Chapter 8
Ecology

Introduction

8.1 This chapter presents the findings of the assessment of likely effects of the proposed Glenmuckloch to Glenglass Reinforcement Project (GGRP) on ecology. It details and interprets the findings of desk-based and field studies and follows good practice methods in assessing the significance of effects on ecological features, with a focus on identifying those that are considered to be significant in the context of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ("EIA Regulations").

8.2 This chapter should be read in conjunction with the following chapters of the EIA Report, which inform, or have been informed by, this assessment:

- **Chapter 2: Routeing and Design Strategy**
- **Chapter 4: Development Description**
- **Chapter 5: Planning Policy Context**
- **Chapter 7: Hydrology, Hydrogeology, Geology and Peat**
- **Chapter 9: Ornithology.**

8.3 The ecology assessment was undertaken by LUC. LUC ecologists are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) or the Institution of Environmental Sciences (IES) and are subject to peer review.

8.4 The assessment of effects on ornithology is reported separately within **Chapter 9: Ornithology**.

Scope of the Assessment

Effects Identified to be Assessed in Full at Scoping Stage

8.5 The following effects of GGRP were originally identified at the scoping stage for consideration in the assessment reported in this chapter:

- Permanent or temporary loss, fragmentation or disturbance of habitats of conservation concern during the construction phase. This may include GWDTEs which, if identified, will be assessed in conjunction with the hydrology assessment.[1]
- Permanent or temporary loss, fragmentation of disturbance of sheltering or foraging habitat of protected species during the construction phase.
- Direct effects on protected species, including mortality and disturbance as they relate to the species population.

Effects Scoped Out

8.6 A likely effect may be scoped out of full assessment when it is clear that it will not be significant in EIA terms[2]. A number of factors are considered in this determination, including:

- Baseline data that confirms the Study Area is of limited importance for a species/habitat identified during field studies.
- Construction methods are demonstrably limited in their ability to cause damage or disturbance (e.g. limited footprint or timescale).
- Post construction, the operation of the development will not result in increased activity or land take.
- The application of embedded mitigation and / or standard, well-established good practice construction methods means a significant effect is unlikely.

8.7 With regard to the GGRP, key project features include:

- Physical land take at tower locations and the new Glenmucklock sub-station is limited, with access tracks and other ancillary development being temporary. The felling of broad-leaved and coniferous plantation woodland within the wayleave and windthrow areas is inevitable due to the commercial nature of these operations (further details on felling and proposed replanting and compensatory planting are provided in **Chapter 3: Approach to the EIA** and **Chapter 4: Development Description**).
- Construction activity at each new tower location is relatively short term in nature, with an overall construction programme of approximately 16 months.
- The operation of the 132kV OHL forming part of the GGRP will not comprise ongoing activity within the wayleave, staff will only visit periodically for inspection and maintenance purposes anticipated on an annual basis.
- Construction will be subject to embedded mitigation and standard well-established good practice construction methods to be set out in the Construction and Environmental Management Plan (CEMP). Please, refer to **Chapter 4** and **Appendix 3.3** for further details. All measures to be included in the CEMP are well established in energy infrastructure projects and have a demonstrably high level of success.

8.8 Consequently, the following effects have been scoped out of full assessment reported in this chapter:

- Construction and operational effects of the GGRP on statutory designated areas for nature conservation purposes (i.e. Special Protection Areas (SPA) and Sites of Special Scientific Interest (SSSI)). On the basis that habitats of conservation concern and protected terrestrial species present in the Study Area are not structurally or functionally connected to the upland habitat mosaic designated by the North Lowther Uplands SSSI or Muirkirk Uplands SSSI that are approximately 1.7km to the north-east and 1.7km to the north west of the Study Area at the closest point. Further details of qualifying features of these SSSI's are included within **Appendix 8.1: Desk Study and Legal Context**. It is very unlikely that these sites, including their qualifying features / interests will be significantly affected by the development. Muirkirk and North Lowther Uplands SPA, is designated for it's ornithological features only therefore is scoped out of the Ecology Chapter. However, Ornithological considerations and assessment in relation to the above designated sites are presented separately within **Chapter 9**.
- Construction and operational effects of the GGRP on terrestrial protected species, including fragmentation of habitat, severance, mortality and disturbance. These have been excluded on the basis that direct evidence of all target species was limited, the construction programme is relatively short, access tracks are temporary in nature and extensive suitable habitat will persist both during and following construction.
- Operational effects of the GGRP on habitats of conservation concern, including fragmentation of habitat loss and severance. These have been excluded on the basis that the permanent land take associated with the development is very limited and extensive suitable habitat will persist both during and following construction. In addition, the operation of commercial forestry within the Study Area inherently will result in an inevitable level of habitat loss as a result of felling operations in line with their existing Forest Management Plans (further details on felling and proposed replanting and compensatory planting are provided in **Chapter 3** and **Chapter 4**).
- Construction and operational effects on fisheries resources. These have been excluded on the basis that the development design avoids significant works in proximity to the River Nith and appropriate mitigation have been embedded into the project design in line with Marine Scotland guidance to reduce the risk of significant effects on the fisheries resources and water quality. Water quality is further considered within **Chapter 7.**

[1] i.e. habitats listed in Annex 1 of the Habitats Directive, included in the Scottish Biodiversity List, Local Biodiversity Action Plans, and Groundwater Dependent Terrestrial Ecosystems (GWDTEs).

[2] As defined by the assessment method set out in this chapter.

- Cumulative effects with other nearby developments as outlined within **Chapter 5** and **Chapter 6**, on the basis of the GGRP Study Area's limited Ecological Importance and the lack of receptor (as outlined above) connectivity with other developments, with the exception of the substation extension works at Glenglass. Cumulative effects with the substation extension works at Glenglass have been scoped out due to the minor effects of the substation extension works at Glenglass (which in itself does not constitute EIA development, in line with the Screening Direction Letter Reference: EIA-170-001, dated 25 September 2022).

8.9 It is important to note, however, that while effects are scoped out because they are not considered to be significant in EIA terms, the need to ensure compliance with international and national nature conservation legislation still applies. The potential presence of protected species along the route will be considered in line with the CEMP and appropriate measures, including potential licensing, will be followed to ensure their ongoing viability. See **Appendix 8.3: Protected Species** for further details of protected species distribution across the Study Area.

