



## 8. Biodiversity

### Executive Summary

This chapter of the Environmental Statement has considered the potential effects of construction and operation of the proposed development on Biodiversity. This chapter and associated appendices outline the relevant legislation and national and local planning policy, details the outcome of stakeholder consultation, includes a review of the existing baseline conditions, consideration of the potential impacts and identification of proportionate mitigation and habitat enhancement for the identified adverse effects resulting from the proposed development.

Habitats recorded within the application site primarily consisted of areas categorised using UK Habitats Classification<sup>117</sup> as 'other lowland acid grassland' (g1d) surrounding the disused runways. This habitat also holds a nationally important assemblage of fungi and is considered an irreplaceable habitat under Planning Policy Wales (PPW). Other semi-natural habitats recorded included: dense scrub (h3), other neutral grassland (g3c); a small area of lowland heath priority habitat (h1a); hedgerows (h2a and h2b); lines of trees (w1g6) and a small area of other coniferous woodland (w1h). Urban areas present comprised hardstanding and buildings making up the Cawdor Barracks site. Further habitats recorded within the wider Cawdor Barracks site included priority habitat wet woodland (w1d) and arable and horticulture habitats (c1).

Field surveys recorded a population of reptiles, comprising all four common UK species with county level importance. County level important assemblages of ground-nesting birds, notably skylark and meadow pipit, were also recorded as well as an assemblage of overwintering birds. The application site was also used for commuting and foraging bat species, including the rare species barbastelle, greater horseshoe bat and Nathusius' pipistrelle in low numbers, although no roosting sites for bats were recorded. Evidence of badger activity was recorded to the north of the application site with an outlier sett identified. The invasive species cotoneaster and rhododendron were recorded on site.

The assessment of potential significant effects on biodiversity features was undertaken with reference to CIEEM guidelines<sup>118</sup>. The assessment identified potential impact pathways and subsequent effects during both construction and operation of the proposed development.

Potential significant effects (in the absence of mitigation but with standard controls and measures) were identified on biodiversity features during construction of the proposed development for:

- Grassland supporting a nationally important fungi assemblage – habitat loss and disturbance of mycelium network;
- Reptiles – habitat loss; and
- Breeding birds – habitat loss and disturbance of ground nesting birds.

No potential impacts and subsequent significant effects were identified in the operational phase of the proposed development.

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<sup>117</sup> UK Habs Ltd. (2023) The UK Habitat Classification. Available at: <https://www.ukhab.org/>

<sup>118</sup> CIEEM (2018). Guidelines for ecological impact assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, version 1.3, Winchester: Chartered Institute of Ecology and Environmental Management.



Following the implementation of appropriate design interventions and controls, **no significant effects** on statutory and non-statutory designated sites, priority habitats and vascular plants (excluding fungi grassland), barn owl, badger, or other priority species were identified during construction or operation.

In summary, mitigation measures focus on provision, enhancement and where feasible, translocation, of grassland habitats that support fungi (including a Grassland Fungi Mitigation Plan); enhancement of retained scrub habitats and enhancement of a hedgerow currently in poor condition; and measures to reduce noise and visual disturbance to ground nesting birds during construction comprising removal of suitable habitat in advance of works and, where necessary, installation of temporary barriers around the works.

No residual significant effects are considered likely following correct implementation of the mitigation measures.

Monitoring of the translocated grassland fungi turves and related habitat enhancements will be developed with Pembrokeshire County Council (PCC) / Natural Resources Wales (NRW) and academic specialists as part of the Grassland Fungi Mitigation Plan. Monitoring will involve undertaking further eDNA surveys of the enhanced grassland areas to determine fungi species-richness. Where required, remedial measures will be adopted to improve the habitat conditions for fungal growth, likely through changes to the management regime.

The Landscape and Ecology Management Plan (LEMP) will define the necessary monitoring required for successful establishment of the woodland, tree and scrub planting. This will include measures for intervention should there be any establishment failure.

## 8.1. Introduction

- 8.1.1. This chapter presents information required by the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017<sup>119</sup>. As part of the Environmental Impact Assessment (EIA) process, this Environmental Statement (ES) chapter reports the potential significant effects for Biodiversity as a result of the proposed development. This assessment includes a review of the existing baseline conditions, consideration of the potential impacts and identification of proportionate mitigation to mitigate against any likely significant adverse effects resulting from the proposed development.
- 8.1.2. The approach to this assessment follows the EIA Scoping Report (March 2023) submitted to Pembrokeshire County Council (PCC) and has been prepared in accordance with the EIA Scoping Opinion (received May 2023) for the proposed development from PCC. Further consultation, as described in Section 8.3, has also been incorporated. The assessment in this chapter has been undertaken in accordance with Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines for Ecological Impact Assessment<sup>120</sup> in preference over the generic methodology provided in Chapter 2, although the principles are shared.
- 8.1.3. Chapter 3 (Proposed Development) contains a detailed project description comprising both construction and operational information. This chapter is supported by the following appendices and figures, and includes cross-references to other chapters and figures where appropriate:
- Appendix 8.1 (National Vegetation Classification and UK Habitat Classification);
  - Appendix 8.2 (Fungi eDNA Survey);
  - Appendix 8.3 (Great Crested Newt eDNA survey);
  - Appendix 8.4 (Reptile Survey);
  - Appendix 8.5 (Wintering Bird Survey);
  - Appendix 8.6 (Breeding Bird Survey);
  - Appendix 8.7 (Chough Survey);
  - Appendix 8.8 (Barn Owl Survey);
  - Appendix 8.9 (Bat Activity Survey);
  - Appendix 8.10 (Habitat Regulations Assessment);
  - Figure 8.A.1 (Internationally Designated Sites within 10 km);
  - Figure 8.A.2 (Nationally and Locally Designated Sites within 3 km);
  - Figure 8.B (UK Habitat Classification);
  - Figure 8.C (Badger Field Signs);

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<sup>119</sup> Welsh Government (2017) The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. Available at: [The Town and Country Planning \(Environmental Impact Assessment\) \(Wales\) Regulations 2017](#)

<sup>120</sup> CIEEM (2018). Guidelines for ecological impact assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, version 1.3, Winchester: Chartered Institute of Ecology and Environmental Management.

- Figure 8.D (Invasive Non-Native Species); and
- Figure 8.E (Ecological Constraints).

## 8.2. Legislation and Policy

### Legislation

8.2.1. The national legislation and regulatory framework applicable in this assessment for biodiversity are summarised in this section:

- The Conservation of Habitats and Species Regulations 2017 (as amended)<sup>121</sup>;
- The Wildlife and Countryside Act (WCA) 1981<sup>122</sup> (as amended);
- The Environment (Wales) Act (EWA) 2016<sup>123</sup>;
- The Well-being of Future Generations (Wales) Act 2015<sup>124</sup>;
- Natural Environment and Rural Communities Act 2006<sup>125</sup>;
- Countryside and Rights of Way Act 2000<sup>126</sup>;
- The Hedgerow Regulations 1997<sup>127</sup>;
- Protection of Badgers Act 1992<sup>128</sup>; and
- The Invasive Alien Species (Enforcement and Permitting) Order 2019<sup>129</sup>.

8.2.2. The proposed development is to comply with Section 6 of the Environment (Wales) Act 2016, which states:

*(1) A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in doing so promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.*

*(2) In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects –*

*(a) diversity between and within ecosystems;*

*(b) the connections between and within ecosystems;*

*(c) the scale of ecosystems;*

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<sup>121</sup> <https://www.legislation.gov.uk/uksi/2017/1012/contents>

<sup>122</sup> <https://www.legislation.gov.uk/ukpga/1981/69/contents>

<sup>123</sup> <https://www.legislation.gov.uk/anaw/2016/3/contents>

<sup>124</sup> <https://www.legislation.gov.uk/anaw/2015/2/contents>

<sup>125</sup> <https://www.legislation.gov.uk/ukpga/2006/16/contents>

<sup>126</sup> <https://www.legislation.gov.uk/ukpga/2000/37/contents>

<sup>127</sup> <https://www.legislation.gov.uk/uksi/1997/1160/contents>

<sup>128</sup> <https://www.legislation.gov.uk/ukpga/1992/51/contents>

<sup>129</sup> <https://www.legislation.gov.uk/uksi/2019/527/contents>



- (d) *the condition of ecosystems (including their structure and functioning);*
- (e) *the adaptability of ecosystems.*

### National Policy

- 8.2.3. The Planning Policy Wales (PPW) 2024<sup>130</sup> sets out the Welsh Government's planning policy framework for the whole of Wales, including the Welsh Government's expectation for content and quality of planning Applications and local plan policy. PPW sets out the policy which the proposed development should comply with. It is also the basis for informing a judgement on the impacts of a proposed development, for example whether the proposed development is consistent with the requirements of PPW. Compliance of the proposed development with PPW is detailed within the Planning Statement.
- 8.2.4. PPW paragraph 6.4.11 reinforces the Environment (Wales) Act 2016, stating that development must, "*maintain and enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity*". The net benefit for biodiversity is further explained throughout the PPW.
- 8.2.5. PPW does not have a definitive list of 'irreplaceable habitat' However, it includes the following description (Welsh Government Briefing Note, 2025<sup>131</sup>):
- "Irreplaceable habitats are defined as those habitats, including the natural resources which underpin them, which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. Examples of irreplaceable habitat include ancient woodland and veteran trees, ancient hedgerows, wet woodlands, sand dunes, peatland, species rich grassland, long undisturbed soils, blanket bog, salt marsh and lowland fen".*
- 8.2.6. PPW paragraph 6.4.15 1b states the below regarding removal of irreplaceable habitat:
- "Proposals in statutory designated sites are, as a matter of principle, unacceptable and therefore must be excluded from site searches undertaken by developers. This principal also extends to those sites containing protected species and habitats which are irreplaceable and must be safeguarded. Such sites form the heart of resilient ecological networks and their role and the ecosystem services they provide must be protected, maintained and enhanced and safeguarded from development. It will be wholly exceptional for development to be justifiable in such instances".*
- 8.2.7. PPW paragraph 6.4.15 1b footnote 129, goes on to state that grassland habitats may be categorised as irreplaceable habitat if they are species-rich. PPW also states that developers should consider the advice of Natural Resources Wales (NRW).
- 8.2.8. PPW is also supported by the Welsh Technical Advice Note 5: Nature and Conservation Planning<sup>132</sup>.
- 8.2.9. Future Wales: The National Plan 2040<sup>133</sup> is a national development framework, setting the direction for development in Wales to 2040. It provides the strategic policy context for

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<sup>130</sup> Welsh Government. (2024). Planning Policy Wales. Ed. 12. Available at: <https://www.gov.wales/planning-policy-wales>

<sup>131</sup> Welsh Government (2025). Briefing Note: Irreplaceable Habitats, Peatlands and Wind Farm Developments. Available at: [https://www.gov.wales/sites/default/files/publications/2025-07/ATISN\\_23303\\_-\\_Doc\\_01.pdf](https://www.gov.wales/sites/default/files/publications/2025-07/ATISN_23303_-_Doc_01.pdf)

<sup>132</sup> Welsh Government. (2009) Technical Advice Note 5: Nature and Conservation Planning. Available at: <https://www.gov.wales/sites/default/files/publications/2018-09/tan5-nature-conservation.pdf>

<sup>133</sup> <https://www.gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf>



biodiversity protection, enhancement and ecosystem resilience at a national scale and must be considered in the EIA.

- 8.2.10. Future Wales embeds biodiversity within the sustainable development principle and the ecosystem resilience approach as set out in the Environment (Wales) Act 2016.
- 8.2.11. Future Wales requires development to avoid biodiversity loss wherever possible particularly to designated sites, priority habitats and species and ecologically connected landscapes. Development should also deliver measurable biodiversity enhancement aligned with the nature recovery to ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure.
- 8.2.12. The following national policies have also been reviewed for this assessment:
- Convention on Biological Diversity's Strategic Plan for Biodiversity 2011 – 2020<sup>134</sup>; and
  - The Nature Recovery Action Plan for Wales 2020-21<sup>135</sup>.

### Local Planning Policy

- 8.2.13. Local policy of relevance to the biodiversity assessment includes the following documents:
- PCC Local Development Plan (LDP) 2013<sup>136</sup>;
  - Pembrokeshire Local Biodiversity Action Plan<sup>137</sup>;
  - Pembrokeshire Nature Partnership (June 2018). Nature Recovery Action Plan for Pembrokeshire Part 1: Our Strategy for Nature Recovery<sup>138</sup>.
- 8.2.14. This chapter makes reference to the current LDP, and the Planning Statement for the proposed development considers emerging policies and therefore considers the LDP Review which is currently in development.

## **8.3. Methodology**

### Guidance

- 8.3.1. The methodology to assess the impact on ecological features used in this report follows CIEEM guidelines for Environmental Impact Assessment (CIEEM, 2018)<sup>2</sup>. These recommend that the technical scope of the assessment should comprise those biodiversity features that, as a minimum, meet the following criteria:
- Be of sufficient value that effects on them may be significant; and
  - Be potentially vulnerable to significant effects arising from the project.
- 8.3.2. As such, assessment has not been undertaken on any features of less than local importance. Where protected species are present and there is potential for a breach of the legislation, those species are classified as 'important' and taken forward for detailed assessment

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<sup>134</sup> <https://www.cbd.int/sp>

<sup>135</sup> <https://www.gov.wales/sites/default/files/publications/2020-10/nature-recovery-action-plan-wales-2020-2021.pdf>

<sup>136</sup> Pembrokeshire County Council. (2013). Local Development Plan. Available at: <https://www.pembrokeshire.gov.uk/local-development-plan>

<sup>137</sup> <https://www.pembrokeshire.gov.uk/biodiversity/pembrokeshire-nature-partnership-plans-and-guidance>

<sup>138</sup> Pembrokeshire Nature Partnership. (2018). Nature Recovery Action Plan for Pembrokeshire. Part 1: Our Strategy for Nature Recovery.



regardless of the level of importance they are assigned. Legally controlled species, e.g. species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and/or The Invasive Alien Species (Enforcement and Permitting) Order 2019, are also considered in the assessment to avoid a contravention of legislation.

8.3.3. Consideration has also been made of:

- Biodiversity Enhancement Supplementary Planning Guidance<sup>139</sup>; and
- CIEEM guidance on the Welsh Government's approach to net benefits for biodiversity<sup>140</sup>.

8.3.4. Guidance used in the assessment of effect on biodiversity features caused by potential changes in air quality, noise and lighting are described in the relevant ES chapters and supporting appendices.

### Definitions used within the Assessment

8.3.5. The following terminology is used to define the different areas that are discussed in this chapter:

- **Survey site:** the area included for ecological surveys. This comprised the application site and all other areas within Cawdor Barracks, extended for some species such as great crested newt (see baseline section below).
- **Application site:** this is the area subject to development proposals, including areas where planting and ecological enhancements will be undertaken and denoted by the red line boundary.
- **Works area:** area directly affected by the works, including construction and working areas within the application site.

8.3.6. The location of the proposed development and key environmental constraints can be found in Figure 3.3 (Environmental Constraints Plan).

### Scope of the Assessment

8.3.7. The scope of the assessment has been informed by the Scoping Opinion, provided by PCC in May 2023 with supporting correspondence from Natural Resources Wales (NRW) at the time (see Table 8.1). Further clarification of scope from PCC was sought in March 2024 with comments received in May 2024. The scope of this impact assessment on Biodiversity comprises:

- Collation of existing biodiversity information from desk study and field survey;
- Evaluation of biodiversity features within and adjacent to the application site with regard to their nature conservation importance;
- Provision of avoidance and mitigation measures to minimise negative impact from the Project on those features;
- Assessment of the significance of potential ecological impact from the Project; and

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<sup>139</sup> Pembrokeshire Coast National Park Authority and Pembrokeshire County Council (2020) How biodiversity can be protected and enhanced in the development process. Supplementary planning guidance. Available at: <https://www.pembrokeshirecoast.wales/wp-content/uploads/2020/08/May2020PCCfinalcommentsPembsBiodiversitySPGEng.pdf>

<sup>140</sup> CIEEM (2022) Welsh Government's Approach to Net Benefits for Biodiversity and the DECCA Framework in the Terrestrial Planning System CIEEM Briefing Paper September 2022. Available at: <https://cieem.net/wp-content/uploads/2022/08/Net-Benefits-briefing.pdf>



- Enhancement measures to increase the biodiversity value of the land within the application site.

8.3.8. Consideration has been given to the following likely significant effects, some of which may extend beyond the application site:

- Permanent and temporary loss of notable habitats, including those that have intrinsic botanical interest and those that are important to animal species for roosting, nesting, resting, breeding or foraging;
- Impacts to designated sites and other sensitive habitats within receiving range of indirect effects (e.g. dust) during the construction phase;
- Contamination of watercourses/waterbodies during the construction and operation phase;
- Direct mortality of notable and legally protected species during the construction and operation phase;
- Disturbance to animal populations, for example, from noise, vibration and lighting during the construction and operational phases; and
- Potential for radiation impacts from new operational infrastructure.

8.3.9. Table 8.1 summarises the scope of the assessment where comment from stakeholders has been received and applied in this chapter.

#### ***Geographical – Study Area***

8.3.10. The geographical scope of the assessment is based on the application site boundary plus an additional distance defined by the Zone of Influence (Zoi) of individual ecological features. The Zoi is the area over which ecological features may be subject to change as a result of the proposed development and associated activities, and varies depending on the feature concerned and can extend beyond the application site. Where possible, Zois were determined using the results of professionally accredited or published scientific studies. Where such studies are not available, the Zoi was determined using the professional judgement of a suitably experienced and qualified ecologist. This is in line with professional guidelines and are described in the Establishing the Baseline section, below.

#### ***Temporal scope***

8.3.11. The temporal scope of this assessment comprises the construction and operational stages of the project. Construction is due to commence in April 2027 and is anticipated to take approximately 21 months (excluding any biodiversity pre-construction or post-construction requirements). It is anticipated that the proposed development will have a 25-year operational lifespan. Decommissioning is not assessed as explained in Chapter 2 (Methodology).

8.3.12. The collection of baseline information was undertaken between 2022 and 2023. This is detailed in Establishing the Baseline below and in the supporting appendices.

#### ***Cumulative impacts***

8.3.13. The scope and assessment of cumulative impacts are provided in Chapter 17 (Cumulative Effects Assessment).

#### ***Multi-disciplinary approach***

8.3.14. Additional noise assessments (to those detailed in Chapter 7: Noise and Vibration) were undertaken specifically relating to ecological receptors.

- 8.3.15. Chapter 6 (Air Quality) and Chapter 16 (Lighting) assess potential impacts on ecological receptors, and which are further considered in the assessment on ecological receptors in this chapter.

