

Tynninghame Hall,

STAGE 1 BAT SURVEY

**(Desk Study & Preliminary Roost
Assessment)**



JANUARY 2021



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1 INTRODUCTION

This report refers to Tynninghame Hall located in the centre of Tynninghame, approximately 2.5 km North-East of East Linton. It is proposed to install roof insulation within the Hall and a bat survey is therefore required.

David Dodds Associates Ltd was commissioned by the Trust of Tynninghame Hall to carry out the necessary survey, and this report details the methods and results, together with conclusions drawn and recommendations for further action.

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Report version	1.0
Issue date	01/02/2021
Expiry date	02/08/2022



2 SUMMARY

A full stage 1 preliminary roost assessment was conducted at this site, as well as a thorough desk study of the site and surrounding habitat. The stage 1 bat survey investigates the suitability of the building and suitability of the surrounding habitat to support bats.

During the survey the following observations were made:

- Six bat species have been recorded within 5km of the site.
- The surrounding habitat was found to have a high suitability to be used by bats for roosting, foraging, and commuting.
- Evidence in the form of bat droppings was found during the stage 1 preliminary roost assessment.
- The building was found to have **high suitability** to be used by roosting bats.

Recommendations are provided that outline a suggested approach to bat licensing.

This survey report is valid until 2 August 2022.



3 LEGAL PROTECTION

3.1 Protection of bats under Scots and European law

All bat species were designated as European Protected Species (EPS) by Article 12 of **The European Habitats Directive 92/43/EEC (1992)**. This was enshrined in Scots Law by **The Conservation (Natural Habitats etc) Regulations (1994)**.

3.2 Possible offences

The following actions constitute criminal offences:

- **Capturing or killing bats.** This is an absolute offence – there is no need for the prosecution to demonstrate an intention to commit the offence to secure conviction.
- **Harassing bats.**
- **Disturbing bats:**
 - a. **Affecting their ability to survive, breed or rear young.**
 - b. **Affecting their local distribution or abundance.**
 - c. **Whilst rearing or caring for their young.**
 - d. **Whilst occupying a structure or place used for shelter or protection.**
- **Obstructing bats from accessing a breeding site or resting place.**
- **Damaging or destroying a breeding site or resting place used by bats.**
- **Possessing any live bat, dead bat or part of a dead bat.**

In addition, the following are also offences:

- **Attempting to commit one of the above offences**
- **Knowingly causing or permitting someone else to commit one of the above offences.**

Maximum fines for committing one of the above offences are **£5,000 per animal**.

3.3 Avoiding committing an offence

Most of these offences (excluding 1) can be committed recklessly as well as deliberately, meaning that ignorance of the presence of bats is not a defence: you are expected to do all you can to find out whether bats (or other protected species) are present and whether you are at risk of committing an offence. In practice this means instructing a consultant ecologist to carry out surveys and taking account of their professional advice.



3.4 Licensing

In certain circumstances, a Scottish Government derogation licence may be obtained, permitting an offence to be committed without prosecution. For a licence to be issued, three legal tests must be met:

- The reason for committing the offence must fall within certain narrow parameters, including:
 - a. The proposal is in the public interest, e.g. the construction of a school or community centre.
 - b. The proposal is necessary on grounds of safety.
 - c. The proposal is necessary to safeguard property.
 - d. The proposal is necessary to safeguard livestock.
- All reasonable alternatives must have been considered.
- The favourable conservation status of the bat species must be undiminished.

This usually requires a mitigating work programme to minimise disturbance/harm and usually compensation measures to ensure the bats are not disadvantaged, e.g. the creation of a replacement roost.

Applications for derogation licences can take up to 8 weeks to be processed and often require strict timetables for action. Early action can therefore reduce delays caused by licencing, mitigation and compensation.

3.5 Disclaimer

The author of this report is not a lawyer and cannot offer a legal opinion. It is strongly recommended that legal advice be sought before taking any action which might expose you to a risk of prosecution. The author can recommend a specialist environmental lawyer.



