

A31 Magherafelt Bypass

Environmental Statement Addendum

Surveys for Wintering & Breeding Birds, Smooth
Newts, Vegetation & Bats

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Acronyms

BAP	Biodiversity Action Plan
BoCC	Birds of Conservation Concern
ES	Environmental Statement
HAP	Habitat Action Plan
SAP	Species Action Plan

1 INTRODUCTION

1.1 Introduction

- 1.1.1 This report represents an addendum to the Environmental Statement for the A31 Magherafelt Bypass. It describes the results of, and evaluates the findings of, surveys for wintering and breeding birds, smooth newts, vegetation and bats undertaken at the site between Autumn 2007 and Spring 2008. It also assesses the potential impacts of the proposed scheme on these species and describes proposed mitigation measures as appropriate.
- 1.1.2 This document should be read in conjunction with the Environmental Statement for the A31 Magherafelt Bypass which contains all relevant background to the scheme and the environmental assessment process including detailed descriptions of the proposed development and the planning and legislative framework. Information contained in the Environmental Statement such as the outcome of other surveys is not repeated here with the exception of those details of particular pertinence to wintering and breeding birds, smooth newts, vegetation and bats.
- 1.1.3 Further detailed information is provided in the following technical appendices:
- Appendix A – Wintering Bird Survey 2007/08
 - Appendix B – Breeding Bird Survey 2008
 - Appendix C – Habitat Impacts Table
 - Appendix D – Bat Survey Results
 - Appendix E – Criteria for Determining Bat Roost Potential

2 LEGISLATIVE CONTEXT

2.1 Breeding Birds

2.1.1 The Wildlife (Northern Ireland) Order 1985 makes it an offence to intentionally kill, injure, or take any wild bird or their eggs or nests (whilst being built or in use). Special penalties are available for offences related to birds listed on Schedule 1, (e.g. buzzard *Buteo buteo*, sparrowhawk *Accipiter nisus*, grey heron *Ardea cinerea*, kestrel *Falco tinnunculus*, kingfisher *Alcedo atthis*, merlin *Falco columbarius*, barn owl *Tyto alba*, long-eared owl *Asio otus* and peregrine *Falco peregrinus*) for which there are additional offences of disturbing these birds at their nests, or their dependent young.

2.2 Smooth Newt *Lissotriton vulgaris* (formerly *Triturus vulgaris*)

2.2.1 The smooth newt is fully protected under the Wildlife (Northern Ireland) Order 1985. Under the legislation, it is an offence to intentionally kill, injure or take a smooth newt as well as intentionally damage, destroy, or obstruct access to, any structure or place which smooth newts use for shelter or protection; or disturb a smooth newt while it is occupying a structure or place which it uses for shelter or protection. The legislation applies to smooth newts in both aquatic and terrestrial habitats and to all life stages.

2.3 Bats

2.3.1 All British bat species are fully protected through their inclusion in Schedule 2 to The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (S.R. 1995 No. 380) as amended by the conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2004 (S.R. 2004 No. 435) as European protected species. Under the legislation, it is an offence to deliberately capture, injure or kill a bat as well as deliberately disturb such an animal while it is occupying a structure or place which it uses for shelter or protection in such a way as to be likely to affect the local distribution or abundance of the species; impair its ability to breed or reproduce; or rear or care for its young. It is also an offence to deliberately obstruct access to a bat's breeding site or resting place; or damage or destroy a bat's breeding site or resting place.

2.4 Priority Species for Conservation Action in Northern Ireland

2.4.1 In 'Biodiversity In Northern Ireland: Recommendations to Government for a Northern Ireland Biodiversity Strategy' the Northern Ireland Biodiversity Group recognised the need to develop lists of Northern Ireland priority species (which require conservation action) and species of conservation concern (which require monitoring because they may need conservation action in the future).

- 2.4.2 The lists consist of 272 Northern Ireland priority species and 457 Northern Ireland Species of Conservation Concern (SoCC), several of which are now Northern Ireland Species Action Plan (SAP) priority species (see below).

2.5 Northern Ireland Species Action Plans

- 2.5.1 As part of the Northern Ireland Biodiversity Strategy, a number of Northern Ireland species requiring conservation action have been identified. A list of Northern Ireland priority species was published in March 2004 and subsequently approved by the Northern Ireland Biodiversity Group (NIBG) in October 2004. This list forms the basis for selecting species requiring SAPs. A revised list of UK Priority Species has recently been published and the list of Northern Ireland Priority Species is currently under review.

2.6 Northern Ireland Habitat Action Plans

- 2.6.1 Those UK priority habitats that occur in Northern Ireland are considered to be automatically selected as priority habitats in Northern Ireland. There are 37 such habitats which are already the subject of action plans at UK level.

3 WINTERING BIRDS

3.1 Methodology

Desk-based study

3.1.1 A desk-based study was undertaken as part of the Environmental Statement. Various organisations were contacted, including the following:

- Centre for Environmental Data and Recording (CEDaR)
- Northern Ireland Environment Agency (NIEA), formerly known as Environment & Heritage Service (EHS)
- Royal Society for the Protection of Birds (RSPB)
- Field surveys

Winter 2006/07

3.1.2 Preliminary wintering bird surveys were undertaken in Winter 2006/07. However, these preliminary surveys, which involved four visits between early-December 2006 and mid-February 2007, focussed on a different route alignment to that taken forward. The results of the 2006/07 surveys are therefore used only to provide local context to the surveys subsequently undertaken in Winter 2007/08.

Winter 2007/08

3.1.3 The field survey methodology is described fully in Appendix A. Six visits were undertaken between early November 2007 and mid March 2008, covering a 100 metre wide corridor centred on the route alignment. During each visit, all field boundaries within the survey area were walked by two experienced ornithologists during suitable weather conditions. All birds seen or heard were recorded on to scale maps.

3.2 Baseline Environment

Winter 2006/07

3.2.1 A total of 36 species were recorded during the Winter 2006/07 surveys, comprising a range of species typical of hedgerow, woodland and suburban habitats. Starling *Sturnus vulgaris* was encountered in the largest numbers (flocks of over 100 were recorded), while robin *Erithacus rubecula* was the most common non-flocking resident species.

3.2.2 The only true wetland species recorded were grey heron *Ardea cinerea* and dipper *Cinclus cinclus*, which were associated with the Ballymoghlan stream and black-headed gull *Larus ridibundus* which was seen drifting over in small groups or feeding on school playing fields.

Winter 2007/08

3.2.3 A total of 54 species were recorded, comprising a similar range of species to that recorded in Winter 2006/07. Starling and redwing *Turdus iliacus* were generally the most numerous species; both were regularly recorded moving through the area in mobile feeding flocks. Corvids such as rook *Corvus frugilegus* and jackdaw *Corvus monedula* were also encountered in flocks on most visits. Other farmland species which were also recorded in flocks within the survey area included woodpigeon *Columba palumbus* and meadow pipit *Anthus pratensis*.

3.2.4 Robin was again the most common non-flocking resident species, with a maximum of 72 birds recorded on any one visit. Blackbird *Turdus merula* was also particularly numerous between December and February; with numbers probably swollen by migrants.

3.2.5 No significant flocks of wetland species were encountered, which reflects the lack of permanent open water or other wetland habitats. During the January visit, a flock of nearly 200 gulls was present in flooded fields at grid ref: H916910 and small numbers of snipe were flushed from waterlogged fields on four visits. Some riverine species were recorded along the Ballymoghlan stream, including kingfisher *Alcedo atthis* (max = 1), dipper *Cinclus cinclus* (max = 2) and grey wagtail *Motacilla cinerea* (max = 11).

3.2.6 Few flocks of seed-eating birds were recorded, which is consistent with the lack of arable stubbles or other winter food sources. The largest finch flock was of 82 birds comprising 46 chaffinch *Fringilla coelebs*, 20 greenfinch *Carduelis chloris* and 16 goldfinches *Carduelis carduelis* along with 14 meadow pipits near the water treatment works at grid ref: H916912. A total of 52 siskin *Carduelis spinus* was recorded on the first visit, mostly in small groups moving through the area.

3.2.7 Three species of birds of prey were recorded:

- Buzzard *Buteo buteo* (on 6 visits, with a maximum count of 5 birds).
- Kestrel *Falco tinnunculus* (a solitary bird recorded on 2 visits).
- Peregrine *Falco peregrinus* (a solitary bird recorded on one visit).

3.2.8 Of the species recorded, six (buzzard; fieldfare; grey heron; kestrel; kingfisher; and peregrine) are listed on Schedule 1 to the Wildlife (Northern Ireland) Order 1985, although these species only receive special protection whilst nesting.

- 3.2.9 Five of the species recorded are the subject of Northern Ireland Species Action Plans¹ (SAP): skylark; lapwing; house sparrow; tree sparrow and yellowhammer². Two of the species; lapwing and yellowhammer are also on the Red List of Birds of Conservation Concern (BoCC) in Ireland³.
- 3.2.10 Eleven of the species recorded are also on the List of Northern Ireland Priority Species⁴: skylark; linnet; yellowhammer; reed bunting; house sparrow; tree sparrow; bullfinch; starling; song thrush; mistle thrush; and lapwing.

3.3 Evaluation

- 3.3.1 The results reveal that during the winter period, the survey area is dominated by a typical mixture of common farmland birds. Some of these species have suffered population declines in recent years and as such are now the subject of SAPs and are listed as priority species. It should be noted that these declines are largely a result of agricultural intensification and, in some instances, persecution rather than as a result of incremental losses to developments.
- 3.3.2 Perhaps the most notable record during the winter period was the regular occurrence of flocks of around 300-400 starlings. Also of some note was the record of a solitary peregrine; although this is a wide ranging species and the fact that it was recorded just once passing overhead suggests that the survey area does not represent significant wintering habitat for peregrine. Waders were recorded in small numbers with up to 2 snipe recorded on four occasions; and 19 lapwing recorded on one occasion, although larger numbers of lapwing were recorded flying overhead on three occasions (maximum count 150; with one of these flocks containing two golden plovers).
- 3.3.3 Overall, the survey area is assessed as being of value for wintering birds within the immediate zone of influence only.

3.4 Potential Impacts

- 3.4.1 Given the limited ecological value of the survey area for wintering birds, potential impacts are not assessed in detail.

3.5 Residual Effects

- 3.5.1 No significant residual impacts are predicted.

¹ http://www.ni-environment.gov.uk/biodiversity/sap_uk/sap_ni.htm

² Yellowhammer was not recorded within the survey area, although a flock containing 17 yellowhammers was recorded approximately 0.5 km from the survey area. Given their roaming nature during winter, it is likely that this species will pass through the survey area occasionally.

³ http://www.bto.org/birdtrack/bird_recording/bocc.htm BirdWatch Ireland and RSPB Northern Ireland have agreed a list of priority species for conservation action in Ireland.

⁴ <http://www.ni-environment.gov.uk/prioritiespecies5.pdf>

4 BREEDING BIRDS

4.1 Methodology

Desk-based study

4.1.1 A desk-based study was undertaken as part of the Environmental Statement. Various organisations were contacted, including the following:

- Centre for Environmental Data and Recording (CEDaR)
- Northern Ireland Environment Agency (NIEA)
- Royal Society for the Protection of Birds (RSPB)

Field surveys

4.1.2 The field survey methodology is described fully in Appendix B. The surveys were undertaken in accordance with the standard methodology described in Bibby et al⁵. This involved four visits between April and June 2008, covering a 200 metre wide corridor centred on the route alignment. During each survey visit, all field boundaries within the survey area were walked and all birds seen or heard were recorded on to scale maps.

4.2 Baseline Environment

4.2.1 35 species were found to be either breeding or displaying territorial behaviour within the survey zone, with a further 15 species also recorded.

4.2.2 The most numerous breeding species were common birds such as wren *Troglodytes troglodytes* (67 breeding territories), robin (44 breeding territories) and blackbird (33 breeding territories), with a number of other common woodland species also holding upwards of 10 breeding territories along the scheme. Other species breeding in the survey area included a typical range of farmland passerines such as song thrush (10 pairs), greenfinch (4 pairs), starling (4 pairs), goldfinch (3 pairs) and house sparrow (one pair).

4.2.3 The only wader breeding in the survey area was lapwing (one pair), although up to three additional pairs attempted to breed just outside the survey area.

4.2.4 The wetland habitats support three breeding pairs of grey wagtails, one pair of mallard and reed bunting (one pair). Two pairs of dipper were recorded during the early surveys along the Ballymoghna stream; although breeding was not confirmed, it is likely that they would have

⁵ Bibby, C.J., Hill, D.A., Burgess, N.D. and Mustoe, S. 2000. *Bird Census Techniques*. 2nd Edition. Academic Press: London. 302pp

nested along the stream, possibly outside the survey area although the survey area would have formed part of their breeding territories (which can comprise several kilometres of stream).

- 4.2.5 Two species of raptor were recorded during the surveys. A pair of buzzards nested at grid reference H919918, although it appears that breeding was not successful in 2008. A further pair seen during the surveys appeared to be breeding some distance outside the survey area. Kestrels have been observed foraging within the scheme footprint, but this species does not appear to breed within the survey area.
- 4.2.6 Of the species recorded, three (buzzard; grey heron and kestrel) are listed on Schedule 1 to the Wildlife (Northern Ireland) Order 1985, although these species only receive special protection whilst nesting. Of these species, only buzzard attempted to breed in the survey area.
- 4.2.7 Furthermore three of the species recorded as breeding in the scheme area are the subject of Northern Ireland Species Action Plans¹ (SAP): lapwing; house sparrow; and tree sparrow.
- 4.2.8 Seven of the species recorded as breeding are on the List of Northern Ireland Priority Species⁴. These are; song thrush, starling, bullfinch, lapwing, reed bunting, house sparrow and tree sparrow. A further priority species (linnet) has been observed within the scheme boundary, but is not known to breed in the area.
- 4.2.9 One of the species that breeds within the survey area, lapwing, is also listed on the Red List of Birds of Conservation Concern (BoCC) in Ireland³.
- 4.2.10 One open-ground nesting species, meadow pipit (one pair), breeds within the survey area.

4.3 Evaluation

- 4.3.1 The breeding bird survey has shown that the area is dominated by a typical range of common hedgerow and woodland species. Some of these species have suffered population declines in recent years and as such are now the subject of SAPs and are listed as priority species. It should be noted that these declines are largely a result of agricultural intensification and, in some instances, persecution rather than as a result of incremental losses to developments.
- 4.3.2 Perhaps the most notable records during the breeding period were ten breeding pairs of song thrush; four breeding pairs of starling; three breeding pairs of bullfinch; one breeding pair of lapwing (with a further three pairs just outside the survey area); and one pair of buzzard which unsuccessfully attempted to breed in woodland in the northern part of the survey area.
- 4.3.3 As described in Appendix B, three areas within the survey area are identified as being of particular value for breeding birds due to the abundance and diversity of species in these areas including declining species.
- 4.3.4 Overall, the majority of the survey area is assessed as being of value for breeding birds within the immediate zone of influence only. However, certain key areas are of greater value due to the species present. The woodland in the northern part of the site (grid reference

H919918) supported a pair of buzzards⁶ and, although they did not successfully breed in 2008, this pair is assessed as being of value at the local level. The key areas A and B shown in Appendix B are assessed as being of value at the local level due to the relative abundance and diversity of breeding species here.

4.4 Potential Impacts

Construction

- 4.4.1 The direct loss of breeding habitat in the key areas A and B (see Appendix B) is assessed as potentially significant at the local level.
- 4.4.2 A small corner of woodland which supports nesting buzzards at grid reference H919918 (approximately 0.001 hectares in extent) will be lost to the scheme. However, the nest is located over 100 metres from this corner of the woodland. In a worst-case scenario, disturbance during construction, e.g. from construction staff and noisy machinery, could lead to temporary abandonment of this nest, resulting in a significant impact at the local level in the short term.
- 4.4.3 If undertaken during the bird nesting season, construction activity could result in the damage/destruction of birds' nests in hedgerows, trees, woodland, scrub, watercourses and open-ground. The impact associated with damage to birds' nests could potentially be significant due to a breach of the Wildlife (Northern Ireland) Order 1985.

Operation

- 4.4.4 No significant impacts are predicted during the operation period.

4.5 Proposed Mitigation

- 4.5.1 Site compounds should be sited at least 200 metres from the woodland at grid reference H919918 in order to minimise disturbance impacts to buzzards.
- 4.5.2 Nesting opportunities for dippers and grey wagtails will be provided in the design of all of the proposed watercourse culverts/bridges. Artificial nesting boxes/cups for swallows and martins will also be installed on the proposed bridges/culverts.
- 4.5.3 The landscape design for the proposed scheme involves the planting of 5.9 hectares of broad-leaved woodland and 3.5 hectares of trees/scrub which will provide bird nesting opportunities once established.
- 4.5.4 Where possible, clearance of potential nesting habitats should be undertaken outside the main bird nesting season of March-August inclusive. Where this is not possible, potential nesting habitat should be checked by an ecologist/ornithologist prior to clearance. If active

⁶ Buzzards only re-colonised Northern Ireland in the 1950s.

nests are found, work in that area should be postponed until the young birds have fledged the nest.

4.6 Residual Effects

- 4.6.1 Given the location of construction compounds no closer than 200 metres from the known buzzard nest, the potential impact associated with disturbance of this nest is assessed as not significant.
- 4.6.2 The loss of key areas for nesting birds is likely to result in a significant impact at the local level in the short term. However, in the long term once the new planting has become established, the net loss is likely to become not significant.

5 SMOOTH NEWTS

5.1 Methodology

- 5.1.1 Surveys for smooth newts followed the standard methodology outlined in the Great Crested Newt Mitigation Guidelines⁷. This involved four surveys, each comprising three survey techniques: torching, netting and egg searching.
- 5.1.2 Torching was carried out on the 14th and 15th May and 18th and 19th June 2008 (dry and mild on each occasion).
- 5.1.3 Netting and egg searching surveys were carried out on the 15th and 16th May and 19th and 20th June 2008.

5.2 Baseline Environment

- 5.2.1 No newts of any species were found in either of the ponds surveyed.

5.3 Residual Effects

- 5.3.1 No significant residual impacts are predicted.

⁷ English Nature. 2001. Great Crested Newt Mitigation Guidelines. Peterborough, UK.

6 VEGETATION

6.1 Methodology

Desk-based study

6.1.1 A desk-based study was undertaken as part of the Environmental Statement. Various organisations were contacted, including the following:

- Centre for Environmental Data and Recording (CEDaR)
- Northern Ireland Environment Agency (NIEA)

Field surveys

6.1.2 As described in the Environmental Statement, a Phase 1 Habitat Survey of the scheme area plus surrounding land was undertaken in 2007. The findings of the 2007 surveys have subsequently been supplemented by an extended Phase 1 Habitat Survey of the scheme area undertaken on 14th to 16th May; and 18th to 20th June 2008. These surveys focussed on those habitats of greatest interest directly affected by the proposed scheme; principally hedgerows and woodland. During the 2008 surveys, separate species lists and habitat descriptions were made of each section of hedgerow and woodland directly affected by the scheme.

6.2 Baseline Environment

6.2.1 The results of the surveys are presented in Appendix C.

Grassland

6.2.2 The surveys confirmed that virtually all of the grassland directly affected by the scheme has been subject to high levels of agricultural 'improvement' and as a resultant is species-poor. Just one small patch of species-poor semi-improved grassland is present within the scheme area; part of the grassland adjacent to the Ballymoghna stream (Target Note 12 on Figure 9.1.1 – Volume 2) contains species such as marsh thistle *Cirsium palustre*, wavy bitter-cress *Cardamine flexuosa* and cuckooflower *Cardamine pratensis*.

Hedgerows

6.2.3 The hedgerows directly affected by the scheme are highly variable in nature; many are species-rich hedgerows (containing on average over four woody species per 30 metre length) with good structural diversity and fairly species-rich ground flora and appear to be of some antiquity; whilst some are relatively species-poor trimmed hedgerows.

Woodland

- 6.2.4 There are two small woodlands within the scheme area (see Target Notes 46 and 34 on Volume 2 - Figure 9.1.3 and Figure 9.1.1 respectively). The canopies at both of these woodlands contain frequent to abundant ash and sycamore, with the woodland at Target Note 46 also containing numerous horse chestnut *Aesculus hippocastanum* trees apparently of planted origin. The majority of the trees appear to be less than 50 years old although both woodlands contain some larger trees which appear to be between 50 and 100 years old. Other woody species present include ash, sessile oak, pedunculate oak, beech, willows *Salix spp.*, bramble, hawthorn, holly and elder. The ground flora in the woodland at Target Note 34 contains bluebell *Hyacinthoides non-scripta*, herb Robert *Geranium robertianum*, navelwort *Umbilicus rupestris*, nipplewort *Lapsana communis*, common nettle *Urtica dioica* and hogweed indicating possible ancient woodland⁸ origins or outgrowth from an ancient hedgerow. The woodland at Target Note 46 has a less rich ground flora with typical species including common nettle, bramble, hogweed, herb Robert, bluebell, cow parsley *Anthriscus sylvestris*, lesser celandine, lord's-and-ladies *Arum maculatum*, broad buckler-fern *Dryopteris dilatata* and ground ivy *Glechoma hederacea*.
- 6.2.5 The Woodland Trust's Inventory of Ancient and Long-established Woodlands of Northern Ireland⁹ identifies the woodland at Target Note 46 as being 'long-established woodland'¹⁰; the woodland at Target Note 34 is not shown on the inventory.

Scrub

- 6.2.6 Within the survey area scrub is largely restricted to scattered patches along watercourses and fence lines etc. although there is one more extensive patch of dense scrub on a rocky outcrop (Target Note 12 on Volume 2 - Figure 9.1.1). Typical scrub species in the survey area include hawthorn, bramble, gorse, elder and willow.

Watercourses

- 6.2.7 As shown in Appendix C, the sections of watercourse within the scheme area contain very little true aquatic vegetation. The only such species present in these areas are reed canary-grass *Phalaris arundinacea*, hemlock water-dropwort *Oenanthe crocata* and water-cress *Rorippa nasturtium-aquaticum*.

Water bodies

- 6.2.8 The permanently wet pond (Target Note 47 in Volume 2 - Figure 9.1.3) measures approximately 60 x 20 metres and appears to be between 0.5 and 1 metre deep in the

⁸ Ancient woodland is land that has been continuously wooded since at least AD1600.

