

Bat Emergence and Re-Entry Surveys (BERS)

Survey site:

Springfield Barn Hatch Gate Lane, Wargrave, RG10 8QD

Client:

Magrun Ltd

Report date:

29th July 2024

Project:

This report is prepared to inform a planning application for the proposal described as:
“The construction of a partial demolition and re-build of the eastern half of the building”

This report is supplementary to the Preliminary Roost Assessment report completed by Arbtech Consulting Ltd (2024).

BERS survey methodology and legislation can be found in the Arbtech Supplement: [BERS Methodology and Legislation - 2024.](#)

This report is an addendum to and must be read in conjunction with the Preliminary Roost Assessment completed by Arbtech Consulting Limited (2024) for the same site address. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the lead surveyor for advice.	
Executive Summary	
<i>Background</i> The PRA identified a brown long-eared bat during the survey of B1. The PRA concluded the site has High habitat value and is a brown long-eared bat roost within B1. B2 (the main house) was not subject to survey during the previous PRA, however, a PRA was undertaken before the 1st BERS survey. <i>BERS results</i> The PRA of B2 concluded that the main house has moderate habitat value for roosting bats. Subsequently, two bat emergence surveys were undertaken. No roosting activity within B2 was identified during the surveys. The surveys confirmed the following roosts within B1: 1. Common pipistrelle day roost (x 1 individual bat) in the barge board on the south-eastern elevation 2. Brown long eared day roost (x1 individual bat) in the loft space with access point from the window on the bottom right side of the north-western elevation 3. Soprano pipistrelle maternity roost (x8 bats) under the eaves on the northeastern elevation The development will need to be permitted by an EPSL.	
The site surveys were designed and managed by Beth Ellison-Perrett BSc (Hons), MSc, MRSB, Natural England Bat Licence Number: 2023-11066-CL17.	
See surveyor locations in the BERS plan in Appendix 1, Bibliography in Appendix 2.	
<i>Limitations</i>	Not applicable. There were no limitations.

Field Survey	
Dusk Emergence Survey 1	
Building B1 and B2	
Building inspection prior to survey	Internal check on B1 Externally, the building is in the same condition as when the previous PRA (Arbtech Consulting Ltd, May 2024) was undertaken. This included raised roof tiles, broken windowpanes, open eaves and warped wooden weatherboarding. The loft space was also in the same condition; however, the brown long eared bat was not observed within the loft during this inspection.  Figure 1: the loft space within B1 PRA on B2 B2 is a detached two-storey brick-built building with a cross-pitched and gabled roof clad in clay roof tiles. The roof tiles are in relatively good condition with a few raised tiles on all elevations under which bats could roost. The doors and windows are wooden framed and appear in excellent condition with no suitable bat roosting sites. The brickwork around the building appears in excellent condition with no gaps or cracks within which crevice-dwelling bats could roost. There are no soffits or bargeboards around the building as the eaves are open. with no gaps between the brickwork and roof. There are four chimneys located on the roof of the building. The brickwork on the chimneys appears in good condition. There is lead flashing around the bases of the chimney which is flat and without gaps. The brick gable ends are in good condition with no gaps around

the tops of the gable ends. There is one loft space within the main roof void of B2. The roof structure is built from modern timber beams including the ridge beam. The roof is lined with wooden sarking which appears in good condition with no gaps. The floor of the loft space is lined with mineral wool insulation and there are timber boards in places. There are cobwebs around the ridge beam and roof to floor cobwebs which could indicate a lack of internal flying activity by void dwelling bats, such as brown long-eared bats. No daylight enters the loft space which indicates that it is well sealed. B2 has moderate habitat value for roosting bats.



