



Our Ref: 081-01-2023_Letter 002

National Parks and Wildlife Service
Wildlife Licensing Unit
90 King Street North
Smithfield
Dublin 7
D07 N7CV.

RE: Bat derogation licence application to (i) interfere with a bat roosting site and (ii) potentially disturb roosting bats associated with permitted renovation/demolition works associated with Sprayfield House at Ballynabooley, Sandycove, Co. Cork.

Dear Sir/Madam,

Permission was granted by Cork County Council under planning reference 24/4911 for the redevelopment and renovation of Sprayfield House (dwelling), which includes demolition of an existing stables building (with tack room) just to the west of Sprayfield House. The permitted renovation/demolition works are due to commence as soon as possible.

Note that there are on-going renovation works at outbuildings associated with Sprayfield House that were permitted under planning reference 22/6345. To inform the permitted renovation/demolition works under 22/6345 in relation to the conservation of bats where relevant, Kelleher Ecology Services Ltd. was engaged by Louise Sliney Architects in 2023 to conduct a bat survey of buildings at the site in general (Sprayfield House and associated outbuildings), including the aforementioned stables to the west of Sprayfield House. As a Soprano Pipistrelle *Pipistrellus pygmaeus* roost was confirmed at a garage building at the time, the renovation/demolition works permitted under 22/6345 went ahead under Bat Derogation Licence (DER/BAT 2024 – 07) with associated Soprano Pipistrelle related mitigation (including the creation of a dedicated Bat Roosting Loft) and monitoring commitments that are currently on-going, where monitoring has included the stables to the west of Sprayfield House.

Although not part of the works permitted under 22/6345, inclusion of the stables building as part of bat monitoring under DER/BAT 2024 – 07 was due to its proximity to the works areas (being adjoining) combined with the likely presence of a Brown Long-eared Bat *Plecotus auritus* maternity roost site at the tack room of the stables building in 2023 and general roosting suitability potential for bats in general. However, bat monitoring on-going under DER/BAT 2024 – 07 has found that no Brown Long-eared Bat maternity roost was present in 2024, although some non-maternity night/day roosting appeared to occur from time to time (more details proved below).

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***Directors: Dr Katherine Kelleher, Mr Philip Crimmins
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We therefore seek a bat derogation licence in relation to the demolition of the stables building (with tack room) to the west of Sprayfield House to (i) interfere with a bat roosting site and (ii) potentially disturb roosting bats associated with works permitted under 22/635 at Sprayfield House that may impact on bats, as afforded by Section 23 of the Wildlife Act 1976-2018 and Article 16 of the Habitats Directive.

Details of bat roosting at the stables building in question, proposed works that may impact on bats and proposed actions are outlined below. Relevant site mapping is also attached for reference.

OVERVIEW OF BAT ROOSTING AT THE STABLES BUILDING

The bat assessment consisted of various standard bat survey elements in 2023 and 2024 with information also gathered from discourse with the previous owners (Wrixon family who have lived at the property >30 years up to 2023) on any bat observations/signs specifically known for the stables building in question;

- **September to November 2023.** Visual checks, passive detector deployment, two active dusk emergence surveys in September (12th & 26th).
- **January to August 2023.** Visual checks, passive detector deployment (full time since 26th April to on-going), one active dusk emergence survey in July (25th) including use of an infra-red camera overlooking the stables building.

Assessments and surveys were undertaken in accordance with standard guidelines (Collins 2023 & 2016¹, Marnell *et al.* 2022, Roche & Aughney 2022, Aughney *et al.* 2008) using appropriate equipment (*e.g.* broadband bat detectors, torches, infra-red camera) and during suitable weather conditions where relevant (dry, low winds). The overview of bat roosting activity at the stables building in question came from the collective outcomes of the above elements.

It is worth noting that the stables building has not changed since 2023, as it was not part of the works permitted under 22/6345.

Stables Building in 2023

A Brown Long-eared Bat day roost was noted in association with exposed roof timbers in the tack room of the stables located west of Sprayfield House (see Plate 3). During both September dusk emergence surveys in 2023, five Brown Long-eared Bats were observed roosting on each occasion with all exiting during the dusk survey. The exit points used by the Brown Long-eared Bats from the building were not confirmed though, where two external walls are covered by ivy. The overall roof (tack room &

¹ Collins 2016 used until updated 2023 version available.

associated stables) is slated with a membrane on its underside and exposed timber roof timbers, where the membrane has holes (see Plate 3).