⁹ <http://www.backonthemap.org.uk/>

¹⁰ In Northern Ireland, 'long-established woodland' is defined by the Woodland Trust as: 'land that from map evidence would appear to have been continuously wooded since the First Edition 6" to the mile OS map was produced, where there is definitive archive evidence of a break in continuity between 1830 and 1600, or land that from map evidence would appear to have been continuously wooded since the First Edition 6" to the mile OS map was produced, where further archive evidence is weak and the site supports fewer plants associated with ancient woodland than the threshold for the original size of the wood shown on the most recent 1:10,000 OS map (mainly from the 1970s) (or no field survey information is available).'

deepest areas. It is partially shaded at the margins and appears to have moderately good water quality with a reasonable abundance of aquatic macrophytes. Typical aquatic species present include common water crowfoot *Ranunculus aquatilis*, curled pondweed *Potamogeton crispus*, broad-leaved pondweed *Potamogeton natans*, reed sweet-grass *Glyceria maxima*, reed canary-grass *Phalaris aundinacea*, fool's water-cress *Apium nodiflorum*, water plantain *Alisma plantago-aquatica* and common duckweed *Lemna minor*. Marginal vegetation includes wood avens *Geum urbanum*, creeping buttercup *Ranunculus repens*, osier *Salix viminalis*, alder *Alnus glutinosa*, marsh thistle *Cirsium palustre*, common figwort *Scrophularia nodosa* and common nettle *Urtica dioica*.

- 6.2.9 The smaller pond (Target Note 56 in Volume 2 - Figure 9.1.3), which had dried out by mid-July, is dominated by reed canary-grass, fool's water-cress, water plantain and common duckweed.

6.3 Evaluation

Grassland

- 6.3.1 The grassland within the scheme area is assessed as being of value within the immediate zone of influence only.

Hedgerows

- 6.3.2 Some of the hedgerows within the scheme area are dominated by a small number of woody species and are characterised by species-poor ground flora. These are assessed as being of value within the immediate zone of influence only.
- 6.3.3 By contrast, many of the hedgerows within the scheme area are relatively species-rich with moderately species-rich ground flora and good structural diversity. Species-rich hedgerows are the subject of both a UK BAP¹¹ and a Northern Ireland BAP¹². These are assessed as being of value at the local level, in terms of their vegetation.

Woodland

- 6.3.4 In terms of their vegetation, the woodlands at Target Notes 34 and 46 (Volume 2 - Figure 9.1.3 and Figure 9.1.1 respectively) are assessed as being of value at the local level.

Scrub

- 6.3.5 The scrub is assessed as being of value within the immediate zone of influence only.

Watercourse

- 6.3.6 In terms of the aquatic and marginal vegetation present, the sections of watercourse within the scheme area are assessed as being of value within the immediate zone of influence only

¹¹ <http://www.ukbap.org.uk/>

¹² http://www.ni-environment.gov.uk/biodiversity/hap_uk/hap_ni.htm

(although they are acknowledged to be of greater value for fauna, e.g. otters and fish – see Environmental Statement Chapter 9).

6.4 Potential Impacts

Construction related impacts

Direct loss of species-rich hedgerows

- 6.4.1 The impact of the direct loss of 2330 metres of species-rich hedgerow and 2915 metres of species-poor hedgerow is assessed as potentially significant at the local level.

Direct loss of woodland

- 6.4.2 Broad-leaved woodland is rare in the wider area. Therefore, despite the small extent of the woodland affected, the impact of the direct loss of 0.051 hectares of woodland is assessed as potentially significant at the local level.

Operational impacts

- 6.4.3 No significant operational impacts are anticipated.

Cumulative impacts

- 6.4.4 Taken together, the direct loss of hedgerows, woodland, scrub, grassland and watercourses is assessed as potentially significant at the local level.

6.5 Proposed Mitigation

- 6.5.1 Proposed ecological mitigation is shown on Figures 4.4.1 - 4.4.1 of the Environmental Statement. The planting strategy for the scheme includes a mix of planting and habitat creation proposals with combined objectives of landscape and ecological mitigation. Implementation of the proposals would result in the establishment of 5.9 hectares of broadleaved woodland, 5km of hedgerow, and 3.5 hectares of scrub and trees. Roadside verges would also include areas of species-rich grassland. In combination, these would comprise a valuable new mosaic of habitats and a substantial new wildlife corridor.

6.6 Residual Effects

- 6.6.1 Given the establishment of semi-natural habitats within the proposed scheme area, the direct loss of semi-natural habitats is assessed as not significant.

7 BATS

7.1 Methodology

Desk-based study

7.1.1 A desk-based study was undertaken as part of the Environmental Statement. Various organisations were contacted, including the following:

- Centre for Environmental Data and Recording (CEDaR)
- Northern Ireland Environment Agency (NIEA)
- Northern Ireland Bat Group

Field surveys

7.1.2 The bat surveys were undertaken in accordance with the Bat Surveys: Good Practice Guide¹³. All of the bat surveys were undertaken by experienced bat surveyors. Bat activity surveys were undertaken using hand-held heterodyne / frequency division bat detectors recording to mp3 recorders. The recorded data was subsequently analysed using BatScan software.

7.1.3 Bat surveys commenced in Summer 2007; prior to the selection of the Preferred Route. Following selection of the Preferred Route, detailed bat surveys were undertaken in Summer 2008. These surveys focussed on the route alignment plus a survey corridor extending 100 metres either side of the scheme footprint. The bat surveys incorporated the following:

7.1.4 Daytime habitat assessment of potential roosting opportunities and foraging/commuting areas;

7.1.5 Dusk emergence and dawn return surveys at potential roosting sites to determine the location and type of bat roosts;

7.1.6 Nocturnal bat transect / point-count surveys to determine the relative value of various habitat features.

Daytime habitat assessment

7.1.7 All buildings, bridges and trees within the survey area were assessed in terms of their potential to support bat roosts in accordance with the criteria described in Appendix E.

¹³ Bat Conservation Trust. 2007. Bat Surveys: Good Practice Guide. Bat Conservation Trust, London.

- 7.1.8 In conjunction with the vegetation surveys (see Section 6) the habitats within the survey area were assessed in terms of their potential value to foraging/commuting bats based on the criteria described in Appendix C Table 4.

Dusk emergence and dawn return surveys

- 7.1.9 Based on the findings of the daytime assessments, all potential roosting sites of at least 'medium' bat roost potential were subject to at least one dusk emergence survey and/or dawn return survey.
- 7.1.10 Dusk emergence surveys involved observing the potential roost site from approximately 30 minutes before sunset until approximately 90 minutes after sunset to determine whether any bats emerged from the site in question.
- 7.1.11 Dawn return surveys involved observing the potential roost site from approximately 90 minutes before sunrise until sunrise to determine whether any bats returned to the site in question.

Nocturnal bat transect / point count surveys

- 7.1.12 Based on the findings of the daytime habitat assessment, 15 'corridors' were identified for subsequent transect / point count surveys. These corridors were selected based on the following key criteria:
- 7.1.13 Relative structural diversity, e.g. broad outgrown hedgerows / tree-lines containing standard trees were selected ahead of low trimmed hedgerows.
- 7.1.14 Connectivity to key areas such as potential roost sites and foraging areas, e.g. woodland.
- 7.1.15 Potential to be affected by the proposals, i.e. corridors likely to be severed by the proposed route were selected ahead of features likely to remain unaffected.
- 7.1.16 'Corridors' were selected as the unit for assessment rather than e.g. 'foraging areas', due to the nature of the habitats in the survey area. The survey area is dominated by intensively managed pasture which is typically of relatively low value for foraging/commuting bats and there is relatively little woodland or other areas of high value for bats (e.g. unimproved grassland, wetlands or heath), such that the habitat features of greatest value for foraging/commuting bats in the survey area are linear features such as hedgerows, streams and tree lines.
- 7.1.17 Each of the 15 corridors was subject to nocturnal activity surveys to assess their relative value for foraging/commuting bats. Each survey commenced approximately 90 minutes after sunset and involved 'point counts' at four selected points evenly spaced along the corridor. Each corridor was surveyed for between 80 and 120 minutes, with the surveyor remaining at each of the four points for an equal period. The surveyor recorded all bat registrations including time, direction and number of passes. The species of each bat registration was determined using field observations in conjunction with subsequent analysis of the recorded bat calls. On completion of the surveys and data analysis, an 'activity score' was calculated for each corridor by dividing the total number of bat registrations by the survey time (in

minutes) then multiplying by 100, e.g. an average of one bat registration every minute would result in an activity score of 100.

7.2 Baseline Environment

7.2.1 The survey results are presented in Appendix D and Figures 1.1 to 1.3. The findings are also summarised below and referenced as Bxx, Cxx etc.

Species recorded

7.2.2 A total of six bat species were recorded within the survey area¹⁴:

7.2.3 Common pipistrelle *Pipistrellus Pipistrellus*: This species was recorded throughout the study area with one roost confirmed in B13. Together with the soprano pipistrelle, it was the most abundant species recorded. This species typically roosts in buildings, although it will also roost in trees and other structures such as bridges. It forages and commutes along hedgerows, woodland and watercourses.

7.2.4 Soprano pipistrelle *Pipistrellus pygmaeus*: This species was recorded throughout the study area with two roosts confirmed in B11 and B12. Together with the common pipistrelle, it was the most abundant species recorded. This species typically roosts in buildings, although it will also roost in trees and other structures such as bridges. It forages and commutes along hedgerows, woodland and watercourses. It is typically more closely associated with wetlands than the closely related common pipistrelle; indeed both roosts within the survey area are in close proximity to the Ballymoghna stream.

7.2.5 Nathusius' pipistrelle *Pipistrellus nathusii*: This species was recorded periodically in small numbers within the study area with one roost confirmed in B4. Relatively little is known about the behaviour and habitat requirements of this species in Britain and Ireland.

7.2.6 Brown long-eared *Plecotus auritus*: This species was recorded periodically in small numbers within the study area. This species typically roosts in trees and in the roof voids of large old buildings, although no roosts have been identified within the survey area. It typically prefers open woodland, parkland and mature gardens, although it will utilise hedgerows for foraging and commuting. This species is often under-recorded on account of its late emergence time and quiet call.

7.2.7 Natterer's *Myotis nattereri*: This species was recorded periodically in small numbers within the study area. This species typically roosts in trees and buildings, although no roosts have been identified within the survey area. It typically prefers 'woodland' habitats, although like most 'woodland' species it will utilise hedgerows for foraging and commuting.

¹⁴ Bat species identification is often only possible to confirm with close inspection of the animals themselves. However, it is often possible to make reasoned judgements of the likely species in the field using criteria such as bat size, behaviour, location and characteristics of the analysed call (such as peak frequency, duration and call dynamics). The information presented in this report is based on reasoned judgements in the field in combination with analysis of recorded calls.

- 7.2.8 Leislars *Nyctalus leisleri*: This species was recorded periodically in small numbers within the study area. This species typically roosts in trees and buildings, although no roosts have been identified within the survey area. Unlike many of the smaller bats, this larger species will often forage and commute over open ground such as pasture; being less dependent on linear features such as hedgerows.

Roosts

- 7.2.9 Four bat roosts were identified within the survey area; in buildings B4, B11, B12 and B13 (see Figures 1.1 to 1.3). No tree or bridge roosts were identified. All features assessed as being of at least 'medium' bat roost potential were subject to at least one dusk emergence / dawn return survey. However, given the transitory nature of bat roosts, it is possible that bat roosts may have remained undetected.
- 7.2.10 Roost B4 is in the roof of a small disused house on the Aughrim Road, approximately 150 metres west of the scheme footprint. In September 2007, two nathusius' pipistrelles were seen entering the building. Despite further survey in summer 2008, there was no further evidence of a bat roost here. However, utilisation of bat roosts typically changes periodically depending on the time of year and other factors such as weather and parasite loading (the number of parasites an individual is carrying). This building should be treated as a confirmed bat roost, although it is not clear whether it is used as a maternity roost or a male roost.
- 7.2.11 Roost B11 is a largely disused farmhouse and farmyard comprising several buildings around an open farmyard, approximately 60 metres north of the scheme footprint. The site was surveyed in May and June 2008 with soprano pipistrelles recorded entering the barn on both occasions (six and two bats respectively). The bats' behaviour during the May survey suggests that the farmhouse may also be used as a bat roost at other times. The survey findings indicate that this is likely to be a maternity roost.
- 7.2.12 Roost B12 is approximately 45 metres south of the scheme footprint and comprises a farmyard complex of a number of buildings and walled structures of varying ages. In 2007 a soprano pipistrelle was seen emerging from a farm building, whilst the update survey in May 2008 recorded a solitary soprano pipistrelle entering and roosting in a gap in a breeze-block wall in the farmyard. This farmyard complex should be treated as a confirmed bat roost; it is likely that small numbers of bats utilise different roosting opportunities within the farmyard from time to time; there is no evidence of a maternity roost here.
- 7.2.13 Roost B13 is a single-story derelict house approximately 120 metres south of the proposed scheme footprint. During June 2008, a common pipistrelle was seen to enter the roof-space of the building. It is likely that this building is used a male roost rather than a maternity roost.

Foraging and commuting habitats

- 7.2.14 All features due to be lost to the scheme footprint, with the exception of pasture, is listed in Appendix C which includes an assessment of the value of each feature in terms of its value for foraging/commuting bats based on habitat criteria.
- 7.2.15 The survey area is dominated by fields of improved pasture (typically cattle-grazed) bordered by hedgerows. The Ballymoghlan stream runs through the survey area; it is bordered by

outgrown hedgerows and tree lines for much of its length. There is very little woodland in the survey area. There are a number of scattered farmhouses and dwellings with associated gardens.

- 7.2.16 Based on habitat criteria, the habitat features of greatest value to bats are the Ballymoghán stream, the two small areas of woodland, the area of dense scrub and the more structurally diverse hedgerows. The less structurally diverse hedgerows, gardens and fence lines are assessed as being of lower value.
- 7.2.17 Due to their open nature and intensive management, the pasture fields are assessed as being the features of lowest value to bats within the survey area, although some bats will make use of these open fields, particularly leisler's bat which often feeds over open pasture.
- 7.2.18 The nocturnal bat transect / point count surveys largely confirmed the findings of the habitat assessment; with the greatest levels of bat activity being recorded along the Ballymoghán stream and the more structurally diverse hedgerows. Overall, bat activity levels were commensurate with those typically found in similar habitats elsewhere in Northern Ireland and northern England. The survey results confirmed that habitat assessment is a good predictor of bat activity levels, with the greatest levels of bat activity found along the more 'wooded' sections of the Ballymoghán Stream and along the more structurally diverse hedgerows.

7.3 Evaluation

- 7.3.1 The results reveal that the survey area supports a reasonable diversity of bat species (six species), similar to that found in comparable areas of Northern Ireland and northern England. In terms of overall bat abundance, the survey area supports levels of bat activity comparable or slightly lower than that expected, given the habitats.
- 7.3.2 The habitats throughout much of the survey area, including the open pasture fields and the less structurally diverse hedgerows were predicted to be of low value to bats, and this was borne out through the results of the nocturnal surveys. These areas are therefore assessed as being of value within the immediate zone of influence only.
- 7.3.3 The more structurally diverse hedgerows within the survey area, i.e. those shown in Appendix C as being of 'medium' / 'high' value for bats, are assessed as being of value for bats at the local level.
- 7.3.4 As expected, several of the more structurally diverse hedgerows were found to support reasonable numbers of foraging and commuting bats. Of those features that will be directly lost to the proposed scheme, the most valuable features are assessed as being the hedgerows at C10 and C14 and the entire stretch of the Ballymoghán stream between C10 and C8. These key features are assessed as being of value for bats at the local level.
- 7.3.5 Roost B11 is considered likely to be a maternity roost and is therefore assessed as being of value at the district level.

- 7.3.6 Roost B4 supports nathusius' pipistrelle which is a relatively rare species in Northern Ireland. Although the maximum count here was only of two bats, this roost is assessed as being of value at the district level.
- 7.3.7 Roosts B12 and B13 are considered to be male or transitory roost sites and are therefore assessed as being of value at the local level.

7.4 Potential Impacts

Construction

Potential impacts on roosts

- 7.4.1 None of the four identified roost sites will be directly lost to the scheme. However, disturbance during construction could potentially lead to the abandonment or partial abandonment of roosts, at least temporarily. The loss of foraging habitats and commuting routes nearby could also lead to the permanent abandonment or partial abandonment of these roosts. The potential loss of roosts through increased disturbance during construction and loss of nearby habitats is assessed as potentially significant at up to the district level. Such impacts would also be significant in legal terms.
- 7.4.2 The scheme will result in the direct loss of six mature trees that have been identified as being of at least medium bat roost potential (T1; T2; T9 (pair of ash trees); T10; and T11). No other trees or built structures of medium or greater bat roost potential will be lost. Although none of these trees supported bat roosts during the surveys in 2008, given the transitory nature of bat roosts, it is possible that they could be used by bats at other times. Given their potential to support roosts in the future, the loss of these trees is assessed as potentially significant at the local level.

Impacts on foraging and commuting habitats

- 7.4.3 As shown in Appendix C, the proposed scheme will result in the direct loss of the following features that have been assessed as being of high; medium and low value for foraging/commuting bats respectively:
- Features of high value to be lost: 1090 metres of hedgerow; 0.051 hectares of woodland; 0.015 hectares of scrub; and 480 metres of watercourse.
 - Features of medium value to be lost: 2250 metres of hedgerow.
 - Features of low value to be lost: 1820 metres of hedgerow; plus all pasture.
 - The loss of these features is assessed as significant at the local level.

Operation

Vehicle-strike

- 7.4.4 The potential impact associated with the increased risk of bat mortality through collisions with vehicles on the proposed road is assessed as potentially significant at the local level and potentially significant at up to the district level if it leads to the break-up of one of the roosts at B4 or B11.

Artificial lighting

- 7.4.5 The potential impact associated with the provision of artificial lighting is assessed as potentially significant at the local level due to effective fragmentation of habitats and potentially significant at up to the district level if it leads to the break-up of one of the roosts at B4 or B11.

7.5 Proposed Mitigation

Location of construction compounds

- 7.5.1 In order to minimise potential disturbance of bat roosts, construction compounds will not be located within 100 metres of a known bat roost if possible.

Pre-construction surveys of potential roost sites

- 7.5.2 All trees with at least medium bat roost potential directly affected by the scheme will be subject to pre-construction surveys for bat roosts. The four known roosts will also be subject to pre-construction bat surveys. Where bat roosts are present, appropriate mitigation will be developed and licences sought from the Northern Ireland Environment Agency where appropriate.

Provision of alternative roosting opportunities

- 7.5.3 Artificial bat boxes will be installed at all culverts, under-passes and bridges.

Provision of an under-bridge on the Killyfaddy Road

- 7.5.4 Given the presence of roosts B11 and B12 either side of the proposed scheme alignment near Killyfaddy Road and the relative abundance of good foraging habitats nearby, an under-bridge will be provided beneath the new road at this location this would encourage bats to safely cross the new road and minimise the impacts of fragmentation and vehicle-strike. Landscape planting will be used at the entrances to direct bats to the under-bridge and an artificial bat box will be installed in the under-side of the bridge.

Landscape planting along the scheme

- 7.5.5 The embankments/cuttings and associated landtake of the proposed road will be planted with a mixture of native trees, shrubs and grassland species resulting in the establishment of 5.9 hectares of broad-leaved woodland and 3.5 hectares of scrub. At key locations, e.g. near

roosts B11 and B12, the planting design and species selection, i.e. tall growing trees, will aim to encourage bats to fly high over the road to minimise the impacts of fragmentation and vehicle-strike.

Supplementary planting of adjacent hedgerows

- 7.5.6 Hedgerows which directly connect to the scheme footprint will be subject to supplementary planting of native woody species where appropriate in order to make these features attractive to foraging/commuting bats and minimise the impact of habitat fragmentation.

Lighting design

- 7.5.7 Intrusive lighting will be avoided as far as possible in the vicinity of known roosts and the locations of artificial roosts in bridges etc. Elsewhere, modern lighting designs will be used to minimise the potential impact of lighting on bats.

7.6 Residual Effects

Potential impacts on roosts

- 7.6.1 Given pre-construction surveys, sensitive locations of construction compounds, sensitive lighting design, the provision of landscape planting, artificial roosting opportunities in all new bridges etc, the provision of an under-bridge at Killyfaddy Road, supplementary planting along adjacent hedgerows and a licence from the Northern Ireland Environment Agency where appropriate, the potential impact associated with impacts on known roosts is assessed as not significant.

Impacts on foraging and commuting habitats

- 7.6.2 The provision of appropriate landscape planting, artificial roosting opportunities, the provision of an under-bridge at Killyfaddy Road, supplementary planting along adjacent hedgerows and sensitive lighting design will help to minimise the magnitude of impacts on foraging and commuting habitats. In the presence of such mitigation, the impact on foraging and commuting habitats for bats is regarded as likely to be significant in the short term until the new habitats have become established. Therefore it may be necessary to obtain a licence from the Northern Ireland Environment Agency to permit activities that would otherwise be in contravention of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (S.R. 1995 No. 380) as amended by The Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2004 (S.R. 2004 No. 435).

Vehicle-strike

- 7.6.3 Given the provision of an under-pass on Killyfaddy Road and planting of tall growing trees near roosts B11 and B12, the impact associated with any increased risk of bat mortality through collisions with vehicles is assessed as not significant.

Artificial lighting

- 7.6.4 Given the provision of a sensitive lighting design, particularly in the vicinity of roost sites, the potential impact on bats associated with artificial lighting is assessed as not significant.

APPENDIX A: WINTERING BIRD SURVEY 2007/08

A31 MAGHERAFELT BYPASS SCHEME

WINTERING BIRD SURVEY 2007/8

**A report for Mouchel Ltd.
by Allen and Mellon Environmental Ltd.**

March 2008

mouchel 



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1. **Introduction**

- 1.1 Allen and Mellon Environmental Ltd were commissioned by Mouchel Ltd. to undertake a winter bird survey in relation to the proposed A31 Magherafelt Bypass. The survey was to involve a total of six visits between November 2007 and March 2008.
- 1.2 The survey area comprised a 100 metre wide corridor along the preferred route for the bypass. This area runs from the Castledawson Roundabout in the north, to the Moneymore Road south of Magherafelt town.

Figure A
Survey Area



- 1.3 The survey area comprises a range of habitat types, although it is predominantly improved pasture, bordered by hedgerows of varying quality. A few stubble fields occur

although most are re-planted in autumn which reduces their value for birds as a winter food source. The road corridor traverses several small streams, in addition to some areas of scrub and riparian woodland. These areas represent the best bird habitats within the survey area. Some small areas of woodland occur outside, but close to, the road corridor. Other habitats of interest outside the corridor include an old flight pond and a sewage plant.

