

P e l l F r i s c h m a n n

## **Hoo Station GRIP 3 – Reopening of the Grain Branch Line for Passenger Services**

Wintering Bird Survey Report

Date: October 2020

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**Appendix A Bird Species Codes**

**Appendix B Wintering Bird Survey Maps**

# 1 Introduction

Pell Frischmann were commissioned by Medway Council to undertake wintering bird surveys for the reopening of the Grain Branch Line for passenger rail services.

The Hoo Peninsula is currently accessed via a single main highway route which links to other roads in the Chatham and Strood area. There is a proposal to increase housing on the peninsula by 12,100 homes, all of which would need to be served by this highway. The resulting significant increase in traffic would exceed the road network's capacity, even with the planned highway upgrades so a shift to rail usage is being sought.

The existing Network Rail lines in the area are the London to Higham / Strood main line and the Grain Line (also known as the Hoo branch line) a freight line to the Isle of Grain. An investigation is underway as to the viability of running a passenger service on the Grain Line.

The GRIP 2 study investigated the feasibility of the scenarios raised by the GRIP 1 report. This focused on providing a passenger service to Sharnal Street (Phase 1), and also considers the passive provision for doubling of the line by Network Rail (Phase 2) to provide for future expansion of passenger and freight services.

This GRIP 3 Study now considers the options in more detail with a view to recommending options to be taken forward This report forms part of that analysis.

The GRIP 3 study has been divided into the following main elements –

- the enabling works to the existing line including any environmental mitigation and structural upgrades to the existing infrastructure;
- permanent way modifications including the creation of passing places;
- the creation of a new route south to Higham, Strood and the Medway Towns;
- civils works for the replacement of existing at-grade crossings; and
- the creation of a new station at Sharnal Street and associated infrastructure.

## 1.1 Survey Scope

The key objective of the wintering bird surveys was to establish the wintering bird assemblages within the ecological zone of influence of the Site. These surveys were undertaken following a walkover survey of the Site to inform and determine the design and scale of any mitigation measures proposed and to enable an accurate assessment of the impacts of the proposals on wintering birds.

The aims and objectives of the survey were therefore to –

- Determine the species of wintering birds present;
- Establish the abundance of these bird species;
- Establish the typical locations of these bird species within and around the Site; and
- Provide sufficient data to enable a robust assessment of the effects of the proposals to be made within this report.

This information was then used to identify the following (where appropriate) –

- The need for further survey work required to fully assess the impacts associated with the development proposals;
- The need for mitigation and/or compensation measures which should be incorporated into the design of the proposed development; and
- Recommendations for enhancement measures above and beyond the need to mitigate adverse effects in order to encourage wintering birds onto the site post development.

## **1.2 Study Area**

The Site includes the existing railway known as the Grain Branch and runs from National grid Reference TQ 70493 73859 (the western end of the scheme) at Canal Street to TQ 79295 73975 to the south of Sharnal Street (the eastern end).

In this instance it was not considered appropriate to complete the wintering bird surveys along the footprint of the Site only as there was limited habitat to support wintering bird communities. Therefore, the wintering bird surveys focussed on the adjoining land to the north and south of the Site within the western section as described in the section below.

### **1.2.1 Determining the Transect Route**

The Site area overlaps with the Thames Estuary and Marshes, which is designated as a Ramsar site, and also runs alongside the section of this site that is designated as a Special Protection Area (SPA). The Site area also overlaps the South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI).

The Thames Estuary and Marshes comprises a complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat along the River Thames between Gravesend and Sheerness in Kent which support internationally important numbers of wintering waterfowl. The saltmarsh and grazing marsh habitats are of international importance for their diverse assemblages of wetland plants and invertebrates.

The study area for the wintering bird surveys covered the areas of Ramsar and SPA land accessible by public footpaths between the Site and the River Thames to the north, and land to the south of the Site between Church Street and Canal Road. The transect route is shown below in

Figure 1.

This transect was chosen as it provided a number of habitats suitable for wintering birds including grazing marsh, wet ditches, ponds, mudflats and hedgerows. It was extended as far as the River Thames due to the potential for noise and light disturbance to travel this distance from the Site over the relatively flat marshes.

Vantage points were chosen to view across the land area without the need to directly disturb species within the RSPB managed areas and enabled surveyors to complete spot counts covering the area within and bordering the transect route. The raised bunded land running parallel with the River Thames also enabled a higher vantage point and view down onto the marshy grasslands and ditches, as well as the mudflats along the river itself.

Figure 1 Wintering Bird Survey Study Area. The transect route walked is marked in black, with the rail line subject to the proposed development located in the southern part of the transect.



Map data contains © OpenStreetMap contributors

## 2 Legislation

The Wildlife and Countryside Act 1981 (as amended) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to recklessly or intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while in use or being built; and
- Take or destroy the egg of any wild bird.

Species listed on Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended) are specially protected to avoid disturbance of an active nest.