While the 2023 survey was done at a time in the year that is not optimal for confirming a maternity roost, discourse with the Wrixon family suggested that Brown Long-eared Bats have been present at the tack room for the two to three Summers up to 2023 with an estimate of up to about 40 individuals noted in the June/July period in 2023. This information is highly suggestive of a Brown Long-eared Bat maternity roost. As the median roost size for Brown Long-eared Bat is 9 with a mean of 14.9 (Roche *et al.* 2014), the estimated maximum numbers here indicate that this is relatively large for this bat species. The Wrixon family also stated that the bats come in through holes present in the membrane underneath the slated roof in the two to three Summers up to 2023.

On 23rd November 2023, 1 Brown Long-eared Bat was still day roosting within the tack room of the stables building from which it exited after dusk. On 30th November 2023, no bat was noted day roosting within the stables building. It is worth noting that air temperatures had substantially reduced between both November dates.

A relatively extensive amount of Brown Long-eared Bat droppings was also noted on the ground of the tack room, adding to the indications of a maternity roost here in 2023. Droppings were also noted on the ground within the stables part of the overall building, along with several Small Tortoiseshell butterfly wings at various locations indicating relatively frequent night roosting activity from Brown Long-eared Bat when handling its butterfly prey from a perch overhead (*i.e.* exposed roof timbers in this case). No daytime roosting bats were ever observed at the exposed roof timbers within the stables area of the overall building and there are no substantive crevice opportunities for such bat species present either (see Plate 1).

It is worth noting that there is no exposed stonework as external/internal walls are plastered, such that there are no roosting opportunities at crevices between stonework in this case.

In summary, the stables building likely supported a relatively large Brown Long-eared Bat maternity roost in the 2023 Summer period with daytime roosting continuing into the Autumn/early Winter period. Brown Long-eared Bat is a widespread resident bat species in Ireland, although not as frequently recorded as both Pipistrelle species (Roche *et al.* 2014). The conservation significance of the likely Brown Long-eared Bat maternity roost site at the tack room of the stables building in 2023 was potentially of medium to high conservation significance (see Figure 20 in Marnell *et al.* 2022).



Plate 1: Stables building with tack room (top left) and internal area of tack room that likely supported a brown long-eared bat maternity roost in 2023 (right) and internal area of stables that was used for night-roosting activity by Brown Long-eared Bat in 2023 (bottom left).

Stables Building in 2024

Some fresh Brown Long-eared Bat droppings were first noted in the tack room of the stables building in late April (when the full-time passive detector was initially deployed). However, the amount of droppings noted since then remains relatively small and not at all as extensive as that noted in 2023.

No Brown Long-eared Bats were noted in association with the stables building during the active dusk emergence survey in late July 2024. Furthermore, no individuals have been seen day roosting during any of the visual checks so far in 2024.

While no individuals have been seen day roosting during any of the dedicated visual checks so far in 2024, it is assumed that such day roosting is still in association with the exposed roof timbers in the tack room (as per 2023) as evidenced by droppings underneath same in 2024.

From late April to late August, the passive detector monitoring has mostly noted occasional night activity/roosting and some very occasional day roosting by Brown Long-eared Bat within the tack room of the stables building as follows, with a summary of passive recordings attached below. Of the continuous monitoring period of 118 nights (26th April to 22nd August inclusive 2024), 20 nights had some degree of Brown Long-eared Bat activity within the tack room of the stables building. Of these 20 nights, it was considered that there were three occasions of likely day roosting activity (all in August) given calls recorded close to sunrise/sunset times. The other occasions appear to represent night activity/roosting behaviour, as all occurred well between the sunset and sunrise periods in question. As can be seen from the summary of passive recordings attached below, activity within the tack room

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increased in August with a relatively substantial amount of social calling noted in-tandem. At the same time, the amount of droppings did not substantially increase and no individuals were seen day roosting during visual checks (as per 2023). It is worth remembering that the median roost size for Brown Long-eared Bat is 9 with a mean of 14.9 (Roche *et al.* 2014). Also, a maternity roost would have activity recorded on the passive detector every night from both mothers and pups. This collectively suggests that the activity was due to a non-breeding individual or very small number of non-breeding individuals at most – perhaps male(s) returning from previous years for mating/lekking, particularly from August.

