Fyrish BESS

784-B067560

Bat Survey Report

TNEI on behalf of Field Fyrish Ltd.

January 2025

Document prepared on behalf of Tetra Tech Limited. Registered in England number: 01959704

TETRA TECH

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
BCT	Bat Conservation Trust
BSI	British Standard Institute
CIEEM	Chartered Institute of Ecology & Environmental Management
FAR	Further Assessment Required
GLTA	Ground Level Tree Assessment
Habitats Regulations	Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
LBAP	Local Biodiversity Action Plan
LPA	Local Planning Authority
PRF	Potential Roost Feature
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
NS	NatureScot
NPF	National Planning Framework
W&CA	Wildlife & Countryside Act 1981 (as amended)

EXECUTIVE SUMMARY

Contents	Summary
Site Location	The Site is located approximately 1.25km west of Alness in the Scottish Highlands and is centred at Ordnance Survey National Grid Reference NH 62960 68934.
Proposals	The development proposals consist of the creation and operation of a Battery Energy Storage System (BESS) of up to 200 MW with associated infrastructure (including cable route to substation), access and ancillary works (including landscaping and biodiversity enhancement).
Scope of this Survey(s)	A Ground Level Tree Assessment was undertaken on site in July 2024. Five static bat detectors were deployed on site between July and October 2024.
Results	**Species recorded:** A minimum of five bat species were identified: soprano pipistrelle, common pipistrelle, Nathusius' pipistrelle, brown long-eared bat and Myotis species. **Roosting Activity:** Several trees with potential roosting features were found both within the Site or close to the Site survey area. Activity levels of soprano and common pipistrelles suggest maternity roosts may be present on or near to the Site. Individual roosts of Nathusius pipistrelle and *Myotis* species are also likely present on/near to the Site. **Bat Activity:** The Site is important for foraging, commuting and mating bats, particularly the open grassland areas, linear scrub features and adjacent woodland.
Recommendations	**Construction Timing:** Limit works to daylight hours, where possible, to reduce disturbance to bats. **Lighting Strategy:** Implement a lighting strategy in line with the Institution of Lighting Professionals (ILP) guidance to minimise light spillage. **Habitat Creation:** Enhance the Site with native broadleaved trees, species-rich meadows and wetland meadows to improve connectivity and foraging opportunities.
Conclusions	Provided the measures within this report for mitigation and enhancement can be adopted, it is anticipated that the plans for the Site will allow compliance with legal requirements set out under ecological legislation and national/local planning policy.

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by TNEI on behalf of Field Fyrish Ltd. ("the Applicant") in July 2024 to undertake bat activity surveys to support a planning application for the creation of a Battery Energy Storage System (BESS) and associated development on land 650m South of Fyrish Substation, Alness, IV17 0XH, hereafter referred to as "the Site".

This report has been prepared by a Tetra Tech Ecologist of 'capable' competency for this type of report, as per the CIEEM Competency Framework (CIEEM, 2024), and the conditions pertinent to it are provided in Appendix A.

Bats are protected species, full details of that protection, including types of offences and policy position are provided in Appendix B.

1.2 SITE LOCATION

The Site is located approximately 1.25km west of Alness in the Scottish Highlands and is centred at Ordnance Survey National Grid Reference NH 62960 68934 (Figure 1). It comprises areas of dense, tall bracken and wet, marshy grassland. Vegetation within the Site ranges from sporadic broadleaf regeneration to packed woodland parcels and scrub. The south boundary runs adjacent to the Culcraggie Burn, featuring riparian edges which provide foraging resources and commuting routes suitable for all bat species relevant to Scotland. There is a residential property within the survey area which has at least moderate roost suitability for bats.

The wider landscape features mature woodland habitat within 5km of the Site (which encompasses the core sustenance zones of the majority of UK bat species) and extensive open arable farmland providing foraging and commuting features. There are four ancient woodland habitats within 1km of the Site providing roost opportunities for a range of bat species. The nearby agricultural buildings within the timber yard have limited suitability to host roosting bats.

1.3 DEVELOPMENT PROPOSALS

The development proposals consist of the creation and operation of a Battery Energy Storage System (BESS) of up to 200 MW with associated infrastructure (including cable route to substation), access and ancillary works (including landscaping and biodiversity enhancement).

1.4 PURPOSE OF THE REPORT

The purpose of this report is to:

- Identify the species assemblage on site, including the presence of common, rarer or rarest species of bat;
- Categorise the value of the Site for bats (as per (Reason & Wray, 2023));

- Understand the spatial and temporal distribution of bat activity across the Site;
- Assess the effects of the proposed development of the Site relating to bat species; and
- Provide recommendations for mitigation and enhancement where necessary.

The details of this report will remain valid until September 2026 after which the validity of this assessment should be reviewed to determine whether further updates are necessary.

Baseline ecological results are generally considered valid for a period of eighteen months from the date of the survey. It is suggested that baseline data is maintained valid until pre-construction checks. The recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

Note that scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

2.0 METHODOLOGY

2.1 HISTORIC SURVEYS

No previous reports relevant to the Site have been identified.

2.2 DESK STUDY

The desktop study comprised two elements:

- A data search obtained from The National Biodiversity Network (NBN) Atlas in July 2024 and Highland Biological Recording Group (HBRG) in September 2024 for records of bats within 2km of the survey area; and
- Online element including a search using Ordnance Survey (OS) and Aerial Imagery (https://www.bing.com/maps).

2.3 GROUND LEVEL TREE ASSESSMENT (GLTA)

A GLTA of the trees on site was completed by Tetra Tech Principal Ecologist Aaron Middleton ACIEEM on 29th July 2024. Weather conditions were dry with 20% cloud cover and a light airy wind.

The survey methodology for the GTLA was based on Bat Conservation Trust (BCT) Bat surveys for Professional Ecologists: Good Practice Guidelines 4th Edition (Collins, 2023), hereafter referred to as the BCT Guidelines. Trees on site were inspected systematically from the ground for their suitability to support roosting and hibernating bats using survey methods based on BCT Guidelines (Collins, 2023). Trees were surveyed consistently around all parts of the tree (from all angles and from both close to the trunk and further away) using binoculars and a high-power torch. The surveys were completed in daylight hours and not during poor light conditions.

Categorisation of Trees

All trees were categorised as follows to highlight whether additional assessment is required:

- None – either no Potential Roost Features (PRFs) in the tree or highly unlikely to be any
- FAR – Further Assessment Required to establish if PRFs are present in the tree
- PRF – a tree with at least one PRF present

Professional judgement was used to identify trees where features could be obscured by foliage or other branches.

Categorisation of Sub Features

Once trees with features were identified all sub features were categorised as follows:

- PRF-I – PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitat.
- PRF-M – PRF is suitable for multiple bats and may therefore be used by a maternity colony.

The categorisation was completed using professional judgement and provides an informed view on a further approach following the ground level assessment.