In addition to statutory protection, some bird species are also classified according to their conservation status, such as their inclusion on the Red and Amber lists of Birds of Conservation Concern 4 (BoCC) in the UK (Eaton *et al* 2015):

- Red list (high conservation concern) species are those that are Globally Threatened according to IUCN (International Union for Conservation of Nature) criteria; those whose population has declined rapidly (50% or more) in recent years; and those that have declined historically and not shown a substantial recent recovery.
- Amber list (medium conservation concern) species are those with an unfavourable conservation status in Europe; whose population or range has declined moderately (between 25% and 49%) in recent years; whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
- Green list (low conservation concern) species fulfil none of the above criteria.

Certain bird species have also been identified as species of principal importance listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

The 'UK Post-2010 Biodiversity Framework' (JNCC & DEFRA, 2012) also sets out a framework of priorities for UK-level work for the Convention on Biological Diversity, to which the UK is a signatory. Covering the period 2011-2020, this framework replaces the original UK Biodiversity Action Plan (UK BAP 2004) system and now the work is focussed on the separate countries (England, Scotland, Northern Ireland and Wales). The overall aim remains to protect a number of rare species and habitats and reverse the declines of more widespread but declining species and habitats, and so currently many of the species and habitats in the UK BAP still form the basis of the biodiversity work carried out in the devolved countries. Furthermore, the Local Biodiversity Action Plans (LBAP) are still in place under this framework.

## 3 Assessment Methodology

### 3.1 Desktop Study

To accurately assess the potential ecological impacts of the scheme, a desktop study was undertaken to identify the presence of sensitive ecological receptors at the site and within the surrounding area.

The Kent and Medway Biological Records Centre (KMBRC) were commissioned to undertake a data search for protected and notable species and sites of conservation importance within a 2km radius of the central point of the site.

In addition, the National Biodiversity Network (NBN) database was searched for local records for notable and protected species from 2km of the site boundary within the last 20 years.

Reference was also made to Ordnance Survey maps and aerial photography, which were used to determine the presence of open water and ponds in the area and provide information on land use and habitat connectivity throughout the area.

Full details of the desktop study (including relevant legal and policy issues) can be found within the Preliminary Ecological Appraisal (PEA) report (103223-PEL-G3-H01-REP-EVV-0001). Records relevant to the wintering bird surveys have been summarised in Section 4.1 of this report.

### 3.2 Field Survey

The survey methodology deployed was based on the Wetland Bird Survey (WeBS) (Gilbert *et al.* 1998) which is a standard methodology for wintering birds including non-breeding waterfowl. This method involves an extensive search of the Site by observing birds from all possible vantage points. However, to enable the survey to be practical, the points are generally based on a set transect to facilitate recording and mapping.

Observations of bird species (by sight or sound) in proximity to the transect route were noted on the survey (field) map using standard species and activity recording codes (see Appendix A for Codes and Appendix B for maps of the surveys). Records were also made of any bird species observed on land adjacent to the study area or flying over the site only. Birds in this category would not be included in the assessment, unless it was obvious that they were moving between different parts of the study area.

Ordnance Survey maps, aerial photography and site plans were used to establish the general transect route for the wintering bird survey. This would cover vantage points and boundaries within the study area as described in section 1.2.1.

Six surveys were completed between December 2019 and March 2020. Surveys were completed in approximately 3-4 hours each. Bird surveys were not undertaken in unfavourable conditions such as heavy rain, which may have negatively affected the results.

The wintering bird surveys were led by S.Pagett who has extensive experience of various bird survey techniques and holds licences from Natural England and the British Trust for Ornithology (BTO) for Barn owls and other Schedule 1 bird species. These licences allow detailed survey work that might be considered disturbance for less experienced/qualified surveyors.

The dates and prevailing weather conditions during these survey visits are detailed below in Table 1.

**Table 1 Wintering bird survey dates and weather conditions**

Date	Temperature	Other weather conditions
10.12.2019	8°C	100% cloud with no rain and light breeze. Good visibility
16.01.2020	11°C	50% cloud with no rain and light breeze. Good visibility
30.01.2020	9°C	100% cloud with light showers and light breeze. Fair visibility
12.02.2020	7°C	0% cloud with no rain and still air. Excellent visibility.
26.02.2020	10°C	75% cloud with no wind and string breeze. Excellent visibility.
10.03.2020	10°C	75% cloud with no rain and light breeze. Good visibility

The conservation value of bird populations has been assessed using two approaches –

- Nature conservation value; and
- Conservation status.

The Chartered Institute of Ecology and Environmental Management (CIEEM) guidance on ecological impact assessment assesses nature conservation value within a geographical context. (CIEEM, 2018). To attain each level of value, an ornithological resource or one of the features (species population or assemblage of species) should meet the criteria set out in Table 2 below. In some cases, professional judgement may be required to increase or decrease the allocation of specific value, based upon local knowledge.