Taking the above into consideration, there is no evidence of a Brown Long-eared Bat maternity roost at the stables building in 2024 (in contrast to 2023) as evidenced by the data collected from the ongoing surveys so far in 2024. There is no evidence of roosting activity by other bat species within the stables building in 2024 either.

In summary, the stables building supported occasional Brown Long-eared Bat day/night roosting in the 2024 Summer period and no maternity roosting activity. As previously mentioned, Brown Long-eared Bat is a widespread resident bat species in Ireland, although not as frequently recorded as both Pipistrelle species (Roche *et al.* 2014). The conservation significance of the day/night Brown Long-eared Bat roost site at the tack room of the stables building in 2024 is considered to be of relatively lower conservation significance (see Figure 20 in Marnell *et al.* 2022).t

Sprayfield House (dwelling) in 2023 & 2024

Sprayfield House (dwelling) has two attics that were accessed as part of the 2023 assessment. Both attics had exposed roof timbers with membrane under the slated roofs in some sections but not all (see Plate 2). Mortar was generally present between exposed stonework thereby limiting roosting opportunities at crevices between stonework (see Plate 2). Inspection of both attics noted that they had a lot of cobwebs with no signs of bats (including droppings, staining, water tanks, *etc.*) nor any day roosting bats ever noted during the 2023 assessment.

A passive detector was deployed within each attic space during the 2023 September assessment, where one ran for 15 consecutive nights and the other ran for 10.5 consecutive nights. Both attics only recorded an overall total of 42 files with bat calls over the survey period, none of which occurred within the attic spaces but were of bats active outside including flying over the dwelling roof (call signatures relatively faint).

A walk around the outside of the overall structure did not find any bat droppings/staining at the wall, windowsills or ground. Furthermore, no bats were seen exiting/entering the dwelling roof space during any of the dusk emergence surveys in 2023 and 2024.

While discourse with the Wrixon family found that they had up to a handful of bats fly into one of the bedrooms on one occasion during the 2023 Summer period, this was the only time they noted bats at the Dwelling in all their years in residence (>30 years). Description of the bats suggest they were Pipistrelles, and it appears that this occurrence came about when the bats flew in through an open window at the time.

In summary, there was no evidence of bat roosting associated with Sprayfield House in 2023 and again in 2024.



Plate 2: Sprayfield House dwelling (left) and internal attic spaces (top & bottom right).

OUTLINE OF WORKS THAT MAY IMPACT ON BATS

Stables Building (west of Sprayfield House):

- Stables building to be entirely removed.

The primary impacts on bats arising from the above relates to the (i) permanent loss of a Brown Long-eared Bat roost site within the tack room section of the structure (see mitigation of loss below) and (ii) potential disturbance/injury to roosting bats at the structure during removal works if present.

PROPOSED ACTIONS REGARDING WORKS & BAT CONSERVATION

The following *measures* are proposed in the interest of bat conservation in relation to works due at the Stables building.

General

1. Construction Team bat awareness: The Construction Team will be made aware of the use of the Stables building by roosting bats, to cease works in the event that any bat is encountered during works in general and to immediately inform the Ecology Team for further instruction.

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The implementation of same will be undertaken/supervised by Dr Kelleher & her Ecology team at site.

2. Monitoring: Monitoring through visual and active/passive detector surveys will continue to be undertaken by the Ecology Team to check bat activity during and post the works period in general. ***The implementation of same will be undertaken/supervised by Dr Kelleher & her Ecology team at site.***

