

7.0 ECOLOGY

Introduction

- 7.1 This chapter of the ES assesses the likely significant effects of the Proposed Development in terms of ecology and is supported by **Appendices 7.1 to 7.4**.
- 7.2 The chapter describes: the assessment methodology; the baseline conditions currently existing at the Assessment Site and its surroundings; the likely significant environmental effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed. This chapter has been prepared by URS.

Legislation and Planning Policy

Introduction

- 7.3 The ecological impact assessment has been undertaken within the context of relevant planning policies, guidance documents and legislative instruments. These are summarised below.
- 7.4 It is important to appreciate that the level of protection given to a particular species or habitat through national or international legislation does not necessarily relate to the evaluated level of importance of that receptor to nature conservation. For example species may be widespread or common nationally, but of scarce occurrence in a particular county (for example, it might be at the limit of its geographical range), or conversely a species may also be considered to be rare nationally or internationally, but be abundant within particular areas.
- 7.5 Legislation may have been enacted primarily for animal welfare purposes, or may be open to considered interpretation. For example, all places used for shelter by bats are protected by a range of national and international legislation. However, a transient roost used infrequently by an individual of a common species of bat is not of the same value to nature conservation as a hibernation site upon which a whole colony of bats may depend.
- 7.6 Consequently, whilst the protection given to specific receptors associated with the Assessment Site might be highlighted within this chapter for its relevance to how the Proposed Development might be constructed or operated, this should not be confused with

the relative level of importance to nature conservation that is separately evaluated and reported.

UK Wildlife Legislation

- 7.7 The Wildlife and Countryside Act, 1981 (as amended) (Ref. 7.1) consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) (Ref. 7.2) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) (Ref. 7.3) in Great Britain. It is complemented by the Wildlife and Countryside (Service of Notices) Act 1985 (Ref. 7.4), which relates to notices served under the 1981 Act and the Conservation of Habitats and Species Regulations 2010 (as amended) (Ref. 7.5), which implement Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) (Ref. 7.6).
- 7.8 The Natural Environment and Rural Communities (NERC) Act 2006 (Ref. 7.7) places an obligation on Local Planning Authorities for the material consideration of species of principal conservation importance, which are listed in Section 41 of the Act.

Planning Policy Context

- 7.9 The Ecological Impact Assessment (EcIA) has been undertaken within the context of relevant planning policies and guidance documents. A summary of those policies relevant to ecology and nature conservation is presented below. Legislation relevant to ecology and Biodiversity Action Plans (BAPs) are summarised and presented as **Appendix 7.1** to this chapter.

National Planning Policy

- 7.10 The Government published the National Planning Policy Framework (NPPF) in March 2012 (Ref. 7.8) which replaced Planning Policy Statement 9 (PPS9) (Ref. 7.9) in providing guidance to Local Planning Authorities when developing their planning policies and when considering planning applications affecting protected habitats, sites and species.
- 7.11 In respect of the natural environment, Section 11 Paragraph 109 of the NPPF states that:

"...the planning system should contribute to and enhance the natural and local environment by:

- Protecting and enhancing valued landscapes, geological conservation interested and soils;*
- Recognising the wider benefits of ecosystem services; and*

- ***Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...***

Regional Planning Policy

North Yorkshire County Council Minerals Local Plan Saved Policies (1997) (Ref. 7.10)

- 7.12 The North Yorkshire County Council Minerals Local Plan is currently in the process of being replaced by the Minerals Core Strategy (Ref. 7.11). This document will set out a new approach to minerals development in the North Yorkshire Minerals and Waste Development Framework (MWDF) plan area, and will set out saved policies from the Local Plan.
- 7.13 There is one saved policy in the Minerals Local Plan, which was adopted in 1997, relating to ecology and nature conservation:
- Policy 4/6a - Nature conservation and habitat protection (local).

Local Planning Policy

North York Moors National Park Authority Adopted Core Strategy and Development Policies (2008) (Ref. 7.12)

- 7.14 The North York Moors National Park Authority has published planning advice in respect of developments potentially affecting biodiversity receptors (Ref. 7.13). The National Park Management Plan sets out strategic policies on the conservation of the natural environment to achieve the statutory purpose to conserve the wildlife, landscape and cultural heritage of the Park. These policies provide the framework for more specific actions in the local Biodiversity Action Plan, and inform the inclusion of policies in the Local Development Framework (LDF).
- 7.15 Adopted core strategy policies in respect of nature conservation that have been saved following a review of policies against the NPPF are summarised below.
- Core Policy A – Delivering National Park Purposes and Sustainable Development. Broad policy that includes a statement on the maintenance and enhancement of the natural environment and conditions for biodiversity and geodiversity; and

- Core Policy C – Natural Environment, Biodiversity and Geodiversity. Policy specifically referring to the need for consideration of impacts of development on protected sites, species and habitats, and to maximise opportunities for the enhancement of biodiversity.

Discussion

- 7.16 A detailed desk study and habitat survey has been undertaken to ensure that all constraints relating to protected sites and protected species have been identified. Where appropriate, mitigation and biodiversity enhancement measures are proposed in the relevant sections of this chapter to ensure that relevant legislation and planning policy is adhered to during the construction, operational and decommissioning and restoration phases of the Proposed Development.

Assessment Methodology

Sources of Information/ Data

Ecological Assessment Guidance Documents

- 7.17 Throughout the investigation, the approach adopted is based upon recognised techniques of ecological survey and impact assessment and published guidance documents for ecological impact assessment (Institute of Environmental Assessment (IEA), 1995 (Ref. 7.14) and Treweek, 1999 (Ref. 7.15)).
- 7.18 The EcIA of the Proposed Development broadly follows guidelines published by the Institute of Ecology and Environmental Management (IEEM) in June 2006 (Ref. 7.16). The guidelines have been endorsed, amongst others, by English Nature (now Natural England), the Environment Agency, the Institute of Environmental Management and Assessment (IEMA), and the Wildlife Trusts.
- 7.19 Whilst the methods used for assessing the significance of likely effects resulting from potential impacts on features of nature conservation importance build on those set out in the IEEM guidelines for EcIA (Ref. 7.16), the assessment also takes account of the professional opinion of URS ecologists, and hence draws from experience of similar EcIA carried out over the past 25 years.

Scoping Study

7.20 In determining the appropriate scope of the baseline data collection and ecological impact assessment, the outcome of consultation with statutory bodies on the Scoping Report for a similar development encompassing the Assessment Site has been taken into account, including responses from North Yorkshire County Council, North York Moors National Park Authority, Natural England and the Environment Agency (see Chapter 2 for more information).

Desk-Based Study

7.21 A desk study was undertaken to identify any statutory and non-statutory protected sites within a 2 km radius, in addition to protected or otherwise notable species within 1 km of the Assessment Site. A summary of the organisations and websites that were contacted/ searched, and the data obtained is provided in **Table 7.1**.

Table 7.1: Summary of information obtained in desk-study

Organisation/ website	Information Obtained
Multi-Agency Geographic Information for the Countryside (MAGIC) website	Statutory designated sites of nature conservation importance Ancient woodland
Joint Nature Conservation Committee (JNCC) website	Citation sheets for international statutory designated sites
Natural England website	Citation sheets for national statutory designated sites
North and East Yorkshire Ecological Data Centre (NEYEDC)	Non-statutory designated sites of nature conservation importance Records of protected/ notable species
North Yorkshire Badger Group	Returned no records
North Yorkshire Bat Group	Bat records
The Forestry Commission	Bird and bat records
Scarborough Bird Club	Bird records

7.22 Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular protected species does not automatically mean that such species do not occur in the study area. Likewise, the presence of records for protected species does not automatically mean that these species still occur within the area of interest or are relevant in the context of the Proposed Development under consideration. However, a desk study does help characterise the baseline conditions, provides context, and can provide valuable background information that would not be gathered on a site visit alone.

Study Area

- 7.23 The study area has been determined based on both the likely extent of any impacts (considering both the nature/ source of the impact and any pathways by which those impacts could affect ecological receptors), and the nature and mobility of the potential receptors themselves. The study area is not a rigid limit, and different receptors are acknowledged to have the potential to be affected at different distances from any particular impact. Consequently, a discretionary approach has been adopted for receptors outside the general study area as appropriate. For example, the nearest European designated sites (North York Moors Special Area of Conservation (SAC) and Special Protection Area (SPA)) have been scoped into the assessment on the basis that the Proposed Development has the potential to affect the habitats/ qualifying features.

Assumptions

- 7.24 Unless otherwise specified, all distances within this report relate to the shortest distance between two described points. For example the distance between the Assessment Site and a designated area is presented as the linear ('as-the-crow-flies') distance between the two closest points on their boundaries. SI (Système Internationale) units are generally used, with the exception of measures where other units are the accepted standard in common use (such as nautical miles and knots when dealing with marine distances and velocities, and feet when considering altitude).
- 7.25 All botanical nomenclature in this document follows that described in Stace's New Flora of the British Isles (Stace, 2010) (Ref. 7.17). In general, for all species, Latin species names are provided at the first reference of that species within the chapter, together with its vernacular name. Thereafter, the species is referred to using only its common name.

Field Survey Methodologies

- 7.26 The scope of the surveys undertaken to inform this assessment and the respective methodologies adopted are summarised in the paragraphs below.

Phase 1 Habitat Survey

- 7.27 A Phase 1 Habitat survey of the Assessment Site was undertaken in accordance with the standard JNCC methodology (JNCC, 2010) (Ref. 7.18) between the 27th and 28th November 2012. The scope of the Phase 1 Habitat survey included land within and immediately

adjacent to the Assessment Site boundary. The presence of notable or invasive plant species was recorded where seasonal survey constraints allowed.

7.28 All habitats within the survey area were appraised for their suitability to support protected and/ or notable species or flora and fauna including statutorily protected species, national and NERC Section 41 Habitats and Species of Principal Importance (Ref. 7.19).

7.29 The scope of the Phase 1 Habitat survey included:

- external inspection and evaluation of any trees and other features for suitability for roosting bats and classification of potential (negligible, low, moderate or high) in accordance with published guidance (Bat Conservation Trust, 2012) (Ref. 7.20), a summary of which is presented in **Appendix 7.4**;
- evaluation of habitat suitability for otter and water vole in accordance with published methodology (Strachan et al 2011) (Ref. 7.21);
- evaluation of habitat suitability for notable species or assemblages of breeding and wintering birds;
- evaluation of habitat suitability for notable species or assemblages of amphibians and reptiles (Herpetofauna Workers Manual, 2012) (Ref. 7.22); and
- evaluation of habitat suitability for notable species or assemblages of invertebrates.

Survey Limitations

7.31 The Phase 1 Habitat survey was undertaken outside the period in which most species are in flower, and therefore does not provide a comprehensive botanical species list. However, given that the Assessment Site lies within commercially managed forestry and an existing well site compound, the potential for any notable or invasive plant species to be present is low. The timing of the Phase 1 Habitat survey is therefore not considered to represent a limitation to the assessment.

