

**Proposed building renovation at
Longback, Kirknewton**
Ecological Assessment

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Issuing office

The Schoolhouse | Live Theatre | 12 Trinity Chare | Newcastle Upon Tyne | NE1 3DF
 T: 0191 303 8964 | W: www.bsg-ecology.com | E: info@bsg-ecology.com

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Approved for issue to client	Kirsty Kirkham	Director	30 September 2020
Issued to client	Steven Betts	Associate Director	30 September 2020

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1 Introduction

Site Description

- 1.1 The proposed development site is a building known as Longback, near Kirknewton, (referred to in the report as the Site); it is located in open countryside, at central grid reference NT 90962988. Longback is located about 400 m to the west of Kirknewton village, Northumberland (Figure 1).
- 1.2 The Site consists of a single detached stone building adjacent to a farm track to the north with a plantation woodland to the south. The College Burn is 375 m to the west at its closest point.

Proposed Development

- 1.3 A planning application is to be submitted for the renovation of the existing building, which was previously used as a cottage and is now derelict.

Aims of Study

- 1.4 BSG Ecology was originally appointed in 2018 by Dobsons Design, on behalf of Mr and Mrs Martin, to carry out an ecological assessment at the Site to inform a planning application submission. Following a delay in submitting a planning application, further surveys were completed in August 2020.
- 1.5 The aim of this study is to update the ecology baseline information and to use the outcome of the survey work to inform the ecological assessment of the Site. Ecological constraints and associated mitigation measures are identified in the report that will need to be taken into account during the different phases of the proposed development.

Personnel

- 1.6 The survey work and reporting was completed by Steven Betts CEcol CEnv MCIEEM. He is an experienced ecologist who has worked in the ecological sector for more than 27 years. Further details of his experience and qualifications can be found at <http://www.bsg-ecology.com/project/steve-betts/>.
- 1.7 This report has been technically reviewed by Kirsty Kirkham MCIEEM who has over 25 years professional ecology experience. Further details of her experience and qualifications can be found at https://www.bsg-ecology.com/portfolio_page/kirsty-kirkham/.

2 Methods

Desk Study

- 2.1 A desk study has been undertaken to update the previous work using the following data sources. A 2 km search area has been adopted as this distance defines the extent of a precautionary zone of influence based on the scope and nature of the proposed development.
- 2.2 Data were obtained from Defra's Multi Agency Geographic Information for the Countryside internet-based database (<http://www.magic.gov.uk>, accessed 24 September 2020) to establish the location and nature of any statutory designated sites of nature conservation interest located within 2 km of the centre of the Site. This includes Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites. The desk study has also considered the location of the Site with respect to the Natural England Impact Risk Zones¹ (IRZ) for statutorily designed sites.
- 2.3 Records were requested from the Environmental Records and Information Centre (ERIC) North East. These were received on 28 September 2020.
- 2.4 Reference has been made to species and habitats listed in accordance with the provisions of Sections 40 and 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (referred to in this report as S.41 species and habitats). The Northumberland Biodiversity Action Plan (NBAP) has also been consulted, which identifies species and habitats that are targets for conservation action at the county level.
- 2.5 Aerial photography of the Site and its surroundings was examined to further assist in understanding the context of the Site and to identify and assess possible habitat linkages with other habitats or sites of ecological importance within the local area (<https://www.bing.com/mapspreview>, accessed 28 September 2020).

Field Survey

Habitat assessment for bats

- 2.6 The building within the Site was assessed on 21 June 2018 by Steven Betts to determine its suitability for roosting bats. During the survey the building was inspected externally and evaluated to determine its potential to provide roosting sites for bats. Any suitable features were recorded and described. Where possible any voids and gaps in walls and other building features were inspected using an endoscope and/or a powerful torch. A second assessment was completed by Steven Betts on 17 August 2020.

Bat activity surveys

- 2.7 Dusk bat activity surveys have been carried out on 21 June 2018, 16 July 2018, 17 August 2020 and 1 September 2020. During all surveys two surveyors provided total coverage of the building, with one surveyor position on the south-west corner and one on the north-east corner. Details of the surveys are provided in Table 1.

¹ The Impact Risk Zones (IRZs) are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks posed by development proposals to: Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites (GOV.UK website, 28 September 2020).

Table 1: Details of dusk bat activity surveys

Date	Start time	Finish time	Sunset	Weather conditions
21/06/18	21.37	23:25	21.55	Dry, 0% cloud cover, light wind, 12°C
06/07/18	21.36	23.21	21.51	Dry, 50% cloud cover, still, 18°C
17/08/20	20.22	22.07	20.37	Dry, 5% cloud cover (high), still, 18°C
01/09/20	19.36	21.30	20.00	Dry, 80% cloud cover, still, 16°C

- 2.8 Surveys were carried out by Steven Betts, Paul Lowings and Barry Grieve, all of whom are experienced bat ecologists who have previously carried out numerous bat surveys. Steven Betts holds Natural England Class survey licence 2015-12419-CLS-CLS Level 2, Paul Lowings holds Natural England Class survey licence WML CL17 CLS 2452, Barry Grieves holds Class survey licence 2015-12418-CLS-CLS.

Habitat assessment for nesting birds

- 2.9 During the Site visit on 6 July 2018 any evidence of breeding bird activity was noted. All birds observed during the survey were recorded and a note made of their location. Any evidence of past nesting activity was noted, such as nests, broken eggs, faecal staining. This assessment was repeated during the site visit on 17 August 2020.
- 2.10 The assessment included consideration of the habitats and building features to determine their suitability for supporting nesting birds.