Stables Building Removal

3. Supervision of roof removal by an Ecologist: The removal of the roof will be done under the advice and supervision of the Ecology Team, where removal of relevant aspects of the roof will be done slowly and carefully by hand as necessary. ***The implementation of same will be undertaken under advice/supervision of Dr Kelleher & her Ecology team at site.***
4. Bats encountered during works that require removal: ***Implementation of the following will be undertaken/supervised by Dr Kelleher & her Ecology team at site.*** Where roosting bats are encountered during removal works, they will be carefully removed where necessary by members of the Ecology Team that that have a Licence to Capture Bats (as issued by NPWS) for safe release elsewhere (such as dedicated bat roosting loft, see below), with removed bats transported in a secure container or cloth bird holding bag. Bat handling and moving protocol to include the following:
 - a. Protective gloves to be worn by those from the Ecology Team handling a bat (see BCT 2020, Miller 2016), with disposable gloves worn over the top of the protective gloves.
 - b. New disposable gloves to be used between bats to prevent the transmission of disease.
 - c. Handling to be kept to a minimum. Handler can mimic a crevice with their hand to make the bat feel safe when moving into secure container or cloth bird holding bag, or handler can cover the bat with a clean soft cloth/tea-towel and gently move bat with cloth into the secure container or cloth bird holding bag (see Miller 2016).
 - d. Bats to be placed/released either into the dedicated bat roosting loft or surrounding environment (whichever is more appropriate) following guidelines around bat release (see Miller 2016).
 - e. Any unexpected care interventions or other items to follow advice from Miller (2016) and/or Bat Rehabilitation Ireland² and/or Bat Conservation Ireland¹.
 - f. Adhere to conditions of Licence to Capture Bats, such as liaison with NPWS personnel as stipulated.

² <https://batrehabilitationireland.ie/>; <https://www.batconservationireland.org/>

Dedicated Bat Roosting Loft

As previously mentioned, a dedicated Bat Roosting Loft was created by redeveloping an existing Loft space (in May 2024, Plate 3) as part of mitigation commitments for Soprano Pipistrelle under Bat Derogation Licence (DER/BAT 2024 – 07).

A passive detector has been deployed within this space as part of monitoring commitments since 10th July 2024 date, which has confirmed some activity within this feature by Soprano Pipistrelle, Natterer's Bat *Myotis nattereri* and possibly Common Pipistrelle *Pipistrellus pipistrellus*. The activity in question to date has comprised of night activity with no evidence of day roosting so far but confirms that the installed bat access points are accessible for bats and are allowing bats to explore this relatively new redeveloped space. Roosting features within the dedicated Bat Roosting Loft include additional timbers at the rafters to create roosting crevices (in line with BCI 2015), along with bat boxes (4 x Schwegler Flat Bat Box 1FF with built-in wooden rear panel). A total of four bat access slates were installed, two on each roof slope.



Plate 3: Internal area of dedicated bat roosting loft showing rafter roost crevice timbers & bat boxes (left) and western roof slope with 2 x bat access slates (right).

The following *measures* are proposed to especially improve this space for Brown Long-eared Bat.

5. Install sections of boarding to rafters: Install untreated 1.2m wide board (e.g. plyboard) to underside of rafters (towards apex), leaving 1 inch along the apex for bat access. Cover half the length of the roof on one side of the apex and also half the length on the other side (staggered or alternated from each side) to increase both secure closed and open roosting opportunities for adult and young Brown Long-eared Bats. ***The implementation of same will be undertaken under advice/supervision of Dr Kelleher & her Ecology team at site.***
6. Improve roughness of (new) exposed timbers under roof: Horizontally score new exposed timbers under roof (rafters, boards) to make it less smooth so that bats can more easily latch onto the timbers with their feet and move about. Horizontal grooves to be about half an inch



apart. ***The implementation of same will be undertaken under advice/supervision of Dr Kelleher & her Ecology team at site.***

It is believed that the above proposed actions and measures will ensure that no detrimental impacts on the continued favourable existence of the local bat roosting community will occur. Please do not hesitate to contact the undersigned if you require any further details or information.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Katherine Kelleher', is written over a light green rectangular background. Below the signature is a horizontal dotted line.

