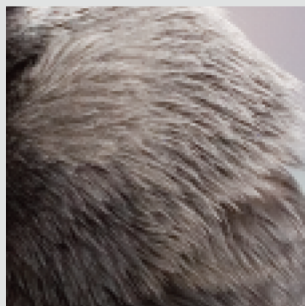
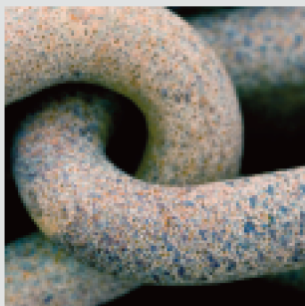
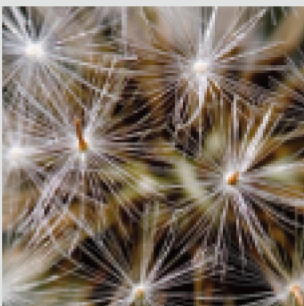


Monckton Coke Works Breeding Bird Survey

July 2020



Who we are:

Baker Consultants is an ecology and sustainability consultancy. We work in terrestrial, freshwater and marine environments, providing a range of services to industry, government, developers, public services and utilities.

Baker Consultants comprises a highly experienced team of professional ecologists. We do wildlife surveys - but they are only the first steps in the process for most projects. We are also involved in ecological assessment, environmental law, biodiversity management and design planning.

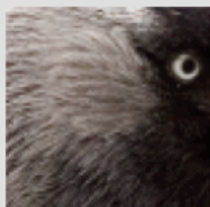
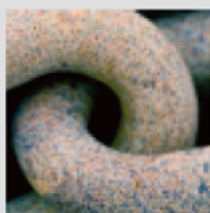
We don't just work with wildlife, because we know that communication with clients, design teams and conservation bodies is the key to project success. Explaining the implications of survey data, and interpreting legislation, policy and best practice is one of our strengths. We help decisions to be made and actions taken, allowing constraints to be kept to a minimum and project risks to be managed.

Our approach is scientific, pragmatic and creative. Alongside tried and tested methods, we seek to innovate, introduce clients to new ways of thinking and always deliver sound commercial awareness. You will find us honest and approachable, but we're not afraid to be robust and challenging - or to ask difficult questions.

We do believe in nature conservation. But we also believe in good development, well delivered. We know that, with our input, projects and plans can provide benefits for both nature and people.

That's not the whole story.

For more information, look at our web site www.bakerconsultants.co.uk, subscribe to our blog, or call us on 01629 593958.



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Where field investigations have been carried out, these have been restricted to the agreed scope of works and carried out to a level of detail required to achieve the stated objectives of the services. Natural habitats and species distributions may change over time and further data should be sought following any significant delay from the publication of this document.

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1 Introduction

1.1 The Proposed Development

- 1.1.1 This document provides a Technical Appendix written in support of the Ecological chapter for the Monckton Coke Works Environmental Statement.
- 1.1.2 This report describes and assesses the breeding bird assemblage within the proposed development boundary. It also provides advice to help minimise any adverse ecological impacts, thereby enabling the development to comply with current nature conservation policy and legislation.

1.2 Site Description

- 1.2.1 The former Monckton Coke and Chemical Works (hereafter referred to as the 'site') is located on the eastern fringe of Royston, in South Yorkshire. The site comprises two parcels of land separated by a railway line; a larger 15 ha parcel is located to the east of the railway line and a smaller 1ha parcel is located to the west. The central Ordnance Survey grid reference for the larger eastern parcel is SE 37455 12123, and for the smaller western parcel is SE 37318 11785.
- 1.2.2 The larger parcel comprises the former Monckton Coke and Chemical Works and is bounded by Lund Hill Lane to the east and south. A railway line and the disused Barnsley Canal is located to the west. The majority of the site consists of areas of hardstanding, rubble piles and derelict buildings. To the north, dense scrub boundaries within the site extend out to join an area of mixed grassland, scrub and semi natural broadleaved woodland, with open countryside beyond. To the south, surrounding a group of settling ponds, is an area of scattered scrub and broadleaved woodland.
- 1.2.3 The smaller parcel of land consists of semi-improved grassland bounded by Lund Hill Lane to the south, the railway line to the east and residential properties to the west.
- 1.2.4 Figure 1 below provides the location and approximate red line boundary of the site.

Figure 1. Site Location



1.3 Study Scope

- 1.3.1 The site has been highlighted as a potential area for a residential development. Consultation with Barnsley Conservation Officer and previous surveys carried out by Skyline Ecology (2020) identified suitable habitats on site for breeding birds. As a result of this assessment, Baker Consultants was commissioned in 2020 by the client to undertake a breeding birds survey.
- 1.3.2 The purpose of the survey is to document the breeding bird community present and estimate the abundance of breeding bird species present within the site. This is to allow an evaluation of the breeding bird assemblage and provide an assessment of the likelihood of impacts arising from the proposed development.
- 1.3.3 This report takes into account standard guidance from a variety of sources including the Chartered Institute of Ecology and Environmental Management ^{1 2 3}, British Standards Institution ⁴, and [www.gov.uk](https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications) ⁵.

