

A Bat and Badger Assessment of Auburn House and Little Auburn and Associated Lands to Determine the Potential Impacts of The Proposed Development



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Introduction

Most of Ireland's mammals enjoy protection under the Wildlife Act (1976) and the more recent updating of this legislation (Wildlife (Amendment) Act 2000, S.I. No. 94 of 1997, S.I. No. 378 of 2005, S.I. No.477 of 2011 as amended, European Communities (Natural Habitats) (Amendment) Regulations, 2005). In conjunction with the enactment of the Habitats Directive into Irish legislation, all native mustelid species and bat species are protected with further protection given to otters and lesser horseshoe bats.

This assessment is aimed at identifying the presence of badgers and their setts and bats and their roosts within lands proposed for the construction of housing in the grounds of Auburn House and Little Auburn, Malahide, Fingal, County Dublin.

The survey undertaken within the site allows a targeting of mitigation measures to the appropriate or most efficient sites to prevent accidental death or injury and to determine if it would be possible to provide safe passage across long-established routes through any new development.

Fieldwork for the current report on mammal distribution (including bats) within the grounds of Auburn House and Little Auburn in the Malahide was carried out over three visits in 2021, four visits in 2019 and one visit in 2022.

This report addresses the main issues affecting the protected mammal fauna considered in this assessment and created by the necessary activities associated with house construction and the preparation of a site and subsequent human occupancy and actions.

The development for which permission is sought is described below:

Planning permission is sought by Kinwest LTD. for a proposed Strategic Housing Development on lands at Auburn House (Protected Structure), Little Auburn and Streamstown off Malahide Road and Carey's Lane, Malahide, Co. Dublin. The proposed development will consist of the preservation and protection of the existing Protected Structure of Auburn House. The proposed development subject to this SHD application provides for the preservation and protection of the existing Protected Structure of Auburn House and its stables as 1 no. residential dwelling; the conversion of the existing stables of Auburn House to provide for storage space for the main Auburn House and the construction of 368 no. new residential dwelling units (comprising 87 no. houses, 238 no. apartments & 43 no. duplex units) for an overall total of 369 no. residential units. The development shall consist of 127 no. 1-bedroom apartments and duplex apartments, 145 no. 2-bedroom apartments and duplex apartments, 9 no. 3 bedroom apartments and duplex apartments, 45 no. 3-bedroom houses, 36 no. 4-bedroom houses, 6 no. 5-bedroom houses and the existing 11-bedroom Auburn House. The proposed development shall also provide 1 no. childcare facility, landscaped public open space, car parking and all associated ancillary site development infrastructure including foul and surface water drainage, internal roads, cycle paths and footpaths, and boundary walls and fences.

Vehicular access to the proposed development is to be via a new entrance at the R107 Malahide Road/Dublin Road entrance, with the existing entrance to Auburn House acting as a pedestrian/cyclist entrance and access to existing properties outside the application site, there will be a secondary entrance comprising modifications of the existing vehicular entrance off Carey's Lane to the south west of the development, the closure of the existing vehicular entrance to Little Auburn, the provision of ESB substations, 1 no. new foul pumping station, public lighting; proposed foul sewer works along Back Road and Kinsealy Lane and all associated engineering and site works necessary to facilitate the development. The building heights range from 2 storey to 5 storey buildings with balconies or terraces being provided to the apartments and duplex units.

Bats

Determining the bat fauna within a site requires an examination of the entire site concerned through night-time and daytime assessments, paying attention to all buildings and trees affected by the proposed development and all hedgerow, woodland, watercourses, fence lines, paths etc. with the aid of an ultrasonic receiver ("bat detector"). Bats may be affected through roost loss, loss of feeding and interruption to their ability to exploit different roosts and different feeding areas. A survey of any site involves an evaluation of the existing roosts within the site, the feeding availability within the site and the means by which bats utilise the existing habitats to feed and commute between roosts and feeding areas. The methodology for this assessment is given below.

Badgers

In relation to badgers, the clearance of hedgerow poses the risk of the removal of the badgers' home burrow and the associated burrows (all of which are known as setts) that are used seasonally or occasionally throughout the year. In winter, this is especially risky if the sett is not identified before vegetation removal operations, as this is the time when badger cubs are born.

In the classification used in this report, setts are considered to fall into four categories, which are best elaborated by long-term studies but can be interpreted to a relatively good accuracy in terms of status based on basic observations.

The basic sett type within which badgers are typically present throughout the year is the main sett. This is almost always the sett within which cubs are born. Bedding outside the entrance to these setts often identifies their use as such and paw prints and dung pits or latrines nearby also assist in their categorisation. There are typically a number of entrances to a main sett, some of which may be disused. Paths leading from the main sett are often very easy to trace for some distance.

Annexe setts are similar in construction to main setts and are typically accessed by a number of entrances. They are often discernibly connected to a main sett by well-worn paths, which is within 150 metres of the annexe sett. Badgers do not necessarily use this type of sett throughout the year, and they may be inactive at the time of any short-term study.

Subsidiary setts are again not always active throughout the year. There may be a number of entrances to the sett and they are not clearly associated with any other sett.

The last type of sett, the outlier sett, may only have one entrance and has no path leading to it. This type of sett is only sporadically used and may even be in areas subject to flooding or seasonally unsuitable to badger use. These setts may be overlooked if they have remained inactive for several weeks and this may be true of such setts in early winter during which time this survey was carried out.

Setts may be under threat from construction if they lie directly in the footprint of a building, cabling, or a new road. Setts outside of this land take area may also be threatened with damage from the normal activities of the heavy plant equipment required to build the scheme. For example, if a badger sett entrance were located outside of the land take but led to a system of tunnels that lay under the working area of the heavy plant, there is a clear risk that the tunnels would be crushed under the repeated movement of equipment.

These tunnels may occasionally go two metres or deeper underground but are also liable to surface to shallower depth to avoid rocky substrate or water. Thus, badger setts may be affected by the immediate impact upon them from the excavation and removal of the soil within which they are established or by the indirect destruction of tunnels that lie under the construction corridor of the road or building.

The population of badgers in Ireland has been revised downwards in recent years as badger social groups are now considered to be smaller than in original assessments undertaken and this number has reduced as a consequence of the Department of Agriculture activities in culling. Roadkill is a significant contributor to badger losses, and this can be seen even on new roads where badger mitigation was included at the time of construction (see <https://maps.biodiversityireland.ie/Map/Terrestrial/Dataset/44>) . Areas where agriculture is of less intensity may provide safer conditions for badgers in terms of state control measures, but urban areas create a risk of interference that may be more persistent than in rural areas.

Nonetheless, badgers survive in many urban areas including public parks, gardens, along the rivers in built-up areas or in the grounds of schools, colleges, convents etc. Urban badgers would appear to accept a higher level of disturbance than rural badgers and may even be found under patios and sheds and with one case of occupancy of a disused house in Dublin.

Methodology

Bats

Bat surveying was carried out by means of a number of methods over a number of dates as described in Collins (2016) and Kelleher and Marnell (2006).

Surveying for bats was undertaken on the following dates at Auburn House and Auburn Little between 2019 and 2022:

29th = 30th May, 27th – 28th June, (nighttime surveys)

8th October and 11th November 2019 (daytime surveys)

10th – 11th and 25th – 26th August, 2021 (nighttime surveys)

13th October and 6th December, 2021 and 21st February 2022 (daytime surveys)

In 2021, the first survey of Auburn House (10th August) was undertaken by a single surveyor and concentrated on Auburn House and the stable yard in addition to trees surrounding Auburn House. At the same time, a second surveyor assessed Auburn Little and surrounding lands on the same night.

The attics of the houses were examined for evidence of roosting bats followed by an examination of the stables for evidence of bats. This led into a bat detector assessment of the house, stable yard, and surrounding trees for evidence of feeding, commuting and alternative roost types (such as mating perches). The night-time survey commenced prior to sunset and continued for approximately 1.5 hours. The pre-dawn assessment commenced 1 hour prior to sunrise and continued to sunrise. The second survey was undertaken by three surveyors and covered Auburn Little and the stable yard while mature trees close to Auburn House were also examined for evidence of bat emergence. Prior to sunrise, all three surveyors concentrated on Auburn House and surrounding buildings for returning bats for one hour finishing at sunrise.

All buildings were examined externally and internally, and all accessible attics were entered where it was safe to do so.

The bat detectors employed included a Songmeter Mini Bat ("Mini") installed within the stable yard on both survey dates, a handheld Echometer 3+, an Echometer Touch 2 Pro x 2.

2019 - 29th May (sunset 21.39 hours, sunrise 05.05 hours), 27th June (sunset 21.57 hours, sunrise 04.58 hours), 8th October and 11th November.

The first two dates covered the grounds of Little Auburn (29th May) and Auburn House (27th June). These were bat detector surveys which included dusk and dawn assessments of suitable potential roosts in addition to a walked transect to evaluate the bat abundance and diversity within the two sites. The buildings at Little Auburn were also checked in late June.

Trees were examined during the June assessment in conjunction with the bat detector survey. Equipment employed for the bat survey included a Premium fiberscope, a high-powered torch, an Echometer 3 (EM3) heterodyne and time expansion detector and a static Songmeter2Bat+ (SM2) monitor placed at Little Auburn in May and Auburn House in June. Signals from the SM2 monitor, the Mini, the Touch 2 Pro x 2 and the EM3 were analysed with Kaleidoscope Pro both using automatic identification and manual confirmation of signals of special interest and to ensure valid identification.

A visual examination of the buildings at Auburn House was initially undertaken on 8th October 2019 for evidence of roosting bats. This included all outbuildings and the upper levels and attics of the main house. An examination of trees within the grounds was also undertaken on 8th October and 11th November 2019.

An autumn bat survey was undertaken on 13th October 2021 during daylight to identify the presence of bat roosts within previously examined structures including several stone arches, the stable buildings, and accessible tree cavities.

Stone arches and easily accessible areas of the stable yard were examined in winter for the presence of bats on 6th December 2021.

Additional safety measures were required to assess areas such as the upstairs areas of the stables and the higher sections of stone walls to the rear of the stables and these were put in place for a later visit.

A final winter assessment of all buildings associated with Auburn House was undertaken on February 21st, 2022 and included an examination of the attics of the main house, the stable buildings and two stone arches within the orchard area. All attics, stonework, cut-stone walls, and timbers were checked with a torch and fibrescope and all bats and bat droppings were sought during this assessment.

Surveying was undertaken with reference to the following survey methodologies: Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins 2016, 3rd edition) and Kelleher, C. & Marnell, F. (2006) Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland. The bat survey is also consistent with the update of the NPWS document: Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland. Data from Bat Conservation Ireland and all previous records from the surveyor in the Dublin area for

Dublin Bat Group, for other developments and on behalf of Fingal County Council were considered for a complete picture of bat distribution over a longer timescale (1988 to 2022).

Constraints

The surveys were undertaken over several months and over a span of years (fieldwork in 2019, 2021 and 2022) at a period of the year that would provide information on different aspects of the annual bat ecology / life cycle. The surveys were adequate to identify bat roost locations and to record bat activity. The weather conditions during all surveys were dry and mild and bat activity was present during all survey periods (for night-time assessments). The span of the survey covers two separate years and three seasons (summer, autumn, and winter). The surveys also cover pre-birth of the annual young, post-birth and the mating season in addition to the hibernation period.

Badgers

Badger surveying was undertaken on the following dates in 2019, 2021 and 2022:

2019: 31st July to 8th August 8th October and 11th November.

2021: 13th October 6th to 13th December including 2 daytime assessments, 21st February 2022

Surveying involved a number of visits and different levels of assessment. The initial assessment involved a visual examination of a potential sett close to the main avenue of Auburn House accompanied by a motion-activated camera assessment of the sett. This was followed up by a more complete evaluation of the site in October where the grounds were more thoroughly checked for badger signs and setts. The final evaluation in 2019 was in November and was undertaken to confirm that features noted during other ecological surveys were or were not badger setts and signs.

A follow-up survey was undertaken on 13th October 2021 and involved an examination of the previously examined areas of interest in addition to a walked transect through the woods along all observed tracks and around the perimeter of the fields and along the stream. This was supplemented on 6th December by the installation of a motion activated camera between sett entrances within the woodland. Further examination of the setts was undertaken on 13th December 2021 and 21st February 2022 and all woodland tracks were examined for any badger commuting or foraging signs (e.g., dung pits, snuffle holes, paw prints, hairs). The stream and bridge were checked for any paw prints and for any evidence of otter activity along the stream.