Effects Scoped In

8.10 The following effects have been scoped into full assessment reported in this chapter:

- Construction effects on habitats of conservation concern, including direct habitat loss and severance of habitats,

Assessment Methodology

Legislation and Guidance

Legislation

8.11 Legislation of relevance to statutorily designated sites, protected habitats and protected species, as detailed in this assessment, includes:[3]

- The Conservation of Habitats and Species Regulations 2017.
- The Wildlife and Countryside Act 1981;
- The Nature Conservation (Scotland) Act 2004;
- The Protection of Badgers Scotland Act 1992; The Water Environment and Water Services (Scotland) Act 2003 (WEWS): and
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011.

Guidance

8.12 Nature conservation policy or guidance of relevance to locally designated sites and habitats and species of conservation interest, as detailed in this assessment, includes:

- The Scottish Biodiversity List.[4]
- The Dumfries and Galloway Biodiversity Action Plan.[5]
- Scottish and Local Planning Policy and Supplementary Guidance, as detailed in **Chapter 5**.

8.13 Relevant guidance that informs assessment methods adopted in this chapter includes:

- Guidelines for Ecological Impact Assessment in the UK and Ireland.[6]
- Scottish Natural Heritage, Series on Species Advice Notes for Developers.[7]
- Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (GWDTE).[8]

8.14 Further guidance in relation to survey methods and the interpretation of ecological data is referenced in **Appendices 8.1 – 8.4**, as appropriate.

Consultation

8.15 In undertaking the assessment, consideration has been given to the scoping responses and other consultation undertaken during the EIA as detailed in **Table 8.1**.

Table 8.1: Consultation Responses

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
NatureScot (16th March 2020)	Formal Scoping Consultation	NatureScot recommends that all potentially affected peatland habitats with the survey corridor be mapped to National Vegetation Classification (NVC) standards. NautreScot notes that the NVC is more sensitive to the hydrological variation that occurs in blanket bog than the Phase 1 classifications, which will be important in determining construction methods and mitigation measures Advised that the proposals for protected species surveys are considered appropriate.	NVC surveys and mapping were conducted in line with best practice guidelines. Results are summarised in this Chapter and reported in detail within **Appendix 8.2.** None required
Nith District Salmon Fishery Board (NDSFB) (12th November 2020)	Formal Scoping Consultation response provided via Dumfries and Galloway Council in correspondence dated 7th December 2022	Aquatic surveys of invertebrates and fish in the watercourses should be carried out before, during and after construction. This mirrors current approach to surveys being employed on powerline routes in the area.	Aquatic surveys were not considered necessary for the purposes of this assessment, however the methods requested by NDSFB will be incorporated into the project's CEMP and delivered before, during and post construction.
Dumfries and Galloway Council (7th December 2020)	Formal Scoping Consultation	Following advice from NDSFB aquatic surveys of fish and invertebrates are recommended before, during and after construction.	
Marine Scotland, 5 February 2020	Formal Scoping Consultation	Marine Scotland notes that the River Nith catchment supports important salmon and trout populations and advises SPEN to consider the potential effect of the development on water quality and fish populations within and downstream of the development area, both during construction and operation. Marine Scotland recommended consulting their generic scoping guidelines in relation to the potential impacts on water quality and fish populations associated with the proposed development.	Standard mitigation to protect Fisheries resources have been embedded into the project design therefore have been scoped out for further consideration. Effects on water quality are considered in **Chapter 7**. The Marine Scotland (2018) guidance was consulted in relation to assessing and mitigating the potential effects

[3] References to all legislation relate to legislation as amended and in force at the time of writing of this chapter.
[4] Scottish Biodiversity List. Available at https://www.nature.scot/scottish-biodiversity-list
[5] Dumfries and Galloway Biodiversity Action Plan. Available at https://www.dumgal.gov.uk/media/19945/Local-Biodiversity-Action-Plan/pdf/Local_Biodiversity_Action_Plan.pdf
[6] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester
[7] Available at https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species
[8] SEPA Guidance note 31. Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
			on fish (this Chapter) and water quality (**Chapter 7**). All embedded and site specific mitigation measures relevant to this chapter are set out in the mitigation section within this chapter and summarised in the **Appendix 3.3 – Schedule of Mitigation**.

Study Area

8.16 The Study Area adopted in the assessment reported in this chapter varies by desk and field survey and ecological feature, as defined by best practice (detailed in **Appendices 8.1 – 8.4**). Study Areas are detailed in **Table 8.2** and are illustrated in **Figure 8.1**.

Table 8.2: Study Area Description

Desk Based Studies	
Ecological Feature	**Study Area**
Statutory Designated Sites	Development footprint, wayleave and 5km buffer
Non-Statutory Designated Sites	Development footprint, wayleave and 2km buffer
Existing Protected Species Data	Development footprint, wayleave and 2km buffer
Ecological Surveys	
Protected Species Surveys	Development footprint, wayleave and up to 200m buffer as defined by best practice (and detailed in **Technical Appendix 8.3**).
Phase 1 Habitat Survey	Development footprint, wayleave and 250m buffer.
National Vegetation Classification Survey	Development footprint, wayleave and 250m buffer.

Desk Based Research and Data Sources

8.17 Prior to the commencement of field studies, a desk study was undertaken to identify known ecological features within the relevant Study Areas described above. Searches were made for those habitats and species agreed through consultation. The following resources were used:

- NatureScot SiteLink (statutory designated sites).[9]
- Dumfries and Galloway Council list of Local Nature Conservation Sites (Non-statutory designated sites).[10]
- The Ancient Woodland Inventory.[11]
- National Biodiversity Network Atlas[12].

8.18 Where appropriate, other scientific resources were referred to when determining protected species behaviour or population sizes. These resources are referenced in the chapter where appropriate.

8.19 Further information relating to the desk study method is provided in **Appendix 8.1**.

Field Survey

8.20 A suite of habitat and species surveys were undertaken to inform the assessment reported in this chapter. Field studies comprised the following:

- Habitat surveys: Phase 1 Habitat Survey and National Vegetation Classification (NVC) to inform the GWDTE classification where necessary. The phase 1 habitats survey provided a rapid classification of habitats within the Study Area. Where habitats of potential conservation concern were noted, vegetation of these habitats was subject to NVC survey to allow more detailed analysis of the plant communities within these areas. Further details of the methods employed and findings of habitat surveys are included in **Appendix 8.1-8.2**;
- Protected terrestrial species surveys comprised detailed searches for field signs of:
  - Badger.
  - Bat roosting potential.
  - Otter.
  - Red squirrel.
  - Pine marten.
  - Water vole.