2.4 AUTOMATED STATIC MONITORING

In accordance with BCT guidelines (Collins, 2023), automated bat detectors (Titley Ranger) were deployed at five locations shown in Figure 3. These locations were chosen subjectively according to habitat present, areas to be potentially negatively impacted and to cover potential flightlines around the Site.

Details of relevant foraging and commuting habitat in each chosen static location is provided in Table 1 along with the nearest roost location (based on desk study data).

Table 1: Relevant Habitat Information for Each Static Location

Static Location	UK Hab habitat in location	Linear features within 50m
1	g4 Modified grassland Adjacent habitats: h3h Mixed scrub and g3c other neutral grassland	Broadleaf woodland edge running adjacent to the farm road.
2	w1h Other woodland mixed Adjacent habitats: g1c Bracken and f2c Upland flushes fens and swamps	Slow flowing burn between 1-3m wide. Static was located next to the burn.
3	w2 Coniferous woodland Adjacent habitat: w1h Other woodland mixed	Broadleaf and conifer woodland edges.
4	h3h Mixed scrub Adjacent habitat: g3a Lowland meadows	Dense scrub bordering the grassland meadow.
5	u1b Developed land, sealed surface Adjacent habitat: w2 coniferous woodland	Conifer woodland edges.

The static detectors were left to record and capture data for a minimum of five consecutive nights in suitable weather conditions within each of the sampled months (July to October inclusive). Surveys were not continuous, i.e. they were spaced out to include a reasonable time gap between each monitoring period. The detectors were set to 'Night Only' mode and recorded 30 minutes prior to sunset and finished 30 minutes after sunrise and all calls were recorded in full spectrum. Monitoring dates are provided in Table 2.

Table 2: Monitoring Dates

Monitoring period	Dates
July	30/07/24 – 31/07/24
August	01/08/24 – 14/08/24
September	02/09/24 – 10/09/24
October	08/10/24 – 20/10/24

Both static detectors were positioned at approximately 1.5m height and in each case, the omnidirectional microphone of the Ranger was positioned on the side with the microphone facing south. Calls were subsequently analysed using Kaleidoscope Pro software (Version 5.6.8). The monitoring data was processed using the auto-id tool within the software and subsequently all calls not identified as a pipistrelle species or noise file were manually verified. A 10% random sample of the files identified as either pipistrelle species or noise were also manually verified. Data is presented as an activity index of bat passes per night (BPpN - total number of passes in one night) or bat passes per hour (BPpH total bat passes within deployment divided by the total hours the detector was deployed for).

2.5 VALUING BAT POPULATIONS IN A WIDER ECOLOGICAL CONTEXT

The assessment of the value of the bat population on site was based on the method outlined within the UK Bat Mitigation Guidelines (Reason & Wray, 2023). This includes identifying potential regional species assemblage based on known distributions; assessing importance of roosts and foraging & commuting habitats; and finally, looking at overall importance of assemblage. This is broken down into key stages below.

2.5.1 Regional Species Assemblage

British bat species have been subdivided into groups, dependant on how common they are: widespread, widespread in many geographies, but not as abundant in all, rarer or restricted distribution and rarest Annex II species and very rare. Species have been further subdivided based upon the location surveyed. Table 3 presents the rarity categorisation of bats in Scotland (Reason & Wray, 2023).

Table 3: Categorising bats by distribution and rarity in Scotland

Country: Northern Scotland			
[score 4]	**[score 3]**	**[score 2]**	**[score 1]**
Rarest Annex II species and very rare	**Rarer or restricted distribution**	**Widespread in many geographies, but not as abundant in all**	**Widespread**
All other species	Nathusius' pipistrelle *Pipistrellus nathusii*	Daubenton's bat *Myotis daubentoniid* Natterer's bat *Myotis nattereri* Brown long-eared bat *Plecotus auritus*	Common pipistrelle *Pipistrellus pipistrellus* Soprano pipistrelle *Pipistrellus pygmaeus*

2.5.2 Importance of roosts

The Site and its immediate surrounding habitats (i.e. houses, farm buildings, woodland/mature trees) are suitable for roosting bats.

2.5.3 Importance of commuting and foraging

The scale of any changes will determine its likely significance, which cannot be greater than the original value assigned. For example: for a habitat feature assessed as being of District value, the impact significance may be assessed as also being of District value, if the feature will no longer support foraging or commuting activity after development has taken place (i.e. it will be functionally lost). However, where there is a minimal predicted impact on the functionality of the resource, the impact would be less (potentially negligible/limited to the Site). The nature of the impacts and their landscape context are both important.

The value assigned to this Site for foraging and commuting features for bats is '**moderate potential value**' as defined in the Bat Survey Guidelines (Collins, 2023). However, it is noted that this assessment applies to habitats on or near to the Site as per the guidelines. The majority of the most suitable habitat for foraging bats is located outside of the Site and this should be considered during evaluation.

2.5.4 Importance of assemblage

To assess the importance of bat assemblage, three things need to be determined:

- Species present on site (project data);
- Local species distributions (desk study); and
- Regional species distributions (Table 3).

To determine the maximum possible score any Site could achieve, a score is assigned to each species that could be present (as set out in Table 3 and 4), where:

- Widespread in (almost) all geographies [score 1];
- Widespread in many geographies, but not as abundant in all [score 2];
- Rarer or restricted distribution [score 3]; and
- Rarest Annex II species and very rare [score 4].

Once the score for each has been calculate and summed to determine the maximum theoretical score, the threshold score needed for any assemblage to meet each geographic level of importance can be calculate:

- Assemblage score meets or exceeds 45% of the maximum score: County importance
- Assemblage score meets or exceeds 55% of the maximum score: Regional importance
- Assemblage score meets or exceeds 70% of the maximum score: National importance

Table 4: Scoring system for valuing bat assemblage in Scotland

Rarity category [points/species]		Score
Threshold	Maximum possible	11
County importance threshold: 45%	County	5
Regional importance threshold: 55%	Regional	6
National importance threshold: 70%	National	8

To calculate the maximum possible score for species assemblage, the score is multiplied by no. of species within that category. For example, three widespread species (1 point per species - score 3), five less - abundant species (2 points per species – score 10), three rare species (3 point per species - score 9) producing a maximum total score of 22.

This initial assessment is based on presence only and factors such as large colonies for a species, would increase the importance of any assemblage (up to 'International importance').

2.6 LIMITATIONS

Tetra Tech was commissioned to begin the survey effort in late July; therefore, no survey data was obtained prior to 30th July. The absence of survey data from April to June during the early activity season limits the scope of the data.

Weather data during the static monitoring periods was not recorded, but static detectors were deployed for additional time to compensate for any intermittent adverse weather. The assessment and conclusion of this report will not be impacted by changes in weather throughout the deployment periods.