¹ CIEEM (2018). Guidelines for Ecological Impact Assessment In The UK And Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

² CIEEM (2015). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

³ CIEEM (2017). Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management, Winchester.

⁴ BSI (2013). BS42020:2013 Biodiversity – Code of Practice for Planning and Development

⁵ <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications>

2 Methods

2.1 Surveyor Qualifications and Experience

- 2.1.1 Senior Ecologist James Longley BSc ACIEEM carried out the survey work and assessment for the site. James has over 14 years' experience in ecology and conservation and has worked on a variety of Ecological Impact Assessments. He is an experienced ornithologist and holds a Natural England Licence to survey for barn owls (CL29/00511).
- 2.1.2 Wherever appropriate during surveys, Natural England's Standing Advice on Protected Species ⁶ was taken into account, along with a wide range of other best practice guidance on survey methods. These are referenced in the text below. However, the professional judgement of the surveyors was also applied in relation to the site conditions and target species/habitats being considered. This may have required changes to the published guidance.

2.2 Desk Study

- 2.2.1 A desk study was provide by Sheffield Biological Records Centre on 20 November 2019, for a 2km radius around the site. This included records for a number of bird sightings within the search area.

2.3 Field Survey

- 2.3.1 The breeding birds survey broadly followed the 'Common Bird Census' method ⁷. This technique involves walking the site during the bird breeding season, while watching and listening for birds. The location and behaviour of every bird recorded during this survey is then mapped using a standardised system of notation.
- 2.3.2 The surveyor assessed all habitats on the site for evidence of breeding birds, including specific features, such as buildings, which may be used by species such as barn owl.
- 2.3.3 Three visits were undertaken to each part of the site during the bird breeding season in suitable weather conditions. The visits were made in the early morning when birds are most active. The surveyors, dates, times and weather conditions during these surveys are detailed in Table 1.

Table 1. Breeding Birds Survey Conditions

Date	Surveyor	Times (hrs)	Weather conditions	Sunrise
08/04/2020	Jim Longley	07:10 – 09:00	5-9°C, wind 1-2 bf, dry and sunny with 30% cloud cover.	06:22
11/05/2020	Jim Longley	06:25 – 08:30	4-8°C, wind 1 bf, dry with no cloud cover.	05:11
18/06/2020	Jim Longley	05:50 – 08:00	8-12°C, wind 2 bf, dry with 90% cloud cover.	04:36

⁶ <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications>

⁷ Marchant, J.H. (1983). Common Bird Census Instructions. British Trust for Ornithology, Tring.

3 Results

3.1 Study Limitations

- 3.1.1 Within a desk study, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest, as the area may simply be under-recorded. Some species should also be considered more frequent than indicated by the records provided within a desk study.
- 3.1.2 Whilst every effort was made in the field survey to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment. Habitats are subject to change, species may colonise the site after surveys, and results included in this report may become less reliable over time.
- 3.1.3 Survey data is generally only considered valid if it is from the current or previous active season. In some cases, surveys up to 3 years old may be considered acceptable by consultees if the habitats have not significantly changed in the intervening period.
- 3.1.4 The surveys were undertaken at an appropriate time of year in good weather conditions. There were no significant constraints to the survey.

3.2 Desk Study

- 3.2.1 The desk study (see Appendix 1) returned a substantial amount of records covering 131 bird species: a total of 7690 records dated 1975 to 2018. None of the records were from within or immediately adjacent to the site, and there is limited suitable breeding habitat for a large number of these species on site. The vast majority of records are from Carlton Marsh Reserve which is located 1.8km south of the site, and Rabbit Ing Country Park which is located directly east of the site.
- 3.2.2 The most relevant nearby notable records, given the available habitats on site, include barn owl *Tyto alba* (the most recent being 2017), little ringed plover *Charadrius dubius* (2003), peregrine falcon *Falco peregrinus* (2015), and willow tit *Poecile montanus* (2018).

3.3 Field Survey

- 3.3.1 A total of 35 species of birds were recorded during the site surveys, of which one species (feral pigeon) was confirmed to be breeding (B), 14 probably breeding (Pr) and 9 possibly (Po) breeding. Another 12 species were considered to be non-breeding visitors (N). See Appendix 2 for a detailed species list, their breeding status, the habitat in which the bird was recorded and their legal protection.
- 3.3.2 The locations of each bird registration recorded throughout the breeding bird surveys are provided in Figure 2 below.
- 3.3.3 The locations and details of notable breeding bird registrations (Schedule 1 and Red and Amber BoCC status species) are shown in Figure 3 and Table 2 below. Further details in relation to barn owl are provided in the subsequent paragraphs.

Figure 2. Locations of Bird Registrations



The BTO species codes used in this Figure are listed in Appendix 2 and Table 3 below.

Figure 3. Notable Bird Registrations



Note: Figure shows combination of all three survey visits.