Survey Limitations

- 2.11 There were no limitations to the survey methods.

3 Results and Interpretation

Desk Study

Statutory Designated Sites

3.1 The following statutory designated sites are located within the desk study area:

- Tweed Catchment Rivers - England: Till Catchment SSSI (390 m to the west);
- River Tweed SAC (390 m to the west).

3.2 The reasons for the notification of each designated site are summarised below.

Tweed Catchment Rivers- England: Till Catchment SSSI

3.3 The citation for the Tweed Catchment Rivers - England: Till Catchment SSSI describes the site in the following terms: 'As part of the whole River Tweed system, the Till Catchment Rivers are clean rivers of high conservation and ecological value. The vegetation types show a natural succession from mineral-poor upland streams through to communities which are typical of mineral-rich lowland rivers. Floating beds of water crowfoot, *Ranunculus*, are of international significance and the blooming of a diatom *Didymosphenia* in the headwaters draining the Cheviot is unique in England. The fish fauna is particularly significant, the area supports one of the most important game fisheries in England, with large migrations of salmon and also supports the three British species of Lamprey. The Till catchment also contains important habitat for otters.'

River Tweed SAC

3.4 The River Tweed qualifies as an SAC as it supports the following Annex I habitat that is a primary reason for selection of this site:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation.

3.5 The River Tweed also supports populations of the following Annex II species that are a primary reason for selection of this site:

- Atlantic salmon *Salmo salar*;
- Otter *Lutra lutra*.

3.6 The River Tweed also supports the following Annex II species, which are qualifying features but are not a primary reason for site selection:

- Sea lamprey *Petromyzon marinus*;
- Brook lamprey *Lampetra planeri*;
- River lamprey *Lampetra fluviatiles*.

3.7 The Site falls within the Impact Risk Zone for the above SSSI and SAC; however, the development types listed identifies rural residential development of 50 or more houses outside existing settlements/urban areas as requiring further consultation with Natural England. The proposed development falls below this threshold and no consultation with Natural England is considered necessary in relation to statutory sites.

Non Statutory Designated Sites

3.8 ERIC provided information on non-statutory designated sites that shows that Longknowe Hill and Pawston Lake Local Wildlife Site is located approximately 910 m to the west of the Site at its closest point. This LWS is separated from the Site by the College Burn: consequently impacts on the LWS are unlikely. The LWS is not considered further in this report.

- 3.9 Fredden Hill, Preston Hill and Yeavering Bell LWS is located 960 m to the south-east at its closest point. The LWS is separated from the Site by higher ground: consequently impacts on the LWS are unlikely. The LWS is not considered further in this report.
- 3.10 Cannonmill Bog is located approximately 1 km to the north-west of the Site at its closest point. This LWS is separated from the Site by the College Burn: consequently impacts on the LWS are unlikely. The LWS is not considered further in this report.
- 3.11 A figure showing the locations of the designated sites is provided in Section 7.

Protected Species

- 3.12 Examination of the MAGIC internet-based database (<http://www.magic.gov.uk>, accessed 24 September 2020) revealed that there is one European protected species licence for bats within the study area. The nearest licence that has been issued in the area relates to work carried out Crookhouse, which is 1.9 km to the north (licence EPSM2010-2277, which covered works impacting on brown long-eared and common pipistrelle bats).
- 3.13 ERIC returned records of S.41 species that are present in the study area but none of these relate to the Site. A total of seven records of hedgehog were returned but these relate to locations in Kirknewton village, which is approximately 450 m to the north-east. A total of sixteen records of red squirrel were returned for the study area, the nearest record being for a location in a field to the north of the Site. All other records are more distant, with records returned for Kirknewton village. The most recent record was from 2012. A total of twenty five records have been returned for grey squirrel none of which relate to the Site. The most recent record dates from 2015.

Field Survey

Habitat description

- 3.14 The Site is located on elevated ground to the west of Kirknewton village. The habitats within the Site consist of poor semi-improved grassland and a small number of trees and shrubs.
- 3.15 A farm access track passes to the north of the building and beyond this (outside the Site) is poor semi-improved grassland that was being used for cattle grazing at the time of the surveys. The field boundary alongside the track is defined by a stone wall. Poor semi-improved grassland is also present to the south-east of the building and to the west (outside the Site).
- 3.16 A small coniferous plantation is present immediately to the south of the building (outside the Site). Some semi-mature ash *Fraxinus excelsior* trees and hawthorn *Crataegus monogyna* shrubs are between the building and the edge of the plantation (within the Site).

Building assessment for bats

- 3.17 ERIC provided 88 records of bats for the study area but none of these relate to the Site. The majority of the records come from locations in the village of Kirknewton, which is approximately 450 m to the north-east. No information was provided on the species present for 36 of the records. The other records are for common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, whiskered / Bandt's bat *Myotis mystacinus / brandtii*.
- 3.18 Photographs of the building are provided in Section 6. The Site comprises a single stone construction building that is currently disused. Although the building appears to have been disused for some time the walls appear to be in reasonable condition, i.e. there are few gaps that have suitability for roosting bats (Photographs 2, 3 and 4, Section 6).
- 3.19 The building has a pitched roof that is covered with pan tiles. Internally the roof is unlined with the backs of the tiles visible (Photographs 7 and 8, Section 6). There is no loft area in the central part of the building or at the western end of the building. Consequently the interior of these parts of the building is open from the floor to the ridge. The roof of the main section of the building appears to be in reasonable order with few missing or slipped tiles; however, there are gaps below the tiles where they cover the wall heads. Whilst these gaps potentially provide access to the interior of the

building, inspection of the wall heads indicates that there are few holes with suitability for roosting bats.