Figure 2: the north-eastern and south-eastern elevations of B2



Figure 3: the north-western and south-western elevations of B2



Figure 4: the south-western elevation of B2



Figure 5: the south-eastern elevation of B2



Figure 6: the loft space within B2

Surveyor and position	Surveyor 1 – Phillip Wooding – 1st year bat survey experience – observing the northwest and southwest elevations of B1						
	Surveyor 2 – Aga Bogucka – 3 years bat survey experience – observing the northeast and southeast elevations of B1						
	Surveyor 3 – Oli Drew – 2 years bat survey experience – observing the west elevation of B2						
	Surveyor 4 – Chris Drew – 2 years bat survey experience – observing the north elevation of B2						
	Lead Surveyor 5 – Beth Ellison- Perrett – Natural England Bat Licence Number: 2023-11066-CL17 – observing the northeastern elevations of B2						
	Surveyor 6 – Sarah Cooke – 4 years bat survey experience – observing the southeastern elevations of B2						
Weather (start/end)	Temperature (°C): 15				Temperature (°C): 13		
	Relative humidity (%): 75				Relative humidity (%): 75		
	Cloud cover (%): 100				Cloud cover (%): 100		
	Wind (m/s): 3				Wind (m/s): 4		
	Rain: None				Rain: None		
Equipment used	Echometer Touch 2, Magenta 4, Batbox Duet, Nightfox Whisker, Nightfox Red, Nightfox XB5 Pro IR torch						
Results							
Date of survey	Sunset Start - End	Species and numbers	Roost type	Structure reference	Roost location	Access points	Dimensions and explanation of roost location
07/06/2024	Sunset 21:17 21:02 – 23:17	CPx1	Day	B1	SE elevation	Barge board	Under the barge board on the south-eastern elevation
Surveyor observations B1							

<i>Surveyor 1</i>	No emergences. The first bat activity noted was a noctule that was heard but not seen at 21:38, then from 21:38 to 21:46, common pipistrelles were heard but not seen. From 22:18 to 22:22 brown long-eared bats were seen flying around the light box on the top of B1 with emergences discounted through further review. Between 22:35 to 22:56, there was constant activity all around from soprano pipistrelles, brown long-eared bats, and common pipistrelle social activity.	
<i>IR position 1</i>	The footage reflected the view of surveyor 1. No bat roosting behaviour was recorded.	

<i>Surveyor 2</i>	One emergence from a common pipistrelle observed at 21:48 from underneath the barge board. The bat then flew south-east. The first bat was a noctule heard not seen at 21:28. Common pipistrelles were heard not seen between 21:31 and 22:20. Another noctule was heard not seen at 22:39. The last bat observed was a common pipistrelle heard not seen at 22:45.	
<i>IR position 2</i>	The footage reflected the view of surveyor 2. The recording confirmed the emergence of a common pipistrelle identified by the surveyor at 21:48.	
Surveyor observations B2		
<i>Surveyor 3</i>	No emergences seen. The first bat was 21.37 a noctule heard not seen. A number of passes by common and soprano pipistrelles were recorded during the survey. The bats were heard not seen. A brown long-eared bat was recorded at 22.01. Between 21.59 and 22.05 a Noctule was heard not seen. The last bat was a common pipistrelle heard not seen at 22:45.	N/A

<i>IR position 3</i>	The footage reflected the view of surveyor 3. No bat roosting behaviour was recorded.	
<i>Surveyor 4</i>	No emergences seen. The first bat was a soprano pipistrelle that was heard not seen at 21:35. At 21:39 two common pipistrelles were observed foraging above the tree to the left of the surveyor. At 22:02 a direct pass by a brown long-eared bat was observed. Occasional distant passes by noctule, soprano pipistrelle and common pipistrelle were recorded from 22:08 to 22:55. The bats were heard not seen.	N/A
<i>IR position 4</i>	The footage reflected the view of surveyor 4. No bat roosting behaviour was recorded.	