8.21 Further details of the methods employed and findings of protected species surveys are included in **Appendix 8.1, 8.3 and 8.4**.

Approach to GWDTEs

8.22 The term 'Groundwater Dependent Terrestrial Ecosystem' (GWDTE) refers to wetland habitats that rely on groundwater for their function and viability. The concept evolved from the Water Framework Directive, transposed in Scotland through the Water Environment and Water Services Act (2003) (WEWS), and subsequent SEPA guidance.[8]

8.23 The guidance sets out those vegetation communities that at least potentially rely upon groundwater. Classification as a GWDTE does not convey any ecological value on a habitat; indeed, many GWDTE habitats are common and widespread across Scotland, e.g. rush mire. However, while GWDTE habitats are not necessarily of specific ecological value, the WEWS Act, and subsequent guidance, requires GWDTEs to be protected wherever possible.

8.24 SEPA guidance requires potential effects on GWDTEs to be fully assessed and where necessary, mitigated. It is important to understand this context because to focus the assessment on the ecological value of GWDTEs is to misunderstand their use. The assessment of potential effects should also focus on GWDTEs as a proxy for groundwater movement, i.e. the assessment should focus on the effect of the GGRP upon the quality and quantity of groundwater supporting the GWDTE. Notwithstanding this, the ecological value of GWDTEs in their own right must also be considered, which is completed through the assessment of potential effects on habitats.

Assessing Significance

8.25 The assessment reported in this chapter is based on methods described in best practice guidelines[6].

8.26 The guidelines recommend that the 'importance' of a given site in relation to each of its ecological features is determined within a defined geographical context. This, alongside the qualifying criteria and associated geographical context as it relates to the GGRP is described in **Table 8.3**.

[9] Available at https://sitelink.nature.scot/map (Accessed 10/10/22)
[10] Available at https://www.dumgal.gov.uk/media/19849/LDP2-Local-Nature-Conservation-Sites-technical-paper/pdf/Local_Nature_Conservation_Sites_Jan2018.pdf (Accessed 10/10/22)
[11] Available at https://map.environment.gov.scot/sewebmap/ (Accessed 10/10/22)
[12] Available at https://scotland-spatial.nbnatlas.org/# (Accessed 10/10/22)

Table 8.3: Ecological Importance Criteria

Ecological Importance	Qualifying Criteria	Relevant Geographical Context
International/European	A Study Area is considered of international/European ecological importance when it supports: An internationally designated site or candidate site (SPA, pSPA, Special Area of conservation (SAC), cSAC, pSAC, Ramsar site, Biogenetic Reserve) or an area which SNH has determined meets the published selection criteria for such designations, irrespective of whether or not it has yet been notified. A viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller areas of such habitat which are essential to maintain the viability of that ecological resource at an international scale. >1% of the European resource of an internationally important species, i.e. those listed in Annex 1, 2 or 4 of the Habitats Directive.	Europe
UK/National	A Study Area is considered of UK/National ecological importance when it supports: A nationally designated site (SSSI, National Nature Reserve, Marine Nature Reserve) or a discrete area which SNH has determined meets the published selection criteria for national designation irrespective of whether or not it has yet been notified. A viable area of a priority habitat referenced in the UK Post-2010 Biodiversity Framework or Scottish Biodiversity List, or smaller areas of such habitat which are essential to maintain the viability of that ecological resource at a national scale. >1% of the National Resource of a regularly occurring population of a nationally important species, i.e. a priority species listed in the Scottish Biodiversity List and/or Schedules 1, 5 (S9 (1, 4a, 4b)) or 8 of the Wildlife and Countryside Act.	UK/Scotland
Regional	A Study Area is considered of regional ecological importance when it supports: Non-statutory designated sites that represent a scale, or habitat/species assemblage, of importance across a number of counties within a recognised regional context. Non-designated sites that the designating authority has determined meet the published ecological selection criteria for designation, particularly large or represent habitat or species assemblages of importance at a regional level. Viable and extensive areas of legally protected habitat/habitat identified in Regional Biodiversity Action Plan (BAP) or County BAP, or smaller areas of such habitats that are essential to maintaining the viability of the resource at a regional scale. Any regularly occurring population of an internationally/nationally important species or a species in a relevant policy which is important for the maintenance of the regional meta-population. Semi-natural ancient woodland greater than 0.5ha.	South-west Scotland
County	A Study Area is considered of county ecological value when it supports: County sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, e.g. Local Nature Conservation Sites. Viable areas of legally protected habitat/habitat identified in Council BAP, or smaller areas of such habitats that are essential to maintaining the viability of the resource at a county scale. Any regularly occurring population of an internationally/nationally important species or a species in a relevant County BAP which is important for the maintenance of the county meta-population. Semi-natural ancient woodland smaller than 0.5ha. Networks of species-rich hedgerows.	Dumfries and Galloway
Local	A Study Area is considered of local ecological value when it supports: Commonplace and widespread semi-natural habitats, e.g. scrub, poor semi-improved grassland, coniferous plantation woodland, intensive arable farmland, which, despite their ubiquity, contribute to the ecological function of the local area (habitat networks, etc.); Very small, but viable, populations of internationally/nationally important species or a species in a relevant UK/Council BAP which is important for the maintenance of the local meta-population. Networks of linear features, including species-poor hedgerows	Study Area plus a 5km radius
Study Area	A Study Area is considered of Study Area ecological value when it supports: Habitats of limited ecological value, e.g. amenity grassland, but which contribute to the overall function of the application site's ecological functions.	Study Area

8.27 Following the assessment of Ecological Importance, likely effects are identified. This process involves the study of the GGRP construction methods and timescales with a view to identifying the pathways by which ecological features may be affected. Design and programme information presented in **Chapter 4** have informed this stage of the assessment. Similarly, embedded mitigation and sensitive design consideration, also known as 'Good Practice Measures'[6] have been reviewed. Further information on these measures is provided in later sections of this chapter.

8.28 Potential effects can be grouped into the following broad types:

- **Direct habitat loss**
- **Severance** (disruption of ecological processes through fragmentation, isolation and barriers).
- **Mortality** (loss of life to faunal species or populations, through direct contact or following pollution events, etc.).
- **Disturbance** (disruption to ecological processes through increased human presence, noise, vibration, etc.).