Table 2. Summary of Notable Birds

BTO code	Common Name	Scientific Name	Legislative Status	Notes	Breeding status
BO	Barn owl	<i>Tyto alba</i>	Sch 1	A barn owl was noted during the 1st and 2nd survey roosting within a building in the north east of the site. Over 100 pellets are present throughout the structure in 6 piles below roof joists. Fresh pellets were noted near the building entrance during every survey. No evidence of breeding was found on site. It is understood that a barn nest box is present within Rabbit Ings Country.	Non-breeding (roosting)
BH	Black-headed gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber	Noted flying over the whole site without landing - in very small numbers.	Non-breeding
BF	Bullfinch	<i>Pyrrhula pyrrhula</i>	BoCC Amber, Sect.41	Only one pair recorded in the west of the site in suitable breeding habitat.	Probable
D.	Dunnock	<i>Prunella modularis</i>	BoCC Amber, Sect.41	Observed within the site boundaries and in woodland / scrub to the south. Generally in low numbers (assumed 2-3 territories)	Probable
GL	Grey wagtail	<i>Motacilla cinerea</i>	BoCC Red	One bird observed passing through east of site.	Non-breeding.
K	Kestrel	<i>Falco tinnunculus</i>	BoCC Amber	One bird observed perching on tower in the east of the site during final survey. Could have been near nest site but not confirmed. Anecdotal sightings during bat surveys and from local birdwatches suggests the structure is probably used for nesting.	Probable
LB	Lesser black-backed gull	<i>Larus fuscus</i>	BoCC Amber	Two individuals recorded flying over the site during the final survey.	Non-breeding.
LI	Linnet	<i>Carduelis cannabina</i>	BoCC Red, Sect. 41	Low numbers were observed passing through the site. Some suitable nesting habitat present to the north and south.	Possible
MA	Mallard	<i>Anas platyrhynchos</i>	BoCC Amber	Only two mallard were noted passing over the site going east to west.	Possible
M.	Mistle thrush	<i>Turdus viscivorus</i>	BoCC Red	One bird recorded during final survey. Observed singing from lighting tower in north of site.	Possible
ST	Song thrush	<i>Turdus philomelos</i>	BoCC Red, Sect. 41	Low numbers were encountered throughout the site boundary.	Probable
WW	Willow warbler	<i>Phylloscopus trochilus</i>	BoCC Amber	Low number of males heard singing within the northern boundary during surveys 2 and 3.	Probable

Key:

BoCC Listed as red or amber under the Birds of Conservation Concern initiative**Sect.41** Section 41 species on Natural Environment and Rural Communities Act (2006)**Sch 1** Listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)**Ann 1** Listed under Annex 1 of the European Bird Directive 2009/147/EC

Barn Owl

3.3.4 Barn owl was recorded on site during the first two breeding bird surveys (see Figure 3 for location). On both occasions a single bird emerged from a fairly modern prefabricated building located within the northwestern part of the site (Figure 4). The building is well used by barn owl with over 100 pellets of various ages recorded on the ground throughout the structure (Figure 5). Staining is also present on most joists. At the time of the final survey at least 20 pellets, located in two separate piles near the open front of the

structure, were considered fresh or less than 3 months old.

- 3.3.5 A small platform is present at the rear of the structure (See Figure 6). During the second breeding bird survey the platform was inspected for evidence of barn owl nesting. Only old pigeon nests were recorded and no evidence of breeding barn owl was found. After close inspection it was concluded that the feature is generally sub-optimal to support breeding barn owl.

Figure 4. Prefabricated Structure



Figure 5. Barn Owl Pellets



Figure 6. Platform within roof



4 Assessment

4.1 National Policy

- 4.1.1 The National Planning Policy Framework (NPPF 2019) sets out the Government's planning policies for England and how these should be applied. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, combining economic, social and environmental objectives, and 'protecting and enhancing our natural --- environment; including ---helping to improve biodiversity'. Within this framework, the requirements in relation to biodiversity are included within several policies. The two most relevant to individual planning decisions are Paragraphs 170 and 175, shown below:

170: Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, Sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
 - b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
 - c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
 - d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- etc...

175. When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

- 4.1.2 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on every public authority to have regard to conserving biodiversity. Section 41 of the same Act requires that the Secretary of State must publish a list of the living organisms and types of habitats that are of 'Principal Importance' for the purpose of conserving biodiversity. The Secretary of State must take steps, as appear reasonably practicable, to further the conservation of those living organisms and habitats in any list published under this section. The list of species and habitats of principal importance currently includes 943 species and 56 habitats.

4.2 Birds

- 4.2.1 All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to intentionally or recklessly disturb them while they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.
- 4.2.2 The Birds of Conservation Concern initiative ⁸ publishes lists of Red and Amber species. Birds on the Red list are of high conservation concern within the UK, while those on the Amber list are of medium conservation concern. In addition, a number of bird species are also included as Species of Principal Importance under the provisions of the NERC Act 2006.
- 4.2.3 A total of 35 bird species were recorded during the bird surveys (see Appendix 2). The notable species present are set out in Table 3 below.