**Table 2 Definition of Terms Relating to Nature Conservation Value**

Nature Conservation Value	Examples of Selection Criteria
International	A species which is part of the cited interest of a Special Protected Area (SPA) and which regularly occurs in internationally or nationally important numbers. A species presents in internationally important numbers (>1% of international population).
National	A species which is part of the cited interest of a Site of Special Scientific Interest (SSSI) and which regularly occurs in nationally or regionally important numbers. A nationally important assemblage of breeding or overwintering species. A species presents in nationally important numbers (>1% UK population). A rare breeding species (<300 breeding pairs in the UK).
Regional	Species listed as priority species in the UK BAP, which are not covered above, and which regularly occurs in regionally important numbers. Sustainable populations of species that are rare or scarce within a region. Species on the Birds of Conservation Concern (BoCC) Red List and which regularly occurs in regionally important numbers.
County	Species listed as priority species in the UK BAP, which are not covered above, and which regularly occurs in county important numbers. Species present in county important numbers (>0.5% of national population).

Nature Conservation Value	Examples of Selection Criteria
	Sustainable populations of species that are rare or scarce within a county, or listed in a county BAP. A site designated for its county important assemblage of birds. Species on the BoCC Red List and which regularly occur in county important numbers.
District	Species listed as priority in the UK BAP, which are not covered above, and are rare in the locality or in the relevant Natural Area profile. Species present in numbers just short of county importance. Sustainable populations of species which are rare or scarce within the locality. A site whose designation falls just short for inclusion for its county important assemblage of birds. Other species on the BoCC Red List and which are considered to regularly occur in district important numbers.
Local	Other species of conservation interest (e.g. all other species on the BoCC Red and Amber List and UK BAP which are not covered above) regularly occurring in locally sustainable populations.
Site	All other BoCC Green-listed common and widespread species.

### 3.3 Survey Constraints and Limitations

The surveys covered a large area and consequently it is possible to double-count a bird that flew from one area to another. Birds that were seen to move between different parts of the survey area were only mapped in the location where they were most frequently observed. It should be noted that wintering birds tend to be fairly mobile, but many species will commute along linear features such that they are likely to be detected only once within the duration of a survey.

The survey in December and early January covered the entirety of Church Street and Canal Road. Following these surveys, it was considered that the impacts to this area would be minimal to wintering birds and therefore the transect adjusted to discard these areas. This enabled further focus on the woodland areas to the south of the existing railway track between Church Street and Canal Road. Given the species assemblages recorded, it is not considered that this change in transect would have missed any additional notable species.

## 4 Desk Study Results

### 4.1 Species Records

KMBRC returned a total of 73,415 records from 366 bird species within a 2km search area of the Site. Based on the close proximity to the River Thames and River Medway estuaries, this search includes a high number of water birds. Of the species recorded, 74 are listed on Schedule 1 of the Wildlife and Countryside Act (WCA) 1981 as amended; 58 on the Birds of Conservation Concern (BoCC) Red List; and 46 on the UK Biodiversity Action Plan (BAP).

Records for wetland and water birds that could use the study area for shelter during winter months included red-throated diver (*Gavia stellata*), black-throated diver (*Gavia arctica*), great northern diver (*Gavia immer*), little grebe (*Tachybaptus ruficollis*), great crested grebe (*Podiceps cristatus*), black necked grebe (*Podiceps nigricollis*), cormorant (*Phalacrocorax carbo*), gannet (*Morus bassanus*), little egret (*Egretta garzetta*), grey heron (*Ardea cinerea*), bittern (*Botaurus stellaris*), cattle egret (*Bubulcus ibis*), avocet (*Recurvirostra avosetta*), mute swan (*Cygnus olor*), spoonbill (*Platalea leucorodia*), Canada goose (*Branta canadensis*), barnacle goose (*Branta leucopsis*), brent goose (*Branta bernicla*), shelduck (*Tadorna tadorna*), wigeon (*Anas penelope*), gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), shoveler (*Anas clypeata*), pochard (*Aythya ferina*), tufted duck (*Aythya fuligula*), ruddy duck (*Oxyura jamaicensis*), goosander (*Mergus merganser*), water rail (*Rallus aquaticus*), oystercatcher (*Haematopus ostralegus*), little ringed plover (*Charadrius dubius*), lapwing (*Vanellus vanellus*), snipe (*Gallinago gallinago*), and whimbrel (*Numenius phaeopus*).

A search using NBN has also identified the presence of bird species listed on Schedule 1, Part 1 of the WCA.

### 4.2 Sites Designated for Bird Species

The Site itself is not designated for bird species, but the wider search area overlaps with the Thames Estuary and Marshes, which is designated as a Ramsar site and Special Protection Area (SPA) immediately adjacent to the railway corridor along the western section of the Site.

The Thames Estuary and Marshes comprises a complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat along the River Thames between Gravesend and Sheerness in Essex and Kent which support internationally important numbers of wintering waterfowl. The saltmarsh and grazing marsh habitats are of international importance for their diverse assemblages of wetland plants and invertebrates.

The wider search area also overlaps with the South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI) which comprises of mudflats which attracts large numbers of feeding wader and wildfowl species.