8.29 Details of the potential effects that are scoped in to and out of this assessment are provided above.

8.30 To determine significance, effects are considered with reference to the following parameters:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Frequency; and
- Reversibility.

8.31 A degree of confidence, based on professional judgement, is used to assess the likelihood of an effect occurring. The following scale is referred to:

- Certain/near-Certain: probability estimated at ≥95%;

- Probable: probability estimated at 50 – 90%;
- Unlikely: probability estimated at 5 – 50%; and
- Extremely unlikely: probability estimated at ≤ 5%.

8.32 Based on the combination of the parameters outlined in Paragraphs 8.28 – 8.30 and likelihood, an effect is then considered to be either **significant** or **not significant** in EcIA terms. An effect is considered to be significant if it has the potential to affect the 'integrity' of a habitat or the 'conservation status' of a species. The Conservation Status of a habitat or species is determined by the sum of the influences acting on a species or habitat that may affect its extent, such as the:

- Structure and functions of the habitat.
- Distribution of the habitat and its typical species present within a given geographical area.
- Abundance and distribution of a species within a given geographical area.

8.33 Technical definitions of integrity and conservation status follow CIEEM guidelines[6].

8.34 The significance of an effect is considered within the context of the geographically-based ecological importance of the feature. For example, an effect on a habitat of local ecological importance is considered to be *significant, or not significant, at a Local level*. In some cases, where only a small part of an ecological feature is affected, the potential effect may be significant at a lower geographical level; for example, where only a small part of a habitat of local ecological importance is affected, the effect may only be *significant at a Study Area level*.

8.35 The EIA process requires that the significance of an effect is described as either '*major*, '*moderate'*, '*minor'* or '*negligible/none'*. However, best practice guidance in relation to ecological impact assessment[6] (EcIA) does not support this approach, due to the complexities of ecological processes.

8.36 To allow the potential effects identified in this EcIA to be considered alongside those addressed in other topic chapters, a 'translation' from EcIA significance to EIA significance has been undertaken, as set out in **Table 8.4** below. The translation relates the geographically-based significance of ecological effects (identified through the EcIA process) to the standard terminology for significance presented in other chapters (following the EIA process), allowing direct comparison.

8.37 Effects of **Major** and **Moderate** significance are considered 'significant' in the context of the EIA Regulations

Table 8.4: Ecological Effect 'Significance' Translation to EIA Terminology

EIA Significance Terminology	Corresponding EciA Effect Significance Terminology
Major	International/European
	UK/National
Moderate	Regional
	County
Minor	Local
	Study Area
Negligible/None	Not Significant

Identifying Mitigation and Assessing Residual Significance

8.38 Where likely significant effects are identified, mitigation measures are identified to avoid or reduce their significance or, where necessary, compensate for the effect. The standard mitigation hierarchy applies, whereby the following sequential measures are considered:

- **Avoidance**: the effect is avoided by removing its pathway, e.g. by changing the route of an access track or the positioning of a tower;
- **Mitigation**: measures are taken to reduce the significance of the effect, e.g. vegetation clearance is undertaken outwith the nesting bird season; and
- **Compensation**: where the effect cannot be reduced, alternative action is taken elsewhere within the Study Area, e.g. new planting proposals to replace lost vegetation, etc.

8.39 Using the assessment method described above, significant effects are re-assessed on the basis that mitigation measures will be applied, and a residual significance identified. An important part of this step is the identification of the likely success, or confidence in, the proposed mitigation measure.

Assessment Limitations

8.40 Ecological surveys are limited by a variety of factors which affect the presence of flora and fauna; for example, climatic variation, season, and species behaviour may mean that evidence of protected species is not always recorded during a survey. This does not mean that a species is absent; hence the surveys also record and assess the ability of habitats to support species. All ecological surveys provide a snapshot of activity for the purposes of design and assessment and cannot be used for long-term interpretation i.e. prior to construction.

8.41 No bat roost surveys have been undertaken of individual trees to be removed during the construction phase as, as whilst wherever possible, the removal of mature trees has been avoided through the design process, the appointed contractor may require to change felling, trimming or pruning requirements to respond to site conditions when works commence. Therefore, bat roost surveys will be undertaken prior to the commencement of construction if they are required. If bat roosts are identified, the bat roost licensing process will be engaged. This is considered an appropriate response as bat tree roosts can often be transient and open to considerable change due to the effects of weather on suitable features.

8.42 It is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant environmental impacts on biodiversity. A further account of constraints is provided in **Appendices 8.1-8.4**.

Existing Conditions

8.43 A series of desk studies and field surveys were undertaken between August 2019 and September 2022 to establish the ecological baseline of the Study Area. A summary of these is provided within this Section. Further details are provided within **Appendices 8.1-8.4**.

Designated Sites

8.44 There are no statutory designated sites designated for nature conservation purposes relevant to this assessment present within the Study Area, however is one statutory designated site (<5km) are present within the Study Area:

- North Lowther Upland SSSI – Is located approximately 1.7km to the north-east at its closest point. This is notified for its assemblage of upland habitats (including blanket bog, wet and dry heath and acid grassland).
- Muirkirk Uplands SSSI – Is located approximately 1.7km to the north-west at its closest point. This site is notified for its upland assemblage and blanket bog.

8.45 The Muirkirk and North Lowther SPA is also located approximately 1.7km from the Study Area at the closest point. This is designated for ornithological interest and therefore is considered in **Chapter 9**.

8.46 **Figure 8.2** shows the location of the location of the these sites in relation to the development.

8.47 There is no structural or functional connectivity between the terrestrial ecology of the GGRP and these statutory designated sites, therefore no further assessment is required. Further information is provided within **Appendix 8.1**.

8.48 There are no non-statutory designated sites within 2km of the Study Area.

Habitats and Vegetation

8.49 **Appendix 8.2** provides detailed accounts of the habitats and vegetation present within the Study Area. **Figure 8.3** and **Figure 8.4** shows Phase 1 Habitat Survey and National Vegetation Classification Survey mapping.

8.50 The Study Area is dominated by commercial coniferous plantation woodland, improved/ marshy grassland grazed pasture with localised mosaics of modified wet heath and acid grassland. Other habitats present within the Study Area include a network of small watercourses, quarry, bare ground/ hard standing and buildings.

