Appendix 3: Likely Significant Effects

By following the Risk Assessment Decision Tree, you have been directed to this section because there is a possible risk of likely significant effect(s) occurring from the development being proposed/evaluated. The following table will be used by Development Control Officers to record actions taken to monitor/address any likely significant effects (LSE). In the event that a pSPA/SPA is declared, Mansfield District Council will need to review all out-standing permissions under the 2010 Habitat Regulations. This Appendix is designed to assist with this and decisions on planning applications.

Background

The Decision Tree of the risk-based approach attempts to address the main likely significant effects in relation to the type and location of the development (i.e. distance from important bird areas). Please note, that there may be additional, combined effects that require consideration, depending on the nature of the proposed development. ***A precautionary approach should be taken with regards to possible impacts from combined effects.***

Relevant avoidance, mitigation and/or compensation measures (in this order) should address any direct, indirect and cumulative effects over time. Potential cumulative effects should be addressed in relation to the specific application being considered, as well as, combined effects with other nearby developments (current and planned). In-combination effects regarding residential development is well documented; this includes, for example, potential recreation disturbance, loss of habitat from anti-social behaviour (fires), and predation from cats and other animals.

Although an Appropriate Assessment under Section 61 of the Habitats Regulation 2010 is not currently required (as the area has not been formally designated a pSPA or SPA), it is in Mansfield District Council's best interest to take a precautionary risk-based approach to development plans and proposals as advised by Natural England (June 2010 / updated July 2011).

A recent planning inspector's decision to refuse planning permission on a development in Newark and Sherwood (Rufford Incinerator), was backed by the Secretary of State (May 2011). The likely significant impact of the development on Nightjar and Woodlark was a major determining issue; the Secretary of State agreed that, whilst the application site was within an area not currently identified as a Special Protection Area, there was merit in following a (Conservation of Habitats and Species) Regulation 61 approach towards considering the impacts of the development.

Advice from RTPI's good practice guide, 'Planning Decisions for Biodiversity'

***Avoidance**: Have all effects on wildlife, species and habitats been avoided wherever possible?*

***Mitigation**: Where adverse effects are unavoidable, have they been or can they be minimised by the use of mitigation measures that can be guaranteed?*

***Compensation**: Where, despite mitigation, there will be residual effects that mitigation cannot reduce further, have they been or can they be compensated by measures that try at least to offset the harm?*

Also see http://www.ieem.net/ecia/mitigation.html for further guidance.

Instructions

Below are considerations that should be addressed. Please note that this is not an exhaustive list and further advice should be sought from Planning Policy, Natural England and other relevant conservation bodies (see Appendix 2).

- Please refer to the following table and circle/highlight those likely significant effects (LSEs) considered (may be more than one).
- Record evidence requested by MDC and/or submitted by the applicant to address each LSE and any cummulative considerations e.g. species surveys, modelling studies, Environmental Statement (as part of EIA), etc.
- Indicate any cumulative effects considered.
- Record any measures taken as part of the proposed development with reference to LSEs.
- Include this table along with the Decision Tree in the associated planning file.

Likely Significant Effects to Consider

A. Direct Loss of Habitat
B. Is the development likely to pose a barrier/deterrent to movement of key bird species?
C. Indirect loss of habitat or degradation of habitat quality due to: air quality, abstraction, and/or water quality factors.
D. Noise
E. Light
F. Mortality from predation of nesting sites e.g. domestic cats, bird of prey, crows, fox
G. Increased disturbance from roads and/or recreational activity in and around the combined ICA/IBA area.
H. Other Considerations

Likely Significant Effect (LSE)		**Things to Consider**	**In-combination effects considered** (List appropriate letter code(s) as indicated above.	**Evidence of supporting information** (as requested by DC and/or submitted by applicant)	**Avoidance, Mitigation & Compensation Measures Addressed**
A	**Direct Loss of Habitat**	Mitigation of functional habitat (see Appendix1) is not a valid option. Permission should be avoided if located within combined ICA/IBA bird areas, as it may be difficult to avoid or mitigate any LSE. If new habitat is to be created or enhanced, how will this be managed and protected from future degradation/disturbance? E.g. design features and visitor access. Please note under 'Mitigation.' Are surveys carried out by a competent ecologist, at appropriate times of year, and follow Common Bird Census methods? See Appendices 1&2.			

B	**Is the development likely to pose a barrier/deterrent to movement of key bird species? i.e. is it located between core bird areas and/or other areas of preferred habitat?**	Is there an alternative location? Urban areas can create a barrier for movement required for foraging and migration. Research suggests that Nightjar occupancy of a site depends on the distance between suitable habitat patches (around 100-500m).[1] Is there potential for creating new habitat links within or adjacent to the development? If new habitat is to be created or enhanced, how will this be managed and protected from future degradation/disturbance? E.g. design features and visitor access. Please note under 'Mitigation.'			
C	**Indirect loss of habitat or degradation of habitat quality due to:** **- Nitrogen (N), sulphur, &/or ammonia deposition e.g. road traffic, industrial source(s), and/or dog fouling.** **- Water abstraction** **- Water quality issues e.g. sewage effluence**	Emissions of nitrogen oxides and ammonia can lead to N enrichment (eutrophication). These problems can result in a loss of biodiversity in sensitive ecosystems because N-loving species benefit at the expense of other species of conservation interest. Increases in N can also lead to increased sensitivity to frost and drought and can effect soil health.[2] The UK Air Pollution Information System (APIS) provides guidance on critical loads and levels for heathland; empirical critical loads for atmospheric nitrogen deposition on heathland is 10-15 kg N $ha^{-1}yr^{-1}$. This is the same for Acidophilous *Quercus*-dominated woodland. Nitrogen deposition rates for the area currently exceed this.[3] For those pollutants which are emitted in significant amounts, detailed modelling may be required if the process is located near to sensitive receptors/locations of relevant exposure. Please also refer to the MDC Strategic Flood Risk Assessment, MDC Water Cycle Scoping Study and the Environment Agency regarding water abstraction and water quality issues.	Active habitat management has a positive effect on long-lived habitat quality.	Please indicate source(s) and levels measured as 'critical load'.	