Impact Assessment and Significance Criteria

7.32 The following paragraphs describe the EcIA methodology adopted, including evaluation of the nature conservation of receptors, the impacts (either direct or indirect) and the likely significant environmental effects.

7.33 The approach to EcIA is as follows:

- habitats and species that might be affected by the Proposed Development are considered and baseline conditions (both those likely to be present at the time works begin, and for the sake of comparison, those predicted to be present at a set time in the future) are defined through a combination of desk-based study and field survey work;
- the importance of each habitat and species (that is both present and could be affected by the Proposed Development) is evaluated to place their relative biodiversity/ nature conservation value, social/ community value and economic value into context in terms of their international, national, regional or local value. The ecology of the habitats and species present is also considered;
- the changes or perturbations predicted to result as a consequence of the Proposed Development (i.e. impacts), and which could potentially affect habitats or species, are identified and their nature described. Established best-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are described and are taken into account;
- the likely effects (beneficial or adverse) of these impacts on species and their habitats are then assessed, and where possible quantified in terms of their extent, magnitude, duration, reversibility, timing and frequency;
- the likely effects are determined to be either significant or not significant (see **Table 7.5**);
- measures to avoid or reduce any significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines). If necessary, measures to compensate for effects on features of nature conservation importance are also included;
- scope for enhancement is considered where applicable; and
- any residual effects of the Proposed Development are reported.

Evaluation of Receptor's Importance to Nature Conservation

7.34 The relative importance or value of potential receptors to nature conservation has been evaluated in accordance with the IEEM guidelines (2006) (Ref. 7.16).

Biodiversity Value

7.35 In order to determine the relative biodiversity value of an ecological feature, certain characteristics have been used. These characteristics are outlined in **Table 7.2** below.

Table 7.2: Characteristics used to assess biodiversity value

Characteristics used to identify ecological resources or features likely to be important in terms of biodiversity*
Animals or plant species, subspecies or varieties that are rare or uncommon, internationally, nationally or more locally.
Ecosystems and their component parts that provide the habitats required by the above species, population and/ or assemblages.
Endemic species or locally distinct sub-populations of a species.
Habitat diversity, connectivity and/ or synergistic associations.
Notably large populations of animals or concentrations of animals considered uncommon or threatened in a wider context.
Plant communities (and their associated animals) that are considered to be typical of valued natural/ semi-natural vegetation types.
Species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.
Species-rich assemblages of plants or animals.
Typical faunal assemblages that are characteristic of homogenous habitats.

*(Adopted from IEEM, 2006) (Ref. 7.16)

7.36 The Ratcliffe Criteria (Ratcliffe, 1977) (Ref. 7.24) have also been considered. These criteria have contributed to the IEEM characteristics in **Table 7.1**. They have been developed in the UK and in most instances have been quantified for the selection of statutory sites of national importance for nature conservation, designated as Sites of Special Scientific Interest (SSSI). A similar approach is often taken to identify the most important non-statutory sites at a county or district level. A summary of the Ratcliffe Criteria is reproduced as **Appendix 7.2**, with the key topics listed below:

- size (area or extent);
- rarity;
- diversity;
- fragility;
- potential value;
- position within an ecological/ geographical unit;

- 'typicalness';
- recorded history;
- 'naturalness'; and
- intrinsic appeal.

7.37 These criteria include measures by which both relative value can be attributed and indications of how likely it is that the ecological receptor will be affected by a change connected to construction of the Proposed Development. The assignment of a relative value (i.e. categorising within a defined geographical context) is necessary before the significance of predicted effects can be assessed. The assignment of value to a specific resource requires that the assessor make use of relevant published evaluation criteria (where available). Where published evaluation criteria do not exist (for example, guidance for assigning value below the county value is rarely available) it has been necessary to apply best judgement, supported by a carefully reasoned argument. The categories of species value that have been adopted for this assessment are provided in **Table 7.3**.

Table 7.3: IEEM scales of ecology and nature conservation value

IEEM scale of value	Criteria	Example
International	High importance and rarity, international scale and limited potential for substitution.	<ul style="list-style-type: none"> • Internationally designated sites (e.g. SPAs and SACs). • Sustainable area of a habitat listed in Annex I of the Habitats Directive (Ref. 7.6), or smaller areas of such habitat where they are essential to maintain the viability of a larger whole. • Sustainable population of a species listed in Annex IV of the Habitats Directive and Annex I of the Birds Directive (Ref. 7.3).
UK/ National	High importance and rarity, national scale, or regional scale with limited potential for substitution.	<ul style="list-style-type: none"> • Nationally designated sites (e.g. SSSIs). • Regionally important sites with limited substitution possibilities. • Sustainable area of a priority habitat identified in the UK BAP. • Sustainable population of a species listed on Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (Ref. 7.1), or a priority species identified in the NERC Act (Ref. 7.7), of a UK Red Data book species, or of a nationally rare species (15 or fewer 10 km squares in the UK) (Ref. 7.25).
Regional/ County	High or medium importance and rarity, local or regional scale and limited potential for substitution.	<ul style="list-style-type: none"> • Regionally important sites with potential for substitution. • Locally designated sites (e.g. SINCs). • Sustainable area of a priority habitat identified in local BAP, or as a nationally scarce species (16 – 100 10 km squares in the UK).
District/ Local	Low or medium importance and rarity, local scale.	<ul style="list-style-type: none"> • Undesignated sites that are good examples of a more widespread habitat, or species-poor examples of a habitat of note (as described above) or of earth heritage interest. • Population of a species that is of low importance/rarity but of some value locally.

IEEM scale of value	Criteria	Example
Negligible	Not applicable	<ul style="list-style-type: none"> Sites, habitats and species not meeting any of the above criteria.

7.38 Seven geographic frames of reference are used to assess the value of nature conservation features (**Table 7.4**). For example, all national designations (e.g. SSSI) are considered to be of value to nature conservation at the UK level (although not all component parts may be valued equally).

Table 7.4: Geographic frames of reference for determining the relative nature conservation value

Relative Value of Nature Conservation Resource	Geographic Area
International	European Community and wider (up to global) area
UK	England, Scotland, Wales, Northern Ireland
National	England
Regional	Yorkshire and Humber
District/ County	North Yorkshire
Local	Assessment Site and/ or neighbouring sites
Within the zone of influence	Assessment Site and/ or neighbouring sites

7.39 Where the value of the nature conservation resource is considered, and then subsequently not evaluated to be of importance at even a local level, this is clearly stated. Such features may or may not be considered further, depending on their extent and relationship with other features.

7.40 Whilst there are national criteria for appraising rarity and threats to populations for different groups of species, it should be appreciated that species may be widespread or common nationally, but of scarce occurrence in a county or district context. Conversely a species may be common in a county or district context, but considered to be rare nationally or internationally. Consequently when undertaking an evaluation of a site, consideration is also given to relevant local biodiversity guidance documents such as local BAPs and the species and habitat action plans that might be derived from these.

7.41 Whilst the level of legislative protection afforded to a particular ecological receptor is noted as part of the evaluation process, this may not have a direct bearing on the evaluation of a feature in terms of its nature conservation importance.

- 7.42 In addition to the existing value a receptor represents in terms of nature conservation, the potential value of species and habitats has also been taken into consideration where it is feasible to restore a feature to a favourable nature conservation status.
- 7.43 Secondary or supporting features of value are also considered in this study. These are features that might not have any significant relative nature conservation value in themselves, but provide some ecological function such as acting as a buffer against negative impacts, or enabling the effective conservation of a more valuable feature.

Prediction of Impacts and Significance of Effects

- 7.44 The identification of the potential impacts anticipated to be associated with the Proposed Development has been based on a variety of approaches. The primary source of information has been the review of similar projects and professional experience of the assessment team.
- 7.45 The likely effects of potential impacts on ecological receptors largely depend upon the sensitivity of that ecological feature and the magnitude of the impact. The parameters that may influence the assessment of this are listed and defined in **Table 7.5**.

Table 7.5: Environmental parameters that influence the severity of a potential impact or significance of the resulting effect

Environmental Parameter	Description
Magnitude	The 'size' or 'amount' of an impact is referred to as the magnitude of the impact, and is determined on a quantitative basis where possible (see also Table 7.7).
Extent	The extent of an impact is the area over which the impact occurs. The magnitude and extent of an impact may be synonymous.
Duration	The duration of an impact is the time over which an impact is expected to last. The duration of an effect is the length of time that a receptor will be affected prior to recovery or replacement. This can be considered in terms of life cycles of species and regeneration times of habitats. The duration of an effect may be longer than the duration of the impact (or <i>vice versa</i>). For example, construction activity may cause disturbance over two years but the effect of that disturbance may continue for five years, or conversely, receptors may adapt or habituate to an impact and cease to be affected by it before that impact stops.
Reversibility	Reversible (or temporary) impacts are those that do not have a persistent or permanent nature. Reversible or temporary effects are those from which a spontaneous recovery is possible, or for which effective mitigation is possible that will allow such a recovery. Irreversible (or permanent) impacts are those that endure within the context of a specific timescale, for example extending throughout the duration of the scheme's operational phase and potentially beyond. Irreversible (or permanent) effects include those from which recovery is not possible within a reasonable timescale, or for which there is no reasonable chance of action being taken to reverse it. The effects of permanent land-take may lead to

Environmental Parameter	Description
	irreversible fragmentation and decline of habitats. Some indirect effects may also be irreversible or of an unspecified duration.
Timing and Frequency	Some activities or changes may only cause an adverse effect if they coincide with critical life stages or seasons, therefore timing of the activity or change is important in assessing the impact. Such effects may be avoided through careful timing of works. The frequency of an activity (impact) may also influence the resulting effect.

- 7.46 Effects on ecology and features of nature conservation importance can be adverse or beneficial. Impacts may be direct or indirect.
- 7.47 The significance of the effect resulting from impacts on ecological receptors associated with the Proposed Development will depend upon all of these factors, and can relate to the integrity of ecologically functioning sites or systems. The definition of 'site integrity' (as developed for use in the Habitats Regulations Assessment) is: *"the coherence of its ecological structure and function, across its whole area, that enables it to sustain that habitat, complex of habitats and/ or the levels of populations of the species for which it was classified"* (Office of Deputy Prime Minister (ODPM) and Department for Environment Food and Rural Affairs (DEFRA), 2005) (Ref. 7.9).
- 7.48 A site that achieves this level of coherence is considered to be at a favourable condition (IEEM, 2006) (Ref. 7.16).
- 7.49 For the purposes of assessing impacts on internationally designated nature conservation sites, the likely effect of developments on ecological and site integrity also needs to be considered within the terms of the Conservation of Habitats and Species Regulations 2010 (commonly known as the Habitats Regulations) (Ref. 7.5). However, the Habitats Regulations do not consider the 'significance' of effects. Conversely this ES is required to predict likely significant environment effects, and the terms 'significant' and 'not significant' are used in this context as shown in **Table 7.6**. The effects of an impact on a receptor are initially described in the absence of mitigation, but taking into account the implementation of the measures necessary to ensure legislative compliance during the construction and operation phases.
- 7.50 The terms 'significant' and 'not significant' are not used without also referring to the value of the affected receptor, or the threshold at which an effect is considered to be significant.