## 5 Field Survey Results

This section details the bird observations during the 2019/2020 wintering bird surveys conducted for the reopening of the Grain Branch Rail Line for passenger services.

Table 3 presents the species recorded during the survey and includes the abundance of each species measured as the maximum number of individuals detected on any one survey visit.

The number of 'notable' recorded species is also given. Notable species are those that appear on the BoCC Red or Amber Lists, WCA Schedule 1 Part 1 or are listed as UK BAP and/or Kent BAP species.

Locations that birds were recorded are shown on the survey maps attached in Appendix B.

### 5.1 Species Recorded

Overall, 77 bird species were observed within the study area during the surveys, of which 41 are 'notable' as shown in Table 3 below.

**Table 3 Bird Species, Conservation Status and Abundance recorded during the Wintering Bird Surveys**

Species	Conservation Status	Abundance
Avocet <i>Recurvirostra avosetta</i>	BoCC Amber, WCA Sch 1 Part1	127
Bar-headed goose <i>Anser indicus</i>	Not listed	1
Blackbird <i>Turdus merula</i>	BoCC Green	11
Blackcap <i>Sylvia atricapilla</i>	BoCC Green	1
Black-headed gull <i>Chroicocephalus ridibundus</i>	BoCC Amber	247
Blue tit <i>Cyanistes caeruleus</i>	BoCC Green	16
Bullfinch <i>Pyrrhula pyrrhula</i>	BoCC Amber, UK BAP	2
Buzzard <i>Buteo buteo</i>	BoCC Green	2
Carrion crow <i>Corvus corone</i>	BoCC Green	93
Cormorant <i>Phalacrocorax carbo</i>	BoCC Green	5
Collared dove <i>Streptopelia decaocto</i>	BoCC Green	7
Chaffinch <i>Fringilla coelebs</i>	BoCC Green	29
Chiffchaff <i>Phylloscopus collybita</i>	BoCC Green	149
Canada Goose <i>Branta canadensis</i>	BoCC Introduced	28
Common Gull <i>Larus canus</i>	BoCC Amber	1
Curlew <i>Numenius arquata</i>	BoCC Red, UK BAP	44
Cetti's warbler <i>Cettia cetti</i>	BoCC Green, WCA Sch 1 Part 1	4
Coot <i>Fulica atra</i>	BoCC Green	164
Dunnock <i>Prunella modularis</i>	BoCC Amber, UK BAP	3
Dunlin <i>Calidris alpina</i>	BoCC Amber	50

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Species	Conservation Status	Abundance
Egyptian goose <i>Alopochen aegyptiaca</i>	BoCC Introduced	4
Feral pigeon <i>Columba livia domestica</i>	Not listed	15
Fieldfare <i>Turdus pilaris</i>	BoCC Red, WCA Sch 1 Part 1	65
Gadwall <i>Anas strepera</i>	BoCC Amber	19
Green woodpecker <i>Picus viridis</i>	BoCC Green	4
Great crested grebe <i>Podiceps cristatus</i>	BoCC Green	37
Greylag goose <i>Anser anser</i>	BoCC Amber	133
Great spotted woodpecker <i>Dendrocopos major</i>	BoCC Green	10
Great tit <i>Parus major</i>	BoCC Green	13
Great black-backed gull <i>Larus marinus</i>	BoCC Amber	2
Grey partridge <i>Perdix perdix</i>	BoCC Red, UK BAP	2
Grey heron <i>Ardea cinerea</i>	BoCC Green	7
Goldfinch <i>Carduelis carduelis</i>	BoCC Green	50
Herring gull <i>Larus argentatus</i>	BoCC Red, UK BAP	19
House sparrow <i>Passer domesticus</i>	BoCC Red, UK BAP	24
Jackdaw <i>Corvus monedula</i>	BoCC Green	5
Jay <i>Garrulus glandarius</i>	BoCC Green	1
Kestrel <i>Falco tinnunculus</i>	BoCC Amber	4
Kingfisher <i>Alcedo atthis</i>	BoCC Amber, WCA Sch 1 Part1	1
Little grebe <i>Tachybaptus ruficollis</i>	BoCC Green	7
Lapwing <i>Vanellus vanellus</i>	BoCC Red, UK BAP	141
Little egret <i>Egretta garzetta</i>	BoCC Green	2
Lesser black-backed gull <i>Larus fuscus</i>	BoCC Amber	2
Long-tailed tit <i>Aegithalos caudatus</i>	BoCC Green	15
Magpie <i>Pica pica</i>	BoCC Green	13
Mallard <i>Anas platyrhynchos</i>	BoCC Amber	78
Meadow pipit <i>Anthus pratensis</i>	BoCC Amber	19
Mute swan <i>Cygnus olor</i>	BoCC Amber	15
Mistle thrush <i>Turdus viscivorus</i>	BoCC Red	5
Moorhen <i>Gallinula chloropus</i>	BoCC Green	39
Oystercatcher <i>Haematopus ostralegus</i>	BoCC Amber	7
Pheasant <i>Phasianus colchicus</i>	BoCC Introduced	6
Pochard <i>Aythya farina</i>	BoCC Red	10
Pied wagtail <i>Motacilla alba</i>	BoCC Green	16
Redwing <i>Turdus iliacus</i>	BoCC Red, WCA Sch 1 Part 1	9

