Daimler Chrysler site, Wentworth Industrial Park

Tankersley

Ecological summary report

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Drawing numbers:

ES06/009/01:	Mitigation proposals
ES06/009/02:	Habitat survey
ES06/009/03:	Amphibian survey
ES06/009/04:	Reptile survey
ES06/009/05:	Badger survey

1 Introduction

1.1 Objectives of investigation

This report summarises ecological surveys and impact assessments carried out at Wentworth Industrial Park, Tankersley, Barnsley.

The purpose of the studies is to assess potential ecological constraints associated with the development of four warehouse units, with associated access and car parking. The site, known as Plot B, is located within a largely undeveloped section of the Daimler Chrysler commercial vehicle distribution centre. It currently comprises a mixture of woodland and scrub, grassland, disturbed ground and hard standing.

1.2 Scope of investigation

The following studies have been carried out, and are appended (under separate cover):

- Ecological scoping study — Appendix A
- Habitat survey — Appendix B1
- Amphibian survey — Appendix B2
- Reptile survey — Appendix B3
- Bird survey — Appendix B4
- Bat survey — Appendix B5
- Badger survey — Appendix B6
- Ecological impact assessment — Appendix C

1.3 Ecological scoping study

The ecological scoping study included a consultation with data holders, collation of existing data, and site visit to assess ecological constraints, carried out on 13th January 2006.

The results of this survey identified a number of known and potential protected species issues, leading to the requirement to carry out the suite of specialist surveys presented as the series of reports in Appendix B. In addition, a habitat survey was recommended, to be carried out at an optimal time of year.

1.4 Protected species and habitat surveys

A **habitat survey** of the study area was carried out on 25th April 2006, in accordance with Institute of Environmental Management and Assessment guidelines

for baseline ecological assessment (IEA, 1995), utilising extended Phase 1 Habitat Survey methodology (JNCC, 1991).

The **amphibian survey** covered five ponds in close proximity to the site which has been identified as holding known or potential great crested newt (GCN) populations. Six site visits were carried out and a range of techniques were used. This included bottle trapping, egg searching, torching and netting. The techniques used on any one pond were determined by pond conditions.

The **reptile survey** involved the placement and inspection of 19 reptile refugia, in the form of $1m^2$ roofing felt located in areas of the sites which were likely to offer the best opportunities for reptiles. The refugia were inspected regularly throughout the study (8 occasions in total) and any reptiles located were identified to species. In addition, observations were made of reptiles in the course of refugia inspection.

The **breeding bird survey** involved three separate visits within the bird breeding season: 1st April, 6th May and 11th June 2006. Bird survey methods were based on Common Bird Census (CBC) methodology (Bibby *et al.*, 2000; Gilbert *et al.*, 1998; Marchant, 1983), and had the overall aim of establishing which species of birds were breeding on the site, and their approximate numbers.

The **bat survey** focused on those trees that were on the development site itself, and had cracks and crevices that could form roosts for crevice dwelling species. These consisted largely of a number of mature oak trees that were found within the woodland section of the development site. Batbox III, and Petterson 240D detectors were used to detect and identify bats using the site. Three emergence surveys were carried out: on 15th May, 15th June, and 29th June 2006.

The **badger survey** involved a thorough search for badger setts, trails, dung pits, tracks and other typical signs. Badger signs were mapped using a hand held GPS and an attempt was made to track backwards towards the setts in order to attempt to understand the social interaction between badgers on this site. The site boundary was thoroughly inspected for signs of movement to and from the site by badgers. Two site surveys were carried out, in January and June 2006.

Each component report identifies ecological interest features, and where appropriate includes proposals for mitigation of any impacts. Reports involving protected species are, wherever possible, structured so as to be compatible with the information requirements for any Natural England licence application.