<i>Surveyor 5</i>	No emergences. The first bat was a noctule heard not seen at 21:38, and then again at 21:41. From 21:41 there was heard not seen activity from noctules, common pipistrelles and soprano pipistrelles to the last bat, which was a common pipistrelle at 22:55. There were two soprano pipistrelle passes recorded at 22:28 and 22:50 from east to west.	N/A
<i>IR position 5</i>	The footage reflected the view of surveyor 5. No bat roosting behaviour was recorded.	
<i>Surveyor 6</i>	No emergences seen. The first bat was a common pipistrelle heard not seen, followed by another heard not seen at 21:42. The last bat was a soprano pipistrelle heard not seen at 22:45.	N/A

<i>IR position 6</i>	The footage reflected the view of surveyor 6. No bat roosting behaviour was recorded.	
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Field Survey							
Dusk Emergence Survey 2							
Building B1 and B2							
<i>Surveyor and position</i>	Lead surveyor 1 – Anna Smith – 4 years bat survey experience – observing the northwest and southwest elevations of B1 Surveyor 2 – Aga Bogucka – 3 years bat survey experience – observing the northeast and southeast elevations of B1 Surveyor 3 – Tom Drew – 3 years bat survey experience – observing the southeastern elevations of B2 Surveyor 4 – Chris Drew – 2 years bat survey experience – observing the north elevation of B2 Surveyor 5 – Oli Drew – 2 years bat survey experience – observing the west elevation of B2 Surveyor 6 – John-Henry Munday – 1 year bat survey experience – observing the northeastern elevations of B2						
<i>Weather (start/end)</i>	Temperature (°C): 17 Relative humidity (%): 64 Cloud cover (%): 100 Wind (m/s): 0.2 Rain: Light drizzle			Temperature (°C): 16 Relative humidity (%): 70 Cloud cover (%): 100 Wind (m/s): 3 Rain: None			
<i>Equipment used</i>	Echometer Touch 2, Magenta 4, Batbox Duet, Nightfox Whisker, Nightfox Red, Nightfox XB5 Pro IR torch						
Results							
Date of survey	Sunset Start - End	Species and numbers	Roost type	Structure reference	Roost location	Access points	Dimensions and explanation of roost location
01/07/2024	Sunset 21:23 21:08 – 23:23	SPx2	Maternity Roost. (Please see results from subsequent survey, when 8 SP were observed to	B1	NE elevation	Eaves	Under the eaves on the north-east elevation of B1

			emerge from this location on 22/07/24.				
Surveyor observations B1							
<i>Surveyor 1</i>	No emergences. Survey commenced with a heard not seen pass from a common pipistrelle at 21:38, followed by heard not seen pass by a soprano pipistrelle at 21:45 and a noctule at 21:46. The survey primarily recorded common pipistrelles with frequent heard-not-seen activity and some passing observations noted via flight paths northwest to southeast, and north to south; moving primarily from north to south and vice versa. A confirmed brown long-eared bat could be heard at 22:15. Feeding behaviour and continuous activity were noted throughout the survey period with the survey finishing with a heard not seen call from a Barbastelle at 23:02.					N/A	
<i>IR position 1</i>	The footage reflected the view of surveyor 1. No bat roosting behaviour was recorded.						

<i>Surveyor 2</i>	An emergence from a soprano pipistrelle was observed from under the eaves on the north-east elevation at 21:32. A re-entry from a soprano pipistrelle into the same location was observed at 21:43 and an emergence from a soprano pipistrelle as the same location was observed at 21:48. The bat flew south-east after emerging and began feeding south to north along the property border (trees and hedgerow). This was continuous activity throughout the survey. Common pipistrelles were heard not seen at 21:52 and then from 22:02 feeding from north to northwest, with continuous activity until the last heard not seen at 22:17. A brown long-eared bat was heard not seen at 22:21 and again at 23:15. A noctule was heard not seen at 23:02.	
<i>IR position 2</i>	The footage reflected the view of surveyor 2. The recording confirmed the emergence, re-entry and second emergence of a soprano pipistrelle identified by the surveyor at 21:32, 21:43 and 21:48.	
Surveyor observations B2		
<i>Surveyor 3</i>	No emergences. The first bat seen was a soprano pipistrelle pass at 21:42, with another soprano pipistrelle pass at 21:58. Common pipistrelle passes were seen from 21:53 with further common pipistrelle	N/A