Species	Conservation Status	Abundance
Reed bunting <i>Emberiza schoeniclus</i>	BoCC Amber, UK BAP	2
Redshank <i>Tringa totanus</i>	BoCC Amber	20
Robin <i>Erithacus rubecula</i>	BoCC Green	13
Raven <i>Corvus corax</i>	BoCC Green	1
Stonechat <i>Saxicola rubicola</i>	BoCC Green	34
Starling <i>Sturnus vulgaris</i>	BoCC Red, UK BAP	544
Snipe <i>Gallinago gallinago</i>	BoCC Amber	5
Skylark <i>Alauda arvensis</i>	BoCC Red, UK BAP	44
Swift <i>Apus apus</i>	BoCC Amber	6
Stock dove <i>Columba oenas</i>	BoCC Amber	2
Swallow <i>Hirundo rustica</i>	BoCC Green	2
Short-eared owl <i>Asio flammeus</i>	BoCC Amber	1
Shoveler <i>Anas clypeata</i>	BoCC Amber	4
Song thrush <i>Turdus philomelos</i>	BoCC Red, UK BAP	2
Shelduck <i>Tadorna tadorna</i>	BoCC Amber	31
Teal <i>Anas crecca</i>	BoCC Amber	201
Tufted duck <i>Aythya fuligula</i>	BoCC Green	48
Wigeon <i>Anas Penelope</i>	BoCC Amber	361
White-fronted Goose <i>Anser albifrons</i>	BoCC Red	105
Woodpigeon <i>Columba palumbus</i>	BoCC Green	29
Wren <i>Troglodytes troglodytes</i>	BoCC Green	9
Whooper swan <i>Cygnus cygnus</i>	BoCC Amber, WCA Sch 1 Part1	1

### 5.1.1 Notable Species within Close Proximity to the Site

A number of notable bird species were recorded immediately adjacent to the Site and existing railway line.

Large flocks of fieldfares, redwings and starlings were frequently observed calling, sheltering and foraging within the woodland, hedgerows and grassland located immediately adjacent to the existing railway track.

Song thrush and dunnoek were observed taking shelter in hedgerows, scrub, scattered trees and tall ruderal vegetation surrounding the existing railway track.

Kestrels were frequently observed foraging in areas of open grassland and perching in trees located adjacent to the existing railway track.

A peak count of one kingfisher was observed within the ditch network located immediately adjacent to the existing railway track at approximate grid reference TQ 71743 74701 to the north of the Site boundary.

Mixed Flocks of black-headed gull and herring gull were observed foraging in areas of open grassland immediately adjacent to the railway. These species were also frequently observed frequently calling while flying over the study area.

A peak count of 2 bullfinches were observed calling within the woodland and hedgerows located along the northern boundary of the railway track.

### **5.1.2 Notable Species within the Wider Study Area**

Generally wintering bird report assessments would not consider the species recorded in the wider area to the Site with too much importance. However, due to the potential for collision and bird strike from the reopening of the Grain Branch Line for passenger services, notable species within the entire study area are considered to be relevant.

Many of the wintering species recorded within the study area may commute at night, which during the wintering season can be as early as 4.30pm. At this time, the proposed increased number of trains would still be running regularly to get commuters home from work and as such may pose an increased risk of bird strike. Therefore, it is important that all the wider wintering bird species recorded are included within the assessment to recognise that the increased number of trains could increase the mortality rate for a variety of species.

The remaining notable species listed in Table 3 were generally recorded within the Ramsar, SPA and SSSI areas using the grasslands and ditches for sheltering.

Skylarks were seen during each survey throughout the marshes singing or resting on flooded area of grassland.

The mudflats on the Thames Estuary provided resting and foraging grounds for wigeon, redshank, shelduck, teal, curlew, greater black backed gull, oystercatcher, lapwing and avocet.

Timber Lake and Alpha Pool along the eastern section of the study area provided resting and foraging places for pochard, lesser and greater black backed gulls, greylag goose, mallard, shoveler and mute swan.

## 6 Likely Impacts and Key Constraints

### 6.1 Evaluation

Due to the increased risk of collision to wintering birds through the reopening of the Grain Branch Rail Line for passenger services, all wintering bird species recorded within the wider study area have been included within the assessment.

Based on the criteria in Table 2, the study area supports species listed as priority in the UK BAP, WCA Sch1 Part 1 and on the Red and Amber Lists. Species including avocet, dunlin and redshank recorded within the study area are qualifying features for which the Thames Estuary has been designated as a SPA and therefore the nature conservation value of the wintering bird population within the study area is of international value.

To assess the overall wintering bird assemblage, Fuller (1980) describes a method for assessing ornithological interest of sites, whereby the importance is defined by the number of species present as shown in the centre column of Table 4 below.