Dr Katherine Kelleher, Kelleher Ecology Services

References

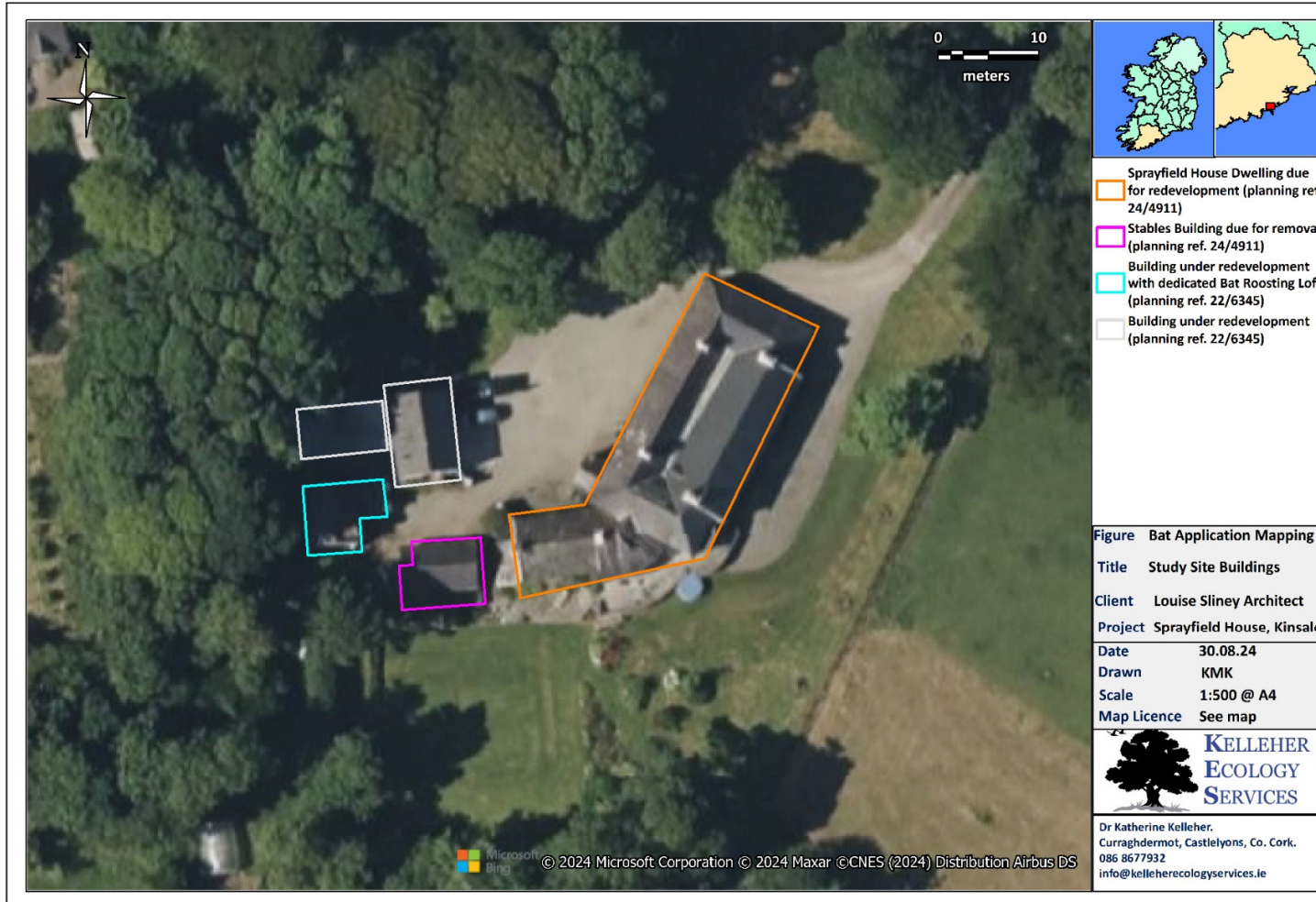
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- BCT (Bat Conservation Trust). 2020. Wearing Gloves When Handling Bats.
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- Roche, N., Aughney, T., Marnell, F. and Lundy M. 2014. Irish Bats in the 21st Century. Bat Conservation Ireland, Cavan.

Site Mapping



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Brown Long-eared Bat activity within (including likely) the tack room of the stables building in 2024 as recorded by a full time passive detector from 26th April to 22nd August (118 nights).