	passes throughout survey until 22:32. Heard not seen activity was heard from soprano pipistrelle at 22:16 and 22:16, common pipistrelle from 21:56 until 22:36, noctule at 21:42 until 22:15, common serotine at 21:45 and a brown long-eared bat at 22:20. The last bat was a common pipistrelle pass at 22:32 between the house and the barn.	
<i>IR position 3</i>	The footage reflected the view of surveyor 3. No bat roosting behaviour was recorded.	
<i>Surveyor 4</i>	No emergencies seen. The first bat was a soprano pipistrelle heard not seen at 21:21. There was constant heard not seen activity through the whole survey from soprano pipistrelles, noctules, common pipistrelles and brown long-eared bats. A soprano pipistrelle was seen at 21:41 feeding in the garden. There was then common pipistrelle feeding at 21:54 followed by two passes recorded at 22:00. A common pipistrelle passed over the house at 22:35. Brown long-eared bats were heard not seen at 22:20, 22:40 and 23:12, the last bat seen. Noctules were heard not seen at 21:41 and 22:11.	N/A

<i>IR position 4</i>	The footage reflected the view of surveyor 4. No bat roosting behaviour was recorded.	
<i>Surveyor 5</i>	No emergences. The first bat was a noctule heard not seen at 21:28, followed by a common pipistrelle heard not seen at 21:42. There were constant common pipistrelle passes from northeast to southwest, and south to north from 21:55 to 22:03. Common pipistrelles were heard not seen from 22:03 to the last bat at 23:13. A noctule was heard not seen at 22:11 and 22:57, and a soprano pipistrelle was heard not seen at 21:39.	N/A

<i>IR position 5</i>	The footage reflected the view of surveyor 5. No bat roosting behaviour was recorded.	
<i>Surveyor 6</i>	No emergences seen. The first bat was a noctule which was heard but not seen at 21:41. At 21:54 a common pipistrelle was observed passing south to west. At 21:56 a common pipistrelle was observed passing along the same route. At 21:58 a soprano pipistrelle was observed passing east to west. At 22:02 a common pipistrelle was observed passing south to east. Common pipistrelles were heard but not seen between 22:12 and 23:08.	N/A

<i>IR position 6</i>	The footage reflected the view of surveyor 6. No emergences were recorded.	
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Field Survey							
Dusk Emergence Survey 3							
Building B1							
<i>Surveyor and position</i>		Lead surveyor 1 – Phillip Wooding – 1 st year bat survey experience – observing the northwest and southwest elevations of B1 Surveyor 2 – Sarah Cooke – 4 years bat survey experience – observing the northeast and southeast elevations of B1					
<i>Weather (start/end)</i>		Temperature (°C): 19 Relative humidity (%): 74 Cloud cover (%): 10 Wind (m/s): 0.2 Rain: None			Temperature (°C): 18 Relative humidity (%): 79 Cloud cover (%): 10 Wind (m/s): 2 Rain: None		
<i>Equipment used</i>		Echometer Touch 2, Magenta 4, Batbox Duet, Nightfox Whisker, Nightfox Red, Nightfox XB5 Pro IR torch					
Results							
Date of survey	Sunset Start - End	Species and numbers	Roost type	Structure reference	Roost location	Access points	Dimensions and explanation of roost location
22/07/2024	Sunset 21:05	SPx8	Maternity	B1	NE elevation	Eaves	Under the eaves on the north-eastern elevation of B1
	20:50 – 23:05	BLEx1	Day	B1	Loft	Window on the bottom right of the south-western elevation	Loft dimensions L – 12m W – 5m H – 3m
Surveyor observations							