2. Statement of Authority

- 2.1 Ornithological survey work was undertaken by Clive Mellon and Dave Allen, who are the Directors of Allen and Mellon Environmental Ltd. Both are extremely experienced field ornithologists, each with over 25 years experience in undertaking structured bird surveys at home and abroad. In their previous employment with Royal Society for the Protection of Birds (RSPB) Northern Ireland, both were involved in designing, managing and undertaking many bird surveys over a period of 15 years.

3. Objective and Scope of the Study

- 3.1 The aim of the survey was to assess the numbers and diversity of species using the road corridor and adjacent areas during the winter months. In particular any significant assemblages of water birds and seed-eating passerines (finches and buntings) were to be identified.
- 3.2 Access to all relevant lands was secured for the survey, and the proposed road corridors were covered on a field by field basis. However, many species of birds are highly mobile outside the breeding season, and many birds recorded moved frequently between the corridor itself and outlying areas.

4. Methodology

- 4.1 Six visits were undertaken between early November 2007 and mid March 2008. A survey in October 2007 was not possible due to the timing of the project's initiation.
- 4.2 The survey area comprised a 100 metre wide corridor along the proposed route. The centre line of the road alignment was used as the basis for a transect route, although any interesting habitats beyond the centre line were also investigated. All birds seen or heard from the transect route were recorded. Those recorded within the 100 metre corridor were recorded separately to those outside the area.

- 4.3 The route was covered by two fieldworkers on the same day. One fieldworker covered the north section from Castledawson Roundabout to Loves Road, while the other covered from Loves Road south west to the Moneymore Road.
- 4.4 Grid references were taken when any significant species or assemblages were encountered. Details of survey visits are shown in Table 1.

Table 1 Survey Visit Details

Date	Time	Weather
November 1 st 2007	0930-1430	Wind SW3. Cloud 8/8. Mild.
November 26 th 2007	0950-1440	Wind W2. Cloud 7/8. Showers.
December 21 st 2007	0920-1400	Wind 0/1. Cloud 7/8. Slight frost and mist at start.
January 22 nd 2008	0900-1330	Wind 0/1. Cloud 8/8. Rain later.
February 20 th 2008	0925-1445	Wind 0/1. Cloud 7/8. Dull at start, brighter later. Cold.
March 13 th 2008	1010-1500	Wind 0/1. Cloud 8/8. Light rain at start, dry later.

5. Results

5.1 Overview

- 5.1.1 A total of 54 species were recorded within the survey area over the six visits. The assemblage comprised a range of typical hedgerow and woodland birds, as well as common species associated with human habitation and improved pasture. Starlings (*Sturnus vulgaris*) and Redwings (*Turdus iliacus*) were generally the most numerous species, moving through the area in mobile feeding flocks. Corvids such as Rooks (*Corvus frugilegus*) and Jackdaws (*Corvus monedula*) were also encountered in flocks on most visits. Other farmland species which were also recorded in flocks from the survey area included Woodpigeon (*Columba palumbus*) and Meadow Pipit (*Anthus pratensis*).
- 5.1.2 The Robin (*Erithacus rubecula*) was generally the most common non-flocking resident species, with a maximum of 72 birds recorded. On the December, January and February visits, however, Blackbirds (*Turdus merula*) were more numerous than Robins, and their numbers may well have been swollen by migrants. Many of the birds recorded are likely to be resident within the area, although the Starling and Thrush flocks certainly constitute migrants from northern and eastern Europe.
- 5.1.3 No significant water bird flocks were encountered, which reflects the lack of permanent open water or other wetland habitats. On Visit 4 a flock of nearly 200 Gulls was feeding in flooded fields at H916 910, and small numbers of snipe were flushed from waterlogged fields on four visits. Some riparian species were recorded along the stream which is crossed twice by the proposed road route. These include Kingfisher (*Alcedo atthis*), Dipper (*Cinclus cinclus*) and Grey Wagtail (*Motacilla cinerea*). It is possible that all three species breed along this watercourse, and this will be investigated fully during the forthcoming breeding bird surveys.
- 5.1.4 Few flocks of seed-eating birds were recorded, which is consistent with the lack of arable stubbles or other winter food sources. The largest finch flock was of 82 birds comprising 46 Chaffinches (*Fringilla coelebs*), 20 Greenfinches (*Carduelis chloris*) and 16 Goldfinches (*Carduelis carduelis*) along with 14 Meadow Pipits. This flock was at the Sewage Plant which lies just to the east of the road corridor (H916 912). No other similar flocks were recorded from the survey area. A total of 52 Siskins (*Carduelis spinus*) was recorded on the first visit, mostly in small groups moving through the area.

5.1.5 An interesting flock of feeding finches and buntings was encountered at a stubble field about 0.5 kilometres outside the survey area (H8895 8935) on February 20th 2008. This comprised 30 Reed Buntings (*Emberiza schoeniclus*), 17 Yellowhammers (*Emberiza citronella*), 20 Chaffinches, 10 Greenfinches and single Skylark (*Alauda arvensis*) and Lesser Redpoll (*Carduelis cabaret*). All birds had been flushed by a hunting Kestrel (*Falco tinnunculus*).

5.1.6 Tree Sparrows (*Passer montanus*) and Stock Dove (*Columba livia*), both farmland birds of Conservation Concern, were also recorded during the survey (see Section 5.2). Three species of birds of prey were recorded:

- Buzzard (*Buteo buteo*): 6 visits
- Kestrel (*Falco tinnunculus*): 2 visits
- Peregrine (*Falco peregrinus*): 1 visit

5.1.7 Table 2 provides details of each species recorded and the maximum numbers seen on each visit. Many species are extremely mobile in the winter when not territorial, and were not exclusively associated with any one area. For this reason, Table 2 provides totals of birds recorded from the survey corridor, whether seen/heard inside or outside the corridor. Where relevant details of where birds were recorded are provided in the Comments column or in the text of Sections 5.1 and 5.2.

Table 2 Summary of Winter Bird Survey Results

Species	Visit 1 total	Visit 2 total	Visit 3 total	Visit 4 total	Visit 5 total	Visit 6 Total	Comments
Greylag Goose				4			Birds flying over NE
Mallard						3	2 males and female at H911 893
Grey Heron			2		1		
Buzzard	5	4	3	2	5	4	
Kestrel		1				1	
Peregrine			1				
Pheasant		1	3	2		2	
Lapwing			2	150	54	35	Flyovers except Visit 5, 19 in field
Golden Plover					2		Flying over with lapwing
Snipe	2		1		2	1	
Lesser black-backed Gull				3		1	
Common Gull				150		6	Flock of 150 in wet fields
Black-headed Gull	6			35	21	22	
Feral Pigeon					2		
Woodpigeon	125	34	49	50	48	33	Largest flock 75 Visit 1
Stock Dove	1						
Collared Dove	3	2	6	4	6	1	
Kingfisher	1		1	1			Single bird at same location
Dipper		1			2	2	Two territorial pairs
Skylark	4	3					
Meadow Pipit	13	48	13	77	41	30	Largest flock 60 Visit 4
Pied Wagtail	16	19	13	9	24	12	
Grey Wagtail	7	5	7	8	11	7	

Species	Visit 1 total	Visit 2 total	Visit 3 total	Visit 4 total	Visit 5 total	Visit 6 Total	Comments
Wren	32	41	41	37	37	25	
Dunnock	13	24	22	13	18	14	
Robin	50	61	60	72	55	48	
Stonechat	1			2			
Blackbird	28	34	66	85	56	36	
Song Thrush	5	10	12	23	15	9	
Mistle Thrush	11	22	9	13	14	10	
Redwing	102	129	401	371	518	50	Largest flock 140, Visit 5
Fieldfare	2	22	184	81	118		Largest flock 35 Visit 5
Blue Tit	9	12	21	21	32	15	
Great Tit	8	10	15	22	33	20	
Coal Tit	4	4	7	13	12	7	
Long-tailed Tit	9	7	4		11		
Goldcrest	20	11	8	11	6	8	
Starling	136	352	421	339	290	311	Largest flock 220 Visit 3
Magpie	35	27	26	19	38	29	
Jackdaw	124	163	101	152	181	105	Largest flock 40 Visit 5
Rook	78	91	66	144	180	147	Rookery of 22+ nests outside area
Hooded Crow	8	13	12	19	18	16	
Raven		2					
House Sparrow		9	17	13	11	8	
Tree Sparrow				2		3	
Chaffinch	33	77	49	29	37	39	Largest flock 46 Visit 2
Linnet	2			1			
Goldfinch	6	34	3		3		
Siskin	52	21	19	2			
Lesser Redpoll	3	8	4			1	
Bullfinch	5	4	1	1	4		
Greenfinch	3	27	5	5	10	6	
Reed Bunting	1	4			1	2	
Total Species	38	37	37	38	37	37	

- Priority Species are listed in Red and Species of Conservation Concern in Amber

5.2 Details of key species

5.2.1 Kingfisher

The Kingfisher is listed on Annex I of the Council Directive 79/409/EEC on the conservation of wild birds (The Birds Directive) as a species which should be the subject of special conservation measures by Member States under Article 4 of the Directive. It is also listed as a Species of Conservation Concern by Northern Ireland Environment Agency (NIEA) in the lists which accompany the Northern Ireland Biodiversity Strategy.

A single Kingfisher was recorded on three separate visits along the same stretch of stream in the northern part of the road corridor. Details of dates and locations of sightings are provided below:

November 1st 2007: H917 911 – flew east downstream

December 21st 2007: H918 911 – flew east downstream

January 22nd 2008: H919 913.

Kingfishers are largely sedentary birds. Some breeding birds move to adjacent coastal or lowland areas in autumn and winter, but rarely more than a few kilometres from their breeding territory. Immature birds can disperse more widely in late summer when they can be found some distance from their natal site¹. It is unknown whether the Kingfisher recorded during the winter 2007/8 is a breeding adult or first year bird, but it is possible that they may breed in this area. Breeding bird work in 2008 will confirm their status along the proposed road corridor.

5.2.2 Dipper

Two pairs of Dippers were recorded, with both exhibiting territorial behaviour (singing). Although not listed as a Species of Conservation Concern, Dippers are indicators of good water quality and are generally scarcer and more localised in areas of lowland farmland.

Pair 1: Located at the little bridge downstream from Killyfaddy Bridge, and SE of Leckagh House (H9012 8884). This bridge is situated less than 50 metres outside the survey corridor. A single bird was recorded here on November 26th 2007 and a pair together on March 13th 2008, when singing was also recorded.

Pair 2: Located at the Killyneese Road bridge at H9199 9140. A pair was recorded holding territory (including singing) on February 20th 2008. This bridge is situated about 100 metres from the survey corridor.

Both locations are along the same stream, although some 4 kilometres apart. The length of stream required by breeding Dippers depends on factors such as width and depth, with greater length required on narrower streams. In Cumbria one study found that the average territory extended to just under less than 0.5 kilometres of stream per pair, while studies elsewhere in Britain have recorded an average of around 2 pairs per 10 kilometres of river². Dippers can begin to breed as early as February, so it is highly likely that the territorial birds recorded in February and March relate to separate pairs.

5.2.3 Tree Sparrow

The Tree Sparrow is a localised breeding bird in Northern Ireland and is listed as a Priority Species by NIEA in the lists which accompany the Northern Ireland Biodiversity Strategy. Tree Sparrows were recorded on two visits, on both occasions at the Sewage

¹ Wernham, C.V., Toms, M.P., Marchant, J.H., Clark, J.A., Siriwardena, G.M., & Baillie, S.R. (eds). 2002. *The Migration Atlas: movements of the birds of Britain and Ireland*. T & AD Poyser, London

² Birds of the Western Palearctic *Interactive* (2006). BirdGuides Ltd and Oxford University Press.

Plant located at H921 914. Two birds (possibly a pair) were recorded on January 22nd 2008, while three birds flew over calling in the same area on March 13th.

5.2.4 Yellowhammer

The Yellowhammer has undergone a dramatic decline in range and population in Northern Ireland in recent decades, and is increasingly confined to arable areas of County Down and Armagh. In common with the Tree Sparrow, it is listed as a Priority Species for conservation action in Northern Ireland. No Yellowhammers were recorded during field work along the survey corridor. However, a flock of 17 were found feeding in a stubble field alongside a car park about 0.5 kilometres from the survey corridor (H8895 8935) (see also Section 5.1.5). One bird sang briefly.

5.2.5 Reed Bunting

Although there is no evidence of any significant decline in this species in Northern Ireland, it is listed as a Priority Species by NIEA because of significant declines elsewhere in the UK. Small numbers were present along the survey corridor, with up to four birds recorded on 4 of the 6 survey visits. A flock of 30 birds was present with Yellowhammers in a feeding flock recorded outside the survey area on 20th February 2008.

5.2.6 Bullfinch

The Bullfinch is listed as a Priority Species in Northern Ireland because of significant declines elsewhere in the UK. This species was recorded on all but the final visit, with a maximum of five birds seen. Most birds were recorded within the road corridor in the riparian scrub and woodland on either side of Killyfaddy Bridge.

5.2.7 Stock Dove

The Stock Dove is a declining farmland bird in Northern Ireland, which is also largely restricted to County Down. A single bird was recorded on November 1st 2007 at H918 920. The bird was on its own and not in the company of Woodpigeons, and there were no subsequent records.

5.2.8 Kestrel

The Kestrel is listed as a Species of Conservation Concern in Northern Ireland. Single Kestrels were recorded from the survey corridor on two occasions – November 26th 2007 and March 13th 2008. A third bird was recorded on February 20th 2008 from beyond the survey corridor (see Section 5.1.5).

5.2.9 Buzzard

The Buzzard has been undergoing a rapid expansion in range and population across Northern Ireland in recent years. It was by far the most common raptor encountered during winter field work, and between two and five birds were recorded on all six visits. Few suitable nesting areas exist within the survey corridor. A pair appears to be associated with the small copse at H919 919 which lies just outside the corridor between the Castledawson Bypass and Killyneese Road.

5.2.10 Peregrine

This is the only other species recorded (along with Kingfisher) which is listed in Annex I of The Birds Directive. One bird flew over the survey corridor during field work on December 21st 2007.

5.2.11 Snipe and Lapwing

Snipe and Lapwing are declining breeding birds in Northern Ireland. Small numbers of wintering Snipe were recorded from waterlogged fields along the survey corridor on four of the six visits. Lapwings were recorded flying over, although on Visit 5 a group of 19 were in a field at H920 915.

5.2.12 Stonechat

The Stonechat (*Saxicola torquata*) is a Species of Conservation Concern. It is normally associated with rough grazing, particularly in upland or coastal areas, although they breed in suitable habitat around Lough Neagh which is situated around 4 kilometres east of the survey area. Many Stonechats remain in their breeding territories throughout the winter, although upland breeding birds will move to lowland or coastal areas in hard weather³. A single male was recorded at H915 901 on Visit 1, and a pair at H908 890 on Visit 4. The breeding status of Stonechat within the corridor is assessed by the Breeding Bird Survey.

5.3 **Records of other taxa**

5.3.1 Mammals

Five species of mammals were recorded during field work.

Brown Rat (*Rattus norvegicus*) : One dead on Aughrim Road, Visit 4.

³ Lack, P. (1986). *The Atlas of Wintering Birds in Britain and Ireland*. T & AD Poyser.

Red Fox (<i>Vulpes vulpes</i>):	Scent encountered throughout survey corridor on every visit.
Rabbit (<i>Oryctolagus cuniculus</i>):	Encountered on all visits.
Irish Hare (<i>Lepus timidus hibernicus</i>):	One record. One seen at H90989 89162 on December 21 st 2007.
Stoat (<i>Mustela erminea</i>):	One record. One seen at H9199 9140 on March 13 th 2008.

5.3.2 Lepidoptera

Lunar Hornet Moth (*Sesia bembeciformis*):

This is a scarce, although probably under-recorded, species in Northern Ireland. Exit holes and feeding funnels were found in old Willow trees at two separate locations along the survey corridor. Four exit holes were found at H91898 89825 and H91930 89803 on February 20th 2008 and at least six exit holes plus feeding funnels in cut Willow trunks at H89850 88773 on March 13th 2008.

There have been no recent records of this species from the Magherafelt area. It has previously been recorded (pre 1980) in square H99, but there are no known previous records from square H88⁴.

⁴ Thompson, R. & Nelson, B. (2006). *The Butterflies and Moths of Northern Ireland*. National Museums Northern Ireland.

APPENDIX B: BREEDING BIRD SURVEY 2008

A31 MAGHERAFELT BYPASS SCHEME

BREEDING BIRD SURVEY 2008

A report for Mouchel



Allen and Mellon Environmental Ltd

July 2008



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1. Introduction

- 1.1 This report presents the results of a breeding bird survey undertaken by Allen and Mellon Environmental for the proposed A31 Magherafelt Bypass road scheme. The survey relates to a study area along the preferred route for the new road. This area runs from the Castledawson Roundabout in the north, to the Moneymore Road south of Magherafelt town.
- 1.2 The proposed road passes through a range of habitat types, although it is predominantly improved pasture, bordered by hedgerows of varying quality. Some arable fields (e.g. winter wheat) and semi-improved pasture provide a little diversity. The route also includes wet ditches, streams and a few poorly-drained field corners, but there are no significant wetland areas within the corridor. Some areas of scrub and small areas of plantation woodland are present as well as a number of mature species-rich hedgerows.

2. Statement of Authority

- 2.1 Ornithological survey work was undertaken by Clive Mellon and Dave Allen, who are the Directors of Allen and Mellon Environmental Ltd. Both are extremely experienced field ornithologists, each with over 25 years experience in undertaking structured bird surveys at home and abroad. In their previous employment with Royal Society for the Protection of Birds (RSPB) Northern Ireland, both were involved in designing, managing and undertaking many bird surveys over a period of 15 years.

3. Aims of the Study

- 3.1 The aims of the survey were as follows:
- To obtain an accurate assessment of the numbers and distribution of breeding birds within and adjacent to the road corridor;
 - To provide information in support of an assessment of impacts on the breeding birds of the survey area.

4. Methodology

- 4.1 Four breeding bird surveys were undertaken between April and June 2008. Details of all survey visits are presented in Table 1.

Date	Time	Weather
30/4/2008	0640 - 1140	Wind 2/3NE, cloud 7/8
16/5/2008	0620 - 1130	Wind 2E, cloud 5/8
04/6/2008	0645 - 1000	Wind 3SW, cloud 6/8
19/6/2008	0645 -1030	Wind 3/4NW, cloud 5/8

- 4.2 The survey area was a 200 metre wide strip comprising the road corridor plus a buffer of around 50 metres on either side. A linear transect was walked along the road corridor, and all birds seen or heard were recorded. The survey transect did not adhere exclusively to the central line, to ensure that bird habitats at the edges of the corridor or just outside could be fully investigated.
- 4.3 Bird registrations were recorded on large scale maps of the route in the format of a modified Common Bird Census (CBC) survey. As with a CBC survey, all birds were recorded allowing analysis of territory numbers and distribution on completion of the survey. Standard British Trust for Ornithology (BTO) codes were used to record species and their behaviour¹.
- 4.4 It is inevitable that some bird territories overlap with site boundaries, and so it was necessary to record all birds occurring adjacent to the road corridor itself. In line with CBC methodology, all territories within 50 metres of the road corridor were included in the analysis of field maps
- 4.5 The breeding status of birds was determined using the criteria set out by Gibbons et al (1993)². For example, birds were considered to be breeding if they were apparently holding territory, giving alarm calls or if young birds or nests were seen. Other species seen or heard making contact calls were recorded as present or possibly breeding, if in suitable habitat.

¹ Gilbert, G., Gibbons, D.W., & Evans, J. (1998). Bird Monitoring Methods – a manual of techniques for key UK species, RSPB Sandy

² Gibbons DW, Reid, JB & Chapman RA (1993). The New Atlas of Breeding Birds in Britain and Ireland 1988-91, T&AD Poyser

- 4.6 All four survey visits were commenced in early morning (prior to 07.00am) to coincide with the period of maximum bird activity. Two fieldworkers were engaged in each survey visit. One fieldworker covered the northern section from the Castledawson Roundabout to Loves Road, while the second fieldworker simultaneously covered the route between Loves Road and the proposed junction with the Moneymore Road.

5. **Results**

5.1 **Overview**

- 5.1.1 A total of 50 species were recorded during survey work. Of these, 35 species either bred or displayed territorial behaviour within the study area (road corridor plus 100 metres). A further one species (Kestrel *Falco tinnunculus*) probably bred some distance outside the corridor but had a large hunting territory which included a section of the corridor. The remaining 14 species either bred beyond the road corridor zone or were casual visitors within it. A summary of breeding birds recorded within the road corridor is presented in Table 2A, and other species recorded are shown in Table 2B.
- 5.1.2 The survey area supports a typical hedgerow breeding bird assemblage. Wrens *Troglodytes troglodytes*, Robins *Erithacus rubecula*, Blackbirds *Turdus merula* and Chaffinches *Fringilla coelebs* were the most abundant breeding birds, and there were smaller numbers of Willow Warbler *Phylloscopus trochilus*, Dunnock *Prunella modularis* and Song Thrush *Turdus philomelos*. Species which are more typical of taller trees and woodland were also represented including Woodpigeon *Columba palumbus*, Chiffchaff *Phylloscopus collybita*, Goldcrest *Regulus regulus* and four species of tits. Bullfinch *Pyrrhula pyrrhula* and Lesser Redpoll *Carduelis cabaret*, which are both scarcer species of hedgerow and woodland, were also recorded.
- 5.1.3 In addition to the common breeding bird assemblage, some localised farmland bird species were recorded. A pair of Lapwing *Vanellus vanellus* held territory at the start of the season within the road corridor, with a further three pairs in a separate location outside the corridor. Tree sparrows *Passer montanus* were recorded during winter field work and two recently fledged young were seen on the final visit on 19th June, indicating that they had bred close to or within the road corridor. Two other declining farmland bird species recorded during winter fieldwork (Stock Dove *Columba oenas* and Yellowhammer *Emberiza schoeniclus*) were not recorded during the summer visits.
- 5.1.4 Two species of raptor were recorded during summer fieldwork. Two pairs of Buzzards *Buteo buteo* and a pair of Kestrels *Falco tinnunculus* were seen regularly from the survey area. One buzzard pair was associated with the small copse adjacent to the road corridor at H919 918, but was apparently unsuccessful. Another pair seen during fieldwork was well outside the survey area. Kestrels were recorded on two occasions at

the same location – an electricity pylon at H903 888. The pylon was used as a perch by the birds but it is not known where they were breeding.