- 3.20 At the eastern end of the building there is a small remnant section of lath and plaster ceiling above which there is an unlined pan tile covered roof. The western end of the main part of the building is a storage room that was being used to store old bales of straw at the time of the site visit. A small lean-to extension is attached to the western end of the building and this has a partially collapsed roof (Photograph 6, Section 6). Gaps in the stonework were noted above a lintel on this elevation and under a kneeler stone on the south-east corner (Photograph 9, Section 6). The central part of the building appears to be a former living space, which was empty at the time of the survey.
- 3.21 The window openings have no glass present but all are covered with chicken wire. There are two small windows in the eastern gable end wall, there are two small windows in the north-facing wall and two small windows in the south-facing wall. There are three door openings on the northern side of the building, all of which are sealed with doors.
- 3.22 The unlined pan tile covered roof provides few roosting opportunities. Whilst bats could potentially access the interior of the building, there are few holes or gaps that have suitability for bats: those gaps that are present were checked using torches and endoscopes. No bats were present and no signs of bat presence were noted.
- 3.23 Overall the building is considered to have moderate potential to support roosting bats. This assessment is based on the presence of some gaps and cracks in the stone walls and takes into account the buildings location near good bat foraging habitat.

Tree assessment for bats

- 3.24 None of the broadleaved trees immediately to the south of the building (between the building and the plantation and within the Site) has suitability for roosting bats. The semi-mature ash tree and hawthorn shrub adjacent to the southern side of the building are also assessed as having no suitability for roosting bats.

Bat activity surveys

- 3.25 During the dusk bat activity surveys carried out on 21 June and 6 July 2018 no bats were seen to emerge from the building and no behaviour indicative of roosting was noted. On 21 June 2018 the first bat was a distant pipistrelle *Pipistrellus* sp. (species could not be determined due to the call duration) recorded at 22.22, which is 27 minutes after sunset. The first bats recorded near the building were two common pipistrelle *Pipistrellus pipistrellus* bats feeding high in the nearest conifer trees: these were recorded at 22.29.
- 3.26 Other species recorded during the survey on 21 June 2018 were soprano pipistrelle *Pipistrellus pygmaeus* (first recorded at 22.33), noctule *Nyctalus noctula* (first recorded at 22.48) and a *Myotis* sp. bat (first recorded at 23.15). All of these species were recorded infrequently.
- 3.27 During the survey on 6 July 2018 the first bat was a distant pipistrelle (species could not be determined due to the call duration) recorded at 22.12, which is 21 minutes after sunset. The first bat recorded near the building was a common pipistrelle bat feeding over the grassland to the west of the building: this was recorded at 22.22.
- 3.28 Other species recorded during the survey on 6 July 2018 were soprano pipistrelle (first recorded at 22.30), noctule (first recorded at 22.12) and a *Myotis* sp. bat (first recorded at 22.34). All of these species were recorded infrequently.
- 3.29 During the survey on 17 August 2020 a soprano pipistrelle bat emerged at 20.41 (4 minutes after sunset) from a hole adjacent to the kneeler stone on the west gable end, just above eaves height (point 1 on Photograph 9 in section 6). The bat flew into the adjacent woodland to the south.
- 3.30 At 20.57 on 17 August, a pipistrelle bat emerged silently from a crack on the west gable end at a point just above and to the right the filled-in window (point 2 on Photograph 9 in section 6). The bat flew off to the north-west. At 20.59 a common pipistrelle bat emerged from the same location with another common pipistrelle emerging at 21.00.

- 3.31 During the survey on 1 September 2020 at 20.09 (9 minutes after sunset) a bat emerged from a gap in the stonework above and to the right of the lintel in the west gable wall (point 2 on photograph 1 above). The bat flew south and into the adjacent woodland.
- 3.32 A noctule bat was heard briefly at 21.00 and again at 21.05 during the survey on 17 August 2020. This species was also heard briefly on four occasions between 20.47 and 21.00 on 1 September 2020. On 1 September 2020 a distant *Myotis* sp bat was recorded at 20.58, 21.12, 21.23 and 21.28 (this species was not recorded during the survey on 17 August 2020).

The results of the bat activity surveys are presented in Appendix 1.

Building assessment for birds

- 3.33 No evidence of bird nesting activity was recorded in the building. During the bat activity survey on 6 July 2018 a pied wagtail *Motacilla alba* was seen to roost under the pan tiles above the window at the western end of the northern elevation. Pied wagtail is included on the Birds of Conservation Concern Green List (Eaton *et al*, 2015); it is a common and widespread species. No nesting birds were recorded during the site visit on 17 August 2020.

Constraints on Study Information

- 3.34 The survey work has been carried out by competent experienced ecologists and with reference to published guidance. A thorough assessment was possible as all parts of the building were accessible.

4 Impacts and Recommendations

Designated Sites

- 4.1 The Site is located 390 m to the east of the River Tweed SAC but is separated from the SAC (College Burn) by grassland and a narrow belt of plantation woodland and scrub. The land slopes down to the north of the Site and so it would be expected that any surface water arising from the Site would flow in this direction. No ditch or stream is present that provides a hydrological link to the College Burn and so it is expected that surface water will soak away to ground. Given the small scale nature of the development and the geographical aspect of the Site in relation to the River Tweed SAC, no appreciable impacts are anticipated and no mitigation is considered necessary.