8.51 **Table 8.5** provides a summary of the habitat composition of the Study Area.

Table 8.5: Habitats Recorded within the Study Area

Phase 1 Habitat – Primary Habitat Code	Phase 2 Habitat Survey – Secondary Habitat Code	NVC Code (where appropriate)	Total Habitat Area (Ha)	Proportion of Study Area (%)
A1.1.1 Broadleaved woodland (semi-natural)*	B4 Improved grassland, G2 Running water	W11 *Quercus petraea-Betula pubescens-Oxalis acetosella* woodland	7.354	1.044%
A1.1.2 Broadleaved woodland (plantation)*	A2.1 Scrub (dense/continuous), B2.2 Neutral grassland (semi-improved), B5 Marshy grassland	N/A	20.909	2.969%
A1.2.2 Coniferous plantation woodland	A1.1.2 Broadleaved woodland (plantation), B2.2 Neutral grassland (semi-improved), B5 Marshy grassland	N/A	159.021	22.579%
A1.3.1 Mixed Woodland (Semi-natural)	G2 Running water	N/A	1.079	0.153%
A1.3.2 Mixed woodland (plantation)	B5 Marshy grassland	N/A	16.404	2.329%
A4.2 Felled Coniferous woodland	B2.2 Neutral grassland (semi-improved), C1.1 Bracken (continuous), D6 Wet heath/acid grassland	N/A	17.271	2.452%
B1.2 Acid Grassland (Semi-improved)	C1.2 Bracken (scattered)	U2 *Deschampsia flexuosa* grassland	2.556	0.363%
B1.2 Acid grassland/ C1.2 Bracken mosaic	N/A	N/A	11.056	1.570%
B2.2 Neutral Grassland (Semi-improved)	B5 marshy grassland, A3.3 Mixed scattered trees	N/A	12.737	1.809%
B4 Improved Grassland	N/A	N/A	12.176	1.729%
B5 Marshy Grassland	A3.1 Broadleaved scattered trees, A3.1 Broadleaved scattered trees, A3.3 Mixed scattered trees	M23 *Juncus effusus/ acutiflorus-Galium paluste* rush-pasture	223.260%	31.701%
	N/A	MG10 Holcus lanatus-Juncus effusus rush-pasture		
	B1.2 Acid grassland (semi-improved), B2.2 Neutral grassland (semi-improved), D6 Wet heath/acid grassland	N/A		
D2 Wet dwarf shrub heath	N/A	M15 *Scirpus cespitosus-Erica tetralix* wet heath	0.230%	0.033%
		U5 *Nardus stricta-Galium saxatile* grassland	0.230%	0.033%
D6 Wet Heath/ Acid Grassland	N/A	M15 *Scirpus cespitosus-Erica tetralix* wet heath	32.036	4.549%
		U5 *Nardus stricta-Galium saxatile* grassland	32.036	4.549%
		N/A	6.328	0.899%
	B5 Marshy grassland	N/A	3.425	0.486%
E1.7 Wet Modified Bog	A3.1 Broadleaved scattered trees	M25 *Molina caerulea-Potentilla erecta* mire	34.880	4.953%
G2 Running Water	N/A	N/A	1.700	0.241%
I 2.1 Quarry	N/A	N/A	0.185	0.026%
J1.1 Arable	N/A	N/A	95.222	13.521%
J3.6 Buildings	N/A	N/A	0.647	0.092%
J4 Bare Ground and Hard Standing	N/A	N/A	13.534	1.922%
Total			**704.273**	**100%**

8.52 The majority of habitats within the Study Area are considered to be common and widespread within the context of the wider landscape and are scoped out of the assessment. However, **Table 8.6** provides further details of those habitats of conservation concern identified during field surveys to be taken forward for assessment.

Table 8.6: Habitats of Conservation Concern

Phase 1 Habitat Type	NVC Code where appropriate	Policy Priority	Description	Total Habitat Area (Ha)
A1.1.1 and A1.1.2 Broadleaved woodland (semi-natural and plantation)	N/A	Dumfries and Galloway Biodiversity Action Plan	Broadleaved woodland plantation cover is primarily limited to the peripheries of the railway line and the River Nith to the north and Forestry Land Scotland (FLS) Corserig commercial coniferous plantation at the centre of the Study Area. In general, these habitats are typical of the surrounding landscape.	28.2635
B1 Acid Grassland	U2 *Deschampsia flexuosa* grassland	Scottish Biodiversity List	Small areas of acid grassland habitat are present to the south of Kello Water. In places, this habitat was encroached by small areas of bracken. This habitat is dominated by Wavy hair-grass, Matgrass, Heath bedstraw and Bracken.	1.2780
B5 Marshy Grassland	M23 *Juncus effusus/ acutiflorus-Galium paluste* rush-pasture	Dumfries and Galloway Biodiversity Action Plan, Potential GWDTE[8]	The marshy grassland within the Study Area varies little by location. It is dominated by Soft rush, Sharp flowered rush and common marsh bedstraw. This habitat is subject to extensive sheep grazing throughout the Study Area. The NVC communities present are comprised of poor quality marshy grassland, that is heavily influenced by historic and current agricultural practices (including drainage and grazing).	19.1179
	MG10 *Holcus lanatus-Juncus effusus* rush-pasture			32.5262
D2 Wet dwarf shrub heath	M15 *Scirpus cespitosus-Erica tetralix* wet heath	Annex 1 habitat (M15), Scottish Biodiversity List	Wet dwarf heath habitat is confined to a small area to the south of the Study Area, to the east of FLS Euchanhead plantation. The NVC communities present are comprised of poor quality heath, that is heavily influenced by historic and current agricultural practices (including drainage and grazing). M15 *Scirpus cespitosus-Erica tetralix* wet heath is classified as Annex 1 habitat, however the habitat was very degraded with the presence of drains up to 2m deep.	0.2296
	U5 *Nardus stricta-Galium saxatile* grassland			0.2296
D6 Wet Heath/ Acid Grassland	M15 *Scirpus cespitosus-Erica tetralix* wet heath	Annex 1 habitat (M15), Scottish Biodiversity List, Dumfries and Galloway Biodiversity Action Plan, potential GWDTE	Wet Heath confined to the south of the Study Area, to the east of FLS Euchanhead plantation. The NVC communities present are comprised of poor quality heath, that is heavily influenced by historic and current agricultural practices (including drainage and grazing). M15 Scirpus cespitosus-Erica tetralix wet heath is classified as Annex 1 habitat, however the habitat was very degraded	32.0358
	U5 Nardus stricta-Galium saxatile grassland			32.0358
			with the presence of drains up to 2m deep.	
E1.7 Wet modified bog	M25 *Molina caerulea-Potentilla erecta* mire	Scottish Biodiversity List. Dumfries and Galloway Biodiversity Action Plan, Potential GWDTE	An area of wet modified bog is present to the north of Polmeur Burn within the Study Area. The NVC communities present are comprised of poor quality bog and mire, that is heavily influenced by historic and current agricultural practices (including drainage and grazing).	24.1796
	N/A			10.6999
G2 Running water	N/A	Scottish Biodiversity List. Dumfries and Galloway Biodiversity Action Plan.	There are five main water courses within the Study Area: River Nith, Kello Burn, Thwater Burn, Polmeur Burn and Euchan Water. In addition there is also a network of small tributaries and drainage channels within the Study Area. The river system supports a wide variety of flora and fauna.	0.0015
Total				**180.5976**