All survey techniques are subject to bias, and bat detector surveys may under-record species with weak echolocation calls, such as brown long-eared bats. However, these biases were considered when interpreting the results. Some bat calls are variable dependent on the habitats they fly in and on their activity (commuting, foraging, social interaction, etc) and extremely similar between species. In these cases, it is accepted that species are identified to genus level or group level (e.g. *Myotis*, *Myotis/Plecotus* and *Nyctalus/Eptesicus*) (Collins, 2023). Where call parameters are inconclusive the species has been labelled as 'unknown'. This allows the dataset to be interpreted accurately and transparently.

Notwithstanding the limitations highlighted above, the survey effort applied is considered sufficient to meet the aims of the survey and this report, in accordance with the aforementioned guidelines.

The details of this report will remain valid until September 2026, after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or development proposals which this report was based on.

3.0 RESULTS

3.1 DESK STUDY

The NBN Atlas returned two records of Pipistrelle species *Pipistrellus* sp. bats within 2km of the Site from 1995 and 2003. Specification of the type of record is not provided by NBN Atlas; therefore, it is unknown whether these records pertain to field observations or roosts.

The Highland Biological Recording Group (HBRG) did not return any bat records within 2km of the Site.

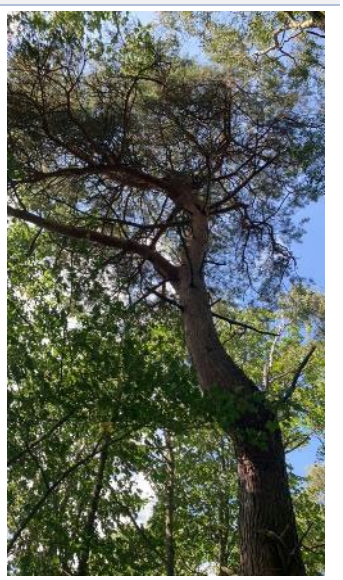
3.2 FIELD SURVEYS

3.2.1 Ground Level Tree Assessment (GLTA)

A total of 17 PRF's were identified both on the Site and near to the Site's boundary, as detailed in table 5. The locations of each PRF are shown in Figure 2.

Table 5: GLTA Results

Tree Identification	Roost Features	Roosting Categorisation	Photographic Plate
T1 – Silver birch *Betula pendula.* Located on the southern boundary line, adjacent to the burn.	Knot hole on limb extending over the burn. Hazard beam in the centre of the tree.	PRF-M	
T2 – Silver birch Located on the southern boundary line, adjacent to the burn.	Hazard beam in the centre of the tree, facing south.	PRF-M	
T3 – Silver birch Located on the southern boundary line, adjacent to the burn.	PRFs present around dead tree limbs.	PRF-M	

T4 – Silver birch Located on the southern boundary line, adjacent to the burn.	Dead limb with a large cavity.	PRF-M	
T5 – Silver birch Located on the southwestern boundary line, adjacent to the burn.	Large cavity on tree limb extending east.	PRF-M	
T6 – Scot's pine *Pinus sylvestris* Located in the area of woodland in the southwest corner of the Site.	Knot hole on east tree face.	PRF-M	

T7 – Pedunculate oak *Quercus robur* Located in the area of woodland in the southwest corner of the Site.	Tear out on tree limb in the upper tree.	PRF-M	
T8 – Beech *Fagus sylvatica* Located in the area of woodland in the southwest corner of the Site.	PRFs present but limited visibility.	PRF-M	
T9 - Pedunculate oak Located in the area of woodland in the southwest corner of the Site.	Snapped and dead limbs.	PRF-M	

T10 – Silver birch Located in the area of woodland in the southwest corner of the Site.	Two large cavities in the co-dominant stems.	PRF-M	
T11 – Pedunculate oak Located within the woodland edge, adjacent to the western corner of the Site.	Crack limb facing south.	PRF-M	
T12 – Pedunculate oak Located within the woodland edge, adjacent to the western corner of the Site.	Twisted dead limb.	PRF-M	

T13 – Pedunculate oak Located within the woodland edge, adjacent the western corner of the Site.	Tear out cavity on the east face of the tree.	PRF-M	
T14 – Beech Located along the woodland edge, outside the northern survey area boundary.	Group of large beech trees with PRFs.	PRF-M	
T15 – Beech Located along the woodland edge, outside the northern survey area boundary.	Knot holes and tears outs.	PRF-M	

T16 – Beech Located along the woodland edge, outside the northern survey area boundary.	Tear out with cavity facing south.	PRF-M	
T17 – Pedunculate oak Group of ~15 trees running adjacent to the B9176 road and lining the eastern grassland field.	Size and age of trees are suitable for PRFs but were not surveyed due to lack of safe access (along main road).	N/A	

3.2.2 Automated Static Monitoring

The automated bat detectors deployed on site recorded a minimum five species of bat:

- Common pipistrelle
- Soprano pipistrelle
- Nathusius' pipistrelle
- Brown long-eared bat
- Myotis sp. (considered to comprise Daubenton's and Natterer's bat)

Static Monitoring Results Summary

A minimum of five species and 33,975 bat calls were recorded on site across the survey period. Common pipistrelle accounted for 52% of calls and soprano pipistrelle represented 46%. Pipistrelle sp. calls (those which could not be determined between common and soprano pipistrelle), brown long-eared, and Nathusius' pipistrelle *Myotis* species all contributed <1% of calls.

Static location 4 captured most of the activity, recording 32% of all calls throughout the months, followed by static locations 2 and 3 with 27%, static location 1 with 9% and static location 5 with 5% of the total calls. August made up 50% of the data collected, with 37% in September, 10% in July and 3% in October.

A summary of the monitoring results across July to October split by static location and species are displayed in Tables 6 and 7 below as well as shown on Figure 4.

July

During July the species recorded during the static deployment at was mostly soprano pipistrelle (~50% of calls) followed by common pipistrelle (~49% of calls). The remaining 1% of calls was made up by pipistrelle sp., Nathusius' pipistrelles, brown long-eared and *Myotis* species. Static locations 2 and 4 were the most active area within the Site with fewer calls recorded next to the burn (static location 3) and adjacent to the access track (static location 1). The least number of calls were recorded near to the substation (static location 5).

August

During August the species recorded during the static deployment at was mostly common pipistrelle (~52% of calls) followed by soprano pipistrelle (~46% of calls). Brown long-eared represented ~1% of calls with pipistrelle sp., Nathusius' pipistrelles and *Myotis* species making up the remaining 1%. Static locations 2 and 4 were the most active area within the Site, with fewer calls recorded in locations 3 and 1. The lowest number of calls were again recorded in static location 5.

September

During September the species recorded during the static deployment was mostly common pipistrelle (~54% of calls) followed by soprano pipistrelle (~44% of calls). The remaining 1% of calls was made up by pipistrelle sp., Nathusius' pipistrelles, brown long-eared and *Myotis* species. Static locations 3 and 4 were the most active area within the red line boundary with 30% of bat calls recorded at static 3, adjacent to the coniferous woodland. Fewer calls were recorded adjacent to the access track (static location 1) and the burn (static location 2), with the least calls recorded next to the substation (static location 5).

