

Proposed mineral working
Middleton Lodge, North Yorkshire

Appraisal of ecological issues

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Kevin Honour MSc MIEEM

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Argus Ecology

Unit 14, The Greenhouse

Greencroft Industrial Park

Annfield Plain, Co. Durham

DH9 7XN

Tel: 01207 524859

Fax: 01207 524895

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	Name	Signature	Date
Prepared By:	Kevin Honour		16/02/07
Checked By:	Paul Lupton		16/02/07

Prepared By: Argus Ecology Unit 14, The Greenhouse Greencroft Industrial Park Annfield Plain, Co. Durham DH9 7XN, UK Tel: +44 (0)1207 524859 Fax: +44 (0)1207 524895	Prepared For: England & Lyle Morton House Morton Road Darlington, Co. Durham DL1 4PT, UK Tel: +44 (0)1325 469236 Fax: +44 (0)1325 489395
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Contents

	Page
Summary	4
1 Introduction	5
2 Appraisal of ecological surveys	6
3 Appraisal of ecological evaluation and impact assessment	7
4 Appraisal of proposed ecological mitigation	11
5 Conclusions and recommendations	13
6 References	14

Summary

An independent appraisal of the ecological surveys, and of likely ecological impacts of the development has been carried out. Key conclusions are as follows:

- The scope of the ecological surveys was adequate to determine and describe the ecological interest features present on site; and
- The execution of the surveys appeared to be carried out to a high standard, with no significant deviations from standard methodologies; but
- The planning application states that there will be no impacts on protected species, which is contradicted by the ecological survey results;
- In the EIA, the evaluation section of the ecology chapter omitted some ecological interest features;
- The impact assessment is over-optimistic concerning several key impacts, particularly on badgers; and
- Mitigation measures do not address some key impacts, and much of the planned compensation will not begin to be put in place until 10 years after commencing development.

1 Introduction

James Allison and Sherburn Stone Company Ltd. have submitted a planning application for mineral extraction on the Middleton Lodge Estate, near Middleton Tyas, North Yorkshire. The application also provides for the creation of a number of visitor attractions on the estate, including a garden with water feature created in part of the quarry void.

The development raises a number of ecological issues, including potential impacts on legally protected species. These have been addressed by a number of ecological surveys, and an ecological impact assessment, carried out by Durham Wildlife Services or their agents.

This document provides an independent appraisal of the scope, execution and conclusions of the ecological impact assessment. Survey, evaluation and impact assessment methodologies employed are evaluated against standard published guidelines (IEA, 1995; IEEM, 2006).

Based on Durham Wildlife Services' data, the impact assessment and mitigation requirements have been assessed against their likely compliance with species protection legislation, and with planning policies for biodiversity conservation.

The appraisal is based on consideration of the Environmental Impact Assessment, with particular reference to the ecology section and technical appendices. Component plans, including the Landscape Masterplan and Indicative Phasing Plan for minerals extraction were also consulted. The only document which it was not possible to access was the Confidential Badger survey; however, its conclusions have been incorporated into other documents, allowing an assessment of its key components.

2 Appraisal of ecological surveys

2.1 Scope of surveys

The scope of the ecological surveys and impact assessment were derived from the conclusions of a Scoping Report, which included consultations with a sufficiently wide range of agencies in order to determine an appropriate scope of ecological investigation.

The range of surveys undertaken includes a Phase 1 Habitat Survey; water vole and otter survey; bat survey; breeding bird survey; badger survey; and terrestrial invertebrate survey. This is sufficient to properly characterise the ecological interest features of the proposed development site.

The geographical scope of the component surveys mostly appeared adequate in order to encompass all interest features which could be potentially impacted by the proposed development, and were appropriate to the particular species concerned. The Phase 1 Habitat Survey appeared from the map produced to be confined to the planning application boundary, although this was not clear from the Phase 1 map, which did not have a survey boundary marked on it.