Table 8.1: Scope of Biodiversity Assessment

Biodiversity Feature	Scoping Opinion Comments (PCC / NRW)	Response (MoD)
All	No comment was made on the proposed scope of assessment as presented in Table 7.3 and Table 7.4 of the Scoping Report.	It is assumed that the proposed scope of assessment for biodiversity, as stated in the Scoping Report, is appropriate and sufficient. No new features or impacts have been identified since issue.
Bats, Birds, Fungi, Reptiles and GCN.	PCC - Requirements for further survey work are agreed. NRW requested manmade features e.g. fire ponds and water tanks, to be included in the GCN survey.	The further surveys were completed and are reported in the supporting appendices to this chapter.
Habitats	NRW requested that Phase 1 habitats survey <sup>141</sup> were undertaken to establish the habitats baseline for the application site.	The UK Habitat Classification <sup>142</sup> survey technique has been used that, when in combination with National Vegetation Classification survey, provides a detailed understanding of the baseline, appropriate for the assessment. This is shown in Figure 8B UK Habitat Classification and National Vegetation Classification Survey 2025 Update
Bats	PCC - There is currently little research investigating impacts of radar on bat movements. However, if the presence of any significant roosts are found to be nearby, consideration of operational impacts on their flight lines across the site should be considered and addressed.	Appendix 15.1 (Evaluation of Radiation Hazards Associated with the DARC Radar) includes a quantitative appraisal of hazards on birds, bats and insects.  A subsequent assessment is provided in this chapter.
Light sensitive features e.g. bats, birds and otter	PCC - A full lighting scheme to include a lux diagram and a demonstration of the extent of lighting and its impact on the surrounding landscape is needed. The lighting scheme must consider the results of any bat surveys and light spill on roosts, and commuting and foraging areas must be avoided. Impacts of Manx Shearwater potentially being attracted to the lighting on site should also be considered and discussed with the Wildlife Trust and RSPB. The island SPA's may need to be considered as part of the Habitats Regulations Assessment.	A standalone lighting assessment is provided in Chapter 16 (Lighting). A baseline survey was undertaken in February 2024 with best practice e.g. GN08/2023 (Bats and Artificial Lighting in the UK) <sup>143</sup> used to evaluate the significance of any obtrusive light levels associated with the Project. The potential effect on biodiversity features is provided in this chapter.  Appendix 8.10 (Habitats Regulations Assessment) considers the potential impacts on European sites due to provision of artificial lighting within the application site.
Surface water	NRW made a request for information on the make up of potential contamination of surface water (sediments and pollutants). A request	Accidental spills have been included in the assessment of operational at Section 8.5.

<sup>141</sup> Joint Nature Conservation Committee (2010) Handbook for Phase 1 habitat survey – a technique for environmental audit. Peterborough. UK.

<sup>142</sup> UK Habs Ltd. (2023) The UK Habitat Classification. Available at: <https://www.ukhab.org/>

<sup>143</sup> Institute of Lighting Professionals (2023 ) GN08/2023 Bats and Artificial Lighting in the UK. Available at: <https://theilp.org.uk/>



Biodiversity Feature	Scoping Opinion Comments (PCC / NRW)	Response (MoD)
	was also made that accidental spills should be included in the assessment of operational impacts.	
All	Decommissioning – request to exclude decommission from assessment	PCC agreed that an assessment of decommissioning was not required but should approval be given, a planning condition would be applied such than an assessment of effects would be required in advance of future decommissioning.

## Establishing the Baseline

### **Desk Study**

- 8.3.16. The Multi-Agency Geographic Information for the Countryside (MAGIC)<sup>144</sup> online database was consulted to obtain geographic information on nationally and/or internationally important site designations. Internationally important sites (Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites and potential or possible categories of these sites) were searched within a 10 km study area, extended to 30 km for SACs where bats were a qualifying feature. Due to specific request from PCC, the study area was increased to 15 km for migratory birds to ensure an assessment of the Skomer, Skokholm and the Seas off Pembrokeshire SPA was made.
- 8.3.17. The search for nationally designated sites (National Nature Reserves (NNR) and Sites of Special Scientific Interest (SSSI)) was based on a 3 km study area.
- 8.3.18. Data Map Wales<sup>145</sup> was consulted (in March 2025) for Local Nature Reserves within 3 km of the application site. A search was also made for any 'priority habitats' (i.e. Habitats of Principal Importance in Wales) and ancient woodland within 2 km of the application site boundary.
- 8.3.19. West Wales Biodiversity Information Centre (WWBIC)<sup>146</sup> was contacted in November 2022 for details of local non-statutory designated sites and records of protected/notable habitats and species within 5 km of the application site's central national grid reference. Only records of protected species recorded 10 years prior to the receipt of these records are considered within this assessment.
- 8.3.20. The British Trust for Ornithology (BTO) was contacted in December 2022 for Wetland Bird Survey (WeBS)<sup>147</sup> records of bird assemblages within 10 km of the application site's central national grid reference.

### **Preliminary Ecological Appraisal**

- 8.3.21. An ecological desk study, UK Habitat Classification (UKHab) survey and protected species scoping survey was undertaken in November 2022. This was reported and presented as an Appendix to the Scoping Report. A search for badger signs within the survey site boundary

<sup>144</sup> Defra (2025) MAGIC, "Site Check," [Online]. Available at: <https://magic.defra.gov.uk/>.

<sup>145</sup> Welsh Government, "Data Map Wales," [Online]. Available: <https://datamap.gov.wales/>.

<sup>146</sup> West Wales Biodiversity Information Centre, "Data Enquiries," [Online]. Available: <https://www.wwbic.org.uk/data-enquiries/>. [Accessed 12 2022].

<sup>147</sup> British Trust for Ornithology, "Wetland Bird Survey," [Online]. Available: <https://www.bto.org/our-science/projects/wetland-bird-survey>.

was undertaken as part of this survey, including areas within the application boundary where dense scrub did not prevent access.

### ***Protected Species Surveys***

8.3.22. Following the recommendations of the Preliminary Ecological Appraisal Report produced in November 2022 (submitted as an Appendix to the Scoping Report) and as discussed through further consultation with PCC, the following protected species surveys were undertaken between 2022 and 2023, with specific methodology detailed within the relevant ES Appendices:

- Appendix 8.1 (National Vegetation Classification and UK Habitat Classification);
- Appendix 8.2 (Fungi eDNA Survey);
- Appendix 8.3 (Great Crested Newt eDNA survey);
- Appendix 8.4 (Reptile Survey);
- Appendix 8.5 (Wintering Bird Survey);
- Appendix 8.6 (Breeding Bird Survey);
- Appendix 8.7 (Chough Survey);
- Appendix 8.8 (Barn Owl Survey); and
- Appendix 8.9 (Bat Activity Remote Monitoring Survey).

8.3.23. During the field surveys listed above, any incidental signs of other protected or notable species were recorded.

### ***Site Walkover***

8.3.24. A further ecologically focussed site walkover survey was undertaken on 10 October 2025. The primary aim of the survey was to validate the findings of the previous field surveys undertaken between 2022 and 2023, specifically the habitat mapping in the construction areas identified in the current design. This site visit did not constitute a full revised UKHab classification and condition assessment. Surveyors reviewed previous UKHab mapping and classification, and data relating to vegetation community structure and species composition were collected. The extent of habitats was amended as required. Figure 8B (UK Habitat Classification and National Vegetation Classification) provides the updated habitat mapping. Surveyors also recorded evidence of fungi presence particularly within the grassland areas and any evidence of protected and notable species presence such as badger setts.

### **Consultation**

8.3.25. An EIA Scoping Report was submitted to PCC in March 2023. A Scoping Opinion was received in response to the EIA Scoping Report in May 2023. The applicant's responses to the Scoping Opinion are contained in Appendix 2.1 (Scoping Opinion Response).

8.3.26. Table 8.2 summarises the consultation that has been undertaken since the receipt of the Scoping Opinion.

8.3.27. PCC's Planning Ecologist and Development Manager were consulted to confirm that approaches to biodiversity were appropriate and adequate.

*Table 8.2: Summary of Consultation*

Consultee	Form of Consultation	Topics Discussed and Actions Agreed
Planning Ecologist (PCC)	Online meeting 03 May 2024	<ul style="list-style-type: none"> <li>Impacts of proposals on waxcap grassland and appropriate mitigation strategy.</li> <li>It was agreed that no fruiting body surveys would be required following results of the fungi eDNA survey which confirmed presence (Appendix 8.2: Fungi eDNA Survey).</li> <li>Impacts of proposals on bird assemblages.</li> <li>Steps taken to minimise impact on waxcap grasslands will benefit skylark (<i>Alauda arvensis</i>).</li> <li>Majority of scrub habitat to be retained. No impacts to red listed bird species associated with scrub, reptiles or bats.</li> <li>PCC had previously raised the risk of migratory birds flying over the application site. The potential for Manx shearwater to confuse the antennas with waterbodies, as has been previously found with solar farms, was discussed. The applicant confirmed, with PCC agreement, there were no waterbodies on site that Manx shearwater are likely to follow and it is considered unlikely that antennas will be confused as a waterbody.</li> </ul>
Planning Ecologist and Development Manager (PCC)	Online meeting 12 February 2025 09:00 to 10:00	<ul style="list-style-type: none"> <li>The applicant described the latest design of the proposed development, the ecology baseline and mitigation strategy.</li> <li>Main ecological issues and potential impacts for the application site were birds and fungi within the grassland.</li> <li>Only minimal areas of scrub would be affected, and areas of retained scrub would be enhanced. Therefore, no likely significant effects were anticipated on bats, reptiles and birds using this habitat.</li> <li>The preliminary fungi mitigation strategy was explained, including application of the mitigation hierarchy and how this has been applied to the proposed development. This also included process and project examples of successful translocation of the waxcap habitat.</li> <li>PCC indicated that this level of mitigation for fungi was acceptable given the constraints.</li> <li>How net benefit will be achieved was discussed in principle, which would include enhancements to habitats in the north of the survey site.</li> </ul>
NRW	Contacted to request consultation on 6 February 2025.	<ul style="list-style-type: none"> <li>NRW was contacted for consultation but the response stated that they did not have capacity to take on any new consultations at that time.</li> <li>As the proposed development would not affect designated sites, NRW would not comment on this application (including fungi mitigation) until the statutory pre-application consultation.</li> </ul>
PCC	Online meeting in November 2025.	<ul style="list-style-type: none"> <li>Online meeting with PCC where the main issues regarding fungi were explained. No concerns or queries were raised by PCC.</li> </ul>

## Assessment Methodology

### **Importance of Ecological Features**

- 8.3.28. The important ecological features considered within the impact assessment were determined following the desk study, UKHab and protected species surveys. The geographic level of importance of each ecological receptor has been assessed, in accordance with the CIEEM guidance on Ecological Impact Assessment<sup>120</sup>, using the criteria in Table 8.3.

Table 8.3: Importance of Biodiversity Features

Geographical Frame of Reference	Brief Description
International and European	<ul style="list-style-type: none"> <li>Habitats that meet criteria for European designation.</li> <li>A species present in internationally important numbers (&gt;1% of international population).</li> <li>Species which is part of the cited interest of a European site, and which regularly occurs in internationally important numbers.</li> </ul>
National (UK and Wales)	<ul style="list-style-type: none"> <li>Habitats that meet criteria for a Site of Special Scientific Interest (SSSI).</li> <li>A species present in nationally important numbers (&gt;1% of UK population).</li> <li>A species which is part of the cited interest of a SSSI, and which regularly occurs in nationally important numbers.</li> <li>Rare breeding species (e.g. birds with &lt;300 UK breeding pairs).</li> </ul>
Regional (South West Wales)	<ul style="list-style-type: none"> <li>A local site with important regional habitats or significant populations of species of principal importance under the EWA.</li> <li>Species present in regionally important numbers (&gt;1% of regional population).</li> <li>Species listed as priority species, which are not covered above, and which regularly occur in regionally important numbers.</li> <li>Sustainable populations of a species that is rare or scarce within a region.</li> <li>Species on the Birds of Conservation Concern (BoCC) 148 Red List and which regularly occur in regionally important numbers.</li> </ul>
County (Pembrokeshire)	<ul style="list-style-type: none"> <li>A local site with a habitat that is characteristic of the county or rare on a county scale, or with significant populations of locally important species.</li> <li>Species present in county important numbers (&gt;1% of county population).</li> <li>Species listed as priority species, which are not covered above, and which regularly occurs in county important numbers.</li> <li>Sustainable populations of a species that is rare or scarce within a county.</li> <li>A site designated for its county important assemblage of birds, reptiles, invertebrates, etc.</li> <li>Species on the BoCC Red or Amber List and which regularly occur in county important numbers.</li> </ul>
Local (the application site)	<ul style="list-style-type: none"> <li>A site which has wildlife corridors likely to be essential to allow viable movement of species or improve the biodiversity of the area.</li> <li>Species listed as priority species, which are not covered above, and are rare in the locality.</li> <li>Species present in numbers just under county importance (&lt;1% of county population).</li> </ul>

<sup>148</sup> British Trust for Ornithology (2021). "Birds of Conservation Concern". Available at: <https://www.bto.org/our-science/publications/birds-conservation-concern>

Geographical Frame of Reference	Brief Description
	<ul style="list-style-type: none"> <li>• Sustainable populations of a species that is rare or scarce within the locality.</li> <li>• A site whose designation is just under for inclusion for its county important assemblage of a particular species on site.</li> <li>• Other species on the BoCC Red or Amber List and which are considered to regularly occur in locally important numbers.</li> </ul>
Less than local importance	<ul style="list-style-type: none"> <li>• Any ecological feature which does not fit the criteria for any of the levels above.</li> </ul>

### ***Characterising the impacts***

8.3.29. In accordance with the CIEEM Guidelines, the characterisation of impacts and effect would be determined referring to the following characteristics (relevant to the understanding subsequent effect):

- Positive (beneficial) or negative (adverse);
- Extent - area measurements and percentage of total (e.g. percentage area of habitat or territory lost);
- Magnitude - size or amount of an impact, determined on a quantitative basis;
- Duration - permanent or temporary in ecological terms (where differing timescales are determined in relation to the life cycle of the receptor, these would be defined);
- Timing and frequency - important seasonal and/or life-cycle constraints and any relationship with frequency considered; and
- Reversibility - whether the effect can be reversed, and whether or not this is planned.

### ***Significance of Effects***

8.3.30. After consideration of the design changes and embedded controls to avoid adverse impacts on biodiversity, as provided in Section 8.5 (Design Interventions and Controls), any residual impacts will be assessed for their significance i.e. are they significant or not. For the purposes of ecological impact assessment, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for important biodiversity features or for biodiversity in general. Significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species.

8.3.31. Significant effects are qualified with reference to an appropriate geographical scale and at a wide range of scales from international to local. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important.

### **Assumptions & Limitations**

8.3.32. The assessment has been based on the proposed development description and construction strategy presented in Chapter 3 (Proposed Development) and represents a realistic worst-case assessment scenario.

8.3.33. The baseline ecological surveys undertaken to inform this assessment were based upon the application site (red line boundary) as presented in the EIA Scoping Report during the earlier stages of the concept design stage. Changes to the development design and application site (described further in Chapter 4: Alternatives and Design Evolution) have occurred resulting in an overall reduction in the habitat potentially impacted by the proposed development. The surveys undertaken are therefore considered sufficient to establish the baseline of the final application site for planning and inform the assessment within this chapter.



- 8.3.34. Desk study data purchased during the EIA Scoping stage was based on the application site as it was at that time. The changes that have occurred to the application site (described further in Chapter 4: Alternatives and Design Evolution), resulted in an overall reduction of land included within the application site. Therefore, a further data request was not warranted.
- 8.3.35. Specific field survey limitations are detailed in the protected species reports, Appendices 8.1 to 8.9. Where field survey limitations occur, these do not affect the assessment of the baseline or affect the validity of the survey results.
- 8.3.36. The assessment is based on the complete and successful implementation and management of the design interventions, controls and mitigation identified throughout this ES.
- 8.3.37. When calculating the areas of habitat to be affected by the works, the following assumptions were made:
- Permanent land-take was calculated by using the area shown in (excluding proposed utilities) Figure 3.1 (Proposed Development Overview).
  - Temporary land-take and associated impacts were based on the land as shown in ES Figure 3.2 (Proposed Construction Overview) which comprised a 1.5 m wide trench for buried utilities and 15 m around antennas to also allow for drainage (see Appendix 12.3 Drainage Strategy for details).
  - No areas of habitat outside of the construction zones would be directly impacted due to the implementation of appropriate control measures.
  - Areas required for planting are as shown on Figure 3.4 (Landscape and Ecology Proposals Plan).

## 8.4. Baseline Conditions

- 8.4.1. This section gives a summary of the desk study and the factual results and interpretations of the field surveys undertaken.

### Designated Sites

- 8.4.2. Two SACs designated for bats are located within 30 km of the application site. Six additional internationally designated sites are located within 10 km of the survey site boundary with and additional SPA for migratory birds located within 15 km. Three nationally designated sites located within 3 km of the survey site boundary.
- 8.4.3. The sites are shown in Figures 8.A.1 (Internationally Designated Sites within 10 km) and 8.A.2 (Nationally and Locally Designated Sites within 3 km) and detailed in Table 8.4.
- 8.4.4. No Local Nature Reserves or non-statutory sites such Sites of Importance for Nature Conservation (SINC) within 5 km of the survey site's central grid point were identified.

