass	08 Aug 2016	
<i>Populus x canadensis</i>	Hybrid Black-poplar	08 Aug 2016	
<i>Potentilla anserine</i>	Silverweed	08 Aug 2016	
<i>Potentilla reptans</i>	Creeping Cinquefoil	08 Aug 2016	
<i>Prunella vulgaris</i>	Selfheal	08 Aug 2016	
<i>Prunus domestica</i>	Wild Plum	08 Aug 2016	
<i>Prunus spinosa</i>	Blackthorn	08 Aug 2016	
<i>Pulicaria dysenterica</i>	Common Fleabane	08 Aug 2016	
<i>Quercus robur</i>	Pedunculate Oak	08 Aug 2016	
<i>Ranunculus acris</i>	Meadow Buttercup	08 Aug 2016	
<i>Ranunculus repens</i>	Creeping Buttercup	08 Aug 2016	
<i>Ranunculus sceleratus</i>	Celery-leaved Buttercup	08 Aug 2016	
<i>Rosa arvensis</i>	Field-rose	08 Aug 2016	
<i>Rosa canina</i> agg.	Dog-rose	19 Aug 2017	
<i>Rosa x dumalis</i>	<i>Rosa caesia</i> x <i>canina</i>	08 Aug 2016	
<i>Rumex crispus</i>	Curled Dock	08 Aug 2016	
<i>Rumex obtusifolius</i>	Broad-leaved Dock	08 Aug 2016	
<i>Rumex sanguineus</i>	Wood Dock	08 Aug 2016	
<i>Sagina procumbens</i>	Procumbent Pearlwort	08 Aug 2016	
<i>Salix caprea</i>	Goat Willow	08 Aug 2016	
<i>Salix cinerea</i>	Grey Willow	08 Aug 2016	
<i>Salix x fragilis</i> sens. lat.	(Hybrid Crack-willow)	08 Aug 2016	
<i>Sambucus nigra</i>	Elder	08 Aug 2016	
<i>Schedonorus arundinaceus</i>	Tall Fescue	19 Aug 2017	
<i>Schedonorus giganteus</i>	Giant Fescue	08 Aug 2016	
<i>Scorzoneroideis autumnalis</i>	Autumn Hawkbit	08 Aug 2016	

Scrophularia auriculata	Water Figwort	08 Aug 2016	
Scutellaria galericulata	Skullcap	08 Aug 2016	by a farm pond at TQ7389 4588
Senecio erucifolius	Hoary Ragwort	08 Aug 2016	
Senecio jacobaea	Common Ragwort	08 Aug 2016	
Senecio vulgaris	Groundsel	08 Aug 2016	
Silene dioica	Red Campion	08 Aug 2016	
Sinapis arvensis	Charlock	08 Aug 2016	
Sison amomum	Stone Parsley	08 Aug 2016	
Sison amomum	Stone Parsley	19 Aug 2017	
Sisymbrium officinale	Hedge Mustard	08 Aug 2016	
Solanum dulcamara	Bittersweet	19 Aug 2017	
Solanum nigrum	Black Nightshade	08 Aug 2016	
Sonchus arvensis	Perennial Sow-thistle	08 Aug 2016	
Sonchus asper	Prickly Sow-thistle	08 Aug 2016	
Sonchus oleraceus	Smooth Sow-thistle	08 Aug 2016	
Sparganium erectum	Branched Bur-reed	08 Aug 2016	
Stachys palustris	Marsh Woundwort	19 Aug 2017	
Stachys sylvatica	Hedge Woundwort	08 Aug 2016	
Stellaria graminea	Lesser Stitchwort	08 Aug 2016	
Stellaria holostea	Greater Stitchwort	19 Aug 2017	
Stellaria media	Common Chickweed	08 Aug 2016	
Symphytum x uplandicum	Russian Comfrey (S. asperum x officinale)	19 Aug 2017	
Tanacetum parthenium	Feverfew	08 Aug 2016	
Tanacetum vulgare	Tansy	08 Aug 2016	
Taraxacum agg.	Dandelion	08 Aug 2016	
Thlaspi arvense	Field Penny-cress	08 Aug 2016	
Torilis japonica	Upright Hedge-parsley	08 Aug 2016	
Trifolium dubium	Lesser Trefoil	19 Aug 2017	
Trifolium incarnatum subsp. Incarnatum	Crimson Clover	19 Aug 2017	a few plants among a bird seed sowing on Mill Farm
Trifolium repens	White Clover	08 Aug 2016	
Tripleurospermum inodorum	Scentless Mayweed	08 Aug 2016	
Typha latifolia	Bulrush	19 Aug 2017	
Urtica dioica	Common Nettle	08 Aug 2016	
Veronica arvensis	Wall Speedwell	08 Aug 2016	
Veronica chamaedrys	Germander Speedwell	19 Aug 2017	
Veronica persica	Common Field-speedwell	08 Aug 2016	
Veronica polita	Grey Field-speedwell	08 Aug 2016	
Veronica serpyllifolia	Thyme-leaved Speedwell	19 Aug 2017	
Viburnum lantana	Wayfaring-tree	19 Aug 2017	
Viburnum opulus	Guelder-rose	08 Aug 2016	planted
Vicia cracca	Tufted Vetch	08 Aug 2016	
Vicia hirsuta	Hairy Tare	08 Aug 2016	
Vicia sativa subsp. segetalis	Common Vetch	08 Aug 2016	
Vicia tetrasperma	Smooth Tare	08 Aug 2016	