2.2 Survey methodology

All surveys which were appraised (i.e. excluding badger survey) were explicit about methodology and timing. All made reference to currently accepted standard methods, and appear to have been carried out at an appropriate intensity, and at an appropriate time of year.

2.3 Standard of survey execution and outputs

All surveys appear to have been carried out by suitably qualified and experienced personnel, holding relevant Natural England licenses (in the case of protected species surveys).

Protected species surveys utilised DEFRA / Natural England reporting formats, which are sufficiently comprehensive to provide a clear picture of the species or species groups concerned.

In conclusion, survey data appears to provide a detailed description of ecological baseline conditions on the proposed development site, and there is no reason to question its validity. The Phase 1 Habitat Survey excluded habitats in the vicinity of the planning application boundary, which would have allowed a better characterisation of the overall value of the estate, and identified any nearby habitats which could have been vulnerable to indirect impacts.

3 Appraisal of ecological evaluation and impact assessment

3.1 Evaluation and impact assessment methodology

The Ecology section of the Environmental Statement makes reference to the currently accepted standard (IEEM, 2006) for evaluation and impact assessment, and broadly follows its recommended methodology.

Although reference is made to UK and Local Biodiversity Action Plans, no reference is made to species or habitats listed under Section 74 of the 2000 Countryside and Rights of Way Act, which provides the legislative basis for protection of BAP Priority Species in planning decisions.

3.2 Identification of ecological receptors

Three valued ecological receptors were identified in the assessment – badger (local level of ecological value), bats (District / County level) and breeding birds (District level). This does not adequately represent the full range of ecological receptors present on site. We would dispute the following aspects of the evaluation:

Vegetation

The evaluation states that there are '*a limited range of habitats within the application area*' and that '*none are considered to be of ecological importance.*' This is not borne out by some of the findings of the component surveys. For example, the habitat survey refers to over mature fruit trees with splits and cracks in the walled garden area, while the bat survey focuses attention on two very mature isolated ash trees in the grassland. Both of these features are within the proposed development area. Wardell Armstrong's Existing Site Setting drawing (Fig. 2) in the Scoping Report refers to 'mixed deciduous woodland with veteran trees' on the northern boundary of the proposed development area.

Veteran trees, old orchards, and mixed deciduous woodland are all normally regarded as ecological interest features. In this case they are probably all of no more than local value, but should still have been recognised as interest features, and considered as ecological receptors in the impact assessment.

In addition, the statement on vegetation and habitats neglects the value that component habitats of limited intrinsic value can have for other ecological interest features. For example, the improved grassland habitat which makes up the main area of proposed mineral extraction is potentially very valuable for foraging badgers, since it is likely to support high populations of earthworms, a major dietary component. Breeding birds are similarly dependent on component habitats such as woodland and scrub, so to state they have no ecological importance under-states

the value of component habitats on the estate. Overall, there is little appreciation of the value of habitats in combination, in terms of how elements of the landscape function together to support component species – despite the fact that this function is explicitly recognised in some of the component surveys, such as the bat survey.

Badger

The Local value attributed to the badger population is probably correct, although it should be remembered that the legal protection afforded to badgers is a separate issue from their scale of importance in nature conservation terms.

As noted above, the importance of habitats within the application site for badger foraging was not stressed; as well as the improved grassland habitat referred to above, fruit trees in the walled garden are likely to be particularly important at appropriate seasons. This is borne out by the presence of a badger trail entering the walled garden. In this case, the small size of this habitat was referred to – however, a high quality habitat of small size can have a disproportionate importance, and this is certainly true in the case of fruit trees and badgers.

Bats

The ecological assessment acknowledges the importance of Middleton Lodge estate to bats, with 6 species recorded, with the application area assessed as being of District / County level importance for foraging bats.

Birds

If anything, the value of the site for breeding birds has been slightly over-stated in the evaluation section; a Red List species (song thrush) which remains widespread is probably of no more than local, not District-level value. However, more pertinently, song thrush is listed as a species of principal importance for biodiversity conservation under Section 74 of the Countryside and Rights of Way Act.