Table 3. Notable Bird Species

Common Name	Scientific Name	Legislative Status	Site Breeding Status
Barn owl	<i>Tyto alba</i>	Sch 1	Non-breeding (roosting)
Black-headed gull	<i>Chroicocephalus ridibundus</i>	BoCC Amber	Non-breeding
Bullfinch	<i>Pyrrhula pyrrhula</i>	BoCC Amber, Sect.41	Probable
Dunnock	<i>Prunella modularis</i>	BoCC Amber, Sect.41	Probable
Grey wagtail	<i>Motacilla cinerea</i>	BoCC Red	Non-breeding.
Kestrel	<i>Falco tinnunculus</i>	BoCC Amber	Probable
Lesser black-backed gull	<i>Larus fuscus</i>	BoCC Amber	Non-breeding.
Linnet	<i>Carduelis cannabina</i>	BoCC Red, Sect. 41	Possible
Mallard	<i>Anas platyrhynchos</i>	BoCC Amber	Possible
Mistle thrush	<i>Turdus viscivorus</i>	BoCC Red	Possible
Song thrush	<i>Turdus philomelos</i>	BoCC Red, Sect. 41	Probable
Willow warbler	<i>Phylloscopus trochilus</i>	BoCC Amber	Probable

Key:

BoCC Listed as red or amber under the Birds of Conservation Concern initiative

Sect.41 Section 41 species on Natural Environment and Rural Communities Act (2006)

WCA1 Listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)

⁸ Eaton, M.A. et al (2015). Birds of Conservation Concern 4: The population status of birds in the UK, Channel Islands and the Isle of Man. British Birds 108, pp708-746.

- 4.2.4 To assess the overall breeding bird assemblage, a published method⁹ for assessing the ornithological interest of sites has been used, whereby the importance of a site is defined by the number of breeding species present. This has been adapted to fit the geographical levels for evaluation used by CIEEM, and also to reflect ongoing declines in bird populations. These adapted criteria that are shown in Table 4 below:

Table 4. Breeding Birds Site Evaluation

Number of breeding bird species	Site importance
<13	Site
13-25	Local
25 – 49	District
50 – 69	County
70 – 84	Regional
>85	National

- 4.2.5 A total of 15 species have been assessed as either confirmed or probably breeding on the site, with a further 9 possibly breeding. Using the criteria in Table 4, the site is therefore considered to be of **Local** importance. Weight is added to this evaluation by the fact that of those species possibly, probably or confirmed to be breeding on the site, 3 of are red-listed species of high conservation concern and a further 5 are amber-listed species of moderate conservation concern. In addition, barn owl, which is listed as a Schedule 1 species under the WCA, has been found to roost on site.
- 4.2.6 All of the species listed within Table 3 are listed as Local Priority Birds in Barnsley on their Biodiversity Action Plan. Barn owl is also listed as a local priority, but for breeding only.
- 4.2.7 In general, the mix of species and numbers of birds is typical of that found in scrub, woodland and post-industrial land in England.
- 4.2.8 Those habitats with the greatest value to breeding birds within the application area are the woodland to the north and the boundary scrub habitats, particularly those connecting to woodland in the north and the railway embankment to the west. These habitats support confirmed and probable breeding birds of higher conservation concern but are also considered to serve as important connective habitat linking to the wider landscape.
- 4.2.9 Site clearance or construction works, if undertaken during the bird breeding season, could potentially damage active nests and result in an offence under the legislation. Impacts to consider include damaging or removing breeding Sites, disturbing birds and their young, removing vegetation or changing habitats, demolishing or changing buildings or natural features like rock faces, and removing ground nest habitats with activities like soil stripping.
- 4.2.10 If the whole site was developed and no habitats retained, then a loss of biodiversity would be likely to occur. However, the aims of the NPPF can be achieved within the design plan by retraining those habitats which support biodiversity, and providing green space within the development. Features within the landscape such as scrub and trees

⁹ Fuller, R.J. (1980). A method for assessing the ornithological interest of sites for conservation. *Biological Conservation* 17:229-239.

provide links to the broader landscape.

- 4.2.11 The site boundaries, woodland / scrub in the north, and the majority of the woodland / scrub in the south of the site will be retained and enhanced as part of the development with an appropriate buffer. This will maintain existing nesting habitat, along with foraging links within the wider landscape for a number of species recorded on site, included those with higher conservation value.
- 4.2.12 There will likely be some minor loss of trees and scrub habitat within the south of the site, which currently provides nesting habitat to common woodland and garden bird species. The demolition of a tower within the east of the site will remove probable and confirmed nesting habitat for kestrel and feral pigeon (the latter being the only confirmed breeder and most recorded bird on site). The loss of these habitats will be offset by the provision of gardens and greenspace within the development. In addition, a variety of nest boxes will be provided to be of benefit to species such as kestrel, dunnoek and starling, as well as other notable species that are not currently known to be breeding at the site, including house sparrow, swallow and house martin.
- 4.2.13 A barn owl roost will be lost as a result of the proposed development. The provision of a barn owl nest box within a suitable building (most preferred), or on a pole within the northeast corner of the site, could offset this loss. The retention and buffering of the northern boundary will maintain existing linkages for barn owl to foraging and breeding habitat within Rabbit Ings Country Park to the east.
- 4.2.14 Additional species-specific habitat enhancement can also be provided within retained habitats for notable birds such as willow tit, which although not identified on site, have been recorded within 250m of the site boundary, and are a significant bird species within the locality that would benefit from woodland enhancement works.