Table 7.6: Descriptions of the terms 'significant' and 'not significant'

Scale of impact upon ecological integrity	Description
Significant	The effect is significant if the ecological integrity of a feature is influenced in some way. It may be that the impact is large in scale or amount, irreversible, has a long-term effect, or coincides with critical life stages. In addition, a combination of any of these parameters may also be assessed as significant. An impact is considered to be significant in this ES where it results in a major or moderate effect.
Not significant	The effect is not significant if it does not influence the ecological integrity of a feature. It may be that the impact is small in scale or amount, reversible within a reasonable timescale and/ or does not coincide with critical life stages. An impact is not considered to be significant in this ES where it results in a minor or neutral effect.

7.51 It is important to attribute a level of confidence by which the predicted effect has been assessed, particularly in the case where only a qualitative assessment can be made. The criteria for these definitions are set out in **Table 7.7**. Unless otherwise stated, confidence levels are certain/ near certain.

Table 7.7: Confidence levels

Confidence Level	Description
Certain/ near-certain	Probability estimated at 95% chance or higher.
Probable	Probability estimated to be at or above 50% but below 95%.
Unlikely	Probability estimated to be at or above 5% but less than 50%.
Extremely unlikely	Probability estimated at less than 5%.

7.52 The magnitude of an impact is described as Major, Moderate, Minor or Negligible. Impacts are neither beneficial nor adverse in nature. Such terms are relative to the receptor affected by the impact (i.e. a particular impact can result in a beneficial effect on one receptor and an adverse effect on another), and the criteria associated with them are summarised in **Table 7.8**.

Table 7.8: Criteria used to define the magnitude of an impact

Relative level of predicted impact	Criteria
Major	Large scale loss of resource and/ or quality and integrity of resource; severe damage to key characteristics, features or elements. Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality.

Relative level of predicted impact	Criteria
Moderate	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements. Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements. Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements. Very minor benefit to or positive addition of one or more characteristics, features or elements.
No change	No loss or alteration of characteristics, features or elements; no observable impact in either direction.

7.53 The relative significance of an effect is largely a product of the magnitude and duration of the impact and the value and sensitivity of the ecological receptor, but assessment is moderated by professional judgement and takes into account the considerations described above. The receptor value and impact magnitude can be combined to produce a matrix that illustrates to what degree an effect is likely to be relatively significant. This is provided as **Table 7.9** below.

7.54 Although the methodology broadly follows IEEM guidelines, a matrix of significance of effects has been used to ensure consistency with other chapters.

Table 7.9: Matrix for evaluation of relative significance of effects

Magnitude of impact	Ecological value					
	Inter-national	National	County	District	Local	Negligible
Major	Major	Major	Moderate	Moderate	Moderate or Minor	Negligible
Moderate	Major	Major or Moderate	Moderate	Moderate	Moderate or Minor	Negligible
Minor	Major or Moderate	Moderate or Minor	Minor	Negligible	Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

Baseline Conditions

Statutory Designated Sites

- 7.55 Relevant designated sites are summarised in **Table 7.10** below. The sites are mapped on **Figure 7.1**.
- 7.56 The Assessment Site lies within the North York Moors National Park. This designation is largely associated with the landscape and recreational value of the area and is therefore not considered further in this chapter. Further details on the assessment of effects on the North York Moors National Park are provided in Chapter 8.
- 7.57 There are four statutory ecologically designated sites within the study area. These are the North York Moors Special Area of Conservation (SAC), Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI), the boundaries of which are largely overlapping; and Troutsdale and Rosekirk Dale Fens SSSI.
- 7.58 Potential impacts on the North York Moors SPA/ SSSI are considered in this assessment. This is on the basis that bird species that are qualifying species for the SPA/ SSSI may be present in habitats some distance from the designated site boundary. Impacts on habitats within the North York Moors SAC have been scoped out of this assessment on the basis that the SAC is well outside the zone of influence of all identified potential impacts.

Table 7.10: Statutory Designated Nature Conservation Sites within 2 km of Assessment Site

Site Name	Grid Reference	Distance from Proposed Development	Reason for Designation
Troutsdale and Rosekirk Dale Fens SSSI	SE 900 876 and SE 903 879	c. 1.7 km south	Nationally rare spring and flush fen habitats covering an area of approximately 13.07 ha.
North York Moors SAC	NZ 711 021	c. 7 km north	The site contains the largest continuous tract of upland heather moorland in England and is designated for its Annex I habitats: <ul style="list-style-type: none"> Northern Atlantic wet heaths with <i>Erica tetralix</i> European dry heaths Blanket bog
North York Moors SPA	NZ 711 021	c. 7 km north	Qualifies under Article 4.1 for supporting breeding populations of merlin (<i>Falco columbarius</i>) and golden plover (<i>Pluvialis apricaria</i>).

Site Name	Grid Reference	Distance from Proposed Development	Reason for Designation
North York Moors SSSI	SE 4996 – SE 7192 – NZ 9500 – NZ 6910	c. 7 km north	Designated for its extensive tracts of heather moorland and breeding birds particularly the Annex I species merlin and golden plover. Also supports nationally important populations of moorland breeding birds including peregrine, hen harrier, short-eared owl, red grouse, curlew, snipe, redshank, whinchat, wheatear, ring ouzel and lapwing.

Non-statutory Designated Sites

- 7.59 There are no non-statutory designated Sites of Importance for Nature Conservation (SINC) within 2 km of the Proposed Development.

NERC Act Section 41 Habitats and Species of Principal Importance

- 7.60 Several species of principal importance as listed on Schedule 41 of the NERC Act (Ref. 7.19) were identified as present, or potentially present, within the study area as part of the desk study (see **Table 7.11**). Where species have been identified within the zone of influence, this is discussed in the text below.

North York Moors National Park Biodiversity Action Plan (BAP)

- 7.61 No habitats affected by the Proposed Development meet the criteria for threatened habitats for which a Habitat Action Plan (HAP) has been produced in the North York Moors National Park BAP. Local BAP species identified during the desk study within the study area are listed in **Table 7.11**. Where species have been identified within the zone of influence, this is discussed in the text below.

Desk Study Records

- 7.62 Records of protected species within a 2 km radius of the Assessment Site have been obtained from various organisations and websites. Following a critical screening of the data provided, the following relevant records are identified (**Table 7.11**). Full details of the desk study data received are presented in **Appendix 7.3**.

Table 7.11: Summary of Protected Species Records Obtained

Species	Location(s)	Status
Nightjar <i>Caprimulgus europeus</i>	Numerous records from within the North York Moors National Park. Nearest (breeding not confirmed) is at Jingleby Thorn c. 240 m south-west	Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41
Goshawk <i>Accipiter gentilis</i>	Dalby Forest (no breeding sites recorded within 2 km)	Wildlife and Countryside Act 1981 (as amended)
Adder <i>Vipera berus</i>	Dalby Forest	Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41
Brandt's bat <i>Myotis brandtii</i>	Allerston Moor (SE883880)	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41 North York Moors National Park BAP
Brown long-eared bat <i>Plecotus auritus</i>	Broad Head (SE896886) North York Moors (SE896881) Allerston Moor (SE883880)	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41 North York Moors National Park BAP
Common lizard <i>Zootoca vivipara</i>	Dalby Forest	Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Broad Head (SE896886) Allerston Moor (SE883880)	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41 North York Moors National Park BAP
Natterer's bat <i>Myotis nattereri</i>	Broad Head (SE896886)	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41 North York Moors National Park BAP
Noctule bat <i>Nyctalus noctula</i>	Broad Head (SE 896886)	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41 North York Moors National Park BAP
Pipistrelle species <i>Pipistrellus sp.</i>	Broad Head (SE896886) Allerston Moor (SE883880)	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended) NERC Act Section 41 North York Moors National Park BAP

Field Survey Results

Habitats

- 7.63 The Assessment Site is accessed via an existing road off the A170 leading to South Moor Farm (Ebberston Lane which becomes Ebberston Common Lane). The Assessment Site comprises the fenced compound of an existing well site (Ebberston Moor 'A' Well Site) and is surrounded on its northern, western and eastern sides by mature forestry plantation. The Lockton Compound lies adjacent to the northern boundary of the Assessment Site although it is physically separated from the site by a narrow band of trees. A substantial area of clear felled forestry is located approximately 240 m to the south-west of the Assessment Site (south of Jingleby Thorn Farm). The eastern boundary of the Assessment Site is defined by a narrow band of mature trees, beyond which lies the access road and improved grass pasture.
- 7.64 Mature commercial forestry plantation surrounds the majority of the Assessment Site and is dominated by even-aged spruce (*Picea* sp.) trees (TN03). There are some scattered deciduous broad-leaved specimens along the roadside comprising semi-mature silver birch (*Betula pendula*), pedunculate oak (*Quercus robur*) and downy birch (*Betula pubescens*).
- 7.65 A narrow band of young and semi-mature trees separates Ebberston Moor 'A' Well Site from Ebberston Common Lane (TN04) and NGN AGI on the northern and eastern perimeters, comprising silver birch, cherry (*Prunus* sp.) and sycamore (*Acer pseudoplatanus*). Some of the younger specimens remain in their rabbit guards.
- 7.66 Ebberston Moor 'A' Well Site is flat bare ground comprising crushed hardcore laid over a geotextile membrane and bentonite mat, with a bentonite mat lined drainage ditch to drain surface water run-off. The topsoil has been removed from the well site and is stored in a uniform bund around the southern and western perimeter of the well site, between the fence and the drainage ditch (TN01). The topsoil bund has become naturally re-colonised with rank grassland and tall ruderal vegetation. The dominant species is cock's-foot (*Dactylis glomerata*) with cow parsley (*Anthriscus sylvestris*), broad-leaved dock (*Rumex obtusifolius*), rosebay willowherb (*Chamerion angustifolium*), hogweed (*Heracleum sphondylium*), Timothy (*Phleum pratense*), creeping buttercup (*Ranunculus repens*), common knapweed (*Centaurea nigra*) with some low-growing scattered bramble (*Rubus fruticosus* agg.) scrub.
- 7.67 A short section of newly planted hedgerow (all specimens still in rabbit guards) is present in the southern part of the Assessment Site, adjacent to an internal fence (TN02).

Evaluation

7.68 The habitats within the study area are typical of forestry plantation throughout the county. The forestry plantation has the potential to support breeding birds, including Schedule 1 breeding birds (see below). Given that the forestry is commercially managed for timber, the habitat itself is not assessed to be anything other than local value. Furthermore, none of the habitats identified are representative of rare or threatened habitats in the county for which action plans have been developed through the North York Moors BAP. It is therefore evaluated that the habitats within the study area are of local value only to nature conservation.

