
Appendix 15.5
Preliminary Bat Roost
Assessment – Trees

Introduction

Scope

RPS Ltd. were commissioned by Meath County Council to undertake a preliminary roost assessment (PRA) of trees for bats within the proposed N2 bypass route. Surveys were carried out by suitably qualified Ecologists, holding a bat roost disturbance licence (DER/BAT 2020-44).

The purpose of this report is to outline the findings of the PRA of trees within and along the proposed N2 bypass route. The methods, results and subsequent recommendations of this survey, are included within this report.

Site Location

The subject site of the PRA is the footprint and adjoining habitats of the proposed N2 bypass route. With the exception of the corridor of the River Boyne, the footprint of the proposed scheme is typically comprised of grasslands (primarily improved agricultural grasslands, arable crops and tilled land). Despite the expansive agricultural patchwork of fields that characterise the Proposed Scheme, there remain areas of woodland, often as linear landscape elements, but elsewhere such as the northern side of the river Boyne, as discrete woodland units. Across the landscape, semi-mature and mature trees, largely deciduous, are common throughout, reflecting in places the heritage of larger demesnes and estates.

Legislative Context

All bats species in Ireland are afforded protection in Ireland under the Wildlife Act (1976) and Wildlife [Amendment] Act (2000), as amended. As outlined by the Wildlife Acts, it is an offence to intentionally disturb, injure or kill a bat or disturb its resting place.

The EC Directive on The Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive 1992) (as amended), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All bat species are protected under Annex IV of the EU Habitats Directive, while the Lesser Horseshoe Bat (*Rhinolophus hipposideros*) is also listed under Annex II.

Additionally, under international legislation, bats are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve wild flora and fauna and their natural habitats.

Methodology

Preliminary Ground Level Roost Assessment

A preliminary ground level roost assessment was carried out during daylight hours, using close focusing binoculars, to identify features with suitability for roosting bats in trees and structure exteriors. This survey was conducted on the 10, 11 and 12 of May 2021 within the proposed N2 bypass route.

Trees were studied and assessed for the presence of features with suitability for roosting bats including cavities, frost cracks, trunk and branch splits, rot holes, bark peel, and hollow sections of trunk and branches. The results of this assessment were used to grade trees as having Negligible, Low, Moderate, or High suitability for roosting bats (**Table 36**) taking cognisance of the Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).

Table 36. Guidelines for assessing the potential suitability of proposed development sites for bats (Collins, 2016)

Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of

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Suitability	Roosting Habitats
	sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat

Internal Inspection of Structures

An internal inspection of structures was carried out using a systematic approach to identify potential or actual bat access points, roosting places, and any evidence of bats usage. The survey was conducted on the 10th, 11th and 12th of May 2021 on structures identified as having bat roosting suitability and was carried out in cognisance of the Bat Conservation Trust's (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).

The interior of buildings (namely the loft/attic or exposed internal roof areas of sheds) were assessed using a suitable light source (head-torch and hand-held torch) by assessing the following locations:

- Both sides of rafters – from wall plate/eave to ridgeboard;
- The top of gable end or dividing walls;
- The top of chimney breasts;
- Ridge and hip beams and other beams;
- Mortise and tenon joints;
- All beams (free-hanging bats);
- The junction of roof timbers, especially where ridge and hip beams meet; and
- Behind purlins.

Furthermore, the inspection also assessed and searched roof voids, and accumulation of bat droppings, feeding remains (e.g. moth wings) and smears or stain marks.

Results

Trees

The preliminary ground level roost assessments identified six trees with features suitable for roosting bats. The visual assessment categorised the trees with potential to support bat roost features as ranging from low to moderate suitability (**Table 37**). The remaining trees on site were classified as having negligible suitability for roosting bats.

Table 37. Tree features suitable for Roosting Bats identified during the Preliminary Ground Level Roost Assessment

Tree Code	Tree Species	Feature Location and Description	Suitability
BT12	Ash	Two features identified. Mature Ash tree. (i) Facing north, the first feature is SW facing. The first trunk facing east has a small subsidiary branch with large scar.	Moderate

Tree Code	Tree Species	Feature Location and Description	Suitability
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(ii) Facing northwest, the second feature is southeast facing. Find the first trunk facing downward on this side. Large tear/knot hole.