For the purposes of this assessment, Fuller's geographical levels have been adapted so that Fuller's 'Local importance' is assumed to correspond to District importance as described in the CIEEM Guidelines (CIEEM, 2018). An assemblage comprising fewer than 25 species is therefore considered to be of local importance or less. Since the publication of the criteria in 1980, declines have occurred in many farmland bird populations; it is therefore deemed appropriate to recalibrate the categories slightly downwards in this way.

A total of 77 species were recorded within the study area and therefore falls into the regional importance category. The site is therefore evaluated as having a regional level of importance as a wintering site for the bird assemblage present in the area.

**Table 4 Assessment using the number of bird species**

Level of Importance	Number of Bird Species	
	Fuller (1980)	Adapted Criteria
Local	25 – 49	<25
District	-	25 – 49
County	50 – 69	50 – 69
Regional	70 – 84	70 – 84
National	85+	85+

### 6.2 Potential Impacts

Many wintering bird species tend to favour habitat that provides opportunities for sheltering, commuting and/or foraging. Habitats used by wintering birds within the Site red line boundary include woodland and scrub which will be impacted during construction through removal of vegetation and disturbance by noise and vibration. During the operational phase of the scheme, additional train movements will likely impact on these areas through additional disturbance.

Disturbance in the form of noise, vibration and additional lighting during both construction and operation also has the potential to travel across the study area and impact on wintering bird species within the wider study area. No direct impacts to these species are considered likely during construction; however, as they are expected to commute across the study area, there is the potential for an increased number of collisions with the increased number of trains during the operational phase of the scheme.

### **6.3 Impact on individual species**

Overall it is considered that collision rates could increase as the train activities increase along the existing line; however in line with previous railway studies, it is not considered that there will be a significant mortality rate to those wetland bird species that the SPA has been designated for such as avocet, dunlin and redshank (Godinho et al 2017). Nevertheless, mitigation should be included to steer other bird species, in particular those that fly in flocks and at lower levels, away from potential collision points.

Certain species recorded are known to be more likely to collide with trains, for example kestrel were frequently observed near the existing line during the surveys and railway ecology studies specifically identify that raptors can be impacted by collisions along rail corridors (Godinho et al 2017). An increase in use of the line during both winter (when extra foraging is required during the cold months) and spring/summer (when they will be regularly hunting to feed chicks) will be when this species is likely to be at increased risk from the increase of activity on the line.

Mute swans were also frequently recorded within the wider study area during the wintering bird surveys and will commute and migrate during both day and by night. Especially in winter, this species will be at an increased risk of collision when it is dark earlier in the day. Mute swan is an amber listed species and is highlighted as being of increased risk of rail activities (Godinho et al 2017).

Mallard also has the potential to be largely impacted by collisions with trains (Godinho et al 2017). Mallard is an amber listed species and therefore the increased activity of the line will likely increase the number of collisions for this species.

## 7 Recommendations and Mitigation Measures

The ecological impact hierarchy requires that all steps are taken to avoid adverse impacts to habitats and species. Only where impacts cannot be avoided, steps should be taken to mitigate for any losses within the scheme boundary. In cases where all options for on-site mitigation have been exhausted, offsite compensation measures can be considered.

The following mitigation measures are recommended to provide sheltering habitat, food sources and commuting opportunities for those wintering species identified during the surveys.

### 7.1 Timings of Construction Works

Where possible timing of construction works should be between September and December to avoid the nesting bird season. This will overlap with the beginning of the overwintering bird season and therefore methods to ensure reduced noise, vibration and dust must be used. As the construction works will be temporary in duration and are unlikely to commit offences with respect to wintering birds, no further timing constraints are considered necessary at this stage.

### 7.2 Pollution Prevention

All proposed work must strictly be in accordance with all relevant Pollution Prevention Guidelines (PPG) published by the Environment Agency which may include but is not limited to PPG1 (general), PPG5 (works in, near, or liable to affect watercourses) and PPG6 (work at construction & demolition sites). Contingency plans should be drawn up to address chemical spillage, collision, etc. Spill kits should be kept onsite permanently throughout the operational phase with residents given clear instruction on how and when to use them.

### 7.3 Reduction in Train Speeds

It is recommended that a speed limit is put in place on the line, in particular when traveling adjacent to the Ramsar, SPA and SSSI designated sites. Greater speeds are largely associated with a greater risk of wildlife mortality and therefore putting a speed limit in place would allow for the protection of many bird species migrating and commuting through this area. This speed restriction should be put in place all year round as many of the wintering bird species recorded are UK residents that are likely to also use the study area for breeding during the Spring and Summer.

### 7.4 Vegetation Removal

Vegetation including trees and scrub should be retained where possible to maintain a visual barrier between the existing railway line and the adjacent habitats. Pruning should be considered as an option over of tree removal.

