Final

NATURAL RESOURCES WALES
PEN-YR-ENGLYN TIP REMEDIATION
Nightjar Survey Technical Note

Project no. 4021526

Prepared for:

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1. Introduction

1.1 Background

Binnies UK Limited (BUKL) was commissioned by NRW to undertake a nightjar *Caprimulgus europaeus* survey for the Pen-Yr-Englyn Tip Remediation project. The purpose of this assessment is to establish the presence or likely absence of nightjar to inform the design and ecological assessment of the project.

The purpose of this report is to:

- present the results of the nightjar surveys carried out for the Pen-Yr-Englyn Tip Remediation project;
- provide recommendations to enable compliance with relevant nature conservation legislation and planning policy during project delivery.

1.2 Scheme Location and Context

Pen-Yr-Englyn tip is situated on the eastern side of the Rhondda Fawr Valley. The Scheme Area is located directly north of Pen-Yr-Englyn, situated between the village of Treherbert to the west and the town of Treorchy to the east. The Scheme Area is centred at National Grid reference SS 94822 98025 (nearest postcode CF42 5HA) and covers approximately 0.2 km^2 (20 ha) of land.

Pen-Yr-Englyn tip was formed as a result of the historical mining waste produced by the Ynysfeio Colliery between 1854 and 1935. Mining spoil was placed on the steep slopes above mine shafts and colliery buildings. The tipping area is above residential properties, and as part of previous remediation works to cap shallow mine entries at the base of the hillside, some spoil was reprofiled to create what is now a plateau at the base of the steep slopes. The current project is to design and implement a drainage solution to reduce the pore water pressure and stabilise the tip.

The Scheme Area is situated within the County Borough of Rhondda Cynon Taff. Rhondda Cynon Taff County Borough Council (RCTCBC) land holdings own the plateau at the base of the hillside. The hillside north of the plateau is currently owned by the Welsh Government Woodland Estate (WGWE) and is managed by Natural Resources Wales (NRW). The location of the Scheme Area is shown in Figure 1-1 below.

The hillside in the north of the Scheme Area is crossed by Ynysfeio forest road, and a number of other forest tracks exist on the slopes. The steep slopes below the forest road were previously part of a conifer plantation but were clear-felled in winter 2023-24 to comply with a statutory plant health notice to remove the *Phytophthora ramorum* diseased trees. An area of broadleaved wet woodland on the lower slopes was retained, as was an area of mature western hemlock *Tsuga heterophylla* plantation on the western boundary of the Scheme Area (Binnies UK Ltd, 2024).