BT17	Ash	Five moderate features on very mature ash. (Note: Features (i) and (ii), and Moderate features (iii) and (iv) can be grouped together for survey if required as they are in close proximity to each other). (i) Downward south facing branch break. Standing in a north-eastern direction, follow the main trunk up c.8m and follow the first branch facing	
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Tree Code	Tree Species	Feature Location and Description	Suitability
		<p>directly south. At the end of this branch it splits into two- the lower and smaller of these two branches is the moderate feature.</p> <p>(ii) Similar to feature (i). Branch breaking and bark peeling. The feature is located c. 2m below and behind the first feature.</p>  <p>(iii) Facing in a southwestern direction. The feature is facing directly north on the apical/main centre branch of the trunk. Knot hole feature located at tip of branch.</p> <p>(iv) Directly below feature (ii). Bark peeling.</p>  <p>(v) From the towpath and facing south looking at the back of BT17. There are two main trunks, follow the second branch and the upward facing knot hole feature is located at a right angle at the end of the branch.</p>	

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT18		<p data-bbox="478 1019 670 1052">Two low features.</p> <p data-bbox="478 1052 1284 1142">(i) Facing southeast, first branch facing northeast splits into three. The most easterly branch of these has a very small knot hole around three quarters of the way down the branch. The feature is on a small finger-like branch.</p>   <p data-bbox="478 1870 1284 1960">(ii) Facing northeast, the branch is facing west. The first branch on this side splits into two, The lower of these two branches has a small branch break/split.</p>	Low

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Tree Code	Tree Species	Feature Location and Description	Suitability
			
BT28	Oak	<p>Two features identified. Mature Oak tree located along the N51.</p> <p>(i) When standing in the field facing the N51, stand in a NW direction and the feature is facing SE. Feature is located c.1.5m above the hedgerow. It is the first downward facing trunk with knot hole hollow on SE side of tree.</p>	Moderate
			
		<p>(ii) When standing in the field facing the N51, stand in a NE direction and the feature is facing NW and juts out over the road slightly. Knot hole located on the first NW facing branch. Located 6m from the ground.</p>	

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT35	Hawthorn	 <p data-bbox="480 1093 1289 1227">East facing feature standing at base of tree facing west. The first south facing branch has a stump/branch break at its base. The feature is horizontally positioned c.4m from the ground. Other low features have contributed to this tree having moderate potential e.g. ivy cover and splitting bark.</p>	Moderate
BT37	Ash	<p data-bbox="480 1240 1289 1323">Northwest facing feature. Standing looking at tree and facing southeast. The feature is located c. 6m from the ground on the main trunk. Large knot hole.</p> <p data-bbox="480 1330 1289 1384">Orientated southwest with potential staining at the base of the first east facing branch. Obscured by flowering sycamore. Very difficult to see.</p>	Moderate

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT38		 <p>Ivy coverage and broken branching. Two fallen branches located with tip pointing north. Some cracks and bark peeling also located on the higher of the two branches.</p>	Low

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT40	Scot spine	 <p data-bbox="478 1691 1276 1803">Locate 30m south of BT35 within small, wooded patch between fields. Branch of Scots pine has broken and rooted itself into the ground making it look like a separate tree. Facing south, it is the first branch break facing northwest c.4m from the ground. Excessive splitting and breaking.</p>	Low

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT41	Larch	 <p data-bbox="480 981 1281 1088">Larch tree with stumped crown. Crown has potential for good features they are just no visible as they are obscured. Branch break also present. Standing in a south-westerly direction, the feature is east facing and has clearly fallen from crown of tree.</p>	Low
BT42	Ash	 <p data-bbox="480 1832 639 1859">Dead thick ivy.</p>	Low (ivy)

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT43	Scot spine	 <p>Thick ivy. Note: All of the Scots pine and larch trees south of BT43 should be soft felled.</p>	Low (ivy)
BT44	Ash	 <p>Two moderate features.</p> <p>(i) When facing north toward the Boyne the feature is southwest facing. The branch pointing toward you (south facing), there is a large bark tear with significant potential for upward shelter. The tear is close to the base of the branch.</p> <p>(ii) On the same branch as feature (ii), follow the branch to its tip where there is a large branch break with open hole. Good potential for shelter.</p>	Moderate

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT45	Ash	Heavy ivy coverage and located below electricity line along the towpath.	Low (ivy)
BT46 BT47 BT48	Scots Pine	Heavy ivy coverage with dead ivy concentrated at the crown of the tree. However, this tree is heavily managed and cut back on its west side. Features obscured by ivy, however, may have crack and break features.	Low (ivy)



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Tree Code	Tree Species	Feature Location and Description	Suitability
BT49	Ash	 <p data-bbox="478 1624 1284 1736">Thick ivy coverage. Looks like two separate trees close together at first glance. Potential for shelter between thick ivy branching. Tree is located directly opposite open wooded patch on west side of track. First ash tree on left hand side of driveway.</p>	Low (ivy)

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT50	Hawthorn	 <p>Fifth hawthorn on left hand side (east side of track). Broken branch and hawthorn tree is leaning over it. Has fallen from tree with two to three bark holes.</p>	Low

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT51	Scots Pine	Located at tip of wooded triangle patch. Heavy and thick ivy coverage.	Low
BT52	Ash	Located in the south/southwest corner of the building opposite Ledwidge Museum. Thick ivy.	Low