October

During October the species recorded during the static deployment was mostly common pipistrelle (~50% of calls) followed by soprano pipistrelle (~48% of calls). Brown long-eared represented 1% of calls with pipistrelle sp., Nathusius' pipistrelles and *Myotis* species making up the remaining 1%. Static location 3 recorded the highest abundance of calls during October making up 54% of calls followed by static location 2. The lowest number of calls were recorded in static location 1.

Table 6: Bat passes per hour per species, by location and deployment month

Deployment Month	Static Location	PIPPIP	PIPPYG	PIP Sp.*	PIPNAT	MYOSPP	PLEAUR
July	**1**	3	4	0	0	0	0
	2	24	22	0	0	0	0
	3	19	7	0	0	0	0
	4	15	32	0	0	0	0
	5	5	2	0	0	0	0
August	**1**	2	3	0	0	0	0
	2	18	22	0	0	0	0
	3	20	9	0	0	0	0
	4	20	21	0	0	0	0
	5	2	1	0	0	0	0
September	**1**	1	2	0	0	0	0
	2	30	24	0	0	0	0
	3	21	12	0	0	0	0
	4	11	12	0	0	0	0
	5	1	0	0	0	0	0
October	**1**	0	0	0	0	0	0
	2	10	8	0	0	0	0
	3	5	6	0	0	0	0
	4	0	0	0	0	0	0
	5	0	0	0	0	0	0

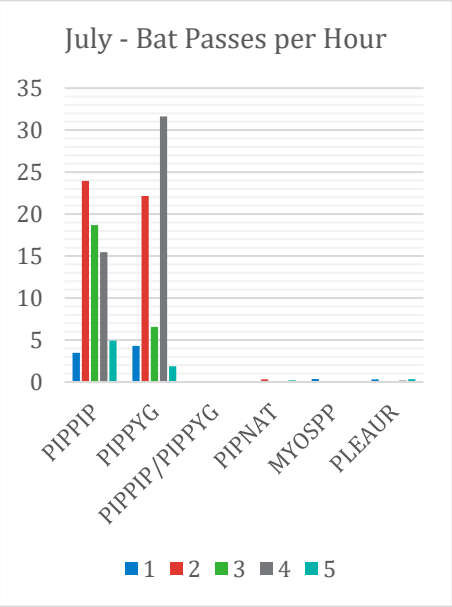
*Key: **PIPPIP**: common pipistrelle, **PIPPYG**: soprano pipistrelle, **PIP Sp.**: Combinations of pipistrelle species, **PIPNAT**: Nathusius' pipistrelle, **MYOSPP**: Myotis species, **PLEAUR**: Brown long-eared*

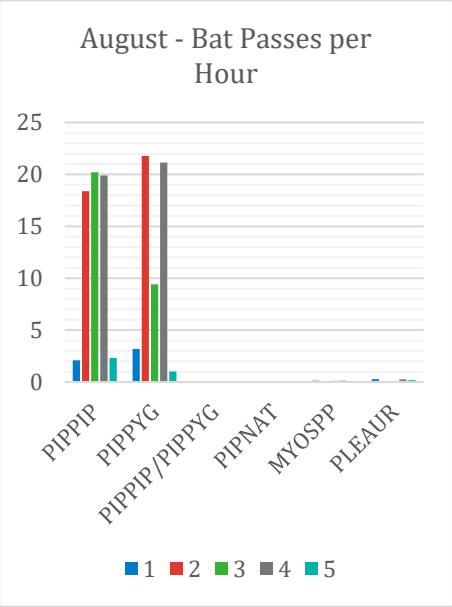
Table 7: Percentages of activity per species by location and deployment month

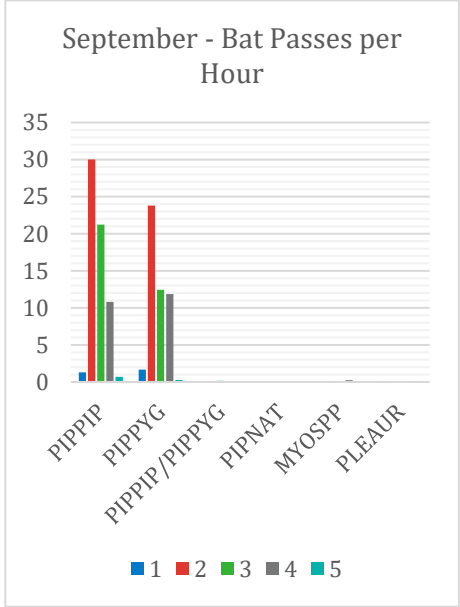
Deployment Month	Static Location	PIPPIP (%)	PIPPYG (%)	PIP Sp.* (%)	PIPNAT (%)	MYOSPP (%)	PLEAUR (%)
July	**1**	41	50	2	0	4	4
	2	52	48	0	1	0	0
	3	73	24	0	0	0	0
	4	33	67	0	0	0	0
	5	66	25	0	3	2	4
August	**1**	36	56	1	0	2	2
	2	46	54	0	0	0	0
	3	68	32	0	0	0	0
	4	48	51	0	0	1	0
	5	65	28	0	0	1	5
September	**1**	40	51	1	1	4	4
	2	56	44	0	0	0	0
	3	63	37	0	0	0	0
	4	47	52	0	0	1	0
	5	60	23	0	0	5	13
October	**1**	48	38	0	0	0	14
	2	54	46	0	0	0	0
	3	47	52	0	1	0	0
	4	48	46	0	0	2	4
	5	62	25	1	0	8	5

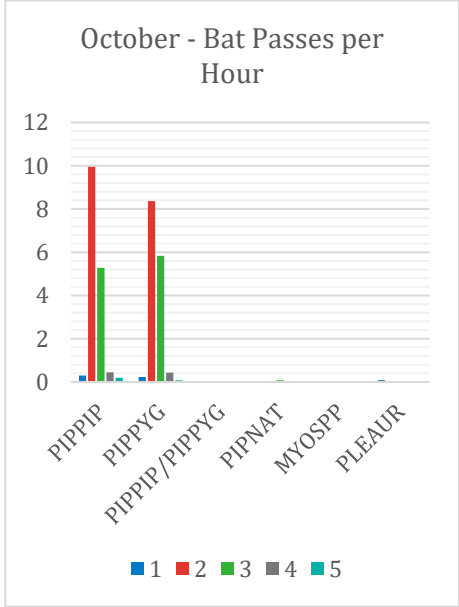
*Key: **PIPPIP**: common pipistrelle, **PIPPYG**: soprano pipistrelle, **PIP Sp.**: Combinations of pipistrelle species, **PIPNAT**: Nathusius' pipistrelle, **MYOSPP**: Myotis species, **PLEAUR**: Brown long-eared*