Breeding Birds

7.69 Forestry plantation surrounding the Assessment Site may be used by a range of common species such as blackbird (*Turdus merula*), robin (*Erithacus rubecula*) and magpie (*Pica pica*), as well as species that prefer nesting in coniferous woodland such as coal tit (*Periparus ater*) and goldcrest (*Regulus regulus*).

7.70 There is no suitable habitat for breeding birds within the existing Eberston Moor 'A' Well Site or Lockton Compound. The open gravelled area associated with the Eberston Moor 'A' Well Site is too small and enclosed by mature trees and fencing to support ground nesting species. The scattered bramble scrub colonising the topsoil bund is insufficiently dense to provide suitable habitat for nesting birds.

Goshawk

7.71 Forestry plantation within the North York Moors National Park is known to support the Schedule 1 nesting species, goshawk. The goshawk nest sites are monitored annually by volunteers on behalf of the Forestry Commission, which has confirmed that there are no recorded goshawk nest sites within the potential zone of influence of the Proposed Development (Ref. 7.25)).

Nightjar

7.72 This species has been recorded as nesting within clear felled areas of forestry throughout the North York Moors National Park. Although varying nationally, trends in Yorkshire indicate that this species is undergoing an expansion in numbers due to the increase in clear felled and young restocked plantations (Scott *et al.*, 1998) (Ref. 7.26) in the county. It is

estimated that there are up to 4,024 pairs nesting in North Yorkshire (Conway & Henderson, 2005) (Ref. 7.27).

- 7.73 There is no suitable nesting habitat for nightjar within the Assessment Site boundary as this species nests in clear felled areas of the forestry plantation which remain suitable until re-growth is around 15 years old (Birdguides 2006) (Ref. 7.38). There are no confirmed nesting records of nightjar within the study area, although Scarborough Bird Club has recorded nightjar in June and July 2011 in the clear felled forestry plantation at Jingleby Thorn approximately 240m south-west of the Assessment Site, and it is assumed that this indicates breeding. It is likely that this species' distribution varies in response to forestry felling operations and the area of clear felled woodland at Jingleby Thorn does provide optimum nesting habitat for nightjar.

Evaluation

- 7.74 Habitats within the Assessment Site provide suitable habitat for a range of breeding bird species, associated with scrub and mature forestry plantation. There is no evidence to suggest that any Schedule 1 bird species are nesting within habitats directly affected by the Proposed Development. It is therefore evaluated that the breeding bird assemblage in habitats affected by the Proposed Development is of local nature conservation value.

Amphibians

- 7.75 The 1:25,000 Ordnance Survey map does not indicate the presence of any ponds within 500 m of the Assessment Site boundary, which is the generally accepted terrestrial range of great crested newts from their breeding ponds. It is concluded that there is no reasonable likelihood of great crested newt being present within the site boundary and therefore no further consideration is given to this species.

Badgers

- 7.76 No evidence of badgers was identified within the Assessment Site boundary, and no setts were observed within c. 30m of the boundary. It is therefore concluded that badgers are absent from the Assessment Site and will not be affected by the Proposed Development. On this basis, no further consideration is given to badgers in the report.

Bats

- 7.77 A large number of bat species have been identified through the desk study as present in the study area, and an abundance of records were received from both NEYEDC and North Yorkshire Bat Group. Species recorded within 2 km of the Assessment Site included common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Brandt's bat (*Myotis brandtii*), Natterer's bat (*Myotis nattereri*), brown long-eared bat (*Plecotus auritus*) and noctule bat (*Nyctalus noctula*). In addition, the Forestry Commission has erected several artificial bat boxes throughout the forestry plantation, with the nearest ones to the Assessment Site located approximately 1 km to the south-west. The boxes are regularly monitored and have been found to support roosting common pipistrelle, soprano pipistrelle, brown long-eared bat and Natterer's bat.
- 7.78 Coniferous trees in the mature forestry plantation within the Assessment Site are considered unsuitable for roosting bats as they do not have any features that may provide roosting habitat for bats such as cracked and flaking bark, damaged limbs and boss holes in the stem. The density of planting also largely precludes the presence of bat roosts since the access to any potential trees is 'cluttered'.

Evaluation

- 7.79 The forestry plantation provides suitable habitat for foraging/ commuting bats, given the abundance of woodland 'rides' and 'glades' that bats prefer, although roosting opportunities are limited given the presence of coniferous trees that do not typically provide suitable roosting opportunities for bats.
- 7.80 Given the relative abundance and diversity of bat species identified in the wider local area it is considered that bats are common and widespread throughout this part of North Yorkshire. The diversity of species indicates that the habitats within the wider local area provide good quality roosting and foraging habitat for bats. Woodland edge habitat surrounding Eberston Moor 'A' Well Site may offer some potential foraging habitat for foraging/ commuting bats. However, overall foraging habitat quality is low and bats are more likely to be using local broad-leaved woodland areas within the plantation as key foraging habitats and for roosting. The Assessment Site represents a small area of the total resource available for bats in the local area and is assessed as being of value at the local level only for bats.

Reptiles

- 7.81 The desk study identifies that adder (*Vipera berus*), slow worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*) have been recorded within the study area in the forestry plantations in the Dalby Forest and Wykeham areas, which are north-west and south-east respectively of the Assessment Site. Abundant suitable habitat for reptiles is present within the forestry plantation and its clear felled areas and linear 'rides'. It is concluded that common lizard, slow worm and adder are highly likely to be present within areas of forestry within the Assessment Site.
- 7.82 Additional suitable potential reptile habitat is present in association with the vegetated earth mounds used for topsoil storage around Ebberston Moor 'A' Well Site. These bunds have become overgrown with rank grassland and invading bramble scrub, and subsequently provide a potentially suitable mosaic of habitats for reptiles.
- 7.83 Suitable reptile habitat is highlighted on **Figure 7.3**.

Evaluation

- 7.84 Slow worm, adder and common lizard are likely to be widespread and relatively common within the forestry plantation of the North York Moors National Park, which is a known county stronghold for reptiles given the abundance of suitable habitat. It is evaluated that the reptile populations within the forestry plantation are of no more than local value to nature conservation.

Invertebrates

- 7.85 No habitats that could potentially support a diverse assemblage of rare or notable invertebrates were recorded in the study area.

Future Baseline

- 7.86 In the absence of the Proposed Development, assuming the forestry plantation continues to be managed by the Forestry Commission for commercial forestry, there may be some changes in the distribution of dense coniferous woodland should any blocks within or adjacent to the Assessment Site be felled by the time of the future baseline year of 2014. This may result in additional suitable nesting habitat for nightjar being created within the study area. However, the likely timeframe for felling the blocks of woodlands exceeds that of

the future baseline year as it is predicted to be in 2052. It is therefore unlikely that the current baseline forestry habitat conditions would be different at the time of the future baseline year.

- 7.87 The scrub currently becoming established on the topsoil storage bund in the Assessment Site may also invade further, lowering the suitability of this habitat for reptiles, but increasing opportunities for nesting birds as the scrub matures.

Likely Significant Effects

Introduction

- 7.88 The potential impacts, and the significance of the effect of those impacts on ecological receptors, are characterised in the absence of mitigation measures for the construction, operational and decommissioning/ restoration phases of the Proposed Development. Impacts may be direct (i.e. when a habitat and/ or species is lost to development) or indirect (i.e. when adjacent habitats or species are remotely affected, or when factors that relate to the Proposed Development, but are not actually part of the Proposed Development itself, influence ecology or features of nature conservation value. For example, increased disturbance to birds during the construction phase of a development, or dust smothering of vegetation).
- 7.89 Impacts are only considered in detail when there is a reasonable likelihood of an effect on a receptor of nature conservation importance. As discussed in the Methodology section, effects can be either significant (moderate or major) or not significant (negligible or minor).
- 7.90 Further details on the Proposed Development are provided in Chapter 4 (The Proposed Development) and are therefore not reproduced in detail in this chapter.

Construction

Statutory Designated Sites

- 7.91 The Proposed Development is located within the North York Moors National Park. Habitat within the footprint of the Proposed Development includes conifer plantation, which is under the management of the Forestry Commission. The felling of trees within the Assessment Site would fall under the normal permitted activities within this part of the North York Moors National Park. The evaluation of this Proposed Development's impacts on the North York

Moors National Park as a whole does not therefore fall within the remit of the ecological assessment.

- 7.92 The Proposed Development will not result in any direct impacts on Troutsdale and Rosekirk Dale Fens SSSI as the SSSI does not have any habitat connectivity with the Assessment Site. Emissions from construction traffic will be broadly concurrent with existing forestry operations, and it is therefore reasonable to conclude that such operations will not result in any indirect impacts on the SSSI. The Proposed Development is *c.* 1.6 km from the SSSI, and there is therefore no potential for indirect adverse effects on habitats to occur as a result of dust deposition when topsoil stripping is being undertaken since any fugitive dust emissions would be restricted to the area immediately surrounding the Assessment Site. On this basis, it is concluded that the construction phase of the Proposed Development will not result in any adverse effects on Troutsdale and Rosekirk Dale Fens SSSI.
- 7.93 The Proposed Development will not result in any direct impacts on the North York Moors SPA/ SSSI. There is also no potential for the sensitive habitats within the boundary of the designated site to be indirectly affected as a result of dust deposition, given the distance between the designated site and the Proposed Development.
- 7.94 The North York Moors SPA/ SSSI is designated on the basis of the important breeding bird assemblages it supports. Given that such species are mobile there is the potential for SPA/ SSSI populations of birds to be present outside the designated site boundary, and potentially within habitats affected by the Proposed Development. However, there is no suitable nesting habitat for the SPA qualifying species, merlin and golden plover, within the Assessment Site, since these species require heath and moorland for nesting. Habitats within the Assessment Site also do not provide suitable nesting habitat for species recorded in the SSSI, such as whinchat, wheatear and ring ouzel.
- 7.95 There is no potential for noise or visual disturbance to breeding bird populations in the SPA/ SSSI given the distance between the Proposed Development and the designated site (*c.* 7 km), although there is potential for displacement of foraging individuals. Any displacement of foraging SPA/ SSSI birds is considered to be negligible given the abundance of undisturbed suitable foraging habitat in the wider local area. It is assessed that the Proposed Development will not result in any significant effects on the breeding bird populations of the North York Moors SPA/ SSSI.
- 7.96 It is assessed that the construction of the Proposed Development will not result in any significant effects on statutory designated sites.