The acknowledged value of the site for breeding birds has not been translated in the evaluation to give any value to bird habitats such as woodland and scrub; the value of the site in its entirety for birds depends on the totality of different habitats present, including the juxtaposition of woodland and open grassland.

3.3 Ecological impact assessment

Nature of impacts

The identification of impacts includes a list of the main types of change likely to result from the development. Impacts associated with the quarry are highlighted as being temporary in nature; this appears to influence the subsequent assessment of impact magnitude and significance. The ‘construction phase’ of the development

appears to include both the construction of visitor facilities, and the operation of the quarry. The lack of an explicit time dimension in the ecology section creates the impression that construction phase impacts are relatively short-term in duration. While clearly quarry operations are temporary in nature, mineral extraction is intended to proceed over a 20 year period (see Indicative Phasing Plan; Figure 3 of Scoping Report). The associated construction phase impacts are clearly therefore of a longer-term nature, particularly as restoration to a nature conservation end-use will not commence until phase 3 of the development is complete; i.e. after 10 years. The first phase of restoration is associated with income and visitor-generating activities through building works and the creation of the quarry garden. This may alter the assessment of their magnitude and subsequent significance, as well as the need for targeted mitigation measures.

Impacts on vegetation

As the preceding evaluation did not ascribe any value to vegetation, ecological impacts are assessed as neutral. This ignores the following impacts:

- Permanent loss of improved grassland (badger foraging habitat);
- Permanent loss of old orchard trees (badger foraging, potentially important in their own right);
- Loss of two veteran ash trees; and
- Potential indirect impacts on veteran trees in mixed deciduous woodland on northern edge of extraction area (e.g. from changes in water table).

The overall effect of these impacts is likely to be of at least minor, possibly moderate negative magnitude.

Impacts on badgers

The magnitude of impacts on badgers was assessed as minor negative, because of the loss of a currently unused outlier sett, blasting operations, and potential badger fatalities through falls into the quarry. The long-term impact was considered to be major positive due to the creation of a greater habitat diversity in the restoration scheme, with cover, corridors and greater feeding opportunities. The impact of developing the walled garden was assessed as neutral, because of the small size of the area involved.

In fact the improved grassland is likely to represent prime foraging habitat for badgers, attracted to its earthworm population. Although the eventual (after 10 years) replacement of this habitat with species-rich grassland and other habitats may benefit many species, the thin, nutrient-poor soil profiles are unlikely to

support a high earthworm population; indeed, the paucity of earthworm populations after soil disturbance following mineral and coal extraction is well-documented (Standen *et al.*, 1982). This is therefore a long-term negative impact of at least minor magnitude.

It seems likely that its observed usage of the walled garden by badgers was as a consequence of the occurrence of a high quality food resource in the form of fruit trees. Its loss will therefore have a disproportionate effect on the population, and should have been assessed as being of minor magnitude.

When disruption to established foraging patterns is taken into account, with the possible medium-term barrier effect of the quarry workings, and the loss of an outlier sett which may well have been re-occupied in the future, the overall impact on badgers should probably be assessed as moderate negative in magnitude.

Impacts on bats

The impact on bats is described as neutral, because no roost sites will be affected, and the majority of the development area is not of high quality for foraging bats. The loss of a wall and rock exposure used by foraging bats is, however, classed as a minor negative impact.

The loss of the two mature ash trees is explained as being neutral, because they are already mature, one of them is suffering from die-back, and may have fallen naturally by the time that quarrying operations require them to be felled. An alternative interpretation is that they are likely to develop further crevices and cavities, and become more suitable as bat roosts over the next 10 years. Veteran trees can survive with significant levels of decay and die-back for many years.

Although the impact of quarrying operations is described as neutral, this is contradicted by the statement about loss of the wall. In fact, there is a risk that loss of the wall and mature ash trees will, in combination, create a sterile corridor acting as a barrier to bat movement between more favourable habitats to the north and south. When earlier statements are recalled regarding the regional importance of the estate for bats, the conclusion should be that there will be at least a minor negative impact on bats during the operation of the quarry.