4 BAT SPECIES IN SCOTLAND

4.1 Bat Ecology

There are 17 species of bat currently resident in the UK. Nine species are known from Scotland. All are believed to have declined as they face many threats to their highly developed and specialised life cycles. In general, their dependence on insects has left them vulnerable to habitat destruction, land drainage, habitat fragmentation, agricultural intensification and increased use of pesticides. Their reliance on buildings and decaying trees has also made them vulnerable to felling, repairs and the use of timber treatment chemicals.

In the UK, bats are generally active from late March to mid October, hibernating from late October to mid March. In early summer, females gather in maternity roosts to give birth, normally producing a single offspring per year. This slow rate of reproduction inhibits repopulation in areas of rapid decline. Bats are generally born in June/ July and are dependent on their mothers for about six weeks. In autumn and winter, male and females gather for mating. The females are able to store sperm until spring when an egg may be fertilized. In winter, bats hibernate in sites that have a cool, humid and stable climate.

Bats generally return to the same roost sites every year which makes them particularly vulnerable to disturbance or destruction of these sites. Some species of bat move roost frequently and use a number of different roost sites.

4.2 Bat Species



Fig. 1 - Soprano Pipistrelle

Soprano Pipistrelle (*Pipistrellus pygmaeus*) is the most frequently encountered species in Central Scotland. They roost mostly in modern buildings, but occasionally in trees or other crevices. They range up to 4km from their roosts, using hedgerows and woodland edges to provide commuting routes to foraging sites and eat small flying insects and midges, with an affinity for habitats with a riparian element.

Common Pipistrelle (*Pipistrellus pipistrellus*) is less common in Scotland than further south, but still frequently encountered. Its habits are very similar to the Soprano Pipistrelle, but uses more generalised habitats.

Nathusius' Pipistrelle (*Pipistrellus nathusii*) is one of Britain's rarest bat species, with only a handful of records in Scotland. They tend to roost in tree-holes or buildings and are most commonly associated with large water bodies, such as reservoirs.



Brown Long-eared Bat (*Plecotus auritus*)

is a relatively common, but rarely seen woodland bat. Primarily gleaners, they pick larger insects and arachnids off shrubs and trees, mostly in dense woodland. They roost in hollow trees or in the roof spaces of older buildings or barns, always very close to woodland.

Natterer's Bat (*Myotis nattereri*) is primarily a woodland bat, catching insects in flight and occasionally gleaned from trees and shrubs, though they also forage low over pasture. They most commonly roost in hollow trees, occasionally also in buildings near to woodland.



Fig. 2 – Brown Long-eared Bat

Whiskered Bat (*Myotis mystacinus*) is known in Central Scotland from a small number of records, though it is easily confused with Natterer's Bat and may be under-recorded. They forage in a variety of habitats, including hedgerows, woodland and parkland. They roost in old stone buildings, and in tree crevices.



Fig. 3 – Cluster of Daubenton's Bats

Daubenton's Bat (*Myotis daubentonii*) forages almost exclusively over water, eating insects and other arthropods gaffed from the water surface or caught in flight just above it. Their roosts tend to be close to water, usually in hollow trees or cavities in bridges or other waterside structures.

Noctule (*Nyctalus noctula*) is the largest bat in Scotland and only rarely found north of the Borders. They mostly roost in hollow trees and emerge, often before dark to forage high over parkland, woodland and pasture on large flying insects.

NB: All images of bats are for illustrative purposes only, including image on front cover.



Fig. 4 – Noctule Bat



5 SURVEY METHODS

5.1 Desk study

Records of bats within a 5km radius of the site were obtained from appropriate sources of biological records. 1:25 000 and 1:10 000 Ordnance Survey maps were consulted, together with satellite pictures, in order to assess the surrounding habitat. The Scottish Natural Heritage Sitelink website was consulted, to establish whether the site lay within or close to any designated sites.