5.1.5 The streams and wet ditches running through the road corridor supported some characteristic water birds including three pairs of Grey Wagtails *Motacilla cinerea*, a pair of Mallards *Anas platyrhynchos*, and a single pair of Reed Buntings *Emberiza schoeniclus*. Two pairs of Dippers *Cinclus cinclus* were recorded holding territory during winter field work in February and March. Only one Dipper was recorded during summer field work and there was no other evidence of breeding in the survey area. Similarly, no Kingfishers *Alcedo atthis* were seen despite being recorded on three occasions during winter field work.

Table 2A Summary of breeding bird numbers in the road corridor zone
(in order of abundance)

Species	Number of territories	Details
Wren <i>Troglodytes troglodytes</i>	67	Most abundant species within the road corridor.
Robin <i>Erithacus rubecula</i>	44	
Blackbird <i>Turdus merula</i>	33	
Chaffinch <i>Fringilla coelebs</i>	28	
Dunnock <i>Prunella modularis</i>	21	
Willow Warbler <i>Phylloscopus trochilus</i>	20	
Goldcrest <i>Regulus regulus</i>	16	
Blue Tit <i>Parus caeruleus</i>	11	
Great Tit <i>Parus major</i>	11	
Woodpigeon <i>Columba palumbus</i>	11	
Song Thrush <i>Turdus philomelos</i>	10	
Blackcap <i>Sylvia atricapilla</i>	8	
Coal Tit <i>Parus ater</i>	8	
Greenfinch <i>Carduelis chloris</i>	4	
Chiffchaff <i>Phylloscopus collybita</i>	4	Two singing birds within road corridor and two outside but within 50 metres.
Starling <i>Sturnus vulgaris</i>	4	
Grey Wagtail <i>Motacilla cinerea</i>	3	Pair at stream near Leckagh Bridge H898 887 and pair at H902 888. Another pair adjacent to road corridor at H896 888.
Bullfinch <i>Pyrrhula pyrrhula</i>	3	Two pairs at H901 889, one just outside corridor at Leckagh Bridge
Goldfinch <i>Carduelis carduelis</i>	3	
Magpie <i>Pica pica</i>	3	
Hooded Crow <i>Corvus cornix</i>	2	
Mistle Thrush <i>Turdus viscivorus</i>	2	
Lesser Redpoll <i>Carduelis cabaret</i>	2	Both pairs at H901 889
Long-tailed Tit <i>Aegithalos caudatus</i>	2	
Dipper <i>Cinclus cinclus</i>	2	Both pairs only recorded in early season during winter fieldwork.

Species	Number of territories	Details
Lapwing <i>Vanellus vanellus</i>	1	Pair displaying with another single bird at H910 891. 3 pairs outside corridor in H91 91. See Figures A and B.
Buzzard <i>Buteo buteo</i>	1	Pair associated with small copse at H919 918 just outside road corridor. Territory includes corridor. See Figure B.
Mallard <i>Anas platyrhynchos</i>	1	Pair in ditch at H917 911
Moorhen <i>Gallinula chloropus</i>	1	Pair in ditch at H916 909
Meadow Pipit <i>Anthus pratensis</i>	1	One possible breeding pair adjacent to corridor in N section.
Pied Wagtail <i>Motacilla alba yarrellii</i>	1	
Swallow <i>Hirundo rustica</i>	1	In old cottage at H902 888. Many others hunting over area
Reed Bunting <i>Emberiza schoeniclus</i>	1	Male singing at H916 900. See Figure B
House Sparrow <i>Passer domesticus</i>	1	
Tree Sparrow <i>Passer montanus</i>	0/1	Two recently fledged juveniles at H 915 897. See Figure A.
Total Territories	332	

Table 2B Additional species recorded during fieldwork

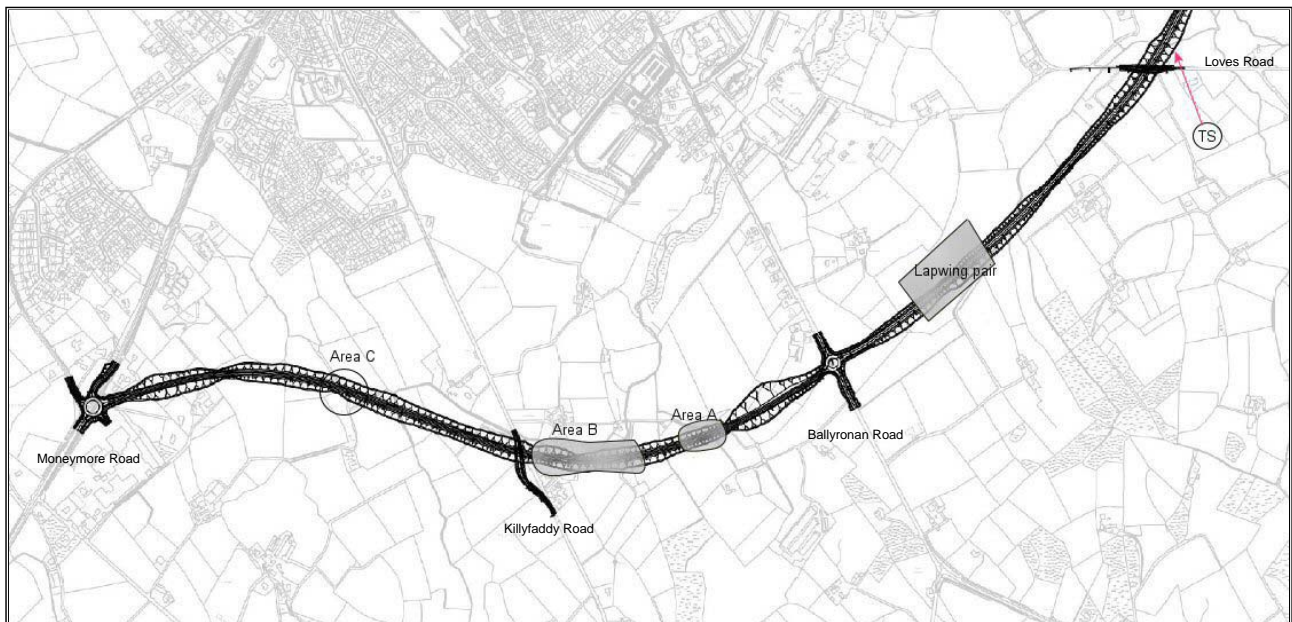
Species	Maximum number recorded	Number of visits recorded (n=4)
Grey Heron <i>Ardea cinerea</i>	2	3
Kestrel <i>Falco tinnunculus</i>	2 (pair on 30/4/08)	2
Pheasant <i>Phasianus colchicus</i>	2	1
Lesser Black-backed Gull <i>Larus fuscus</i>	25	4
Black-headed Gull <i>Larus ridibundus</i>	21	3
Feral Pigeon <i>Columba livia</i>	12	4
Collared Dove <i>Streptopelia decaocto</i>	4	3
Swift <i>Apus apus</i>	21	4
Sand Martin <i>Riparia riparia</i>	1	1
House Martin <i>Delichon urbica</i>	80	4
Jackdaw <i>Corvus monedula</i>	100	4
Rook <i>Corvus frugilegus</i>	255	Two small rookeries outside survey area – H914 921 (8 nests) and H920 899 (22 nests)
Raven <i>Corvus corax</i>	1	1
Siskin <i>Carduelis spinus</i>	5	1
Linnet <i>Carduelis cannabina</i>	2	3

5.2 Identification of Key Areas

5.2.1 Most breeding birds were associated with hedgerows within the road corridor and were evenly distributed throughout the route. However, three areas along the road corridor (all in the southern section) supported a higher density and diversity of breeding birds. The locations of all areas are illustrated in Figure A.

Figure A

Location of key breeding bird clusters and Lapwing pair in southern section



Key: TS = location of Tree Sparrow juveniles

5.2.2 Area A consists of a small copse with associated rough grassland along an old laneway. Despite its small size, this area supported an estimated 21 breeding bird territories of 11 species.

Breeding birds recorded in Area A

Wren	4 pairs	Blue Tit	1 pair
Robin	3 pairs	Coal Tit	1 pair
Chaffinch	3 pairs	Willow Warbler	1 pair
Dunnoek	3 pairs	Blackcap	1 pair
Song Thrush	2 pairs	Woodpigeon	1 pair
Blackbird	1 pair		

5.2.3 Area B is by far the most important area for breeding birds along the corridor. It comprises a series of species-rich hedgerows and scrubby woodland situated alongside the stream east of Leckagh Bridge, along with semi-improved grassland and a scrub bank to the north of the stream. 18 species of breeding birds were recorded here amounting to an estimated 53 breeding bird territories within the road corridor zone. Further breeding bird territories were located in adjacent areas outside the road corridor area. The species composition was as follows:

Breeding birds recorded in Area B

Wren	5 pairs	Dunnock	3 pairs
Blackcap	5 pairs	Lesser Redpoll	2 pairs
Goldcrest	5 pairs	Chiffchaff	2 pairs
Willow Warbler	4 pairs	Bullfinch	2 pairs
Blackbird	4 pairs	Song Thrush	2 pairs
Chaffinch	4 pairs	Coal Tit	1 pair
Woodpigeon	4 pairs	Great Tit	1 pair
Blue Tit	4 pairs	Greenfinch	1 pair
Robin	3 pairs	Grey Wagtail	1 pair

A pair of Dippers *Cinclus cinclus* was holding territory in the area early in the breeding season and was recorded during winter field work on 13th March 2008. However, no Dippers were recorded here during summer fieldwork.

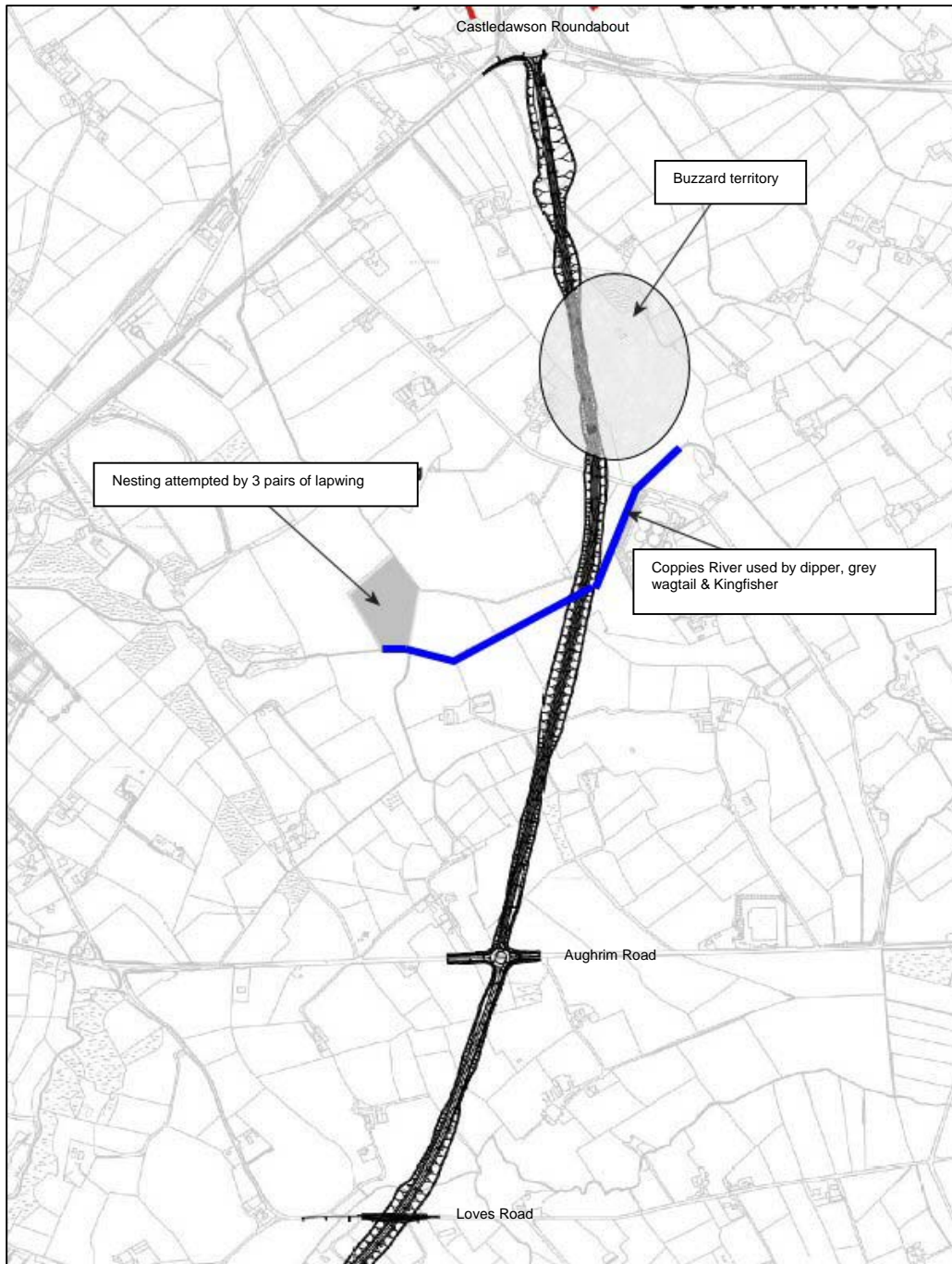
5.2.4 Area C represents the only other significant cluster of breeding bird territories along the route. This area comprises the northern edge of an area of quite young plantation woodland and scrub on a rocky outcrop. It supported an estimated 13 territories of 11 bird species.

Breeding birds recorded in Area C

Wren	2 pairs	Dunnock	1 pair
Blackbird	2 pairs	Goldcrest	1 pair
Chaffinch	1 pair	Song Thrush	1 pair
Robin	1 pair	Starling	1 pair
Great Tit	1 pair	Willow Warbler	1 pair
Blue Tit	1 pair		

- 5.2.5 There were no significant areas of woodland and scrub along the northern section of the route, and so no significant clusters or assemblages of breeding birds were recorded. A pair of Buzzards was associated with the small copse adjacent to the road corridor zone and may have attempted to breed here. Its territory overlapped to some extent with the road corridor (see Figure B).
- 5.2.6 The only other significant area in this section was the stream flowing to the north and west of the Sewage Treatment Works at H921 914 (Figure B). Dipper and Grey Wagtail were both recorded here (just east of the road corridor zone). A Dipper pair held territory early in the breeding season (H919 914), but only a single bird was recorded during the breeding bird surveys. A Kingfisher was recorded along this stretch of stream in the winter, but not during summer fieldwork.
- 5.2.7 Three pairs of Lapwings attempted to breed in a field to the west of the corridor, but all were unsuccessful. The pair which was displaying within the road corridor at H910 891 also failed and was only recorded on the first survey visit. The causes of breeding failure are unknown, although predation of eggs or young by *Corvids* or Red Fox *Vulpes vulpes* is suspected. The habitat in both lapwing areas comprised pasture with a short sward and an un-drained, wet area beside a ditch.

Figure B



Location of key breeding species in northern section

Key: RB = Reed Bunting territory

6. Evaluation

- 6.1 The 35 recorded breeding or territorial species include a number which are considered to be of conservation concern in Northern Ireland. This section considers the conservation status of the species recorded within the survey area in both a UK and Ireland context. This evaluation is based upon the priority species list prepared by Northern Ireland Environment Agency (NIEA) as part of the Northern Ireland Biodiversity Strategy process³. This in turn is based on the UK and Irish Birds of Conservation Concern lists as described in Gregory *et al* (2002)⁴ and Newton *et al* (1999)⁵. The priority species lists are currently under review by NIEA, and a review of the conservation status of birds in Ireland has already been completed (Lynas *et al* 2007)⁶
- 6.2 Priority species are generally those which have suffered significant declines (greater than 50%) in Britain or Ireland over the past 25 years, while Species of Conservation Concern (SoCCs) are species which are rare or localised or have undergone a moderate (greater than 25%) decline.

Seven Priority species were recorded breeding within the survey area. These are:

- Lapwing
- Reed Bunting
- Song Thrush
- Starling
- House Sparrow
- Tree Sparrow
- Bullfinch

- 6.3 Most of these species are common and widespread in Northern Ireland. Only one – Lapwing – is categorised as Red-listed in Ireland by Lynas *et al*. The remainder are categorised as Priority species primarily because of the significant declines that they have suffered in parts of Great Britain. The most recent figures from the UK Breeding Bird Survey (BBS) indicate that Starling, House Sparrow and Song Thrush have been

³ EHS (2004) Biodiversity Habitats & Species: Priority species for conservation action in Northern Ireland. DOE NI.

⁴ Gregory RD, Wilkinson NI, Noble DG, Robinson JA, Brown AF, Hughes J, Procter DA, Gibbons DW, Galbraith CA (2002) The population status of birds in the UK Channel Isles & Isle of Man: an analysis of conservation concern 2002-2007. *British Birds* 95: 410-450.

⁵ Newton S, Donaghy A, Allen D and Gibbons DW (1999) Birds of Conservation Concern in Ireland. *Irish Birds* 6 (3): 333-344.

⁶ Lynas, P., Newton, S.F., & Robinson, J.A. (2007) The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8 (2): 149-166.

- stable or increasing in Northern Ireland over the past ten years⁷. No BBS data are available for Tree Sparrow, Bullfinch or Reed Bunting, due to the restricted survey coverage in Northern Ireland. Data from the UK and Ireland Breeding Bird Atlases provide no evidence of any significant change to the range or populations of these species in Northern Ireland.⁸ The Tree Sparrow has a restricted distribution in Northern Ireland, mainly in the south east and around Lough Neagh where it is widespread and locally common.
- 6.4 The Lapwing remains categorised as Red-listed in Ireland because its breeding population has declined by greater than 50% over 25 years. The most recent population estimate for Northern Ireland is 1,771 pairs which show a decline of 66% from the estimated population in 1987⁹. Lapwing numbers have continued to decline at some key sites (including Lough Neagh) since then and its dwindling status as a breeding bird in the wider countryside continues to cause concern. The Lapwing is the subject of a NI Species Action Plan, which cites agricultural intensification as the key factor in its decline. The Action Plan advocates the implementation of measures such as agri-environment schemes and Good Agricultural and Environmental Condition (GAEC) to manage farmland for this species.
- 6.5 Eight Species of Conservation Concern (SoCC) were recorded breeding or holding territory within the road corridor zone.
- Swallow
 - Meadow Pipit
 - Grey Wagtail
 - Dunnock
 - Mistle Thrush
 - Willow Warbler
 - Goldcrest
 - Lesser Redpoll
- 6.6 Of the resident SoCCs recorded in the survey area, only the Mistle Thrush is known to have declined in Northern Ireland over the last ten years¹⁰. Swallow, Meadow Pipit, Goldcrest, Willow Warbler, and Dunnock have all apparently undergone significant increases in Northern Ireland in that period. No BBS data are available for Grey Wagtail

⁷ The Breeding Bird Survey 2005. BTO Research Report Number 439.

⁸ Gibbons DW et al (1993). The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991. T&AD Poyser.

⁹ Henderson, I., Wilson, A. & Steele, D. 2000. Population Estimates and Habitat Associations of Breeding Waders in Northern Ireland, 1999: The Results of an Extensive Survey.

¹⁰ The Breeding Bird Survey 2005. BTO Research Report Number 439.

or Lesser Redpoll. An increase has been detected in the English Grey Wagtail population in the past decade after a long term moderate decline. The Lesser Redpoll, however, continues to decline in England, although numbers are apparently increasing in Scotland¹¹. The UK and Ireland Breeding Atlas also provides evidence of a contraction of the Lesser Redpoll's range across much of Ireland. Despite this, Lynas *et al* include only the Swallow in their new Amber list, with the remaining species being placed in the Green list of species not currently of conservation concern in Ireland ¹²

- 6.7 In addition to the Priority species and SoCCs which were recorded in the survey area, the Buzzard is listed in Schedule 1 to the Wildlife (Northern Ireland) Order 1985 and is therefore protected by special penalties.

¹¹ The Breeding Bird Survey 2005. BTO Research Report Number 439.

¹² Lynas, P., Newton, S.F., & Robinson, J.A. (2007) The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8 (2): 149-166.

7. Conclusion and Summary

- 7.1 An estimated 332 breeding bird territories were recorded within the road corridor zone. This includes territorial birds recorded up to 50 metres beyond the road corridor to ensure that all birds whose territories might overlap with the corridor were included. Most breeding birds were distributed along hedgerows, with tall, thick hedges with mature trees holding the greatest number and diversity of birds.
- 7.2 Three areas of scrub or woodland in the southern section supported more significant assemblages of breeding birds, and in particular the area east of Leckagh Bridge (Area B), which supported an estimated 53 territories of 18 species. Species recorded in this area include Bullfinch and Lesser Redpoll which are known to be in decline in some parts of the UK; this however, is not evident in Northern Ireland.
- 7.3 The most significant breeding bird species recorded was Lapwing, which has undergone a significant decline in Northern Ireland. One pair was recorded within the road corridor and a further three pairs in a field several hundred metres to the west of the corridor. All four pairs apparently failed, possibly as a result of nest predation.
- 7.4 The discovery of two recently fledged juvenile Tree Sparrows suggests that breeding occurred either within or close to the road corridor. This is a localised species in Northern Ireland, although its main stronghold on the shores of Lough Neagh is only a few kilometres from the road corridor.
- 7.5 The Coppies River which flows through part of the road corridor supported two pairs of Grey Wagtails and two pairs of Dippers, although the Dippers' territorial activity was restricted to February and March, before the breeding bird survey began. One pair each of Mallard and Moorhen nested on drainage ditches not far from the Coppies River. A Kingfisher which was recorded on three occasions during winter field work was not recorded during summer surveys.

APPENDIX C: HABITAT IMPACTS TABLE

Table 1: Direct loss / damage of habitats (excludes habitats of minimal value such as improved grassland and hard standing)

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
0	Roadside scrub	Not applicable	-	Hawthorn, bramble, ash	No	0.15 ha	Low
0	2 x semi-mature ash tree with medium bat risk	Not applicable	-	-	-	Loss	Low
0 – 50	Ornamental shrubs & immature trees	Not applicable	-	Leyland cypress, Norway maple etc	No	0.1 ha	Low
125	Outgrown hedgerow	4	Outgrown	Hawthorn, sycamore, ash, blackthorn	No	70m	Medium
170-210	Outgrown hedgerow	4	Outgrown	One main section of hedgerow to be lost, plus sections of two perpendicular hedges. Hawthorn, blackthorn, dog rose, ash & sycamore.	No	110m	Medium
270-320	Outgrown hedgerow	5	Outgrown	Sections of three hedgerows to be lost here. Hawthorn, blackthorn, dog rose, holly, ash & sycamore.	Yes	80m	Medium

¹⁵ Species rich is defined as having 5 or more woody species within a typical 30m section.