Table 8.4: Summary of Designated Sites

Site name	Geographical Importance	Designated features	Approximate Distance and Direction from application site
European sites within 10 km			
Ramsey and St David's Peninsula Coast SPA	International	Species: red-billed chough ( <i>Pyrrhocorax pyrrhocorax</i> )	0.67 km south-west
St David's / Ty Ddewi SAC	International	Annex I Habitats: vegetated sea cliffs of the Atlantic and Baltic coasts; European dry heaths.	0.67 km south-west

Site name	Geographical Importance	Designated features	Approximate Distance and Direction from application site
		Annex II Species: Floating water-plantain ( <i>Luronium natans</i> )	
		Annex I Habitats: estuaries, large shallow inlets and bays, reefs, sandbanks, mudflats and sandflats, coastal lagoons (*priority feature), Atlantic salt meadows and sea caves.	
Pembrokeshire Marine / Sir Benfro Forol SAC	International	Annex II Species: grey seal ( <i>Halichoerus grypus</i> ), shore dock ( <i>Rumex rupestris</i> ), sea lamprey ( <i>Petromyzon marinus</i> ), river lamprey ( <i>Lampetra fluviatilis</i> ), allis shad ( <i>Alosa alosa</i> ), twaite shad ( <i>Alosa fallax</i> ) and otter ( <i>Lutra lutra</i> )	0.75 km south-west
West Wales Marine / Gorllewin Cymru Forol SAC	International	Annex II Species: harbour porpoise ( <i>Phocoena phocoena</i> )	0.75 km south-west
North West Pembrokeshire Commons / Comin Gogledd Orllewin Sir Benfro SAC	International	Annex I Habitats: European dry heaths, transition mires and quaking bogs, northern Atlantic wet heaths with <i>Erica tetralix</i> , Molinia meadows on calcareous, peaty or clayey-silt-laden soils Annex II Species: floating water-plantain	4.35 km west
Afonydd Cleddau / Cleddau Rivers SAC	International	Annex I Habitats: water courses of plain to montane levels, active raised bogs (*priority feature), alluvial forests with alder ( <i>Alnus glutinosa</i> ) and ash ( <i>Fraxinus excelsior</i> ) (*priority feature) Annex II Species: brook lamprey ( <i>Lampetra planeri</i> ), river lamprey ( <i>Lampetra fluviatilis</i> ), bullhead ( <i>Cottus gobio</i> ), otter, sea lamprey ( <i>Petromyzon marinus</i> )	4.52 km north and east
<i>Additional European sites within 15 km designated for migratory birds</i>			
Skomer, Skokholm and the Seas off Pembrokeshire SPA	International	Species: European storm petrel ( <i>Hydrobates pelagicus</i> ), chough, short-eared owl ( <i>Asio flammeus</i> ), Atlantic puffin ( <i>Fratercula arctica</i> ) Manx shearwater ( <i>Puffinus puffinus</i> ), lesser black-backed gull ( <i>Larus fuscus</i> ) and seabird assemblage of international importance.	13 km south-west
<i>Additional European sites with bats as qualifying features within 30 km (other qualifying features not included)</i>			
North Pembrokeshire Woodlands/ Coedydd Gogledd Sir Benfro	International	Annex II Species: Barbastelle bat ( <i>Barbastella barbastellus</i> )	13 km north-east
Pembrokeshire Bat Sites and Bosherton Lakes/ Safleoedd Ystlum Sir Benfro a Llynnoedd Bosherton	International	Annex II Species: Greater horseshoe bat ( <i>Rhinolophus ferrumequinum</i> ) and lesser horseshoe bat ( <i>Rhinolophus hipposideros</i> )	24 km north-east
<i>Nationally designated sites within 3 km</i>			

Site name	Geographical Importance	Designated features	Approximate Distance and Direction from application site
St. David's Peninsula Coast SSSI	National	St David's Peninsula Coast SSSI (part of the Ramsay and St David's Peninsula Coast SPA and St David's SAC) comprises of important geological and biological features, namely lichens, invertebrates, choughs and peregrines ( <i>Falco peregrinus</i> ) and grey seals.	0.65 km south-west
Arfordir Niwawl - Aber Bach / Newgale - Little Haven Coast SSSI	National	Newgale - Little Haven Coast SSSI is notified for its geology and marine biology including specialised rockpool, cave, overhanging and under-boulder communities, which enhance the interest of the rocky habitats.	2.7 km south
Ysgeifiog Moor SSSI	National	Ysgeifiog Moor SSSI is of special interest for its marshy grasslands, heaths and fen vegetation. The extensive species-rich marshy grassland communities, irrigated by slightly alkaline groundwater are of particular interest.	3.0 km to the north-west

### Priority Habitats and Ancient Woodland

- 8.4.5. The desk study identified several priority habitats and areas of ancient woodland within 2 km of the application site boundary. These are listed in Table 8.5.
- 8.4.6. Lowland heathland priority habitat was identified (and confirmed by subsequent field survey) within the application site and an area of purple moor grass and rush pasture was identified immediately adjacent. These habitats are of **county** level importance being representative of inland habitats of Pembrokeshire.
- 8.4.7. A restored ancient woodland site is located immediately adjacent the application site boundary. Additional areas of ancient semi-natural woodland are located at distance from the application site to the south-east. These habitats are of **national** level importance due to their irreplaceable nature.

Table 8.5: Summary of the Priority Habitats located within 2 km

Habitat	Source	Geographical Importance	Distance of Closest Parcel* (km)	Number of Parcels*
Lowland Heathland	Environment (Wales) Act 2016 – section 7	County	On site	15 (3 on site)
Purple Moor Grass and Rush Pastures*	Environment (Wales) Act 2016 – section 7	County	0 km (adjacent to site) to the north-east	228
Lowland Meadows	Environment (Wales) Act 2016 – section 7	County	0.52 km to the north-west	20
Lowland Fens and Reedbeds*	Environment (Wales) Act 2016 – section 7	County	0.85 km to the north-west	14
Raised Bog*	Environment (Wales) Act 2016 – section 7	County	1.0 km to the west	1
Lowland dry acid grassland	Environment (Wales) Act 2016 – section 7	County	1.7 km to the south-east	1
Ancient & Semi-Natural Woodland	Ancient Woodland Inventory	National	0 km (adjacent to site) to the west	4

\*Likely to comprise a groundwater dependent terrestrial ecosystem (GWTDE).



## On Site Habitats

- 8.4.8. The results of the UK Habitat Classification survey of the application site are shown in Figure 8B and listed in Table 8.6. Full descriptions are provided in Appendix 8.1 (National Vegetation Classification and UK Habitat Classification).

Table 8.6: UK Habitat Classification Survey of the Survey Site

Habitat	Geographic Importance	UKHab code
Other lowland acid grassland with diverse waxcap assemblage	National	g1d
Other neutral grassland	Local	g3c
Lowland heathland (Priority Habitat)	County	h1a
Native hedgerow (Priority Habitat)	Local	h2a
Other hedgerow, including line of trees	Less than local	h2a6
Dense scrub	Local	h3
Standing open water and canals	Less than local	r1g
Buildings	N/A	u1b5
Other developed land	N/A	u1b6
Suburban mosaic of developed/natural surface	N/A	u1d
Developed land; sealed surface	N/A	u1b
Wet woodland (Priority Habitat)	County	w1d
Other woodland, mixed	Local	w1h
Other coniferous woodland	Less than local	w2c

- 8.4.9. National Vegetation Classification (NVC) surveys undertaken to provide further detailed assessment of the habitat types identified the grassland areas adjacent to the runway, currently managed as hay meadows, as being NVC category U4b, *Festuca ovina–Agrostis capillaris–Galium saxatile* grassland, *Holcus-Trifolium* sub community, one of the calcifugous grassland communities. The tabulated NVC survey results are presented in Appendix 8.1 (National Vegetation Classification and UK Habitat Classification).
- 8.4.10. The habitats recorded within the application site have a range of importance levels, ranging from less than local for the non-native habitats present to county level where Priority Habitats occur. The g1d other lowland acid grassland contains a diverse waxcap fungi assemblage which, in accordance with PPW guidance, are considered to be an 'irreplaceable habitat. Whilst the site is not designated, the number and species found are considered to meet SSSI designation criteria. Therefore, the importance is at the national level (see Fungi section below for further information).
- 8.4.11. The hedgerows present were either heavily managed or with gaps and although some comprised native species, these were poor examples of Priority Habitat and therefore all hedgerows are of **local** importance.

## Species

### ***Vascular plants***

- 8.4.12. Detailed survey of the grassland areas adjacent to the runway are reported in Appendix 8.1 (National Vegetation Classification and UK Habitat Classification). No notably rare or scarce species of plants were identified within the survey site. However, native bluebell



(*Hyacinthoides non-scripta*), a protected species listed in Schedule 8 of the WCA, only in terms of sale, were identified in the northern part of the survey site during the NVC survey.

- 8.4.13. The absence of notable vascular plants and lack of diversity suggests that the plant assemblage found within the survey site is of less than local importance.

#### ***Fungi***

- 8.4.14. The PEA identified grassland on site with the potential to support a diverse fungal assemblage. eDNA surveys were subsequently conducted to identify what species were present. Fungi survey results of the grassland areas adjacent to the runway are included in Appendix 8.2 (Fungi eDNA Survey).
- 8.4.15. A total of 58 CHEGD (Clavarioids, *Hygrocybe* (waxcaps), *Entoloma*, *Geoglossum* and relatives, and *Dermoloma* and relatives) species were identified, with between 20 and 34 CHEGD species noted in any single quadrat. Of the species identified, 21 species of waxcap fungi were detected, including seven species listed by the International Union for Conservation of Nature (IUCN) as globally vulnerable, and a single species listed in accordance with Section 7 of the EWA - olive earthtongue (*Microglossum olivaceum*).
- 8.4.16. The g1d other acid grassland grassland present meets the criteria for irreplaceable habitat under PPW as it is species-rich from a fungal assemblage perspective (58 CHEGD species recorded on site). The habitat is located within an area of long undisturbed soils with minimal agricultural improvement or management. These grassland areas, which supported a rich assemblage of waxcaps are of high conservation value. The grassland habitats were further assessed during the ecology walkover undertaken in October 2025. The g1d other neutral grasslands surrounding the runway and the Cawdor Barracks were also observed to contain a rich diversity of fungi species. As a precautionary measure, the fungi assemblage present here is assumed to be of similar value and of the same assemblage as in the wider application site.

#### ***GCN and other amphibians***

- 8.4.17. Great crested newt survey results are provided in Appendix 8.3 (Great Crested Newt eDNA Survey). Water samples were collected from ten waterbodies on site which were considered suitable habitat for great crested newts during the aquatic stages of their life cycle. Three ponds were excluded from the survey as they were either dry, too small to sample or access was restricted. Additional waterbodies were identified during the eDNA survey located outside of the site boundary. Samples were not collected from these waterbodies as kits were not available during the survey. However, habitat suitability index assessments (HSI) were conducted.
- 8.4.18. HSI assessments found the ponds to be of 'poor' or 'below average' suitability for great crested newts and eDNA surveys from all tested waterbodies returned negative results, indicating that great crested newts are likely absent from the survey site.
- 8.4.19. Although the GCN HSI assessment and eDNA surveys were undertaken in 2022, the habitat assessment undertaken in October 2025 noted the habitats on site were largely the same as previously recorded and the amphibian population present on site is considered likely to be stable. GCN are considered **likely absent**.
- 8.4.20. Five common toads (*Bufo bufo*) were incidentally recorded within the survey site under reptile mats. These species of principal importance (listed in accordance with Section 7 of the EWA), were typically found to the north of the survey site, where grassland habitats meets scrub.
- 8.4.21. Incidental observations of palmate newt (*Lissotriton helveticus*) and smooth newt (*Lissotriton vulgaris*) were recorded during site visits undertaken in April 2023 within the onsite waterbodies, including the temporary waterbodies formed in vehicle tyre ruts to the north-east and north-west of the survey site.



8.4.22. Given widespread species of commonly occurring amphibian species present on site, the amphibian assemblage is considered important at the **local** level.

### **Reptiles**

8.4.23. Reptile survey results are provided in Appendix 8.4 (Reptile Survey). All four common reptile species: slow worm (*Anguis fragilis*), grass snake (*Natrix helvetica*), common lizard (*Zootoca vivipara*) and adder (*Vipera berus*), were recorded during the surveys.

8.4.24. Using Froglife guidance<sup>149</sup>, the following population size class for each species was recorded:

- Slow worm – low population (peak count of 3);
- Grass snake – good population (peak count of 6);
- Adder – good population (peak count of 9); and
- Common lizard - exceptional population (peak count of 43).

8.4.25. The reptiles were largely concentrated in the northern areas of the survey site and along the eastern boundary, but isolated numbers were also recorded within the airfield itself, at the boundary scrub habitats.

8.4.26. The Guidelines for the Selection of Wildlife Sites in South Wales (although not directly applicable to Pembrokeshire) suggest that sites supporting three or more reptile species or sites supporting good populations of any species should be considered for designation. As such, the assemblage of reptiles present on site is considered to be of **county** importance.

8.4.27. The ecological walkover survey undertaken in October 2025 found the habitats on site to be largely unchanged since the surveys were undertaken in 2022 and 2023. Therefore, the reptile population present on site is considered likely to be stable.

### **Wintering birds**

8.4.28. Wintering bird survey results are included in Appendix 8.5 (Wintering Bird Survey), which includes full species lists and maps their distribution across the survey site.

8.4.29. The survey site is considered to be of **county** importance for wintering birds. Notable species recorded included nine amber-listed BoCC Wales 4 species, seven red-listed BoCC Wales 4 species, nine species listed under Section 7 of the EWA and four Schedule 1 species listed under the WCA. BoCC Wales 4 species are those included in the latest review of the conservation status of birds in Wales (2022).

8.4.30. Of particular note due to high numbers, were the large assemblages of herring gull (*Larus argentatus*) recorded on site, with a peak count of 509 individuals, rook (*Corvus frugilegus*) with a peak count of 30, and starling (*Sturnus vulgaris*) with a peak count of 651. All of these species used the habitats across the survey site, including the grassland areas.

8.4.31. Although the wintering bird surveys were undertaken in 2022 and 2023, the habitat assessment undertaken in October 2025 noted the habitats on site were largely the same as previously recorded and the wintering bird population present on site is considered likely to be stable.

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<sup>149</sup> Froglife, "Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation." Froglife Advice Sheet 10, Halesworth: Froglife, 1999.



### **Breeding birds**

- 8.4.32. Breeding bird survey results are included in Appendix 8.6 (Breeding Bird Survey), which includes full species lists and maps their distribution across the survey site.
- 8.4.33. The site is considered to be of **county** importance for breeding birds due to the presence of 10 amber-listed BoCC Wales 4 species, 17 red-listed BoCC Wales 4 species, 14 EWA species and three WCA Schedule 1 species. Of these species, six were confirmed to be breeding on and off site, ten were likely breeding, and three were possibly breeding on site.
- 8.4.34. Of particular note, due to the high numbers recorded, were skylark with a peak count of 65 individuals observed during the surveys, and meadow pipit (*Anthus pratensis*) with a peak count of 45 individuals. Both ground nesting species were breeding within the grassland habitats of the survey site.
- 8.4.35. The scrub habitat present within the site was assessed as important for several species identified within the survey site and currently in decline in the UK: stonechat (*Saxicola torquata*), grasshopper warbler (*Locustella naevia*), willow warbler (*Phylloscopus trochilus*), garden warbler (*Sylvia borin*), linnet (*Carduelis cannabina*) and whitethroat (*Sylvia communis*).
- 8.4.36. Although the breeding bird surveys were undertaken in 2023, the habitat assessment undertaken in October 2025 noted the habitats on site were largely the same as previously recorded and the breeding bird population present on site is considered likely to be stable.
- 8.4.37. No Manx shearwater (listed as a designated feature for the Skomer, Skokholm and the Seas off Pembrokeshire SPA) were recorded within the survey site or within the desk study during any of the bird surveys. However, no specific nocturnal surveys were conducted for this species and it is considered unlikely that Manx shearwater would be using the site given its distance (approximately 950 m) from the coastline and given that they predominantly return to the colonies they were born into and nest in rabbit burrows around rock and cliff areas, which are not present within or near to the survey site.

### **Red-billed Chough (*Pyrrhocorax pyrrhocorax*)**

- 8.4.38. Specific red-billed chough surveys were conducted as the species is listed as a designated feature of the Ramsey and St David's Peninsula Coast SPA, located approximately 0.67 km to the south-west of the site.
- 8.4.39. No red-billed chough were identified within the survey site during the surveys conducted specifically for this species. See Appendix 8.7 (Chough Survey).
- 8.4.40. Therefore, the red-billed chough is considered to be **likely absent** from the site, and so are not considered further within this assessment.
- 8.4.41. Although the red-billed chough surveys were undertaken in 2022, the habitat assessment undertaken in October 2025 noted the habitats on site were largely the same as previously recorded, i.e. unsuitable for the species, and the red-billed chough is still considered likely to be absent.

### **Barn owl**

- 8.4.42. The areas of grassland immediately adjacent to the runway were assessed as providing sub-optimal habitat for barn owl, while optimal areas of habitat were located to the south of the main runway, to the middle-east of the survey site and along the north-western edge of the survey site, comprising more tussocky grassland and the absence of encroaching scrub, see Figure in Appendix 8.8 (Barn Owl Survey).
- 8.4.43. A barn owl temporary roost structure, identified by the presence of a single pellet, was identified within the building next to the shooting range. See Appendix 8.8 (Barn Owl Survey) for full details.



- 8.4.44. Given that one temporary roost structure, and only one pellet was found, it is considered likely that barn owl use the site only occasionally. Therefore, the population of barn owl at the site are considered to be important at the **less than local** level.
- 8.4.45. Although the barn owl surveys were undertaken in 2022, the habitat assessment undertaken in October 2025 noted the habitats on site were largely the same as previously recorded and the barn owl population present on site is considered likely to be unchanged.

#### **Bats**

- 8.4.46. No potential bat roosting features within buildings/ other structures or trees were present within the application site.
- 8.4.47. Buildings located within the main barracks were not individually assessed for their potential to support roosting bats but are considered unlikely to support a roost given the high level of artificial lighting present across Cawdor Barracks. In addition, if a bat roost were present, it would already be subject to a high level of disturbance from the active works and activities taking place on site and as such would be unlikely to be impacted by the proposed works.
- 8.4.48. Bat activity surveys identified at least 12 species of bats within the survey site (see Appendix 8.9 Bat Activity Survey), including species listed on the rarest category within Wales<sup>150</sup>: barbastelle (*Barbastella barbastellus*) recorded four times across the survey period, greater horseshoe (*Rhinolophus ferrumequinum*) recorded 162 times, Nathusius' pipistrelle (*Pipistrellus nathusii*) recorded 110 times and serotine bats (*Eptesicus serotinus*) recorded five times.
- 8.4.49. Bat activity, particularly of the rare species listed above, was concentrated to the north and east of the survey site along the scrub boundary habitats. However, common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), as well as *Myotis* sp. to a lesser degree, were frequently recorded towards the grassland habitats at the centre of the survey site.
- 8.4.50. While bats were utilising the survey site, they were not roosting there and so the site does not sustain populations alone but is used as part of a larger area which includes off site roosting areas. Therefore, the survey site is precautionarily considered to be of **county** importance for bats.
- 8.4.51. Although the bat field surveys were undertaken in 2022 and 2023, the habitat assessment undertaken in October 2025 noted the habitats on site were largely the same as previously recorded and bat roosts are considered still likely absent from site. The habitats used for foraging and commuting also remained relatively unchanged and therefore the species of bat using the site is considered likely to be stable.

#### **Badger**

- 8.4.52. The WWBIC biological data included 94 records for badger, identified within 5 km of the survey site's central grid point. Precise locations for these badger records have not been disclosed in accordance with the Protection of Badgers Act 1992.
- 8.4.53. Badger presence within the survey site was confirmed with an active outlier badger sett and latrine site recorded during the ecology site walkover conducted in October 2025. Additional field signs were recorded to the north of the site within an area of grassland and scrub, see Figure 8.C (Badger Field Signs).

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<sup>150</sup> S. Wray, D. Wells, E. Long and T. Mitchell-Jones, "Valuing Bats in Ecological Impact Assessment," *In Practice*, pp. 23-25, 2010.



8.4.54. A search for badger field signs within areas outside of the MOD ownership boundary was not conducted. However, in the main, the search within the application site boundary encompassed areas within 30 m of the proposed works area. A small section in the south-east of the site could not be surveyed but as no development is proposed in this area the absence of survey information does not impact the assessment.

8.4.55. The population of badger present within the survey site are considered to be important at the **less than local** level.

#### ***Invertebrates***

8.4.56. The WWBIC biological record data included 386 records of 94 notable invertebrate species within 5 km of the site's central grid point. These include two records of the white clawed crayfish (*Austropotamobius pallipes*), from the River Solva.

8.4.57. Invertebrates of potential relevance to the site include a number of EWA Sch.7 species such as the hornet robberfly (*Asilus crabroniformis*) found in well drained areas of heath and downs, the black oil beetle (*Meloe proscarabaeus*) in meadows and field margins and the bee species *Bombus humilis* and *Bombus muscorum*, which favour grassland meadows. A range of lepidopteran species may benefit from herbaceous plants across the site, in particular, common nettle and dandelion for the mottled rustic, shaded broad-bar, white ermine and buff ermine; and *Senecio* spp. for the cinnabar moth.