5 Recommendations

5.1 Introduction

- 5.1.1 The recommendations below for further survey and mitigation are based on the results and assessment set out above, taking into account standard published guidance from a number of sources (as referenced through the report), including the GOV.UK information on Planning and Development ^{10 11}.
- 5.1.2 Individual Local Planning Authorities have their own requirements for ecological information to support the validation and assessment of planning applications. These requirements often vary widely between Authorities and sometimes do not accord with national guidance- including that issued by the statutory nature conservation organisations. As a result, we have applied the more consistent national guidance to our survey and mitigation recommendations set out below.

5.2 Further Survey

- 5.2.1 The breeding bird surveys have provided a baseline of ecological information to describe the main characteristics of the proposed development site and to fully assess the potential ecological impacts of the proposed development. No further survey is required at this stage. However, should there be a delay in any proposed land use change, then it may be necessary to repeat the detailed species surveys in order to provide current data for a valid impact assessment.

5.3 Mitigation Measures

- 5.3.1 Mitigation measures should be considered through the masterplan design and planning application process, with actions during the construction and operation phases agreed and established in a Construction Environmental Management Plan (CEMP) and/or Landscape and Ecology Management Plan (LEMP). This whole process from proposal to implementation should consider the 'mitigation hierarchy' – avoid, reduce, compensate and enhance:
- Aim to avoid negative effects, e.g. by redesigning the scheme
 - If this isn't possible, use mitigation measures to reduce the impacts
 - Use compensation measures if there are still negative impacts, e.g. by replacing habitats
 - Seek opportunities to make enhancements for biodiversity
- 5.3.2 To avoid and reduce potential impacts on birds, the design of the proposed development should avoid valuable bird habitats and retain, as far as possible, suitable habitats in greenspace within the development. In addition, new habitats and nest boxes can be provided to replace existing features of value.

¹⁰ <https://www.gov.uk/topic/planning-development/protected-sites-species>

¹¹ <https://www.gov.uk/guidance/natural-environment#biodiversity-and-ecosystems>

- 5.3.3 The management of scrub and trees (as part of a LEMP) will ensure breeding habitat is maintained for the notable species in particular, such as song thrush and dunnock.
- 5.3.4 Maintenance of the boundary habitats will provide a dense, wide-based cover for nesting, as well as associated marginal vegetation, to provide additional cover, feeding opportunities, and some protection from a possible increase in domestic cat presence.
- 5.3.5 Impacts on nesting birds should be avoided in particular, by carrying out site clearance and similar operations outside of the bird breeding season (March - August). Construction activities that might directly impact upon breeding birds should hence be limited to the September-February period.
- 5.3.6 If the timing or location of work activities cannot be changed to avoid affecting birds, then birds may be prevented from starting to nest by blocking access to nest sites, clearing vegetation or structures used for breeding, or using deterrents they can see or hear, e.g. tapes or flashing lights. These techniques cannot be used, however, once a nest is established.
- 5.3.7 During woodland enhancement works there will be opportunity to provide species-specific habitat enhancements for notable bird species such as willow tit *Poecile montanus*. An example of this includes leaving (or introducing) lengths of standing deadwood in areas adjacent to the woodland and open water to provide suitable nesting habitat. In addition to this, and where appropriate, individual stands of silver birch or alder trees could be ring barked and/or felled at a height above 1m to create nesting stumps. After a sufficient length of time to allow rot, the tree stump has the potential to provide additional nesting habitat for willow tit.

Appendix 1: Desk Study

'BARNSELEY MBC'

Black-Headed Gull
Blackbird
Bullfinch
Cuckoo
Dunnock
Fieldfare
Gadwall
Goldcrest
Goldfinch
Grasshopper Warbler
Green Woodpecker
Grey Partridge
House Martin
House Sparrow
Kestrel
Lapwing
Linnet
Mallard
Meadow Pipit
Mistle Thrush
Mute Swan
Reed Bunting
Skylark
Song Thrush
Starling
Stock Dove
Swallow
Swift
Tawny Owl
Turtle Dove
Whinchat
Willow Tit
Willow Warbler
Yellow Wagtail
Yellowhammer

Abandoned railway embankment, Carlton Marsh Reserve

Blackbird
Bullfinch
Fieldfare
Green Woodpecker
Redpoll
Spotted Flycatcher
Willow Warbler
Woodcock

Area between Ryhill & Royston

House Sparrow

Barnsley Canal Royston

Cormorant
Fieldfare
House Sparrow
Mute Swan

Skylark
Starling
Tree Sparrow

Bretton Park LWS

Green Woodpecker
Kestrel
Redwing
Yellowhammer

Carlton

Barn Owl
Golden Plover
Lapwing
Peregrine
Storm Petrel
Swallow

Carlton Marsh LWS

Arctic Skua
Arctic Tern
Bar-tailed Godwit
Barn Owl
Barnacle Goose
Bearded Tit
Bewick's Swan
Bittern
Black-Headed Gull
Black-Tailed Godwit
Blackbird
Brambling
Brent Goose
Bullfinch
Common (Mealy) Redpoll
Common Gull
Common Sandpiper
Common Scoter
Common Tern
Cormorant
Corn Bunting
Crane
Cuckoo
Curlew
Dartford Warbler
Dunlin
Dunnock
Fieldfare
Gadwall
Garganey
Glaucous Gull
Goldcrest
Golden Plover
Goldeneye
Goldfinch
Goshawk