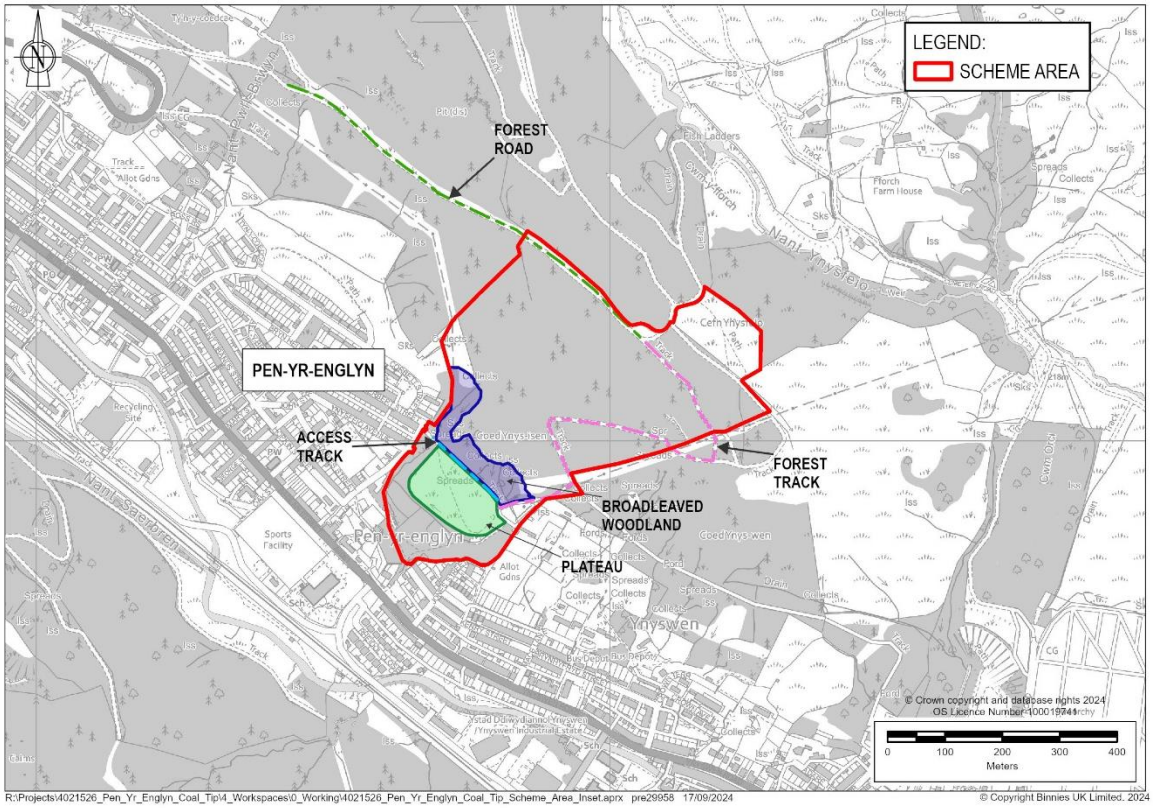

Figure 1-1: Scheme Area

2. Nightjar Ecology and Legislation

2.1 Ecology

Nightjars are a summer African migrant arriving to the UK between April and May. This species is a nocturnal insectivore, that is most closely associated with recently felled conifer plantations and lowland heathland. However, nightjar can also occupy; coppiced woodlands, woodland margins, moorlands and sand dunes, should the habitat provide healthy invertebrate numbers.

Nightjars are a ground nesting species, their clutches generally contain two eggs and nesting pairs usually produce two broods while in the UK. Given their excellent camouflage, it is extremely difficult to observe birds on the ground and/or nesting. Nightjars are best viewed at dusk and dawn, when the species is most active. It is during this time, the males produce their distinctive song, known as 'churring'. The 'churring' song is produced by the male usually from a perch and the song advertises the presence of the species within breeding habitat. Where the softer 'ke-wick' contact calls between male and females is heard, it evidences occupied breeding territories. Wing clapping while in flight is also performed by males when displaying to females (BTO, 2023).

2.2 Status

Nightjars are listed in Annex I of the EU Birds Directive (Directive 2009/147/EC) and are listed as a species of principle importance under Section 7 of the Environment (Wales) Act 2016.

There had been a marked decrease in nightjar numbers throughout Britain and Ireland in the late 19th and 20th century. Possible causes for the decline in nightjar numbers include habitat change/loss, disturbance and decreases to invertebrate numbers (Langston et al, 2007).

A 1992 national survey showed a 50% increase in nightjar population size since 1981 (Morris et al. 1994). Following that, a national nightjar survey in 2004 confirmed that the population had again increased by a further 36%, since 1992 (Conway et al, 2007). There was, however, evidence of decline and decreases in nightjar range in north Wales, northwest England and Scotland, since 1992 (Conway et al, 2007). In contrast, NBN atlas data from 2008-11 shows that range has increased in Britain by 18% since 1988-91.

The partial recovery and recent increases in numbers and range, ha s resulted in the species being moved from red to amber listed in the latest Birds of Conservation Concern (BoCC5) (BTO, 2021).

2.3 Legislation

Nightjar, their nests and their eggs are protected under the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000. Under this legislation, it is an offence to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- Intentionally take or destroy the egg of any wild bird;
- Have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- Have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or Protection of Birds Act 1984;
- Use traps or similar items to kill, injure or take wild birds.

3. Methodology

3.1 Scoping

A desk study was completed by as part of a PEA completed in 2022 (ARUP, 2022). Within the PEA, records of nightjar within the previous 10 years (2012 – 2022) within 10km of the Scheme Area, were noted. A search for any statutory and non-statutory designated sites was also completed as part of the PEA. Mynydd Blaenrhondda and Mynydd Tylsaf Site of Importance for Nature Conservation (SINC), located on the west side of the Rhondda Fawr Valley north-west of the Scheme Area, was highlighted as providing clear-felled areas that represent valuable nightjar habitat. Several of the nightjar records are within this SINC.

The north east half of the Scheme Area is within the Mynydd Ystradffernol SINC. This is noted in the PEA as being an upland plantation on deep peat, the majority of which is managed as Sitka spruce plantation. As set out in section 1.2, the conifer plantation within the Scheme Area was felled in winter 20234/24, creating suitable nightjar habitat similar to that recorded with the Mynydd Blaenrhondda and Mynydd Tylsaf SINC.

3.2 Field Survey

The Survey Area comprised the recently felled slopes above the 'plateau' within the Scheme Area (see Figure 1 and drawing 4021526-BUK-ZZ-00-DR-EN-00010, Appendix A).