¹⁶ See criteria at end of table.

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
280	Oak tree with medium bat risk	Not applicable	Mature	-	Not applicable	Loss	Medium
420 – 480	Trimmed hedgerow	3	Trimmed	Hawthorn, blackthorn & holly.	No	60m	Low
490	Trimmed hedgerow	3	Trimmed	Hawthorn, blackthorn & holly.	No	70m	Low
590-630	Broad-leaved semi-natural woodland containing semi-mature trees	Not applicable	Semi-mature	Ash, hawthorn & sycamore over navelwort, herb Robert, foxglove, curled dock, common nettle, ivy, primrose, and common dog violet	Not applicable	0.05 ha	Medium
600-660	Trimmed gappy hedgerow	4	Trimmed	Hawthorn, blackthorn, dog rose, ash, gorse	No	50m	Medium
690-730	Trimmed hedgerow with track and opposite fence	3	Trimmed	Hawthorn, blackthorn, dog rose	No	60m	Medium
770-820	Watercourse ~3m wide with outgrown hedgerow to east	6	Outgrown	Hawthorn, ash, alder, dog rose, gorse, blackthorn, honeysuckle, bluebell, herb Robert, wood avens, opposite-leaved golden-saxifrage.	Yes	70m	High

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
850-900	Outgrown hedgerow	4	Outgrown with two mature ash trees	Hawthorn, dog rose, ash, gorse, elder, holly	No	60m	Medium
990	Track with two trimmed hedgerows (westernmost of 2)	3	Trimmed	Hawthorn, holly, sycamore with herb Robert and nipplewort	No	50m	Medium
990	Track with two trimmed hedgerows (easternmost of 2)	4	Trimmed	Hawthorn, blackthorn, ash with herb Robert	No	50m	Medium
1120-1130	Trimmed roadside hedgerow (westernmost)	5	Trimmed with some some-mature trees	Hawthorn, dog rose, holly, honeysuckle, ash, grey willow, beech. Contains 7 semi-mature ash trees.	Yes	80m	Medium
1130-1150	Trimmed roadside hedgerow (easternmost) with damp ditch	5	Trimmed with some some-mature trees	Hawthorn, dog rose, ash, elder with herb Robert, bush vetch and meadowsweet.	Yes	80m	Medium

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
1180-1400	Watercourse ~3m wide with outgrown waterside hedgerow containing several semi-mature trees	5	Outgrown hedgerow with stream	Feature of high value due to structural and species diversity. Ash, holly, hazel, grey willow, blackthorn, gorse, hawthorn, alder, elder with herb Robert, wood avens, meadowsweet and bluebell. Aquatic vegetation somewhat limited with just some reed canary-grass and hemlock water-dropwort.	Yes	250m	High
1230-1270	Area of dense scrub on rocky outcrop	Not applicable	Dense scrub	Area of dense scrub dominated by grey willow, hawthorn, bramble, gorse and elder. Ground flora of common nettle, common vetch, greater stitchwort, meadowsweet, ivy and cleavers.	Not applicable	0.014 ha	High
1270-1330	Former track now one very broad (~5m) outgrown hedgerow	4	Outgrown	Hawthorn, hazel, blackthorn, ash and sessile oak over wild angelica, wood sorrel, cow parsley, bush vetch and hogweed.	No	185m	High
1380-1420	Broad-belt of streamside scrub and semi-mature trees	7	Outgrown	Hawthorn, bramble, holly, blackthorn, honeysuckle, ash, gorse, elder, sycamore, bramble, cow parsley, ivy, cleavers, creeping buttercup, wood sorrel wood anemone, herb Robert.	Yes	60m	High
1420	Outgrown hedgerow adjacent to track including some recent planting	6	Outgrown	Gorse, elder, hawthorn, bramble, holly, blackthorn, guelder rose, honeysuckle, ash, wild cherry, sycamore, foxglove, bramble, cow parsley, hedge parsley, ivy, cleavers herb Robert.	Yes	60m	High

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
1490-1500	Trimmed hedgerow with damp ditch	7	Outgrown	Hawthorn, bramble, rowan, ash, holly, blackthorn, wild cherry, dog rose, honeysuckle, goat willow. Ground flora of bush vetch, common valerian, cow parsley, common nettle and creeping buttercup.	Yes	50m	Medium
1580-1630	Outgrown hedgerow with damp ditch	8	Outgrown	Hawthorn, blackthorn, honeysuckle, dog rose, grey willow, bramble, ash, beech, sycamore, alder, holly, goat willow.	Yes	65m	Medium
1620-1670	Trimmed hedgerow alongside track with fence on opposite side. Including 6 x semi-mature ash trees and 1 x semi-mature wild cherry.	6	Trimmed / outgrown	Holly, honeysuckle, blackthorn, rowan, gorse, ash, dog rose, sycamore, wild cherry with bramble, common nettle, cleavers, foxglove, herb Robert, ivy, bush vetch, barren strawberry, cow parsley.	Yes	70m	Medium
1710	Trimmed hedgerow	5	Trimmed	Hawthorn, blackthorn, elder, dog rose, ash, holly	Yes	60m	Low
1710-1810	Trimmed hedgerow	4	Trimmed	Hawthorn, elder, holly, gorse, beech, dog rose and blackthorn with species-poor ground flora	No	100m	Low
1810-1820	Trimmed hedgerow with one mature crab apple	4	Trimmed	Hawthorn, holly, blackthorn, honeysuckle, elder and crab apple with common dog violet.	No	35m	Low

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
1825-1850	Newly planted hedgerow	2	Trimmed	Blackthorn and hazel with foxglove	No	25m	Low
1825-1855	Trimmed hedgerow with one mature sessile oak	5	Trimmed	Hawthorn, blackthorn, dog rose, sessile oak, holly and ash	Yes	60m	Low
1930-1980	Trimmed hedgerow	2	Trimmed	Hawthorn and elder	No	60m	Low
1990	Roadside trimmed hedgerow including 2 x mature ash trees	3	Trimmed	Hawthorn, bramble, ivy, holly, ash with cleavers, common ragwort, spear thistle and garden solomon's seal.	No	220m	Medium
2005	Roadside trimmed hedgerow with fence only in southern portion	2	Trimmed	Hawthorn, bramble, ivy, holly with species-poor ground flora.	No	180m	Low
2150-2220	Outgrown mature hedgerow along a bank	6	Outgrown hedge/tree line	Hawthorn, dog rose, gorse, holly, blackthorn, sycamore, grey willow, wild cherry, elder and ash with ground ivy, fox glove, common nettle, spear thistle, Yorkshire fog.	Yes	85m	High

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
2220	Overgrown hedge along a fence line	6	Outgrown gappy	Hawthorn, blackthorn, elder, holly, ash, gorse. Over a ground flora of common nettle, oxeye daisy, creeping buttercup, soft rush Yorkshire fog and meadow foxtail	Yes	75m	Medium
2450-2650	Mature out grown hedgerow /tree line. Along a dry ditch which becomes wet downstream (i.e. eastwards) of confluence of drains at 2560 and 2590.	4	Mature / outgrown	Hawthorn, wild privet, willow, holly, ash covering a flora of soft rush, common nettle, Yorkshire fog, creeping buttercup, red clover and herb Robert	No	200m	High
2560	Outgrown hedgerow	7	Outgrown	Hawthorn, dog rose, holly, honeysuckle, ash, alder, rowan, crack willow over herb Robert and lords-and-ladies.	Yes	30m	High
2590	Damp ditch with scattered scrub	Not applicable	Not applicable	Alder and elder.	No	30m	Low
2775	Fence line	Not applicable	Not applicable	-	Not applicable	Not applicable	Not applicable

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
2910-2980	Trimmed field boundary hedge with very short verge	4	Trimmed	Alder, elder, holly, dog rose with a ground flora of sow thistle, spear thistle, creeping buttercup, common nettle, Yorkshire fog, meadow foxtail, perennial rye grass.	No	120m	Medium
3030-3050	Outgrown, unmanaged hedge becoming a tree line	5	Outgrown & gappy	Ash, blackthorn, hawthorn, holly, dog rose with a ground flora of common nettle, broad leaved dock, hogweed, creeping buttercup, meadow foxtail, Yorkshire fog, cocks foot and perennial rye grass.	Yes	100m	High
3110-3150	Double roadside hedgerow (western most of 2)	6	Trimmed	Wild privet, blackthorn, ash, honeysuckle, hawthorn, guelder rose, sycamore and holly with wood avens, ivy, hedge bindweed, cow parsley, meadowsweet.	Yes	140m	Medium
3110-3150	Double roadside hedgerow (eastern most of 2) with 2 mature sycamores	6	Trimmed	Guelder rose, ash, honeysuckle, hawthorn, sycamore, grey willow, hazel, blackthorn, wild privet, alder, gorse and holly with meadow vetchling, herb Robert, hardheads, germander speedwell, smooth hawk's-beard, greater stitchwort, red clover, crested dog's-tail and sorrel.	Yes	140m	Medium

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
3190-3230	Outgrown hedgerow / tree-line with shallow watercourse ~2m across	5	Outgrown	Holly, sycamore, honeysuckle, hazel, blackthorn, ash and sessile oak with wild angelica, common ragwort, common dog violet, sorrel, bush vetch, march thistle, meadowsweet, wood sorrel, herb Robert, barren strawberry, wood dock, wood dock, wood avens, opposite-leaved golden-saxifrage, foxglove and hart's-tongue fern.	Yes	95m	High
3350-3370	Wet ditch with scattered scrub and fence line	Not applicable	Not applicable	Grey willow, elder, common vetch, common nettle, bramble, lesser stitchwort, meadow vetchling, bush vetch, cow parsley.	Not applicable	30m	Low
3450-3480	Trimmed hedgerow (grades into fence-line only to east)	4	Outgrown	Broom, alder, hawthorn, bramble, dog rose, holly, wild privet with foxglove, honeysuckle, soft rush and hedge parsley	No	40m	Medium
3580-3610	Outgrown hedgerow with dry ditch	4	Outgrown	Hawthorn, holly, dog rose, honeysuckle, sycamore, bramble, ash, marsh thistle, fox glove and gorse.	No	40m	Medium
3610-3625	Outgrown hedgerow / line of immature trees	6	Outgrown	Hawthorn, bramble, alder, holly, blackthorn, wild privet, dog rose, rowan, honeysuckle and grey willow with soft rush, compact rush, prickly sow-thistle, lesser spearwort, field horsetail, marsh woundwort, hairy bitter-cress and common water-starwort.	Yes	100m	Medium

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
3640-3670	Outgrown hedgerow	5	Outgrown	Hawthorn-dominated with holly, bramble, blackthorn, ash, sycamore, dog rose, water figwort, common nettle, colt's-foot and creeping buttercup.	Yes	40m	Medium
3750	Roadside hedgerow (southernmost of 2)	3	Trimmed	Hawthorn, blackthorn, dog rose, holly, ash, cow parsley, tufted vetch, honeysuckle and ivy.	No	200m	Low
3750	Roadside hedgerow (northernmost of 2)	1	Trimmed	Hawthorn-dominated	No	80m	Low
3800	Managed hedgerow	2	Trimmed	Hawthorn, elder, sycamore, bush vetch, bramble and honeysuckle.	No	100m	Low
3870-3910	Outgrown hedgerow	4	Outgrown	Hawthorn, hazel, cherry, blackthorn, holly, ash, dog rose, sycamore and bramble.	No	60m	Medium
4100-4120	Outgrown hedgerow with several semi-mature trees	3	Outgrown hedgerow with trees	Ash, hawthorn, alder, cherry, bramble and navelwort. An old boundary with associated wall and bank.	No	40m	High
4140	Defunct hedgerow	1	Defunct hedgerow	Gappy hedgerow with hawthorn and bramble	No	40m	Low

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
4200-4230	Trackside hedgerow	3	Trimmed	Hawthorn, ash, gorse, holly, rowan, greater stitchwort, wood avens, tufted vetch, honeysuckle and bramble. Old boundary, on a bank with associated wall.	No	70m	Low
4230	Trimmed hedgerow	2	Trimmed	Hawthorn, gorse and honeysuckle.	No	20m	Low
4230-4250	Trackside hedgerow	3	Outgrown	Hawthorn, gorse, blackthorn, bush vetch, herb-Robert, bramble and honeysuckle. Old boundary, on a bank with associated stone wall.	No	70m	Low
4250-4300	Managed hedgerow	4	Trimmed	Hawthorn, dog rose, blackthorn, holly, hazel, honeysuckle and bramble.	No	70m	Low
4300-4350	Trackside hedgerow	5	Trimmed	Hawthorn, wild cherry, blackthorn, wild privet, dog rose, ash, elder, bush vetch, meadowsweet, honeysuckle and bramble.	Yes	60m	Low
4350-4400	Outgrown hedgerow	3	Outgrown	Hawthorn, cherry, alder, blackthorn, gorse, ash, honeysuckle and bramble	No	15m	Low
4620-4660	Watercourse ~3m wide bordered by fences	Not applicable	Not applicable	Species-poor grassland stream-sides with some reed canary-grass	Not applicable	65m	medium
4640-4660	Dry ditch with semi-mature crack willow	Not applicable	Not applicable	Scattered scrub and crack willow	Not applicable	20m	medium

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
4750-4850	Trimmed hedgerow	3	Trimmed	Hawthorn, blackthorn, privet, dog rose, gorse, holly & bush vetch.	No	95m	Low
4900	Roadside trimmed hedgerow (northernmost of 2)	5	Trimmed	Hawthorn, blackthorn, ash, wild privet, holly, dog rose, honeysuckle, bush vetch, bluebell, lords'-and-ladies.	Yes	60m	Medium
4900	Roadside trimmed hedgerow (southernmost of 2)	5	Trimmed	Hawthorn, ash, wild privet, holly, gorse, bush vetch & meadowsweet.	Yes	60m	Medium
5050-5100	Outgrown hedgerow with semi-mature trees	5	Trimmed	Ash, hawthorn, dog rose, blackthorn, hazel & holly with bluebell.	Yes	50m	Medium
5375	Broad-leaved semi-natural woodland	Not applicable	Mature woodland	Ash, sycamore, holly, alder & elder with ground flora of bluebell, cow parsley, lesser celandine, lord's-and-ladies & broad buckler-fern. 2 x semi-mature ash and 2 x semi-mature alder to be lost.	-	0.001 ha	High
5380	Hedgerow (mostly outgrown)	5	Outgrown	Hawthorn, holly, dog rose, blackthorn & sycamore with ground flora of lesser celandine, cow parsley, lord's-and-ladies, meadowsweet & soft rush.	Yes	50m	Medium
5400	Trimmed hedgerow	6	Trimmed	Hawthorn, holly, hazel, elder, dog rose, blackthorn & sycamore with ground flora of lesser celandine, wood dock, cow parsley & lord's-and-ladies.	Yes	50m	Medium

Chainage	Habitat	Average number of woody species per 30m of hedgerow	Structure (trimmed; outgrown; row of trees)	Comments	Species Rich? ¹⁵	Direct loss	Value for foraging / commuting bats (based on habitat features) ¹⁶
5530	Fence	Not applicable	Fence	-	No	50m	Low
5530	Very gappy hedge	2	Trimmed	Hawthorn & blackthorn	No	20m	Low
5520-5600	Trimmed trackside hedgerows – very gappy (easternmost of 2)	2	Trimmed	Hawthorn & gorse	No	40m	Low
5520-5600	Trimmed trackside hedgerows (westernmost of 2)	7	Trimmed	Hawthorn, blackthorn, hazel, dog rose, gorse, ash & sycamore with ground flora of bluebell and bush vetch.	Yes	80m	Low
5720	Outgrown double hedgerow and green lane (treated as single feature)	5	Trimmed	Hawthorn, gorse, bramble, wild cherry, ash, holly & honeysuckle with ground flora of bluebell, bush vetch, greater stitchwort, herb Robert & germander speedwell.	Yes	130m	Medium
5860	Row of mature cypress trees & species-poor road-side grassland	Not applicable	Row of trees	-	No	130m	Low

Table 2: Summary of vegetation loss

Habitat	Area / extent
Scrub	0.15 hectares
Broad-leaved semi-natural woodland	0.051 hectares
Species-rich hedgerows	2330 metres
Species-poor hedgerows	2915 metres
Watercourses	480 metres

Table 3: Breakdown of bat hedgerow habitat loss in terms of value for bats

Assessed value	Extent
Hedgerows of low value	1820 metres
Hedgerows of medium value	2250 metres
Hedgerows of high value	1090 metres
Scrub (medium value)	0.015 hectares
Broad-leaved semi-natural woodland (high value)	0.051 hectares
Watercourses (high value)	480 metres

Table 4: Criteria for calculating habitat valuations for bat foraging/commuting

Low	Medium	High
<ul style="list-style-type: none"> Trimmed hedgerows typically <1.5m high and <1.5m broad. Exposed location. Poor connectivity to areas of good foraging / roost sites. High disturbance e.g. traffic / lighting. 	<ul style="list-style-type: none"> Partially outgrown hedgerows. Reasonable connectivity to areas of good foraging / roost sites. Characteristics intermediate between 'low' and 'high'. 	<ul style="list-style-type: none"> Structurally diverse hedgerows, e.g. containing standard trees. Outgrown hedgerows typically >3 high and >2m broad. Good connectivity to areas of good foraging / roost sites. Associated features e.g. wet ditch / watercourse. Sheltered location.

APPENDIX D: BAT SURVEY RESULTS

Table 1: Results of bat corridor surveys

Corridor reference	Date(s) of survey	Dawn or dusk	Species recorded	Passes	Activity level	Number of bat species
C1	14 May 2008	Dusk	Soprano pipistrelle	38	48 medium	1
C1	18 June 2008	Dusk	Soprano pipistrelle; common pipistrelle; and Leisler's	50	67 high	3
C2	14 May 2008	Dusk	Soprano pipistrelle; common pipistrelle; nathusius' pipistrelle; and Leisler's	24	32 medium	4
C2	18 June 2008	Dusk	Pipistrelle & Leisler's	82	103 very high	2
C3	15 May 2008	Dawn	Common pipistrelle	1	2 very low	1
C4	18 June 2008	Dusk	Soprano pipistrelle; common pipistrelle; nathusius' pipistrelle; and Leisler's	16	21 low	4
C4	19 June 2008	Dusk	Pipistrelle	7	9 low	1
C5	14 May 2008	Dusk	Soprano pipistrelle; common pipistrelle; nathusius' pipistrelle; brown long-eared; and Leisler's	55	69 high	5
C5	18 June 2008	Dusk	Common pipistrelle; Leisler's; and Myotis sp.	67	84 high	3
C6	20 Sept 2007	Dusk	Soprano pipistrelle; common pipistrelle; and Leisler's	41	18 low	3
C6	19 June 2008	Dusk	Common pipistrelle; and Leisler's	9	11 low	2
C7	19 Sept 2007	Dusk	Soprano pipistrelle and Myotis sp.	32	13 low	2
C7	19 June 2008	Dusk	Soprano pipistrelle; common pipistrelle	33	44 medium	2
C8	17 Sept 2007	Dusk	Common pipistrelle and natterer's	48	20 low	2
C8	19 June 2008	Dusk	Pipistrelle	32	40 medium	1
C9	17 Sept 2007	Dusk	Soprano pipistrelle; common pipistrelle; and Myotis sp.	105	44 medium	3
C9	15 May 2008	Dusk	Soprano pipistrelle; common pipistrelle; and Leisler's	36	45 medium	3

Corridor reference	Date(s) of survey	Dawn or dusk	Species recorded	Passes	Activity level	Number of bat species
C10	17 Sept 2007	Dusk	Soprano pipistrelle; common pipistrelle; and Myotis sp.	317	132 very high	3
C10	15 May 2008	Dusk	Soprano pipistrelle; common pipistrelle	38	48 medium	2
C11	18 Sept 2007	Dusk	Soprano pipistrelle; and Leisler's	26	11 low	2
C12	20 Sept 2007	Dusk	Soprano pipistrelle; common pipistrelle; and Leisler's	50	21 low	3
C13	18 Sept 2007	Dusk	Soprano pipistrelle; common pipistrelle	20	8 low	2
C14	18 June 2007	Dusk	Soprano pipistrelle; common pipistrelle	168	70 high	2
C14	15 May 2008	Dusk	Soprano pipistrelle; and Leisler's	44	55 high	2
C15	20 Sept 2007	Dusk	Soprano pipistrelle; common pipistrelle	37	15 low	2
C15	15 May 2008	Dusk	Common pipistrelle; brown long-eared; Myotis sp. and Leisler's	49	61 high	4

Table 2: Results of potential roost surveys (buildings)

Potential roost reference	Bat roost potential (based on external inspection)	Date(s) of survey	Type(s) of survey	Roost confirmed	Notes	Distance from route alignment
B1	Medium	18 June 2008	Dusk emergence	No	Farmyard complex containing several buildings, including some older traditional structures.	65 metres west
B2	Medium	18 June 2008	Dusk emergence	No	Farmyard complex containing several buildings, mostly modern.	60 metres west
B3	Medium	15 May 2008	Dawn return	No	Farmyard complex containing several buildings, including some older traditional structures.	80 metres east
B4	Confirmed	18	Dusk	Yes	Roost containing at least 2 nathusius' pipistrelles in 2007 – one bat	150 metres

Potential roost reference	Bat roost potential (based on external inspection)	Date(s) of survey	Type(s) of survey	Roost confirmed	Notes	Distance from route alignment
	roost	September 2007	emergence		calling from roost then another seen to enter.	west
B4	Confirmed roost	15 May 2008	Dawn return	Confirmed previously	No evidence of roost in 2008. This suggests likely male roost, rather than maternity colony.	150 metres west
B5	Medium	18 June 2008	Dusk emergence	No	Derelict small barn. Stone walls contain some crevices; corrugated metal roof; also dense ivy growth on northern and western walls.	40 metres west
B6	Low/medium	19 June 2008	Dusk emergence	No	Modern single-storey dwelling in good state of repair.	35 metres west
B7	Medium	18 June 2008	Dusk emergence	No	Farmyard complex containing several buildings, including some older traditional structures. Solitary 45 kHz pipistrelle recorded foraging around nearby trees, but no roost identified.	35 metres east
B8	Medium	19 June 2008	Dusk emergence	No	Farmyard complex containing several buildings, mostly modern.	35 metres north
B9	Medium	19 June 2008	Dawn	No	Old stone cottage with corrugated metal roof. Appears to be in use only during daytime. Several crevices provide potential roosting opportunities.	35 metres north
B10	Medium / high	19 June 2008	Dawn	No	Derelict former mill building near watercourse and surrounded by semi-mature trees. Pipistrelles recorded nearby but no roost detected.	45 metres north
B10	Medium	19 June 2008	Dusk	No	Derelict former mill building near watercourse and surrounded by semi-mature trees. Pipistrelles recorded nearby but no roost detected.	45 metres north
B11	Confirmed roost	15 May 2008	Dawn	Yes	Largely disused farmyard complex containing several buildings, including some older traditional structures. Six 55kHz pipistrelles seen to enter old stone barn. Behaviour of bats observed suggests that	60 metres north