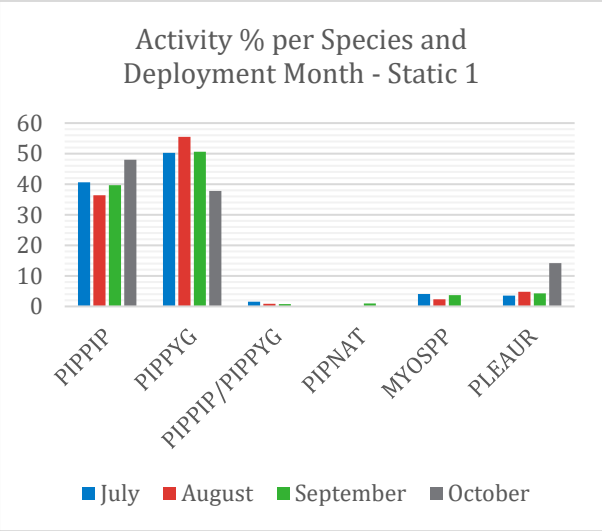
Charts Dictating Bat Activity Across the Site

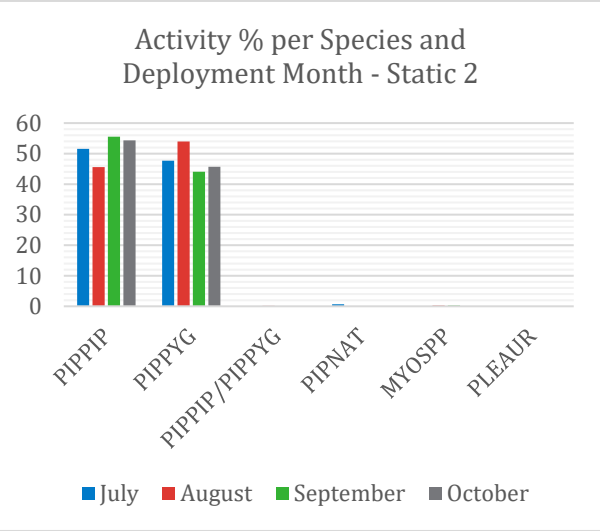


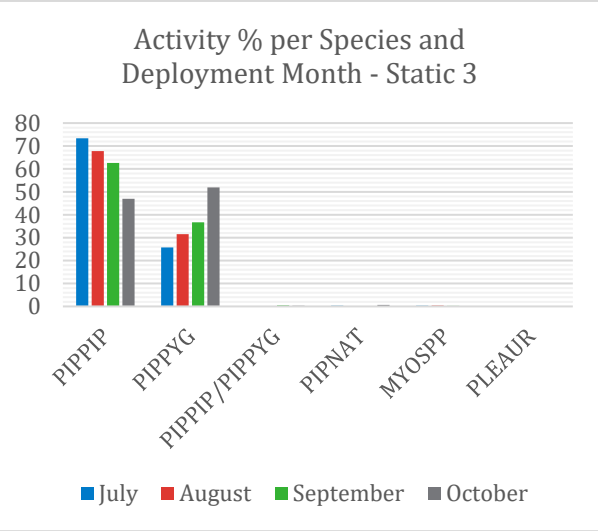


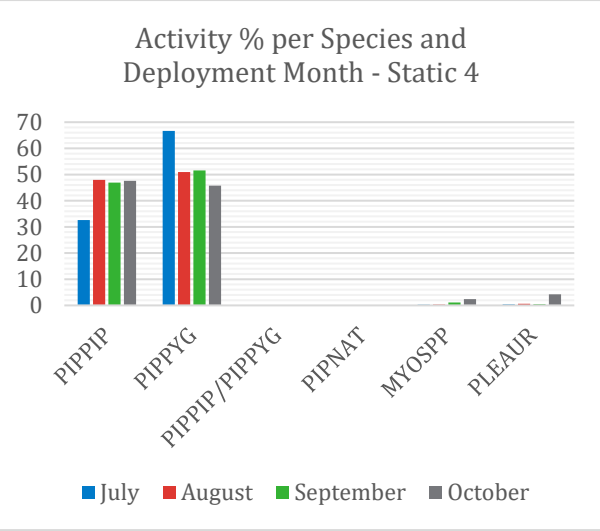


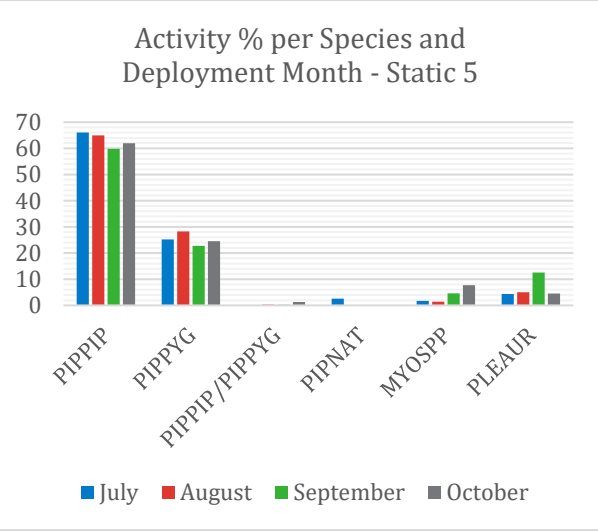



Activity % per Species and Deployment Month - Static 1
60
50
40
30
20
10
0
PIPPIP
PIPPYG
PIPPIP/PIPPYG
PIPNAT
MYOSPP
PLEAUR
July
August
September
October


Activity % per Species and Deployment Month - Static 2
60
50
40
30
20
10
0
PIPPIP
PIPPYG
PIPPIP/PIPPYG
PIPNAT
MYOSPP
PLEAUR
July
August
September
October


Activity % per Species and Deployment Month - Static 3
80
70
60
50
40
30
20
10
0
PIPPIP
PIPPYG
PIPPIP/PIPPYG
PIPNAT
MYOSPP
PLEAUR
July
August
September
October


Activity % per Species and Deployment Month - Static 4
70
60
50
40
30
20
10
0
PIPPIP
PIPPYG
PIPPIP/PIPPYG
PIPNAT
MYOSPP
PLEAUR
July
August
September
October


Activity % per Species and Deployment Month - Static 5
70
60
50
40
30
20
10
0
PIPPIP
PIPPYG
PIPPIP/PIPPYG
PIPNAT
MYOSPP
PLEAUR
July
August
September
October

4.0 DISCUSSION

4.1 VALUATION OF THE BAT POPULATION

The Site was found to be of value at a **district** and **national level** for bats based on the method within the UK Bat Mitigation Guidelines (Reason & Wray, 2023). This assessment is based on the valuations included in Table 8.