5.2 Preliminary roost assessment

The building was systematically examined for signs of bats and for structures with suitability for roosting bats. A high-power spotlight, close-focusing binoculars, ladders and an endoscope were used where necessary, to understand the structure.

Structures with suitability could include sarked slate or tile roofs, wall-heads, cavity walls, attic voids, lofts, masonry crevices, rubble-filled walls, cellars, barrel-vaulted ceilings etc.

Signs of bat roosts could include droppings, urine spots, smear marks, corpses, ectoparasites, odor and social calls or scrabbling noises.

Upper stories, attics etc. were examined where they were accessible, and it was judged safe to do so.

5.3 Survey limitations

All British bats are peripatetic and move between different roosting sites through the seasons and sometimes within seasons. The absence of bats on a particular occasion does not necessarily rule out their presence at other times. An absence of physical signs does not always indicate the absence of a roost.

Physical surveys were carried out where it was safe to do so. Where unstable structures rendered it unsafe to enter a structure survey effort was reduced.



6 RESULTS

6.1 Desk study

6.1.1 Designated sites

The survey site does not lie within or adjacent to any designated site.

The nearest designated site is The Firth of Forth Site of Special Scientific Interest (SSSI), which lies approximately 1.2 km to the North of the site.

The site was designated a SSSI in 2000 to protect a wide range of coastal and maritime habitats and species.

6.1.2 Biological records

Bat roost records show five bat species have been recorded within 5km of the site: Common Pipistrelle, Soprano Pipistrelle, Daubenton's Bat, Noctule and Brown Long-eared Bat.

The author holds records for five species which have been recorded within 5km of the site: Common and Soprano Pipistrelle, Natterers Bat, Noctule and Brown Long-eared Bat.

6.1.3 Surrounding habitat

The site lies within a landscape of several habitat types, with arable farmland, hedgerows, tree lines and patches of mixed woodland surrounding the area. This offers foraging opportunities for Soprano and Common Pipistrelles and Natterer's Bats.

To the North lies an extensive area of mostly mixed woodland. The woodland offers good foraging and roosting opportunities for Brown Long-eared Bats, Natterer's bats and Noctules.

The River Tyne lies less than 3 km East of the site and provides foraging opportunities for Daubenton's Bats, who are likely to roost in woodland or structures close by. These habitats are also likely to be used by Common and Soprano Pipistrelles.

There are numerous old and agricultural buildings in the vicinity, built in the local vernacular and likely to provide roosting opportunities for a range of bat species



6.2 Preliminary roost assessment

Date of survey	27/01/2021
Weather conditions	Dry
Light conditions	Bright

The subject building comprises a single storey traditional bakehouse that was remodeled in 1842 and is currently used as the Village Hall. To the rear of the building on the West elevation is an elevated storage room.

The building is of rubble stone masonry in good condition with no apparent cracks, however there are gaps and crevices at the wallhead of all elevations.

The slate roof is in relatively good condition however does have slipped and loose slates, creating crevices that may be used by roosting bats. The flashing is raised and twisted in places, and the stone capping on the dormer windows is broken and missing in places, further creating potential roosting features, as well as access to the internal space.

Evidence of bats was found during the stage 1 preliminary roost assessment. A minimal scattering of Brown Long-eared Bat droppings was found within the hall itself, however the majority of droppings was found within the elevated storage room to the rear of the building. The storage area has a high volume of Brown Long-eared Bat droppings covering the entirety of the space.

The building has found to have **high suitability** to be used by roosting bats.



6.2.1 Site Plan



The Subject building is outlined in red.

6.2.2 Photographs



Fig. 5 – North elevation of the subject building.



Fig. 6 – South elevation of the subject building.



Fig. 7 – West elevation of the subject building.



Fig. 8 – South and East elevation of the subject building.