8.4.58. No field surveys were required but it is assumed that a terrestrial invertebrate assemblage of **local** level importance is present.

#### ***Other mammal species of principal importance (priority species)***

8.4.59. The WWBIC biological data included records of European hedgehog (*Erinaceus europaeus*), harvest mouse (*Micromys minutus*) and polecat (*Mustela putorius*). None were recorded during the protected species surveys and no targeted surveys were undertaken for the species. However, the survey site provides suitable habitat for these priority mammals species in the form of grassland and scrub, so there is the potential for them to be on site and they are assumed present in suitable habitats.

8.4.60. Although the data search and UKhab surveys were undertaken in 2022, the habitat assessment undertaken in October 2025 noted the habitats on site were largely the same as previously recorded and habitat suitable for hedgehogs was still present on site.

8.4.61. The potential populations of other priority mammal species are considered at the **local level** as widely occurring species in Pembrokeshire.

#### ***Invasive Non-Native Species (INNS)***

8.4.62. The WWBIC biological data included 29 records of three invasive non-native plant species listed in Schedule 9 of the WCA within 5 km of the site's central grid point: four records of rhododendron (*Rhododendron ponticum*), one of Himalayan balsam (*Impatiens glandulifera*) and 24 of Japanese knotweed (*Reynoutria japonica*).

8.4.63. The WCA Schedule 9 species cotoneaster (*Cotoneaster horizontalis*) and rhododendron were confirmed on site, in locations shown on Figure 8.D (Invasive Non-Native Species). The rhododendron was maintained within a horticultural environment near the residential buildings to the south of the site, while the cotoneaster appeared to be spreading near an area identified as ancient woodland, close to the survey site's western boundary at Rickeston Hall.

8.4.64. No additional stands of INNS were recorded during the ecology walkover survey undertaken in October 2025. INNS are not given an importance value as they are not of intrinsic biodiversity value but have legal compliance obligations.



### Summary of Biodiversity Features

- 8.4.65. A summary of the biodiversity features present and their geographic importance, are listed in Table 8.7 below. Figure 8.E (Ecological Constraints) shows the location of these features within the survey site.
- 8.4.66. Fungi are considered as an essential component of the grassland where they are found and not individually assessed.
- 8.4.67. Where features are likely absent or of less than local importance, these will not be taken forward for assessment.

Table 8.7: Summary of Important Biodiversity Features and their Importance

Ecological Receptor	Description	Geographical Importance
Internationally Designated sites (SAC, SPA)	Nearby designated sites and their qualifying features	International
Nationally Designated sites (SSSI)	Nearby designated sites and their qualifying features	National
Ancient Woodland	Irreplaceable habitat located on the application site boundary	National
Other lowland acid grassland with diverse waxcap assemblage (including other grassland where fungi assemblage present)	Irreplaceable habitat located within the application site	National
Priority habitats - Lowland Heathland; Purple Moor Grass and Rush Pastures; Lowland Meadows; Lowland Fens and Reedbeds; Raised Bog and Wet Woodland.	Lowland heath located and wet woodland within the site, purple moor grass and rush pastures immediately adjacent and other Priority Habitats with the wider study area, off-site.	County
Habitats – other neutral grassland (where fungi absent); native hedgerow, scrub and other woodland, mixed.	Commonly occurring and widespread habitats.	Local
Habitats – other hedgerows; standing water; and other coniferous woodland.	Commonly occurring and widespread habitats of poor quality.	Less than local
Vascular plant assemblage	Bluebell recorded on site.	Less than local
GCN	Likely absent	n/a
Amphibian assemblage	Toad and two newt species identified within the application.	Local
Reptiles	All four common species of reptile confirmed within the application site. Exceptional population of common lizard and good population sizes of adder and grass snake.	County
Wintering birds	Wintering bird assemblage use the habitats across the survey site, including the grassland areas.	County
Breeding birds	Breeding birds within grassland and scrub habitats.	County
Red-billed chough	Likely absent	n/a

Ecological Receptor	Description	Geographical Importance
Barn owl	Optimal foraging habitat identified within the survey site but no nesting sites.	Less than local
Bats	Foraging and commuting bats	County
Badger	Outlier badger sett located within the application site	Less than local
Other mammals of principal importance	Suitable habitat within the survey site. Assumed present.	Local
Terrestrial invertebrate assemblage	Assumed present on records and habitats present	Local
INNS	Identified within the survey site.	N/A - included due to legislation

### Future Baseline

- 8.4.68. Long-term impacts from climate change could affect the species composition and types of habitats in and around the study area, and therefore types and diversity of fauna present. Species could be affected by the change in temperatures making it hard for them to adapt and could lead to the dominance of certain species. However, it is not anticipated that the combined impact of the project and climate change would be any different to the impacts of climate change in isolation (i.e. without the proposed development).
- 8.4.69. Given the current land use as a military base with no plan to abandon in the future, the future biodiversity baseline is unlikely to significantly change, even with consideration of climate change. The ongoing management as an active site is beneficial to the species rich grassland present and will likely buffer any changes in climate.
- 8.4.70. Changes in land use of the surrounding area can affect the habitats present, e.g. a lowering of intensity in the farming regime, could encourage more diverse habitats to establish. This is increasingly likely where landowners engage with agri-environmental schemes, which may increase in Wales with release of the new, comprehensive Sustainable Farming Scheme, which launched in 2025, focusing on sustainable food production, climate action, and ecosystem resilience through rewarding farmers for beneficial land management. Even so, unpredictable changes in the biodiversity value or spatial extent of semi-natural habitat are unlikely to occur.

## 8.5. Design Interventions and Controls

### Design Interventions

- 8.5.1. Chapter 3 (Proposed Development) details the proposed design elements. Chapter 4 (Alternatives and Design Evolution) details the design alternatives that have been considered, including the environmental factors which have influenced the decision-making.
- 8.5.2. Throughout the iterative design process for the proposed development, the environment team has worked in close collaboration with the design team to avoid or reduce potential environmental impacts. The outputs are referred to as design interventions. This approach follows EIA best practice and principles set out in the mitigation hierarchy; the first principle being to avoid potential adverse effects, where feasible, before seeking to minimise or mitigate for impacts. Compensation for effects (for example offsite enhancement and/or remediation of effects) are considered if it is not reasonably possible to avoid or reduce adverse effects. This section of this chapter provides more detail and background on the design iterations made relevant to biodiversity.

***Biodiversity Design Interventions***

- 8.5.3. The importance of the grassland for fungi and minimisation of impacts upon it was considered throughout the design process. This included:
- Siting as much of the proposed development on areas of existing hardstanding to reduce loss of fungi grassland areas, within the confines of the technical design requirements.
  - A previously proposed road which was to be located around the boundary fences was removed to reduce the footprint within the fungi grassland areas.
  - Existing access roads have been used for construction of the proposed antenna as far as is practicable, to reduce potential impacts on fungi grassland.
  - Utility trenching, etc. within the fungi grassland has been prioritised at the edge (i.e. adjacent to hardstanding) to reduce fragmentation and loss of fungi grassland.
  - Retention of all grassland areas within the new fence lines but outside the construction zones for the antennas, as shown on Figure 3.1 (Proposed Development Overview).
- 8.5.4. The length of mown grassland either side of the fence will be kept as long as practicable while still addressing security concerns. This area will be maintained at a height of 20 cm (8 inches) and has been minimised to a buffer of 10 m either side of the fence.
- 8.5.5. Grassland to be retained within the fence line (but outside the area which needs to be mown to 20 cm (8 inches)) will be managed through hay cuts once a year, to keep management the same as is currently the case.
- 8.5.6. Intrusive archaeological excavations within the fungi grassland areas would be undertaken following the fungi translocation mitigation works. This includes undertaking the trial trenching to allow for the detailed design to be completed and sensitive habitat to be translocated, to avoid unnecessary impact to the fungi grassland as agreed with Cadw and reported in Chapter 10 (Archaeology).
- 8.5.7. Embedded mitigation is included within the design of the antenna to reduce noise levels during operation, see Chapter 7 (Noise and Vibration) for details.
- 8.5.8. The drainage strategy is designed to capture runoff by a new surface water drainage network and pollution prevention measures will form part of this drainage strategy / sustainable drainage systems (SuDS) design. Mitigation measures relating to hydrology, groundwater and pollution are detailed within Chapter 12 (Water Environment, Flood Risk and Drainage).
- 8.5.9. The antennae dishes will have a non-gloss finish and no material glare or reflected light is anticipated. As a result, the dishes are considered unlikely to significantly affect ecological receptors in this way.
- 8.5.10. The consultant ecologist will be consulted during the pre-construction micro-siting of infrastructure to ensure protection of the sensitive ecological features and to ensure implementation of the design principles.

***Lighting***

- 8.5.11. Lighting has been minimised throughout the design process to reduce impacts on sensitive ecological receptors, notably nocturnal species such as bats. Full details of the lighting scheme are provided in Chapter 16 (Lighting) which has considered GN08/2023 Bats and Artificial Lighting in the UK guidance in its development.
- 8.5.12. All lighting will be dark sky compliant with directional lighting pointing towards the ground to reduce light spill and so will not cause reflection from the antenna dishes.



- 8.5.13. For security purposes, the only lighting that will be on full-time at night will be at the site access gate.

### Controls

- 8.5.14. Controls are included in the Framework Construction Environmental Management Plan (CEMP) provided in Appendix 3.1. The Framework CEMP will be developed into the Detailed CEMP for implementation during construction and will be secured by an appropriately worded planning condition. Further information on the Framework CEMP is provided in Chapter 3 (Proposed Development).

### ***Biodiversity Controls during construction***

- 8.5.15. This section summarises the controls required during the construction of the proposed development. These typically include best practice or industry standard measures and/or are required to achieve compliance with legislation.

### ***Ecological Clerk of Works (ECoW)***

- 8.5.16. Prior to construction, a suitably qualified and experienced ECoW will be appointed by the Contractor. The ECoW should be consulted on habitat clearance methods and equipment, approve final method statements and be consulted on the works throughout the construction process, to ensure that all avoidance and mitigation measures are being adopted appropriately, including deployment and maintenance of any necessary (temporary) exclusion zones.

### ***Pre-commencement walkover***

- 8.5.17. A pre-commencement site walkover by a competent ecologist will be undertaken six months prior to the commencement of works and repeated immediately prior to the commencement of works to ensure that no new ecological constraints are present within the works area. This will include a search for badger setts and to map the location of any invasive species within the works boundary and within a 30 m buffer.

### ***Construction Environmental Management Plan***

- 8.5.18. The CEMP will detail good practice measures such as: procedures required to prevent the spread of INNS; maintaining a tidy work site; generally reducing noise as well as appropriate storage of materials; and ensuring any excavations are covered overnight or have a ramp to facilitate an escape route for any wildlife.
- 8.5.19. The CEMP will include pollution prevention methods, which will be in place to ensure no detrimental impact to any groundwater/surface water features during construction. All measures relating to hydrology, groundwater and pollution are detailed within Chapter 12 (Water Environment, Flood Risk and Drainage).
- 8.5.20. All construction works will be undertaken following Best Practicable Means (BPM) to minimise noise disturbance, which will include restrictions on working hours, using well maintained plant with lower noise emission levels and installation of barriers where needed, see Chapter 7 (Noise and Vibration) for full details.
- 8.5.21. Standard dust management practices, as detailed within Chapter 3 (Proposed Development), will be put in place and detailed within the CEMP for the proposed development.

### ***Lighting***

- 8.5.22. No nighttime construction works are required although this may be unavoidable during the antenna assembly process. Lighting will only be required in and immediately around the building to illuminate the work area for safe assembly conditions.



- 8.5.23. The ECoW will be consulted on lighting to be used throughout construction, ensuring lighting levels are minimised and providing advice on any further measures required as necessary (e.g. additional screening, changing of lighting type, angle location etc).

***Timing of Works/Clearance of Habitats***

- 8.5.24. Vegetation clearance and earthworks across the application site will be undertaken under the observation of the ECoW, following the agreed methodology detailed within a Precautionary Working Method Statement (PWMS) and/or the Grassland Fungi Mitigation Plan (secured by inclusion in Appendix 3.1 Framework CEMP). This will be presented in a method statement, either within an independent document or included in the CEMP. The purpose of the PWMS will be to detail how the work will be undertaken to avoid breaches of wildlife law and minimise potential effects on legally protected species and habitats.
- 8.5.25. Full details of the methods will be provided in the CEMP, with a short summary of actions included below.
- 8.5.26. Clearance of any potential bird nesting habitat (i.e. scrub/ hedgerows/ grassland) will be ideally undertaken outside of the breeding bird season (i.e. undertaken from September to February inclusive) where possible. Where this is not possible, these habitats must be checked for nests by a suitably qualified ecologist shortly prior to clearance. If an active nest is found, works must stop, and a works exclusion buffer zone will be put in place. The works exclusion zone will remain in place until an ecologist has confirmed that the nest is no longer in use. The size of the works exclusion zone will be dependent on the species recorded nesting.
- 8.5.27. Below ground and ground level clearance within any areas suitable for hibernating amphibians, reptiles and hedgehogs (areas of scrub) will avoid the hibernation period, generally considered to be November to February inclusive, where possible. Vegetation can be cut to approximately 150 mm in height during this period. If any additional clearance is required during this period, this will need to be restricted to small areas with careful hand searches undertaken by the ECoW.
- 8.5.28. It is recommended that construction activities begin within the key window of September to October, after the bird nesting season has concluded but while temperatures remain suitable for reptile activity ensuring that there are no impacts to the initial breeding season for either reptiles or nesting birds. If this is not possible and works are to commence within grassland areas between March and July all areas of grassland within construction areas to be directly impacted by the works would be cut and maintained short from mid-February to the start of the works. This is to reduce the suitability of the grassland for ground nesting birds, reptiles and amphibians prior to works starting to minimise the risk of injury and/or disturbance.
- 8.5.29. However, if works are due to start within the breeding season (March to August inclusive) and grassland cut in February was not possible, an experienced ECoW will be required to undertake pre-commencement checks for both nesting birds and reptiles supervising the initial vegetation cut and subsequent soil stripping, as detailed above.
- 8.5.30. Any grassland to be cleared during the reptile active period (generally March to October, weather dependant) should be subject to a two-stage cut under the supervision of the ECoW to encourage reptiles to move away from the area.

## **8.6. Potential Significant Effects**

### **Construction**

- 8.6.1. This section sets out the potential for likely significant effects on biodiversity during construction. The assessment assumes that the relevant design interventions and controls (see Section 8.5) are in place, and where applicable, a reference is given to a control measure listed in Table 3 of Appendix 3.1 Framework Construction Environmental Management Plan



(CEMP). The results of the assessment then inform the need for any additional mitigation requirements during construction (see Section 8.7).

### ***Designated Sites***

- 8.6.2. Potential likely significant effects on the International designated sites due to construction activities are assessed in detail in the HRA Report (Appendix 8.10). The potential impacts on each qualifying feature of the designated sites were assessed and are summarised in Table 8.8. No potential impacts relating to changes in air quality or groundwater dependency were identified. In conclusion, the potential impacts identified would be **not significant** on any of the sites.

Table 8.8: Summary of potential construction impacts on International Designated Sites

Site	Qualifying features	Potential impact			Change in surface water quality
		Habitat loss	Species disturbance	Species injury/mortality	
Ramsey and St David's Peninsula Coast SPA	Breeding red-billed chough	No chough were recorded in 2023 surveys. Considered likely absent with no pathway to impact.	Modelled construction noise levels at the SPA are $\leq 36$ dB LAeqT (see HRA in App 8.10). This is below the defined low impact threshold of 55dB(A), as per the as defined within the Waterbird Disturbance and Mitigation Toolkit <sup>151</sup> . No disturbance to the breeding nests within the SPA are therefore anticipated. Chough nest on cliff ledges and sea caves and are not expected to be breeding inland, nearer the proposed development.	No chough were recorded in 2023 surveys. Considered likely absent with no pathway to impact.	No impact pathway identified.
St David's / Ty Ddewi SAC	Annex I Habitats: vegetated sea cliffs of the Atlantic and Baltic coasts; European dry heaths. Annex II Species: Floating water-plantain	The SAC is located over 700 m from the proposed development; no habitat within the SAC would be lost.	No impact pathway identified.	No impact pathway identified.	Change in surface water quality during construction activities is highly unlikely as the topology is very flat meaning sediment transport is unlikely. Contamination of surface water with connectivity to the SAC is also unlikely due to standard pollution

<sup>151</sup> Institute of Estuarine and Coastal Studies, "Waterbird Disturbance & Mitigation Toolkit Informing Estuarine Planning and Construction Projects," 2013. [Online]. Available: [https://www.tide-toolbox.eu/tidetools/waterbird\\_disturbance\\_mitigation\\_toolkit/](https://www.tide-toolbox.eu/tidetools/waterbird_disturbance_mitigation_toolkit/). [Accessed 26 February 2025]. Although chough are not specifically referred to in this guidance, they are a coastal bird and as a precautionary approach is taken to assessment, this is considered an appropriate threshold.

Potential impact					
Site	Qualifying features	Habitat loss	Species disturbance	Species injury/mortality	Change in surface water quality
					prevention techniques implemented as standard during construction (as detailed in measures WE1-WE12 in the CEMP).
Pembrokeshire Marine / Sir Benfro Forol SAC	<p>nnex I Habitats: estuaries, large shallow inlets and bays, reefs, sandbanks, mudflats and sandflats, coastal lagoons (*priority feature), Atlantic salt meadows and sea caves.</p> <p>Annex II Species: grey seal, shore dock, sea lamprey, river lamprey, allis shad, twaite shad and otter.</p>		<p>The application site nor its surroundings contain aquatic or coastal habitats suitable to support marine mammals or qualifying feature fish species. No disturbance of these species, where they occur, can be reasonably foreseen. The plant, shore dock, is not sensitive to temporary changes in noise or light and has specific coastal habitat requirements which are not present at the application site or its immediate surroundings.</p> <p>Otter present in the wider area could be temporarily disturbed by construction activities but as mobile and wide ranging species there is plentiful alternative habitats available for otter should temporary displacement from foraging or commuting habitats occur. Of note, there would be limited night time working, further reducing the likelihood of disturbance occurring.</p>		
West Wales Marine / Gorllewin Cymru Forol SAC	<p>Annex II Species: harbour porpoise</p>	<p>The SACs are located over 700 m from the proposed development; no habitat within the SACs would be lost.</p>		<p>The application site nor its surroundings contain aquatic or coastal habitats suitable to support marine mammals, fish or shore dock. It is possible that otter use the river network in wider landscape but no aquatic or riparian habitats supporting otter would be directly impacted removing risk of injury or mortality through construction activities.</p>	<p>Change in surface water quality during construction activities is highly unlikely as the topology is very flat meaning sediment transport is unlikely. Contamination of surface water with connectivity to the SAC is also unlikely due to standard pollution prevention techniques implemented as standard during construction.</p>

Potential impact					
Site	Qualifying features	Habitat loss	Species disturbance	Species injury/mortality	Change in surface water quality
North West Pembrokeshire Commons / Comin Gogledd Orllewin Sir Benfro SAC	Annex I Habitats: European dry heaths, transition mires and quaking bogs, northern Atlantic wet heaths with Erica tetralix, Molinia meadows on calcareous, peaty or clayey-silt-laden soils Annex II Species: floating water-plantain	The SAC is located over 4 km from the proposed development; no habitat within the SAC would be lost.	No impact pathway identified.	No impact pathway identified.	No hydrological connectivity – no impact pathway.
Cleddau Rivers / Afonydd Cleddau SAC	Annex I Habitats: water courses of plain to montane levels, active raised bogs (*priority feature), alluvial forests with alder (Alnus glutinosa) and ash (Fraxinus excelsior) (*priority feature) Annex II Species: brook lamprey, river lamprey, bullhead, otter, sea lamprey.	The SAC is located over 4 km from the proposed development; no habitat within the SAC would be lost.	The application site nor its surroundings contain aquatic or coastal habitats suitable to support the qualifying feature fish species. No disturbance of these species, where they occur, can be reasonably foreseen. Otter are highly mobile and wide ranging species with occasional foraging presence likely in watercourses surrounding the application site. However, there is plentiful alternative habitat available in the unlikely event that the occasionally present otter were temporarily disturbed. Night-time working is also highly restricted.	The application site nor its surroundings contain aquatic or coastal habitats suitable to support the listed qualifying fish species. It is possible that otter use the river network in the wider landscape but no aquatic or riparian habitats supporting otter would be directly impacted removing risk of injury or mortality through construction activities.	No hydrological connectivity – no impact pathway.