Results

Bats

Bat activity at Auburn Malahide

Roosts within Auburn House and Little Auburn

There was one whiskered bat noted within the timbers of the stable building at roof level on 25th to 26th August 2021. A brown long-eared bat was noted returning to the stable buildings prior to sunrise on 11th and 26th August 2021. Common pipistrelle activity around the buildings suggest that this species is also roosting within the buildings, but none were seen to emerge or return during this assessment.

Two soprano pipistrelles were seen within the attic of Auburn House on August 10th, 2021, and a small number of soprano pipistrelles (no greater than three) were seen to return to the house on August 26th, 2021. There were therefore three species confirmed to roost in Auburn House or the stables and a potential for a fourth species (common pipistrelle).

There was a male Leisler's bat calling from a tree (beech tree 712) to the southeast of Auburn House on August 10th, 2021, in addition to calling in flight. This tree is close to the moat. A Leisler's bat was noted to call from trees to the rear of Auburn House along the western to northwestern edge on August 25th, 2021. The exact tree was difficult to pinpoint.

Examination of the outbuildings in the late autumn and winter months provided no obvious signs of resident bats. Hibernating individuals may enter deep into cavities and crevices in buildings and trees and are not easily discovered.

There are numerous roost options within the outbuildings including door frames, window frames, timber joists, wall crevices in addition to the identified roost sites within the attic of the house and in the stable roof where trusses and rafters meet and form tight spaces.

Species of bat noted in 2019 and 2021

Common pipistrelle

This species was present through the site and was noted on all survey occasions. There is the potential for use of the stables by an individual common pipistrelle or of very small numbers of bats based on activity prior to sunrise in 2021. In May 2019, a procession of bats was noted returning to a house neighbouring Little Auburn. This was most probably a maternity roost in 2019.

Soprano pipistrelle

This species was noted through the study but was overall less widespread than Common pipistrelle.

Soprano pipistrelle activity was noted close to Auburn House prior to sunrise on 28th June 2019 (04.58 hours). Soprano pipistrelles were seen in the attic in August 2021 and entering the activity prior to sunrise.

Leisler's bat

This species was noted throughout the site in all surveys. There was high activity southeast of Auburn House in May (concentrated feeding by a maximum of two individuals within one field) while Leisler's bats were noted to call from two areas of woodland in 2021. One bat called from a dead beech tree (712) on August 10th while another bat (or the same bat) was noted on August 25th to call from trees to the rear of Auburn House (northern edge). This species was noted over pasture as well as from trees within the site. Leisler's bats were noted to fly south or southeast approaching sunrise but did not appear to roost within the site.

Whiskered bat / *Myotis*

Myotis bat activity was noted on several occasions within the grounds of Auburn House in 2019. Much of this activity was noted south of Auburn House close to the moat and in the orchard. One bat was seen to feed repeatedly at a mature broadleaf tree (a plane tree).

This species was also noted feeding at other trees in the orchard. Sound analysis indicated the presence of Natterer's bat in 2019. On August 25th, 2021, a whiskered bat was visible within the stable buildings and a second whiskered bat was visible flying along the moat during the same night. This may indicate the presence of both of these species within the site or the sounds analysed in 2019 may have been whiskered bat.

Bat Conservation Ireland notes of whiskered bats: "typically forages along forest tracks or near water. It has a rapid fluttering flight and flies along a regular 'beat' over and over again. It is sometimes found roosting in attics of old buildings but there are very few confirmed roosts in Ireland. It is also sometimes found roosting in crevices under stone bridges and in trees".

Brown long-eared bat

Brown long-eared bats were noted during the two active surveys in August 2021, while a small number of signals were noted by the static monitors within the site in May 2019. During the visual inspection, evidence of brown long-eared bat feeding activity was noted in the attic / loft of the stable buildings in 2021 and 2019. As noted earlier, this species is roosting in very small numbers within the stables.

No bats were noted within the stable buildings in October 2021. Bat droppings were present under the same timbers as noted in August 2021. Most bat droppings were recent but not fresh.

No bats were noted within any areas of stonework examined in October 2021. No evidence of tree occupancy was visible in October 2021 (this was a ground level inspection and would not reveal bat presence if the numbers were very low).

Badgers

Badger setts within the grounds of Auburn House and Little Auburn

A number of minor badger setts were noted close to Auburn House including close to the main driveway and within the woodland behind the house. Two possible setts were present close to the house. A possible sett monitored with a motion activated camera for any evidence of badger entry or emergence for one week in summer 2019 was deemed to be unused at this time. The sett (or burrow, if not established by badgers) was not active in 2021 based on an examination of the entrances for fresh digging, paw prints etc. There was no evidence of usage in February 2022.

There were two very minor badger setts within the woodland showing limited historical usage based on how overgrown the setts were and how undeveloped the entrances were. A larger sett was noted within the wood close to the northwestern corner. This sett is very close to a meeting place for night-time human activity and is likely to have been rendered inactive by this disturbance. All setts showed higher levels of abandonment in 2021 than in 2019 and it is probable that no setts were used in the intervening two years.

No setts were active within the grounds of Auburn House or Little Auburn in 2019 or 2021 up to the end of February 2022. No badger latrines or dung pits were noted within the grounds. There were some possible foraging signs, but these were not indisputable and could also be made by foxes or other mammals or birds.

There are a number of trails in the land surrounding the stream south of Auburn House that may be evidence of badgers but again, there were no fresh indications of badgers in either 2019 or 2021 and it is therefore possible that these could be made by other mammals (foxes or dogs).

The badger sett in the northwestern corner of the woods was clearly inactive in 2021 and early 2022 with a deep layer of leaves blocking the entrance and almost obscuring the sett entirely (see sett 1 below).

Badgers are present within the grounds of Malahide Castle, and it is probable that there would be movement between these two areas. However, badgers are not in residence within the grounds of Auburn House.



Badger setts at Auburn House and Little Auburn

No sett was active based on a lack of evidence of badger activity in the period July to November 2019 and August, October and December 2021 and February 2022. During night-time survey work, no badgers were seen or heard in May or June 2019 or August 2021. The largest sett was in the northwestern area of the wood at Auburn House (1). The sett monitored by a camera is close to the House and main driveway (2). The setts at (3) are undeveloped and were probably inactive during this study in 2019. One entrance was clear in December 2021 and February 2022, but this is possibly attributable to a fox which was recorded on the camera. Tracks in the area east of the lane and north of the stream were possibly badger tracks but there was no recent evidence of feeding or commuting.

Potential impacts

Bats

- **Removal of trees may remove roosts and place roosting bats at risk**

Bats roost in trees, in addition to buildings, walls and other structures. Tree removal creates the potential for roost loss. This is more critical if bats are present at the time of felling. Felling may place a bat at risk if it has not sufficient opportunity to become active and vacate a tree. This is more likely to occur when temperatures are low (6°C, for example). Bats may be killed or injured by the felling process, by a chainsaw or by crushing when a limb or bark is moved as the tree moves prior to or during felling or when striking the ground.

A male Leisler's bat was calling from a mature beech (probably dead) tree close to the moat (number 712). There is high potential that a mating perch would be removed (in removing the tree for safety considerations). This roost would potentially be lost through vegetation changes and lighting alterations within the site. This is a long-term moderate negative impact.

Trees are of high importance to bats for several reasons. They serve as roost sites. They provide shelter from wind and rain. They provide a substrate for the insect prey. They also provide protection from predation by allowing bats to fly close to branches.

Category U trees (either dead, dying, or dangerous, or those with a useful remaining amenity contribution of <10 years) provide ideal conditions for roosting bats but may be deemed a safety risk where there is an increased level of human activity or access within a site. Such trees are very typically rich in insect numbers and species diversity and are beneficial as a food store for bats in addition to the roost opportunities and shelter provided.

Removal of the trees has the potential to have a long-term to permanent moderate negative impact upon the local bat fauna. This would include any major tree surgery to old or sick trees and especially for the removal of such trees completely from the site.

- **Alterations to stable buildings would remove roosting opportunities and place bats at risk**

There are at least two bat species roosting within the stables; whiskered bat and brown long-eared bat. There is a likelihood of pipistrelle use of the buildings also. Renovation and partitioning of these buildings would remove the existing roosts. If bats were present at the time of construction, this would pose a risk to their safety. This is a long-term moderate negative impact to bats as there would be a loss of a roost site to an uncommon species nationally and a very uncommon species for Dublin (whiskered bat).

- **House demolition may remove roost sites for individual bats**

While there were no bats evident in 2019 or 2021 in Auburn Little, there is potential for bats within the buildings proposed for removal as bats move in and out of buildings. Signs of bats are most obvious when there are large numbers of bats and individual bats may be overlooked without considerable effort (including tile / slate removal, examination of wall cavities etc.). This is a long-term slight negative impact.

- **Lighting may reduce value of area to light-sensitive bat species**

Lighting is disruptive to all bat species if near or in a roost and will also affect feeding and commuting of light sensitive bat species. Whiskered bats, Natterer's bats and brown long-eared bats are the more light-sensitive species of the assemblage noted in this assessment while even pipistrelles and Leisler's bats avoid direct light.

Badgers

- ✦ **Raised levels of human activity**

There will be a greater level of human activity within the site and more traffic movement through the site. Given the very low level of badger activity at present, this will not have an immediate impact upon badgers. The presence of activity, lighting and dogs may affect movement of badgers through the site, but this is at most a slight long-term / permanent negative impact.

Mitigation Measures

1. Acquisition of a Derogation to allow the removal of bat roosts within stable buildings

A derogation shall be required for disturbance to roost sites of bat species. This requires that a system of protection of bats is in place and that alternative roost sites or access to roosts is provided for bats. The following measures are proposed to provide appropriate protection for bats:

2. Supervision of all roof level work within the stable yard by a bat specialist

3. Protection of any roosting bats during construction operations by a bat specialist.

This may require that bats are captured and cared for by the bat specialist until the work affecting the roost site is complete. Bats should be released into a bat box within another area within the grounds of Auburn and the original roost site re-examined prior to any further work that may affect bats.

4. Provision of access to all attics within the stable yard for bat following construction

Access shall be provided by means of suitable access slates, vents, or other means to allow bats to return to roofs following all construction work.

5. Provision of roosting features within attics

Timber rafters shall be provided that create suitable crevices for bats. This shall include similar features to those used within the existing stable buildings in addition to the provision of parallel timbers ("2 x 4" timbers (38 x 89 mm) spaced 15 to 18 mm apart i.e., at a slight angle creating a range of gaps from 15 mm to 18 mm).

6. No lighting of the roof area of the stable yard or of Auburn House

No lighting shall be directed at the roof or eaves of either Auburn House or the stable yard buildings. No ornamental lighting shall be attached to the buildings.

7. Dark corridor of movement for bats from the stable yard and Auburn House to the surrounding lands

No lighting shall illuminate the surrounding area of the stable yard or Auburn House to allow movement of bats through the site and to and from roost sites.

8. Retention where possible of Category U trees away from public access and activity

Where there is no clear risk posed to public safety, Category U trees shall be retained or rendered safer by reducing the unsafe limbs in favour of felling. The removal of these trees has the greatest impact upon biodiversity, and this should be seen as the option of last resort.

9. Vegetation cover along the perimeter of the site to allow mammal movement.

Planting along the perimeter of the development shall ensure that there is potential for movement of bats and badgers and other fauna through the site. This shall include shrubbery as well as trees. Trees of a variety of ages and species creates the best habitat compared to planting of trees of the same age and species.

10. Lighting control

Lighting must be managed to ensure that mature trees are unlit, and that lighting does not overspill into green areas where it is unnecessary. Lighting should not exceed 3 lux away from areas where street and house lighting are essential. No lighting of tree canopies shall occur.

Lighting shall be used as a function and not as an ornament and shall be of a design that allows a high level of control and directability. LED allows for controls on timing, directionality and wavelength and should be the source of light.

- Lighting shall be directed downwards away from the treetops and known bat roosts.
- Tree crowns shall remain unilluminated
- All luminaires shall lack UV elements when manufactured and shall be LED
- A warm white spectrum (ideally <2700 Kelvin but as low as Fingal County Council limitations allow) shall be adopted to reduce blue light component
- Luminaires shall feature peak wavelengths higher than 550 nm •
- Light levels shall be controlled by the use of sensor lighting for security.
- Lights must not be left on throughout the night.

11. Evaluation of lighting following construction

A bat specialist shall examine the lighting and planting upon completion to ensure that lighting provides for access for bats to the woodland. Where there are no suitable access areas, measures to create easier movement of bats through the site shall be introduced through modifications to the lighting that may include cowls, planting, or other options.

12. Checking of Trees for Bats Prior To / During Felling or Surgery where this is essential

Where there is no alternative to felling or removal of limbs of mature trees, an assessment for the presence of bats must be undertaken. Tree felling and surgery must avoid the summer months to protect nesting birds. At all other times, it should be possible to assess for bats provided that full access to any tree is available to the bat specialist.