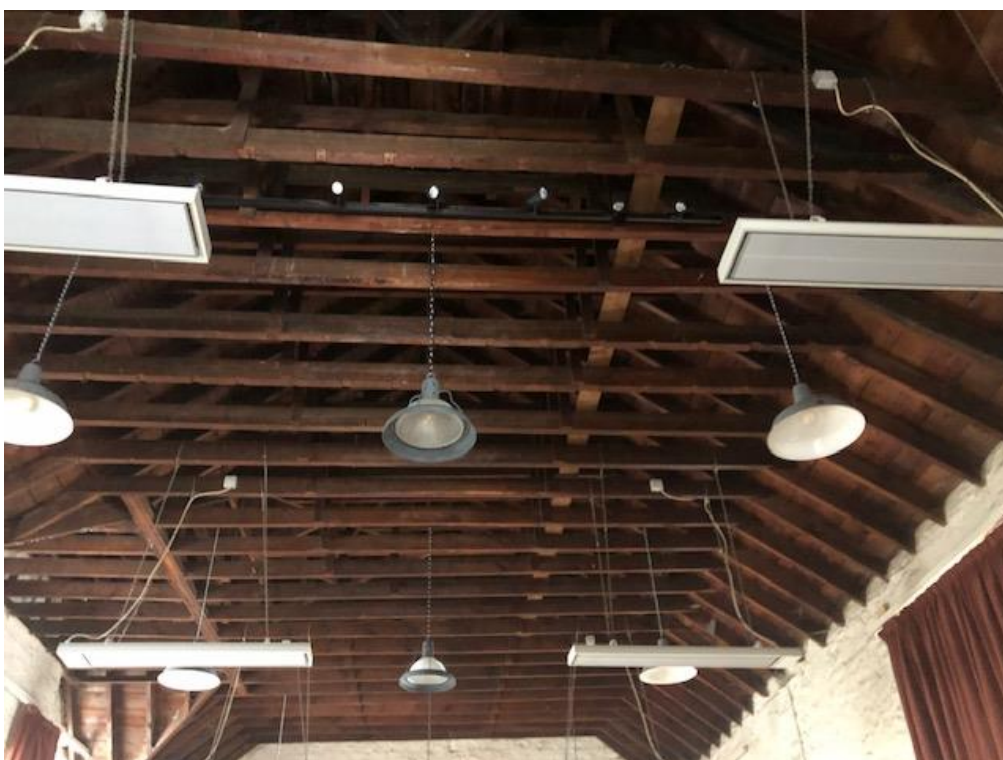


Fig. 9 – Internal space of the subject building.



Fig. 10 – Bat droppings found within the Hall.



Fig. 11 – Roof structure of the elevated storage room.



Fig. 12 – Bat droppings found covering the floor and stored items.



Fig. 13 – Bat droppings found covering the floor and stored items.



Fig. 14 – Bat droppings found covering the floor and stored items



Fig. 15 – Potential Roost Features identified on the subject building.



7 DISCUSSIONS & CONCLUSIONS

This survey has been carried out to a suitable standard, using methods which comply with current guidelines.

No designated sites are relevant to this site, with regard to bats.

Six bat species have been recorded within 5 km of the site: Common and Soprano Pipistrelle, Natterers Bat, Brown Long-eared Bat, Daubenton's Bat and Noctule.

The area surrounding the site has high suitability to be used by a range of bat species for roosting, foraging, and commuting.

Evidence of bats in the form of droppings was found during the stage 1 preliminary roost assessment. A small number of Brown Long-eared Bat droppings was found within the main hall of the building; however, a large quantity of the droppings was found in the storeroom to the rear of the building.

Given the large quantity of droppings found within the storeroom it may be concluded that this area is heavily utilised by bats. The small number of droppings identified within the hall itself indicates that although used by bats this is minimal.

The building was assessed as having **high suitability** to be used by roosting bats.

Recommendations are given overleaf.



8 RECOMMENDATIONS

The author understands that Tynninghame Hall is to undergo work that will involve the installation of insulation within the hall itself. The insulation is to be installed above the rafters, creating a platform across the hall and an attic space above this. Approximate measurements have been considered and there will be sufficient space, approximately 2 m, for the Brown Long-eared Bats to continue utilising the space. No changes are being made to the storeroom where the main roost was identified.