Potential impact					
Site	Qualifying features	Habitat loss	Species disturbance	Species injury/mortality	Change in surface water quality
Skomer, Skokholm and the Seas off Pembrokeshire SPA	European storm petrel, chough, short-eared owl, Atlantic puffin, Manx shearwater, lesser black-backed gull and seabird assemblage of international importance.	The SPA is located over 13 km from the proposed development; no habitat within the SPA would be lost and there is no habitat within the application site that is essential in the support of the qualifying bird species.	Lesser black-backed gull were recorded in three of six breeding bird surveys. However, although migratory, no other qualifying feature species were recorded in either breeding or wintering bird surveys. Nevertheless, the record of an arctic skua overhead does indicate some passage activity. Construction activity would be temporary and limited to the application site. The modelled construction noise levels (see Figures 7.4 to 7.6) suggest that the defined low impact threshold of 55dB(A) for birds extends to a maximum of approximately 600 m from the application site. In the context of the wider available area, disturbance of migratory/passage birds is highly unlikely due to construction noise.	There is no habitat within the application site that supports breeding qualifying bird species and therefore injury or mortality during construction activities is highly unlikely.	No impact pathway identified.
North Pembrokeshire Woodlands/ Coedydd Gogledd Sir Benfro	Barbastelle bat	The SACs re both over 10 km from the application with no loss of habitats supporting these species within the SACs. As mobile species, bat use habitats beyond their roost sites but	Barbastelle were recorded very rarely with just four calls during activity surveys across multiple months. Lesser horseshoe bat was recorded just once. 162 greater	No bat roosts were identified during the bat surveys. Limited nighttime working is permitted. No impact pathway has been identified.	No hydrological connectivity – no impact pathway.
Pembrokeshire Bat Sites and Bosherton Lakes/ Safleoedd Ystlum Sir	Greater horseshoe bat and lesser horseshoe bat				

Potential impact					
Site	Qualifying features	Habitat loss	Species disturbance	Species injury/mortality	Change in surface water quality
Benfro a Llynnoedd Bosherston		there would be no loss of any bat roosts or significant loss of foraging/commuting habitats (habitat impacts detailed in sections below). The Core Sustenance Zone (the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost) for barbastelle bat is 6 km, reducing to 3 km for greater horseshoe and 2 km for lesser horseshoe bats. SAC bats roosting at 13 km and 24 km away would not be impacted by the habitat changes proposed.	horseshoe calls were recorded. For context, the commonly occurring soprano pipistrelle had nearly 5000 calls recorded in the same timeframe. The majority of the calls were recorded along the eastern and northern edges of the application site, where habitats would be retained.	Limited nighttime working is permitted. No significant species disturbance is anticipated.	

- 8.6.3. The St. David's Peninsula Coast SSSI underpins the Ramsey and St David's Peninsula Coast SPA and St David's SAC with additional features of interest, namely its invertebrate and plant assemblages, peregrine and grey seal. The assessment for the concurrent features of the combined sites is not repeated here, please see above. The additional SSSI specific features, grey seal, invertebrate assemblage and plant assemblage are location and habitat specific with no suitable supporting habitat within the application site suitable for these species. Implementation of standard pollution prevention and control measures (measures WE1 – WE12 in Appendix 3.1 Framework CEMP) would avoid any adverse impact on the quality of local receiving waters that ultimately discharge into the SSSI.
- 8.6.4. Peregrine was recorded once in four wintering bird survey surveys and once in six breeding bird surveys undertaken in 2023 suggesting that the application site is not an important resource for the species. No peregrine used the application site for breeding. As such any minor habitat loss (see Table 8.9) would be neutral in impact considering the wider suitable habitat availability nearby. Noise generated during construction at levels above the 55dB(A) disturbance threshold would be temporary during the construction phase and limited to a maximum distance of approximately 600 m from the application site boundary (see Figures 7.4 to 7.6). For a species that has a hunting range of up to 35 km from their nests, in the unlikely event that any individual peregrine temporarily amended its behaviours and activity to avoid this change in noise, it would not be significant on individual or population.
- 8.6.5. No potential impact pathways were identified between the construction activities of the proposed development and the Arfordir Niwgwyl - Aber Bach / Newgale - Little Haven Coast SSSI nor the Ysgeifiog Moor SSSI.
- 8.6.6. **No significant effects** on the SSSIs identified and their variety of notified features are anticipated through proposed construction activities.

***Ancient Woodland (2 km)***

- 8.6.7. A restored area of ancient woodland, approximately 1.5 ha in size is located on the western boundary of the application site (ID: 4751), see Figure 6.3. However, the closest construction activity would be installation of the proposed fence over 100 m away. At this distance no direct impact on the woodland nor the root protection zone of individual component trees is anticipated. Any potential change in air quality due to dust generation in the construction stage (assessed as negligible to low risk in Chapter 6 Air Quality) is highly unlikely to generate an impact in woodland habitat located beyond 50 m from origin<sup>152</sup>. The application site entrance is also over 500 m away<sup>153</sup>. Nevertheless, precautionary measures, as recommended by the IAQM construction dust guidance would reduce any potential nuisance dust (full measures are provided in Tables 23 to 27 in Appendix 6.4 Air Quality Technical Appendix – Air Quality Mitigation) which would also be secured in the CEMP.
- 8.6.8. Emissions from vehicles and plant used during construction, although potentially within the 200 m threshold for consideration<sup>154</sup> would be of such limited and short term nature that the criteria for detailed assessment was not met. As such no impact is anticipated.
- 8.6.9. The additional areas of ancient woodland identified in the baseline are beyond the 200 m threshold for where significant effects could occur.

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<sup>152</sup> Institute of Air Quality management (IAQM) Guidance on the assessment of dust from demolition and construction. V1.1. Institute of Air Quality Management, London. [www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf](http://www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf).

<sup>153</sup> Natural Resources Wales (2025) Assessing air quality impacts as part of your planning Application

<sup>154</sup> CIEEM (2021) Advisory Note: Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management. Winchester, UK.



- 8.6.10. In conclusion, there would be **no significant effect** on Ancient Woodland habitats during construction.

#### **Priority habitats**

- 8.6.11. Two priority habitats have been confirmed within the application site: 0.38 ha of h1a lowland heath; and approximately 700 m of h2a native hedgerow. No permanent or temporary loss of h1a lowland heath habitat would be required for the proposed development. Approximately 10 m of h2a native hedgerow would be permanently lost (see Table 8.9 below). However, this is not significant, especially when also considering the provision of multiple linear strips of tree planting (between 1 m and 10 m wide) totalling approximately 2.91 ha, see Figure 3.4 Landscape and Ecology Proposals Plan.
- 8.6.12. All other priority habitats identified in the baseline (see Table 8.5) are outside of the application site, where they would not be impacted directly.
- 8.6.13. Potential indirect effects from changes in air quality i.e. dust generation and high deposition can block sunlight, hinder gas exchange, and reduce photosynthesis, impacting plant health and altering community structure. However, this would be avoided for priority habitats through a combination of being located beyond 50 m from construction activities with implementation of the precautionary measures to reduce any potential nuisance dust (full measures are provided in Tables 23 to 27 in Appendix 6.4 Air Quality Technical Appendix – Air Quality Mitigation), which would also be secured in the CEMP.
- 8.6.14. No groundwater dependent habitats were recorded within the application site but w1d wet woodland priority habitat, which is assumed to have some groundwater dependency, was recorded approximately 120 m west of the application site, see Figure 8B UK Habitat Classification. Multiple areas of purple moor grass and rush pastures priority habitat adjacent to the application boundary, which have the potential to be GWDTE, are also located adjacent (outside) the application site. Lowland fens and reedbeds and raised bog priority habitats potentially supporting GWDTE are located in the wider study area. Priority habitats with the potential to be GWDTE are shown on Figure 12.5. A high-level dewatering screening assessment of the effect of temporary dewatering on GWDTEs caused by excavations associated with installation of antennae and buildings is given in Chapter 12 (Water Environment, Flood Risk and Drainage). Excavations are assumed to be of no more than 0.5 m below ground. As such, these activities are very shallow and very localised, and therefore unlikely to cause a significant effect on groundwater levels and flows in superficial and bedrock deposits. No GWDTEs are located within close proximity (or the 100 m zone of influence defined by the assessment) to these excavations and no impact is predicted.
- 8.6.15. In summary, any potential indirect effect (change in air quality or groundwater) on priority habitats from construction activities would be **not significant**.

Table 8.9: Habitat loss within the application site for the proposed development infrastructure

Habitats (bold = priority habitat)	Area (ha) / length (km) within application site	Area (ha) / length (km) of permanent loss	Area (ha) / length (km) of temporary loss
g1d - Other lowland acid grassland	85.14	1.82	7.93
g3c - Other neutral grassland	11.82	0.62	0
h1a - Lowland heath	0.38	0	0
h3 - dense scrub	41.69	0.13	0.28
u1 - Developed land, sealed surface /	48.93	1.04	3.01

Habitats (bold = priority habitat)	Area (ha) / length (km) within application site	Area (ha) / length (km) of permanent loss	Area (ha) / length (km) of temporary loss
Buildings / Other developed land			
u1d - suburban mosaic of developed/natural surfaces	0.07	0	0
w1h - Other woodland, mixed	0.02	0	0
h2a - Native hedgerow	0.7	0.01	0
h2b - Other hedgerow	0.02	0	0
w1g6 - Line of trees	0.36	0	0

**Grasslands supporting important fungi assemblage**

- 8.6.16. The area of g1d other lowland acid grassland and g3c other neutral grassland that supports (or is assumed to support) the nationally important fungi assemblage within the application site totals approximately 96.96 ha. Of this, approximately 2.44 ha would be permanently lost (2.5%) while an additional 7.93 ha would be impacted temporarily, and reinstated (acknowledging that disturbance to fungi mycelial networks would occur), following installation of new infrastructure and buried utilities (8.2%). The installation of new fence lines would not result in additional impacts as the fencing would involve the installation of posts only and would seek to tie into existing fencing where operationally feasible.
- 8.6.17. All grassland supporting the fungi assemblage outside of the construction footprint would be retained and protected. This would continue to be managed through an annual hay cut following construction.
- 8.6.18. The construction footprint would impact small, discrete areas of grassland and would not require the removal of any singular large, connected area. As a result, the fungi assemblage would be retained and no individual species are likely to be lost as a result of the proposed development. Although the abundance and distribution across the application site would be affected by physical works, the fungi assemblage would not be lost from the application site, as the majority (approximately 97.5%) of grassland fungi habitat would be retained in its current condition. As such, the loss of grassland supporting an important fungi assemblage is a **significant adverse effect at the county level**.
- 8.6.19. Implementation of the precautionary measures (full measures are provided in Tables 23 to 27 in Appendix 6.4 Air Quality Technical Appendix – Air Quality Mitigation) to reduce deposition of any potential nuisance dust during construction would avoid any potential impact on grasslands supporting important fungi assemblage, with any effect being **not significant**.

**Other habitats**

- 8.6.20. The only additional habitat directly impacted by the proposed development infrastructure is h3 dense scrub; approximately 1.04 ha permanently (2.2% of that within the application site) and 3.01 ha temporarily, for the installation of infrastructure and buried utilities (6.3% of that within the application site). Although scrub habitats are common and widespread across Pembrokeshire and the loss is comparatively small, a precautionary approach is made and this is a significant effect at the local level. No other semi-natural habitats would be directly impacted by the proposed development.
- 8.6.21. Scrub is relatively tolerant to dust deposition (in comparison to the other sensitive habitats present within the application site). However, implementation of the standard precautionary measures (full measures are provided in Tables 23 to 27 in Appendix 6.4 Air Quality Technical



Appendix – Air Quality Mitigation) to reduce any potential nuisance dust during construction would avoid any potential impact on scrub with any effect being **not significant**.

### **Reptiles**

#### **Habitat loss**

- 8.6.22. Reptiles were confirmed across the application site, in grassland and scrub habitats. A reduction in available habitat could potentially affect the physical condition of individuals or their ability to reproduce successfully. As detailed in Table 8.9, approximately 1.95 ha of suitable grassland and scrub habitat and 10 m of hedgerow would be permanently lost to the proposed development with an additional 8.21 ha of suitable habitats temporarily lost and therefore temporarily unavailable for reptiles. However, in addition to vegetation impacts relating to the new infrastructure, additional scrub would be removed in the north of the application site, see Figure 3.4 Landscape and Ecology Proposals Plan and Section 8.9 Mitigation and Enhancements, to facilitate grassland fungi mitigation. This would comprise, up to, an additional 8.05 ha of permanent scrub clearance. Combined, approximately 8.18 ha (20%) of scrub within the application site would be permanently lost. If permanent and temporary vegetation clearance were to occur at the same time, up to approximately 18.34 ha of scrub and grassland habitats would be unavailable for use by reptiles of the 139 ha available (13%).
- 8.6.23. Adders prefer woodland and heathland habitats; neither of which would be directly impacted by the proposed development or grassland fungi mitigation plan. However, adder were recorded in scrub habitats within the application site.
- 8.6.24. Although a minimum of 87% of suitable habitats would remain available at any one time and aerial photography suggests that there is plentiful suitable habitat in the immediate surroundings for reptiles into which they could naturally disperse, the potential loss of habitats suitable for reptiles within the application would be, precautionarily, an adverse **significant effect at the county level**.

#### **Disturbance**

- 8.6.25. During the construction period, the potential effects to reptiles caused by disturbance is uncertain. There is no strong evidence that reptiles are sensitive to disturbance, but there is potential that disturbing activities could cause stress to individual animals and compromise survival and reproduction. However, construction noise would be limited, in the main, to day time hours and would be temporary for the length of the works (up to 21 months). Noise modelling is provided in Chapter 7 (Noise and Vibration), with construction noise contour map provided in Figures 7.6 to 7.9 showing the typical worst-case construction noise conditions (in the absence of mitigation). These show how at times of peak activity, construction noise levels of between 55dB LAeq,T – 75dB LAeq,T extend over much of the application site, reducing to below 50dB LAeq,T beyond it.
- 8.6.26. Chapter 7 (Noise and Vibration) and Table 3 of Appendix 3.1 Framework CEMP lists a suite of control measures (NV1 – NV11) and mitigation that would reduce potential construction noise generated. These measures avoid any significant effect on humans, however the effectivity for sensitive ecological features may vary, and as such, some behavioural response to construction noise could still occur. However, as the application site supports existing military activities that are likely to generate occasional noise of similar levels, a certain level of habituation can be reasonably expected to occasional peaks and troughs in noise levels and as suitable habitats and cover for individual reptiles that disperse will remain available, the effect is **not significant**.



### *Injury/mortality*

- 8.6.27. The process of vegetation clearance has the potential to kill or injure any reptiles present. However, control measures described in Section 8.5 (and secured in Appendix 3.1 Framework CEMP) regarding timing and the two-stage methodology of vegetation clearance, are designed to avoid accidental injury or mortality of reptiles (BD4, BD6, BD7 and BD 8) by encouraging natural dispersal from areas to be cleared into suitable retained and protected adjacent habitat.
- 8.6.28. If detailed programming allows, the preference would be for site clearance activities to begin between September to October, inclusive, which is after the conclusion of the bird nesting but before reptile hibernation i.e. while temperatures remain suitable for active reptiles and for them to disperse naturally from impacted areas (BD7).
- 8.6.29. Below ground and ground level clearance within any areas suitable for hibernating reptiles would avoid the hibernation period, generally considered to be November to February inclusive, where possible. If unavoidable, vegetation would be cut to approximately 150 mm in height only during this period. If full clearance is needed during this period, this would need to be restricted to small areas with careful hand searches undertaken by the ECoW (BD6).
- 8.6.30. Adder have comparatively high fidelity to particular locations to other reptile species. Field survey identified adder along the eastern boundary and in association with scrub at the north of the application site. Development and clearance activities are very limited in these areas reducing any potential interaction.
- 8.6.31. Overall, the risk of injury and mortality of reptiles through vegetation clearance or ground works is reduced such that any effect would be **not significant** to the population present.

### *Wintering birds*

#### *Habitat loss*

- 8.6.32. Wintering birds were recorded using the grassland habitats within the application site. The proposed development would require the permanent loss of approximately 2.44 ha and temporary loss of 7.93 ha of grassland habitats. However, when considering the scrub clearance required as part of the grassland fungi mitigation plan (see Figure 3.4 Landscape and Ecology Proposals Plan and Section 8.9 Mitigation and Enhancements), the extent of grassland habitats is thereby increased. Irrespective of this, by their nature, wintering birds are wide ranging and highly mobile species that would have plentiful alternative habitat in the wider areas to use. Any effect would be **not significant**.

#### *Injury/mortality*

- 8.6.33. The mortality and injury of wintering bird species could potentially occur during vegetation clearance and groundworks. However, as highly mobile species and in the absence of nest location fidelity (as per breeding birds), this is unlikely to occur. Nevertheless, the biodiversity controls set out in Section 8.5 relating to appointment of an ECoW (BD1), a pre-commencement walkover survey (BD2), implementation of a CEMP and timing and method of vegetation clearance (BD4) would avoid this potential impact and any effect would be **not significant**.

#### *Disturbance*

- 8.6.34. The pathways by which disturbance effects could occur on wintering birds include noise, vibration and visual disturbance. Disturbance of wintering birds could adversely affect the range and distribution of certain species, although susceptibility to disturbance does vary between species, from total avoidance through to rapid habituation (see Waterbird Disturbance Mitigation Toolkit).