<i>Surveyor 1</i>	One emergence at 21:45 and one re-entry at 22:07, from a brown long eared bat. The bat emerged from the window on the bottom right side of the south-western elevation and re-entering at the same point. First bat activity noted of the night were two noctules seen flying overhead in a north-east to south-west direction, the from then until 22:43, noctules continued to be heard intermittently. At 21:31 the first soprano pipistrelle was heard, along with a common pipistrelle, these could then be seen passing and foraging around the surveyor's position, as well as some being heard but not seen until 22:43. A brown long eared bat could be heard and seen foraging until 22:27. A serotine was heard at 21:44. the last bat of the evening was a common pipistrelle at 22:43.	
<i>IR position 1</i>	The footage reflected the view of surveyor 1. The recording confirmed the emergence and re-entry of a brown long eared bat identified by the surveyor at 21:45 and 22:07.	

		
Surveyor 2	8 emergences and 6 re-entries from soprano pipistrelles were observed from under the eaves on the north-east elevation. The emergences were at 21:32, 21:41, 21:43, 21:44, 21:57, 22:13, 22:15 and 22:32. The re-entries were at 21:39, 21:42, 21:48, 21:53, 22:15 and 22:35. First bat heard was a Noctule at 21:18 heard not seen. At 21:40 a brown long eared bat can be seen flying around inside the light box on top of the roof. A brown long eared bat could be heard but not seen at 21:45, 21:57, 22:14 and 22:38. A noctule could be heard but not seen at 22:04.	

<i>IR position 2</i>	The footage reflected the view of surveyor 2. The recording confirmed the emergences and re-entries of soprano pipistrelles identified by the surveyor. The emergences were at 21:32, 21:41, 21:43, 21:44, 21:57, 22:13, 22:15 and 22:32. The re-entries were at 21:39, 21:42, 21:48, 21:53, 22:15 and 22:35.	
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Conclusions, Impacts and Recommendations	
Survey Results Summary	PRA Summary: The PRA identified a brown long-eared bat during the survey of B1. The PRA concluded the site has high habitat value with a brown long-eared bat roost within the loft space of B1. B2 (the main house) has moderate habitat value for roosting bats due to raised tiles on all elevations. BERS Summary: A likely absence of roosting bats is concluded from B2 (the main house). However, three roosts were observed within B1: <u>Roost 1:</u> Species: common pipistrelle Peak count: 1 Roost type: Day Roost location: south-eastern elevation of B1 Access points: in the barge boards. <u>Roost 2:</u> Species: brown long eared bat Peak count: 1 Roost type: Day Roost location: loft within B1 Access points: the window on the bottom right side of the north-western elevation. <u>Roost 3:</u> Species: soprano pipistrelle

	Peak count: 8 Roost type: Maternity Roost location: north-eastern elevation of B1 Access points: under the eaves. A moderate level of commuting and foraging activity by pipistrelles was recorded within the vicinity, along the treeline to the south and east of B1.
<i>Impact Assessment</i>	The proposed development will include the partial demolition and re-build of the eastern half of B1, re-fitting of the external cladding and re-roofing of B1. All three roosts will be destroyed during the proposed development. Bats could be injured or killed during the proposed development of B1. The proposed plans for B2 are yet to be determined. An increase or change in the artificial lighting to the east, south and west of B1 could disturb bat foraging and commuting behaviour in those areas.
<i>Recommendations</i>	An EPSL application to Natural England will be required to legally permit the proposed works. The EPSL application requires that surveys be undertaken within the most recent active bat season (optimal May to August, suboptimal September). Planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission, where possible to do so. The survey effort should include at least one survey between May and June when the detection rate of bat roosts is highest. A Material Changes Check will be required within three months of the EPSL submission, if no survey work has been undertaken within that period. The EPSL will detail any mitigation and compensation measures that will be required for the proposed development to comply with the standing advice and will be designed to reduce any impacts to an acceptably low level so as to maintain (or enhance) the Favourable Conservation Status (FCS) of the local bat population.