Table 8: Valuation of site importance of roosting bats, commuting and foraging habitat, and importance species assemblage

Species (rarity level for Northern Scotland)	Importance of roosts	Importance of commuting and foraging habitat	Importance of assemblage
Widespread Common pipistrelle Soprano pipistrelle	There are no known roosts on site nor within 2km. Brown long-eared bats have been confirmed to be using the Site. Given the number and frequency of common and soprano pipistrelle calls, particularly in the hour around sunset, it is considered likely that maternity roosts of these species may be present close to the Site. The number and frequency of *Myotis* species and Nathusius' pipistrelle bat calls suggests that individuals of these species are roosting close to the Site, but that these are unlikely to be a significant roost (i.e. maternity).	The habitats in and around the red line boundary meet the definition of 'moderate potential value' as defined in the Bat Survey Guidelines (Collins, 2023). The Site itself contains areas of open grassland suitable for foraging and commuting bats with linear features including tree and scrub lines within 50m. • A total of at least five species were recorded on site throughout the survey period. • Relatively small numbers of *Myotis* species and brown long-eared bats were recorded on site (<2% of all bat calls) on all statics. They were recorded most abundantly around static location 1.	*1 point per species* Both species have been identified on site therefore the Site scores **2**.
Widespread but not as abundant in all geographies Brown long-eared bat Daubenton's bat Natterer's bat			*2 points per species* A minimum of two of the three species have been recorded on site. As *Myotis* species have only been identified to a genus level within the static data analysis, theoretically both myotis species could be present on site within this category. The Site therefore scores between **4** and **6**.

Rarer or restricted distribution Nathusius' pipistrelle	The Site is not deemed to hold a significant roost (maternity or hibernation roost) for these annex 2 species. Numbers of brown long-eared bats peaked in September/October so without furthermore detailed assessment the Site could be considered as a mating Site and the woodland adjacent to the Site could support small numbers of hibernating bats. With this in mind the Site is deemed to be of **local level** importance.	• The highest levels of bat activity were recorded adjacent to the area of mixed scrub which separates the lowland meadow and grassland field to the east of the Site (static location 4). Taking the above into account, the habitats within the red line boundary, the wider landscape and particularly the woodland adjacent, the Site is to be of **district importance**. Habitats elsewhere within the county are of higher value and support a greater diversity and abundance of species.	*3 points per species* Nathusius' pipistrelle have been recorded on site. The Site therefore scores **3**.

Overall, the score for the Sites assemblage is between nine and eleven. Range for importance is because presence of Myotis species is not distinguished beyond genus level.

The above scores would equate to National Importance (9/11 = 80%; 11/11 = 100%).

4.2 IMPACTS

Following the desk study and field survey, soprano pipistrelle, common pipistrelle, brown long-eared bat, Nathusius' pipistrelle and *Myotis* sp. are confirmed to be using the Site. The Site is of national importance to bats and though no loss of roosts is anticipated, foraging and commuting habitat will be lost to achieve the footprint of the development. Landscape planning will be designed to reduce and mitigate impacts on bats, incorporating Biodiversity Enhancements in line with National Planning Policy 4 (NPF) - Policy 3 (Scottish Government, 2023).

4.2.1 Loss of Habitats/Roosts

The indicative Site Landscape Plan (Ref: 2214 l01A Fyrish BESS Landscape Plan) acknowledges that the identified trees with PRFs will not be removed due to the proposed development works. Should this change, further surveys are required to confirm the number of known roosts on site and a derogation license from NatureScot must be obtained by a licensed bat ecologist to legally destroy bat roosts. This will require the provision of a species protection plan.

The development footprint of the Site will result in the loss of areas of brambles scrub and mixed woodland. Due to the abundance of similar and higher value habitats (e.g. woodland, scrub and extensive pastures) within the wider landscape, this impact is not considered highly significant.

4.2.2 Loss of Connectivity

The plans for the Site include the removal and fragmentation of large areas of grassland which are providing suitable open foraging resource for bats. Due to the surrounding habitats of the Site and wider landscape, this impact is not considered significant. The plans will also facilitate the removal of some areas of mixed woodland; however, this is considered a temporary loss and proposed landscape design will introduce native woodland planting around the development, potentially providing over-compensation.

4.2.3 Construction-phase Disturbance

Noise, vibration and artificial light at night from construction activities may cause disturbance to bats.

4.2.4 Operational-phase Disturbance

Noise, vibration and artificial light at night during the operational phase may cause disturbance to bats.

4.3 MITIGATION

As adverse effects on bats are anticipated, mitigation will be required.

The mitigation hierarchy principles are:

- Avoidance – to avoid adverse effects as far as possible by designing out or using preventative measures during the construction process thus resulting in an environmental effect of neutral significance.
- Reduction – to minimise adverse effects as far as possible.
- Compensation – involves measures of the same value to off-set the impact.

4.3.1 Loss of Habitat

The indicative Site plan includes the planting of species-rich meadow, wetland meadow and native broadleaved woodland. This is likely to enhance the Site for invertebrates, increasing the foraging recourse for bats, provide bat commuting routes and mitigate the loss of grassland and lowland meadows.

4.3.2 Loss of Connectivity

The indicative Site Landscape Plan includes the planting of native broadleaved trees around the BESS and wider ownership boundary. This is likely to improve connectivity across the Site. Areas of wetland and other key habitats are also to be retained on site.

4.3.3 Construction-phase disturbance

Where possible, works should take place during daylight hours only. The use of artificial lighting will be installed for a duration of 24 months during construction works. The following measures should be taken in line with ILP guidance (Institute of Lighting Professionals (ILP), 2023):

- Lights should be designed to be as low to the ground as possible (specifically not above 8m). At the time of writing this report, lighting included on the Site plans were positioned at 5m high, and as such, met the required height recommendations.

- Directional lighting should be used to avoid light spillage, particularly towards linear features such as tree lines, water courses and wetland areas. Hoods/cowls can be used to direct light below the horizontal plane (ideally at an angle less than 70 degrees); and
- All lighting used during the construction-phase will be motion sensor activated.

4.3.4 Operational-phase disturbance

Operational-phase lighting will be directional to avoid unnecessary light spillage and will include the use of hoods/cowls to direct lighting below the horizontal plane.

4.4 ENHANCEMENT

It is a requirement of NPF4 and the Highland Council to provide enhancements for biodiversity as part of development. An indicative Site plan, provided by the client, incorporates Biodiversity Enhancement strategies including the creation of wetland and species-rich meadows and planting of new broadleaf trees, both of which will improve connectivity on the Site and provide additional habitat for foraging and commuting bats.

Additional measures to enhance the Site for bats could include the provision of a range of bat boxes within the fabric of residential dwellings and attached to suitable retained trees on site. Examples of suitable bat box models include Schwegler 1FR, 1F, 2FN and 1FF, or similar (NHBS, 2025) Lighting should be directed away from these new roost features. Bat boxes should also be located away from footpaths at a height of at least 4m and away from walls / fences to remove accessibility to cats.

5.0 CONCLUSION

The findings of this study found that a minimum five species of bats are active on the Site. including common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long-eared bat, and Myotis species. The grassland habitats, areas of mixed scrub and adjacent conifer woodland habitats provide important foraging resource, and the Site provides potential mating Sites.