Habitats

- 4.2 The proposed development will not impact on any habitats of acknowledged conservation importance. The only habitat present is an area of poor semi-improved grassland adjacent to the building, which may be subject to some temporary disturbance during the construction phase of the development. No mitigation measures are proposed as any damage or disturbance of this habitat that may occur during the construction phase of the development will be restored following completion of the works.
- 4.3 Broadleaved trees are present immediately to the south of the building. A semi-mature ash tree and hawthorn shrub adjacent to the southern side of the building will need to be removed (Photograph 5, Section 6). All retained trees will be protected from accidental damage and ground compaction around the roots throughout the construction period.

Protected Species

Bats and buildings

- 4.4 Information relating to the legal protection of bats and their roosts is presented in Appendix 2.
- 4.5 During the surveys in 2020 a common pipistrelle day roost (3 bats) and a soprano pipistrelle day roost (1 bat) were identified in cracks in the wall on the south-west gable end of the building which is a significant change to the negative survey outcome recorded in 2018. In the absence of mitigation the proposed development will result in the loss of the identified day roosts. Measures will therefore be required to mitigate impacts on bats and their roosts.
- 4.6 It is understood that external lighting will only be on the front (northern) side of the building and will be manually operated (i.e. it will not be permanently on during occupation of the building). No lighting impacts on bat roosts (including the proposed bat boxes as described below) are therefore anticipated.
- A Natural England bat licence will need to be secured before work proceeds that will impact on bats and their roosts (the small number of bats recorded using day roosts may mean that a Bat Mitigation Class Licence (BMCL) could be secured). A Natural England bat licence will be secured before work proceeds (this could take 10 working days or more for a BMCL to be determined or 30 working days if a full EPS mitigation licence is required).
- 4.7 The licence application will require the inclusion of measures to mitigate impacts on bats and to compensate for the loss of the identified roosts. The following measures will be adopted:
- A pre-works inspection for bats will be carried out by an ecologist using an endoscope. This inspection will identify and examine any features that could potentially be used by bats.
 - A requirement of the bat licence will be that pre-exclusion surveys are completed to confirm if bats are present and, if so, where they are. One way excluders (such as plastic bags that are open at both ends) will be fixed over roost entrances at least two days before work commences (and kept in place until exclusion is confirmed). Surveys will be used to confirm that bats have been excluded.

- A tool box talk will be delivered to the appointed contractor. This will highlight that bats are highly mobile and so their presence in the ongoing construction phase cannot be ruled out.
- Where tiles need to be removed they should be lifted carefully being mindful that a bat may be present underneath (this applies to the eaves as the remainder of the roof structure is poor for bats). A search will be made for signs of bat presence, such as their droppings.
- If bat droppings are found at any point during the works, advice will be obtained from a bat ecologist.
- If bats are encountered during the work, all work will stop and the bat ecologist will be informed immediately. The bat ecologist will advise as to the best way to proceed.
- Only a licensed bat ecologist will be allowed to capture and handle a bat. If a bat is injured it will be taken into care.

- 4.8 To compensate for the loss of the identified day roosts 3 Schwegler 2F bat boxes of equivalent will be erected on retained trees to the south of the building.
- 4.9 To provide enhancement an additional 2 Schwegler 2F bat boxes or equivalent will be erected on retained trees to the south of the building.
- 4.10 The location of the bat boxes will be agreed in consultation with the bat ecologist and sited in locations that are safely accessible for future monitoring.

Bats and trees

- 4.11 A semi-mature ash tree and hawthorn shrub adjacent to the southern side of the building will need to be removed, but neither of these have potential to support roosting bats and so no mitigation measures are proposed. If any other trees need to be removed they will require further assessment to confirm their status with regard to roosting bats.

Breeding Birds

- 4.12 Information relating to the legal protection of nesting birds is presented in Appendix 2.
- 4.13 No signs of breeding bird presence were noted during the survey. The roost site used by a pied wagtail will be lost as a result of the renovation work.
- 4.14 The proposed works could have an adverse impact on active nests if carried out during the breeding bird season (which is generally between late February and mid- August inclusive) and based on the assumption that birds subsequently use the building for nesting. In order to avoid committing an offence, it is recommended that work affecting bird nesting habitat is carried out between late August and mid-February, which would avoid the bird breeding season. If work affecting bird nesting habitat has to take place during the bird breeding season, then it is recommended that the area is surveyed for active bird nests by a suitably qualified ecologist before the proposed work is carried out. If active bird nests are present, then work would have to be delayed in that area until nesting activity ceases. It should be noted that this can be a period of up to 6 weeks and that some species can have two broods.
- 4.15 To provide enhancement 2 Schwegler 3S starling / woodpecker nest boxes or equivalent will be fixed to retained trees to the south of the building. The location of the bird boxes will be agreed in consultation with the ecologist and sited in locations that are safely accessible for future monitoring.

5 References







Collins [Ed] (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 3rd Edition. Bat Conservation Trust, London.

Defra's Multi Agency Geographic Information for the Countryside internet-based database (<http://www.magic.gov.uk>).

Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708–746.

North East England Nature Partnership: Northumberland priority habitats and species, <https://neenp.org.uk/natural-environment/biodiversity-priorities/>.