D	**Noise**	Birds seem to be especially sensitive to traffic noise, as it directly interferes with their vocal communication and thereby affects their territorial behaviour and mating. Traffic and urban noise operate within the same pitch level (approximately 1-4 kHz) of birds song, thus effecting bird communication. Studies on road noise have shown that noise disturbance affects density of breeding birds and, thus overall productivity: birds in open grasslands declined where the traffic noise burden exceeded 50 dbA and birds in woodland reacted already at noise levels of 40 dbA.[4]			
E	**Light**	There is currently little research to support detailed analyses of light pollution; a precautionary approach should therefore be taken. Please refer to LSE as a result of roads.			
F	**Mortality from predation of nesting sites e.g. domestic cats, raptors, crows, fox**	Research on the roaming distance of domestic cats varies from approx. 400m to over 1500m. Evidence suggests that about 60% of domestic cats roam up to 400m.[5] Housing developments will need to take this into account. Thames Basin Heath SPA prohibits building within 400m of the SPA boundary. The closer the distance, the greater the *likely significant effect*. The UK averages about 320-330 cats per 1000 households. Tall structures (e.g. buildings, communication masts, power lines) may impact ground nesting birds by acting as perches for birds of prey and corvids (crows). Research suggests that predation increases, with increased urban density and density of paths close to nesting areas.[6] Disturbance from people and perhaps, especially dogs, may flush the adult birds from the nest, exposing the eggs to predators such as crows. Thus, limiting recreational access to nesting areas may also help decrease the risk of egg predation.			

G	**Increased disturbance from roads and recreational activity in and around the combined ICA/IBA area.**	The general rule of thumb is: the closer the distance, the greater the *likely significant effect*. <u>Recreational Disturbance:</u> Travel distance to points of access to the combined ICA/IBA area will need to be taken into account in measuring distance from the development site in question e.g. public rights of way, other trails, roads and car parking areas (formal or informal). Distance that most people are prepared to walk to a natural greenspace is typically up to ***800 metres*** but some people may be willing to travel further depending on factors such as ease of access[7]. For visitors travelling by car, distance travelled to ICA/IBA area will be longer and depend on car parking provision available near access points. Increased recreational use of areas also increases the vulnerability to predation. Questions to address: - Are there suitable alternative greenspace(s) located between the development site and the combined ICA/IBA area? Please see Appendix 4 for further guidance. - Can alternative routes of access be promoted and encouraged through site design and layout? Is access to sensitive to the ICA/IBA area diverted to less sensitive areas? - What type of on-going monitoring is proposed? - How will the users of greenspace (esp. dog walkers) be informed of specific codes of practice (e.g. staying on paths and dog fouling)? <u>Roads</u> The locations and density of roads may pose a combination of effects such as habitat fragmentation, barriers to migration, noise, air and light pollution.	Also see F above.		

H	**Other Considerations** (e.g. impacts from fires as a result of anti-social behaviour)	Any additional effects that may arise, please indicated here:			

References Cited

1. Bright, J.A., Langston, R.H., Bierman, S. October 2007. Habitat associations of nightjar Caprimulgus europaeus breeding on heathland in England. RSPB Research Report No 25. RSPB The Lodge, Sandy, Bedfordshire.
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3. UK Air Pollution Information System (APIS) website: http://www.apis.ac.uk/index.html.
4. Reijnen, M., Veenbaas, G. and Foppen, R. (1995) *Predicting the effects of motorway traffic on breeding bird populations*. Delft, The Netherlands.: Road and Hydraulic Engineering Division and DLO-Institute for Forestry and Nature Research, P-DWW-95-736.
5. Barratt, D.G. (1997) Home range size, habitat utilisation and movement patterns of suburban and farm cats Felis catus. *Ecography*, **20**, 271-280.
Turner, D. C., and O.Meister. 1988. Hunting behaviour of the domestic cat. Pages 111–121 *in* D. C. Turner and P. Bateson, editors. The domestic cat: the biology of its behaviour. Cambridge University Press, Cambridge, UK.
6. Underhill-Day, J.C. (2005). A literature review of urban effects on lowland heaths and their wildlife, Rep. No. 624. English Nature, Peterborough.
7. Underhill-Day, J.C. and Liley, D. 2007. Visitor patterns on southern heaths: a review of visitor patterns to heathlands in the UK and the relevance to Annex I bird species. Ibis, 149 (suppl. 1), 112-119.