Potential roost reference	Bat roost potential (based on external inspection)	Date(s) of survey	Type(s) of survey	Roost confirmed	Notes	Distance from route alignment
					there may be an alternative roost site in the farmhouse.	
B11	Confirmed roost	19 June 2008	Dawn	Yes	Two 55kHz pipistrelles seen to enter old stone barn.	60 metres north
B12	Confirmed roost	19 Sept 2007			Farmyard complex containing several buildings and a modern house, including some older traditional structures. One soprano pipistrelle recorded emerging from farmyard shed.	45 metres south
B12	Confirmed roost	15 May 2008	Dawn	Yes	One soprano pipistrelle recorded entering breeze-block wall of farmyard shed.	45 metres south
B13	Confirmed roost	19 June 2008	Yes Dawn	Yes	Derelict single-storey dwelling plus disused farmyard building. One 45kHz pipistrelle seen to enter derelict house.	120 metres south
B14	Low	14 May 2008	Dusk	No	Large residential dwelling plus operational warehouse buildings. Pipistrelles and leisler's recorded nearby, but no evidence of a roost.	15 metres south
B15	Low	20 June 2008	Dawn	No	Residential dwelling. Pipistrelle recorded nearby, but no evidence of a roost.	15 metres north

Table 2: Results of potential roost surveys (trees)

Potential roost reference	Bat roost potential	Date(s) of survey	Type(s) of survey	Roost confirmed	Notes	Distance from route alignment
T1	Medium	19 June 2008	Dusk	No	A mature oak tree. Up to 3 x pipistrelles recorded feeding around canopy, but none seen to emerge from tree	0 metres
T2	Medium	19 June 2008	Dusk	No	A mature oak tree. Up to 3 x pipistrelles recorded feeding around canopy, but none seen to emerge from tree	0 metres
T3	Low	n/a	n/a	No	Semi-mature sessile oak	0 metres
T4	Low	n/a	n/a	No	Semi-mature crab apple	0 metres
T5	Medium	19 June 2008	Dusk	No		90 metres
T6	Medium	19 June 2008	Dusk	No		60 metres
T7	Medium	19 June 2008	Dusk	No	Mature ash	100 metres
T8	Medium	20 June 2008	Dawn	No	Row of 7 mature beech trees	20 metres
T9	Medium	15 May 2008	Dusk	No	2 x mature ash trees	0 metres
T9	Medium	15 May 2008	Dusk	No	2 x mature ash trees. Pipistrelles recorded nearby but did not emerge from trees	0 metres
T10	Medium	15 May 2008	Dusk	No	Pipistrelles recorded nearby but did not emerge from tree	0 metres
T11	Low/medium	20 June 2008	Dawn	No	Pipistrelle recorded nearby but did not enter tree	0 metres

APPENDIX E: CRITERIA FOR DETERMINING BAT ROOST POTENTIAL

Table 5: Criteria for calculating bat roost potential in trees

Bat roost potential	Features of trees
High	<p>Cavities and crevices present.</p> <p>Major dead limbs present.</p> <p>Good flight lines to trunk.</p> <p>Heavily ridged and lifting bark.</p> <p>Trunks covered by ivy on mature trees.</p>
Medium	<p>Visible holes or crevices or small superficial holes beginning to form.</p> <p>Minor dead limbs but no obvious cavities / lifting bark / splits.</p> <p>Flight lines to trunk slightly obscured.</p> <p>Lifting bark on main trunk.</p> <p>Trunks covered by ivy on semi-mature trees / clean trunks.</p>
Low	<p>No visible holes or crevices.</p> <p>No major dead branches.</p> <p>Flight lines to trunk highly obscured.</p> <p>No or very little ivy on the trunk.</p>

Table 6: Criteria for calculating bat roost potential in buildings

Bat roost potential	Features of trees
High	<p>Signs of bats (e.g. bat droppings).</p> <p>Points of access of a size that bats would use (not so large that birds would be using it) to enter the building.</p> <p>Tall vegetation adjacent to the building and good habitat linkages to foraging grounds.</p> <p>Building within 200 metres of a watercourse or waterbody.</p> <p>Low levels of disturbance (e.g. people and vehicles).</p>
Medium	<p>Access points which bats can access the building but may be a bit too big or in a position that bats are unlikely to access.</p> <p>Watercourse or waterbody 200m – 400m from building.</p> <p>Some tall vegetation nearby and moderately good habitat linkages to foraging grounds.</p>
Low	<p>No access points visible.</p> <p>No vegetation adjacent to the building.</p> <p>No habitat linkages in close proximity between the building and foraging areas.</p> <p>No waterbodies / watercourses within 400 metres.</p>

A31 MAGHERAFELT BYPASS SCHEME

WINTERING BIRD SURVEY 2007/8

**A report for Mouchel Ltd.
by Allen and Mellon Environmental Ltd.**

March 2008

mouchel 



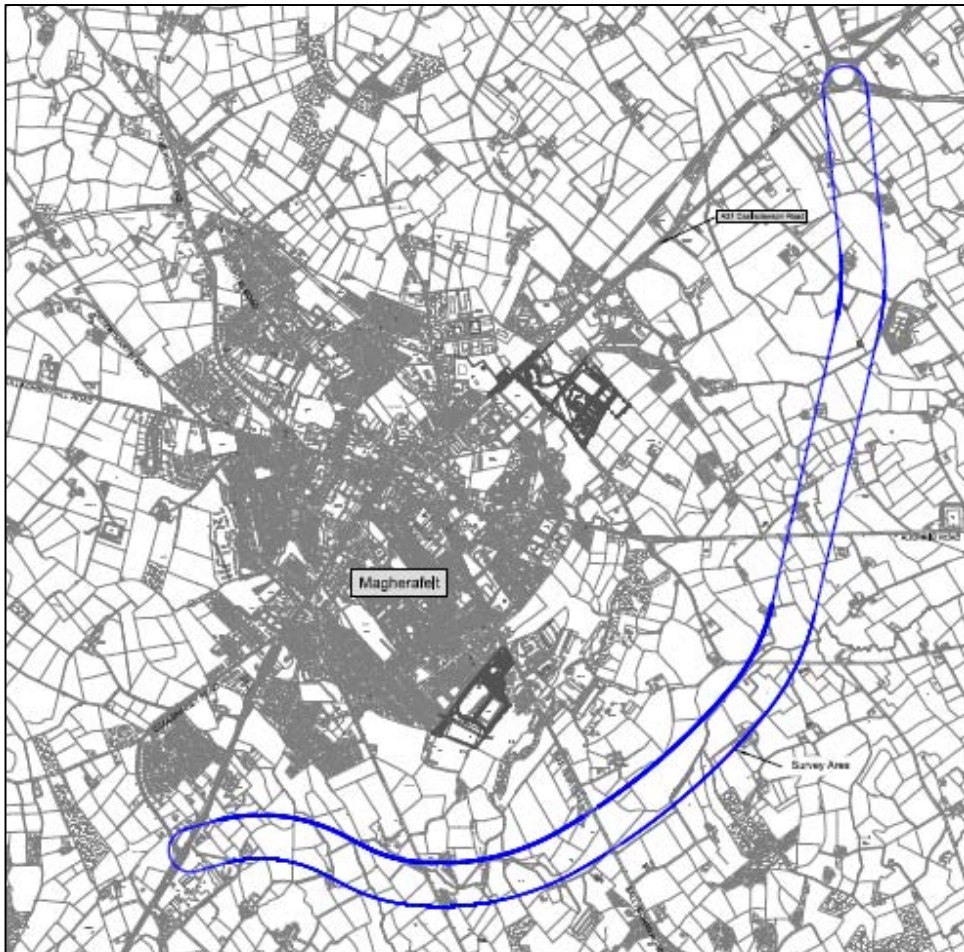
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1. **Introduction**

- 1.1 Allen and Mellon Environmental Ltd were commissioned by Mouchel Ltd. to undertake a winter bird survey in relation to the proposed A31 Magherafelt Bypass. The survey was to involve a total of six visits between November 2007 and March 2008.
- 1.2 The survey area comprised a 100 metre wide corridor along the preferred route for the bypass. This area runs from the Castledawson Roundabout in the north, to the Moneymore Road south of Magherafelt town.

Figure A
Survey Area



- 1.3 The survey area comprises a range of habitat types, although it is predominantly improved pasture, bordered by hedgerows of varying quality. A few stubble fields occur

although most are re-planted in autumn which reduces their value for birds as a winter food source. The road corridor traverses several small streams, in addition to some areas of scrub and riparian woodland. These areas represent the best bird habitats within the survey area. Some small areas of woodland occur outside, but close to, the road corridor. Other habitats of interest outside the corridor include an old flight pond and a sewage plant.

2. Statement of Authority

- 2.1 Ornithological survey work was undertaken by Clive Mellon and Dave Allen, who are the Directors of Allen and Mellon Environmental Ltd. Both are extremely experienced field ornithologists, each with over 25 years experience in undertaking structured bird surveys at home and abroad. In their previous employment with Royal Society for the Protection of Birds (RSPB) Northern Ireland, both were involved in designing, managing and undertaking many bird surveys over a period of 15 years.

3. Objective and Scope of the Study

- 3.1 The aim of the survey was to assess the numbers and diversity of species using the road corridor and adjacent areas during the winter months. In particular any significant assemblages of water birds and seed-eating passerines (finches and buntings) were to be identified.
- 3.2 Access to all relevant lands was secured for the survey, and the proposed road corridors were covered on a field by field basis. However, many species of birds are highly mobile outside the breeding season, and many birds recorded moved frequently between the corridor itself and outlying areas.

4. Methodology

- 4.1 Six visits were undertaken between early November 2007 and mid March 2008. A survey in October 2007 was not possible due to the timing of the project's initiation.
- 4.2 The survey area comprised a 100 metre wide corridor along the proposed route. The centre line of the road alignment was used as the basis for a transect route, although any interesting habitats beyond the centre line were also investigated. All birds seen or heard from the transect route were recorded. Those recorded within the 100 metre corridor were recorded separately to those outside the area.

- 4.3 The route was covered by two fieldworkers on the same day. One fieldworker covered the north section from Castledawson Roundabout to Loves Road, while the other covered from Loves Road south west to the Moneymore Road.
- 4.4 Grid references were taken when any significant species or assemblages were encountered. Details of survey visits are shown in Table 1.

Table 1 Survey Visit Details

Date	Time	Weather
November 1 st 2007	0930-1430	Wind SW3. Cloud 8/8. Mild.
November 26 th 2007	0950-1440	Wind W2. Cloud 7/8. Showers.
December 21 st 2007	0920-1400	Wind 0/1. Cloud 7/8. Slight frost and mist at start.
January 22 nd 2008	0900-1330	Wind 0/1. Cloud 8/8. Rain later.
February 20 th 2008	0925-1445	Wind 0/1. Cloud 7/8. Dull at start, brighter later. Cold.
March 13 th 2008	1010-1500	Wind 0/1. Cloud 8/8. Light rain at start, dry later.

5. Results

5.1 Overview

- 5.1.1 A total of 54 species were recorded within the survey area over the six visits. The assemblage comprised a range of typical hedgerow and woodland birds, as well as common species associated with human habitation and improved pasture. Starlings (*Sturnus vulgaris*) and Redwings (*Turdus iliacus*) were generally the most numerous species, moving through the area in mobile feeding flocks. Corvids such as Rooks (*Corvus frugilegus*) and Jackdaws (*Corvus monedula*) were also encountered in flocks on most visits. Other farmland species which were also recorded in flocks from the survey area included Woodpigeon (*Columba palumbus*) and Meadow Pipit (*Anthus pratensis*).
- 5.1.2 The Robin (*Erithacus rubecula*) was generally the most common non-flocking resident species, with a maximum of 72 birds recorded. On the December, January and February visits, however, Blackbirds (*Turdus merula*) were more numerous than Robins, and their numbers may well have been swollen by migrants. Many of the birds recorded are likely to be resident within the area, although the Starling and Thrush flocks certainly constitute migrants from northern and eastern Europe.
- 5.1.3 No significant water bird flocks were encountered, which reflects the lack of permanent open water or other wetland habitats. On Visit 4 a flock of nearly 200 Gulls was feeding in flooded fields at H916 910, and small numbers of snipe were flushed from waterlogged fields on four visits. Some riparian species were recorded along the stream which is crossed twice by the proposed road route. These include Kingfisher (*Alcedo atthis*), Dipper (*Cinclus cinclus*) and Grey Wagtail (*Motacilla cinerea*). It is possible that all three species breed along this watercourse, and this will be investigated fully during the forthcoming breeding bird surveys.
- 5.1.4 Few flocks of seed-eating birds were recorded, which is consistent with the lack of arable stubbles or other winter food sources. The largest finch flock was of 82 birds comprising 46 Chaffinches (*Fringilla coelebs*), 20 Greenfinches (*Carduelis chloris*) and 16 Goldfinches (*Carduelis carduelis*) along with 14 Meadow Pipits. This flock was at the Sewage Plant which lies just to the east of the road corridor (H916 912). No other similar flocks were recorded from the survey area. A total of 52 Siskins (*Carduelis spinus*) was recorded on the first visit, mostly in small groups moving through the area.

5.1.5 An interesting flock of feeding finches and buntings was encountered at a stubble field about 0.5 kilometres outside the survey area (H8895 8935) on February 20th 2008. This comprised 30 Reed Buntings (*Emberiza schoeniclus*), 17 Yellowhammers (*Emberiza citronella*), 20 Chaffinches, 10 Greenfinches and single Skylark (*Alauda arvensis*) and Lesser Redpoll (*Carduelis cabaret*). All birds had been flushed by a hunting Kestrel (*Falco tinnunculus*).

5.1.6 Tree Sparrows (*Passer montanus*) and Stock Dove (*Columba livia*), both farmland birds of Conservation Concern, were also recorded during the survey (see Section 5.2). Three species of birds of prey were recorded:

- Buzzard (*Buteo buteo*): 6 visits
- Kestrel (*Falco tinnunculus*): 2 visits
- Peregrine (*Falco peregrinus*): 1 visit

5.1.7 Table 2 provides details of each species recorded and the maximum numbers seen on each visit. Many species are extremely mobile in the winter when not territorial, and were not exclusively associated with any one area. For this reason, Table 2 provides totals of birds recorded from the survey corridor, whether seen/heard inside or outside the corridor. Where relevant details of where birds were recorded are provided in the Comments column or in the text of Sections 5.1 and 5.2.

Table 2 Summary of Winter Bird Survey Results

Species	Visit 1 total	Visit 2 total	Visit 3 total	Visit 4 total	Visit 5 total	Visit 6 Total	Comments
Greylag Goose				4			Birds flying over NE
Mallard						3	2 males and female at H911 893
Grey Heron			2		1		
Buzzard	5	4	3	2	5	4	
Kestrel		1				1	
Peregrine			1				
Pheasant		1	3	2		2	
Lapwing			2	150	54	35	Flyovers except Visit 5, 19 in field
Golden Plover					2		Flying over with lapwing
Snipe	2		1		2	1	
Lesser black-backed Gull				3		1	
Common Gull				150		6	Flock of 150 in wet fields
Black-headed Gull	6			35	21	22	
Feral Pigeon					2		
Woodpigeon	125	34	49	50	48	33	Largest flock 75 Visit 1
Stock Dove	1						
Collared Dove	3	2	6	4	6	1	
Kingfisher	1		1	1			Single bird at same location
Dipper		1			2	2	Two territorial pairs
Skylark	4	3					
Meadow Pipit	13	48	13	77	41	30	Largest flock 60 Visit 4
Pied Wagtail	16	19	13	9	24	12	
Grey Wagtail	7	5	7	8	11	7	

Species	Visit 1 total	Visit 2 total	Visit 3 total	Visit 4 total	Visit 5 total	Visit 6 Total	Comments
Wren	32	41	41	37	37	25	
Dunnock	13	24	22	13	18	14	
Robin	50	61	60	72	55	48	
Stonechat	1			2			
Blackbird	28	34	66	85	56	36	
Song Thrush	5	10	12	23	15	9	
Mistle Thrush	11	22	9	13	14	10	
Redwing	102	129	401	371	518	50	Largest flock 140, Visit 5
Fieldfare	2	22	184	81	118		Largest flock 35 Visit 5
Blue Tit	9	12	21	21	32	15	
Great Tit	8	10	15	22	33	20	
Coal Tit	4	4	7	13	12	7	
Long-tailed Tit	9	7	4		11		
Goldcrest	20	11	8	11	6	8	
Starling	136	352	421	339	290	311	Largest flock 220 Visit 3
Magpie	35	27	26	19	38	29	
Jackdaw	124	163	101	152	181	105	Largest flock 40 Visit 5
Rook	78	91	66	144	180	147	Rookery of 22+ nests outside area
Hooded Crow	8	13	12	19	18	16	
Raven		2					
House Sparrow		9	17	13	11	8	
Tree Sparrow				2		3	
Chaffinch	33	77	49	29	37	39	Largest flock 46 Visit 2
Linnet	2			1			
Goldfinch	6	34	3		3		
Siskin	52	21	19	2			
Lesser Redpoll	3	8	4			1	
Bullfinch	5	4	1	1	4		
Greenfinch	3	27	5	5	10	6	
Reed Bunting	1	4			1	2	
Total Species	38	37	37	38	37	37	

- Priority Species are listed in Red and Species of Conservation Concern in Amber

5.2 Details of key species

5.2.1 Kingfisher

The Kingfisher is listed on Annex I of the Council Directive 79/409/EEC on the conservation of wild birds (The Birds Directive) as a species which should be the subject of special conservation measures by Member States under Article 4 of the Directive. It is also listed as a Species of Conservation Concern by Northern Ireland Environment Agency (NIEA) in the lists which accompany the Northern Ireland Biodiversity Strategy.

A single Kingfisher was recorded on three separate visits along the same stretch of stream in the northern part of the road corridor. Details of dates and locations of sightings are provided below:

November 1st 2007: H917 911 – flew east downstream

December 21st 2007: H918 911 – flew east downstream

January 22nd 2008: H919 913.

Kingfishers are largely sedentary birds. Some breeding birds move to adjacent coastal or lowland areas in autumn and winter, but rarely more than a few kilometres from their breeding territory. Immature birds can disperse more widely in late summer when they can be found some distance from their natal site¹. It is unknown whether the Kingfisher recorded during the winter 2007/8 is a breeding adult or first year bird, but it is possible that they may breed in this area. Breeding bird work in 2008 will confirm their status along the proposed road corridor.

5.2.2 Dipper

Two pairs of Dippers were recorded, with both exhibiting territorial behaviour (singing). Although not listed as a Species of Conservation Concern, Dippers are indicators of good water quality and are generally scarcer and more localised in areas of lowland farmland.

Pair 1: Located at the little bridge downstream from Killyfaddy Bridge, and SE of Leckagh House (H9012 8884). This bridge is situated less than 50 metres outside the survey corridor. A single bird was recorded here on November 26th 2007 and a pair together on March 13th 2008, when singing was also recorded.

Pair 2: Located at the Killyneese Road bridge at H9199 9140. A pair was recorded holding territory (including singing) on February 20th 2008. This bridge is situated about 100 metres from the survey corridor.

Both locations are along the same stream, although some 4 kilometres apart. The length of stream required by breeding Dippers depends on factors such as width and depth, with greater length required on narrower streams. In Cumbria one study found that the average territory extended to just under less than 0.5 kilometres of stream per pair, while studies elsewhere in Britain have recorded an average of around 2 pairs per 10 kilometres of river². Dippers can begin to breed as early as February, so it is highly likely that the territorial birds recorded in February and March relate to separate pairs.

5.2.3 Tree Sparrow

The Tree Sparrow is a localised breeding bird in Northern Ireland and is listed as a Priority Species by NIEA in the lists which accompany the Northern Ireland Biodiversity Strategy. Tree Sparrows were recorded on two visits, on both occasions at the Sewage

¹ Wernham, C.V., Toms, M.P., Marchant, J.H., Clark, J.A., Siriwardena, G.M., & Baillie, S.R. (eds). 2002. *The Migration Atlas: movements of the birds of Britain and Ireland*. T & AD Poyser, London

² Birds of the Western Palearctic *Interactive* (2006). BirdGuides Ltd and Oxford University Press.

Plant located at H921 914. Two birds (possibly a pair) were recorded on January 22nd 2008, while three birds flew over calling in the same area on March 13th.

5.2.4 Yellowhammer

The Yellowhammer has undergone a dramatic decline in range and population in Northern Ireland in recent decades, and is increasingly confined to arable areas of County Down and Armagh. In common with the Tree Sparrow, it is listed as a Priority Species for conservation action in Northern Ireland. No Yellowhammers were recorded during field work along the survey corridor. However, a flock of 17 were found feeding in a stubble field alongside a car park about 0.5 kilometres from the survey corridor (H8895 8935) (see also Section 5.1.5). One bird sang briefly.

5.2.5 Reed Bunting

Although there is no evidence of any significant decline in this species in Northern Ireland, it is listed as a Priority Species by NIEA because of significant declines elsewhere in the UK. Small numbers were present along the survey corridor, with up to four birds recorded on 4 of the 6 survey visits. A flock of 30 birds was present with Yellowhammers in a feeding flock recorded outside the survey area on 20th February 2008.

5.2.6 Bullfinch

The Bullfinch is listed as a Priority Species in Northern Ireland because of significant declines elsewhere in the UK. This species was recorded on all but the final visit, with a maximum of five birds seen. Most birds were recorded within the road corridor in the riparian scrub and woodland on either side of Killyfaddy Bridge.

5.2.7 Stock Dove

The Stock Dove is a declining farmland bird in Northern Ireland, which is also largely restricted to County Down. A single bird was recorded on November 1st 2007 at H918 920. The bird was on its own and not in the company of Woodpigeons, and there were no subsequent records.

5.2.8 Kestrel

The Kestrel is listed as a Species of Conservation Concern in Northern Ireland. Single Kestrels were recorded from the survey corridor on two occasions – November 26th 2007 and March 13th 2008. A third bird was recorded on February 20th 2008 from beyond the survey corridor (see Section 5.1.5).