Impact on birds

The impact on breeding birds is described as moderate negative if construction works are undertaken during the bird breeding season; minor negative if the breeding season is avoided. This appears to be a reasonable assessment.

4 Appraisal of mitigation measures

4.1 Mitigation for badgers

Mitigation for badgers is limited to fencing the northern boundary of the quarry, and carrying out exclusion works with one-way gates around the outlier sett. This is good practice as far as it goes, but there are no positive measures to compensate for the loss of badger habitat to the south of the woodland, such as the grassland and walled garden.

The residual impacts following mitigation are therefore likely to be at least minor negative, not neutral as predicted in the report.

4.2 Mitigation for bats

Bat mitigation proposals are more comprehensive, and should result in a net positive impact through the development of habitats such as wetland which are of high quality for foraging bats. Additional provision for roosting bats is also welcome.

There will still be a residual negative impact of at least 5 years duration, due to the loss of connectivity between the woodland to the north of the site and habitats to the south as a consequence of quarrying operations. In addition, immature replacement habitats such as newly planted trees and shrubs will take at least a further 5-10 years before they can function as effective bat foraging / commuting corridors.

Although the works will ultimately have a positive impact on bats, as stated in the report, there will be negative impacts of between 5-15 years duration, specifically affecting habitat connectivity on the estate.

4.3 Mitigation for breeding birds

Mitigation for breeding birds appears adequate, with measures to avoid damaging operations during the breeding season. The minor negative impacts predicted for swallow and song thrush in the walled garden area appear to be a fair assessment of the likely outcome.

4.4 Deficiencies in proposed mitigation measures

As there are no predicted effects on vegetation, no mitigation measures are proposed to deal with issues such as potential impacts to the adjacent mature woodland, and loss of habitats which benefit other species – notably grassland and orchard habitats.

With regard to the mature woodland, there is no indication of the size of any stand-offs between the quarry and mature trees, so there remains a risk of impacting on this feature.

With regard to badger foraging habitat, there is a need to carry out positive mitigation measures before quarrying commences, establishing advanced planting of fruit trees, and looking at the availability of grassland foraging habitat elsewhere on the estate. Similarly, the establishment of alternative bat foraging corridors at an early stage would also be advisable, in order to compensate for the loss of connectivity.

5 Conclusions

The ecology section of the Environmental Statement has clearly acknowledged that there will be some impacts on protected species, and has drawn up mitigation proposals to address these, including licensed exclusion of badgers from an outlier sett. The report also acknowledges that the estate is of regional importance for its bat populations. In this context it is curious that the planning application states that there will be no impacts on protected species.

The ecological surveys were conducted to a high standard using appropriate and current methodology, and there is no reason to question their factual findings. However, the conclusions drawn in terms of the value of the site for wildlife and of the impact of the development have tended towards over-optimism, presenting a more positive view of the development than can be justified by the facts.

Some ecological interest features, such as mature trees and mixed deciduous woodland, have not been identified, and so were excluded from the subsequent impact assessment and mitigation proposals. Other features, such as improved grassland and orchard trees, have not been recognised as being important to other species, in particular foraging badgers.

The impact assessment tends to look towards the positive aspects of the completed development, when habitat creation measures will be complete, without emphasising the significant timescale of up to 20 years before all of these measures will be put in place. This time-lag is exacerbated by the fact that the focus of early restoration is on the creation of ornamental features to attract visitors and generate revenue, which will have limited value for wildlife.

A more effective mitigation strategy would have looked at habitats across the estate as a whole, and put in place a programme of advanced planting and other habitat creation measures, outside of the area affected by the development proposals. The absence of such an approach carries the risk that there will be significant impacts on ecological interest features, including protected species, before compensation measures take effect.

6 References

Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. E & FN Spon.

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