- 8.6.35. The Waterbird Disturbance Mitigation Toolkit (generally applicable to a range of wintering bird species) identifies a 55 dB threshold to identify noise levels where a behavioural response by wintering birds could be generated. Noise modelling is provided in Chapter 7 (Noise and Vibration), with construction noise contour map provided in Figures 7.6 to 7.9 showing the typical worst-case construction noise conditions (in the absence of mitigation). These show how at times of peak activity, construction noise levels of between 55dB LAeq,T – 75 dB LAeq,T extend over much of the application site, reducing to below 50 dB LAeq,T beyond it. As there is no start date for construction works available, it must be assumed that a 21 month long construction programme could include up to two winters. As minimal nighttime working is anticipated, no potential disturbance impact is anticipated during these hours.
- 8.6.36. The effects of visual disturbance from mobile construction teams would vary spatially and temporally, depending on the activity being undertaken. However, as an active site, the proposed development is already in an area with human activity and no significant impact is anticipated in isolation.
- 8.6.37. Although the proposed development may cause some displacement of wintering birds, the species and numbers of overwintering birds identified during field survey suggest they are not dependent on areas of habitat within the survey area where disturbance over 55 dB of noise generation has been modelled. As highly mobile species with plentiful alternative similar habitat available in the wider area, while displacement may occur from the application site and its surroundings, this would be temporary and **not significant**.

#### ***Breeding birds***

##### ***Habitat loss***

- 8.6.38. Vegetation clearance works would remove habitat suitable for breeding birds. Approximately 2.44 ha of grassland, 0.13 ha of scrub habitat and 10 m of hedgerow would be permanently lost to the proposed development. Combining the scrub clearance needed to facilitate grassland fungi mitigation (see Section 8.7), up to approximately 8.18 ha (20% of scrub within the application site), in total, would be permanently lost. Temporary losses of 7.93 ha of grassland and 0.28 ha of scrub would also occur.
- 8.6.39. Grassland, scrub and other alternative habitats also suitable for breeding birds would remain plentiful and available for breeding birds in the wider area. However, a precautionary approach is taken and a **significant effect at the local level** could occur.

##### ***Injury/mortality***

- 8.6.40. The mortality and injury of species could potentially occur during vegetation clearance and during groundworks. Mortality and injury could occur to adults, dependent young and via destruction of eggs. The effects to nests and eggs could occur to both scrub and ground-nesting species.
- 8.6.41. Implementation of the biodiversity controls set out in Section 8.5 assumes that vegetation with the potential to support bird nests would not to be removed during the breeding bird season (March to August, inclusive) (BD5). If any works become necessary during the breeding bird season, works would be supervised by an ECoW (BD1, BD4). Appropriate protection measures would be put in place should active nests be found. These would include exclusion zones around active nests until chicks fledge or nests become inactive as determined by monitoring by the ECoW. If detailed programming allows, the preference would be for clearance to either be completed in September to October, after bird breeding season, or start in February in advance of bird breeding seasons, and these habitats are then maintained at a short, unsuitable condition for breeding birds (BD7).
- 8.6.42. No Schedule 1 bird species were recorded as breeding within the survey area but if required, construction works would comply with relevant protected species legislation with regards to Schedule 1 birds, as advised by the ECoW.



- 8.6.43. As the potential injury/mortality of breeding birds would be avoided by the control measures set out in Section 8.5, **no significant effect** would occur.

#### ***Disturbance***

- 8.6.44. Disturbance of breeding birds could adversely affect the survival, range and abundance of certain species, although susceptibility to disturbance does vary between species, from total avoidance through to rapid habituation.
- 8.6.45. In the absence of a start date, a 21 month construction programme could cover up to two breeding bird seasons. However, if the works are to start before the breeding season this would allow birds to habituate to the noise. Therefore, if birds chose to nest near the application site during construction activities, it can be inferred that they would already be accustomed to that level of potential disturbance.
- 8.6.46. The areas subject to highest levels of modelled noise disturbance (see Chapter 7: Noise and Vibration and Figure 7.6 to 7.9) primarily consist of grassland habitats. Ground nesting birds, particularly skylark and meadow pipit, were recorded in good numbers during the surveys (skylark had a peak number of 65) and confirmed breeding within these grassland habitats. While the application site is an active military site with a range of ongoing activities that are likely to generate potential disturbance (noise, lighting, human presence) to which local breeding bird populations are likely to have some level of habituation, in the absence of mitigation, the proposed development, could have a **significant effect at the local level**.
- 8.6.47. The sections of scrub affected by modelled high noise levels are limited to small areas at the edges in the north-east of the site and smaller patches of scrub in the south of the site. Consequently, potential impacts on scrub-nesting species are likely to be limited to this specific area. However, given that large portions of the scrub will remain unaffected during the construction phase, any disturbance impact on would be **not significant**.

#### ***Bats***

##### ***Habitat loss***

- 8.6.48. No bat roosts were found during surveys, and no roosts would be lost. The majority of the habitat within the application site which offers high suitability for foraging and commuting bats will be retained. Although some isolated habitat removal would be required (see Table 8.9) this is not essential in the support of the bat populations present. Most bat activity was recorded in the north and eastern boundaries where the proposed development would have limited intervention.
- 8.6.49. A single permanent 10 m break in one hedgerow would be created. Scientific literature shows that all of the species within the study area are capable of moving freely over the landscape e.g. crossing major roads (Zeale *et al.*, 2012<sup>155</sup>), crossing fields to reach foraging habitat and return to roosts (Harris and Yeldon, 2008<sup>156</sup>) and crossing gaps of over 200 m (Downs and Racey, 2006<sup>157</sup>). As such, a 10 m wide gap in a linear habitat is considered extremely unlikely to result in a barrier to commuting bats.

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<sup>155</sup> Zeale, M. R. K., Davidson-Watts, I., & Jones, G. (2012). Home range use and habitat selection by barbastelle bats (*Barbastella barbastellus*): implications for conservation. *Journal of Mammalogy*, 93(4): 1110-1118

<sup>156</sup> Harris, S. and Yeldon, D.W. (2008) *Mammals of the British Isles: handbook*. 4th Edition. Mammal Society. Southampton UK.

<sup>157</sup> Downs N.C., Racey, P.A., 2006. The use by bats of habitat features in mixed farmland in Scotland. *Acta Chiropterologica* 8: 169-185.



- 8.6.50. The small loss of foraging and commuting habitat for within the application site that is used, in the main, by common and widespread species, compared to the availability of suitable habitat in the wider area, suggests that any effect would be not significant.

***Injury/mortality***

- 8.6.51. No bat roosts were identified during surveys, and no bat roosts would be lost. Nighttime construction activities would not occur (BD3) except if needed to meet the antenna installation schedule. As such, the risk of collision with construction activities is low. The effect would be not significant.

***Disturbance***

- 8.6.52. As construction activities would be limited to daytime hours and no bat roosts were identified in the survey area, it is highly unlikely that any noise generated from construction activity would cause disturbance to roosting bats. Should bat roosts be present beyond the application site boundary, it is highly unlikely these would be disturbed by construction activities which would be centred on the new antenna locations and the auxiliary power compound which are located at distance from the application site boundary. **No significant effect** would occur on bats.

- 8.6.53. Construction lighting would be limited to inside and immediate around the proposed temporary antenna shelter to illuminate the work area for safe assembly conditions when nighttime works is required. However, this would be temporary and limited if required, i.e. essential overnight scheduling. **No significant effect** would occur on bats.

***Other priority species***

- 8.6.54. The amphibian assemblage, terrestrial invertebrate assemblage and other mammal assemblage present within the application site (excluding the species individually assessed above) could be similarly potentially impacted as per the individual species assessments above. However, the biodiversity control measures set out within Section 8.5 and Appendix 3.1 Framework CEMP to avoid mortality and injury during vegetation clearance (BD4-BD8), although proposed in reference to birds, bats and reptiles, would also benefit amphibian and mammal species.

- 8.6.55. The overall change in suitable habitats present for all priority species assemblages would be small in comparison to the availability of similar habitats in the immediate vicinity of the application site. Of the habitats directly impacted by the proposed works, none is essential in the support and function of any priority species assemblages. Should individual animals disperse in response to temporary construction activity, plentiful retained habitat and cover would be available. Therefore, any effect would be **not significant**.

***Legal compliance***

***Badger***

- 8.6.56. An active outlier sett was recorded within the application site, see Figure 8.C (Badger Field Signs). The sett is located outside of the immediate vicinity of the works and no direct risk to the structure of the sett is anticipated. If required, an exclusion zone stipulated by the ECoW would be demarcated by the Contractor and no construction personnel would enter this exclusion area except when accompanied by the ECoW. The exclusion area would remain in place for the duration of the construction period (BD16).

- 8.6.57. Any excavations would be covered when not in active use. Alternative mammal ramps would be positioned in such a way that trapped animals could naturally escape should they become accidentally trapped (BD15).

### **INNS**

- 8.6.58. Vegetation clearance, ground works, machinery movement and habitats reinstatement could introduce or cause INNS to spread within the application site. These species can outcompete less robust species present reducing habitat complexity and diversity.
- 8.6.59. The risk of introduction or spread of INNS would be controlled through control measures set out in the CEMP. Environmental management measures listed in Appendix 3.1 Framework Construction Environmental Management Plan, specify that (abridged text):
- BD1 – The ECoW will provide ecological toolbox talks to site personnel talks on invasive non-native species (INNS) prior to relevant construction activities, to make them aware of ecological constraints and information; highlight mitigation to minimise impacts; and make site personnel aware of their responsibility with regards to wildlife and sensitive habitats in the context of legislation and policy’;
  - BD2 – A pre-commencement site walkover to map the location of any invasive species would be undertaken;
  - BD14 – A Biosecurity Management Plan within the Detailed CEMP would be produced and adhered to.

### Operation

- 8.6.60. This section sets out the potential for likely significant effects on biodiversity during operation. The assessment assumes that the relevant design interventions and controls (see Section 8.5) are in place, and the results of the assessment then inform the need for any additional mitigation requirements during operation (see Section 8.7).

### **Designated sites**

- 8.6.61. Potential likely significant effects on the International designated sites due to operational activities are assessed in detail in the HRA Report (Appendix 8.10). The potential impacts on each qualifying feature of the designated sites were assessed and are summarised in Table 8.10. No potential impacts relating to habitat loss (as a construction stage impact) or sensitivities to groundwater were identified.
- 8.6.62. An assessment of potential changes in air quality from emissions from the operational auxiliary power compound is made in Chapter 6 (Air Quality) with detailed assessment on designated sites within 2.5 km of origin provided in the Technical Appendices. Predicted Nitrogen Oxides (NOx) Process Contribution (PC) is less than 1% of the relevant critical level at all sites and the effect is considered insignificant, as per NRW guidance (see Table 21 of Appendix 6.1-6.4). Modelled acid and nitrogen deposition on terrestrial habitats (Tables 22 and 23 of Appendix 6.1-6.4) show that the PCs are less than 1% of the relevant critical load value for acid and nutrient deposition, and the impact is insignificant.
- 8.6.63. In conclusion, there would be **no significant effects** on any of the internationally designated sites.
- 8.6.64. The St. David's Peninsula Coast SSSI underpins the Ramsey and St David's Peninsula Coast SPA and St David's SAC with additional features of interest, namely its invertebrate and plant assemblages, peregrine and grey seal. The assessment for the concurrent features of the combined sites are not repeated here, please see above. The additional SSSI specific features, grey seal, invertebrate assemblage and plant assemblage are location and habitat specific with no suitable supporting habitat within the application site suitable for these species. Implementation and continued maintenance of the new drainage system, including SuDs, would avoid any adverse impact on the quality of local receiving waters that ultimately discharge into the SSSI.



- 8.6.65. Any peregrine feeding over the site would not be affected by radiation as the beam would be narrow and close to the dish (7 cm wide at 10 m), thus limiting potential exposure time. Modelled temperature transference was negligible across all scenarios. The dishes would be painted with flat paint to reduce glare or reflected light. As such, no significant injury or mortality through collision is anticipated.
- 8.6.66. No potential impact pathways were identified between the operational activities of the proposed development and the Arfordir Niwglwl - Aber Bach / Newgale - Little Haven Coast SSSI nor the Ysgeifog Moor SSSI.
- 8.6.67. **No significant impact** on the SSSIs identified and their variety of notified features are anticipated through proposed operational activities.

Table 8.10: Summary of potential operational impacts on International Designated Sites

Site	Qualifying features	Potential impact			
		Species disturbance	Species injury/mortality	Change in surface water quality	Radiation
Ramsey and St David's Peninsula Coast SPA	Breeding red-billed chough	Modelled operational noise levels at the SPA are $\leq 14$ dB LAeq. This is below the defined low impact threshold of 55dB(A). No disturbance to the breeding nests within the SPA are therefore anticipated. Chough nest on cliff ledges and sea caves and are not expected to be breeding inland, nearer the proposed development.	No chough were recorded in 2023 surveys. Considered likely absent with no pathway to impact.	No impact pathway identified.	Radiation modelling analysis has concluded that there would be no impact on birds within the SPA due to the angle of the beam (minimum height 67 m above horizon line of dishes at 670 m) and the decreasing temperature transference of the radar beam at distance (negligible at 660 m), based on modelling method provided in ES Appendix 15.1.
St David's / Ty Ddewi SAC	Annex I Habitats: vegetated sea cliffs of the Atlantic and Baltic coasts; European dry heaths.  Annex II Species: Floating water-plantain	No impact pathway identified.	No impact pathway identified.	Change in surface water quality during operation is highly unlikely as any water runoff would be captured by a new surface water drainage network, including SuDS before discharge. These would be maintained throughout the operational lifecycle of the proposed development, thereby removing any potential impact pathway. The likelihood of oil spillage from the antenna is considered to be very low, therefore oil interceptors will not be provided. Instead spillage would be contained via bunds within the antenna pedestal and	No impact pathway identified.

Site	Qualifying features	Potential impact			
		Species disturbance	Species injury/mortality	Change in surface water quality	Radiation
				collected and disposed of appropriately.	
Pembrokeshire Marine / Sir Benfro Forol SAC	Annex I Habitats: estuaries, large shallow inlets and bays, reefs, sandbanks, mudflats and sandflats, coastal lagoons (*priority feature), Atlantic salt meadows and sea caves.  Annex II Species: grey seal, shore dock, sea lamprey, river lamprey, allis shad, twaite shad and otter.				No impact pathway identified on habitats.  The proposed dishes have a minimum angle of 5 degrees above the horizon. As such, radiation during operation would be a minimum of 76 m above the horizon line at 750 m from the proposed dishes, thereby avoiding ground based and aquatic qualifying feature species.
West Wales Marine / Gorllewin Cymru Forol SAC	Annex II Species: harbour porpoise	No impact pathway identified.	No impact pathway identified.	As above	
North West Pembrokeshire Commons / Comin Gogledd Orllewin Sir Benfro SAC	Annex I Habitats: European dry heaths, transition mires and quaking bogs, northern Atlantic wet heaths with Erica tetralix, Molinia meadows on calcareous, peaty or clayey-silt-laden soils	No impact pathway identified.	No impact pathway identified.	No hydrological connectivity – no impact pathway.	The proposed dishes have a minimum angle of 5 degrees above the horizon. As such, radiation during operation would be a minimum of 400 m above the horizon line 4.5 km from the proposed dishes, thereby avoiding ground based qualifying feature species or habitats.

Site	Qualifying features	Potential impact			
		Species disturbance	Species injury/mortality	Change in surface water quality	Radiation
	Annex II Species: floating water-plantain				
Cleddau Rivers / Afonydd Cleddau SAC	Annex I Habitats: water courses of plain to montane levels, active raised bogs (*priority feature), alluvial forests with alder ( <i>Alnus glutinosa</i> ) and ash ( <i>Fraxinus excelsior</i> ) (*priority feature))	No impact pathway identified.	No impact pathway identified.	No hydrological connectivity – no impact pathway.	The proposed dishes have a minimum angle of 5 degrees above the horizon. As such radiation during operation would be a minimum of 407 m above the horizon line 4.5 km from the proposed dishes, thereby avoiding aquatic and ground based qualifying feature species or habitats.
Skomer, Skokholm and the Seas off Pembrokeshire SPA	European storm petrel, chough, short-eared owl, Atlantic puffin, Manx shearwater, lesser black-backed gull and seabird assemblage of international importance.	The modelled operational noise levels (see Figures 7.2 to 7.3) suggest that the defined low impact threshold of 55dB(A) for birds is limited to a single point within the application site, even in emergency conditions, where there is an existing level of noise generated. In the context of the wider available area, disturbance of migratory/passage birds is highly unlikely due to operational noise.	There is no habitat within the application site that supports breeding qualifying bird species and therefore injury or mortality during operational activities is highly unlikely.  Injury during migration due to glare from dish has been considered and the dishes would be painted with flat paint to reduce glare or reflected light. The operational lighting scheme is limited and focussed on building security with limited spill onto antennae dishes, further reducing the potential for collision or confusion.	No impact pathway identified.	Radiation modelling analysis (see ES Appendix 15.1) has concluded that there would be no impact on birds within the SPA due to the angle of the beam (minimum height would be over 1.1 km above horizon line of dishes at 13 km) and the decreasing temperature transference of the radar beam at distance (negligible at 13 km).  Any bird migrating over the application site would not be affected by radiation as i) the beam would be narrow and close to the dish (7 cm wide at 10 m), thus limiting potential exposure time, and ii) the decreasing temperature

Potential impact					
Site	Qualifying features	Species disturbance	Species injury/mortality	Change in surface water quality	Radiation
North Pembrokeshire Woodlands/ Coedydd Gogledd Sir Benfro	Barbastelle bat				transference of the radar beam at a distance, see Appendix 15.1. Temperature transference is negligible under all modelled scenarios.
Pembrokeshire Bat Sites and Bosherston Lakes/ Safleoedd Ystlum Sir Benfro a Llynnoedd Bosherston	Greater horseshoe bat and lesser horseshoe bat	The operational lighting scheme is limited and focussed on building security. The eastern and northern boundaries of the application site where most bat activity has been recorded would not be lit.	The dishes would be painted with flat paint to reduce glare or reflected light. As such, no significant injury or mortality through collision is anticipated.	No hydrological connectivity -	Any bat feeding or commuting around the site would not be affected by radiation as i) the beam would be narrow and close to the dish (7 cm wide at 10 m), thus limiting potential exposure time, and ii) the decreasing temperature transference of the radar beam at a distance, see Appendix 15.1. Temperature transference is negligible under all modelled scenarios.

### ***Ancient woodland***

- 8.6.68. The modelled change in air quality derived from the operational auxiliary power compound (mapped in Plates 1 and 2 in Appendix 6.1 – 6.4) show that the increase in nitrogen levels would not extend to the location where the ancient woodland is located. As such, no impact is anticipated.
- 8.6.69. No other impact pathways were identified between operational activities and ancient woodland on the application site boundary or at distance. In summary, **no significant effect** on ancient woodland habitats are anticipated during the operational phase.