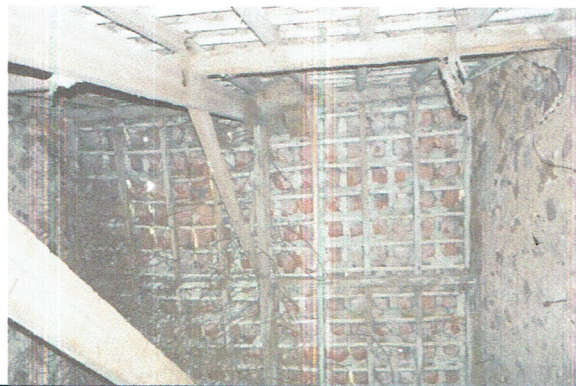
6 Photographs

Photograph 1: Building viewed from the east	Photograph 2: Eastern gable end
 A wide-angle photograph of a stone building with a gabled roof, situated on a grassy slope. A dirt path leads towards the building from the foreground. The background shows a line of trees and a clear sky.	 A close-up photograph of the eastern gable end of the stone building, showing the roofline and the stone masonry. The building is surrounded by green grass and trees.
Photograph 3: Western gable end	Photograph 4: Southern aspect
 A photograph showing the western gable end of the stone building, characterized by its steeply pitched roof and stone walls. The building is set against a backdrop of trees and a clear sky.	 A close-up photograph of the southern aspect of the stone building, focusing on the roof tiles and the stone masonry. The building is surrounded by green grass and trees.
Photograph 5: Western gable end	Photograph 6: Western gable end
 A photograph of the western gable end of the stone building, showing the roof and the surrounding landscape. The building is situated on a grassy slope with trees in the background.	 A photograph of the western gable end of the stone building, showing the roof and the surrounding landscape. The building is situated on a grassy slope with trees in the background.

Photograph 7: Western store room



Photograph 8: Unlined pan tile covered roof



Photograph 9: Bat roost locations (2020)