Date	Time	Details
28/04/2024	01:33:52	Social calls.
03/05/2024	02:30:46	Flight calls and social calls.
	02:52:06	Mainly flight calls.
04/05/2024	23:56:30	Flight calls and social calls
10/05/2024	01:14:59	Social calls.
	01:16:15	Social calls.
12/05/2024	03:13:38	Social calls.
17/05/2024	00:53:10	Social calls.
	00:55:49	Social calls.
28/05/2024	23:27:20	Social calls.
08/06/2024	04:02:13	Social calls.
18/06/2024	03:21:23	Social calls – although faint, possibly within building.
26/06/2024	01:44:58	Flight calls.
31/07/2024	05:07:02	Social calls - likely from outside
01/08/2024	02:33:35	Social calls - likely from outside
06/08/2024	02:32:27	Faint flight calls and social calls - likely outside
	02:33:38	Social calls - likely from outside
	03:02:06	Flight calls and loud social calls - inside stable from now until end of night
	03:02:44	Flight calls and loud social calls
	03:02:54	Flight calls and loud social calls
	03:03:17	Flight calls and loud social calls
	03:03:28	Flight calls and loud social calls
	03:03:51	Flight calls and loud social calls
	03:04:05	Flight calls and loud social calls
	03:04:18	Flight calls and loud social calls
	03:04:32	Flight calls and loud social calls
	03:04:38	Flight calls and loud social calls
	03:04:45	Flight calls and loud social calls
	03:04:51	Flight calls and loud social calls
	03:05:16	Flight calls and loud social calls
03:05:33	Flight calls and loud social calls	

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Date	Time	Details
	03:05:43	Flight calls and loud social calls
	03:05:53	Flight calls and loud social calls
	03:06:03	Flight calls and loud social calls
	03:06:15	Flight calls and loud social calls
	03:06:24	Flight calls and loud social calls
	03:06:37	Flight calls and loud social calls
	03:07:16	Flight calls and loud social calls
	03:07:24	Flight calls and loud social calls
	03:07:45	Flight calls and loud social calls
	03:08:19	Flight calls and loud social calls
	03:08:29	Flight calls and loud social calls
	03:08:47	Flight calls and loud social calls
	03:08:54	Flight calls and loud social calls
	03:09:13	Flight calls and loud social calls
	03:09:26	Flight calls and loud social calls
	03:10:03	Flight calls and loud social calls
	03:10:17	Flight calls and loud social calls
	03:10:26	Flight calls and loud social calls
	03:10:31	Flight calls and loud social calls
	03:10:42	Flight calls and loud social calls
	03:10:52	Flight calls and loud social calls
	03:11:00	Flight calls and loud social calls
	03:11:06	Flight calls and loud social calls
	03:11:15	Flight calls and loud social calls
	03:11:54	Flight calls and loud social calls
	03:12:03	Flight calls and loud social calls
	03:12:20	Flight calls and loud social calls
	03:12:53	Flight calls and loud social calls
	03:13:14	Flight calls and loud social calls
	03:13:20	Social calls
	03:14:12	Social calls
	03:14:34	Social calls
	03:14:45	Social calls
	03:15:26	Social calls
	03:15:34	Social calls

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Date	Time	Details
	03:15:44	Social calls
	03:16:04	Social calls
	03:16:19	Flight calls and loud social calls
	03:16:29	Flight calls and loud social calls
	03:16:38	Flight calls and loud social calls
	03:16:49	Flight calls and loud social calls
	03:18:11	Social calls
	03:18:26	Social calls
	03:18:36	Social calls
	03:19:54	Social calls
	03:24:37	Social calls
	03:26:11	Social calls
	03:26:34	Flight calls and loud social calls
	03:27:27	Social calls
	03:27:46	Social calls
	03:28:07	Social calls
	03:28:40	Flight calls and loud social calls
	03:29:02	Flight calls
	03:29:25	Flight calls
	03:30:07	Social calls
	03:30:47	Social calls
	03:31:02	Flight calls and loud social calls
	03:32:31	Flight calls and loud social calls
	03:32:53	Social calls
	03:33:06	Social calls
	03:33:53	Social calls
	03:34:15	Flight calls
	03:35:37	Flight calls
	03:35:58	Social calls
	03:39:49	Social calls
	03:39:58	Social calls
	03:40:22	Social calls
	03:40:33	Social calls
	03:40:40	Social calls
	03:40:52	Social calls