Habitats

- 7.97 None of the habitats within the study area meet the criteria for any North York Moors National Park Habitat Action Plans (HAPs). The vegetation and habitats within the Assessment Site are typical of the wider environment with the plant species being common and widespread and the habitats having low species diversity. The permanent loss of this habitat is assessed to be a negligible effect.
- 7.98 The forestry plantation is a small part of a much wider resource that is in any case managed for commercial forestry and as such has a finite lifespan. The loss of forestry plantation within the Assessment Site is on a much smaller scale to that which would be lost to commercial forestry operations as described in Chapter 8. Furthermore, these losses will be temporary as, where practicable, trees will be re-planted as part of the decommissioning and restoration phase, which will occur approximately five years after the construction phase (when the Eberston Moor 'A' Well Site is decommissioned). The impact of tree loss is therefore not permanent, and will occur over the medium to long term until the re-planted trees had reached the level of maturity to those within the Assessment Site. When considered in context with the wider resource available, the small scale medium to long term loss of forestry plantation resulting from the construction of the Proposed Development is assessed to be a negligible effect
- 7.99 Dust emissions arising from topsoil stripping will be controlled through standard dust suppression measures as described in Chapter 9 and any fugitive dust deposition is likely to be limited to a level that is highly unlikely to cause adverse effects on surrounding drainage network and habitats.

Breeding Birds

- 7.100 Construction of the Proposed Development will result in the direct loss of nesting bird habitat associated with plantation woodland. This loss is considered in respect of the Schedule 1 species goshawk and nightjar below. With respect to other nesting species, given the abundance of suitable alternative nesting habitat in the wider local area, any impacts are relatively minor in nature. In addition, the woodland habitat will be re-planted during restoration, and any nesting habitat losses are therefore temporary in the medium term until the re-planted trees have reached sufficient maturity to support nesting birds. The effect on breeding bird populations is assessed as minor adverse, and is not significant.

Goshawk

- 7.101 There are no known records of this species nesting within the areas of forestry plantation to be lost. There will therefore be no direct impacts on nesting goshawk sites.
- 7.102 There are also no known records of goshawk within the study area, and it is therefore assumed that this species is not nesting within 400m of the Proposed Development. Goshawks are known to be highly adaptable to human-altered landscapes and in the absence of persecution are tolerant of intense human activities in some areas, even successfully nesting in urban areas (Ruddock & Whitfield, 2007) (Ref. 7.29). Forestry Commission guidance indicates that a disturbance-free zone of 400m should be established around occupied nest sites between February to July (inclusive) to minimise the risk of illegal disturbance to nesting goshawk during forestry operations (Petty 1996) (Ref. 7.25). It is therefore concluded that as there are no known goshawk nest sites within 400m of the Assessment Site, there is no potential for indirect adverse effects as a result of noise and visual disturbance impacts during the construction zone, since any nest sites lie outside the 400m zone of influence in which disturbance may be expected to occur.

Nightjar

- 7.103 There are no records of nesting nightjar within the study area. However, given that the distribution of this species can vary with ongoing forestry operations, there is the potential for the species to be present in habitats close to the Proposed Development. No suitable nesting habitat for this nightjar will be lost to the Proposed Development and therefore there is no potential for any direct impacts on nesting nightjar habitat.
- 7.104 Given that there is suitable potential nightjar nesting habitat within *c.* 250m of the Assessment Site, there is the potential for construction activities on the Ebberston Moor 'A' Well Site and Lockton Compound to result in noise disturbance to nesting nightjar, should works be undertaken within the breeding season.
- 7.105 Nightjars rely on their cryptic plumage to escape detection and this trait is likely to result in low active disturbance distances, with birds only displaying a visible disturbance response (i.e. flushing from the nest) when approaching predators are close. Studies have determined that the distances at which this response occurs is less than 10m during the egg incubation period, increasing to 50 – 100m during chick rearing (Ruddock & Whitfield 2007) (Ref. 7.29). However, other publications also highlight the potential for non visible disturbance responses as a result of disturbance at distances greater than 100m that may also potentially have a

detrimental effect on nesting nightjar. Such 'passive' disturbance is difficult to determine and to quantify its effects on nightjar breeding success (Ruddock & Whitfield 2007) (Ref. 7.29).

- 7.106 The potentially suitable nightjar habitat in the clear felled forestry area lies outside the 100m zone in which a disturbance response would be expected to be elicited. Even if the precautionary principle is adopted, whereby disturbance may happen at distances greater than 100m from a source of disturbance (Ruddock & Whitfield, 2007) (Ref. 7.29), given that the suitable habitat is at a distance of approximately 150m from the Proposed Development it is reasonable to assume that there is limited potential for any disturbance to occur. It is therefore concluded that construction within the Assessment Site will not result in any adverse effects on nesting nightjar, should this species be present in the identified habitat to the south.
- 7.107 There will be a temporary increase in road traffic movements to the Proposed Development during the construction phase as a result of the delivery of materials and other site infrastructure. Such increases will be relatively limited in extent given that the majority of the site infrastructure is already in place at the Ebberston Moor 'A' Well Site and Lockton Compound. There is therefore the potential for noise and visual disturbance resulting from construction traffic movements along the access road (Ebberston Common Lane) that lies adjacent to the potentially suitable nightjar nesting habitat. However, this habitat lies between two roads; the road along the northern edge is part of the Dalby Forest Drive toll road which is well used by vehicles, cyclists and walkers. The road along the southern edge (Ebberston Common Lane) is also well used by vehicles (access to local farms, HGV forestry vehicles etc.) and is part of the Dalby Forest cycle network. Noise disturbance associated with construction traffic movements will be consistent with ongoing forestry operations, disturbance from which it is assumed that nightjars are relatively well habituated to, given that their numbers are expanding rapidly within the North York Moors National Park (Conway & Henderson, 2005) (Ref. 7.27). The noise assessment has concluded that the increase in road traffic movements associated with the construction of the Proposed Development will be lower in magnitude than that associated with the construction of the Ebberston Moor 'A' Well Site, and is well within the capacity of the existing road network. It is concluded that the temporary increase in road traffic on Ebberston Common Lane during the construction phase will not result in any adverse effects on nesting nightjar, should this species be present in the identified habitat.

7.108 It is therefore assessed that indirect impacts due to noise and visual disturbance resulting from the construction phase of the Proposed Development will result in negligible effects on nesting nightjar, should this species be present within the nearby clear felled forestry area.

Bats

7.109 The Proposed Development will not result in any impacts on roosting bats.

7.110 There is the potential for impacts on foraging bats as a result of the direct loss of small sections of forestry plantation surrounding the Assessment Site. However, this is a temporary loss (as trees will be re-planted where practicable following decommissioning and restoration of the well site), the area is a very small part of a much larger foraging resource and the 'woodland edge' habitat composition will be maintained at this location. It is therefore assessed that the temporary loss of trees will result in negligible effects on foraging bats during the construction phase of the Proposed Development.

7.111 Foraging bats using the woodland edge habitat around the perimeter of the Assessment Site may avoid any area of lighting disturbance during construction. However, all lighting will be designed to be directed down onto working construction areas and utilise high pressure sodium (SON) lamps to minimise spillage onto areas outside the Assessment Site boundary. Calculations in the Lighting Assessment have concluded that light spillage beyond the site boundary will be minimal. It is therefore concluded that the construction phase is not likely to result in significant disruption to foraging/ commuting bats. Consequently, it is assessed that there will be negligible effects on bat populations as a result of the construction activities.

Reptiles

7.112 The Proposed Development will result in the temporary loss of a small area of potentially suitable reptile habitat associated with the forestry plantation. The vegetated spoil mound within the Eberston Moor 'A' Well Site will be permanently lost, since the stored topsoil in the mound will be used to reinstate the habitat within the Assessment Site boundary upon decommissioning of the Eberston Moor 'A' Well Site. However, given the abundance of suitable potential reptile habitat in other undisturbed areas of the forestry plantation, the loss of a small area resulting from the Proposed Development will result in negligible effects on the locally important reptile population.

- 7.113 There will also be a small loss of suitable reptile habitat associated with the forestry plantation in the south-western corner of the Assessment Site (at the location of the proposed flare). However, as discussed above, given the abundance of suitable potential reptile habitat in the area immediately surrounding the Assessment Site boundary, this minor impact is assessed to result in negligible effects on the locally important reptile population.
- 7.114 Disturbance to the ground during the construction phase could cause harm to reptiles, specifically adders, slow worms and common lizards that may be present within the Assessment Site. In the absence of mitigation, such actions may result in offences being committed under the Wildlife and Countryside Act 1981 (as amended) (Ref. 7.1). There is the potential for major impacts on individual reptiles and it is assessed that this will result in a moderate adverse effect in the absence of mitigation.

Operation

Statutory Designated Sites

- 7.115 The operation of the Proposed Development has the potential to result in indirect impacts on Troutsdale and Rosekirk Dale Fens SSSI due to changes in air quality resulting from the flare. The flare will only be used for assist start and stop operations and to eliminate fugitive emissions and it will not be in constant operation. Furthermore, there will be minimal flaring or venting thus minimising the emissions to the atmosphere. When considered in combination with the distance of the Proposed Development from the SSSI (c. 1.6 km), it is considered that there will be no adverse effects on SSSI habitats.
- 7.116 Surface water drainage will be treated separately and does not have the potential to result in polluted discharge into surrounding drains. There is therefore no potential for water associated with the operation of the Proposed Development to enter the drainage system and potentially impact the Troutsdale and Rosekirk Dale Fens SSSI.
- 7.117 There is no potential for noise or visual disturbance to breeding bird populations in the North York Moors SPA/ SSSI given the distance between the Proposed Development and the designated site.
- 7.118 There is the potential for the Proposed Development to result in indirect impacts on the North York Moors SPA/ SSSI through noise and visual disturbance to qualifying bird species foraging and breeding in habitats outwith the designated site boundary. However, any displacement of foraging SPA/ SSSI birds from the habitats immediately adjacent to the

Assessment Site (which would experience the greatest operational noise levels) is considered to be negligible given the abundance of undisturbed suitable foraging habitat in the wider local area. A noise impact assessment has been undertaken and concludes that at the nearest human household receptor (Ebberston Common Farm), approximately 260m from the Assessment Site, operational noise will have been attenuated to within ambient levels (see Chapter 10 (Noise)). The zone of influence of the increase in noise due to operation of the Proposed Development is therefore very small when considered in the context of the abundance of suitable habitat in the wider local area. It is therefore concluded that there is no potential for operational noise to result in disturbance to birds in the SPA/ SSSI and it is assessed that the Proposed Development will not result in any significant effects on the breeding bird populations of the North York Moors SPA/ SSSI.

- 7.119 There is the potential for visual disturbance to foraging birds (including those that are part of the North York Moors SPA/ SSSI populations) as a result of the presence of buildings and operational plant, as well as personnel and vehicle movements within the Assessment Site boundary during the operational phase. However, the maximum building height is 8.5 m and as the Assessment Site is surrounded on three boundaries by mature forestry plantation, there will be visual screening of the buildings and vehicle/ plant movements within the Assessment Site by the existing retained vegetation. Visual disturbance associated with the operation of the Proposed Development, including the operation of a flare, is therefore assessed to result in a negligible effect on foraging birds that are part of the North York Moors SPA/ SSSI given the screening effect of the surrounding forestry plantation.
- 7.120 It is assessed that the operation of the Proposed Development will not result in any significant effects on statutory designated sites.