7 Figures

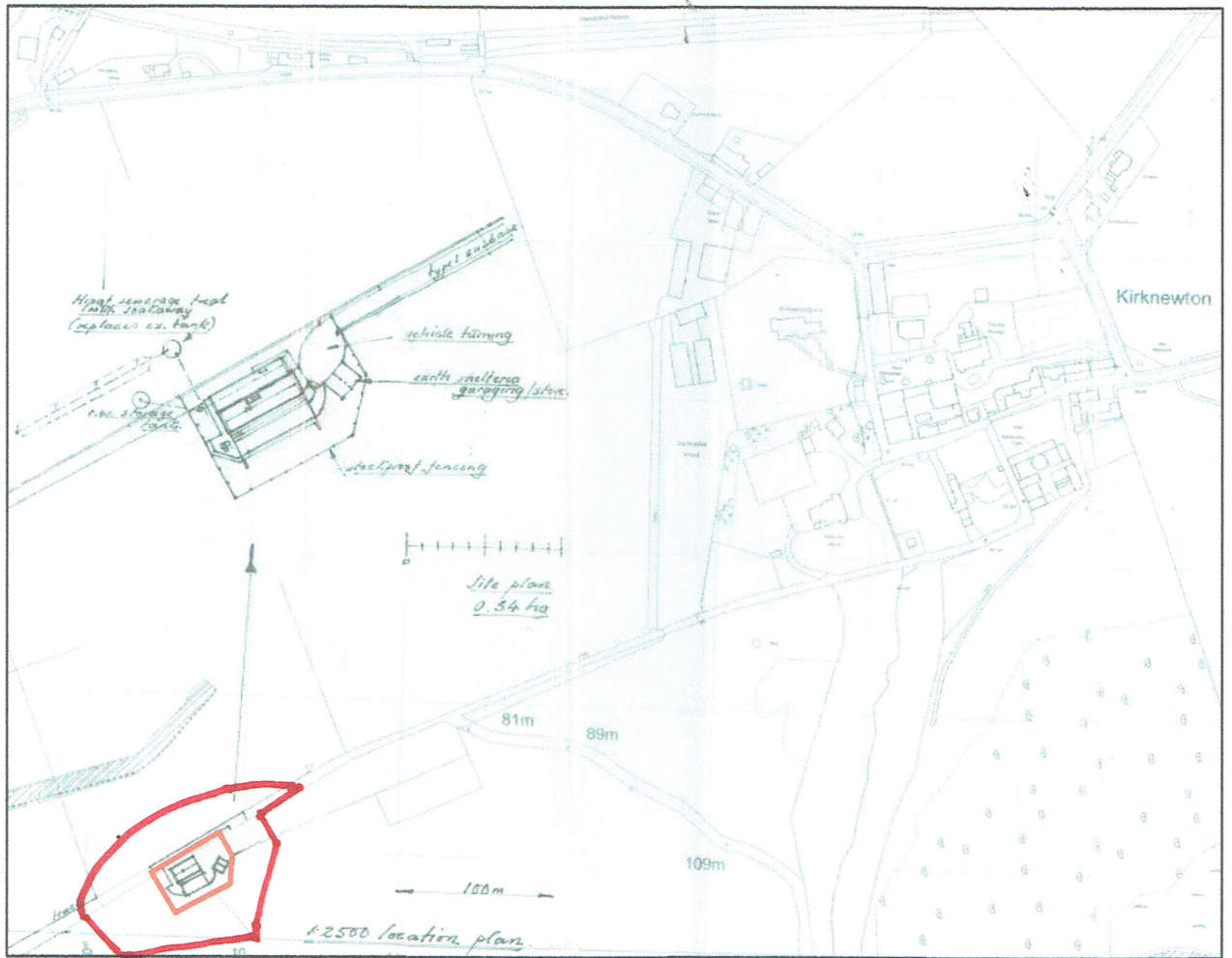
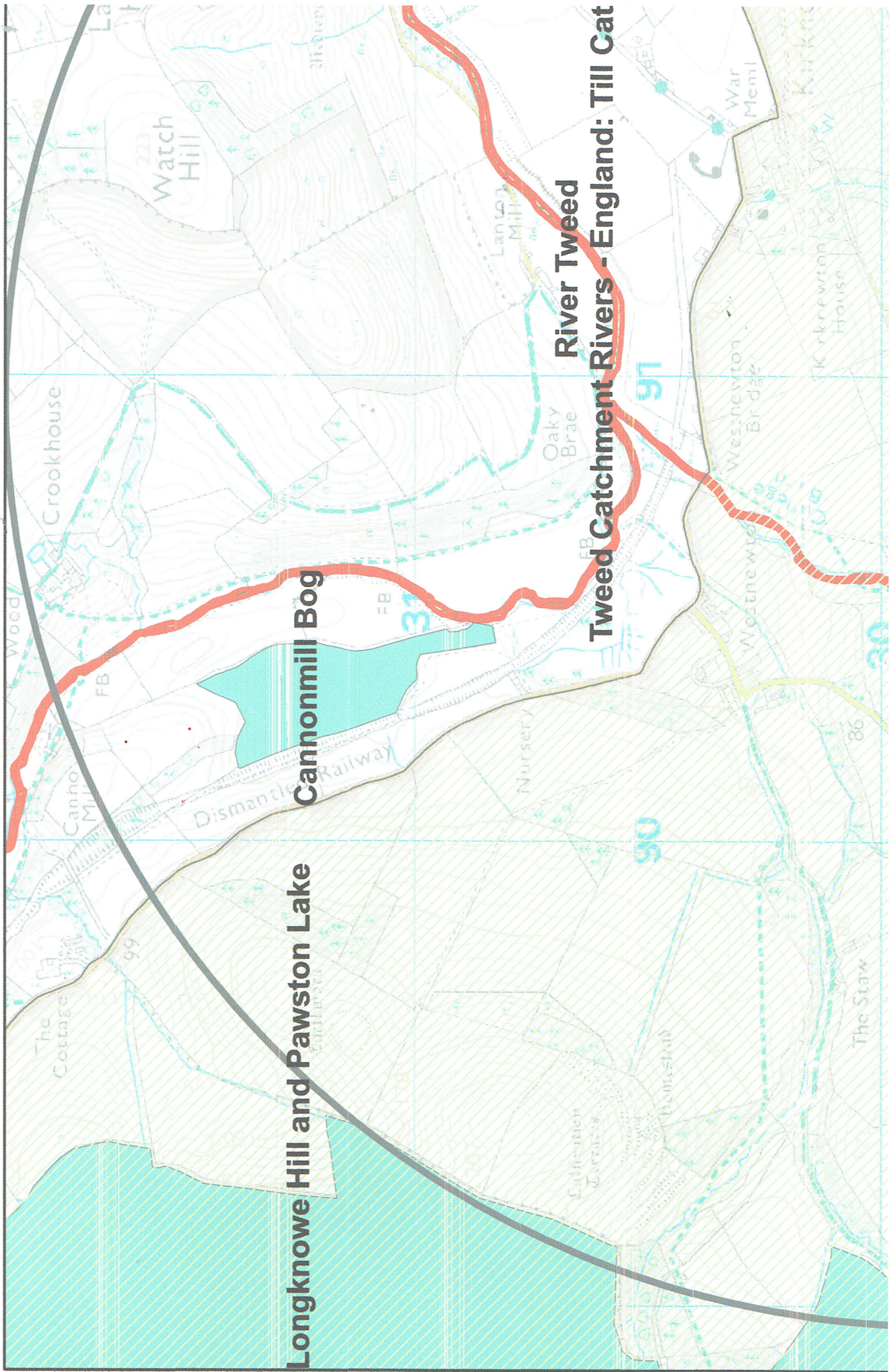


Figure 1: Location plan (Site is outline in red)



Longknowe Hill and Pawston Lake

Cannonmill Bog

River Tweed

Tweed Catchment Rivers - England: Till Cat

Appendix 1: Bat survey data

Project Number: P18-013		Project name: Longback Kirknewton			
Survey Number: 1		Surveyor Name: P. Lowings & B. Grieves			
Date: 21/06/18		Sunset: 21:55		Sunrise:	
START – surveyors sync watches	Time: 21:37	Temp. (°C) 12	Wind (Bf ¹) 2	Cloud (/8) 0	Rain: No
FINISH	Time: 23:25	Temp. (°C) 10	Wind (Bf ¹) 2	Cloud (/8) 0	Rain: No