Field surveys were conducted following best practice guidelines (Gilbert et al, 1998). Surveys were led by Jack Childs (BSc, MSc) who is an experienced and competent bird surveyor, supported by Kieran McElroy (BSc, CIEEM Qualifying Membership).

Two surveys were completed to identify churring males on the dates provided below:

- 25th June 2024; 22:00 – 00:30
- 16th July 2024; 21:30 – 23:30.

Both surveys were completed to cover the first half of dusk (between 22:00 and 23:30) and were undertaken in dry conditions, with winds no greater than Beaufort 3. The survey transect route followed the main forest track within the Scheme Area which ensured comprehensive coverage of all suitable habitat within the survey timing parameters. The transect route passed within 200m of all suitable habitat within the Survey Area, ensuring all churring males were recorded.

Surveyors walked the transect at a steady pace along the pre-determined route, pausing every 5-10 minutes to listen for birds. Data was recorded using ArcGIS field maps software, allowing surveyors to pinpoint their exact locations via GPS. The transect routes were overlaid on the map to help surveyors follow them more accurately. Upon hearing a churring nightjar, surveyors marked the estimated position of the individual as precisely as possible, using codes A1, A2, etc during the first visit. For the second visit, surveyors used codes B1, B2 etc to distinguish churring males recorded between the separate visits. The use of isolated codes for each visit enabled a post survey assessment of the number of male nightjar territories within the survey area. Surveyors recorded all calling (churring) males onto maps, in addition to noting other behaviours including 'ke-wick' call, wing clapping and flight lines. If a churring male was heard from two separate locations, but not churring simultaneously, up to 30 seconds apart and more than 400m apart, the male nightjar was recorded as a separate bird. If the churring male did not meet this criterion, the male was recorded as the same bird that had moved.

3.3 Limitations

Every effort has been made to provide a comprehensive and robust assessment of the Survey Area. However, the following limitations remained during the assessment:

- Maps have been produced from in-field notes and mapping. Whilst this provides a sufficient level of detail to fulfil the requirements of this report, the maps are not intended to provide exact locations. Due to the Scheme Area topography (steeply graded valley side and uneven ground), registrations of the exact churring nightjar locations shown across the survey results map should be interpreted with a degree of subjectivity when evaluating maps.

Despite the above limitation, the survey results are considered valid and give an accurate representation of nightjar within the Survey Area. The limitation above is not deemed severe enough to significantly affect the outcomes described within this report.

4. Results

4.1 Field Survey

The field survey identified nightjar within the Survey Area. A total of two nightjar territories were recorded and survey observations involved a range of vocalisations and flights, including; churring, wing clapping, 'ke-wick', flights between calling posts and territorial flights.

During the first survey visit, male nightjar was recorded churring within the first 20 minutes of the survey. The bird was churring from towards the valley top, to the north and outside of the Scheme Area. A churring male nightjar was recorded from this location also during the second survey visit. This area was therefore identified as territory 1. No visual sighting of the bird was made, however the approximate location of the churring male is shown on drawing 4021526-BUK-ZZ-00-DR-EN-00010 (Appendix A) (A1 – visit 1, B1- visit 2).

A second territory was identified towards the mid - upper area of the Scheme Area. A male was recorded churring across both survey visits, at several locations. No simultaneous churring occurred, nor did churring locations occur more than 30 seconds and more than 400 apart, within these locations (as per guidance, Gilbert et al, 1998). As such, churring was deemed to be from the same bird/territory and was mapped as territory 2 (A2 – visit 1, B2 – visit 2). However, there is the potential that territories may have been under recorded within the Scheme Area. For territory 2, the following behaviours/calls were noted; flights between churring posts, wing clapping and 'ke-wick' contact calls. Both survey visits provided numerous observations of flights and calls. Calls made by female nightjar were mapped and can be identified through the associated gender symbology noted with all mapped observations. Alternate shape symbology has also been used to differentiate between song/calls, see drawing 4021526-BUK-ZZ-00-DR-EN-00010).

The nightjar activity recorded, and locality of observations, confirmed the presence of both nightjar sexes within the Scheme Area (territory 2). 'Ke-wick' contact calls between the male and female provide substantial evidence of an occupied breeding territory. It is therefore considered highly likely that nightjar is breeding within the Scheme Area.

5. Discussion and Recommendations

The construction related activities and construction period for implementing the drainage solution, are not yet defined. However, likely approaches and locations for construction works have the potential to impact nightjar, through both disturbance and destruction of active nests. Therefore, it is imperative that appropriate mitigation is followed to reduce risks of affecting breeding nightjar within the Scheme Area and within adjacent habitat. Following 2024 nightjar surveys, works could affect at least two nightjar territories (A1, A2). Works within 200m of a nesting nightjar have potential to cause disturbance (Goodship & Furness, 2022) and therefore affect breeding success. For Pen yr Englyn, applying a 200m radius around a nest anywhere in the Scheme Area could cover a large proportion of the area in which works will need to take place.