Habitats

- 7.121 The majority of impacts on habitats will occur during the construction phase due to the direct losses of vegetation.
- 7.122 Site drainage will be via a closed system, with rainwater retained onsite prior to being discharged to a soakaway via a three-phase oil interceptor. However any rainwater collecting within the new tank bunds will be taken off site in tankers to be processed at an off-site facility. Other by-products (e.g. condensate and rich amine) will be taken off-site by tankers, and therefore surface water drainage does not have the potential to result in polluted discharge into surrounding drains. There will be minimal flaring or venting thus minimising emissions to the atmosphere. There will be no changes in water or air quality as

a result of the operation of the Proposed Development and therefore no potential for adverse effects on habitats surrounding the Assessment Site.

Breeding Birds

- 7.123 Operation of the Proposed Development may result in noise and visual disturbance to breeding birds. This loss is considered in respect of the Schedule 1 species goshawk and nightjar below. With respect to other nesting species, given the abundance of suitable alternative nesting habitat in the wider local area, any impacts will be unlikely to result in significant effects on local populations of nesting birds, particularly given the screening provided by the mature forestry plantation adjacent to the northern, eastern and southern boundaries of the Assessment Site. The impact is assessed as minor adverse.

Goshawk

- 7.124 As discussed in respect of construction impacts, there is no potential for noise or visual disturbance to nesting goshawk during the operational phase of the Proposed Development, since there are no records of this species nesting within the zone of influence. The presence of mature forestry plantation surrounding the northern, eastern and western boundaries of the Assessment Site will attenuate potential noise and visual impacts arising from within the Assessment Site boundary, and it is therefore considered that there is no potential for adverse effects on goshawk in the event that this species establishes a nesting site within a 400m of the Assessment Site in the future. In any case, if a goshawk nest does become established within this zone during the operational phase, it must be assumed that the level of disturbance to birds is acceptable.

Nightjar

- 7.125 Suitable nightjar nesting habitat within c. 150m of the Proposed Development will be visually screened from the Proposed Development by the retention of a band of forestry plantation along the western perimeter of the Assessment Site. This woodland will also provide some noise attenuation to operations within the Proposed Development, and it is concluded that there is no potential for noise or visual disturbance arising from within the Assessment Site. Noise modelling for human receptors indicates that operational noise will have attenuated to within the ambient level at Jingleby Thorn, which is adjacent to the suitable nightjar nesting habitat (see Chapter 10 (Noise)). This provides further confidence in the assessment that operational noise will not affect nesting nightjar.

- 7.126 There will be an increase in road traffic movements to the Proposed Development during the operational phase, although the noise assessment has concluded that the number of road traffic movements will be significantly lower than during the construction phase. As assessed in respect of construction traffic, it is therefore considered that this increase will not result in any adverse effects on nesting nightjar as a result of noise and visual disturbance.

Bats

- 7.127 Foraging bats using the woodland edge habitat around the perimeter of the Assessment Site may avoid any area of lighting disturbance during the operational phase of the Proposed Development. However, all operational lighting will be designed to be directed down onto working areas to minimise spillage onto areas outside the Assessment Site boundary. It is therefore concluded that the operational phase of the Proposed Development will not result in significant disruption to foraging/ commuting bats. Consequently, it is assessed that no adverse effects on bat populations are predicted as a result of the operational activities.

Reptiles

- 7.128 Potential impacts on reptiles will occur only during the construction phase associated with disturbance/ loss of habitats. There is no potential for the operation of the Proposed Development to result in adverse effects on reptiles.

Decommissioning and Restoration

- 7.129 Following the operational phase for scenario 2, the wells will be plugged and abandoned and the well site restored. The restoration phase will restore the Assessment Site to its original state. Further details are provided in Chapter 6.

Statutory Designated Sites

- 7.130 The decommissioning and restoration phase of the Proposed Development will not result in any direct impacts on Troutsdale and Rosekirk Dale Fens SSSI as the SSSI does not have any habitat connectivity with the Assessment Site. Emissions from traffic during this phase will be broadly concurrent with existing forestry operations, and it is therefore reasonable to conclude that such operations will not result in any indirect impacts on the SSSI. The Proposed Development is *c.* 1.6 km from the SSSI, and there is therefore no potential for indirect adverse effects on habitats to occur as a result of dust deposition when subsoil and topsoil reinstatement is being undertaken since any fugitive dust emissions will be restricted

to the area immediately surrounding the Assessment Site. On this basis, it is concluded that the decommissioning and restoration phase of the Proposed Development will not result in any adverse effects on Troutsdale and Rosekirk Dale Fens SSSI.

- 7.131 There is no potential for noise or visual disturbance to breeding bird populations in the North York Moors SPA/ SSSI given the distance between the Assessment Site and the designated site.
- 7.132 There is the potential for the Proposed Development to result in indirect impacts on the North York Moors SPA/ SSSI through noise and visual disturbance to qualifying bird species foraging and breeding in habitats outwith the designated site boundary. However, any displacement of foraging SPA/ SSSI birds is considered to be negligible given the abundance of undisturbed suitable foraging habitat in the wider local area. It is assumed that decommissioning and restoration activities will be broadly concurrent with construction activities given that the impacts will be a 'reverse' of construction activities i.e. the site infrastructure and plant will be removed and the habitats restored. On this basis, as for the construction phase of the Proposed Development, it is assessed that the decommissioning and restoration phase will not result in any significant effects on the breeding bird populations of the North York Moors SPA/ SSSI.
- 7.133 It is assessed that the decommissioning and restoration phase of the Proposed Development will not result in any significant effects on statutory designated sites.

Habitats

- 7.134 There is no potential for impacts on habitats since these will have been lost at the construction phase of the Proposed Development. The restoration of the habitats to their pre-construction state will ensure that there are no long-term effects as a result of the Proposed Development.

Breeding Birds

- 7.135 Decommissioning and restoration of the Proposed Development may result in noise and visual disturbance to breeding birds. This is considered in respect of the Schedule 1 species goshawk and nightjar below.

Goshawk

- 7.136 As discussed in respect of construction and operational impacts, there is no potential for noise or visual disturbance to nesting goshawk during the decommissioning and restoration phase of the Proposed Development, since there are no records of this species nesting within the zone of influence.

Nightjar

- 7.137 As discussed in respect of construction and operational impacts, there will be a small increase in road traffic movements to the Proposed Development during the decommissioning phase. As assessed in respect of construction and operational traffic, it is not considered that this increase will result in any adverse effects on nesting nightjar as a result of noise and visual disturbance.

Bats

- 7.138 The restoration of the Assessment Site to woodland, and removal of artificial lighting, will restore suitable foraging habitat within the Assessment Site boundary for bats, since during the construction and operational phases there will be no suitable habitat within the Assessment Site boundary.
- 7.139 During the short and medium term, before the re-planted trees reach the maturity of those surrounding the Assessment Site, this impact may be beneficial for bats since the presence of a more mosaic habitat type and in combination with the woodland edge habitat surrounding the Assessment Site, may support a more diverse insect assemblage.
- 7.140 Impacts on foraging bats during the decommissioning and restoration phases are therefore assessed to result in a minor beneficial effect on foraging bats in the short to medium term.

Reptiles

- 7.141 Potential impacts on reptiles will occur only during the construction phase associated with disturbance/ loss of habitats. There is no potential for the decommissioning or restoration phase of the Proposed Development to result in adverse effects on reptiles.

Mitigation Measures

Introduction

- 7.142 Mitigation is proposed to minimise the potential significant effects identified by the assessment. Mitigation measures reduce the severity of impacts, and hence the levels at which effects are considered significant.
- 7.143 The final details of any mitigation measures are likely to be developed as part of compliance with planning conditions for the Proposed Development, and will form part of any detailed environmental management undertaken. The contractor, relevant statutory agencies and nature conservation organisations may be involved in this, and measures relating to construction activities will be set out in a Construction Environmental Management Plan (CEMP).

Construction

Statutory Designated Sites

- 7.144 The assessment has concluded that the Proposed Development will result in no significant effects on statutory designated sites and therefore no mitigation is proposed.

Habitats

- 7.145 Dust emissions arising from topsoil stripping during the construction and decommissioning and restoration phases will be controlled through standard dust suppression measures to minimise dust deposition. This will therefore minimise the potential for smothering of vegetation beyond the Assessment Site boundary, and minimise the potential for siltation of the surrounding drainage network. Chapter 9.0 provides more detail on the dust suppression measures to be implemented.

Breeding Birds

- 7.146 All nesting birds are protected once nesting under the Wildlife and Countryside Act 1981 (as amended) (Ref. 7.1) and it is an offence to destroy or damage an occupied nest. To ensure that construction works comply with this legislation, vegetation clearance (including tree felling) will be undertaken outside the breeding bird season where possible (typically March to September inclusive).

7.147 If vegetation clearance is unable to be undertaken outside the breeding bird season, all areas of vegetation will be checked by an ecologist prior to clearance. In the event that active nest sites are found, an appropriate buffer zone (c. 5m) will be established around the nest and works suspended in this zone until the nest has become unoccupied and any young have fledged.

Goshawk

7.148 Goshawk is afforded additional protection whilst nesting under the Wildlife and Countryside Act 1981 (as amended) (Ref. 7.1) through its inclusion on Schedule 1 of the Act, and it is an offence to disturb nesting goshawk or dependent young, as well as to destroy or damage their nests.

7.149 To address the low risk that goshawk may establish new nest sites in the forestry plantation within an approximate 400m radius of the Proposed Development, liaison will be undertaken with the Forestry Commission during the 2013 survey season to establish whether any additional nest sites within those areas described above have been identified.

7.150 In the event that active goshawk nest sites are subsequently identified prior to the commencement of construction, additional mitigation is likely to be required. This is likely to require the maintenance of a 400m disturbance-free zone between February and July inclusive. The assessment has concluded that there is no potential for adverse effects on goshawk as a result of noise during the operational phase of the Proposed Development as a result of the screening effect of the surrounding forestry. Any such, any disturbance-free zone is therefore applicable to the construction phase of the Proposed Development only.

7.151 All tree felling works will be undertaken outside the breeding bird season (which is extended to include February due to the early nesting habits of goshawk) if practicable and therefore there is no risk of directly destroying active and occupied goshawk nests.

Bats

7.152 Lighting (both permanent and temporary columns) will be directed and focussed downwards with appropriate lantern designs to reduce light spillage on to habitats outside construction areas.