If any buildings (walls etc.) are to be removed or modified, including re-pointing, a bat specialist shall ensure that bats are protected.

13. Bat boxes

21 Schwegler bat boxes (or equivalent) of varying design shall be erected within the remaining woodland to provide a variety of suitable roost sites. These boxes must be away from lighting and shall be no lower than 3 metres from ground level. All other measures to provide roosting opportunities within the stable buildings must also be implemented to make this effective. Locations for bat boxes shall be identified by a bat specialist.

All bat boxes shall be in place prior to any work within the stable yard.

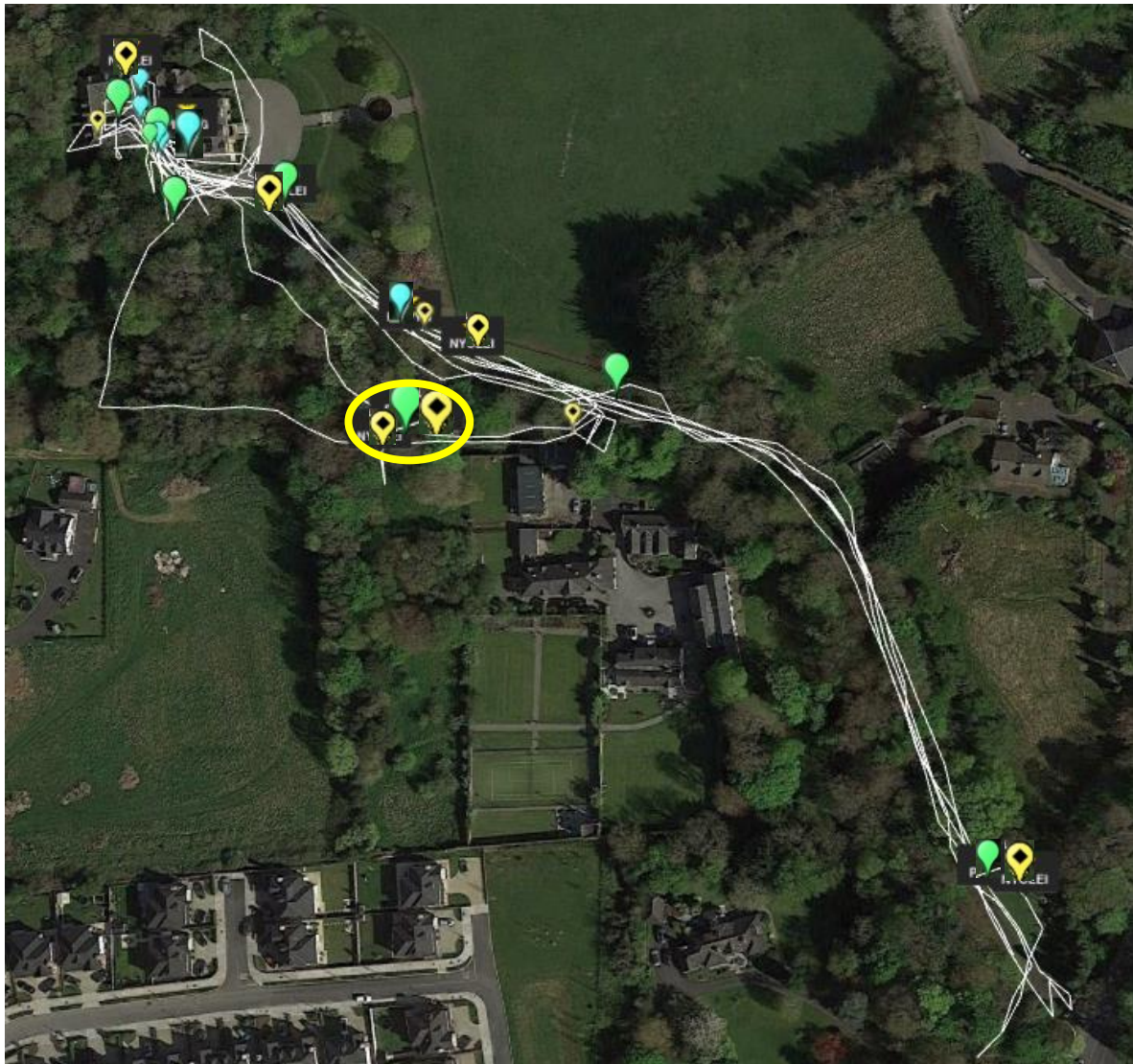
IMPACTS AFTER MITIGATION

There will be a long-term slight negative impact from the proposed development upon bats and other mammals. Where there is considerable tree removal including older and diseased trees, this may rise to a long-term moderate negative impact.



Proposed Lighting and Existing Bat roosts

The yellow boxes indicate bat roosts identified during the survey (the roost outside of the site is not specified for privacy purposes). Lighting is especially sensitive in these areas. Recommendations for lighting are included within the Mitigation Measures.



Bat activity within the site August 10th to 11th 2021

Legend

Green paddle	Common pipistrelle	Blue paddle	Soprano pipistrelle
Yellow paddle	Leisler's bat	Yellow oval	Area within which the male Leisler's bat was Calling



Area within which Leisler's bat was calling on August 10th, 2021 (around tree 712)



Bat activity at Auburn House August 25th, 2021

Legend

Green paddle Common pipistrelle

Yellow paddle Leisler's bat

Blue paddle

Yellow oval

Soprano pipistrelle

Area within which the male Leisler's bat was Calling



Close-up of stable yard bat activity



Bat data within the site including the field and the gardens of Little Auburn 29 May 2019

Legend

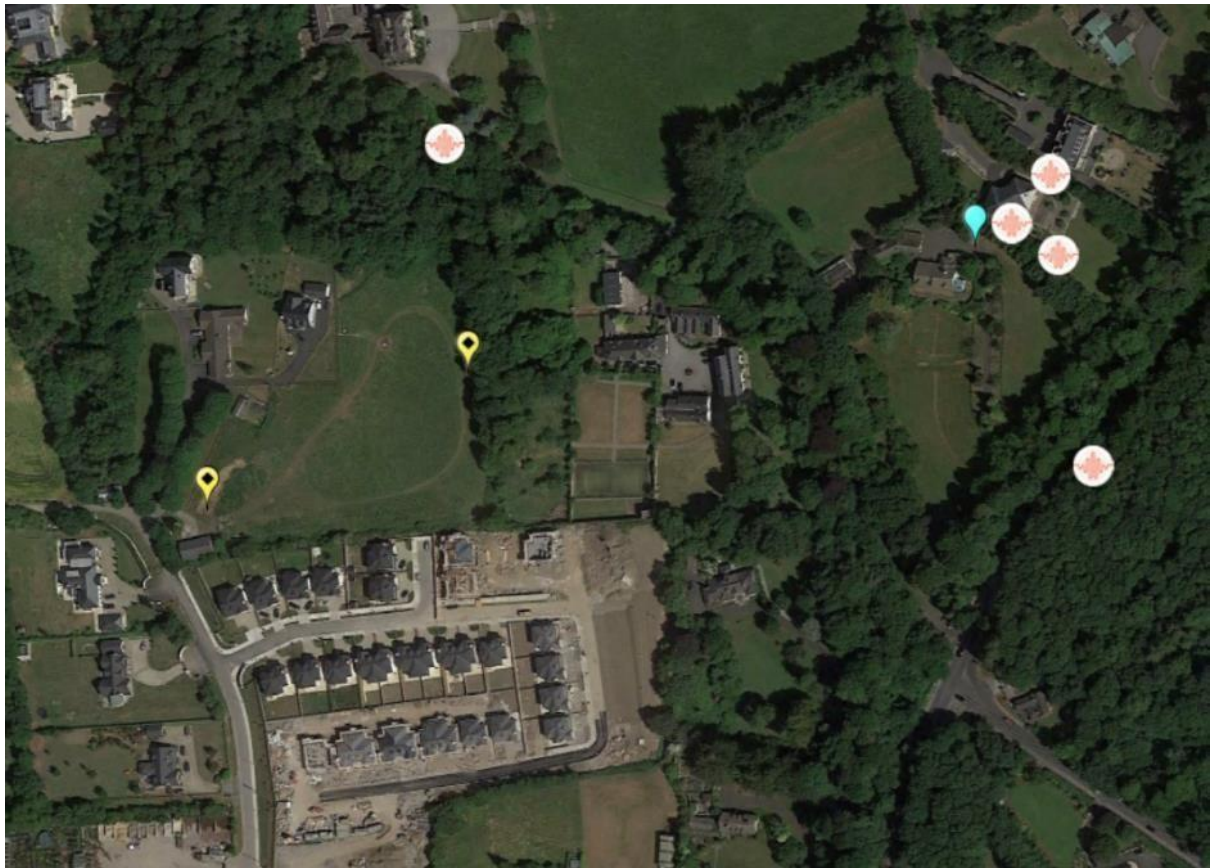
White disc	Common pipistrelle	Blue paddle	Soprano Pipistrelle
Blue paddle with star insert	Soprano Pipistrelle and Leisler's bat		
Yellow paddle Leisler's bat	Yellow paddle with star insert	Common pipistrelle and Leisler's bat	
White line	Transect walked during survey		



Bat data at Little Auburn 29 May 2019 (close-up of the previous figure)

Legend

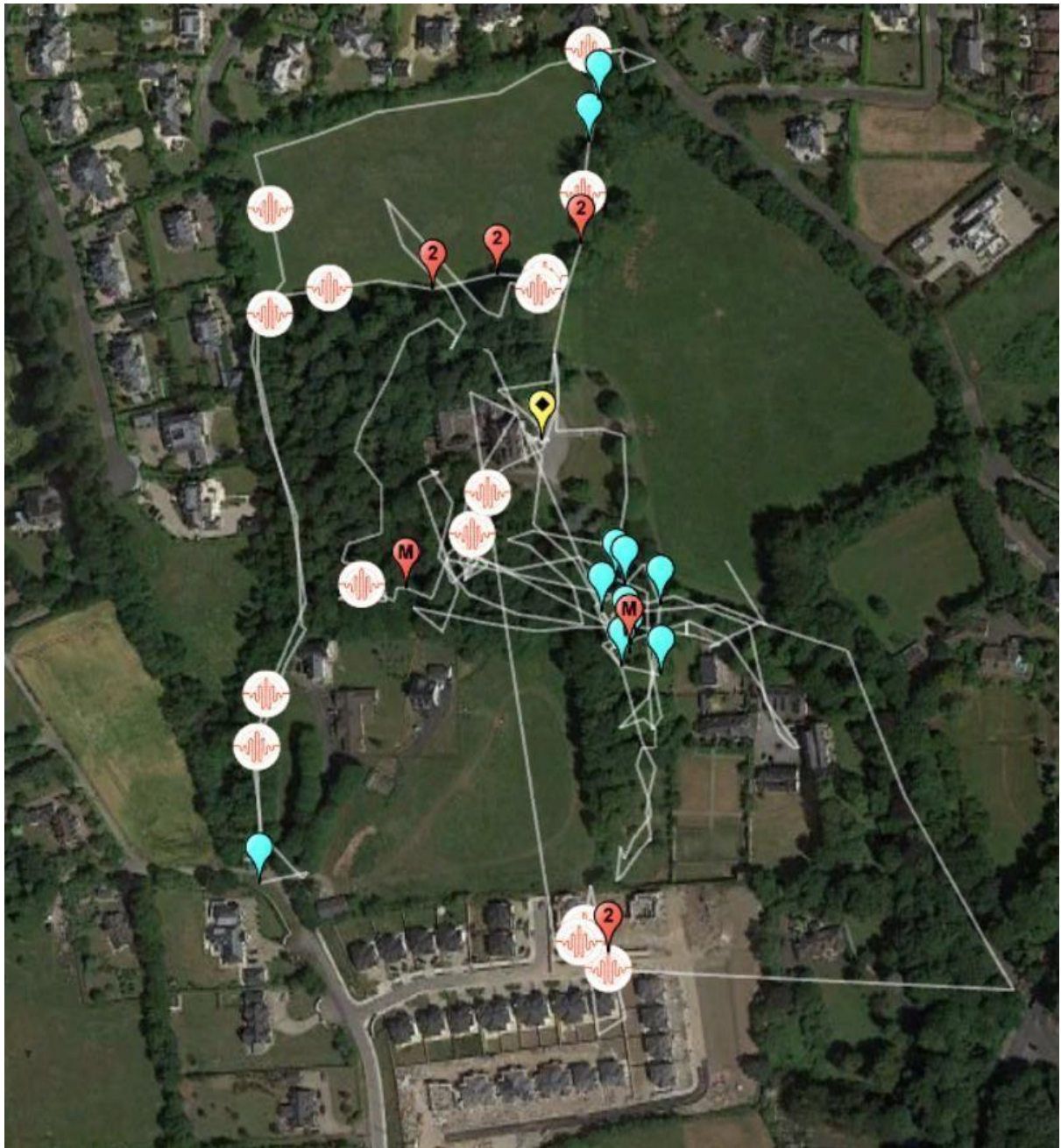
White disc	Common pipistrelle	Blue paddle	Soprano Pipistrelle
Yellow paddle	Leisler's bat		
Yellow paddle with star insert	Common pipistrelle and Leisler's bat		
Blue paddle with star insert	Soprano Pipistrelle and Leisler's bat		
Red paddle with "3"	Common and soprano Pipistrelles and Leisler's bat at same location		