### ***Priority habitats***

- 8.6.70. The modelled change in air quality derived from the operational auxiliary power compound (mapped in Plates 1 and 2 in Appendix 6.1 – 6.4) show that the modelled increase in atmospheric nitrogen concentration levels would not exceed the 30 µg/m<sup>3</sup> critical level for habitats; nor would those emissions extend to the locations where the priority habitats are present - lowland heathland and native hedgerows within the application boundary, the wet woodland to the west of the application boundary, nor the purple moor grass and rush pastures identified through desk study just beyond the application site.
- 8.6.71. Dry nitrogen deposition was modelled at ten sites within the application site where eDNA samples for grassland fungi were undertaken (see Plate 8-1 below). This assumed that the operational auxiliary power compounds would be operational for 180 hours per year and the vegetation type for deposition velocity is 'short'. The nitrogen deposition modelling output is provided in Table 8.11.
- 8.6.72. The Process Contribution (PC) at the modelled locations range between 0.002 kg N/ha-year at the modelling point furthest north within the application site to 0.006 kg N/ha-year at approximately 150 m from the source. The range of values of PC divided by Critical Load (CL) range between <0.1% to 1.1% with only location, Ref. 6, exceeding the 1% threshold where a potential significant effect could occur<sup>158</sup>. However, when Plate 8-1 is cross referenced with Figure 8B UK Habitat Classification and National Vegetation Classification 2025, no overlap of any of the modelled dry deposition occurs with the location of any of the priority habitats present within the application site. Overlap of the modelled deposition occurs with purple moor grass and rush pastures priority habitat (identified through desk study – see Figure 12.5) on/near the western boundary but below the 1% of the CL threshold.
- 8.6.73. Other priority habitats identified through desk study at additional distance from the application site would not be impacted. As such, no significant effect is anticipated.
- 8.6.74. No other impact pathways were identified between operational activities and Priority Habitats within the application site boundary or at distance. In summary, **no significant effect** on priority habitats is anticipated during the operational phase.

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<sup>158</sup> Natural Resource Wales (2025). Assessing air quality impacts as part of your planning application. [Online] Available at: <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/assessing-air-quality-impacts-as-part-of-your-planning-application/?lang=en> [Accessed 06 November 2025].

Table 8.11: Nitrogen deposition within the application site during operation

Ref.	Grid reference	Minimum Critical Load (CL)	Estimated nutrient N deposition (kg N/ha-year)				
			Existing Deposition	Process Contribution (PC)	Predicted Environmental Concentration (PEC)	PC/CL (%)	PEC/CL (%)
1	SM 84458 26277	6	11.76	0.002	11.76	<0.1%	196%
2	SM 84870 25894	6	11.62	0.004	11.62	0.1%	194%
3	SM 85137 25499	6	11.90	0.009	11.91	0.1%	198%
4	SM 85254 25184	6	11.90	0.024	11.92	0.4%	199%
5	SM 85491 25389	6	11.90	0.016	11.92	0.3%	199%
6	SM 85213 24947	6	11.76	0.066	11.83	1.1%	197%
7	SM 85293 24589	6	11.76	0.042	11.80	0.7%	197%
8	SM 85238 24375	6	11.76	0.017	11.78	0.3%	196%
9	SM 85115 24136	6	11.76	0.010	11.77	0.2%	196%
10	SM 84958 23777	6	11.20	0.007	11.21	0.1%	187%
11	SM 84926 23939	6	11.20	0.008	11.21	0.1%	187%

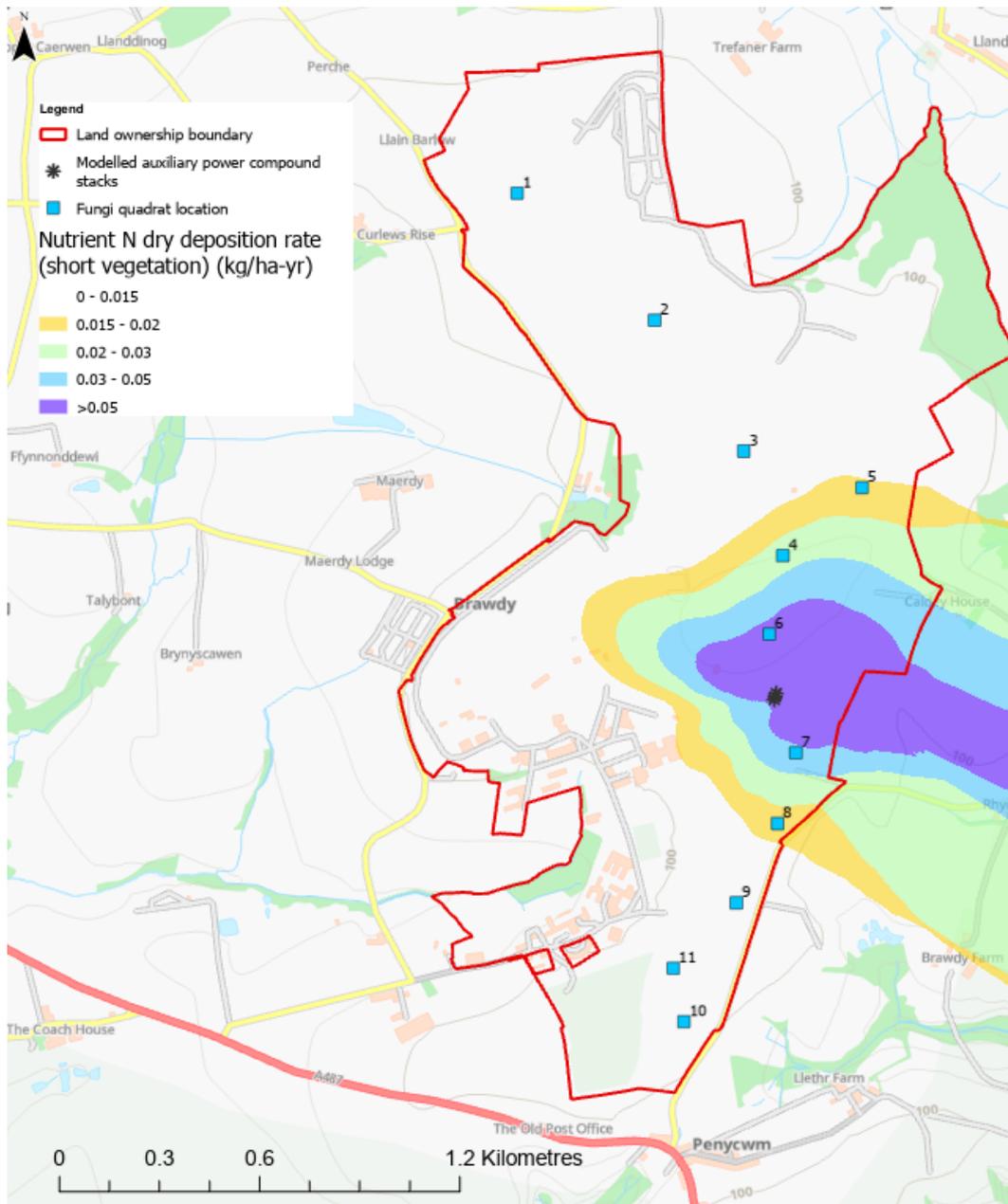


Plate 8-1 Isopleth - Modelled nitrogen deposition during operation ((kg N/ha-year))

### **Grasslands supporting important fungi assemblage**

#### **Nitrogen deposition**

- 8.6.75. For the purposes of the assessment, all g1d other lowland acid grassland and g3c other neutral grassland within the application site are assumed to support the nationally important fungi assemblage. Fungi are highly sensitive to nitrogen deposition with increased levels of deposition reducing fungal biomass and ultimately distribution and diversity, particularly of waxcaps which are indicators of unimproved, low-nutrient grasslands.
- 8.6.76. Annual mean NO<sub>2</sub> concentrations generated by the operational auxiliary power compound are mapped in Plate 1 in Appendix 6.1 – 6.4. The baseline annual mean of NO<sub>2</sub> for the application site is 3.69 µg/m<sup>3</sup> with modelled increases in NO<sub>2</sub> ranging from a maximum of 7.9 µg/m<sup>3</sup> in

the immediate vicinity of the power compound, reducing to 0.2 µg/m<sup>3</sup> at approximately 500 m from the source to the north-east and at approximately 150 m to the west. This gives an annual mean predicted environmental concentration of between 11.59 µg/m<sup>3</sup> in the immediate vicinity of the source reducing to 3.89 µg/m<sup>3</sup> within approximately 500 m. These values are substantially lower than the generic habitat critical level of 30 µg/m<sup>3</sup> <sup>159</sup>.

- 8.6.77. Dry nitrogen deposition was modelled at ten sites within the application site where eDNA samples for fungi were undertaken (see Plate 8-1). The output is provided in Table 8.11. The PC at the modelled locations range between 0.002kg N/ha-year at the modelling point furthest north within the application site to 0.006 kg N/ha-year at approximately 150 m from the source. The range of values of PC divided by CL range between <0.1% to 1.1% with only location, Ref. 6, exceeding the 1% threshold where a potential significant effect could occur<sup>160</sup>. G1d other lowland acid grassland supporting important fungi is located at this point, see Figure 8B UK Habitat Classification and National Vegetation Classification 2025.
- 8.6.78. However, the modelled increase at location Ref 6 with the highest modelled % change has a Predicted Environmental Concentration lower than the existing baseline elsewhere within the application site which also supports the grassland fungi assemblage. The existing nitrogen deposition already exceeds the minimal critical load by almost 100% with baseline deposition levels at over 11 kg N/ha-year. The baseline fungi assemblage is considered to be of national importance and quality even with this comparatively high baseline deposition rate. As such, **no significant effect** would occur.

#### ***Nearby grassland management***

- 8.6.79. A width of grassland over 9 m either side of the new fence line would be maintained at a shorter sward height of approximately 20 cm for security reasons. This is not expected to degrade the fungi communities within or adjacent this area. Professor Gareth Griffith (*pers comms*) confirmed that '*CHEGD fungi are very flexible in terms of sward management in terms of mycelium health*' and that confirmed a sward height of approximately 20 cm should not adversely impact the fungi. A study on the effect of different management regimes on waxcap grasslands undertaken by Professor Gareth Griffith and others found that regular cutting did not reduce waxcap diversity with areas cut to 3 cm from May or July onwards having the highest diversity of species<sup>161</sup>.
- 8.6.80. In summary, **no significant effect** on grasslands supporting important fungi assemblage would occur during operation.

#### ***Other habitats***

- 8.6.81. No impacts on g3c other neutral grassland, h3 dense scrub and w1h other woodland, mixed during operation of the proposed development have been identified.

#### ***Reptiles***

##### ***Disturbance***

- 8.6.82. There is no strong evidence that reptiles are sensitive to disturbance but as a precautionary measure this potential impact has been assessed. Operation phase noise disturbance would

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<sup>159</sup> APIS (2025) Critical Loads and Critical Levels - a guide to the data provided in APIS. Online available at: [https://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#\\_Toc279788054](https://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#_Toc279788054)

<sup>160</sup> Natural Resource Wales (2025). Assessing air quality impacts as part of your planning application. [Online] Available at: <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/assessing-air-quality-impacts-as-part-of-your-planning-application/?lang=en> [Accessed 06 November 2025].

<sup>161</sup> G.W. Griffith, K. Roderick, A. Graham and D. R. Causton, "Sward management influences fruiting of grassland basidiomycete fungi" 2012. *Biological Conservation* 145 (2012) 234–240

be limited. Noise levels are modelled in Chapter 7 (Noise and Vibration) and contour maps provided in Figures 7.2 to 7.5. Maximum operational noise levels are predicted to be no more than 50 dB LAeq,T within the application site. The retained presence of habitat and cover for reptiles would suggest that even in the unlikely event of disturbance of individual reptiles, these would find alternative suitable habitat in the nearby vicinity. Any potential effect would be **not significant**.

### ***Birds – breeding and wintering***

#### ***Injury/mortality***

- 8.6.83. The risk of increased predation of ground nesting birds by predatory birds using new infrastructure to perch and observe prey from is unlikely. Operational characteristics for the proposed development are set out in full in Chapter 3 Proposed Development, Section 3.7. In summary, while new fencing would be installed, this would have an additional 0.5 m of barbed wire along its top which can dissuade larger predatory birds from perching. No tall pole lighting is proposed within the application site – only at the access gates – again reducing suitable locations of birds of prey to perch. DARC typically operates by the antennas motioning to an observation point, taking observations, then moving to the next observation point. The times between observations will vary, as will observation duration. The only exception to typical operations is a specific object search which requires constant motion. This search capability will be tested each week for 20-30 minutes and search events are expected to occur around 5% of radar operations per year. On average, DARC antennas will be stationary between 55 – 60% of the time. As such, these features would be in regular motion, reducing the likelihood of being used as perches by birds of prey. Any potential effect would be **not significant**.

#### ***Disturbance - Noise***

- 8.6.84. Operation phase noise disturbance would be limited. Noise levels are modelled in Chapter 7 (Noise and Vibration) and contour maps provided in Figures 7.2 to 7.5. Maximum operational noise levels are predicted to be no more than 50 dB LAeq,T within the Application site during normal conditions (see Figure 7.2), reducing to below 35dB LAeq,T beyond the Application site.
- 8.6.85. The highest modelled noise levels are restricted to the immediate surroundings of the auxiliary power compound, and the operational antennae. It can be reasonably assumed that habitats in these areas will not be essential in the support or function of any breeding or wintering birds present and are likely to be naturally displaced from the immediate area due to the presence of the new infrastructure. Overall, the operational noise levels from the proposed development are expected to closely align with the existing baseline conditions. Any disturbance from noise would be **not significant**.

#### ***Electromagnetic Radiation***

- 8.6.86. There is relatively little in the scientific literature on the effect of electromagnetic radiation on birds but there are suggestions that it can affect foraging behaviour and cause physiological stress with direct interaction while interference with their natural magnetic sense can alter navigation in migratory birds. Appendix 15.1 Evaluation of Radiation Hazards Associated with the DARC Radar, makes a specific assessment of artificial electromagnetic radiation on birds using herring gull and skylark as representative examples of the type of bird species regularly recorded during the field surveys. The direct impact of radiation and the resultant increase in temperature of the bird, is highly unlikely to occur. The beamwidth of the antennas is very narrow – approximately 0.4 degrees in the far field. Even in a worst case scenario where a bird is located within the beam, the temperature rise is of such a small fraction of a degree, which would be imperceptible to the bird. In the unlikely event of a bird experiencing discomfort, they could simply fly away. Of note, birds that are perching on a fence or resting on the ground within the application site will be below the main beam of the radar, even when this is at its lowest elevation.



- 8.6.87. The impact on magnetic field and effect on migrating birds was also assessed. **No significant effects** were identified.

#### **Bats**

##### ***Disturbance - Noise***

- 8.6.88. Operation phase noise disturbance would be limited. Noise levels are modelled in Chapter 7 (Noise and Vibration) and contour maps provided in Figures 7.2 to 7.5. Maximum operational noise levels are predicted to be no more than 50 dB LAeq,T within the Application site during normal conditions (see Figure 7.2), reducing to below 35 dB LAeq,T along the northern and western boundaries where the main bat activity was recorded.
- 8.6.89. Overall, the operational noise levels from the proposed development are expected to closely align with the existing baseline conditions. Any disturbance from noise would be **not significant**.

##### ***Disturbance - Lighting***

- 8.6.90. Lighting can have both positive and negative effects on bats, depending on species. Delays to bat emergence from roosts are likely if roost exits are lit, reducing the period available for foraging. Artificial lighting can reduce invertebrate assemblages on a site, thus affecting foraging success. Conversely, increased lighting can be beneficial for some species of bat (e.g. noctule and pipistrelle) as they forage prey that are attracted to light (BCT, 2009). Lighting also has a high potential for causing many species of bats (particularly broad winged, slow-flying species such as long-eared and Myotis bats) to avoid the lit area, potentially resulting in losses of foraging and/or roosting habitats.
- 8.6.91. The existing military site at Cawdor is currently subject to very high levels of visually prominent lighting at night. It features tall lighting columns along the entire length of its secure perimeter fence around the barracks buildings. Operational lighting for the proposed development is described in Chapter 3 (Proposed Development). In summary, the proposed exterior lighting design shall be dark sky compliant (full cutoff above 90 degrees) with a maximum mounting height of 2.75 m Above Finished Grade for building mounted lights at personnel doors and 4.6 m poles for perimeter security gates. Exterior pole lighting (2.4 m tall) will be located at the access gates for the segregated fenced areas at the Ops area for security and safety purposes. No tall pole lighting will be installed along the site's perimeter fence, any other additional fencing or along the hardstand (road) between the arrays. Instead, roadside lollipops and reflective paint will be used along and on the array road. The antenna pedestals will have infrared illuminators in lieu of LED pole lights for security cameras that are manually switched.
- 8.6.92. The proposed lighting has been assessed in Chapter 16 (Lighting). This assessment included GN08/2023 Bats and Artificial Lighting in the UK<sup>162</sup> as part of its guidance. 'No change' in the magnitude of impact was concluded.
- 8.6.93. Due to the limited additional operational lighting requirements compared to the baseline, the absence of bat roosts in these areas and the variety of ways lighting can positively as well as adversely impact foraging bats, **no significant effect** would occur on bats due to the proposed operational lighting.

##### ***Electromagnetic radiation***

- 8.6.94. Bats will be of broadly similar sizes to birds, though their flight patterns may be different. The same considerations for birds, above, apply to bats interactions with the radiation from the

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<sup>162</sup> Bat Conservation Trust and Institution of Lighting Professionals (2023) GN08/2023 Bats and Artificial Lighting in the UK. Available online at: <https://theilp.org.uk/resource/gn08-bats-and-artificial-lighting-pdf.html>

operational radar. In all modelled scenarios, it was shown that the effect of radiation emitted from the operational antenna would be negligible, unless the bats were very close to the radar (10 m or less). Even if closer than 10 m, the mobile bat would simply fly away from the beam from the radar beam which is very narrow at 0.4 degrees in the far field. **No significant effect** would occur.

**Other priority species**

**Electromagnetic radiation**

8.6.95. The effect of electromagnetic radiation was also assessed on invertebrates. As with birds and bats, **no significant effect** was identified.

**National Park Special Qualities**

8.6.96. In their landscape and visual scoping opinion consultation response dated 04 May 2023 the PCNPA requested an assessment of the effect of the proposed development on the Special Qualities of the Pembrokeshire Coast National Park (PCNP). These ‘Special Qualities’ are defined as the characteristics and features of the National Park which individually, or in combination, contribute to making the National Park unique. One relates to the ‘richness of habitats and biodiversity’ of the National Park which is considered in the table below. Others relate to topics assessed in chapters elsewhere in this ES (coastal splendour, diverse geology, diversity of landscape, distinctive settlement character, rich historic environment, accessibility, space to breathe, remoteness, islands, tranquillity, and wildness, and the diversity of experienced and combination of individual qualities).

8.6.97. The following table provides a summary assessment of the effects of the proposed development on the ‘richness of habitats and biodiversity’ Special Quality that relates to the PCNP.

Table 8.12: Assessment of Richness of Habitats and Biodiversity National Park Special Quality

Special Quality	Likely changes caused by proposed development	Are effects beneficial, neutral, or adverse and reasoned justification	Duration of effect	Are changes important? Do they conserve, enhance, or harm the Special Quality?
Richness of habitats and biodiversity	The proposed development is located outside of the PCNP boundary therefore there are no direct impacts on habitats or biodiversity within the PCNP. Furthermore, when all mitigation measures are considered, the proposed development would have no overall adverse significant effect and the habitat and grassland fungi mitigation plan are expected to result in a net benefit to biodiversity.	Neutral	NA	Quality conserved (unchanged).