GWDTE

8.53 Marshy grassland and wet modified bog habitats include NVC communities M23, MG10, M15, U5 and M25 that could indicate groundwater dependency. These habitats were generally very degraded and subject to heavy grazing. In addition, the presence of drains of up to 2m deep compromised the health of the heathlands and modified bog within the Study Area. **Appendix 8.2** and **Table 8.7** provide the results of habitat and vegetation community surveys.

8.54 Surveys and assessment of data by both ecologists and hydrologists have concluded that due to their topographic and hydrological setting, none of these habitat were considered to be GWDTEs. Further information on the hydrological conditions within the study Area are included in **Chapter 7.**

Protected Species

8.55 Protected species have been scoped out of the assessment, on the basis that activity levels were very low. It is considered unlikely that the development will have significant effects on protected species. The CEMP will address legislative requirements to protect protected species during construction. This section presents a summary of the baseline conditions in the Study Area for completeness. Detailed accounts of the protected species evidence identified during surveys are provided in **Appendix 8.3** and **8.4**

8.56 The following provides a summary of the baseline conditions for protected species within the Study Area, these should be read in conjunction with **Figure 8.3**

Badger

8.57 The habitats within the Study Area were generally sub-optimal as ground conditions were generally wet and current land uses reduce the suitability for the species. However, it was not possible to access all areas of the forestry, therefore there may be some localised drier areas that exist within the coniferous plantation which badger could excavate setts.

8.58 Two non-breeding badger setts were identified within the Study Area. Further information is provided in **Appendix 8.4 (Confidential).**

8.59 The low levels of badger activity recorded throughout the Study Area suggests that the area is not a core component of any badger territory.

Bats

8.60 The habitats present within the Study Area provided sub-optimal commuting and foraging resources for bats. A Preliminary Bat Roost Assessment (PBRA) identified that there were very few roosting opportunities within the Study Area for bats. A stone cottage was identified to the north of the Study Area as having moderate bat roost potential, however the project design has avoided impacting this structure, therefore further survey was not required. A small number of trees were also identified as having either Low or Moderate potential for roosting bats, however these are unlikely to be affected and no further surveys were required. Further information is provided in **Appendix 8.3**.

8.61 The lack of suitable roosting resources and optimal foraging habitats indicated that this is not a core habitat for the meta population of bats that may be present in the wider area.

Otter and Water Vole

8.62 There are a number of watercourses and drainage ditches within the Study Area. The watercourses and drainage channels within the Study Area generally provide suitable sheltering, commuting and foraging resources for otters and water voles. However, the bankside vegetation was poached and trampled by livestock in many locations. The fast flow, particularly on the Rvier Nith and Kello Burn largely precludes water vole. It is recognised that the drainage channels present within the commercial coniferous woodland plantation are likely to periodically dry out therefore the suitability of these areas is reduced for both otter and water vole.

8.63 The field survey identified one otter hover on the Kello Burn and spraint recorded at five separate locations within the central section of the proposed route.

8.64 Field surveys identified several water vole burrows on the Euchan Water and on a drainage channel to the north of Kello Burn. Latrines were also recorded in the vicinity of these burrows.

8.65 Further information is provided in **Appendix 8.3**.

8.66 The Kello Burn has been identified as an otter territory; however the development design incorporates a series of standard good practice measures which will retain and protect this water course. Refer to **Chapter 4, Chapter 7** and **Appendix 3.3** for further details of embedded mitigation measures adopted.

8.67 Water vole territories were identified within an un-named water course approximately 650m to the north of Euchan Water the south of the Study Area, however the development design has retained and implemented standard good practice which will protect these areas. Refer to **Chapter 4, Chapter 7** and **Appendix 3.3** for further details.

Red Squirrel and Pine Marten

8.68 Central Dumfries and Galloway is often considered a 'hot spot' for red squirrel, which is normally associated with the County's extensive coniferous forestry habitats. The Study Area offers suitable habitat for red squirrel and pine marten, primarily in the form of broadleaved and coniferous plantation woodland, which offers sheltering and foraging opportunities. However due to the commercial function of the coniferous plantation within the Study Area, the suitability of this habitat is reduced.

8.69 Although no dreys or dens were identified during surveys, foraging remains of red squirrel were recorded at several locations in the Study Area, within the Euchanhead Plantation. One single record of feeding remains of pine marten were identified in the same area. Further information is provided in **Appendix 8.3**

8.70 Field signs recorded were of low density and were confined to areas of commercial forestry plantation that have an inherent level of disturbance present due to the nature these operations. The lack of dreys identified indicates that this area is not a core habitat for the meta-population within the area.

Future Baseline in the Absence of the Development

8.71 Ecological features are rarely static in their extent, distribution and condition. Habitats and species populations are dynamic and so the prediction of future baseline is complex.

8.72 However, in the absence of the GGRP it is likely that the commercial coniferous and broadleaved woodland plantations that dominate a large proportion of the Study Area would continue to be subject to their existing Forest Management Plans. This would involve extensive felling and re-stocking which, like the GGRP, have the potential to affect the protected species assemblages discussed in this chapter.

8.73 In relation to lowland agricultural habitats, it is anticipated that agricultural land use will persist, limiting opportunities for habitat enhancement or protected species range expansion.