Bat activity prior to sunrise on 30 May 2019 at Auburn, Streamstown, Malahide

Legend

White disc	Common pipistrelle	Blue paddle	Soprano Pipistrelle
Yellow paddle	Leisler's bat		



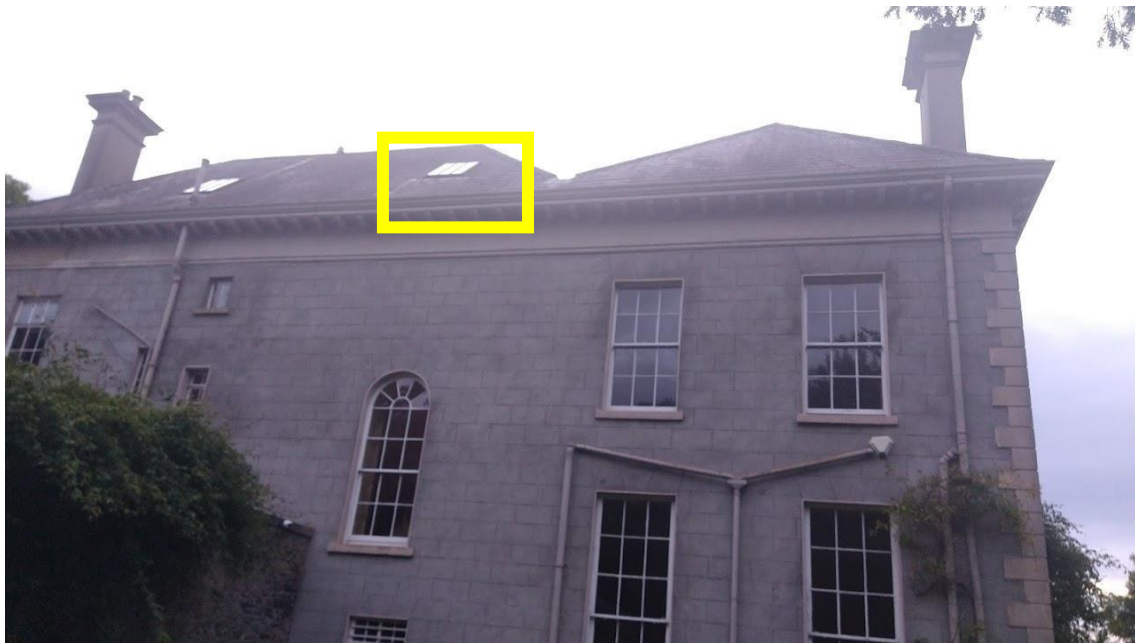
Bat activity on Thursday 27th June 2019 to sunrise 28th June 2019



Stable buildings showing site of whiskered bat (yellow ovals) and brown long-eared bat (white oval)



Timbers within the attic of the stables indicating evidence of bat usage (droppings and moth wings below the timbers shown in the right-hand image)



Soprano pipistrelles noted entering in this area



Bat droppings were noted within the attic of Auburn House indicating regular use of the building by the pipistrelles noted to return to the building in August 2021.
There is also a large colony of bees in some of the attics (see insert image)



Bat droppings were noted in the stable buildings indicating the presence of pipistrelles and brown long eared bats and a small *Myotis* species



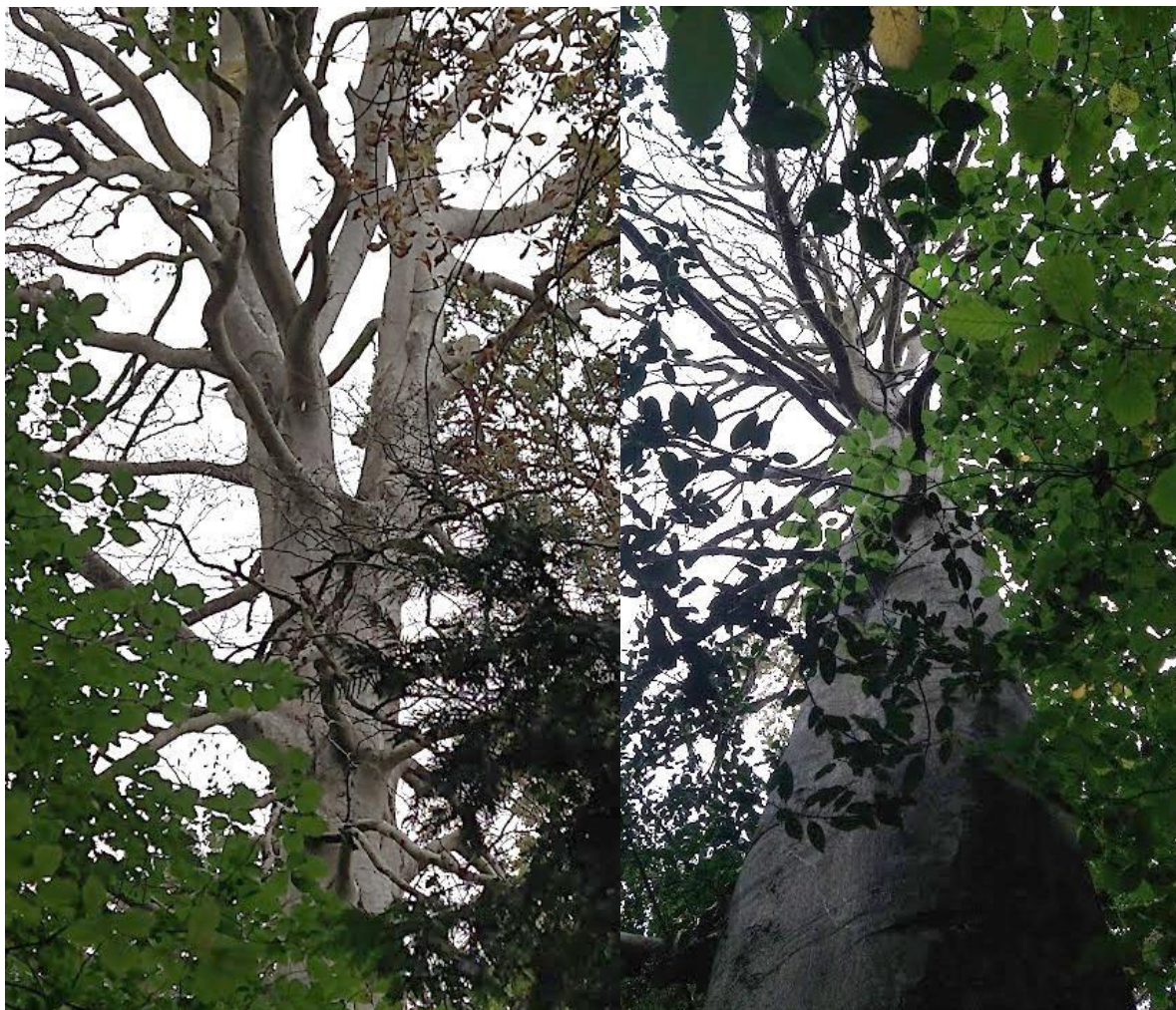
Areas examined for bats provided evidence of renovation of the stables in recent years



Assessment for hibernating bats 21st February 2022

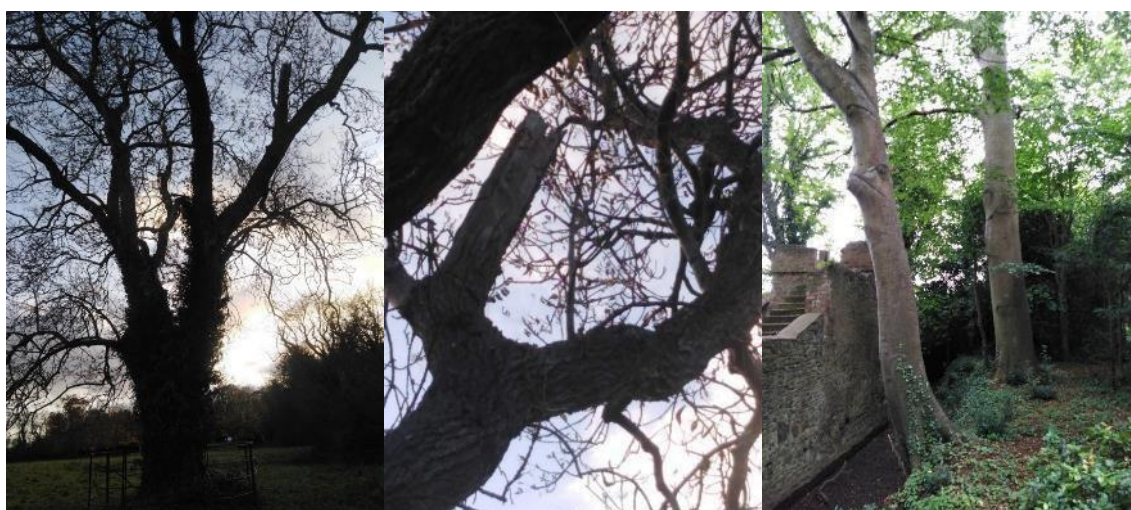


Bat assessment of former stable buildings and outbuildings at Auburn House (top and middle left) and at Little Auburn House and garage (middle right and bottom). Droppings were noted in two places within the barn and stable buildings in 2019.



Tree 712 – The Leisler’s bat mating perch

This tree may be dead and there is the possibility that it would be removed as a safety consideration.



Trees with roost potential including at the drain / moat area

There are numerous trees within the site with roost potential including the beech shown above. The stonework also offers roost potential, but no evidence of bats was noted



Trees within the grounds with roost potential

No bat evidence was noted in the examination of trees in 2019 or 2021. This assessment was based on ground surveying and examining cavities accessible from the ground.



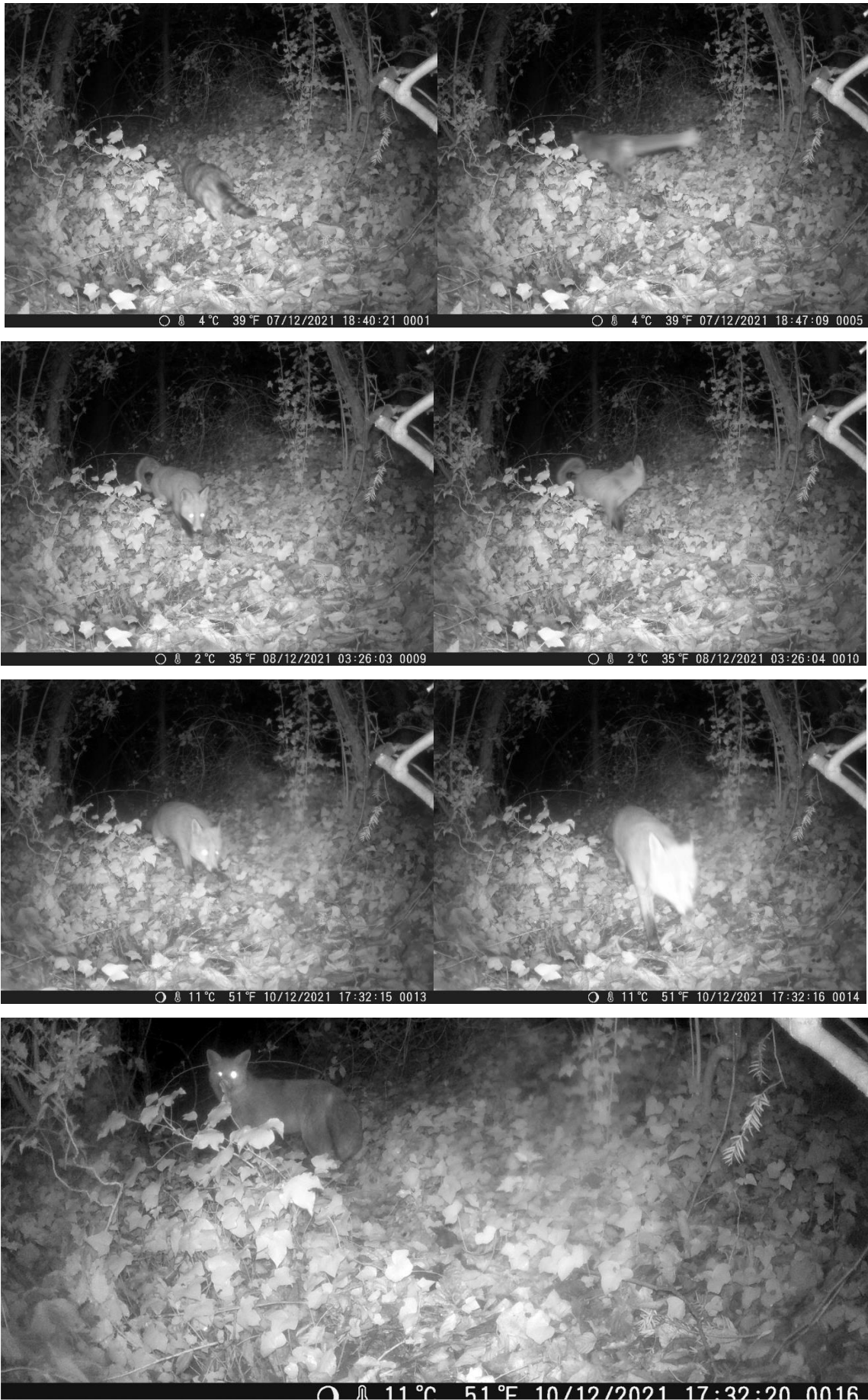
Badger setts in February 2022 at Auburn

There was no evidence of badger usage of any of the setts within the site in 2021 to 2022.