5.2.9 Buzzard

The Buzzard has been undergoing a rapid expansion in range and population across Northern Ireland in recent years. It was by far the most common raptor encountered during winter field work, and between two and five birds were recorded on all six visits. Few suitable nesting areas exist within the survey corridor. A pair appears to be associated with the small copse at H919 919 which lies just outside the corridor between the Castledawson Bypass and Killyneese Road.

5.2.10 Peregrine

This is the only other species recorded (along with Kingfisher) which is listed in Annex I of The Birds Directive. One bird flew over the survey corridor during field work on December 21st 2007.

5.2.11 Snipe and Lapwing

Snipe and Lapwing are declining breeding birds in Northern Ireland. Small numbers of wintering Snipe were recorded from waterlogged fields along the survey corridor on four of the six visits. Lapwings were recorded flying over, although on Visit 5 a group of 19 were in a field at H920 915.

5.2.12 Stonechat

The Stonechat (*Saxicola torquata*) is a Species of Conservation Concern. It is normally associated with rough grazing, particularly in upland or coastal areas, although they breed in suitable habitat around Lough Neagh which is situated around 4 kilometres east of the survey area. Many Stonechats remain in their breeding territories throughout the winter, although upland breeding birds will move to lowland or coastal areas in hard weather³. A single male was recorded at H915 901 on Visit 1, and a pair at H908 890 on Visit 4. The breeding status of Stonechat within the corridor is assessed by the Breeding Bird Survey.

5.3 **Records of other taxa**

5.3.1 Mammals

Five species of mammals were recorded during field work.

Brown Rat (*Rattus norvegicus*) : One dead on Aughrim Road, Visit 4.

³ Lack, P. (1986). *The Atlas of Wintering Birds in Britain and Ireland*. T & AD Poyser.

Red Fox (<i>Vulpes vulpes</i>):	Scent encountered throughout survey corridor on every visit.
Rabbit (<i>Oryctolagus cuniculus</i>):	Encountered on all visits.
Irish Hare (<i>Lepus timidus hibernicus</i>):	One record. One seen at H90989 89162 on December 21 st 2007.
Stoat (<i>Mustela erminea</i>):	One record. One seen at H9199 9140 on March 13 th 2008.

5.3.2 Lepidoptera

Lunar Hornet Moth (*Sesia bembeciformis*):

This is a scarce, although probably under-recorded, species in Northern Ireland. Exit holes and feeding funnels were found in old Willow trees at two separate locations along the survey corridor. Four exit holes were found at H91898 89825 and H91930 89803 on February 20th 2008 and at least six exit holes plus feeding funnels in cut Willow trunks at H89850 88773 on March 13th 2008.

There have been no recent records of this species from the Magherafelt area. It has previously been recorded (pre 1980) in square H99, but there are no known previous records from square H88⁴.

⁴ Thompson, R. & Nelson, B. (2006). *The Butterflies and Moths of Northern Ireland*. National Museums Northern Ireland.

A31 MAGHERAFELT BYPASS SCHEME

BREEDING BIRD SURVEY 2008

A report for Mouchel



Allen and Mellon Environmental Ltd

July 2008



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1. Introduction

- 1.1 This report presents the results of a breeding bird survey undertaken by Allen and Mellon Environmental for the proposed A31 Magherafelt Bypass road scheme. The survey relates to a study area along the preferred route for the new road. This area runs from the Castledawson Roundabout in the north, to the Moneymore Road south of Magherafelt town.
- 1.2 The proposed road passes through a range of habitat types, although it is predominantly improved pasture, bordered by hedgerows of varying quality. Some arable fields (e.g. winter wheat) and semi-improved pasture provide a little diversity. The route also includes wet ditches, streams and a few poorly-drained field corners, but there are no significant wetland areas within the corridor. Some areas of scrub and small areas of plantation woodland are present as well as a number of mature species-rich hedgerows.

2. Statement of Authority

- 2.1 Ornithological survey work was undertaken by Clive Mellon and Dave Allen, who are the Directors of Allen and Mellon Environmental Ltd. Both are extremely experienced field ornithologists, each with over 25 years experience in undertaking structured bird surveys at home and abroad. In their previous employment with Royal Society for the Protection of Birds (RSPB) Northern Ireland, both were involved in designing, managing and undertaking many bird surveys over a period of 15 years.

3. Aims of the Study

- 3.1 The aims of the survey were as follows:
- To obtain an accurate assessment of the numbers and distribution of breeding birds within and adjacent to the road corridor;
 - To provide information in support of an assessment of impacts on the breeding birds of the survey area.

4. Methodology

- 4.1 Four breeding bird surveys were undertaken between April and June 2008. Details of all survey visits are presented in Table 1.

Date	Time	Weather
30/4/2008	0640 - 1140	Wind 2/3NE, cloud 7/8
16/5/2008	0620 - 1130	Wind 2E, cloud 5/8
04/6/2008	0645 - 1000	Wind 3SW, cloud 6/8
19/6/2008	0645 -1030	Wind 3/4NW, cloud 5/8

- 4.2 The survey area was a 200 metre wide strip comprising the road corridor plus a buffer of around 50 metres on either side. A linear transect was walked along the road corridor, and all birds seen or heard were recorded. The survey transect did not adhere exclusively to the central line, to ensure that bird habitats at the edges of the corridor or just outside could be fully investigated.
- 4.3 Bird registrations were recorded on large scale maps of the route in the format of a modified Common Bird Census (CBC) survey. As with a CBC survey, all birds were recorded allowing analysis of territory numbers and distribution on completion of the survey. Standard British Trust for Ornithology (BTO) codes were used to record species and their behaviour¹.
- 4.4 It is inevitable that some bird territories overlap with site boundaries, and so it was necessary to record all birds occurring adjacent to the road corridor itself. In line with CBC methodology, all territories within 50 metres of the road corridor were included in the analysis of field maps
- 4.5 The breeding status of birds was determined using the criteria set out by Gibbons et al (1993)². For example, birds were considered to be breeding if they were apparently holding territory, giving alarm calls or if young birds or nests were seen. Other species seen or heard making contact calls were recorded as present or possibly breeding, if in suitable habitat.

¹ Gilbert, G., Gibbons, D.W., & Evans, J. (1998). Bird Monitoring Methods – a manual of techniques for key UK species, RSPB Sandy

² Gibbons DW, Reid, JB & Chapman RA (1993). The New Atlas of Breeding Birds in Britain and Ireland 1988-91, T&AD Poyser

- 4.6 All four survey visits were commenced in early morning (prior to 07.00am) to coincide with the period of maximum bird activity. Two fieldworkers were engaged in each survey visit. One fieldworker covered the northern section from the Castledawson Roundabout to Loves Road, while the second fieldworker simultaneously covered the route between Loves Road and the proposed junction with the Moneymore Road.

5. Results

5.1 Overview

- 5.1.1 A total of 50 species were recorded during survey work. Of these, 35 species either bred or displayed territorial behaviour within the study area (road corridor plus 100 metres). A further one species (Kestrel *Falco tinnunculus*) probably bred some distance outside the corridor but had a large hunting territory which included a section of the corridor. The remaining 14 species either bred beyond the road corridor zone or were casual visitors within it. A summary of breeding birds recorded within the road corridor is presented in Table 2A, and other species recorded are shown in Table 2B.
- 5.1.2 The survey area supports a typical hedgerow breeding bird assemblage. Wrens *Troglodytes troglodytes*, Robins *Erithacus rubecula*, Blackbirds *Turdus merula* and Chaffinches *Fringilla coelebs* were the most abundant breeding birds, and there were smaller numbers of Willow Warbler *Phylloscopus trochilus*, Dunnock *Prunella modularis* and Song Thrush *Turdus philomelos*. Species which are more typical of taller trees and woodland were also represented including Woodpigeon *Columba palumbus*, Chiffchaff *Phylloscopus collybita*, Goldcrest *Regulus regulus* and four species of tits. Bullfinch *Pyrrhula pyrrhula* and Lesser Redpoll *Carduelis cabaret*, which are both scarcer species of hedgerow and woodland, were also recorded.
- 5.1.3 In addition to the common breeding bird assemblage, some localised farmland bird species were recorded. A pair of Lapwing *Vanellus vanellus* held territory at the start of the season within the road corridor, with a further three pairs in a separate location outside the corridor. Tree sparrows *Passer montanus* were recorded during winter field work and two recently fledged young were seen on the final visit on 19th June, indicating that they had bred close to or within the road corridor. Two other declining farmland bird species recorded during winter fieldwork (Stock Dove *Columba oenas* and Yellowhammer *Emberiza schoeniclus*) were not recorded during the summer visits.
- 5.1.4 Two species of raptor were recorded during summer fieldwork. Two pairs of Buzzards *Buteo buteo* and a pair of Kestrels *Falco tinnunculus* were seen regularly from the survey area. One buzzard pair was associated with the small copse adjacent to the road corridor at H919 918, but was apparently unsuccessful. Another pair seen during fieldwork was well outside the survey area. Kestrels were recorded on two occasions at

the same location – an electricity pylon at H903 888. The pylon was used as a perch by the birds but it is not known where they were breeding.

5.1.5 The streams and wet ditches running through the road corridor supported some characteristic water birds including three pairs of Grey Wagtails *Motacilla cinerea*, a pair of Mallards *Anas platyrhynchos*, and a single pair of Reed Buntings *Emberiza schoeniclus*. Two pairs of Dippers *Cinclus cinclus* were recorded holding territory during winter field work in February and March. Only one Dipper was recorded during summer field work and there was no other evidence of breeding in the survey area. Similarly, no Kingfishers *Alcedo atthis* were seen despite being recorded on three occasions during winter field work.

Table 2A Summary of breeding bird numbers in the road corridor zone
(in order of abundance)

Species	Number of territories	Details
Wren <i>Troglodytes troglodytes</i>	67	Most abundant species within the road corridor.
Robin <i>Erithacus rubecula</i>	44	
Blackbird <i>Turdus merula</i>	33	
Chaffinch <i>Fringilla coelebs</i>	28	
Dunnock <i>Prunella modularis</i>	21	
Willow Warbler <i>Phylloscopus trochilus</i>	20	
Goldcrest <i>Regulus regulus</i>	16	
Blue Tit <i>Parus caeruleus</i>	11	
Great Tit <i>Parus major</i>	11	
Woodpigeon <i>Columba palumbus</i>	11	
Song Thrush <i>Turdus philomelos</i>	10	
Blackcap <i>Sylvia atricapilla</i>	8	
Coal Tit <i>Parus ater</i>	8	
Greenfinch <i>Carduelis chloris</i>	4	
Chiffchaff <i>Phylloscopus collybita</i>	4	Two singing birds within road corridor and two outside but within 50 metres.
Starling <i>Sturnus vulgaris</i>	4	
Grey Wagtail <i>Motacilla cinerea</i>	3	Pair at stream near Leckagh Bridge H898 887 and pair at H902 888. Another pair adjacent to road corridor at H896 888.
Bullfinch <i>Pyrrhula pyrrhula</i>	3	Two pairs at H901 889, one just outside corridor at Leckagh Bridge
Goldfinch <i>Carduelis carduelis</i>	3	
Magpie <i>Pica pica</i>	3	
Hooded Crow <i>Corvus cornix</i>	2	
Mistle Thrush <i>Turdus viscivorus</i>	2	
Lesser Redpoll <i>Carduelis cabaret</i>	2	Both pairs at H901 889
Long-tailed Tit <i>Aegithalos caudatus</i>	2	
Dipper <i>Cinclus cinclus</i>	2	Both pairs only recorded in early season during winter fieldwork.

Species	Number of territories	Details
Lapwing <i>Vanellus vanellus</i>	1	Pair displaying with another single bird at H910 891. 3 pairs outside corridor in H91 91. See Figures A and B.
Buzzard <i>Buteo buteo</i>	1	Pair associated with small copse at H919 918 just outside road corridor. Territory includes corridor. See Figure B.
Mallard <i>Anas platyrhynchos</i>	1	Pair in ditch at H917 911
Moorhen <i>Gallinula chloropus</i>	1	Pair in ditch at H916 909
Meadow Pipit <i>Anthus pratensis</i>	1	One possible breeding pair adjacent to corridor in N section.
Pied Wagtail <i>Motacilla alba yarrellii</i>	1	
Swallow <i>Hirundo rustica</i>	1	In old cottage at H902 888. Many others hunting over area
Reed Bunting <i>Emberiza schoeniclus</i>	1	Male singing at H916 900. See Figure B
House Sparrow <i>Passer domesticus</i>	1	
Tree Sparrow <i>Passer montanus</i>	0/1	Two recently fledged juveniles at H 915 897. See Figure A.
Total Territories	332	

Table 2B Additional species recorded during fieldwork

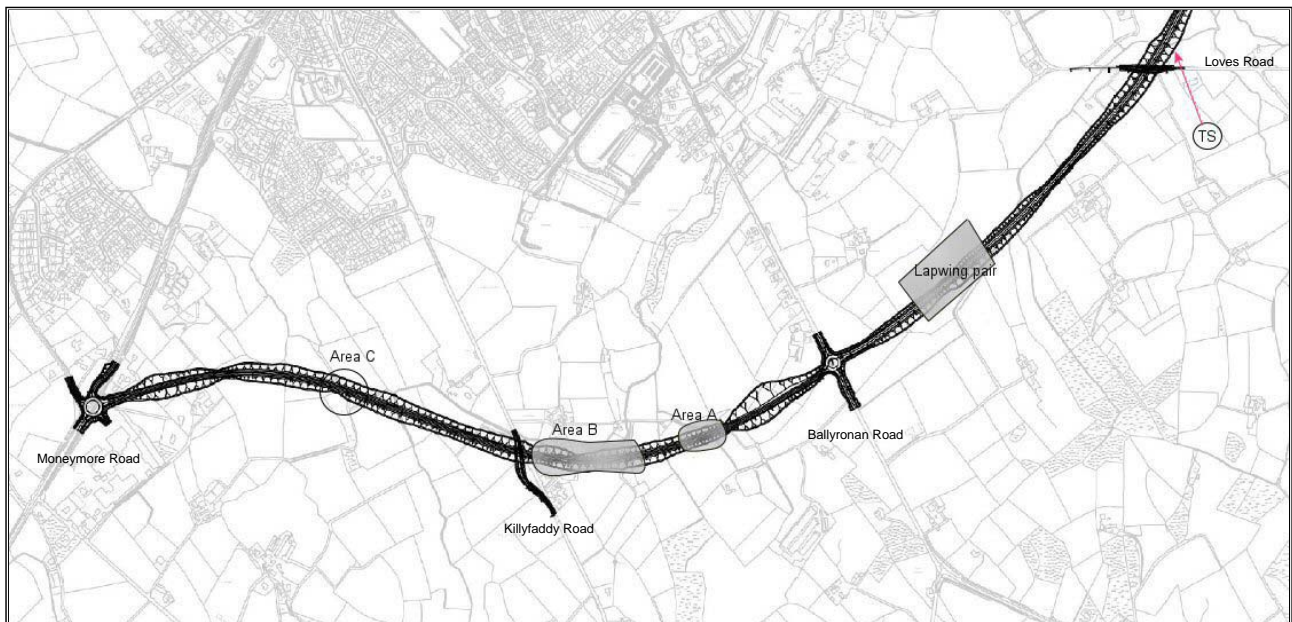
Species	Maximum number recorded	Number of visits recorded (n=4)
Grey Heron <i>Ardea cinerea</i>	2	3
Kestrel <i>Falco tinnunculus</i>	2 (pair on 30/4/08)	2
Pheasant <i>Phasianus colchicus</i>	2	1
Lesser Black-backed Gull <i>Larus fuscus</i>	25	4
Black-headed Gull <i>Larus ridibundus</i>	21	3
Feral Pigeon <i>Columba livia</i>	12	4
Collared Dove <i>Streptopelia decaocto</i>	4	3
Swift <i>Apus apus</i>	21	4
Sand Martin <i>Riparia riparia</i>	1	1
House Martin <i>Delichon urbica</i>	80	4
Jackdaw <i>Corvus monedula</i>	100	4
Rook <i>Corvus frugilegus</i>	255	Two small rookeries outside survey area – H914 921 (8 nests) and H920 899 (22 nests)
Raven <i>Corvus corax</i>	1	1
Siskin <i>Carduelis spinus</i>	5	1
Linnet <i>Carduelis cannabina</i>	2	3

5.2 Identification of Key Areas

5.2.1 Most breeding birds were associated with hedgerows within the road corridor and were evenly distributed throughout the route. However, three areas along the road corridor (all in the southern section) supported a higher density and diversity of breeding birds. The locations of all areas are illustrated in Figure A.

Figure A

Location of key breeding bird clusters and Lapwing pair in southern section



Key: TS = location of Tree Sparrow juveniles

5.2.2 Area A consists of a small copse with associated rough grassland along an old laneway. Despite its small size, this area supported an estimated 21 breeding bird territories of 11 species.

Breeding birds recorded in Area A

Wren	4 pairs	Blue Tit	1 pair
Robin	3 pairs	Coal Tit	1 pair
Chaffinch	3 pairs	Willow Warbler	1 pair
Dunnock	3 pairs	Blackcap	1 pair
Song Thrush	2 pairs	Woodpigeon	1 pair
Blackbird	1 pair		

5.2.3 Area B is by far the most important area for breeding birds along the corridor. It comprises a series of species-rich hedgerows and scrubby woodland situated alongside the stream east of Leckagh Bridge, along with semi-improved grassland and a scrub bank to the north of the stream. 18 species of breeding birds were recorded here amounting to an estimated 53 breeding bird territories within the road corridor zone. Further breeding bird territories were located in adjacent areas outside the road corridor area. The species composition was as follows:

Breeding birds recorded in Area B

Wren	5 pairs	Dunnock	3 pairs
Blackcap	5 pairs	Lesser Redpoll	2 pairs
Goldcrest	5 pairs	Chiffchaff	2 pairs
Willow Warbler	4 pairs	Bullfinch	2 pairs
Blackbird	4 pairs	Song Thrush	2 pairs
Chaffinch	4 pairs	Coal Tit	1 pair
Woodpigeon	4 pairs	Great Tit	1 pair
Blue Tit	4 pairs	Greenfinch	1 pair
Robin	3 pairs	Grey Wagtail	1 pair

A pair of Dippers *Cinclus cinclus* was holding territory in the area early in the breeding season and was recorded during winter field work on 13th March 2008. However, no Dippers were recorded here during summer fieldwork.

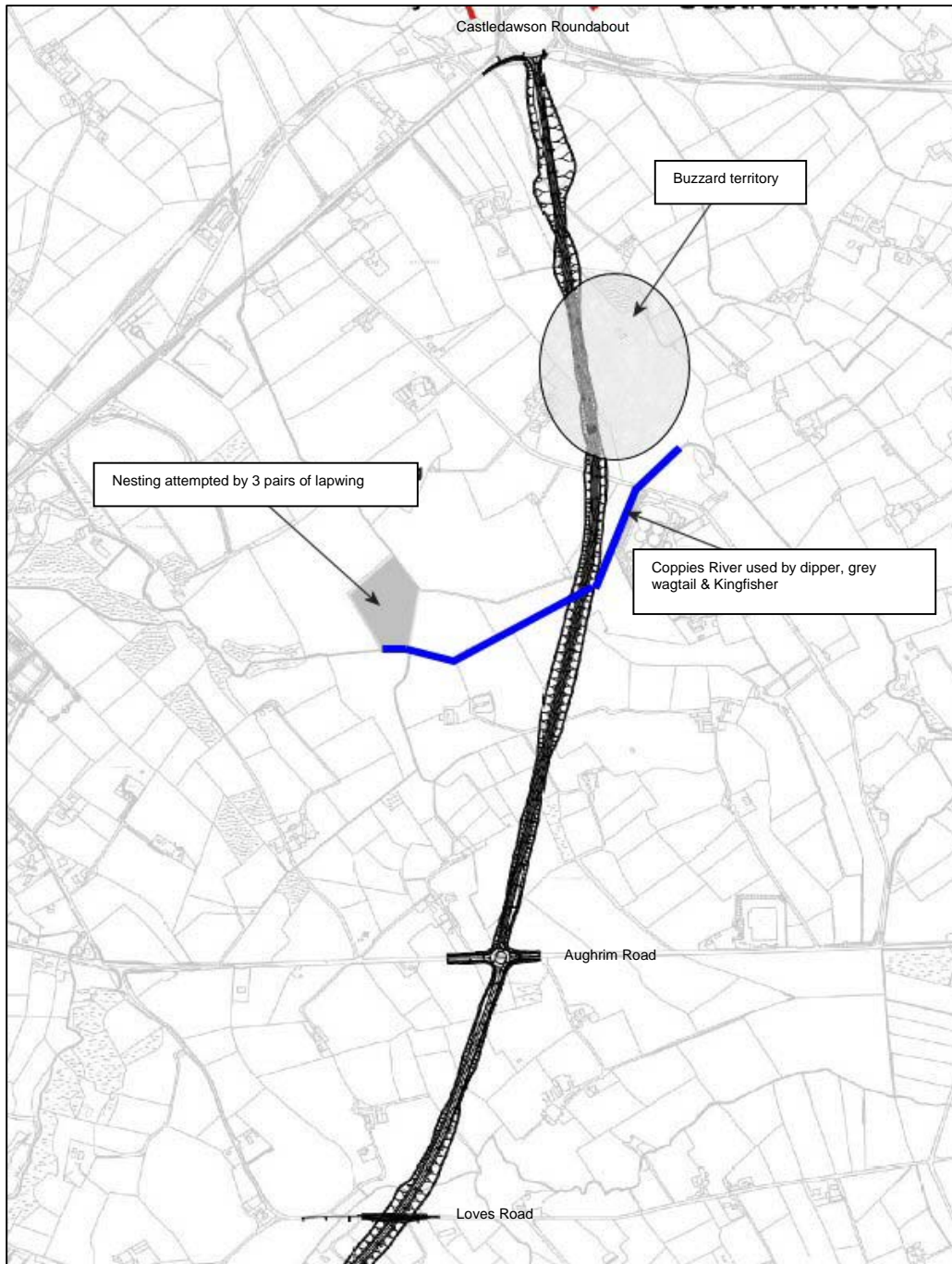
5.2.4 Area C represents the only other significant cluster of breeding bird territories along the route. This area comprises the northern edge of an area of quite young plantation woodland and scrub on a rocky outcrop. It supported an estimated 13 territories of 11 bird species.