1.5 Ecological impact assessment

The ecological impact assessment involves an evaluation of nature conservation interest, combining the findings of the scoping report and component surveys. Potential ecological impacts of the development, and their significance, are outlined. A series of mitigation proposals are then formulated to address these impacts. The

ecological impact assessment is carried out in accordance with current Institute of Ecology and Environmental Management (IEEM) guidelines (IEEM, 2006).

2 Summary of survey results

2.1 Scoping survey

The scoping survey found no statutory designated sites within 2km of the proposed development boundaries. Two non-statutory Natural Heritage Sites, designated by Barnsley MBC, are located within 2km of the site; the closest, Sowell Pond, adjoins the southern boundary of the Daimler Chrysler site. Sowell Pond was designated because it was thought to hold the largest great crested newt (GCN) population in the Borough.

The initial site visit found evidence of badger setts within the boundary of Plot B. Other potential protected species issues, which could not be confirmed or discounted, included the possible presence of reptiles, breeding birds and bat roosts on site. In addition, there were other ponds closer to the site which could potentially support great crested newt populations. There were also a number of habitats on site which would require assessment at a more appropriate time of year, including mature broadleaved woodland.

2.2 Habitat survey

The Habitat Survey Plan (drawing no. ES06-009/02) shows the distribution of habitats within the survey area; more detailed accounts of the vegetation in the survey area are given in a series of 'target notes' appended to the Habitat Survey document (Appendix B1).

A range of habitats are present on site, mostly typical of naturally regenerated former disturbed land, and immature planting carried out as part of previous landscape works. There are extensive areas of bare ground (hard standing), and areas of ephemeral / short perennial vegetation. Much smaller areas of seasonally-wet inundation communities and marshy grassland occur. Collectively these form a mosaic of habitats with some local value for wildlife, but little intrinsic interest, due to their recent, disturbed nature.

The western boundary of Plot B, extending down the remaining western margin of the Daimler Chrysler site, supports mature broadleaved woodland. This has an oak – birch canopy, with an open structure. It has a low species diversity, and does not appear to be of ancient origin; however, it does contain a population of bluebells, which are concentrated towards the northern section of the woodland, within Plot B.

2.3 Amphibian survey

The amphibian survey confirmed the presence of a population of GCN in Sowell Pond (pond 1), with an upper limit estimate of 133 individuals; a further maximum estimated population of 183 individuals was present in the adjacent recently-dug pond (pond 2); both are located to the south of the Daimler Chrysler site.

A large population estimated as comprising up to 697 individuals was discovered in a pond located in wet grassland (pond 4) approximately 80m west of the Plot B boundary.

No GCN were discovered in a pond in the south-eastern part of the Daimler Chrysler site (pond 3), or a seasonally dry pond within Plot B (pond 5).

The proximity of a large GCN population close to the site implies that they are likely to be present within terrestrial habitats in Plot B, and a Natural England licence will be required to carry out the development. An appropriate programme of mitigation works is proposed. Pond locations and GCN mitigation works are shown on the Mitigation Proposals plan (Fig. ES06-009/01).

2.4 Reptile survey

The survey did not find any evidence of use of Plot B by reptiles. However, a single grass snake was located in the southern part of the Daimler Chrysler site, with a further individual in the grassland to the west of Plot B.

2.5 Breeding bird survey

A total of 43 species of bird were recorded in the course of the three surveys. This is a relatively large total for a site of this size, and reflects the relatively high bird habitat diversity, with scrub, woodland, rough and marshy grassland, and a small pond; it may also reflect the low level of human disturbance on the site.

No European protected species were recorded, but breeding was confirmed of one species, little ringed plover (*Charadrius dubius*), protected under Schedule 1.1 of the 1981 Wildlife and Countryside Act. This was located in the large area of bare ground in the central part of Plot B.

Four species were recorded which are listed under Section 74 of the 2000 Countryside and Rights of Way Act, together with a number of BTO / RSPB Red and Amber List species.