Where this is not possible, vegetation removal should be minimised, and where possible utilise existing vegetation gaps for the installation of the proposed works structures. The removal of vegetation should occur outside of the nesting bird season, which usually takes place from late March to September (inclusive, weather dependent). In the event that this is not possible then all vegetation removal works should be preceded by a survey conducted by a suitably qualified ecologist to check for nesting birds and to advise accordingly on the most appropriate way to

proceed. Furthermore, should any active nests (from when the nest is in the process of being built, until all the nestlings have fledged and naturally left the nest) be discovered during the works, then works to the area around the nest must stop immediately and a suitably qualified ecologist called in to check the nest and advise on the most appropriate way to proceed.

## **7.5 Landscape Planting and Sheltering Provision**

It is recommended that landscape proposals aim to shelter the existing railway from the adjacent designated sites with the goal of preventing train collisions with wintering birds. Parts of the existing railway are bounded by woodlands and tree line; however other sections encompass relatively low-lying vegetation with the railway on an embankment and allow open access from the surrounding landscape to potential collision areas (i.e. the active train line).

Landscape plans should be in line with Network Rail planting policies and may require planting along additional sections of the railway to the planned dualling works.

It is considered likely that bird species will be using the woodland and scrub alongside the railway line for winter sheltering. It is recommended that a series of roosting pockets are installed within retained vegetation present within the Site. Those shown in Figure 2 or similar would provide suitable winter shelter for many species and will also provide nesting habitat for species such as wren and dunnock.

**Figure 2 Bird Roosting Pockets, suitable for winter sheltering and nesting for smaller birds such as wren and dunnock**



## 8 Summary

A total of 77 species were recorded within the study area, which therefore falls into the regional importance category as a wintering site for the bird assemblage present in the area. Species including avocet, dunlin and redshank recorded within the study area are qualifying features for which the Thames Estuary has been designated as Ramsar and SPA and therefore the nature conservation value of the wintering bird population within the study area is of international value. A total of 77 species were recorded within the study area and therefore falls into the regional importance category.

Generally wintering bird report assessments would not consider the species recorded in the wider area to the Site with too much importance. However, due to the potential for collision and bird strike from the reopening of the Grain Branch Line for passenger services, notable species within the entire study area are considered to be relevant.

Habitats used by wintering birds within the Site red line boundary include woodland and scrub which will likely be impacted during construction through removal and disturbance by noise and vibration. The wider study area also includes marshy grasslands, ditches and hedgerows. During the operational phase of the scheme, additional train movements will likely impact on these areas through additional disturbance in the form of noise, lighting and vibration.

Disturbance by noise, vibration and lighting during both construction and operation also has the potential to travel across the study area and impact on wintering bird species within the wider study area. No direct impacts to these species are considered likely during construction; however, as they are expected to commute across the study area, there is the potential for an increased number of collisions with the increased number of trains during the operational phase of the scheme.

Overall it is considered that collision rates could increase as the train activities increase along the existing line; however in line with previous studies of railway impacts on birds, it is not considered that there will be a significant mortality rate to those wetland bird species that the SPA has been designated for (Godinho et al 2017). Nevertheless, mitigation should be included to steer bird species, in particular those that fly in flocks and at lower levels, away from potential collision points.

Mitigation measures have been outlined to prevent increases in bird collision including reduction in train speed and landscape planting along the Network Rail boundary.

## 9 Wintering Bird Survey Report Limitations

The information reported herein is based only on the interpretation of data collected during the protected species survey visits. This work pertains specifically to the identification of protected species on the proposed site. Information provided to Pell Frischmann has been accepted as being accurate and valid.

This report has been prepared by Pell Frischmann with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client.

The evaluation and conclusions do not preclude the existence of other protected species, which could not reasonably have been revealed by the comprehensive desk studies, site visit and protected species surveys. Hence, this report should be used for information purposes only and should not be construed as a comprehensive characterisation of all site habitats.

In addition, this report details only the conditions on site, at the time of reporting. The dynamic nature of the natural environment will result in changes to the surrounding environment as seasons change. No responsibility is taken by Pell Frischmann to the existence of additional species identified on this site at a later date.

This report has been prepared solely for the use of Medway Council and may not be relied upon by other parties without written consent from Pell Frischmann. In addition, it must be understood that this report does not constitute legal advice.

Pell Frischmann disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

## 10 References

British Trust for Ornithology. Online [www.bto.org](http://www.bto.org)

Eaton, M., Aebischer, N., Brown, B., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D., and Gregory, R. (2015) *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds 108 pg 708-746.

Fuller, (1980) *A method for assessing the ornithological importance of sites for nature conservation*. Biological Conservation 17:229-239.

Gilbet, G., Gibbons, D., and Evans, J. (2008) *Bird Monitoring Methods: A manual of techniques for key UK species*. The Royal Society for the Protection of Birds (RSPB).