Grasshopper Warbler
Great Black-Backed Gull
Green Sandpiper
Green Woodpecker
Greenshank
Grey Partridge
Grey Plover
Grey Wagtail
Greylag Goose
Hawfinch
Hen Harrier
Herring Gull
Hobby
House Martin
House Sparrow
Iceland Gull
Jack Snipe
Kestrel
Kingfisher
Kittiwake
Lapwing
Lesser Black-Backed Gull
Lesser Redpoll
Linnet
Little Egret
Little Ringed Plover
Little Tern
Mallard
Manx Shearwater
Marsh Harrier
Meadow Pipit
Mediterranean Gull
Merlin
Mistle Thrush
Mute Swan
Oystercatcher
Peregrine
Pied Flycatcher
Pink-Footed Goose
Pintail
Pochard
Quail
Red Kite
Redpoll
Redshank
Redstart
Redwing
Reed Bunting
Ring Ouzel
Ringed Plover
Ruff
Sand Martin

Sandwich Tern
Shelduck
Short-Eared Owl
Shoveler
Skylark
Snipe
Song Thrush
Spotted Flycatcher
Spotted Redshank
Starling
Stock Dove
Swallow
Swift
Tawny Owl
Teal
Tree Pipit
Tree Sparrow
Trecreeper
Tufted Duck
Turtle Dove
Water Pipit
Water Rail
Waxwing
Wheatear
Whimbrel
Whinchat
Whooper Swan
Wigeon
Willow Tit
Willow Warbler
Wood Sandpiper
Woodcock
Yellow Wagtail
Yellow-legged Gull
Yellowhammer

Carlton Marsh Reserve

Skylark
Yellow Wagtail

Carlton Marsh Reserve (with observers codes)

Barn Owl
Barnacle Goose
Bewick's Swan
Bittern
Black-Headed Gull
Black-Tailed Godwit
Blackbird
Brambling
British Lesser Black-Backed Gull
Bullfinch
Common Gull
Common Sandpiper
Common Tern

Cormorant
Corn Bunting
Cuckoo
Curlew
Dunlin
Dunnock
Fieldfare
Gadwall
Glaucous Gull
Goldcrest
Golden Plover
Goldeneye
Goldfinch
Grasshopper Warbler
Great Black-Backed Gull
Green Sandpiper
Green Woodpecker
Greenshank
Grey Partridge
Grey Wagtail
Greylag Goose
Herring Gull
Hobby
House Martin
House Sparrow
Jack Snipe
Kestrel
Kingfisher
Lapwing
Linnet
Little Ringed Plover
Mallard
Marsh Harrier
Meadow Pipit
Merlin
Mistle Thrush
Mute Swan
Osprey
Oystercatcher
Pink-Footed Goose
Pintail
Pochard
Redpoll
Redshank
Redstart
Redwing
Reed Bunting
Ringed Plover
Sand Martin
Sandwich Tern
Shelduck
Short-Eared Owl

Shoveler
Skylark
Snipe
Song Thrush
Spotted Crake
Spotted Flycatcher
Starling
Stock Dove
Swallow
Swift
Tawny Owl
Teal
Thrush Species
Tree Pipit
Tree Sparrow
Treecreeper
Tufted Duck
Turtle Dove
Water Rail
Waxwing
Wheatear
Whimbrel
Whinchat
Whooper Swan
Wigeon
Willow Tit
Willow Warbler
Woodcock
Yellow Wagtail
Yellowhammer

Carlton Marsh, abandoned railway embankment: observers code F

Blackbird
Brambling
Bullfinch
Cuckoo
Dunnock
Fieldfare
Goldcrest
Golden Plover
Goldfinch
Green Woodpecker
Grey Partridge
House Sparrow
Kestrel
Linnet
Mealy Redpoll
Mistle Thrush
Peregrine
Pied Flycatcher
Redpoll
Redstart
Redwing

Short-Eared Owl
Song Thrush
Spotted Flycatcher
Tree Sparrow
Treecreeper
Turtle Dove
Waxwing
Whinchat
Willow Tit
Willow Warbler
Woodcock
Yellowhammer

Carlton Marsh, farmland to E of Reserve: observers code E

Barn Owl
Black-Headed Gull
Brambling
British Lesser Black-Backed Gull
Common Gull
Corn Bunting
Cuckoo
Curlew
Fieldfare
Golden Plover
Goldfinch
Grasshopper Warbler
Grey Partridge
Herring Gull
House Martin
Kestrel
Lapwing
Linnet
Merlin
Peregrine
Pink-Footed Goose
Quail
Reed Bunting
Skylark
Starling
Stock Dove
Swift
Tree Sparrow
Wheatear
Whimbrel
Whinchat
Yellowhammer

Carlton Marsh, grazed/managed wildflower meadow: observers code C

Barn Owl
Brambling
Cuckoo
Fieldfare
Golden Plover
Grasshopper Warbler

Green Sandpiper
Green Woodpecker
Grey Partridge
Jack Snipe
Kestrel
Lapwing
Meadow Pipit
Mute Swan
Redstart
Short-Eared Owl
Skylark
Starling
Yellow Wagtail