Appendix 2

Non botanical recordings made by KFC (Kent Field Club) at MILL FARM, 19 08. 2017

GRASSHOPPERS

Chorthippus parallelus Meadow Grasshopper

DRAGONFLIES

Aeshna cyanea, Southern Hawker

Aeshna grandis, Brown Hawker

Sympetrum striolatum, Common Darter

BUTTERFLIES

Polyommatus icarus, Common Blue

Maniola jurtina, Meadow Brown

Pararge aegeria, Speckled Wood

Polygonia c-album, Comma

Pieris brassicae, Large white

BEES

Bombus terrestris, Buff-tailed Bumblebee

Bombus pascuorum, Common Carder bee

Bombus lapidarius, Red-tailed Bumblebee

Bombus humilis or *B. muscorum* (Two very similar species, not possible to differentiate without trapping, but both **Red Data** Book species).

OTHERS

Andiscus quercuscalicis, Knopper gall on *Quercus robur* (Oak)

Aranarius diadematus, European Garden spider

Asellus aquaticus, Fresh water Hog-louse

Diplolepis rosae, Bedeguar (Robin's pincushion) gall on Dog Rose

Neuroterus numismalis, Silk Button gall on Oak

Neuroterus quercusbaccarum, Spangle gall on oak

Volucella inanis, a hover-fly

MAMMALS

Oryctolagus cuniculus, Rabbit

Appendix 3

BAT SURVEY REPORT

Site: Mill Farm, Hunton Road, Marden, Kent TN12 9QX

Surveyors: Peter Scrimshaw and Steve Songhurst using Elekon Batlogger M bat detectors, plus Katy Tennant and Val Sutton (volunteers)

Background

Peter Hall is managing his recently acquired Mill Farm with wildlife in mind. Kent Bat Group was approached by Ray Morris, who has done a comprehensive bird survey and is working with the RSPB on a Turtle Dove breeding program on the site, with a view to finding out what bats were present, how they used the farm and what might be done to improve the habitat for them. Peter S and Val did a daylight walkover with Peter H and Ray on 22nd June, maps of the site were produced and an evening survey organised for 5th August.

Survey

The survey commenced at sunset, 20.39, and the first bat, a common pipistrelle (*Pipistrellus pipistrellus*), was heard hunting at 21.02 at point M and another at 21.08 at D. The first soprano pipistrelles (*Pipistrellus pygmaeus*) appeared at M at 21.16 and at H at 21.17. These are believed to be separate individuals. Both species of pipistrelle, in ones and twos, continued to feed at these spots during the rest of the survey. The 'hotspots', where the bats were finding most food, were at D west of the sluice gate, between D and F in the woodland, at H on the north side of the footbridge, north east of J and in the overgrown area between K and M. Later in the evening both pipistrelles were also found hunting round the farmyard.

At 21.35 and 22.06 a myotis bat, probably Daubenton's (*Myotis daubentonii*), was recorded hunting in the woodland near point F. Daubenton's bats are most frequently found feeding on aquatic insects over larger bodies of water and it was disappointing not to find any upstream of the main sluice. No bats were recorded leaving any of the buildings, however we did not conduct a specific dusk roost emergence survey, which would have required several more volunteers. We do know, from previously found droppings, that Brown Long-eared/s (*Plecotus auritus*) have used the oast. No Noctules (*Nyctalus noctula*) or Serotines (*Eptesicus serotinus*) were encountered.

Conclusions

Mill Farm currently supports small numbers of four species of bat, but there is no evidence of a maternity roost anywhere. The majority of bats were flying north to south, reasonably soon after sunset, so roosts are presumed to be nearby, north of the site.

Recommendations

It is uncertain why the number of bats visiting Mill Farm is lower than expected. It could be that surrounding fields are mostly monocultures, which do not attract the insect loads bats need, and they are finding them elsewhere. However we know that Peter H is addressing this issue and also developing a wetland area to the north, which should benefit bats as well as birds. There are generally few suitable sites for roosts on the farm. As the trees are relatively young they do not provide many holes and splits. Roosting sites could be provided by erecting bat boxes on or in the buildings, though immediate results should not be expected.

Note: This report is not adequate for attaching to a planning application, so if in the future it was proposed to convert any of the buildings to other uses, a professional survey with many more participants, would be required.

Other Highlights

A Kingfisher seen from the bridge at H at 20.49 and young tawny owls serenading us as we finished surveying at 22.15.

Val Sutton

12th August 2016