Badger potential with the site 2019 and 2021

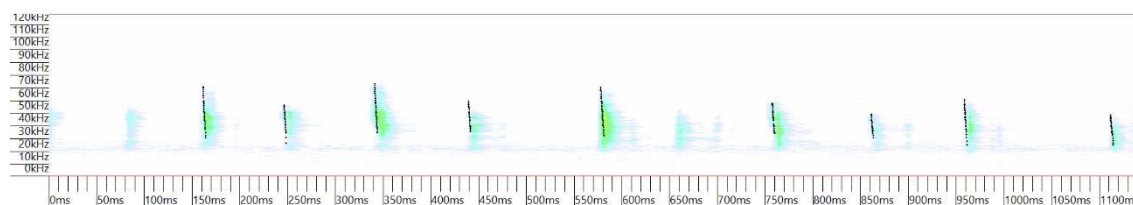
There is no evidence of badger occupancy. Setts within the site are inactive and disturbed by human activity



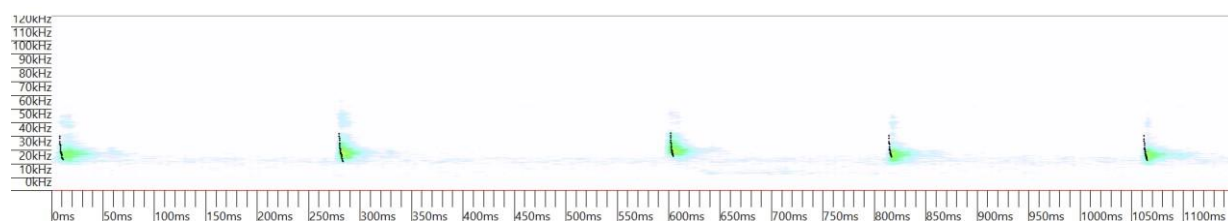
Motion activated camera images from 6th to 13th December 2021 revealing regular fox / cat activity



A rabbit burrow in the field south of Auburn House



***Myotis* bat signal 22.41 hours 10th August 2021**



Brown long-eared bat at 22.43 hours 10th August 2021

Bat signals: Raw data

Bat activity on 10th August 2021 from Songmeter Mini Bat

Date	Time	Auto Id	Manual Id
10/08/2021	21:16:46	Soprano Pipistrelle	
10/08/2021	21:17:55	Soprano Pipistrelle	
10/08/2021	21:19:46	Common Pipistrelle	
10/08/2021	21:22:48	Common Pipistrelle	
10/08/2021	21:23:34	Soprano Pipistrelle	
10/08/2021	21:25:39 to	Common Pipistrelle	
10/08/2021	21:31:20	Leisler's Bat	
10/08/2021	21:31:25	Leisler's Bat	
10/08/2021	21:50:13	Common Pipistrelle	
10/08/2021	22:03:57	Leisler's Bat	
10/08/2021	22:15:12	Soprano Pipistrelle	
10/08/2021	22:19:16	Leisler's Bat	
10/08/2021	22:28:37	Common Pipistrelle	
10/08/2021	22:29:12	Common Pipistrelle	
10/08/2021	22:29:52	Common Pipistrelle	
10/08/2021	22:29:57	Common Pipistrelle	
10/08/2021	22:40:10	Brown Long-Eared	Soprano Pipistrelle
10/08/2021	22:40:28	Noid	
10/08/2021	22:40:44	Noid	
10/08/2021	22:41:11	Natterer's Bat	Myotis
10/08/2021	22:43:16	Brown Long-Eared	Brown Long-Eared Bat
10/08/2021	22:44:30	Brown Long-Eared	Soprano Pipistrelle
10/08/2021	22:44:42	Leisler's Bat	Leisler's Bat
10/08/2021	22:50:58	Leisler's Bat	Leisler's Bat
10/08/2021	22:54:53	Brown Long-Eared	Soprano Pipistrelle
10/08/2021	22:54:58	Noid	
10/08/2021	22:56:50	Common Pipistrelle	
10/08/2021	22:57:41	Common Pipistrelle	
10/08/2021	23:02:29	Common Pipistrelle	
10/08/2021	23:09:53	Leisler's Bat	
10/08/2021	23:16:21	Common Pipistrelle	
10/08/2021	23:27:59	Soprano Pipistrelle	
10/08/2021	23:28:04	Soprano Pipistrelle	
10/08/2021	23:28:09	Soprano Pipistrelle	
10/08/2021	23:28:21	Common Pipistrelle	
10/08/2021	23:28:26	Common Pipistrelle	
10/08/2021	23:28:31	Common Pipistrelle	
10/08/2021	23:28:40	Common Pipistrelle	
10/08/2021	23:28:45	Common Pipistrelle	
10/08/2021	23:28:50	Common Pipistrelle	
10/08/2021	23:28:58	Common Pipistrelle	
10/08/2021	23:29:03	Common Pipistrelle	
10/08/2021	23:30:07	Brown Long-Eared	Soprano Pipistrelle
10/08/2021	23:30:22	Noid	Soprano Pipistrelle
10/08/2021	23:32:19	Brown Long-Eared	Soprano Pipistrelle
10/08/2021	23:32:24	Soprano Pipistrelle	Soprano Pipistrelle
10/08/2021	23:34:53	Leisler's Bat	Leisler's Bat
10/08/2021	23:34:58	Leisler's Bat	Leisler's Bat
10/08/2021	23:37:44	Brown Long-Eared	Soprano Pipistrelle
10/08/2021	23:37:59	Brown Long-Eared	
10/08/2021	23:38:41 to	Common Pipistrelle	
10/08/2021	23:50:22	Brown Long-Eared	Brown Long-Eared Bat
10/08/2021	23:50:30	Brown Long-Eared	Brown Long-Eared Bat
10/08/2021	23:50:42	Leisler's Bat	Leisler's Bat
10/08/2021	23:51:00	Brown Long-Eared	Brown Long-Eared Bat
10/08/2021	23:51:43	Common Pipistrelle	Common Pipistrelle
10/08/2021	23:51:48 to	Common Pipistrelle	
10/08/2021	23:54:26	Leisler's Bat	

10/08/2021	23:54:31	Leisler's Bat	
10/08/2021	23:56:57	Soprano Pipistrelle	
10/08/2021	23:57:02	Soprano Pipistrelle	
10/08/2021	23:57:07	Soprano Pipistrelle	
10/08/2021	23:57:16	Soprano Pipistrelle	
11/08/2021	00:06:30	Soprano Pipistrelle	
11/08/2021	00:06:35	Soprano Pipistrelle	
11/08/2021	00:12:16	Soprano Pipistrelle	
11/08/2021	00:12:21	Soprano Pipistrelle	
11/08/2021	00:13:28	Common Pipistrelle	
11/08/2021	00:13:33	Common Pipistrelle	
11/08/2021	00:13:38	Common Pipistrelle	
11/08/2021	00:14:02 to	Common Pipistrelle	
11/08/2021	00:14:33	Leisler's Bat	
11/08/2021	00:19:00	Soprano Pipistrelle	
11/08/2021	00:19:05	Soprano Pipistrelle	
11/08/2021	00:19:17	Soprano Pipistrelle	
11/08/2021	00:19:22	Soprano Pipistrelle	
11/08/2021	00:19:44	Soprano Pipistrelle	
11/08/2021	00:19:49	Brown Long-Eared	
11/08/2021	00:28:06	Leisler's Bat	
11/08/2021	00:28:11	Common Pipistrelle	
11/08/2021	00:28:16	Common Pipistrelle	
11/08/2021	00:28:26	Common Pipistrelle	
11/08/2021	00:28:31	Common Pipistrelle	
11/08/2021	00:28:57	Common Pipistrelle	
11/08/2021	00:29:17	Common Pipistrelle	
11/08/2021	00:29:54	Soprano Pipistrelle	
11/08/2021	00:29:59	Soprano Pipistrelle	
11/08/2021	00:30:04	Soprano Pipistrelle	
11/08/2021	00:30:16	Soprano Pipistrelle	
11/08/2021	00:30:21	Common Pipistrelle	
11/08/2021	00:31:21	Common Pipistrelle	
11/08/2021	00:31:26	Common Pipistrelle	
11/08/2021	00:32:59	Leisler's Bat	
11/08/2021	00:33:04	Leisler's Bat	
11/08/2021	00:33:15 to	Common Pipistrelle	
11/08/2021	00:53:19	Common Pipistrelle	
11/08/2021	00:53:42	Common Pipistrelle	
11/08/2021	01:09:46	Soprano Pipistrelle	
11/08/2021	01:10:38	Soprano Pipistrelle	
11/08/2021	01:10:48	Soprano Pipistrelle	
11/08/2021	01:10:53	Soprano Pipistrelle	
11/08/2021	01:10:58	Soprano Pipistrelle	
11/08/2021	01:11:08	Leisler's Bat	
11/08/2021	01:12:05	Common Pipistrelle	
11/08/2021	01:12:10	Common Pipistrelle	
11/08/2021	01:12:37	Common Pipistrelle	
11/08/2021	01:15:39	Natterer's Bat	
11/08/2021	01:15:44	Natterer's Bat	
11/08/2021	01:15:49	Natterer's Bat	
11/08/2021	01:16:43	Leisler's Bat	
11/08/2021	01:16:48 to	Common Pipistrelle	
11/08/2021	01:22:45	Soprano Pipistrelle	
11/08/2021	01:24:28	Leisler's Bat	
11/08/2021	01:24:49	Leisler's Bat	
11/08/2021	01:25:44	Leisler's Bat	
11/08/2021	01:26:05	Leisler's Bat	
11/08/2021	01:26:10	Noid	
11/08/2021	01:26:35	Leisler's Bat	
11/08/2021	01:26:40	Leisler's Bat	
11/08/2021	01:26:45	Brown Long-Eared	
11/08/2021	01:26:54	Common Pipistrelle	