Potential roost features are present on trees both within and adjacent to the survey areaboundary, the development proposals are not anticipated to cause damage or destruction to these features.

The proposed development includes measures to mitigate and enhance the Site for bats, such as implementing a compliant lighting and good practice construction and operation measures to avoid displacement and disturbance of bat activity. Additionally, the creation of species-rich meadows, wetland meadows, and native broadleaved woodland will enhance the Site's biodiversity and connectivity.

In conclusion, with the implementation of the proposed mitigation and enhancement strategies, the Fyrish BESS project is not expected to present a risk to roosting, foraging and commuting bats. The Biodiversity Enhancement strategies incorporated into the landscape design will assure longevity and an increase in structural diversity of the key resource for bats at this Site.

6.0 REFERENCES

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Reason, P., & Wray, S. (2023). *UK Bat Mitigation Guidelines: A guide to impact assessment, mitigation and compensation for developments affecting bats.* Ampfield: Chartered Institute of Ecology and Environmental Management.

Scottish Government. (2023). *National Planning Framework 4.*

The Highland Council. (2024). *Inner Moray Firth Local Development Plan 2.*

FIGURES

FIGURE 1: SURVEY AREA PLAN

Survey Area Plan

Fyrish BESS

TNEI on behalf of Field

Legend

Survey Area

Notes:

Drawn by: lily.dunwell

Checked by: Bethany James

Figure No. 1

Revision No. A

27 January 2025

0 100 200 300 400 Meters

Scale 1:10,000 @A3

British National Grid

NGR: 262963E 869000N

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FIGURE 2: GROUND LEVEL TREE ASSESSMENT RESULTS

Ground Level Tree Assessment Results

Fyrish BESS

TNEI on behalf of Field

Legend

- Survey Area
- Tree Numbers

Notes:

Drawn by: dylan.gussman

Checked by: Bethany James

Figure No. 2

Revision No. A

23 January 2025

0 25 50 75 100 Meters

Scale 1:2,500 @A3

British National Grid

NGR: 262987E 868935N

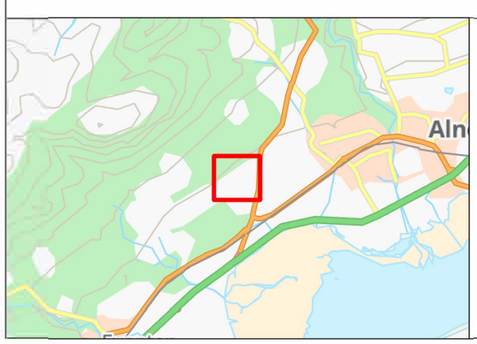

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FIGURE 3: STATIC DETECTOR LOCATIONS

Static Detector Locations

Fyrish BESS

TNEI on behalf of Field

Legend

- Survey Area
- Static Detector

Notes:

Drawn by: lily.dunwell

Checked by: Bethany James

Figure No. 3

Revision No. A

27 January 2025

0 100 200 Meters

Scale 1:5,000 @A3

British National Grid

NGR: 263020E 869193N

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FIGURE 4: STATIC RESULTS

Static Results Plan - July
Bat Passes per Hour

Fyrish BESS

TNEI on behalf of Field

Legend

- Survey Area
- PIPPIP
- PIPPYG
- PIPPIP/PIPPYG
- PIPNAT
- MYOSPP
- PLEAUR

28
14
0.12

Detector 5
2.53 PpH

Detector 4
31.97 PpH

Detector 3
6.78 PpH

Detector 1
5.08 PpH

Detector 2
22.5 PpH

Notes:

Drawn by: lily.dunwell

Checked by: Bethany James

Figure No. 4.1

Revision No. A

27 January 2025

0 100 200 Meters

Scale 1:5,000 @A3

British National Grid

NGR: 263013E 869181N

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Static Results Plan - August
Bat Passes per Hour

Fyrish BESS

TNEI on behalf of Field

Legend

- Survey Area
- PIPPIP
- PIPPYG
- PIPPIP/PIPPYG
- PIPNAT
- MYOSPP
- PLEAUR

28
14
0.12

Detector 5
1.25 PpH

Detector 4
21.58 PpH

Detector 3
9.6 PpH

Detector 1
3.64 PpH

Detector 2
21.97 PpH

Notes:

Drawn by: lily.dunwell

Checked by: Bethany James

Figure No. 4.2

Revision No. A

27 January 2025

0 100 200 Meters

Scale 1:5,000 @A3

British National Grid

NGR: 263013E 869181N

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United Kingdom
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Static Results Plan - September
Bat Passes per Hour

Fyrish BESS

TNEI on behalf of Field

Legend

- Survey Area
- PIPPIP
- PIPPYG
- PIPPIP/PIPPYG
- PIPNAT
- MYOSPP
- PLEAUR

28
14
0.12

Notes:

Drawn by: lily.dunwell

Checked by: Bethany James

Figure No. 4.3

Revision No. A

27 January 2025

0 100 200 Meters

Scale 1:5,000 @A3

British National Grid

NGR: 263013E 869181N

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LS1 4ER

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number: 01959704

Static Results Plan - October
Bat Passes per Hour

Fyrish BESS

TNEI on behalf of Field

Legend

- Survey Area
- PIPPIP
- PIPPYG
- PIPPIP/PIPPYG
- PIPNAT
- MYOSPP
- PLEAUR

28
14
0.12

Notes:

Drawn by: lily.dunwell

Checked by: Bethany James

Figure No. 4.4

Revision No. A

27 January 2025

0 100 200 Meters

Scale 1:5,000 @A3

British National Grid

NGR: 263013E 869181N

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APPENDICES

APPENDIX A: REPORT CONDITIONS
APPENDIX B: LEGISLATION AND RELEVANT PLANNING POLICY
APPENDIX C: DETAILED RESULTS OF THE AUTOMATED STATIC MONITORING

APPENDIX A: REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the Site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the Site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The "shelf life" of the Report will be determined by a number of factors including; its original purpose, the Client's instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B: LEGISLATION AND RELEVANT PLANNING POLICY

The Conservation (Natural Habitats etc.) Regulations 1994

Within Scotland, the primary legislation in relation to Habitats Regulations remains the 1994 statutory instrument.

All species protected under this legislation are European Protected Species and licensing is required for the undertaking of certain activities affecting these species. The protection is applied to all stages of the animals' life.

Under Regulations 39 of the Habitats Regulations it is unlawful to deliberately or recklessly:

- capture, injure or kill such an animal;
- harass an animal or group of animals;
- disturb an animal while it is occupying a structure or place used for shelter or protection;
- disturb an animal while it is rearing or otherwise caring for its young;
- obstruct access to a breeding site or resting place, or otherwise deny an animal use of a breeding site or resting place;
- disturb an animal in a manner or in circumstances likely to significantly affect the local distribution or abundance of the species;
- disturb an animal in a manner or in circumstances likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;
- disturb an animal while it is migrating or hibernating;

If impacts to protected species are considered unavoidable then the works may need to be carried out under a site-specific licence from NatureScot. Certain displacement operations may be carried out under a Class licence by a registered person or a site-specific licence.