The bat roosts and potential bat roosts identified will not be impacted by the works carried out. Continued Ecological Functionality may be applied, and no derogation license will be required.

The following method statement should be followed to ensure Continued Ecological Functionality of the roosts identified, and to avoid committing an offence.

Proposed method statement

1. Work within the attics and roof structure should take place outwith the bat activity season, between 1 November and 31 March
2. Insulation installed should be laid across the rafters and not obstruct the eaves or apex of the roof structure within the hall.

This survey report is valid until 2 August 2022.



9 REFERENCES

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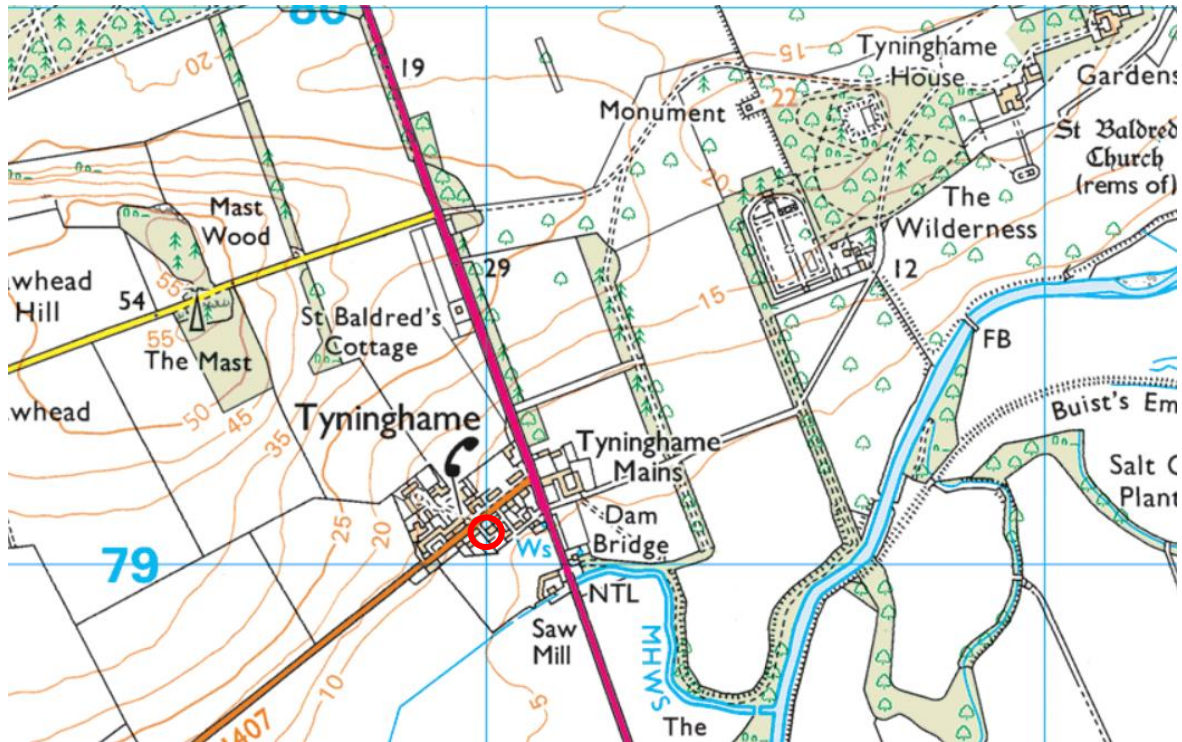
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10 APPENDIX I – LOCATION MAP

Nation Grid Reference (NGR): NT609793

Site location marked in red.



(Ordnance Survey cartography reproduced under licence number 100048711)



11 APPENDIX II – SATELITE VIEW OF THE SITE

The subject building is highlighted in red.





12 APPENDIX III – SATELITE VIEW OF THE SURROUNDING HABITAT

The subject building is highlighted in red.