11/08/2021	01:26:59	Common Pipistrelle	
11/08/2021	01:27:04	Common Pipistrelle	
11/08/2021	01:27:13	Common Pipistrelle	
11/08/2021	01:27:31	Common Pipistrelle	
11/08/2021	01:27:36	Leisler's Bat	
11/08/2021	01:27:56	Leisler's Bat	
11/08/2021	01:28:18	Common Pipistrelle	
11/08/2021	01:28:23	Common Pipistrelle	
11/08/2021	01:28:33	Common Pipistrelle	
11/08/2021	01:28:38	Common Pipistrelle	
11/08/2021	01:28:43	Common Pipistrelle	
11/08/2021	01:28:48	Common Pipistrelle	
11/08/2021	01:28:53	Common Pipistrelle	
11/08/2021	01:28:58	Noid	
11/08/2021	01:29:14	Soprano Pipistrelle	
11/08/2021	01:31:53	Common Pipistrelle	
11/08/2021	01:32:07	Common Pipistrelle	
11/08/2021	01:34:32	Common Pipistrelle	
11/08/2021	01:34:37	Common Pipistrelle	
11/08/2021	01:34:48	Common Pipistrelle	
11/08/2021	01:35:15	Leisler's Bat	
11/08/2021	01:36:50	Common Pipistrelle	
11/08/2021	01:36:55	Common Pipistrelle	
11/08/2021	01:40:16	Leisler's Bat	
11/08/2021	01:40:23	Common Pipistrelle	
11/08/2021	01:42:16	Common Pipistrelle	
11/08/2021	01:43:48	Common Pipistrelle	
11/08/2021	01:43:53	Common Pipistrelle	
11/08/2021	01:44:01	Brown Long-Eared	Soprano Pipistrelle
11/08/2021	01:44:24	Soprano Pipistrelle	Soprano Pipistrelle
11/08/2021	01:44:29	Soprano Pipistrelle	Soprano Pipistrelle
11/08/2021	01:44:34	Noid	Noid
11/08/2021	01:44:44	Brown Long-Eared	Brown Long-Eared Bat
11/08/2021	01:44:49	Leisler's Bat	Soprano Pipistrelle
11/08/2021	01:45:44	Mydau	Natterer's Bat
11/08/2021	01:53:57	Common Pipistrelle	Common Pipistrelle
11/08/2021	01:54:02	Common Pipistrelle	Common Pipistrelle
11/08/2021	01:55:43	Noid	Soprano Pipistrelle
11/08/2021	02:01:19	Common Pipistrelle	
11/08/2021	02:01:24	Common Pipistrelle	
11/08/2021	02:02:04	Leisler's Bat	
11/08/2021	02:02:27	Leisler's Bat	
11/08/2021	02:04:22	Common Pipistrelle	
11/08/2021	02:17:08	Soprano Pipistrelle	
11/08/2021	02:17:14	Soprano Pipistrelle	
11/08/2021	02:19:05	Soprano Pipistrelle	
11/08/2021	02:20:22	Common Pipistrelle	
11/08/2021	02:20:27	Soprano Pipistrelle	
11/08/2021	02:20:32	Common Pipistrelle	
11/08/2021	02:22:41	Soprano Pipistrelle	
11/08/2021	02:22:46	Noid	
11/08/2021	02:26:57	Soprano Pipistrelle	
11/08/2021	02:27:02	Soprano Pipistrelle	
11/08/2021	02:27:07	Leisler's Bat	
11/08/2021	02:29:40	Mydau	Natterer's Bat
11/08/2021	02:35:15	Leisler's Bat	Soprano Pipistrelle
11/08/2021	02:36:19	Soprano Pipistrelle	Soprano Pipistrelle
11/08/2021	02:36:24	Soprano Pipistrelle	
11/08/2021	02:36:29	Soprano Pipistrelle	
11/08/2021	02:36:34	Soprano Pipistrelle	
11/08/2021	02:36:39	Soprano Pipistrelle	
11/08/2021	02:49:40	Brown Long-Eared	
11/08/2021	02:55:44	Common Pipistrelle	

11/08/2021	02:55:52	Common Pipistrelle	
11/08/2021	02:55:57	Common Pipistrelle	
11/08/2021	02:56:02	Common Pipistrelle	
11/08/2021	02:56:07	Common Pipistrelle	
11/08/2021	02:58:54	Common Pipistrelle	
11/08/2021	02:58:59	Common Pipistrelle	
11/08/2021	02:59:41	Leisler's Bat	
11/08/2021	03:00:13	Leisler's Bat	
11/08/2021	03:00:18	Leisler's Bat	
11/08/2021	03:00:23	Leisler's Bat	
11/08/2021	03:06:44 to	Common Pipistrelle	
11/08/2021	03:08:19	Leisler's Bat	
11/08/2021	03:08:26	Leisler's Bat	
11/08/2021	03:08:42	Common Pipistrelle	
11/08/2021	03:10:46	Soprano Pipistrelle	
11/08/2021	03:10:51	Leisler's Bat	
11/08/2021	03:14:03	Leisler's Bat	
11/08/2021	03:14:48	Leisler's Bat	
11/08/2021	03:14:53	Leisler's Bat	
11/08/2021	03:15:07	Leisler's Bat	
11/08/2021	03:16:01	Leisler's Bat	
11/08/2021	03:20:53	Leisler's Bat	
11/08/2021	03:25:24	Noid	Common Pipistrelle
11/08/2021	03:26:12	Brown Long-Eared	
11/08/2021	03:26:28	Brown Long-Eared	
11/08/2021	03:26:33	Noid	Common Pipistrelle
11/08/2021	03:29:33	Soprano Pipistrelle	
11/08/2021	03:30:43	Common Pipistrelle	
11/08/2021	03:32:00	Soprano Pipistrelle	
11/08/2021	03:32:28	Common Pipistrelle	
11/08/2021	03:47:34	Leisler's Bat	
11/08/2021	03:47:44	Leisler's Bat	
11/08/2021	03:49:25	Leisler's Bat	
11/08/2021	03:54:59	Soprano Pipistrelle	
11/08/2021	03:55:05	Common Pipistrelle	
11/08/2021	04:00:32	Leisler's Bat	
11/08/2021	04:00:37	Leisler's Bat	
11/08/2021	04:01:01	Leisler's Bat	
11/08/2021	04:07:20 to	Common Pipistrelle	
11/08/2021	04:07:36	Soprano Pipistrelle	
11/08/2021	04:10:26	Soprano Pipistrelle	
11/08/2021	04:15:53	Common Pipistrelle	
11/08/2021	04:21:24	Leisler's Bat	
11/08/2021	04:21:34	Leisler's Bat	
11/08/2021	04:21:42	Leisler's Bat	
11/08/2021	04:21:56	Leisler's Bat	
11/08/2021	04:22:01	Leisler's Bat	
11/08/2021	04:23:08	Leisler's Bat	
11/08/2021	04:24:30	Common Pipistrelle	
11/08/2021	04:24:35	Soprano Pipistrelle	
11/08/2021	04:25:33	Common Pipistrelle	
11/08/2021	04:25:59	Leisler's Bat	
11/08/2021	04:26:04	Leisler's Bat	
11/08/2021	04:26:09	Soprano Pipistrelle	
11/08/2021	04:26:14	Common Pipistrelle	
11/08/2021	04:26:22	Leisler's Bat	
11/08/2021	04:26:35	Leisler's Bat	
11/08/2021	04:27:30	Leisler's Bat	
11/08/2021	04:28:22	Common Pipistrelle	
11/08/2021	04:28:32	Common Pipistrelle	
11/08/2021	04:28:42	Common Pipistrelle	
11/08/2021	04:28:47	Common Pipistrelle	
11/08/2021	04:29:03	Common Pipistrelle	

11/08/2021	04:29:08	Common Pipistrelle	
11/08/2021	04:29:19	Common Pipistrelle	
11/08/2021	04:31:16	Leisler's Bat	
11/08/2021	04:32:17	Leisler's Bat	
11/08/2021	04:33:12	Common Pipistrelle	
11/08/2021	04:33:57	Soprano Pipistrelle	
11/08/2021	04:40:25	Leisler's Bat	
11/08/2021	04:40:39	Leisler's Bat	
11/08/2021	04:41:00	Soprano Pipistrelle	
11/08/2021	04:42:11	Leisler's Bat	
11/08/2021	04:42:16	Leisler's Bat	
11/08/2021	04:44:22	Leisler's Bat	
11/08/2021	04:46:09	Leisler's Bat	
11/08/2021	04:47:18	Common Pipistrelle	
11/08/2021	04:47:23	Common Pipistrelle	
11/08/2021	04:47:34	Common Pipistrelle	
11/08/2021	04:47:39	Soprano Pipistrelle	
11/08/2021	04:47:44	Soprano Pipistrelle	
11/08/2021	04:48:01	Soprano Pipistrelle	
11/08/2021	04:48:06	Soprano Pipistrelle	
11/08/2021	04:48:11	Soprano Pipistrelle	
11/08/2021	04:48:16	Common Pipistrelle	
11/08/2021	04:48:21	Common Pipistrelle	
11/08/2021	04:48:26	Common Pipistrelle	
11/08/2021	04:48:36	Common Pipistrelle	
11/08/2021	04:48:41	Soprano Pipistrelle	
11/08/2021	04:48:46	Common Pipistrelle	
11/08/2021	04:48:51	Common Pipistrelle	
11/08/2021	04:48:56	Common Pipistrelle	
11/08/2021	05:04:19	Leisler's Bat	
11/08/2021	05:16:35	Leisler's Bat	
11/08/2021	05:16:40	Leisler's Bat	
11/08/2021	05:21:01	Leisler's Bat	
11/08/2021	05:21:06	Leisler's Bat	
11/08/2021	05:22:12	Soprano Pipistrelle	
11/08/2021	05:22:17	Soprano Pipistrelle	
11/08/2021	05:22:22	Soprano Pipistrelle	
11/08/2021	05:22:27	Soprano Pipistrelle	
11/08/2021	05:22:31	Soprano Pipistrelle	
11/08/2021	05:22:38	Soprano Pipistrelle	
11/08/2021	05:27:18	Soprano Pipistrelle	
11/08/2021	05:33:03	Soprano Pipistrelle	
11/08/2021	05:39:36 to	Leisler's Bat	
11/08/2021	05:48:37	Noid	Pip
11/08/2021	05:48:41	Common Pipistrelle	Common Pipistrelle
11/08/2021	05:49:02	Common Pipistrelle	Common Pipistrelle
11/08/2021	05:49:07	Common Pipistrelle	Common Pipistrelle
11/08/2021	05:54:07	Leisler's Bat	Leisler's Bat
11/08/2021	05:54:12	Leisler's Bat	Leisler's Bat
11/08/2021	06:17:33	Leisler's Bat	Noise

Bat data from EM3 recordings at Little Auburn and field Malahide 29 May to 30 May 2019:
(Sunset 21.39 hours, sunrise 05.05 hours)

Date	Time	Auto Id	Manual Id
29/05/2019	21:52:10	Soprano Pipistrelle	Soprano Pipistrelle
29/05/2019	22:01:11	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:01:42	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:02:12	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:02:42	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	22:05:12	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:05:42	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:06:12	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:06:42	Common Pipistrelle	Common Pipistrelle

29/05/2019	22:07:13	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:07:43	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:08:43	Leisler's Bat	Leisler's Bat
29/05/2019	22:09:43	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:13:14	Leisler's Bat	Leisler's Bat
29/05/2019	22:13:44	Leisler's Bat	Leisler's Bat
29/05/2019	22:14:14	Leisler's Bat	Leisler's Bat
29/05/2019	22:15:14	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:15:44	Common Pipistrelle	Common Pipistrelle Leisler's Bat
29/05/2019	22:16:14	Common Pipistrelle	Common Pipistrelle Leisler's Bat
29/05/2019	22:16:44	Common Pipistrelle	Common Pipistrelle Leisler's Bat
29/05/2019	22:17:14	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	22:17:44	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	22:18:15	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	22:18:45	Leisler's Bat	Leisler's Bat
29/05/2019	22:19:15	Leisler's Bat	Leisler's Bat
29/05/2019	22:19:45	Leisler's Bat	Leisler's Bat
29/05/2019	22:20:45	Common Pipistrelle	Common Pipistrelle Leisler's Bat
29/05/2019	22:24:16	Soprano Pipistrelle	Soprano Pipistrelle Leisler's Bat
29/05/2019	22:24:46	Soprano Pipistrelle	Soprano Pipistrelle Leisler's Bat
29/05/2019	22:25:16	Soprano Pipistrelle	Soprano Pipistrelle
29/05/2019	22:26:16	Mvbr	Noise
29/05/2019	22:26:46	Leisler's Bat	Noise
29/05/2019	22:28:16	Leisler's Bat	Leisler's Bat
29/05/2019	22:28:47	Leisler's Bat	Leisler's Bat
29/05/2019	22:29:17	Leisler's Bat	Leisler's Bat
29/05/2019	22:29:47	Leisler's Bat	Leisler's Bat
29/05/2019	22:30:17	Leisler's Bat	Leisler's Bat
29/05/2019	22:30:47	Leisler's Bat	Leisler's Bat
29/05/2019	22:31:17	Soprano Pipistrelle	Soprano Pipistrelle Leisler's Bat
29/05/2019	22:31:47	Leisler's Bat	Leisler's Bat
29/05/2019	22:54:52	Pina	Common Pipistrelle
29/05/2019	22:57:52	Soprano Pipistrelle	Soprano Pipistrelle
29/05/2019	22:58:22	Leisler's Bat	Leisler's Bat
29/05/2019	22:59:53	Leisler's Bat	Leisler's Bat
29/05/2019	23:02:23	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	23:02:53	Common Pipistrelle	Common Pipistrelle
29/05/2019	23:03:23	Common Pipistrelle	Common Pipistrelle
29/05/2019	23:03:53	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	23:04:23	Common Pipistrelle	Common Pipistrelle Leisler's Bat
29/05/2019	23:04:54	Common Pipistrelle	Common Pipistrelle Leisler's Bat
29/05/2019	23:05:24	Common Pipistrelle	Common Pipistrelle
29/05/2019	23:05:54	Common Pipistrelle	Common Pipistrelle
29/05/2019	23:06:24	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	23:06:54	Leisler's Bat	Soprano Pipistrelle Leisler's Bat
29/05/2019	23:07:24	Leisler's Bat	Leisler's Bat
29/05/2019	23:07:54	Leisler's Bat	Leisler's Bat
29/05/2019	23:08:24	Leisler's Bat	Leisler's Bat
29/05/2019	23:08:54	Leisler's Bat	Leisler's Bat
29/05/2019	23:09:25	Leisler's Bat	Leisler's Bat
29/05/2019	23:09:55	Leisler's Bat	Soprano Pipistrelle Leisler's Bat
29/05/2019	23:10:25	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	23:10:55	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	23:12:25	Common Pipistrelle	Common Pipistrelle Soprano Pipistrelle Leisler's Bat
29/05/2019	23:13:55	Common Pipistrelle	Common Pipistrelle
29/05/2019	23:16:56	Common Pipistrelle	Common Pipistrelle
29/05/2019	23:17:26	Soprano Pipistrelle	Soprano Pipistrelle
29/05/2019	23:17:56	Soprano Pipistrelle	Soprano Pipistrelle
29/05/2019	23:18:26	Noid	Soprano Pipistrelle
29/05/2019	23:19:57	Soprano Pipistrelle	Soprano Pipistrelle
29/05/2019	23:20:27	Leisler's Bat	Leisler's Bat
29/05/2019	23:24:28	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	04:26:57	Common Pipistrelle	Common Pipistrelle