	The EPSL will include the following measures: • Timing of works to avoid the maternity season (May to September) • Where possible, destructive works should be timed to take place in the 'shoulder' seasons October-November or March-April. • The installation of 3 bat boxes at the site (one bat box per bat species) prior to works commencing to form a receptor site for any bats found during the works. These boxes may be installed on buildings or trees or can be pole mounted but must be in an undisturbed location and will need to be maintained in this location post-development. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. • The provision of a toolbox talk to contractors, by the Named Ecologist or an Accredited Agent, to inform them of the presence of bat roosts. • A pre-commencement inspection of any roost features by the Named Ecologist or an Accredited Agent using a torch and an endoscope (this may be via ladders, scaffolding or a mobile elevated platform). • The removal of all cladding, barge boards and the eaves by hand under the supervision of the Named Ecologist or an Accredited Agent (where it is not possible conclude absence of bats during the pre-commencement inspection). • Avoiding the use of unnecessary lighting, particularly at night, or implementing a low impact lighting strategy to avoid illumination of retained or newly created roosts or roost features. • Avoiding excessive noise or vibration disturbance e.g. from power tools or radios, within close proximity of retained or newly created roosts or roost features. • Roost replacement features will be built into the new tiles and cladding in the form of integrated boxes and bat adapted tiles. You must include a certificate that proves the roofing membrane has passed a 'snagging propensity test' if you're using a non-bitumen coated roofing membrane. A snagging propensity test checks that the membrane can stand the repeated snagging actions of roosting
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	bats. To pass, a membrane must show no change in the average number of loops per cm² as rotations are increased from 0 to 1000. You do not need a certificate for bitumen 1F felt that has a non-woven, short fibre construction. The EPSL will only include the bat species, numbers and roost types listed above. If bats are found during periods of adverse weather conditions, these must be left undisturbed until weather conditions become more favorable to move bats to the receptor bat box. EPSLs do not allow for the disturbance of hibernating bats. Therefore, if any bats are found during the hibernation period or if any unexpected bat species or roost types are identified works must cease and advice must be sought from the Named Ecologist regarding the possible requirement for timing restrictions for works, the completion of further bat surveys or a modification to the EPSL. <u>Wildlife sensitive lighting strategy</u> A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: • Light spill on to the pond or the southern hedge-line should be avoided. • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light. • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. • Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. • External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on.
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	• Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.
<i>Enhancements</i>	Integrated bat boxes x 2 will be installed in the section of the dwelling. These will be placed high up at eaves level, face south/southwest if possible, and be unlit by artificial light and not above any windows.

Appendix 1: BERS plan



Appendix 2: Bibliography

- Arbtech Consulting Ltd (2024). Preliminary Roosting Assessment.
- Bat Conservation Trust (2022). Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys. <https://cdn.bats.org.uk/uploads/images/Interim-guidance-note-on-NVAs-May-2022-FINAL.pdf?v=1652957834>
- Collins, J. (2016). Bat Surveys for Professional Ecologists — Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland, L. & Markham, S. (2008) Is Important Bat Foraging and Commuting Habitat Legally Protected? <http://biodiversitybydesign.co.uk/cmsAdmin/uploads/protection-for-bat-habitat-sep-2007.pdf>
- Institution of Lighting Professionals (2018). Guidance Note 08/18 Bats and Artificial Lighting in the UK. Bats and the Built Environment Series Publication: http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- Wray, S., Wells, D., Long, E., Mitchell-Jones, T (2010) Valuing Bats in Ecological Impact Assessment. IEEM In-Practice. Number 70 (December 2010). Pp. 23-25.

Version control			
Status	Issue	Name	Date
Draft	0.1	Beth Ellison-Perrett BSc (Hons) MSc (Hons) MRSB, Consultant Ecologist	01/08/2024
Review	0.2	Josephine McCarthy, Consultant Ecologist, [Natural England Bat Licence Number: 2019-41480-CLS-CLS (CL18 Level 2))	07/08/2024
Final	1.0	Beth Ellison-Perrett BSc (Hons) MSc (Hons) MRSB, Consultant Ecologist	07/08/2024

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