**8.7. Mitigation and Enhancement**

**Construction**

8.7.1. Potential significant effects (in the absence of mitigation) were identified on biodiversity features during construction of the proposed development for:



- Grassland supporting a nationally important fungi assemblage – habitat loss (and disturbance of mycelium network);
- Reptiles – habitat loss; and
- Breeding birds – habitat loss and disturbance of ground nesting birds.

8.7.2. Each of these biodiversity features and potential significant effects are taken in turn and mitigation measures applied in Table 8.12. In summary, mitigation measures focus on provision, enhancement and where feasible, translocation, of grassland habitats that support fungi (including a Grassland Fungi Mitigation Plan strategy discussed further below); enhancement of retained scrub habitats and enhancement of a hedgerow currently in poor condition; and measures to reduce noise and visual disturbance to ground nesting birds during construction comprising removal of suitable habitat in advance of works and, where necessary, installation of temporary barriers around the works.

#### ***Grassland Fungi Mitigation Plan – Approach***

8.7.3. A Grassland Fungi Mitigation Plan would be developed post-submission (BD13 in the CEMP) to detail all the actions required to protect, translocate and manage the grassland fungi habitat throughout the construction process within the application site. The methodology provided within this document would be based on previous experience by the ecological consultant and lessons learned from previous experience of fungi grassland habitat relocation undertaken in Suffolk<sup>163</sup>. This document would also include results of the monitoring undertaken at this relocation project to justify and demonstrate the viability of the approach. Detail in this document would be developed in discussion with Professor Gareth Griffith, Chair in Mycology at the University of Aberystwyth prior to submission to the LPA.

8.7.4. A summary of actions to be included within the plan are described below.

- Approximately 2.44 ha of grassland within the application site that supports or is assumed to support the fungi assemblage would be permanently lost as a result of construction activities. As species rich grassland (primarily fungi assemblage in this case) is considered to be an irreplaceable habitat in Wales under PPW, mitigation and compensation in the form of habitat enhancement and creation is proposed.
- Further fungi eDNA assessments would be conducted in the application site to provide additional baseline information regarding the extent of the fungi distribution and assemblage, with focus on detailed identification of donor and receptor sites for translocated grassland turves. Assessments would also be conducted within the grassland areas surrounding the main barracks where fungi have been incidentally recorded.
- The area of g1d other acid grassland with encroaching scrub, located in the north-west corner of the application site has been identified as a suitable location for fungi grassland habitat creation and enhancement (Areas A and B in Figure 3.4). Incidental sightings of fungal fruiting bodies were identified during a walkover survey in October 2025, suggesting suitability for a diverse fungi assemblage. Subject to eDNA assessments, encroaching scrub would be removed to create more grassland (Area B1, Figure 3.4 plus Area B2 should it be required to receive translocated turves), and the habitats would be managed to align with the management of the other acid grassland present.
- Subject to eDNA assessments, selected areas of fungi grassland present that would be permanently lost to the construction footprint, would be translocated as turves to the scrub cleared grassland area to the northwest of the application site (see Area B1, and B2 if

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<sup>163</sup> Sweco UK "West Suffolk Hospital: Irreplaceable Habitat Compensation Strategy" 2023.

needed, Figure 3.4). The selected turves would represent the best in terms of species assemblage and rarity present but also those in the best physical condition to translocate. In addition, if the grassland habitat is considered suitable for waxcap translocation, turves could also be translocated to the modified grassland in proximity to the barracks (Area E, Figure 3.4). The translocation of turves would be conducted so that translocated soils have time, once placed at the receptor site, to re-establish vegetative cover; waxcaps depend on living plants for nutrition and therefore timing to allow vegetative regrowth is ideal, as they rely on high organic matter levels within the soil. A detailed method statement in the Mitigation Plan will include the process, requirements and timing of grassland turves translocation. It is anticipated that translocation would occur in early autumn when vegetation is entering dormancy, rain will have rewetted soils so that they are near field capacity to maximise their cohesiveness and the fungi fruiting bodies are yet to emerge. The receptor areas will be prepared by removal of the topsoil and existing vegetation. Grassland fungi turves will then be placed directly into these areas (with no intermediate storage).

- Any areas of grassland supporting fungi temporarily affected (for trenching for the installation of utilities and working areas around antennas) have been minimised as far as practicable and placed adjacent to hardstanding areas where feasible. The area of fungi grassland to be temporarily cleared is 7.93 ha. Within these areas the habitat would be re-instated immediately after works are complete with arisings stored adjacent to the ground excavations, watered if required, and replaced from where initially removed. Although this would disrupt mycelial networks within these areas, it could also disrupt unaffected mycelial networks either side of the works. It is anticipated that habitat within these areas would likely recover within a few years.
- Whenever vehicles need to track on to fungi grassland (likely required during ground investigation and possibly during archaeological investigations), track matting would be used to minimise damage to the grassland beneath.
- The newly created and enhanced grassland fungi areas would be monitored to determine the efficacy of the translocation and subsequent management. Further eDNA samples will be taken from the receptor area to determine the species richness and species assemblage. Where necessary remedial works will be undertaken. The grassland fungi mitigation approach outlined above and the monitoring method and schedule would be confirmed, post consent, and defined in the Grassland Fungi Mitigation Plan.

Table 8.13: Summary of Potential Significant Effects and Mitigation Measures

Ecological Feature	Potential Impact	Importance	Significant Effect (without mitigation but with control measures)	Mitigation	Significance
Construction				<p>Vegetation clearance and earthworks across the application site will be undertaken under the observation of the ECoW, following methodology detailed within a Precautionary Working Method Statement (PWMS) and the Grassland Fungi Mitigation Plan.</p> <p>The Grassland Fungi Mitigation Plan would be developed to detail all actions required to protect, translocate and manage the grassland fungi habitat throughout the construction and operation process. This document would also include monitoring results of a similar translocation site in Suffolk to demonstrate the viability of the approach.</p> <p>Management and enhancement of habitats within the application site for grassland fungi would comprise (see Figure 3.4 Landscape and Ecology Proposals Plan):</p> <ul style="list-style-type: none"> <li>Area A – Approximately 7.14 ha of unmanaged, rank grassland to the north of the north-western arm of the air strip to be managed for the benefit of grassland fungi. This would include the commencement of an annual mow-and-collect regime to improve the diversity of the grassland and prevent scrub encroachment.</li> <li>Area B1 - Clearance of approximately 2.34 ha of transitional scrub and future management as per Area A. This would be the receptor site for grassland turves.</li> <li>Area B2 – If Area B1 is already supports a good assemblage of grassland fungi Area B2 will undergo clearance of up to 5.71 ha of transitional scrub with future management for the benefit of grassland fungi. If translocation is feasible this would be the backup receptor site.</li> <li>Area E - The managed grassland areas surrounding the main barracks also contain assemblages of fungi, including waxcaps. These grassland areas would be appropriately managed to ensure the continued growth of waxcaps.</li> </ul>	
Grassland supporting fungi assemblage	<p>Permanent loss of 2.44 ha.</p> <p>Temporary loss of additional 7.93 ha (which would be reinstated).</p>	National	Yes, at the county level		None

Ecological Feature	Potential Impact	Importance	Significant Effect (without mitigation but with control measures)	Mitigation	Significance
Reptiles	<p>Permanent loss of up to 10 ha of scrub, 2.44 ha of grassland and 10 m of hedgerow used by reptiles.</p> <p>Temporary loss of an additional temporary loss of 7.93 ha of grassland and 0.28 ha of scrub.</p>	County	Yes, at the county level	An area of dense scrub (6.81 ha) to the north of the eastern arm of the air strip would be enhanced through management to improve the structure of the existing scrub, and to create clearings, glades, rides, and sheltered edges for the benefit of wildlife, including reptiles (see Area C Figure 3.4: Landscape and Ecology Proposals Plan). Hibernaculum would also be created within this area using materials such as brash and excavated uncontaminated soil excavated during construction and habitat clearance works.	None
Breeding birds	<p>Permanent loss of up to 106 ha of scrub, 2.44 ha of grassland and 10 m of hedgerow used by breeding birds.</p> <p>Temporary loss of an additional temporary loss of 7.93 ha of grassland and 0.28 ha of scrub</p>	County	Yes, at the local level	<p>The gappy hedgerow located to the far south of the application site, positioned along the western and southern boundary of the playing fields would be enhanced. The width of the hedgerow would not increase to ensure there is no further encroachment of vegetation into the playing fields. Enhancement would include the planting of new vegetation to fill the gaps and appropriate management to rejuvenate the existing plants. Where practicable vegetation planting would utilise native species of local origin.</p> <p>As part of the overall landscape and ecology proposals, the majority of the scrub lost would be replaced by grassland which is also suitable for reptiles. The enhancement or increase in grassland habitat (up to approximately 21.7 ha) would also be beneficial for ground nesting birds, increasing nesting and feeding opportunities.</p>	None
Breeding birds	Disturbance of ground nesting birds (skylark and meadow pipit)	County	Yes, at the local level	<p>To reduce the impacts of noise and visual disturbance to ground-nesting birds during construction, suitable habitats present within the works area would be strimmed to ground-level to render them unsuitable for nesting, preferably in advance of the breeding bird season (i.e. before end February).</p> <p>Plant and site contractors would be constrained to working within prescribed working areas and access corridors. This would be implemented, where practicable, through</p>	None

Ecological Feature	Potential Impact	Importance	Significant Effect (without mitigation but with control measures)	Mitigation	Significance
				<p>the installation of temporary barriers to minimise damage to retained habitats and minimise the potential for disturbance to ground-nesting birds.</p> <p>Appropriate noise and visual disturbance screening barriers would be installed around works areas to ensure the surrounding environment remains undisturbed for ground-nesting birds, where necessary, to be confirmed by the ECoW.</p>	
<b>Operation</b>					
None	N/A	N/A	N/A	N/A	N/A

### Operation

- 8.7.5. No mitigation measures are required for biodiversity features for potential impacts generated during the operation of the proposed development.

### Net Biodiversity Benefit

- 8.7.6. While the Grassland Fungi Mitigation Plan would have a primary focus on the grassland and fungi assemblage there-in, there would be additional biodiversity benefits from enhancement and ongoing management in terms of intrinsic grassland plant diversity but also of improved faunal assemblages – bird, mammal and invertebrate. Similarly, the Biosecurity Management Plan to control and manage INNS would be widely beneficial. Habitat enhancements in the south of the application site would contribute Buglife's B-Line project<sup>164</sup> which aims to create a UK wide network of interconnected habitats that improve habitats for pollinating insects. Ongoing sensitive grassland management would improve habitat resilience and potentially buffer the effect of climate change.
- 8.7.7. The enhancement of scrub habitat and provision of hibernacula would benefit a range of other invertebrate and animal species, not just reptiles.
- 8.7.8. The creation of SuDs would provide damp habitats for commonly occurring amphibians and reptiles such as grass snake. The additional of increased habitat diversity within the application site would also improve opportunities for different invertebrate assemblages which would also provide additional food source for a range of bird, mammal species, amongst others.
- 8.7.9. Tree planting (see Figure 3.4 landscape and Ecology Proposals Plan) has been carefully targeted to specific areas of the application site to balance operational requirements, the landscape character context, the importance of existing grassland for fungi, and challenging conditions for tree establishment. Approximately 2.1 ha of tree planting is proposed, as 10 m to 15 m wide blocks in selected application site boundary locations and at a location north-west of the barracks. Although provided for landscape and visual purposes, these areas of tree planting have additional benefit for biodiversity providing an additional habitat that is also suitable to support a range of species and providing additional habitat connectivity and natural corridors around the application site and to the wider landscape.
- 8.7.10. The step-wise approach to achieving Net Biodiversity Benefit (based on PPW12) with incorporation of the DECCA (Diversity, Extent, Condition, Connectivity and other Aspect of ecosystem resilience) Framework is summarised below:
- Step 1 – Avoid – Chapter 4 (Alternatives and Design Evolution) describes the UK Site Selection Process for the proposed development. Once the Cawdor barracks were chosen, a number of alternative design iterations are shown, all of which incorporate biodiversity in the process.
  - Step 2 – Minimise – Section 8.5 of this chapter details the design interventions and control measures implemented to further avoid and/or reduce potential impacts on habitats and species.
  - Step 3 - Mitigate/Restore – Section 8.7 details the proposed mitigation which focuses on a Grassland Fungi Mitigation Plan (comprising protection, translocation and enhancement), enhancement of scrub habitats and protection of ground nesting birds. The Biosecurity Management Plan would focus on control/treatment of INNS.

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<sup>164</sup> <https://www.buglife.org.uk/our-work/b-lines/>



- Step 4 - Compensation on site / off-site. The proposed mitigation is considered sufficient such that compensation is not required. The mitigation (see Figure 3.4 Landscape and Ecology Proposals Plan) also includes a suite of tree planting across selected locations across the application site boundary having combined landscape and biodiversity benefits.
- Step 5 - Long term management. The Grassland Fungi Mitigation Plan would include a plan for long-term management of grassland within the application site, while the post-consent detailed Landscape and Ecology Management Plan (LEMP) would specify monitoring requirements (including intervention requirements, if needed) for successful establishment of tree and scrub planting and hedgerow enhancement.

## 8.8. Residual Significant Effects

- 8.8.1. Following the implementation of the control measures laid out in Section 8.5 to be secured by the CEMP (Framework provided in Appendix 3.1) no residual significant effects occur.

## 8.9. Monitoring

- 8.9.1. The grassland fungi monitoring schedule is to be confirmed, post consent, and defined in the Grassland Fungi Mitigation Plan. The monitoring strategy will involve undertaking further eDNA surveys of the enhanced grassland areas with translocated turves to determine the species-richness and diversity of the fungal fruiting bodies present. Should the results be less than expected, remedial measures may be required to improve the soil conditions for fungal growth.
- 8.9.2. A post-consent Landscape and Ecology Management Plan (LEMP) would specify the monitoring requirements for successful tree and scrub planting establishment and maintenance (G8). This document would include intervention measures should establishment fail. The LEMP would also incorporate any requirements in relation to INNS should any be needed beyond construction and the scope of the Biosecurity Management Plan within the CEMP.

## 8.10. Summary and Conclusions

- 8.10.1. This assessment of the potential effects, and their significance, of the proposed development as it applies to biodiversity has been thoroughly carried out based on the information currently available. The approach to the assessment has applied best practice and national and local planning policy.

### Summary of Baseline Conditions

- 8.10.2. Habitats recorded within the application site primarily consisted of g1d other lowland acid surrounding the dis-used runways. This habitat also holds a nationally important assemblage of fungi and is considered an 'irreplaceable habitat' under PPW. Other semi-natural habitats recorded included: h3 dense scrub g3c other neutral grassland; a small area of h1a lowland heath priority habitat; h2a and h2b hedgerows; w1g6 lines of trees; and a small area of w1h other coniferous woodland. Urban areas present comprised hardstanding and buildings making up the Cawdor Barracks site. Further habitats recorded within the wider Cawdor Barracks site included priority habitat w1d wet woodland and c1 arable and horticulture habitats.
- 8.10.3. Field surveys recorded a population of reptiles, comprising all four common UK species with county level importance. County level important assemblages of ground-nesting birds, notably skylark and meadow pipit, were also recorded as well as an assemblage of over-wintering birds. The application site was also used for commuting and foraging bat species, including the rare species barbastelle, greater horseshoe bat and Nathusius' pipistrelle in low numbers,



although no roosting sites for bats were recorded. Evidence of badger activity was recorded to the north of the application site with an outlier sett identified. The invasive species cotoneaster and rhododendron were recorded on site.

### Summary of Design Interventions and Controls

- 8.10.4. Potential impacts on biodiversity have been avoided or minimised as far as is reasonably practicable through the proposed development design. The approach has followed the principles set out in the mitigation hierarchy. An important action was the reduction of direct impacts on the irreplaceable grassland fungi habitat by moving operational buildings and compounds on to existing areas of hardstanding and consideration of the location of antennas to minimise the footprint within the grassland.
- 8.10.5. The antennas have been designed to reduce noise levels during operation and will have a non-gloss finish to reduce expected glare and reflected light.
- 8.10.6. The lighting scheme is Dark Skies Compliant. During operation, the lighting scheme will be minimal and only be used in association with security requirements at buildings and entrance gates. The lighting scheme has been designed overall to reduce impacts on sensitive nocturnal biodiversity, whilst providing the necessary security requirements.
- 8.10.7. In addition to the design intervention, control measures have also been recommended which include adherence to best practice or industry standard measures and are required to achieve compliance with legislation.
- 8.10.8. Controls for the proposed development include the appointment of an ECoW to supervise habitat clearance and to ensure mitigation measures and method statements are adopted appropriately. A CEMP will also be produced to detail good practice measures for all works undertaken.
- 8.10.9. A key control to reduce impacts on protected and notable species present on site will be the timing and programming of works to avoid sensitive periods, for example, avoidance of habitat clearance during the sensitive hibernation period for reptiles and sensitive periods for breeding birds. The agreed methodology will be provided within Precautionary Working Method Statements (PWMS).

### Summary of Potential Significant Effects

- 8.10.10. The assessment of potential significant effects on biodiversity features was undertaken with reference to CIEEM guidelines. The assessment identified potential impact pathways and subsequent effects during both construction and operation of the proposed development.
- 8.10.11. Potential significant effects (in the absence of mitigation but with standard controls and measures) were identified on biodiversity features during construction of the proposed development for:
- Grassland supporting a nationally important fungi assemblage – habitat loss and disturbance of mycelium network;
  - Reptiles – habitat loss; and
  - Breeding birds – habitat loss and disturbance of ground nesting birds.
- 8.10.12. No potential impacts and subsequent significant effects were identified in the operational phase of the proposed development.
- 8.10.13. Following the implementation of appropriate design interventions and controls, **no significant effects** on statutory and non-statutory designated sites, priority habitats and vascular plants (excluding fungi grassland), barn owl, badger, or 'other priority species' were identified during construction or operation.



### Mitigation

- 8.10.14. In summary, mitigation measures focus on provision, enhancement and where feasible, translocation, of grassland habitats that support fungi (including a Grassland Fungi Mitigation Plan); enhancement of retained scrub habitats and enhancement of a hedgerow currently in poor condition; and measures to reduce noise and visual disturbance to ground nesting birds during construction comprising removal of suitable habitat in advance of works and, where necessary, installation of temporary barriers around the works.

### Residual Effects and Monitoring

- 8.10.15. No residual significant effects are considered likely following correct implementation of the mitigation measures.
- 8.10.16. Monitoring of the translocated grassland fungi turves and related habitat enhancements will be developed with PCC / NRW and academic specialists as part of the Grassland Fungi Mitigation Plan. Monitoring will involve undertaking further eDNA surveys of the enhanced grassland areas to determine fungi species-richness. Where required, remedial measures will be adopted to improve the habitat conditions for fungal growth, likely through changes to the management regime.
- 8.10.17. The LEMP will define the necessary monitoring required for successful establishment of the woodland, tree and scrub planting. This will include measures for intervention should there be any establishment failure.

### Overall Conclusion

- 8.10.18. When all mitigation measures are considered, the proposed development would have no overall adverse significant effect and the habitat and grassland fungi mitigation plan are expected to result in a net benefit to biodiversity.