8.74 The predicted effects of climate change are also likely to influence the future ecological status of the Study Area. Drawing on The UK Climate Projections CP18,[13] which generally predicts hotter, drier summers and milder, wetter winters, it is likely that ecological features will be subject to:

- An increase in invasive species diversity and range.
- Changes to vegetation assemblages.
- Range contraction/expansion of faunal species.

Project Design Considerations

LUC's Ecologists have worked closely with the design team to advise on the ecological constraints present within the Study Area to inform the routing of the GGRP project, this has included:

- Providing information of the presence of NVC habitats associated with GWDTE habitats to inform peat assessments and siting of towers, new sub-station and access tracks.
- Applying a 20m buffer zone around water courses to retain bank and instream vegetation.
- Applying appropriate buffer zones around sheltering places of protected species.

Infrastructure Location Allowance

8.75 As detailed in **Chapter 3** and **4**, a 50m infrastructure location allowance (ILA) is included as part of the S37 application. Situations in which micro-siting could be applied, in relation to ecological constraints, include breeding shelters of protected species (e.g. badger main setts) or where works could cause severe damage to habitats of conservation concern. In many situations, the use of an ILA will be determined after pre-works surveys have been undertaken, so as to be based on the most relevant and up-to-date information.

Embedded Mitigation

8.76 In determining the potential significant effects of the GGRP on ecological features, the assessment must consider standard Good Practice Measures adopted during the construction process. Measures of relevance to the construction of the GGRP are described in **Chapter 4** and **Appendix 3.3** and include:

- The development and application of a Construction Environment Management Plan (CEMP), which will set out (amongst others) guidance on compliance with nature conservation legislation and policy;
- Production of and compliance with a Pollution Prevention Plan (PPP) and adherence to Guidelines on Pollution Prevention (GPPs), which will significantly reduce the likelihood and severity of pollution events;
- Production of and compliance with Construction Method Statements (CMS);
- Production of and compliance with a Water Protection Plan (WPP), and a construction site licence (CSL) being obtained from SEPA and thereafter complied with. This will include the application of appropriate buffers around watercourses, which will protect riparian habitat while reducing disturbance and the likelihood of pollution events;
- Production of and compliance with a Peat Management Plan to set out a number of good practice measures in relation to minimising disturbance and the management of peat during construction.
- The use of temporary access roads and 'brash mats' to reduce potential for soil erosion;
- Pre-construction surveys to be completed to confirm the status of protected species prior to works commencing; and

[13] https://www.metoffice.gov.uk/research/collaboration/ukcp

- The appointment of an Advisory Environmental Clerk of Works (ECoW) to advise, monitor and report on compliance with relevant legislation, policy and project specific mitigation during construction.

8.77 With landowner agreement, SPEN also will seek to replant certain sections of the wayleave corridor and the wayleave corridor edge with low growing shrub species, targeted at specific areas where there is deemed to be potential environmental benefit in terms of creating suitable habitat for wildlife, which may help to deliver biodiversity (ecological/ornithological) measures. Further details are provided in **Chapter 3** and **Chapter 4** and a plan showing typical wayleave treatment is provided as **Appendix 4.3: Wayleave Treatment Indicative Planting**. As replanting these areas requires landowner agreement, this is subject to confirmation following construction and is not considered to form part of committed mitigation for the purposes of this EIA Report.

Assessment of Effects

8.78 The assessment of effects is based on the development description as outlined in **Chapter 4**.

Identification of Ecological Importance

8.79 **Table 8.7** provides a summary of the ecological features scoped into the assessment (as defined in paragraphs 8.5-8.10), along with an assessment of their Ecological Importance. Note that only habitats of conservation concern have been scoped into further assessment.

Table 8.7: Ecological Importance Assessment

Ecological Feature	Ecological Importance of Study Area for Feature	Rationale
Habitats of Conservation Concern		
Broadleaved Woodland	Study Area	The Study Area's broadleaved woodland resource is limited to the peripheries of the current commercial forestry blocks and peripheries of the railway line and the riparian corridor associated with the River Nith. Broad leaved woodlands are recognised in the Local Biodiversity Action Plan. The very small scale nature of the overall resource means that it is only of Ecological Importance at the Study Area level, i.e. it does not contribute significantly to woodland resources beyond that geographical scale.
Acid Grassland	Study Area	The Study Area's acid grasslands are present in relatively localised areas to the south of Kello Water. These habitats are limited to those species that can withstand grazing pressure. While acid grassland is recognised in the Local Biodiversity Action Plan, the Study Area's resource is broadly similar to the wider landscape's plentiful grazed grassland resource, therefore this overall consideration of this resource suggests it is only of ecological importance at the Study Area level.
Marshy Grassland	Study Area	The Study Area's marshy grassland comprises areas of rough pasture. Species assemblages are limited to those species that can withstand grazing pressure and very few forbs were identified. While marshy grassland is recognised in the Local Biodiversity Action Plan, the Study Area's resource is broadly similar to the wider landscape's plentiful grazed marshy grassland resource, therefore this overall consideration of this resource suggests it is only of ecological importance at the Study Area level.
Wet dwarf shrub heath	Study Area	The Study Area's wet dwarf heath is limited to a very small area to the east of Euchanhead plantation. M15 Scirpus cespitosus-Erica tetralix wet heath is classified as Annex 1 habitat. However, the habitat was very degraded with the presence of drains up to 2m deep and is comprised of poor quality heath, that is heavily influenced by historic and current agricultural practices (including drainage and grazing). The Study Area's resource is broadly similar to the wider landscape's, therefore the overall consideration of this resource suggests it is only of ecological importance at the Study Area level.
Wet Heath/ Acid Grassland	Study Area	The Study Area's wet heath is limited to a small area to the east of Euchanhead plantation. M15 Scirpus cespitosus-Erica tetralix wet heath is classified as Annex 1 habitat. However, the habitat was very degraded with the presence of drains up to 2m deep and is comprised of poor quality heath, that is heavily influenced by historic and current agricultural practices (including drainage and grazing). The Study Area's resource is broadly similar to the wider landscape's, therefore the overall consideration of this resource suggests it is only of ecological importance at the Study Area level.
Wet modified bog	Study Area	While wet modified bog is recognised in the Local Biodiversity Action Plan, the Study Area's resource is very degraded and is subject to grazing pressure, therefore this overall consideration of this resource suggests it is only of ecological importance at the Study Area level.
Watercourses (Running water)	Local	The Study Area includes four main water courses, these have some limited ecological importance as they offer some habitat connectivity to the surrounding area. Water courses are recognised on the Scottish Biodiversity List and Local Biodiversity Action Plan. These habitats are considered to be of ecological importance at the Local level.