Reptiles

- 7.153 Reptiles are protected from injury/ killing under the Wildlife and Countryside Act (1981) (Ref. 7.1) as amended. The deadwood piles and loose heaps of soil/ pine needles throughout the forestry plantation provide potentially suitable habitat for reptile hibernation. If possible, it is recommended that these areas are cleared outside the winter period to avoid the reptile hibernation season. However, given that the woodland is recommended for clearance outside the breeding bird season, it is acknowledged that there is the potential for conflicts between the mitigation strategies for breeding birds and reptiles to occur.
- 7.154 To address the low potential risk of uncovering hibernating reptiles during site clearance works, and to ensure legislative compliance by preventing the killing/ injury of reptiles, it is recommended that any forestry plantation clearance between November and February is cleared under the supervision of an ecologist to allow any reptiles to be moved to a place of safety.
- 7.155 If site clearance works are to be undertaken in the season during which reptiles are active above ground i.e. between approximately March/ April and October, an ecological watching brief would not be required. To address the low risk of causing harm to reptiles, phased clearance of the vegetation on the topsoil storage bund will be undertaken to ensure that any reptiles present can escape from affected areas. Given the limited clearance of vegetation proposed, a capture and translocation exercise for reptiles is not considered necessary since the risk of killing/ injury is low.
- 7.156 The potential presence of reptiles will be highlighted to site personnel as part of the site induction package. Any reptiles encountered incidentally during the works will be immediately moved to a place of safety if they are unable to escape unaided, and the advice of an ecologist sought.

Operation

- 7.157 No mitigation for the operational phase of the Proposed Development is proposed, on the basis that no significant effects on ecological receptors have been identified in the assessment.

Decommissioning and Restoration

- 7.158 No mitigation for the decommissioning and restoration phases of the Proposed Development is proposed beyond dust suppression measures discussed above, on the basis that no significant effects on ecological receptors have been identified in the assessment.

Residual Effects

- 7.159 A summary of the assessment is provided in **Table 7.12**.

Construction

Statutory Designated Sites

- 7.160 The impact assessment has concluded that the Proposed Development will result in negligible effects on Troutsdale and Rosekirk Dale Fens SSSI and the North York Moors SPA/ SSSI, and no effects on the North York Moors SAC. No significant residual effects on statutory designated sites are therefore predicted at the construction phase of the Proposed Development.

Habitats

- 7.161 Residual effects on habitats are assessed to be negligible.

Breeding Birds

- 7.162 With the implementation of appropriate mitigation to ensure that vegetation clearance is undertaken outside the breeding bird season, residual impacts on breeding birds are assessed to be negligible.

Bats

- 7.163 No significant adverse effects on bats are predicted and the residual effects are assessed as negligible.

Reptiles

- 7.164 Mitigation for reptiles is limited to measures to prevent the accidental/ killing injury of reptiles during vegetation clearance operations in the forestry plantation, and associated with ditches. It is assessed that the mitigation will reduce the risk of the impact occurring, and as such the residual effect on reptiles is assessed to be negligible.

Operation

- 7.165 There is no potential for significant residual effects on protected species during the operational phase of the Proposed Development.

Decommissioning and Restoration

- 7.166 There is no potential for significant residual effects on protected species during the decommissioning and restoration phases of the Proposed Development.

Cumulative Effects

- 7.167 Potential cumulative effects have been assessed in respect of other proposed or permitted schemes in the vicinity, acting together to generate elevated levels of effects from those reported above. One project has been scoped into the cumulative assessment; the Ryedale Gas Project (ref: NY/2010/0159/ENV). The Ryedale Gas Project involves the construction of two underground pipelines from the existing Ebberston South Well Site to a new Gas Processing Facility, a new access road, and a new AGI to provide a connection into the existing NTS pipeline.
- 7.168 The nearest part of the proposed Ryedale Gas Project to the Proposed Development is in the vicinity of Oxmoor Dike, where the Ryedale Gas Project crosses the Dike and bisects the minor road (east to west) providing access to Givendale Head Farm (Ebberston Common Lane). The nearest construction works associated with the Ryedale Gas Project are therefore approximately 2.5 km to the south.
- 7.169 The Ryedale Gas Project Environmental Statement (Ref. 7.30) has not identified any impacts on hydrology as a result of the construction and decommissioning of the proposed pipeline, and subsequently concluded that there will be no significant effects on Troutsdale and Rosekirk Dale Fens SSSI. There is therefore no potential for cumulative effects on the SSSI as a result of the Proposed Development.

7.170 Given the distance between the nearest part of the Ryedale Gas Project and the Proposed Development, it is not considered that there is any potential for cumulative effects on any other ecological receptors. It is therefore assessed that there is no potential for any cumulative effects to arise during the construction and decommissioning phases when the Ryedale Gas Project considered in combination with Proposed Development. No operational impacts associated with the Ryedale Gas Project have been identified, given that the project involves a buried pipeline, and therefore there is no potential for cumulative operational effects.

Summary

7.171 The Proposed Development will not result in any loss of protected habitats, and will not result in any significant adverse effects on statutory designated sites including the North York Moors SPA/ SAC/ SSSI and Troutsdale and Rosekirk Dale Fens SSSI.

7.172 Habitats within the study area support a range of protected species. The forestry plantation in which the Assessment Site lies is known to support Schedule 1 nesting bird species goshawk and nightjar, although there are no records of these species within the zone of influence of the Proposed Development. However, as a precaution potential noise and visual disturbance impacts on nesting goshawk and nightjar have been scoped into the assessment, which has concluded that there is no potential for significant effects on these species.

7.173 The desk-study indicates that reptiles are relatively widespread throughout the forestry plantation, and mitigation to address the potential adverse effects on this species has been proposed.

7.174 No significant residual effects on terrestrial ecological receptors have been identified during the construction and operational phases of the proposed development. Likewise, no cumulative effects have been identified.

7.175 **Table 7.12** provides a summary of the likely significant effects of the Proposed Development.

Table 7.12: Table of Significance – Ecology

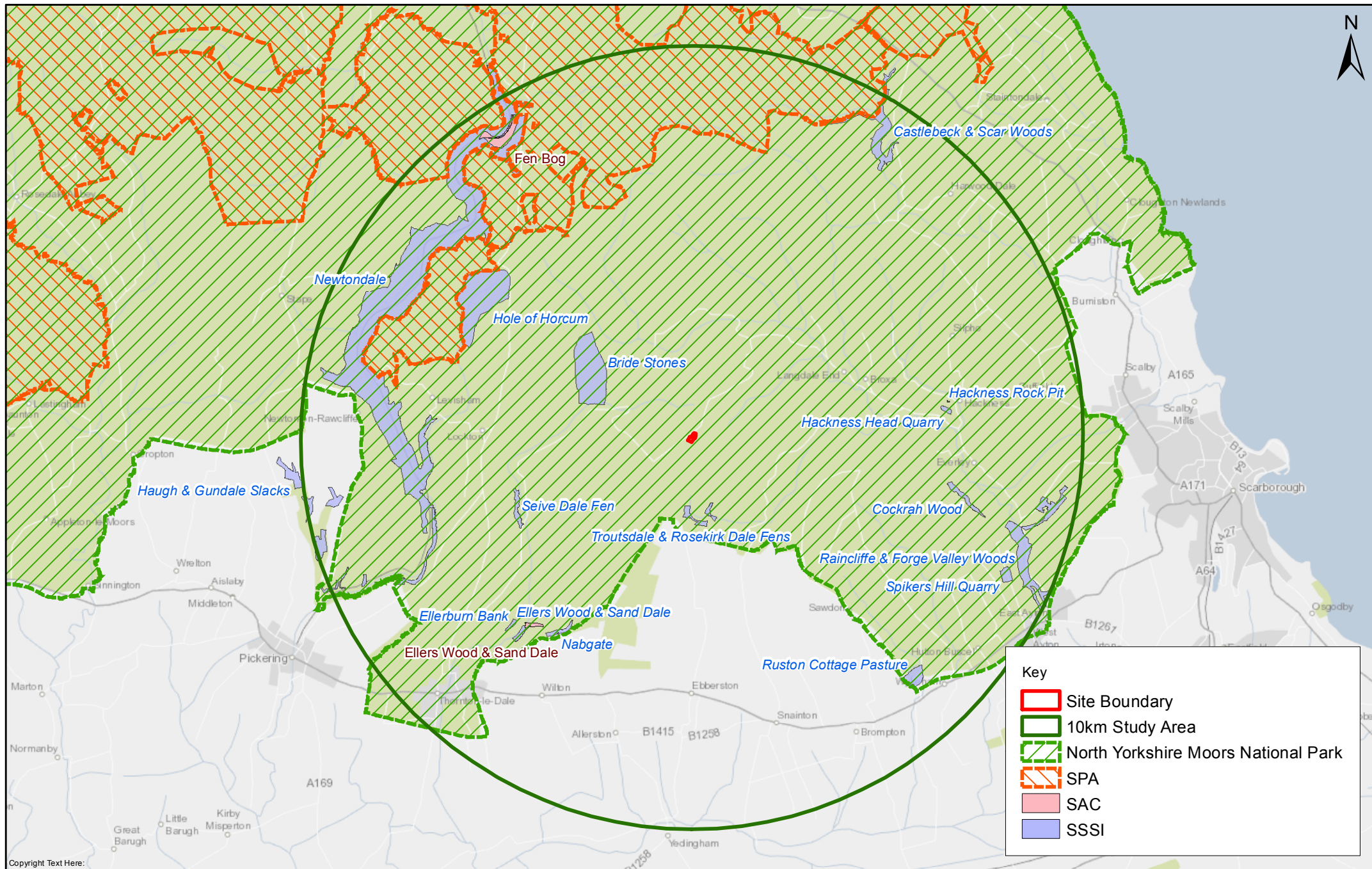
Potential Effect	Nature of Effect (Permanent/ Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/ Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/ Minor) (Beneficial/Adverse/ Negligible)
				I	UK	E	R	C	N P	L	
Construction											
Displacement/ disturbance to birds in the North York Moors SPA/ SSSI	Temporary	Negligible	No mitigation proposed	*							Negligible
Loss of habitat including forestry plantation	Temporary	Negligible	No mitigation proposed. Woodland to be re-planted upon completion of the EDS.							*	Negligible
Damage to habitat as a result of dust deposition	Temporary	Negligible	Standard dust suppression measures during construction phase							*	Negligible
Loss of breeding bird habitat	Temporary	Minor Adverse	No mitigation proposed. Sensitive timing of vegetation clearance to ensure legislative compliance. Woodland to be re-planted upon completion of the EDS.							*	Minor Adverse
Noise/ visual disturbance to breeding goshawk	Temporary	Negligible	Liaison with Forestry Commission to check whether any goshawk nests have become established within 400 m zone from Development site							*	Negligible
Noise/ visual disturbance to breeding nightjar	Temporary	Negligible	No mitigation proposed							*	Negligible
Loss of habitat used by foraging/ commuting bats	Temporary	Negligible	No mitigation proposed. Habitat to be re-planted upon completion of the EDS.							*	Negligible
Lighting disturbance to foraging/ commuting bats	Temporary	Negligible	Lighting designed to be downward directional to minimise light spillage outside site boundary							*	Negligible
Loss of habitat supporting reptiles	Temporary	Negligible	Sensitive clearance of vegetation, watching brief by ecologist where necessary							*	Negligible