Breeding birds recorded in Area C

Wren	2 pairs	Dunnock	1 pair
Blackbird	2 pairs	Goldcrest	1 pair
Chaffinch	1 pair	Song Thrush	1 pair
Robin	1 pair	Starling	1 pair
Great Tit	1 pair	Willow Warbler	1 pair
Blue Tit	1 pair		

- 5.2.5 There were no significant areas of woodland and scrub along the northern section of the route, and so no significant clusters or assemblages of breeding birds were recorded. A pair of Buzzards was associated with the small copse adjacent to the road corridor zone and may have attempted to breed here. Its territory overlapped to some extent with the road corridor (see Figure B).
- 5.2.6 The only other significant area in this section was the stream flowing to the north and west of the Sewage Treatment Works at H921 914 (Figure B). Dipper and Grey Wagtail were both recorded here (just east of the road corridor zone). A Dipper pair held territory early in the breeding season (H919 914), but only a single bird was recorded during the breeding bird surveys. A Kingfisher was recorded along this stretch of stream in the winter, but not during summer fieldwork.
- 5.2.7 Three pairs of Lapwings attempted to breed in a field to the west of the corridor, but all were unsuccessful. The pair which was displaying within the road corridor at H910 891 also failed and was only recorded on the first survey visit. The causes of breeding failure are unknown, although predation of eggs or young by *Corvids* or Red Fox *Vulpes vulpes* is suspected. The habitat in both lapwing areas comprised pasture with a short sward and an un-drained, wet area beside a ditch.

Figure B



Location of key breeding species in northern section

Key: RB = Reed Bunting territory

6. Evaluation

- 6.1 The 35 recorded breeding or territorial species include a number which are considered to be of conservation concern in Northern Ireland. This section considers the conservation status of the species recorded within the survey area in both a UK and Ireland context. This evaluation is based upon the priority species list prepared by Northern Ireland Environment Agency (NIEA) as part of the Northern Ireland Biodiversity Strategy process³. This in turn is based on the UK and Irish Birds of Conservation Concern lists as described in Gregory *et al* (2002)⁴ and Newton *et al* (1999)⁵. The priority species lists are currently under review by NIEA, and a review of the conservation status of birds in Ireland has already been completed (Lynas *et al* 2007)⁶
- 6.2 Priority species are generally those which have suffered significant declines (greater than 50%) in Britain or Ireland over the past 25 years, while Species of Conservation Concern (SoCCs) are species which are rare or localised or have undergone a moderate (greater than 25%) decline.

Seven Priority species were recorded breeding within the survey area. These are:

- Lapwing
- Reed Bunting
- Song Thrush
- Starling
- House Sparrow
- Tree Sparrow
- Bullfinch

- 6.3 Most of these species are common and widespread in Northern Ireland. Only one – Lapwing – is categorised as Red-listed in Ireland by Lynas *et al*. The remainder are categorised as Priority species primarily because of the significant declines that they have suffered in parts of Great Britain. The most recent figures from the UK Breeding Bird Survey (BBS) indicate that Starling, House Sparrow and Song Thrush have been

³ EHS (2004) Biodiversity Habitats & Species: Priority species for conservation action in Northern Ireland. DOE NI.

⁴ Gregory RD, Wilkinson NI, Noble DG, Robinson JA, Brown AF, Hughes J, Procter DA, Gibbons DW, Galbraith CA (2002) The population status of birds in the UK Channel Isles & Isle of Man: an analysis of conservation concern 2002-2007. *British Birds* 95: 410-450.

⁵ Newton S, Donaghy A, Allen D and Gibbons DW (1999) Birds of Conservation Concern in Ireland. *Irish Birds* 6 (3): 333-344.

⁶ Lynas, P., Newton, S.F., & Robinson, J.A. (2007) The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8 (2): 149-166.

stable or increasing in Northern Ireland over the past ten years⁷. No BBS data are available for Tree Sparrow, Bullfinch or Reed Bunting, due to the restricted survey coverage in Northern Ireland. Data from the UK and Ireland Breeding Bird Atlases provide no evidence of any significant change to the range or populations of these species in Northern Ireland.⁸ The Tree Sparrow has a restricted distribution in Northern Ireland, mainly in the south east and around Lough Neagh where it is widespread and locally common.

6.4 The Lapwing remains categorised as Red-listed in Ireland because its breeding population has declined by greater than 50% over 25 years. The most recent population estimate for Northern Ireland is 1,771 pairs which show a decline of 66% from the estimated population in 1987⁹. Lapwing numbers have continued to decline at some key sites (including Lough Neagh) since then and its dwindling status as a breeding bird in the wider countryside continues to cause concern. The Lapwing is the subject of a NI Species Action Plan, which cites agricultural intensification as the key factor in its decline. The Action Plan advocates the implementation of measures such as agri-environment schemes and Good Agricultural and Environmental Condition (GAEC) to manage farmland for this species.

6.5 Eight Species of Conservation Concern (SoCC) were recorded breeding or holding territory within the road corridor zone.

- Swallow
- Meadow Pipit
- Grey Wagtail
- Dunnock
- Mistle Thrush
- Willow Warbler
- Goldcrest
- Lesser Redpoll

6.6 Of the resident SoCCs recorded in the survey area, only the Mistle Thrush is known to have declined in Northern Ireland over the last ten years¹⁰. Swallow, Meadow Pipit, Goldcrest, Willow Warbler, and Dunnock have all apparently undergone significant increases in Northern Ireland in that period. No BBS data are available for Grey Wagtail

⁷ The Breeding Bird Survey 2005. BTO Research Report Number 439.

⁸ Gibbons DW et al (1993). The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991. T&AD Poyser.

⁹ Henderson, I., Wilson, A. & Steele, D. 2000. Population Estimates and Habitat Associations of Breeding Waders in Northern Ireland, 1999: The Results of an Extensive Survey.

¹⁰ The Breeding Bird Survey 2005. BTO Research Report Number 439.

or Lesser Redpoll. An increase has been detected in the English Grey Wagtail population in the past decade after a long term moderate decline. The Lesser Redpoll, however, continues to decline in England, although numbers are apparently increasing in Scotland¹¹. The UK and Ireland Breeding Atlas also provides evidence of a contraction of the Lesser Redpoll's range across much of Ireland. Despite this, Lynas *et al* include only the Swallow in their new Amber list, with the remaining species being placed in the Green list of species not currently of conservation concern in Ireland ¹²

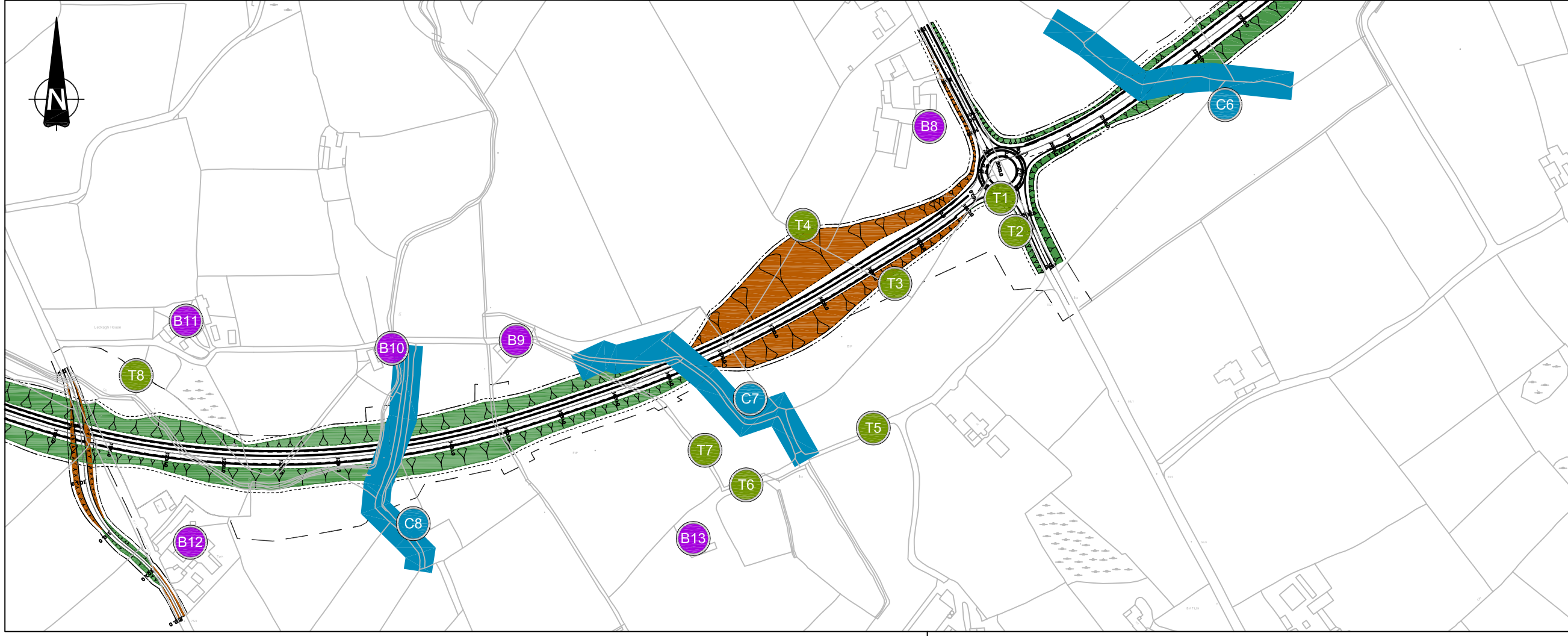
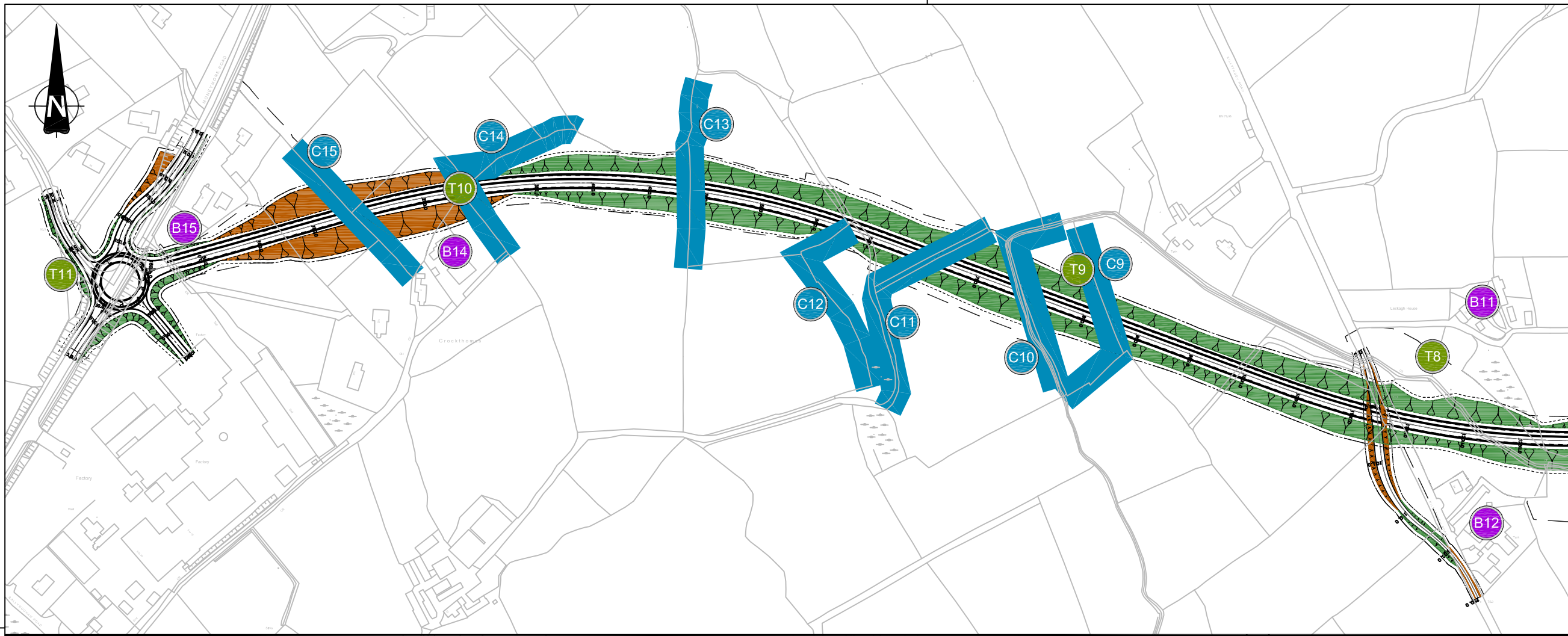
- 6.7 In addition to the Priority species and SoCCs which were recorded in the survey area, the Buzzard is listed in Schedule 1 to the Wildlife (Northern Ireland) Order 1985 and is therefore protected by special penalties.

¹¹ The Breeding Bird Survey 2005. BTO Research Report Number 439.

¹² Lynas, P., Newton, S.F., & Robinson, J.A. (2007) The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8 (2): 149-166.

7. Conclusion and Summary

- 7.1 An estimated 332 breeding bird territories were recorded within the road corridor zone. This includes territorial birds recorded up to 50 metres beyond the road corridor to ensure that all birds whose territories might overlap with the corridor were included. Most breeding birds were distributed along hedgerows, with tall, thick hedges with mature trees holding the greatest number and diversity of birds.
- 7.2 Three areas of scrub or woodland in the southern section supported more significant assemblages of breeding birds, and in particular the area east of Leckagh Bridge (Area B), which supported an estimated 53 territories of 18 species. Species recorded in this area include Bullfinch and Lesser Redpoll which are known to be in decline in some parts of the UK; this however, is not evident in Northern Ireland.
- 7.3 The most significant breeding bird species recorded was Lapwing, which has undergone a significant decline in Northern Ireland. One pair was recorded within the road corridor and a further three pairs in a field several hundred metres to the west of the corridor. All four pairs apparently failed, possibly as a result of nest predation.
- 7.4 The discovery of two recently fledged juvenile Tree Sparrows suggests that breeding occurred either within or close to the road corridor. This is a localised species in Northern Ireland, although its main stronghold on the shores of Lough Neagh is only a few kilometres from the road corridor.
- 7.5 The Coppies River which flows through part of the road corridor supported two pairs of Grey Wagtails and two pairs of Dippers, although the Dippers' territorial activity was restricted to February and March, before the breeding bird survey began. One pair each of Mallard and Moorhen nested on drainage ditches not far from the Coppies River. A Kingfisher which was recorded on three occasions during winter field work was not recorded during summer surveys.



- KEY**
- B1 Building surveyed for bats- with reference number
 - C1 Corridor surveyed for bats- with reference number
 - T1 Tree survey for bats- with reference number
 - Earthworks - Cut
 - Earthworks - Fill

Scale @ A3 **1:2500**

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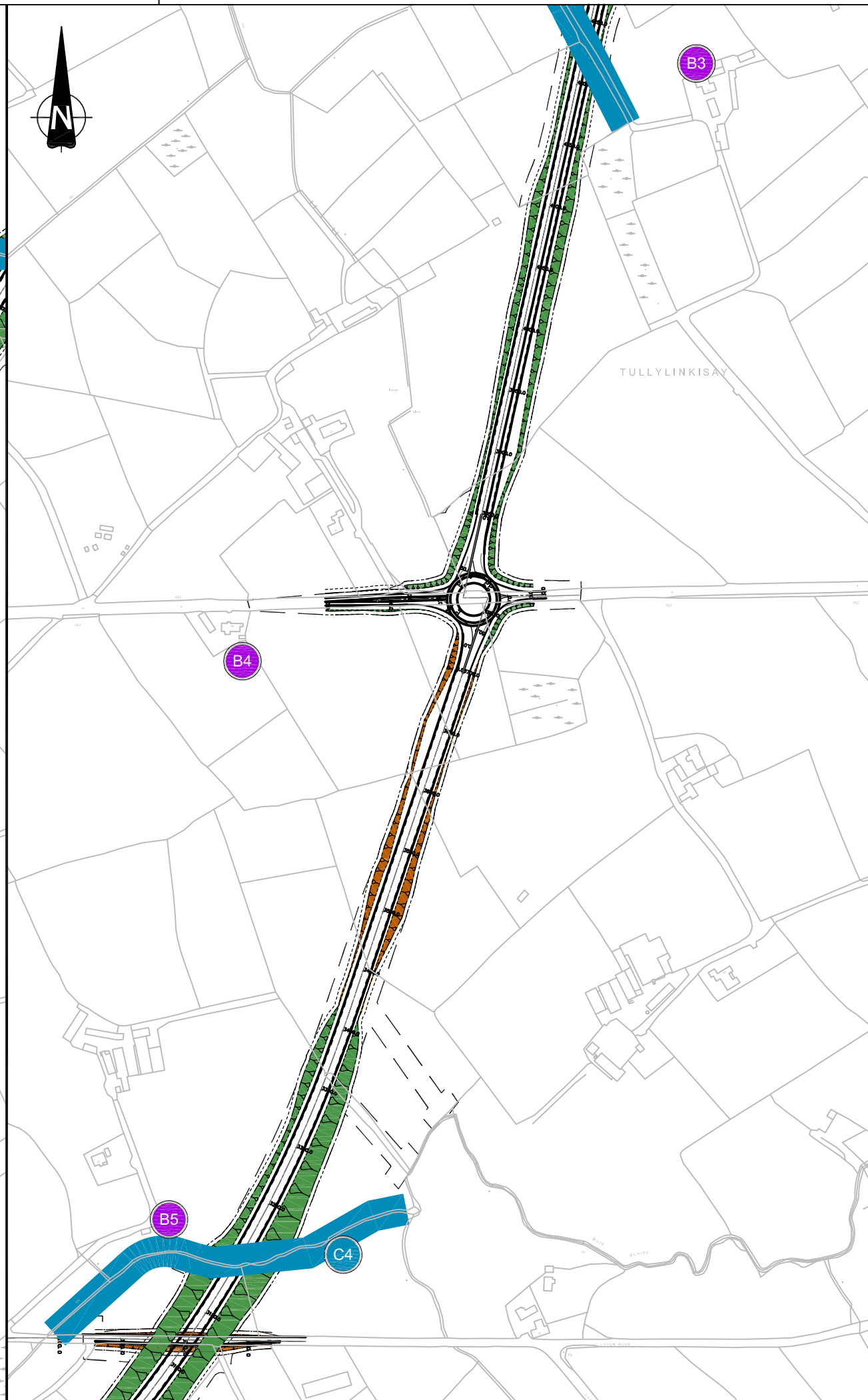
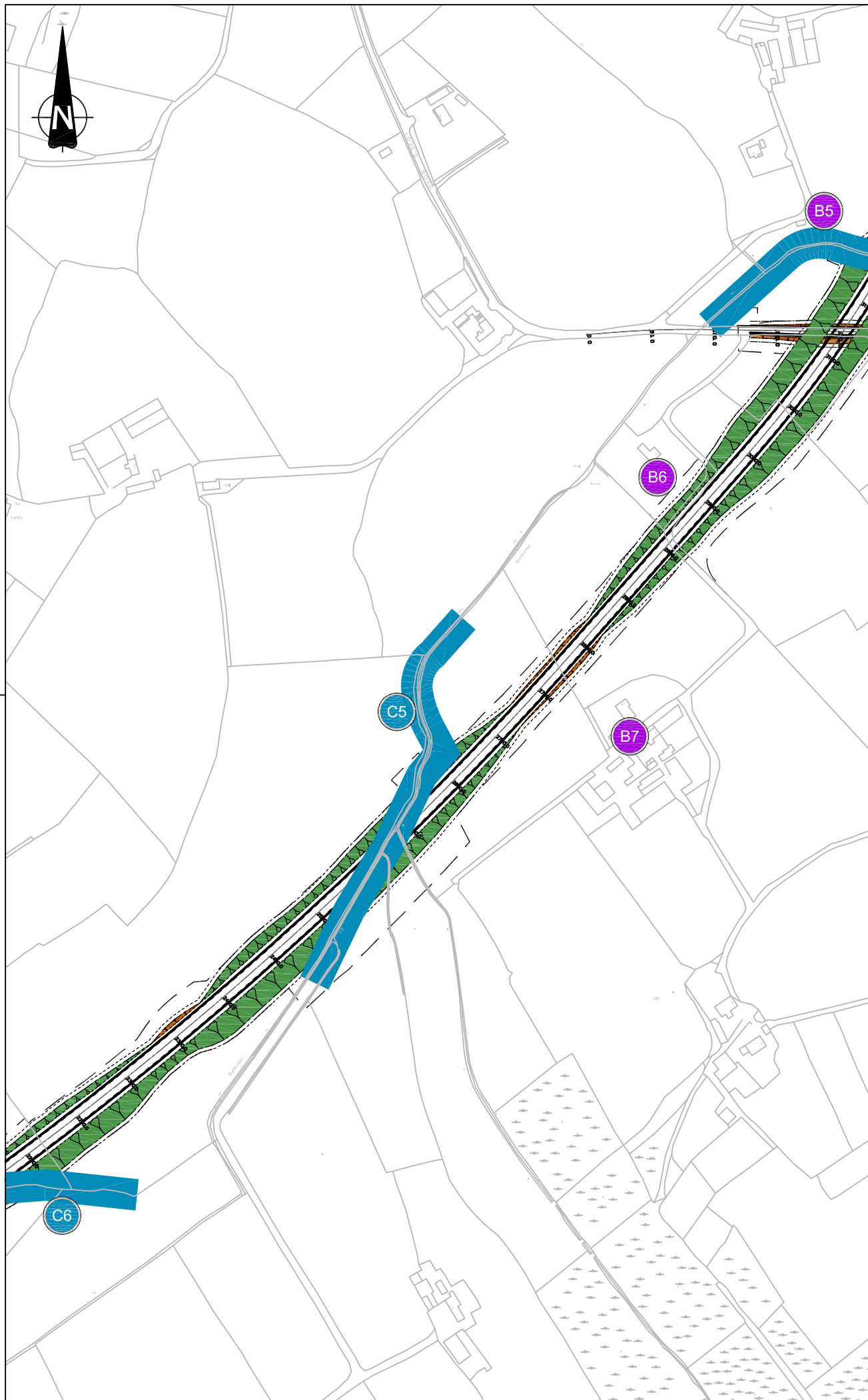
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Title **Preferred Route Bat Survey Locations**

Figure No. **Figure 1.1**



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 - C1 Corridor surveyed for bats- with reference number
 - T1 Tree survey for bats- with reference number
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Figure No. **Figure 1.2**



KEY


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-  Tree survey for bats- with reference number
-  Earthworks - Cut
-  Earthworks - Fill


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Figure No. **Figure 1.3**