30/05/2019	04:27:27	Leisler's Bat	Leisler's Bat
30/05/2019	04:29:57	Leisler's Bat	Leisler's Bat
30/05/2019	04:35:59	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:36:59	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:37:29	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:37:59	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:45:00	Soprano Pipistrelle	Soprano Pipistrelle

Bat data from SM2 placed in the garden of Little Auburn 29 May to 30 May 2019

Date	Time	Auto Id	Manual Id
29/05/2019	22:01:30	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:02:00	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:02:30	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:03:00	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:03:30	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	22:06:30	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:07:00	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:09:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:09:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:10:00	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:10:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:11:30	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:13:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:13:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:14:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:15:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:15:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:16:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:16:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:17:30	Noid	Common Pipistrelle
29/05/2019	22:19:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:19:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:20:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:20:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:21:00	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:21:30	Leisler's Bat	Common Pipistrelle Leisler's Bat
29/05/2019	22:22:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:23:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:24:00	Common Pipistrelle	Common Pipistrelle
29/05/2019	22:24:30	Common Pipistrelle	
29/05/2019	22:27:30	Noid	
29/05/2019	22:28:00	Leisler's Bat	
29/05/2019	22:28:30	Leisler's Bat	
29/05/2019	22:29:30	Leisler's Bat	
29/05/2019	22:30:00	Leisler's Bat	
29/05/2019	22:32:00	Leisler's Bat	
29/05/2019	22:34:00	Leisler's Bat	
29/05/2019	22:34:30	Leisler's Bat	
29/05/2019	22:35:00	Leisler's Bat	
29/05/2019	22:40:00	Leisler's Bat	
29/05/2019	22:41:30	Common Pipistrelle	
29/05/2019	22:42:00	Common Pipistrelle	
29/05/2019	22:48:40	Soprano Pipistrelle	
29/05/2019	22:49:10	Common Pipistrelle	
29/05/2019	22:50:10	Common Pipistrelle	
29/05/2019	22:50:40	Leisler's Bat	
29/05/2019	22:51:10	Common Pipistrelle	
29/05/2019	22:52:10	Common Pipistrelle	
29/05/2019	22:53:10	Common Pipistrelle	
29/05/2019	22:54:10	Common Pipistrelle	
29/05/2019	22:56:40	Common Pipistrelle	
29/05/2019	22:59:10	Common Pipistrelle	
29/05/2019	23:00:10	Leisler's Bat	

29/05/2019	23:03:30	Common Pipistrelle	
29/05/2019	23:05:30	Leisler's Bat	
29/05/2019	23:06:30	Leisler's Bat	
29/05/2019	23:07:00	Soprano Pipistrelle	
29/05/2019	23:11:00	Leisler's Bat	
29/05/2019	23:12:30	Common Pipistrelle	
29/05/2019	23:15:00	Common Pipistrelle	
29/05/2019	23:15:30	Leisler's Bat	
29/05/2019	23:16:00	Leisler's Bat	
29/05/2019	23:17:00	Common Pipistrelle	
29/05/2019	23:17:30	Soprano Pipistrelle	
29/05/2019	23:18:00	Common Pipistrelle	
29/05/2019	23:18:30	Soprano Pipistrelle	
29/05/2019	23:19:30	Soprano Pipistrelle	
29/05/2019	23:20:00	Soprano Pipistrelle	
29/05/2019	23:20:30	Soprano Pipistrelle	
29/05/2019	23:22:00	Leisler's Bat	
29/05/2019	23:22:30	Noid	
29/05/2019	23:23:00	Soprano Pipistrelle	
29/05/2019	23:26:00	Soprano Pipistrelle	
29/05/2019	23:26:30	Common Pipistrelle	
29/05/2019	23:27:30	Common Pipistrelle	
29/05/2019	23:28:30	Common Pipistrelle	
29/05/2019	23:29:00	Noid	
29/05/2019	23:30:00	Soprano Pipistrelle	
29/05/2019	23:30:30	Soprano Pipistrelle	
29/05/2019	23:34:00	Common Pipistrelle	
29/05/2019	23:35:30	Pina	
29/05/2019	23:38:00	Common Pipistrelle	
29/05/2019	23:39:00	Leisler's Bat	
29/05/2019	23:39:30	Leisler's Bat	
29/05/2019	23:43:00	Soprano Pipistrelle	
29/05/2019	23:43:30	Common Pipistrelle	
29/05/2019	23:44:00	Common Pipistrelle	
29/05/2019	23:45:00	Soprano Pipistrelle	
29/05/2019	23:45:30	Leisler's Bat	
29/05/2019	23:46:00	Leisler's Bat	
29/05/2019	23:47:30	Soprano Pipistrelle	
29/05/2019	23:48:00	Leisler's Bat	
29/05/2019	23:48:30	Noid	
29/05/2019	23:51:30	Pina	
29/05/2019	23:52:00	Common Pipistrelle	
29/05/2019	23:53:30	Soprano Pipistrelle	
29/05/2019	23:54:30	Common Pipistrelle	
29/05/2019	23:55:00	Common Pipistrelle	
29/05/2019	23:55:30	Soprano Pipistrelle	
29/05/2019	23:59:00	Common Pipistrelle	
29/05/2019	23:59:30	Common Pipistrelle	
30/05/2019	00:00:00	Soprano Pipistrelle	
30/05/2019	00:00:30	Soprano Pipistrelle	
30/05/2019	00:01:00	Soprano Pipistrelle	
30/05/2019	00:02:00	Soprano Pipistrelle	
30/05/2019	00:02:30	Soprano Pipistrelle	
30/05/2019	00:04:00	Soprano Pipistrelle	
30/05/2019	00:04:30	Common Pipistrelle	
30/05/2019	00:09:30	Soprano Pipistrelle	
30/05/2019	00:11:00	Soprano Pipistrelle	
30/05/2019	00:20:30	Common Pipistrelle	
30/05/2019	00:24:00	Soprano Pipistrelle	
30/05/2019	00:29:10	Common Pipistrelle	
30/05/2019	00:30:10	Common Pipistrelle	
30/05/2019	00:31:10	Soprano Pipistrelle	
30/05/2019	00:31:40	Common Pipistrelle	

30/05/2019	00:34:10	Common Pipistrelle	
30/05/2019	00:37:10	Soprano Pipistrelle	
30/05/2019	00:38:10	Common Pipistrelle	
30/05/2019	00:39:10	Common Pipistrelle	
30/05/2019	00:44:10	Common Pipistrelle	
30/05/2019	00:48:40	Leisler's Bat	
30/05/2019	00:50:10	Common Pipistrelle	
30/05/2019	00:50:40	Soprano Pipistrelle	
30/05/2019	00:52:10	Leisler's Bat	
30/05/2019	00:52:40	Soprano Pipistrelle	
30/05/2019	00:53:10	Soprano Pipistrelle	
30/05/2019	00:54:10	Soprano Pipistrelle	
30/05/2019	00:54:40	Soprano Pipistrelle	
30/05/2019	00:55:10	Soprano Pipistrelle	
30/05/2019	00:57:10	Soprano Pipistrelle	
30/05/2019	00:59:10	Leisler's Bat	
30/05/2019	01:00:10	Soprano Pipistrelle	
30/05/2019	01:01:10	Soprano Pipistrelle	
30/05/2019	01:01:40	Soprano Pipistrelle	
30/05/2019	01:02:10	Soprano Pipistrelle	
30/05/2019	01:05:40	Common Pipistrelle	
30/05/2019	01:06:10	Common Pipistrelle	
30/05/2019	01:06:40	Common Pipistrelle	Common Pipistrelle Soprano Pipistrelle
30/05/2019	01:08:40	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:10:40	Mvbr	Brown Long-Eared Bat
30/05/2019	01:11:10	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:12:10	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:14:10	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:15:50	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:16:50	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:17:20	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:18:20	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:19:50	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:21:20	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:21:50	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:22:20	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:25:50	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:26:50	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:29:50	Leisler's Bat	Leisler's Bat
30/05/2019	01:30:50	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:31:50	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:32:20	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:32:50	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:34:20 to 01:51:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:52:30	Leisler's Bat	Leisler's Bat
30/05/2019	01:53:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:53:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:54:00	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:55:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:57:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	01:58:30	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	01:59:00	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	02:03:30	Leisler's Bat	Leisler's Bat
30/05/2019	02:04:00	Pina	Common Pipistrelle
30/05/2019	02:05:30	Leisler's Bat	Leisler's Bat
30/05/2019	02:11:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:13:00	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	02:13:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:17:00	Leisler's Bat	Leisler's Bat
30/05/2019	02:17:30	Leisler's Bat	Leisler's Bat
30/05/2019	02:19:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:19:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:20:00	Common Pipistrelle	Common Pipistrelle

30/05/2019	02:21:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:22:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:23:00	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	02:24:30	Soprano Pipistrelle	Common Pipistrelle Soprano Pipistrelle
30/05/2019	02:25:00	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	02:27:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:33:40	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:35:40	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:36:10	Common Pipistrelle	
30/05/2019	02:36:40	Soprano Pipistrelle	
30/05/2019	02:37:10	Soprano Pipistrelle	
30/05/2019	02:37:40	Soprano Pipistrelle	
30/05/2019	02:40:40	Common Pipistrelle	
30/05/2019	02:41:40	Soprano Pipistrelle	
30/05/2019	02:45:30	Common Pipistrelle	
30/05/2019	02:47:00	Common Pipistrelle	
30/05/2019	02:49:30	Brown Long-Eared Bat	Brown Long-Eared Bat
30/05/2019	02:51:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:51:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:52:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:52:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:53:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	02:53:30	Pina	Common Pipistrelle
30/05/2019	02:55:30	Pina	Common Pipistrelle
30/05/2019	02:59:00	Soprano Pipistrelle	
30/05/2019	02:59:30	Soprano Pipistrelle	
30/05/2019	03:00:00	Common Pipistrelle	
30/05/2019	03:07:00	Common Pipistrelle	
30/05/2019	03:10:30	Common Pipistrelle	
30/05/2019	03:11:00	Common Pipistrelle	
30/05/2019	03:11:30	Common Pipistrelle	
30/05/2019	03:12:00	Common Pipistrelle	
30/05/2019	03:12:30	Common Pipistrelle	
30/05/2019	03:13:00	Common Pipistrelle	
30/05/2019	03:13:30	Common Pipistrelle	
30/05/2019	03:14:00	Common Pipistrelle	
30/05/2019	03:14:30	Common Pipistrelle	
30/05/2019	03:15:00	Common Pipistrelle	
30/05/2019	03:15:30	Pina	Common Pipistrelle
30/05/2019	03:16:00	Pina	Common Pipistrelle
30/05/2019	03:16:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	03:19:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	03:20:00	Leisler's Bat	Leisler's Bat
30/05/2019	03:20:30	Common Pipistrelle	Common Pipistrelle Leisler's Bat
30/05/2019	03:21:00	Leisler's Bat	Leisler's Bat
30/05/2019	03:22:00	Leisler's Bat	Leisler's Bat
30/05/2019	03:22:30	Leisler's Bat	Leisler's Bat
30/05/2019	03:24:00	Soprano Pipistrelle	Common Pipistrelle Soprano Pipistrelle
30/05/2019	03:24:30	Soprano Pipistrelle	Common Pipistrelle Soprano Pipistrelle
30/05/2019	03:27:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	03:30:10	Noid	Common Pipistrelle Leisler's Bat
30/05/2019	03:30:40	Common Pipistrelle	Common Pipistrelle Leisler's Bat
30/05/2019	03:31:10	Leisler's Bat	Leisler's Bat
30/05/2019	03:31:40	Leisler's Bat	Leisler's Bat
30/05/2019	03:32:10	Leisler's Bat	Leisler's Bat
30/05/2019	03:33:40	Common Pipistrelle	Common Pipistrelle
30/05/2019	03:34:10	Common Pipistrelle	Common Pipistrelle
30/05/2019	03:36:40	Common Pipistrelle	Common Pipistrelle
30/05/2019	03:37:10	Common Pipistrelle	
30/05/2019	03:37:40	Common Pipistrelle	
30/05/2019	03:38:40	Leisler's Bat	
30/05/2019	03:39:10	Common Pipistrelle	
30/05/2019	03:39:40	Pina	