Potential Effect	Nature of Effect (Permanent/ Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/ Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/ Minor) (Beneficial/Adverse/ Negligible)	
				I	UK	E	R	C	N P	L		
Loss/ damage to habitat supporting reptiles	Temporary	Moderate Adverse	Sensitive clearance of vegetation, watching brief by ecologist where necessary								*	Negligible
Completed Development												
Changes in air quality resulting in effects on Troutsdale & Rosekirk Dale Fens SSSI	Temporary	Negligible	No mitigation proposed		*							Negligible
Changes in water quality resulting in effects on Troutsdale & Rosekirk Dale Fens SSSI	Temporary	Negligible	No mitigation proposed		*							Negligible
Noise/ visual disturbance to birds in the North York Moors SPA/ SSSI	Temporary	Negligible	No mitigation proposed	*								Negligible
Changes in air quality resulting in effects on habitats	Temporary	Negligible	No mitigation proposed								*	Negligible
Changes in water quality resulting in effects on habitats	Temporary	Negligible	No mitigation proposed								*	Negligible
Noise/ visual disturbance to breeding goshawk	Temporary	Negligible	No mitigation proposed								*	Negligible
Noise/ visual disturbance to breeding nightjar	Temporary	Negligible	No mitigation proposed								*	Negligible
Lighting disturbance to foraging/ commuting bats	Temporary	Negligible	Lighting designed to be downward directional to minimise light spillage outside site boundary								*	Negligible
Decommissioning and Restoration												
Changes in air quality resulting in effects on Troutsdale & Rosekirk Dale Fens SSSI	Temporary	Negligible	No mitigation proposed		*							Negligible
Noise/ visual disturbance to birds in the North York Moors SPA/	Temporary	Negligible	No mitigation proposed	*								Negligible

Potential Effect	Nature of Effect (Permanent/ Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/ Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/ Minor) (Beneficial/Adverse/ Negligible)	
				I	UK	E	R	C	N P	L		
SSSI												
Noise/ visual disturbance to breeding goshawk	Temporary	Negligible	No mitigation proposed								*	Negligible
Noise/ visual disturbance to breeding nightjar	Temporary	Negligible	No mitigation proposed								*	Negligible
Increased habitat availability for foraging/ commuting bats	Temporary	Minor Beneficial	No mitigation proposed								*	Minor Beneficial
Cumulative Effects												
None identified												

* Geographical Level of Importance

I = International; UK = United Kingdom; E = England; R = Regional; C = County; NP = National Park; L = Local



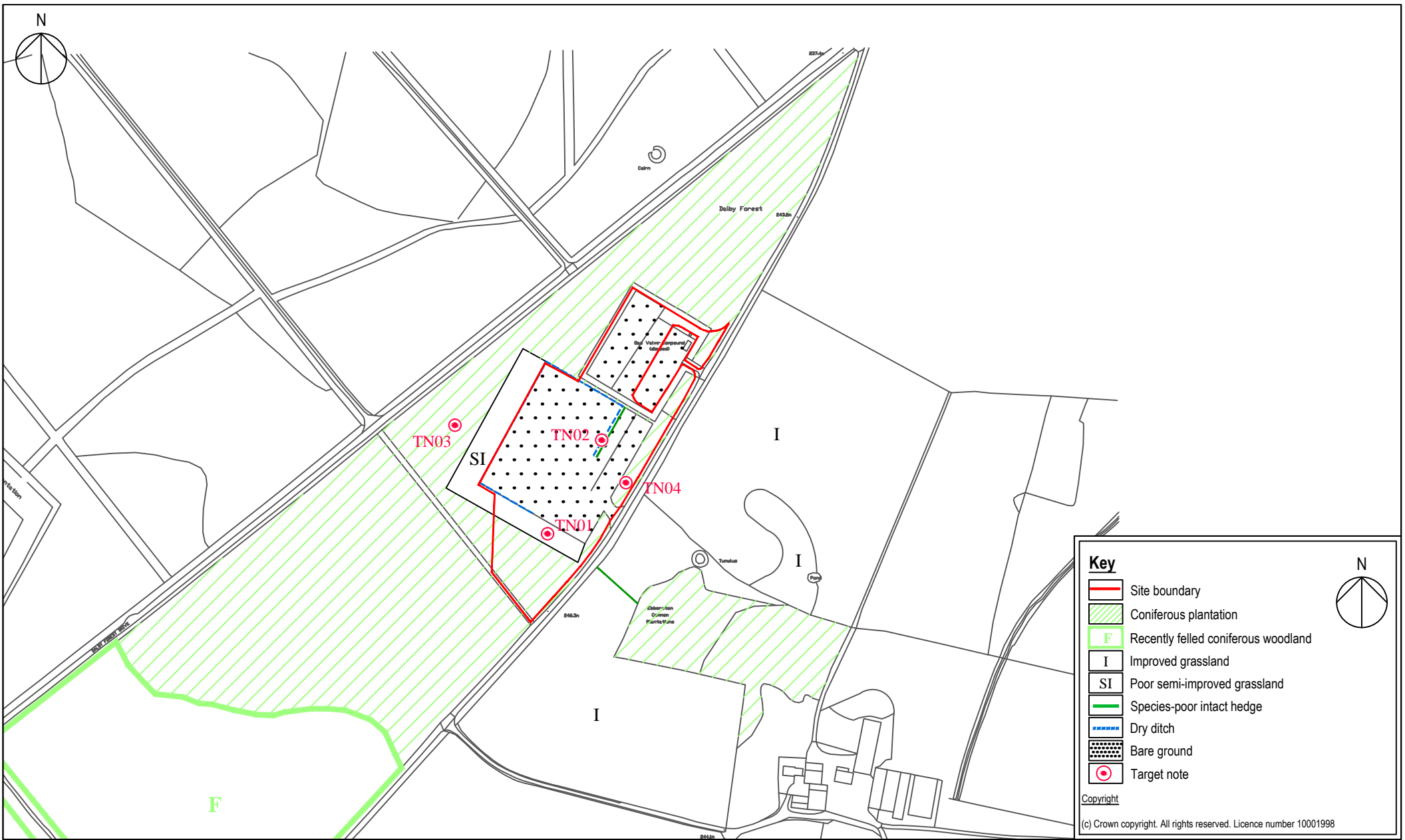
Key

- Site Boundary
- 10km Study Area
- North Yorkshire Moors National Park
- SPA
- SAC
- SSSI

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										Scale @ A4 125000		Drawing Number 47063256/EC/101	
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By				Check Date		Suffix		Approved JA		Date 13.05.13		Rev 0	



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 Plot Date: E-MAN-0011E - PROJECTS\NEWPROJECT\470653256 - KNAPTON PIPELINE\CAD\470653256 EC 102 - FIGURE 2
 File Name:



Key

- Site boundary
- Coniferous plantation
- Recently felled coniferous woodland
- Improved grassland
- Poor semi-improved grassland
- Species-poor intact hedge
- Dry ditch
- Bare ground
- Target note

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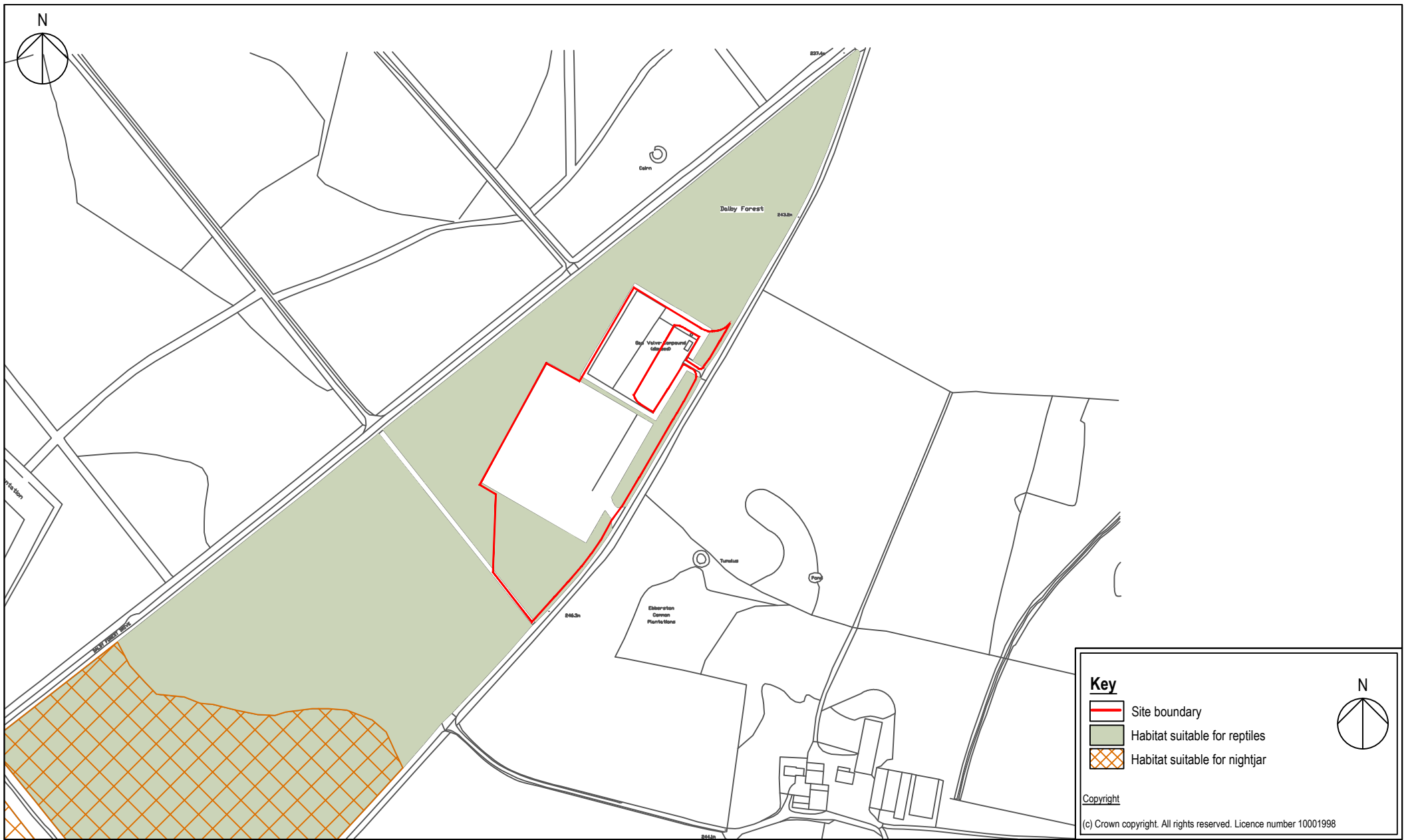
Drawing Title
Figure 2
Phase 1 Habitat Map
Ebberston EDS

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Drawing Title

Figure 3
Protected Species
Constraints Map
Ebberston EDS

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Key

- Site boundary
- Habitat suitable for reptiles
- Habitat suitable for nightjar

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