Species listed on Annex II of the Habitats Regulations are attributed further protection which means that Special Areas of Conservation (SAC) may be designated to internationally important sites for these species.

Wildlife & Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. Since it was first introduced, the Act has been amended several times. All bats are protected through inclusion under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and benefit from various levels of protection. This legislation makes it an offence to:

- Intentionally or recklessly kill or injure these animals; and
- Sell, offer for sale, possess or transport for the purpose of sale of publish advertisement to buy or sell individual reptiles.

All are also listed under Schedule 5 Section 9.4b and 9.4c which makes it an offence to:

- Intentionally disturb while occupying a structure or place used for shelter or protection; and
- Obstruct access to such a Site.

National Planning Policy Framework

National Planning Framework 4 (NPF4) is the top tier of planning policy. The Framework provides guidance to local authorities and other agencies on planning policy and the operation of the planning system.

"Policy 1 gives significant weight to the nature crisis to ensure that it is recognised as a priority in all plans and decisions. Policy 4 protects and enhances natural heritage, and this is further supported by Policy 5 on soils and Policy 6 on forests, woodland and trees. Policy 20 also promotes the expansion and connectivity of blue and green infrastructure, whilst Policy 10 recognises the particular sensitivities of coastal areas.

Protection of the natural features of brownfield land is also highlighted in Policy 9, and protection of the green belt in Policy 8 will ensure that biodiversity in these locations is conserved and accessible to communities, bringing nature into the design and layout of our cities, towns, streets and spaces in Policy 14.

Most significantly, Policy 3 plays a critical role in ensuring that development will secure positive effects for biodiversity. It rebalances the planning system in favour of conserving, restoring and enhancing biodiversity and promotes investment in nature-based solutions, benefiting people and nature. The policy ensures that Local Development Plans (LDPs) protect, conserve, restore and enhance biodiversity and promote nature recovery and nature restoration. Proposals will be required to contribute to the enhancement of biodiversity, including by restoring degraded habitats and building and strengthening nature networks. Adverse impacts, including cumulative impacts, of development proposals on the natural environment will be minimised through careful planning and design, taking into account the need to reverse biodiversity loss. Development proposals for national, major or Environmental Impact Assessment (EIA) development will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks, so they are in a demonstrably better state than without intervention. Proposals for local development will include appropriate measures to conserve, restore and enhance biodiversity."

See here for full details: https://www.gov.scot/publications/national-planning-framework-4/

Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level) and are usually drawn up by a consortium of local Government organisations and conservation charities. Some LBAP's may also include Habitat Action Plans (HAP) and/or Species Action Plans (SAP), which are used to guide and inform the local decision-making process.	
Inner Moray Firth Local Development Plan 2 (The Highland Council, 2024)	
Policy 2 Nature protection, restoration and enhancement	All developments must enhance biodiversity, including, where relevant, restoring degraded habitats and building and strengthening nature networks and the connections between them. Any potential adverse impacts of development proposals on biodiversity, nature networks and the natural environment must be minimised through careful planning and design and following the mitigation hierarchy. Design and layouts must show how they have considered enhancing biodiversity, safeguarding the services that the natural environment provides and building the resilience of nature by enhancing nature networks and maximising the potential for restoration.

APPENDIX C: DETAILED RESULTS OF THE AUTOMATED STATIC MONITORING

Table 9: Total bat passes per species by location and deployment month

Point	Deployment Month	PIPPIP	PIPPYG	PIPPIP/PIPPYG	PIPNAT	MYOSPP	PLEAUR	Total
1	July	80	99	3		8	7	197
2	July	551	510	0	7	0	1	1069
3	July	430	151	0	2	2	1	586
4	July	356	728	1	0	3	4	1092
5	July	76	29	0	3	2	5	115
Subtotal		1493	1517	4	12	15	18	3059
1	August	577	881	14	2	37	76	1587
2	August	1653	1958	5	2	8	2	3628
3	August	2344	1091	1	3	13	5	3457
4	August	3022	3211	6	2	20	38	6299
5	August	642	279	3	0	14	50	988
Subtotal		8238	7420	29	9	92	171	15959
1	September	410	523	8	10	38	44	1033
2	September	1879	1490	3	0	9	1	3382
3	September	2250	1319	17	0	9	0	3595
4	September	1626	1787	0	0	38	16	3467
5	September	234	89	1	0	18	49	391
Subtotal		6399	5208	29	10	112	110	11868
1	October	61	48	0	0	0	18	127
2	October	527	443	0	0	0	0	970
3	October	785	868	5	11	2	0	1671
4	October	79	76	0	0	4	7	166
5	October	96	38	2	0	12	7	155
Subtotal		1548	1473	7	11	18	32	1097

Table 10: Bat passes per hour per species by location and deployment month

Point	Deployment Month	PIPPIP	PIPPYG	PIPPIP/ PIPPYG	PIPNAT	MYOSPP	PLEAUR	Total
1	July	3.48	4.30	0.13	0.00	0.35	0.30	8.56
2	July	23.94	22.16	0.00	0.30	0.00	0.04	46.44
3	July	18.68	6.56	0.00	0.09	0.09	0.04	25.46
4	July	15.47	31.63	0.04	0.00	0.13	0.17	47.44
5	July	4.93	1.88	0.00	0.19	0.13	0.32	7.46
Subtotal		66.49	66.53	0.17	0.59	0.69	0.89	135.36
1	August	2.08	3.18	0.05	0.01	0.13	0.27	5.72
2	August	18.39	21.78	0.06	0.02	0.09	0.02	40.36
3	August	20.21	9.41	0.01	0.03	0.11	0.04	29.81
4	August	19.90	21.14	0.04	0.01	0.13	0.25	41.48
5	August	2.31	1.01	0.01	0.00	0.05	0.18	3.56
Subtotal		62.90	56.52	0.17	0.07	0.52	0.77	120.93
1	September	1.30	1.66	0.03	0.03	0.12	0.14	3.28
2	September	30.01	23.80	0.05	0.00	0.14	0.02	54.01
3	September	21.23	12.45	0.16	0.00	0.08	0.00	33.93
4	September	10.80	11.87	0.00	0.00	0.25	0.11	23.02
5	September	0.69	0.26	0.00	0.00	0.05	0.14	1.15
Subtotal		64.03	50.03	0.24	0.03	0.65	0.41	115.40
1	October	0.30	0.23	0.00	0.00	0.00	0.09	0.62
2	October	9.95	8.36	0.00	0.00	0.00	0.00	18.32
3	October	5.28	5.84	0.03	0.07	0.01	0.00	11.24
4	October	0.45	0.43	0.00	0.00	0.02	0.04	0.94
5	October	0.19	0.08	0.00	0.00	0.02	0.01	0.31
Subtotal		16.17	14.94	0.04	0.07	0.06	0.14	31.42