It is recommended that construction works affecting clear felled woodland habitat, or within 200m of this habitat, are undertaken outside the nesting bird season. For nightjar, this is between May and August (inclusive).

If carrying out all works outside of the nightjar nesting season is not feasible, e.g. for safety reasons, then it is recommended that the necessary vegetation and brash clearance is carried out over winter (outside of the general bird nesting season March to August, inclusive). The main construction works must then commence by the beginning of the following April at the latest. This is so that the construction activity acts as a deterrent to nightjar establishing nests within 200m of the workings areas. As part of the brash and vegetation clearance, it is crucial that extensive clearance is conducted to remove all clear-felled woodland habitat and to establish unfavourable nesting habitat (bare ground). The removal of clear-felled habitat over winter will be the most effective method to deter nesting. Bird scaring devices could also be considered. However, there is limited evidence on the effectiveness of such deterrent measures for nightjar. If scaring devices are deployed, they could be installed in conjunction with construction activity starting by April, e.g. in areas that will be less disturbed during early phases. The potential for bird scaring devices to be moved or removed by members of the public would need to be considered when locating them.

If carrying out all clearance over winter and starting works by April is not feasible, then pre-construction surveys would be needed to determine if there is nightjar breeding activity in the Scheme Area. If there is activity, then further surveys may be needed to determine nest locations. If an active nest is located, then a suitable buffer zone would need to be established as advised by a suitably qualified ecologist, and work carried out under an ecological watching brief, where work could be stopped if nightjar behaviour alters, suggesting the nest is at risk of abandonment. The most suitable approach would depend on the nest location, construction locations, levels of disturbance impact and habitat to be affected by construction works. It is possible that a full 200m works exclusion zone would be applied. As noted previously, at Pen yr Englyn a 200m buffer zone around a nest may cover a large proportion of the construction area, and so would pose a risk to project delivery.

If no evidence of nightjar nests are found within 200m of the nearest point of works, following the additional survey approaches listed above, the area will be deemed unlikely to support a nest and construction works can proceed. An additional pre-construction check of areas to be cleared by a suitably qualified ecologist should be completed as a final mitigation approach, immediately prior to works, to ensure no new nightjar nests are present.

Should additional coniferous woodland be felled adjacent to the Scheme Area, there is the potential this habitat could also be utilised by breeding nightjar. Further surveys should be completed on this habitat, should it fall within 200m of construction activity.

Locating nightjar nests is difficult and often requires extensive survey effort, often involving completing walked nest searches until the female nightjar is flushed from the nest. This may pose a significant safety risk across much of the recently felled woodland habitat and may not be feasible, given the area to be affected. Additional survey approaches for establishing nightjar nest locations can be implemented, this may involve:

- Walked transect listening surveys;
- Tape luring surveys/call-back;
- Capture/radio-tracking;
- Use of thermal-sensing cameras.

6. References

ARUP (2022). *Pen-Yr-Englyn Tip Remediation OBC: Preliminary Ecological Appraisal (PEA),* Cardiff: s.n.

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APPENDICES

Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

LEGEND

- SITE BOUNDARY
- SURVEY TRANSECT
- FLIGHT PATH - SURVEY VISIT 1
- FLIGHT PATH - SURVEY VISIT 2
- CHURRING MALE - SURVEY VISIT 1
- CHURRING MALE - SURVEY VISIT 2
- NJ NIGHTJAR - CALL
- NJ NIGHTJAR - SONG

SAFETY HEALTH AND ENVIRONMENT INFORMATION
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER
CONSTRUCTION
N/A
MAINTENANCE / CLEARING / OPERATION
N/A
DECOMMISSIONING / DEMOLITION
N/A

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
P02	TW	JC	AB	AH	25/11/2024	FOR INFORMATION
P01	TW	JC	AB	AH	24/09/2024	FOR INFORMATION

Designed by: TW Date: SEPTEMBER 2024

Client: Cyfoeth Naturiol Cymru Natural Resources Wales

Client Drawing No. | Revision

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Project:

PEN YR ENGLYN

Drawing title:

PEN YR ENGLYN NIGHTJAR SURVEY RESULTS MAP

Drawing scale: 1:3,000 Sheet size: A3

Drawing no. 4021526-BUK-ZZ-00-DR-EN-00010 | Revision P02