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Date	Time	Details
	03:41:11	Social calls
	03:41:24	Social calls
	03:42:08	Flight calls and loud social calls
	03:42:14	Flight calls and loud social calls
	03:42:54	Social calls
	03:43:14	Social calls
	03:43:19	Social calls
	03:43:29	Social calls
	03:43:42	Social calls
	03:43:50	Social calls
	03:50:13	Loud social calls
	03:50:44	Flight calls and loud social calls
	03:54:48	Social calls
	04:14:09	Loud social calls
	04:17:47	Social calls
	04:19:00	Flight calls
	04:20:00	Social calls
	04:24:41	Loud social calls
	04:25:20	Flight calls and loud social calls
	04:25:41	Flight calls and loud social calls
	04:25:57	Flight calls and loud social calls
	04:26:03	Flight calls and loud social calls
	04:26:09	Flight calls and loud social calls
	04:26:27	Flight calls and loud social calls
	04:26:44	Flight calls and loud social calls
	04:26:54	Flight calls and loud social calls
	04:27:07	Flight calls and loud social calls
	04:27:26	Flight calls and loud social calls
	04:27:37	Flight calls and loud social calls
	04:27:54	Flight calls and loud social calls
	04:28:11	Flight calls and loud social calls
	04:28:18	Flight calls and loud social calls
	04:28:29	Flight calls and loud social calls
	04:28:39	Flight calls and loud social calls
	04:29:02	Flight calls and loud social calls

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Date	Time	Details
	04:29:10	Flight calls and loud social calls
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	04:29:45	Flight calls and loud social calls
	04:30:03	Flight calls and loud social calls
	04:30:15	Flight calls and loud social calls
	04:30:34	Flight calls and loud social calls
	04:30:45	Flight calls and loud social calls
	04:31:02	Social calls
	04:31:37	Social calls
	04:31:53	Social calls
	04:32:17	Social calls
	04:32:24	Social calls
	04:32:50	Social calls
	04:33:08	Social calls
	04:33:15	Social calls
	04:33:21	Social calls
	04:33:32	Social calls
	04:34:05	Social calls
	04:34:21	Social calls
	04:34:32	Flight calls and loud social calls
	04:34:46	Social calls
	04:35:14	Social calls
	04:35:30	Social calls
	04:35:35	Social calls
	04:36:23	Social calls
	04:37:06	Social calls
	04:39:54	Social calls
	04:46:59	Social calls
	04:48:04	Social calls
	04:55:19	Social calls
	05:00:13	Social calls
	05:12:09	Social calls
	05:59:31	Social calls - 6 minutes before sunrise at 06:05hrs. DAY ROOSTING LIKELY

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*Directors: Dr Katherine Kelleher, Mr Philip Crimmins
Registered in Ireland, Company No. 503308. VAT Registration No. 9802986C*



Date	Time	Details
06/08/2024	23:34:23	Flight calls, probably inside stable.
10/08/2024	02:33:42	Social call. Faint, possibly inside stable.
	02:38:27	Flight calls and loud social calls
	02:38:45	Flight calls and loud social calls
	02:39:26	Flight calls and loud social calls
	02:45:12	Flight calls and loud social calls
11/08/2024 to 12/08/2024	23:47:49	Social calls - probably inside
	23:48:12	Flight calls and loud social calls
	23:48:27	Flight calls and loud social calls
	23:48:34	Flight calls and loud social calls
	23:48:51	Flight calls and loud social calls
	23:49:13	Social calls
	23:53:52	Social calls
	23:54:00	Social calls
	23:54:29	Social calls
	23:54:47	Social calls
	23:56:32	Social calls
	23:57:46	Social calls
	23:58:10	Social calls
	23:58:31	Social calls
	23:58:58	Social calls
	23:59:40	Social calls
	00:06:32	Social calls
	00:25:31	Social calls
	00:26:13	Social calls
	00:26:52	Social calls
	00:27:08	Social calls
	00:27:15	Social calls
	00:33:23	Social calls
	00:53:11	Social calls
	00:53:56	Flight calls and social calls
	00:54:38	Flight calls and social calls
12/08/2024	21:19:22	Clear flight calls. 17 minutes after sunset at 21:02hrs. DAY ROOSTING LIKELY
	22:30:28	Social calls. Probably inside

