

SLOUGH MULTIFUEL EXTENSION PROJECT

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Environmental Statement
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Appendix 10D - EclA Methodology Technical Appendix

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ECOLOGICAL IMPACT ASSESSMENT (ECIA) METHOD TECHNICAL APPENDIX

10.1 Introduction

10.1.1 Additional clarification and detail are provided within this ES appendix for the following sub-sections of the ecological impact assessment methodology:

- Identification of Important Ecological Features; and
- Assessment (Significance) Criteria

10.2 Identification of Important Ecological Features

10.2.1 It is impractical and inappropriate for an assessment of the ecological effects of a development to consider every species and habitat that may be affected. Instead, it should focus on ecological features which were considered important. These are species and habitats present within the zone of influence of the Proposed Project that are of sufficiently high value that an effect upon them, as a result of the Proposed Project, could be considered to be significant.

10.2.2 Data received through consultation, desk-based investigations and field-based investigations were used to allow relevant ecological features (including designated sites, ecosystems, habitat and species) of value (or potential value) to be identified, and the main factors contributing to their value described and related to available guidance.

10.2.3 The valuation of species populations, assemblages of species and habitats used accepted criteria. Examples include:

- Species populations - The importance of populations was evaluated on the basis of their size, recognised status (e.g., published lists of species of conservation concern, BAP status) and legal protection status;
- Species assemblages - In some instances it was the species assemblage that was of importance. Criteria used to evaluate the importance of assemblages included SSSI selection criteria; and
- Habitats - Criteria for the evaluation of habitats and plant communities included Annex III of the EC Habitats Directive, guidelines for the selection of biological SSSIs and, where available, local authority and Wildlife Trust criteria for selection of Local Sites (e.g. County Wildlife Sites or Sites of Importance for Nature Conservation).

10.3 Assessment (Significance) Criteria

10.3.1 When describing potential impacts (and where relevant, the resultant effects) reference is made to the following characteristics:

- Beneficial / adverse - i.e., is the change likely to be in accordance with biodiversity objectives and policy:
 - Beneficial (i.e., positive) - a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value;
 - Adverse (i.e., negative) - a change that reduces the quality of the environment. e.g., destruction of habitat or increased noise disturbance.
- Magnitude - the 'size', 'amount' or 'intensity' of an impact, described on a quantitative basis where possible;
- Spatial extent - the spatial or geographical area or distance over which the impact/effect occurs;
- Duration - the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. The likely duration of the impact should be quantified (e.g., two weeks duration; five to ten years). Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- Reversibility - i.e., is the impact temporary or permanent.
 - Temporary impact - is one from which recovery is possible or for which effective mitigation is both possible and enforceable.
 - Permanent effect - is one from which recovery is either not possible, or cannot be achieved within a reasonable timescale (in the context of the feature being assessed); and
- Timing and frequency - consideration of the point at which the impact occurs in relation to critical life-stages or seasons.

10.3.2 Potential impacts on relevant ecological features are assessed and a judgement reached on whether or not the resultant effect on conservation status or structure and function is likely to be significant.

10.3.3 This process takes into consideration the characteristics of the impact, the sensitivity of the ecological feature concerned, and the geographic scale at which the feature is considered important.

10.3.4 The Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines state that:

- *“For the purposes of EclA a ‘significant effect’ is an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general...”*

- 10.3.5 In broad terms, significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).
- 10.3.6 For sites designated for their biodiversity value, defined sites and ecosystems, the assessment considers how the proposals are likely to affect the conservation objectives for the site and/or its interest/qualifying features. For ecosystems, consideration is given to whether the proposals are likely to result in a change in ecosystem structure and/or function.
- 10.3.7 For species and habitats, the effects of impacts on individual habitats and species are considered in relation to ‘conservation status’ which is defined in the CIEEM guidelines as follows:
- For species: conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area; and
 - For habitats: conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
- 10.3.8 In considering effects on conservation status, reference is made to relevant available guidance on the existing conservation status of a feature.
- 10.3.9 Conclusions on the significance of effects are related to the concepts of ‘structure and function’ or ‘conservation status’ as being either:
- Not-significant (i.e. no effect on structure and function, or conservation status); or
 - Significant (i.e. structure and function, or conservation status is affected).
- 10.3.10 Such judgements are based, wherever possible, on quantitative evidence. However, where necessary the professional judgement of an experienced ecologist has been applied (CIEEM, 2018).
- 10.3.11 For those effects considered significant, the effect has also been characterised as appropriate (e.g., adverse or beneficial), and qualified with reference to the geographic scale at which the effect is significant (e.g., an adverse effect significant at a national level).
- 10.3.12 The scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, an effect on a species of principal importance for nature conservation at the national level may not have a significant effect on the conservation status of the national population of that species.
- 10.3.13 The 2018 CIEEM guidance on EclA (CIEEM, 2018) avoids and discourages the use of the matrix approach for determining the significance of effects on ecological features. It is considered that this approach can lead to value-based judgements

and an evaluation which is subjective and not underpinned and supported by a clear evidence base; hence for the purposes of this assessment, professional judgement will be used.

10.4 References

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal Second Edition. Chartered Institute for Ecology and Environmental Management, Hampshire.

CIEEM (2018) Guidelines for ecological impact assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine September 2018. Chartered Institute for Ecology and Environmental Management, Hampshire.

HMSO, Wildlife and Countryside Act 1981 (as amended). London.

HMSO, Countryside and Rights of Way Act 2000. London.

HMSO, Natural Environment and Rural Communities (NERC) Act 2006. London.

HMSO, Conservation of Habitats & Species Regulations 2017. London.

Joint Nature Conservation Committee (JNCC) (1994) 'The UK Biodiversity Action Plan (UK BAP).