30/05/2019	03:42:00	Common Pipistrelle	
30/05/2019	03:44:00	Common Pipistrelle	
30/05/2019	03:44:30	Common Pipistrelle	
30/05/2019	03:48:30	Common Pipistrelle	
30/05/2019	03:49:00	Common Pipistrelle	
30/05/2019	03:51:30	Common Pipistrelle	
30/05/2019	03:52:00	Soprano Pipistrelle	
30/05/2019	03:52:30	Common Pipistrelle	
30/05/2019	03:53:00	Common Pipistrelle	
30/05/2019	03:53:30	Common Pipistrelle	
30/05/2019	03:54:00	Common Pipistrelle	
30/05/2019	03:54:30	Soprano Pipistrelle	
30/05/2019	03:55:00	Soprano Pipistrelle	
30/05/2019	03:55:30	Soprano Pipistrelle	
30/05/2019	03:56:00	Soprano Pipistrelle	
30/05/2019	03:56:30	Soprano Pipistrelle	
30/05/2019	03:57:00	Common Pipistrelle	
30/05/2019	03:57:30	Common Pipistrelle	
30/05/2019	03:58:00	Common Pipistrelle	
30/05/2019	03:58:30	Common Pipistrelle	
30/05/2019	03:59:00	Common Pipistrelle	
30/05/2019	03:59:30	Soprano Pipistrelle	
30/05/2019	04:00:00	Common Pipistrelle	
30/05/2019	04:00:30	Common Pipistrelle	
30/05/2019	04:01:00	Common Pipistrelle	
30/05/2019	04:01:30	Common Pipistrelle	
30/05/2019	04:02:30	Soprano Pipistrelle	
30/05/2019	04:03:30	Common Pipistrelle	
30/05/2019	04:04:30	Soprano Pipistrelle	
30/05/2019	04:07:30	Soprano Pipistrelle	
30/05/2019	04:08:00	Leisler's Bat	
30/05/2019	04:09:30	Leisler's Bat	
30/05/2019	04:10:00	Leisler's Bat	
30/05/2019	04:13:00	Leisler's Bat	
30/05/2019	04:14:30	Leisler's Bat	
30/05/2019	04:28:30	Leisler's Bat	
30/05/2019	04:29:40	Leisler's Bat	
30/05/2019	04:30:10	Leisler's Bat	
30/05/2019	04:31:10	Common Pipistrelle	
30/05/2019	04:32:40	Common Pipistrelle	
30/05/2019	04:33:40	Leisler's Bat	
30/05/2019	04:37:40	Common Pipistrelle	
30/05/2019	04:45:10	Soprano Pipistrelle	

Bat data from SM2 starting at gate of Little Auburn and moving to the field

Date	Time	Auto Id	Manual Id
29/05/2019	22:03:34	Brown Long-Eared Bat	Soprano Pipistrelle
29/05/2019	22:07:34	Leisler's Bat	Leisler's Bat
29/05/2019	22:08:04	Leisler's Bat	Leisler's Bat
29/05/2019	22:08:34	Leisler's Bat	Leisler's Bat
29/05/2019	22:16:34	Leisler's Bat	Leisler's Bat
29/05/2019	22:17:04	Leisler's Bat	Leisler's Bat
29/05/2019	22:18:04	Noid	Leisler's Bat
29/05/2019	22:19:45	Leisler's Bat	Leisler's Bat
29/05/2019	22:23:45	Leisler's Bat	Leisler's Bat
29/05/2019	22:26:15	Leisler's Bat	Leisler's Bat
29/05/2019	22:28:15	Leisler's Bat	Leisler's Bat
29/05/2019	22:31:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:32:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:32:30	Leisler's Bat	Leisler's Bat
29/05/2019	22:33:00	Leisler's Bat	Leisler's Bat
29/05/2019	22:35:00	Leisler's Bat	Leisler's Bat
30/05/2019	01:00:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	03:18:00	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	03:59:30	Leisler's Bat	Leisler's Bat
30/05/2019	04:04:30	Leisler's Bat	Leisler's Bat
30/05/2019	04:07:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:07:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:08:00	Leisler's Bat	Leisler's Bat
30/05/2019	04:12:30	Leisler's Bat	Leisler's Bat
30/05/2019	04:16:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:17:00	Pina	Common Pipistrelle
30/05/2019	04:19:30	Soprano Pipistrelle	Soprano Pipistrelle
30/05/2019	04:20:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:21:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:22:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:23:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:23:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:24:30	Leisler's Bat	Leisler's Bat
30/05/2019	04:25:00	Leisler's Bat	Leisler's Bat
30/05/2019	04:25:30	Leisler's Bat	Leisler's Bat
30/05/2019	04:26:30	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:27:00	Common Pipistrelle	Common Pipistrelle
30/05/2019	04:29:00	Leisler's Bat	Leisler's Bat
30/05/2019	04:29:30	Leisler's Bat	Leisler's Bat
30/05/2019	04:30:00	Leisler's Bat	Leisler's Bat
30/05/2019	04:30:30	Leisler's Bat	Leisler's Bat

Bat Data From SM2 At Auburn House 27th June 2019: (Sunset 21.57 Hours, Sunrise 04.58 Hours),

Date	Time	Auto Id	Manual Id
27/06/2019	22:06:36	Mybr	Common Pipistrelle
27/06/2019	22:16:36	Common Pipistrelle	Common Pipistrelle
27/06/2019	22:30:36	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:46:58	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	23:47:28	Soprano Pipistrelle	Myotis Soprano Pipistrelle
27/06/2019	23:47:58	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:48:58	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:49:28	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:19:09	Mybr	Myotis
28/06/2019	00:19:39	Mybr	Myotis
28/06/2019	00:30:39	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:31:09	Mybr	Common Pipistrelle
28/06/2019	00:31:39 to 00:45:39	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:46:09	Mybr	Myotis Common Pipistrelle
28/06/2019	00:47:09	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:47:39	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:48:09	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:48:39	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:49:09	Mybr	Myotis Common Pipistrelle
28/06/2019	00:49:39	Common Pipistrelle	Myotis Common Pipistrelle
28/06/2019	00:50:09	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:50:39	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:51:09	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:52:09	Common Pipistrelle	Common Pipistrelle
28/06/2019	00:54:39	Noid	Myotis
28/06/2019	00:55:09	Mybr	Myotis
28/06/2019	01:06:20	Mybr	Myotis
28/06/2019	01:07:50	Mybr	Myotis
28/06/2019	01:08:20	Soprano Pipistrelle	Soprano Pipistrelle
28/06/2019	01:08:50	Mybr	Natterer's Bat
28/06/2019	01:13:50	Soprano Pipistrelle	Myotis Common Pipistrelle
28/06/2019	01:34:50	Natterer's Bat	Natterer's Bat
28/06/2019	01:35:50	Mybr	Myotis
28/06/2019	01:40:20	Common Pipistrelle	Common Pipistrelle
28/06/2019	01:40:50	Common Pipistrelle	Common Pipistrelle
28/06/2019	01:41:20	Common Pipistrelle	Common Pipistrelle
28/06/2019	01:41:50	Common Pipistrelle	Common Pipistrelle
28/06/2019	01:58:31	Mybr	Myotis
28/06/2019	01:59:01	Noid	Myotis
28/06/2019	02:02:01	Common Pipistrelle	Common Pipistrelle
28/06/2019	02:07:01	Mybr	Myotis
28/06/2019	02:07:31	Common Pipistrelle	Myotis Common Pipistrelle
28/06/2019	02:08:31	Common Pipistrelle to	Common Pipistrelle
28/06/2019	02:18:31	Soprano Pipistrelle	Soprano Pipistrelle
28/06/2019	02:35:31	Soprano Pipistrelle	Soprano Pipistrelle
28/06/2019	02:36:01	Soprano Pipistrelle	Soprano Pipistrelle

EM3 Data From Active Survey

Date	Time	Auto Id	Manual Id
27/06/2019	22:20:16	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	22:20:47	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	22:21:50	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	22:22:20	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	22:23:22	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	22:30:30	Leisler's Bat	Leisler's Bat
27/06/2019	22:36:39	Common Pipistrelle	Common Pipistrelle
27/06/2019	22:37:10	Common Pipistrelle	Common Pipistrelle
27/06/2019	22:38:41	Mvbr	Natterer's Bat
27/06/2019	22:40:13	Common Pipistrelle	Common Pipistrelle
27/06/2019	22:53:33	Common Pipistrelle	Common Pipistrelle
27/06/2019	22:54:36	Common Pipistrelle	Common Pipistrelle
27/06/2019	22:55:07	Soprano Pipistrelle	Common Pipistrelle Soprano Pipistrelle
27/06/2019	22:55:37	Soprano Pipistrelle	Common Pipistrelle Soprano Pipistrelle
27/06/2019	22:56:38	Common Pipistrelle	Common Pipistrelle
27/06/2019	22:57:40	Pina	Common Pipistrelle
27/06/2019	23:01:43	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:02:45	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	23:05:17	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:08:52	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:15:29	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:15:59	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	23:16:30	Soprano Pipistrelle	Soprano Pipistrelle
27/06/2019	23:17:01	Common Pipistrelle	Common Pipistrelle
27/06/2019	23:17:31	Soprano Pipistrelle	Common Pipistrelle Soprano Pipistrelle
28/06/2019	03:34:23	Leisler's Bat	Leisler's Bat
28/06/2019	03:41:30	Common Pipistrelle	Common Pipistrelle
28/06/2019	03:50:12	Soprano Pipistrelle	Soprano Pipistrelle
28/06/2019	03:55:16	Mvbr	Natterer's Bat
28/06/2019	03:55:46	Mvbr	Natterer's Bat
28/06/2019	03:58:48	Mvbr	Natterer's Bat
28/06/2019	04:00:21	Mvbr	Natterer's Bat
28/06/2019	04:00:52	Leisler's Bat	Leisler's Bat
28/06/2019	04:02:53	Common Pipistrelle	Common Pipistrelle
28/06/2019	04:05:24	Common Pipistrelle	Common Pipistrelle
28/06/2019	04:05:54	Common Pipistrelle	Common Pipistrelle
28/06/2019	04:10:59	Mvbr	Mvotis
28/06/2019	04:13:02	Common Pipistrelle	Mvotis Common Pipistrelle
28/06/2019	04:13:32	Mvbr	Soprano Pipistrelle Leisler's Bat
28/06/2019	04:14:02	Mvbr	Mvotis
28/06/2019	04:14:33	Soprano Pipistrelle	Soprano Pipistrelle
28/06/2019	04:15:05	Mvbr	Mvotis
28/06/2019	04:16:07	Mvbr	Mvotis
28/06/2019	04:17:08	Common Pipistrelle	Common Pipistrelle
28/06/2019	04:18:09	Common Pipistrelle	Common Pipistrelle
28/06/2019	04:18:40	Common Pipistrelle	Common Pipistrelle Soprano Pipistrelle
28/06/2019	04:20:42	Common Pipistrelle	Common Pipistrelle
28/06/2019	04:21:13	Noid	Common Pipistrelle
28/06/2019	04:21:45	Common Pipistrelle	Common Pipistrelle
28/06/2019	04:27:53	Soprano Pipistrelle	Soprano Pipistrelle
28/06/2019	04:30:55	Soprano Pipistrelle	Soprano Pipistrelle
28/06/2019	04:31:56	Soprano Pipistrelle	Soprano Pipistrelle