The main implication of the breeding bird survey for the development is a need to avoid site clearance works during the March – July breeding season, as breeding birds are present in many of the component habitats on site.

2.6 Bat survey

Bat survey efforts focussed on mature oak trees in the woodland within Plot B. No bats were detected emerging from any of the mature oak trees during the three survey occasions. Numerous pipistrelles were detected flying around the outside of the trees. These appeared to be coming onto the site from the northeast (in the direction of Pilley), flying around the outside of the cluster of oak trees and heading offsite in a westerly direction. Pipistrelles were also detected foraging up and down the roadside adjacent to the northern boundary of the site, which is close to the cluster of mature oaks.

The bat survey did not reveal any roosts on site, and therefore there are no current requirements for Natural England licensing. However, appropriate precautions will need to be taken when felling the mature oak trees in the woodland.

2.7 Badger survey

Two setts were identified in the winter survey; both were still active in the summer surveys, and the main sett (sett 1) showed signs of breeding activity in the form of bedding deposited at the sett entrance. There was evidence of a great deal of badger activity across the site with the majority of trails leading east west. Latrines, feeding signs and other signs of badger activity were found across the development and in the wider survey area.

Originally it was thought that the development of Plot B could have been designed to avoid direct impacts on badger setts and therefore should not have required a licence to disturb badgers. Recent revisions to the development plan have taken the units much closer to the badger sett (less than 20m) and as a consequence it is likely that direct disturbance will take place producing the need for Natural England licence. Mitigation measures have been proposed that involve the construction of an artificial sett and the temporary exclusion of badgers from setts 1 & 2.

3 Description of development

3.1 Proposed development of Plot B

The planned development of plot B will involve the construction of four warehouse / office units, with associated car parking and commercial vehicle delivery areas.

A narrow belt of trees will be retained or planted along the northern, western, and part of the eastern boundaries, while the remainder of the site will be predominantly built development or hard surfacing.

The site layout is shown on Gladman drawing no. 2940-001.

3.2 Key elements of the development which could have an ecological impact

The conversion of most of the current area of Plot B to built development and hard standing will result in the loss of rough grassland with trees and scrub, some of the young plantations, small areas of marshy grassland, and the northern section of the mature oak – birch woodland which runs along the western boundary of the site.

Areas which are to be retained include the section of woodland currently occupied by a badger sett, and the northern strip of woodland and scrub which currently supports a range of breeding bird species such as willow warbler and garden warbler, as well as badger foraging trails.

None of the individual habitats impacted have an intrinsically high conservation value, although the oak woodland is of local interest; the northern section of the wood contains the highest population of bluebells, a Flagship Species in the local Biodiversity Action Plan. The mosaic of habitats within Plot B support a reasonably high population of breeding birds, and are likely to provide terrestrial habitats for the nearby population of great crested newt.

Regarding the stages of development, initial site clearance work has the greatest potential for impacts on breeding birds, badger and great crested newt. As site clearance works will inevitably impact upon breeding habitat, including (in the case of the hard standing) habitat used by a Schedule 1 species, these should be timed to avoid the bird breeding season. Disturbance impacts are possible on the badger population and a Natural England license will be required in order to carry out a detailed programme of mitigation which will include the provision of an artificial sett. The risk of great crested newts occupying the site will be lower when breeding adults are in ponds, but non-breeding individuals (<3 years old) will still be occupying terrestrial habitats; these impacts will require avoidance by trapping and installation of exclusion fencing.

Following completion of the development, there will be a longer-term loss of breeding bird habitat, great crested newt terrestrial habitat, and a more minor loss of badger foraging habitat. The greater number of vehicle movements may increase the risk of traffic mortality of badgers; however, this is only relevant to nocturnal vehicle movements, and traffic will be moving slowly within the site. Suitable habitats for most species will remain in the remainder of the Daimler Chrysler site, and on the open space to the west of Plot B. Mitigation measures which are designed to increase the carrying capacity of remaining land for target species will reduce the effects of habitat loss.