Time		Bat Passes Seen or Heard			
Start	End	Species	Obs. No.	Comments E = Emerged, R = Returned; C= Commuting; F= feeding; HxS = heard not seen; SxH = seen not heard	Emerged / Returned
22:22		<i>Pip sp.</i>		Very distant bat HxS	
22:29		P45 and P50		At least two bats feeding high in the conifer trees to the S of the building	
22:29	22:43	P45, P50		Regular bat feeding activity detected mainly in the trees to the S nearly every minute	
22:33		P55		Bat feeding high in the conifer trees to the S of the building	
22:37		P50		Bat flew in from the NE and passed along W gable into woodland to the S of the building	
22:38	22:47	P55		Regular feeding bat passes near to building and in woodland to the S every two or three minutes	
22:40		P45 and P55		At least one of each species feeding above the E gable of the building	
22:41		P45		Bat feeding over survey point to the NW of building. Flew into woodland to the S	
22:42		P45		Bat overflow ridge near to chimney flying N to S	
22:42		P45, P50, P55		At least one bat of each feeding around building	
22:46		P45, P50, P55		At least one bat of each feeding around building	
22:48		Noc		Bat visible feeding down in the valley about 100m to the N of building	
22:51		P45, P55		Two P45 and one P55 feeding over survey point to the NW of the building	
22:52	23:12	P55		Feeding bat present close to building nearly every minute with as many as six passes per minute	
23:08		P45, P55		At least four bats visible feeding around building	
23:10		P55		Bat social calling	
23:15		<i>Myo</i>		Single, distant, pass of bat HxS	

Project Number: P18-013		Project name: Longback Kirknewton			
Survey Number: 2		Surveyor Name: P. Lowings & S. Betts			
Date: 06/07/18		Sunset: 21:51		Sunrise:	
START – surveyors sync watches	Time: 21:32	Temp. (°C) 17	Wind (Bf') 1	Cloud (/8) 4	Rain: No
FINISH	Time: 23:21	Temp. (°C) 15	Wind (Bf') 1	Cloud (/8) 3	Rain: No

Time		Bat Passes Seen or Heard			
Start	End	Species	Obs. No.	Comments E = Emerged, R = Returned; C= Commuting; F= feeding; HxS = heard not seen; SxH = seen not heard	Emerged / Returned
22:12		Pip sp		Distant bat HxS	
22:12		Noc		Distant bat HxS	
22:19		Noc		Distant bat HxS	
22:22		P45		Bat feeding over grassland to the west of the building	
22:30		P55		Distant bat HxS	
22:31		P55		Overflying ridge at just to the NE of central. Flying within the trees to the S of the building	
22:33		P55		Single close commuting pass of bat HxS	
22:34		Myo		Single distant pass of bat HxS	
22:34		P50		Bat overflow central area of ridge in a N direction then flew SW along track and away	
22:35		Pip sp.		Two bats visible feeding in field SE of building along the NE woodland edge	
22:37		P45		Bat briefly feeding over survey point then flew NE along track	
22:38		P50		Bat feeding along woodland edge and field as 22:35	
22:39		P55		Bat feeding close to E gable but flew away to the SE	
22:41		P45		Bat present feeding along woodland edge to the SE	
22:42		P50		Bat social calling near survey point. Flew NW into fields	
22:45		Noc		Feeding bat HxS	
22:47		P55		Bat present feeding along woodland edge to the SE	
22:48		Myo		Bat seen flying SE at 1m height towards building and behind NE lean-to projection. Call characteristics were that of a Natterer's	
22:56	22:59	Noc		Bat HxS. Five passes of feeding bat	
23:04		P55		Bat feeding near to E gable of building but flew away to the SE	
23:10		P55		Bat feeding in field to the NW of building	

Project Number: P18-013		Project name: Longback Kirknewton			
Survey Number: 3		Surveyor Name: P. Lowings & S. Betts			
Date: 17/08/20		Sunset: 20:37		Sunrise:	
START – surveyors sync watches	Time: 20:12	Temp. (°C) 15	Wind (Bf ¹) 0	Cloud (/8) 4	Rain: No
FINISH	Time: 22:07	Temp. (°C) 14	Wind (Bf ¹) 1	Cloud (/8) 8	Rain: No

Time		Bat Passes Seen or Heard			
Start	End	Species	Obs. No.	Comments E = Emerged, R = Returned; C= Commuting; F= feeding; HxS = heard not seen; SxH = seen not heard	Emerged / Returned
20:41		P55		Bat emerged from hole adjacent to kneeler stone on W gable end near to the most westerly point of the building, just above eaves height. Flew off to woodland to S	E
20:49		P55		Distant bat HxS	
20:50		P50		Bat flew around most westerly corner at eaves level. Then flew off to the S	
20:52		P45		As 20:50 but flight path further away from building	
20:53		P45		As 20:50	
20:57		<i>Pip sp.</i>		Bat emerged silently from W gable at crack just above and to the right of crack in lintel above filled-in window. Bat flew to the NW	E
20:59		P45		Bat calling upon emergence from point 2 as 20:57. Flew NE and out of sight	E
21:00		P45		As 20:59	E
21:00		noc		Bat heard in the distance	
21:01		P55		Bat briefly feeding over survey point	
21:02		P55, P45		Mainly P45 but both species feeding within proximity to the building	
21:05		noc		Bat heard in the distance	
21:06		P45		Bat seems to be circling the building	
21:07	21:25	P55, P45		Both bat species regularly feeding near to survey point or in the wooded area to the S	
21:26	21:50	P55, P45		Much reduced bat activity	
21:51	22:07	P55, P45		An increase of feeding activity of both species over levels at 21:26 but less than 21:07	
22:04		P45		Bat social calling	

Project Number: P18-013		Project name: Longback Kirknewton			
Survey Number: 2		Surveyor Name: P. Lowings & B. Grieves			
Date: 01/09/20		Sunset: 20:00		Sunrise:	
START – surveyors sync watches	Time: 19:36	Temp. (°C) 16	Wind (Bf ¹) 0	Cloud (/8) 7	Rain: No
FINISH	Time: 21:30	Temp. (°C) 15	Wind (Bf ¹) 1	Cloud (/8) 7	Rain: No