Carlton Marsh, houses and gardens near entrance to Reserve

House Sparrow

Carlton Marsh, marsh & wetland scrub: observers code B

Bar-tailed Godwit
Barn Owl
Bullfinch
Common Tern
Cormorant
Cuckoo
Grasshopper Warbler
Green Sandpiper
Jack Snipe
Kingfisher
Linnet
Little Ringed Plover
Meadow Pipit
Merlin
Oystercatcher
Pink-Footed Goose
Redstart
Redwing
Reed Bunting
Snipe
Spotted Crake
Starling
Swallow
Swift
Tawny Owl
Water Rail
Whooper Swan
Willow Tit
Willow Warbler
Woodcock

Carlton Marsh, plantations: observers code D

Blackbird
Bullfinch
Cuckoo
Dunnock
Fieldfare

Firecrest
Goldcrest
Goldfinch
Green Woodpecker
Grey Partridge
Grey Wagtail
House Sparrow
Kestrel
Mealy Redpoll
Mistle Thrush
Redpoll
Redwing
Song Thrush
Spotted Flycatcher
Stock Dove
Tawny Owl
Tree Sparrow
Treetreeper
Willow Tit
Willow Warbler
Woodcock
Yellow Wagtail

Carlton Marsh, water area, open water, shore & islands: observer code A

Arctic Tern
Barn Owl
Bittern
Black-Headed Gull
Black-Tailed Godwit
Brambling
Brent Goose
British Lesser Black-Backed Gull
Common Gull
Common Sandpiper
Common Tern
Cormorant
Curlew
Dunlin
Fieldfare
Gadwall
Garganey
Golden Plover
Goshawk
Grasshopper Warbler
Great Black-Backed Gull
Green Sandpiper
Green Woodpecker
Greenshank
Grey Wagtail
Greylag Goose
Hen Harrier
Herring Gull
Hobby

House Martin
Jack Snipe
Kestrel
Kingfisher
Kittiwake
Lapwing
Linnet
Little Ringed Plover
Little Tern
Mallard
Marsh Harrier
Meadow Pipit
Merlin
Mistle Thrush
Mute Swan
Osprey
Oystercatcher
Peregrine
Pink-Footed Goose
Pintail
Pochard
Redpoll
Redshank
Redwing
Reed Bunting
Ringed Plover
Sand Martin
Shelduck
Shoveler
Skylark
Snipe
Song Thrush
Starling
Stock Dove
Swallow
Swift
Teal
Tufted Duck
Water Rail
Wheatear
Whimbrel
Whooper Swan
Wigeon
Yellow Wagtail

Carlton sewage farm

Oystercatcher

Cronk Hill Marsh

Bullfinch

Yellowhammer

Cudworth

Barn Owl

Grey Partridge

House Martin
Song Thrush
Swift

farmland to E of Carlton Marsh Reserve

House Sparrow
Lapwing
Meadow Pipit
Yellowhammer

grazed/managed wildflower meadow in SE3710, Carlton Marsh Reserve

Green Woodpecker
Meadow Pipit
Tawny Owl

grazed/managed wildflower meadow, Carlton Marsh Reserve

Yellow Wagtail

marsh and wetland scrub, Carlton Marsh Reserve

Goldcrest
Grasshopper Warbler
Treecreeper

Monckton Tip

Common Gull
Glaucous Gull
Great Black-Backed Gull
Green Woodpecker
Herring Gull
Iceland Gull
Lesser Black-Backed Gull

Monkton

Pink-Footed Goose

New Monkton

Woodcock

Old Royston

Kingfisher
Lesser Redpoll
Pink-Footed Goose
Tawny Owl

plantations, Carlton Marsh Reserve

Goldfinch
Song Thrush
Willow Tit
Yellow Wagtail

Pools Ings

Blackbird

Rabbit Ings

Barn Owl
Black-Headed Gull
Blackbird
Bullfinch
Cormorant
Cuckoo
Dunnock
Fieldfare
Gadwall

Goldcrest
Goldfinch
Grasshopper Warbler
Green Woodpecker
Grey Partridge
Herring Gull
House Martin
Kestrel
Kingfisher
Lapwing
Lesser Black-Backed Gull
Lesser Redpoll
Linnet
Mallard
Marsh Tit
Meadow Pipit
Mistle Thrush
Mute Swan
Redstart
Redwing
Reed Bunting
Ringed Plover
Short-Eared Owl
Skylark
Snipe
Song Thrush
Starling
Stock Dove
Swallow
Swift
Tawny Owl
Teal
Thrush Species
Tree Pipit
Tufted Duck
Turtle Dove
Water Rail
Wheatear
Willow Tit
Willow Warbler
Yellow Wagtail
Yellowhammer

Royston

Blackbird
Bullfinch
Goldfinch
Grasshopper Warbler
Green Woodpecker
House Sparrow
Kestrel
Meadow Pipit
Mistle Thrush