The only species which is certainly likely to be lost from the site is little ringed plover; this is associated with open, disturbed habitats which are ephemeral in nature.

4 Summary of impacts and proposed mitigation measures

4.1 Key predicted impacts on protected species

Table 4.1 below summarises predicted impacts on protected species, in the absence of any mitigation measures:

Table 4.1: Predicted impacts on protected species

Protected species	Status	Potential impact
Great Crested Newt	European Habitats Directive	Loss of some terrestrial habitat
Grass snake	Schedule 5 1981 W&C Act	Loss of some potential habitat, no evidence of current use of impacted habitats
Little Ringed Plover	Schedule 1 1981 W&C Act	Loss of habitat currently supporting 1 breeding pair
Bats	European Habitats Directive	Some loss of foraging habitat, no impact on roosts
Badger	1992 Protection of Badgers Act	Loss of foraging, direct interference impacts likely during construction

Of these, the impacts on great crested newt and badger will require a licence, involving the compilation and execution of an approved mitigation plan. Little ringed plover are protected against disturbance during the breeding season, and mitigation measures here will involve timing of site clearance works.

4.2 Key predicted impacts on other ecological interest features

The ecological impact assessment identified a number of other ecological interest features, allocating a geographical scale of importance to them.

Potential impacts upon them are summarised in Table 4.2 overleaf.

Table 4.2: *Potential impacts on other ecological interest features*

Ecological interest features	Status	Potential impact
Sowell Pond	Natural Heritage Sites; District-level importance	No impact: development remote from site
West Wood		
Lowland mixed deciduous woodland	Section 74 CRoW Act Habitat; local importance	Loss of northern part of wood
Bluebell	Barnsley BAP Flagship Species; local importance	Loss of majority of population in survey area
Grey partridge	Section 74 CRoW Act species; local importance	Habitat loss, probably supporting 1 breeding pair
Skylark		
Song thrush	Section 74 CRoW Act species; local importance	Loss of some habitat; suitable habitat will remain in vicinity of site
Reed bunting		
Willow tit	BTO / RSPB Red List species with less widespread distribution; local importance	Loss of some woodland / scrub habitat
Tree pipit	BTO / RSPB Amber List species with less widespread distribution; local importance	Loss of some woodland habitat

4.3 Proposed mitigation measures

Mitigation of predicted negative impacts

The key significant impact identified is the loss of great crested newt terrestrial habitat. Mitigation against this loss is based on site protection, habitat creation in the form of the construction of a new breeding pond and wet grassland and increased site connectivity through woodland planting.

Loss of a little ringed plover breeding site is also significant, given a Metropolitan Borough population size estimated at 16 pairs in 2000. However, it is not feasible to mitigate this loss in the context of the development proposals. It should be noted that in the longer term, natural succession of vegetation would render the habitat unsuitable for this species, which is dependent on a continuing supply of disturbed, open land.

The badgers and their setts will undergo significant disturbance in the course of the development and we are proposing the construction of an artificial sett and temporary exclusion of badgers from existing setts. In addition, care will have to be taken to avoid impacts on badger during construction of the development, by avoiding disturbance to foraging corridors along the northern boundary of the site.

None of the other impacts are of more than minor significance. Measures to create additional ponds to the west of the site for great crested newt will also have a positive impact on bat foraging habitat, and will also provide suitable habitats for foraging grass snake. Because of their legal protection, measures are also detailed in the Badger Survey to improve the quality of foraging habitat for badgers.

The loss of woodland will be compensated for by an area of new woodland planting on land outside the plot B development area. This will not achieve short or medium term compensation for the loss of mature woodland, but will provide an alternative habitat, which will become increasingly attractive to fauna associated with woodland habitats as it matures.

Mitigation measures are outlined in Fig ES06-009/01.

5 References

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