Time		Bat Passes Seen or Heard			
Start	End	Species	Obs. No.	Comments E = Emerged, R = Returned; C= Commuting; F= feeding; HxS = heard not seen; SxH = seen not heard	Emerged / Returned
19:52		noc		Distant bat HxS	
19:58		P55		Bat seen flying high over ridge of building in SW direction. Flew into woodland to the S of survey point	
19:59	20:04	P55		Two bats seen feeding high in woodland to S of survey point	
20:08		P50		Bat seen flying into survey area from open fields to the NW of the building. Bat flew over building and into woodland to the SE	
20:09		P45		Bat emerged from stonework above and to the right of crack in lintel of W gable wall (point 1). Bat flew towards survey point then to the S and into woodland	E
20:13		P45, P55		Probably three or four bats in total of both species feeding high in the woodland to the S of survey point	
20:33		<i>Pip sp.</i>		Bat activity much reduced	
20:38		P45		Bat social calling whilst flying in the proximity of both NW and SW el.	
20:40		Myo		Bat with the call characteristics of a Natterer's bat made a single pass flying SW over and along ridge	
20:47		noc		Feeding bat HxS	
20:56		noc		Feeding bat HxS	
20:58		noc		Probably two bats feeding quite close but HxS	
20:58	20:59	Myo		Two passes of bat	
21:00		noc		Feeding bat HxS	
21:03		P45		Bat seen flying SW above ridge	
21:10		P55		Bat social calling whilst flying near NW and SW el.	
21:12		Myo		Single pass of a bat HxS	
21:13	& 21.20	P45		Bat social calling whilst flying near NW and SW el.	
21:23		Myo		Distant bat HxS	
21:28		Myo		Single pass of a bat HxS	

Appendix 2: Summaries of Relevant Legislation, Policy and Other Instruments

- 7.1 This section briefly summarises the relevant legislation, policy and related issues that are mentioned in the main text of the report. The following text does not constitute legal advice.

National Planning Policy Framework

- 7.1 The government published the National Planning Policy Framework (NPPF) on 27th March 2012. The NPPF states that, "*the planning system should contribute to and enhance the natural and local environment by:*
- a. *Protecting and enhancing valued landscapes, geological conservation interests and soils;*
 - b. *Recognising the wider benefits of ecosystem services;*
 - c. *Minimising impacts on biodiversity and providing net gains in biodiversity, where possible contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
 - d. *Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
 - e. *Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*

Planning applications and biodiversity

- 7.2 "When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:
- a. *If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
 - b. *Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;*
 - c. *Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
 - d. *Opportunities to incorporate biodiversity in and around developments should be encouraged;*
 - e. *Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and*
 - f. *The following wildlife sites should be given the same protection as European sites:*
 - i. *potential Special Protection Areas and possible Special Areas of Conservation*
 - ii. *listed or proposed Ramsar sites; and*
 - iii. *sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites."*

- 7.3 *"The presumption in favour of sustainable development (paragraph 14 [of NPPF]) does not apply where development requiring appropriate assessment under the Birds and Habitats Directives is being considered, planned or determined."*
- 7.4 In paragraph 125 the NPPF stipulates that *'by encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.'*

Species and Habitats of Principal Importance

- 7.1 The NPPF (paragraph 117) indicates that local authorities should take measures to *"promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species"* linking to national and local targets through local planning policies. Priority species are those species shown on the England Biodiversity List published by the Secretary of State under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Planning authorities have a duty under Section 40 of the NERC Act to have regard to priority species and habitats in exercising their functions including development control and planning.

Bats

- 7.2 Bats are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and under the Conservation of Habitats and Species Regulations 2017. Taken together, these make it an offence to:
- Deliberately capture or intentionally take a bat.
 - Deliberately or intentionally kill or injure a bat.
 - To be in possession or control of any live or dead wild bat or any part of, or anything derived from a wild bat.
 - Damage or destroy a breeding site or resting place of such an animal or intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection.
 - Intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection.
 - Deliberately disturb any bat in such a way as to be likely significantly to affect;
 - the ability of any significant group of animals of that species to survive, breed or rear or nurture their young; or
 - the local distribution or abundance of that species.

- 7.3 A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, legal opinion is that a bat roost is protected whether or not the bats are present at the time. However, this has yet to be tested in law.

- 7.4 Although the law provides strict protection to bats, it also allows this protection to be set aside (derogation) under the Conservation of Habitats and Species Regulations 2017 through the issuing of licences. In England these licences are currently determined by Natural England (NE) for development works.

Breeding Birds

- 7.5 All birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take any wild bird or take damage or destroy the nest while in use or being built or take or destroy an egg. Certain species of bird that are listed in Schedule 1 of the Act receive additional protection. For these species it is an offence to recklessly disturb the bird while it is on its nest or to disturb the dependant young of such a species.

- 7.6 In addition, the EU Birds Directive, Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006 all provide protection to certain bird species and their habitats in the UK.
- 7.7 A number of birds of particular conservation concern have also been assigned priority status under the UK BAP. These are generally species which occur on the Birds of Conservation Concern Red List (Gregory et al, 2002) and usually belong to groups that are particularly influenced by unfavourable land management. Some species are also given priority within the local BAP, and these require action at the local level.