Construction Effects

8.80 Having identified the Ecological Importance of the Study Area for scoped-in ecological features, the sections below consider the significance of likely effects during the construction stage of the project. Construction effects are considered in relation to 'Direct Habitat Loss' and 'Severance', which may arise from land take associated with construction, and the subsequent fragmentation of habitat.

8.81 **Table 8.8** provides details of the scale of habitat loss associated with the development.

Table 8.8: Habitat Loss Calculations

Phase 1 Habitat Survey Code	NVC Code	Total Area within Study Area (Ha)	Area to be Permanently Lost (Ha)	% of Resource within Study Area Lost
A1.1.1 Broadleaved woodland (semi-natural) [14]	W11 *Quercus petraea-Betula pubescens-Oxalis acetosella* woodland	7.3542	0.0000	0.0000%
A1.1.2 Broadleaved woodland (plantation) [14]	N/A	20.9094	0.0000	0.0000%
B1.2 Acid Grassland (Semi-improved)	U2 *Deschampsia flexuosa* grassland	1.2780	0.0000	0.0000%
B5 Marshy Grassland	M23 *Juncus effusus/ acutiflorus-Galium paluste* rush-pasture	19.1179	0.1851	0.9683%
	MG10 *Holcus lanatus-Juncus effusus* rush-pasture	32.5262	0.9209	2.8312%
D2 Wet dwarf shrub heath	M15 *Scirpus cespitosus-Erica tetralix* wet heath	0.2296	0.0190	8.2960%
	U5 *Nardus stricta-Galium saxatile* grassland	0.2296	0.0190	8.2960%
D6 Wet Heath/ Acid Grassland	M15 Scirpus cespitosus-Erica tetralix wet heath	32.0358	0.3218	1.0045%
	U5 *Nardus stricta-Galium saxatile* grassland	32.0358	0.3218	1.0045%
E1.7 Wet Modified Bog	M25 *Molina caerulea-Potentilla erecta* mire	24.1796	0.2999	1.2405%
	N/A	10.6999	0.3185	2.9764%
G2 Running Water	None	0.0015	0.0000	0.0000%
			Total Area of Habitats of Concern to Be Permanently Lost (Ha)	Overall % of Resource within Study Area Lost
Total		**180.5976**	**2.4061**	**1.3323%**

8.82 Overall the development will result in the permanent loss of approximately 1.33% of the habitats of conservation concern that are present within the Study Area.

8.83 In considering the above, **Table 8.8** assesses the significance of potential effects on habitats of concern.

Table 8.9: Assessment of the Significance of Effects - Habitats of Conservation Concern

Parameter	**Effect**	
	Direct Habitat Loss	Severance
Extent	Permanent direct loss of acid/marshy grassland, dwarf shrub heath and modified bog is limited to a very small proportion of the wider available resource within the Study Area. No watercourse habitats are likely to be lost. No significant negative effect at Study Area level as a result of direct or indirect loss of Habitats of Conservation Concern is anticipated.	The development design includes a series of temporary access tracks which allows access to tower locations that have a very limited footprint. Vegetation removal will be very localised, temporary in nature and reinstated once works are complete. In addition, the risk of severance of water courses have been avoided due to the accommodations included within the project design. No habitats will not become severed or fragmented from the wider habitat resource. No significant negative direct or in-direct effect at Study Area level as a result of severance or fragmentation of Habitats of Conservation Concern.
Magnitude	The localised loss of acid grassland, marshy grassland and wet modified bog will not result in changes to the viability of these habitats beyond the Study Area level.	The magnitude of the potential severance of habitats is very small due to the limited project footprint.
Duration	It is certain that there will be permanent direct habitat loss for tower locations and Glenmuckloch Sub-station locations only (See details above). No significant negative effect as a result of the duration of direct habitat loss at Study Area level.	It is unlikely that there will be permanent severance of habitats at tower locations and Glenmuckloch Sub-station locations .(See details above). No significant negative effect as a result of the duration of severance at Study Area level.
Frequency	Direct habitat loss will be a one time occurrence. Not significant at Study Area Level.	No severance expected as a result of the development. Not significant at Study Area level.
Reversibility	Irreversible habitat loss for tower locations and Glenmuckloch Substation locations only. None.	No severance expected as a result of the development. None.
Likelihood	It is certain that there will be direct habitat loss of a small proportion of the Habitats of Conservation Concern within the Study Area. Not significant at Study Area level.	It is unlikely that there will be severance of Habitats of Conservation Concern at Study Area level. Not significant at Study Area level.
Significance (EcIA)	**Not significant at Study Area level.**	**Not significant at Study Area level.**

[14] It should be noted that, in relation to the areas of broadleaved woodland, the figures presented within this chapter differ from those noted in Chapter 4, which sets out the information on the existing forestry and felling required, due to differences in the methodology used to calculate the affected areas in relation to the effects being assessed. Both chapters have been informed by field surveys. In the case of the ecology, the assessment does not include loss of bread leaved and coniferous forestry or semi-natural broadleaved woodland habitat within wayleaves as a result of operation of the GGRP.

Parameter	Effect	
	Direct Habitat Loss	Severance
Conversion (EIA Regs)	**None**	**None**

Proposed Mitigation

8.84 The assessment has confirmed that there are no significant effects on habitats of concern as a result of the construction of the development, therefore specific mitigation is not required.

Residual Construction Effects

8.85 There are no likely significant residual effects.

Further Survey Requirements and Monitoring

8.86 Monitoring requirements are limited to pre-construction surveys. These will form part of the role of the ECoW, who will be appointed, and their duties developed post-consent and in consultation with relevant stakeholders.

Summary of Significant Effects

8.87 **Table 8.10** below summarises the likely effects of the GGRP on ecology.

Table 8.10: Summary of Effects - Ecology

Receptor	Effect	Mitigation Proposed	Significance of Residual Likely Effect (EcIA)	Significance of Residual Likely Effects (EIA Regs)
Habitats of Conservation Concern	Direct Habitat Loss and Severance	None	Not Significant	None