Song Thrush

Swallow

Shafton

Black-Headed Gull

Blackbird

Bullfinch

Fieldfare

Goldcrest

Goldfinch

Honey Buzzard

Kestrel

Lesser Black-Backed Gull

Linnet

Mallard

Meadow Pipit

Mistle Thrush

Redpoll

Reed Bunting

Skylark

Starling

Swallow

Willow Tit

Yellowhammer

site of former Carlton Colliery

Green Woodpecker

Wheatear

tilled land in SE3710 to E of Carlton Marsh Reserve

Herring Gull

Trans Pennine Trail, Barnsley

Goldfinch

House Sparrow

Swallow

Swift

Upper Cudworth

Barn Owl

water area, open water, shore and islands, Carlton Marsh Reserve

Black-Headed Gull

Common Gull

Common Tern

Cuckoo

Gadwall

Golden Plover

Green Sandpiper

Green Woodpecker

Hobby

House Martin

Kestrel

Kingfisher

Lesser Black-Backed Gull

Linnet

Mallard

Mute Swan

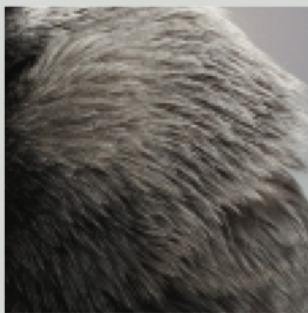
Oystercatcher
Pink-Footed Goose
Redwing
Sand Martin
Shelduck
Shoveler
Skylark
Snipe
Swallow
Swift
Teal
Tufted Duck
Water Rail
Yellow Wagtail

wooded railway cutting in woodland adjoining B6428

Green Woodpecker

Appendix 2: Breeding Bird Data

BTO code	Common Name	Scientific Name	BoCC	WCA Sch 1	Bir Dir Ann 1	NERC 41	Total birds recorded whole site			Total No.	Breeding Status
							08/04/2020	11/05/2020	18/06/2020		
B.	Blackbird	Turdus merula	Green	0	0	0	3	8	5	16	Probable
BC	Blackcap	Sylvia atricapella	Green	0	0	0		1	2	3	Possible
BF	Bullfinch	Pyrrhula pyrrhula	Amber	0	0	Y		2		2	Probable
BH	Black-headed gull	Chroicocephalus ridibundus	Amber	0	0	0		2	1	3	Non-breeding
BO	Barn owl	Tyto alba	Green	Y	0	0	1	1		2	Non-breeding
BT	Blue tit	Cyanistes caeruleus	Green	0	0	0	1	4	5	10	Probable
C.	Carrion crow	Corvus corone	Green	0	0	0	1	1	1	3	Non-breeding
CC	Chiffchaff	Phylloscopus collybita	Green	0	0	0	4	5	2	11	Probable
CG	Canada goose	Branta canadensis	Green	0	0	0	2	3		5	Non-breeding
CH	Chaffinch	Fringilla coelebs	Green	0	0	0	2	4	2	8	Probable
CT	Coal tit	Parus ater	Green	0	0	0			1	1	Possible
D.	Dunnock	Prunella modularis	Amber	0	0	Y	1	3	1	5	Probable
FP	Feral pigeon/rock dove	Columba livia	Green	0	0	0	47	107	54	208	Confirmed
GL	Grey wagtail	Motacilla cinerea	Red	0	0	0			1	1	Non-breeding
GO	Goldfinch	Carduelis carduelis	Green	0	0	0	12	21	8	41	Possible
GT	Great tit	Parus major	Green	0	0	0	1	3	1	5	Probable
JD	Jackdaw	Corvus monedula	Green	0	0	0	1	1	3	5	Non-breeding
K.	Kestrel	Falco tinnunculus	Amber	0	0	0			1	1	Probable
LB	Lesser black-backed gull	Larus fuscus	Amber	0	0	0			2	2	Non-breeding
LI	Linnet	Carduelis cannabina	Red	0	0	Y	1	6	2	9	Possible
LT	Long tailed tit	Aegithalos caudatus	Green	0	0	0		3	5	8	Probable
M.	Mistle thrush	Turdus viscivorus	Red	0	0	0			1	1	Non-breeding
MA	Mallard	Anas platyrhynchos	Amber	0	0	0	1	1		2	Non-breeding
MG	Magpie	Pica pica	Green	0	0	0	1	2	3	6	Possible
MH	Moorhen	Gallinula chloropus	Green	0	0	0			1	1	Non-breeding
PH	Pheasant	Phasianus colchicus	Green	0	0	0	1	1		2	Possible
PW	Pied wagtail	Motacilla alba	Green	0	0	0	4	5	1	10	Probable
R.	Robin	Erithacus rubecula	Green	0	0	0	2	4	4	10	Probable
RO	Rook	Corvus frugilegus	Green	0	0	0	3	4	1	8	Non-breeding
SL	Swallow	Hirundo rustica	Green	0	0	0		1		1	Non-breeding
ST	Song thrush	Turdus philomelos	Red	0	0	Y	2	3	1	6	Probable
WH	Whitethroat	Sylvia communis	Green	0	0	0		6	6	12	Probable
WP	Woodpigeon	Columba palumbus	Green	0	0	0	2	3	17	22	Possible
WR	Wren	Troglodytes troglodytes	Green	0	0	0	2	4	6	12	Probable
WW	Willow warbler	Phylloscopus trochilus	Amber	0	0	0		1	1	2	Possible
Total							95	210	139	444	



baker*consultants*