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Date	Time	Details
14/08/2024	01:45:52	Social calls. Probably inside
	01:46:33	Social calls. Probably inside
	01:46:43	Social calls. Probably inside
	01:46:57	Social calls. Probably inside
	01:48:20	Flight calls and loud social calls
	01:48:33	Flight calls and loud social calls
	01:49:18	Flight calls
	01:50:40	Loud social calls
	01:51:03	Flight calls and loud social calls
	01:51:54	Social calls. Probably inside
	01:52:19	Social calls. Probably inside
	01:53:38	Flight calls and loud social calls
	01:53:59	Flight calls and loud social calls
	01:54:22	Flight calls and loud social calls
	01:54:34	Flight calls and loud social calls
	01:54:40	Flight calls and loud social calls
	01:55:18	Social calls. Probably inside
	01:55:23	Social calls. Probably inside
	01:56:08	Social calls. Probably inside
	01:56:53	Social calls
	02:00:25	Flight calls and loud social calls
	02:01:40	Flight calls and loud social calls
	02:54:42	Flight calls and loud social calls
	03:14:50	Social calls
	03:15:54	Social calls
	03:16:20	Loud social calls
	03:16:34	Social calls
	03:16:51	Social calls
	03:17:10	Social calls
	03:17:40	Loud social calls
	03:17:57	Social calls
	03:18:07	Social calls
	03:18:25	Social calls
03:18:38	Flight calls and loud social calls	
03:18:55	Flight calls and loud social calls	

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Date	Time	Details
	03:19:03	Flight calls and loud social calls
	03:19:20	Flight calls and loud social calls
	03:19:35	Flight calls and loud social calls
	03:20:34	Flight calls and loud social calls
	03:20:57	Social calls
	03:21:27	Social calls
	03:22:45	Social calls
	03:23:01	Social calls
	03:23:16	Social calls
	03:23:56	Social calls
	03:24:06	Social calls
	03:24:33	Social calls
	03:26:01	Social calls
	03:26:31	Social calls
	03:26:57	Flight calls and loud social calls
	03:27:06	Social calls
	03:28:12	Social calls
	03:29:19	Flight calls and loud social calls
	03:29:44	Flight calls and loud social calls
	03:30:20	Social calls
	03:30:45	Social calls
	03:31:07	Flight calls and loud social calls
	03:31:26	Social calls
15/08/2024 to 16/08/2024	22:15:05	Flight calls and loud social calls
	22:35:19	Flight calls and loud social calls
	22:35:37	Flight calls and loud social calls
	22:35:44	Flight calls and loud social calls
	22:35:49	Flight calls and loud social calls
	22:35:56	Flight calls and loud social calls
	22:36:07	Flight calls and loud social calls
	22:36:14	Flight calls and loud social calls
	22:36:24	Flight calls and loud social calls
	22:36:32	Flight calls and loud social calls
	22:36:45	Flight calls and loud social calls
	22:36:55	Flight calls and loud social calls

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Date	Time	Details
	22:37:10	Flight calls and loud social calls
	22:59:33	Flight calls and loud social calls
	23:02:33	Social calls
	23:02:45	Social calls
	23:03:22	Flight calls and both types of loud social calls as above
	23:04:48	Social calls
	23:27:16	Flight calls and loud social calls
	23:27:40	Social calls
	23:27:50	Social calls
	23:27:58	Social calls
	23:28:14	Social calls
	23:28:19	Social calls
	23:28:25	Social calls
	23:28:38	Social calls
	23:28:49	Social calls
	23:28:58	Social calls
	23:29:06	Social calls
	23:29:37	Social calls
	23:29:44	Social calls
	23:29:51	Social calls
	23:30:08	Social calls
	23:31:01	Social calls
	23:34:19	Social calls
	23:50:48	Flight calls and loud social calls
	23:51:09	Social calls
	00:48:24	Social calls
	00:48:48	Social calls
	00:49:26	Flight calls and loud social calls
	00:49:50	Flight calls and loud social calls
	00:50:20	Flight calls and loud social calls
	04:31:27	Flight calls and loud social calls
	04:42:38	Social calls
	04:43:08	Social calls
	04:43:18	Social calls

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Date	Time	Details
	04:43:31	Social calls
	04:43:54	Flight calls and loud social calls
	04:45:43	Flight calls and loud social calls
	04:45:51	Flight calls and loud social calls
19/08/2024	20:30:39	Social calls. Faint, but 18 minutes before sunset 20:4. DAY ROOSTING LIKELY