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Tree Code	Tree Species	Feature Location and Description	Suitability
BT53	Hawthorn	Mature hawthorn on southeast corner of building opposite Ledwidge Museum. Thick ivy.	Low
BT54	Ash	Mature Ash located in the northwest corner of the building identified with bat roost potential opposite Ledwidge Museum.	Low



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Tree Code	Tree Species	Feature Location and Description	Suitability
BT55	Hawthorn	All hawthorns on perimeter of wooded patch to be soft felled.	Low
BT56	Hawthorn	Thick ivy.	Low (ivy)
BT57	Hawthorn	Thick ivy.	Low (ivy)



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Tree Code	Tree Species	Feature Location and Description	Suitability
BT58	Beech	<p>Mature beech with two features.</p> <p>(i) Standing north, the feature is facing southwest. Broken branch/split. Follow the first branch in front of you c. 2m from the ground, this branch splits into two and in between this branch split there is a middle broken and shorter branch.</p>	Low
		 <p>The image shows a close-up of a beech tree trunk with several large, gnarled branches. A red circle highlights a specific feature on one of the branches, which appears to be a broken or split section. The tree is situated in a grassy area with other trees in the background.</p>	
		<p>(ii) Standing in a northwest direction. The second feature is located adjacent to feature (i). The feature is an elongated open knot hole pointing</p>	

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Tree Code	Tree Species	Feature Location and Description	Suitability
		<p>in a southwest direction and is the first branch pointing south located c. 4,5m from the ground.</p>	
			
BT59	Beech	<p>Two features identified. (i) Branch tear/rotting. Standing in a eastern direction the feature is south facing and is located c. 10m from the ground. (ii) Ivy coverage.</p>	Low
			

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT60	Ash	Thick ivy.	Low (ivy)
BT61	Beech	Two broken branches. Standing in a northwest direction the feature is southeast facing. Both broken branches are located on the first east facing branch.	Low
BT62.1 BT62.2	Ash	Thick Ivy.	Low (ivy)



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Tree Code	Tree Species	Feature Location and Description	Suitability
BT62.3 BT62.4			
BT63	Ash	Two features identified (i)Knot/Hole. As standing west, this feature is facing east. Follow the first trunk on the RHS (southern side) that splits into two. There is a branch that goes northwest from this trunk. At the base of the branch is a knot/hole. Note: there is also a feature located approx. 1m above this knot/hole on the same branch, but it does not have any bat potential.	Low
BT64	Ash	Four features identified. (i) Broken Branch. As standing facing west, this feature is facing southwest. It is the first broken branch facing back. It is broken at a right angle (ii) Knot/Hole. On the same branch as feature 1, there are two holes approx. 6m above ground level. (iii) Knot/Hole. As facing west, the third trunk (e.g. 2 above feature 1) breaks into many branches with two branches facing northwest. The lower of these two branches has two open knots/holes approx. 1m apart. (iv) Knot/Hole. As facing west, the fourth major trunk up from the bottom, located approx. 3.5m above the third trunk. Where this trunk breaks into two there is a knot/hole on the west facing branch.	Low
BT65	Ash	Thick ivy.	Low (ivy)

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Tree Code	Tree Species	Feature Location and Description	Suitability
BT66	Ash	Branch break/tear	Low
BT67	Ash		Low (ivy)



Recommendations

Tree Removal

During the preliminary bat roost assessment survey, 34 trees were identified to have bat roost potential, 28 of which were classified as having low potential and 6 of which were classified as having moderate potential (**Table 37**).

Based on the results, the following recommendations are proposed by RPS;

- **Tree of low bat roost potential:** *No further survey is required.* If a tree of low bat roost potential is required to be felled then soft felling is recommended, where:
 - Tree should be pushed lightly with machinery two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active;
 - Tree should be sectioned or felled entire, without increased force (e.g. without being pulled or pushed to the ground by machinery); and
 - Tree should be left grounded for 24 hours to allow any bats to make their way out.
- **Tree of moderate bat roost potential:** *Further surveys required.* If a tree of moderate bat roost potential is required to be felled, then bat presence/absence (emergence/re-entry) surveys are required to expand on the findings of the PRA. These presence/absence surveys should, at a minimum, include:
 - Two separate survey visits. One dusk emergence and a separate dawn re-entry survey; and
 - Timing of May to September (weather dependant) with at least one of the surveys between May and August.
 - If no roosts are confirmed from the further surveys, and no additional surveys are recommended, the tree should be soft felled as outlined above.
- **Confirmed roost:** If a bat roost is confirmed on site, a licence will be required from the Wildlife Licencing Unit (National Parks and Wildlife Service) for its removal. Mitigation and compensation measures should be included in any licence application.