Godinho C. et al. (2017) Bird Collisions in a Railway Crossing a Wetland of International Importance (Sado Estuary, Portugal). In: Borda-de-Água L., Barrientos R., Beja P., Pereira H. (eds) *Railway Ecology*. Springer, Cham. [https://doi.org/10.1007/978-3-319-57496-7\\_7](https://doi.org/10.1007/978-3-319-57496-7_7)

Institute of Ecology and Environmental Management, (2016). *Guidelines for Ecological Impact Assessment in the United Kingdom*.

Chartered Institute of Ecology and Environmental Management, (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater and Coastal*

JNCC, (2007). UK *Biodiversity Action Plan (UKBAP) priority bird species*. Online [jncc.defra.gov.uk/page-5163](http://jncc.defra.gov.uk/page-5163)

JNCC, (2010). *Wildlife and Countryside Act (WCA) 1981 (amended)*. Online [jncc.defra.gov.uk/page-1377](http://jncc.defra.gov.uk/page-1377)

Kent and Medway Biological Records Centre (KMBRC) data search ref ENQ/19/268 (19/06/2019)

Multi Agency Geographic Information for the Countryside (MAGIC). Online [magic.defra.gov.uk](http://magic.defra.gov.uk)

National Biodiversity Network (NBN) database. Online [www.nbn.org.uk](http://www.nbn.org.uk)

Natural England. Online <http://publications.naturalengland.org.uk/publication/3227002>

Ramsar Sites Information Service. Online <https://rsis.ramsar.org/ris/1025>

Royal Society for the Protection of Birds Document Library. Online [www.rspb.org.uk](http://www.rspb.org.uk), accessed on 09/04/2019.

## **Appendix A**

### **Bird Species Codes**

Hoo Station GRIP 3 Reopening of the Grain Branch Line for Passenger Services  
103223-PEL-G3-H01-REP-EVV-0004-A Wintering Bird Survey Report

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Species	BTO Code
Avocet <i>Recurvirostra avosetta</i>	AV
Bar-headed goose <i>Anser indicus</i>	BAR
Blackbird <i>Turdus merula</i>	B.
Blackcap <i>Sylvia atricapilla</i>	BC
Black-headed gull <i>Chroicocephalus ridibundus</i>	BH
Blue tit <i>Cyanistes caeruleus</i>	BT
Bullfinch <i>Pyrrhula pyrrhula</i>	BF
Buzzard <i>Buteo buteo</i>	BZ
Carrion crow <i>Corvus corone</i>	C.
Cormorant <i>Phalacrocorax carbo</i>	CA
Collared dove <i>Streptopelia decaocto</i>	CD
Chaffinch <i>Fringilla coelebs</i>	CH
Chiffchaff <i>Phylloscopus collybita</i>	CC
Canada Goose <i>Branta canadensis</i>	CG
Common Gull <i>Larus canus</i>	CM
Curlew <i>Numenius arquata</i>	CU
Cetti's warbler <i>Cettia cetti</i>	CW
Coot <i>Fulica atra</i>	CO
Dunnock <i>Prunella modularis</i>	D.
Dunlin <i>Calidris alpina</i>	DN
Egyptian goose <i>Alopochen aegyptiaca</i>	EG
Feral pigeon <i>Columba livia domestica</i>	FP
Fieldfare <i>Turdus pilaris</i>	FF
Gadwall <i>Anas strepera</i>	GA
Green woodpecker <i>Picus viridis</i>	G.
Great crested grebe <i>Podiceps cristatus</i>	GG
Greylag goose <i>Anser anser</i>	GJ
Great spotted woodpecker <i>Dendrocopos major</i>	GS
Great tit <i>Parus major</i>	GT
Great black-backed gull <i>Larus marinus</i>	GB
Grey partridge <i>Perdix perdix</i>	P.
Grey heron <i>Ardea cinerea</i>	H.
Goldfinch <i>Carduelis carduelis</i>	GO
Herring gull <i>Larus argentatus</i>	HG
House sparrow <i>Passer domesticus</i>	HS

Hoo Station GRIP 3 Reopening of the Grain Branch Line for Passenger Services  
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Species	BTO Code
Jackdaw <i>Corvus monedula</i>	JD
Jay <i>Garrulus glandarius</i>	J.
Kestrel <i>Falco tinnunculus</i>	K.
Kingfisher <i>Alcedo atthis</i>	KF
Little grebe <i>Tachybaptus ruficollis</i>	LG
Lapwing <i>Vanellus vanellus</i>	L.
Little egret <i>Egretta garzetta</i>	ET
Lesser black-backed gull <i>Larus fuscus</i>	LB
Long-tailed tit <i>Aegithalos caudatus</i>	LT
Magpie <i>Pica pica</i>	MG
Mallard <i>Anas platyrhynchos</i>	MA
Meadow pipit <i>Anthus pratensis</i>	MP
Mute swan <i>Cygnus olor</i>	MS
Mistle thrush <i>Turdus viscivorus</i>	M.
Moorhen <i>Gallinula chloropus</i>	MH
Oystercatcher <i>Haematopus ostralegus</i>	OC
Pheasant <i>Phasianus colchicus</i>	PH
Pochard <i>Aythya farina</i>	PO
Pied wagtail <i>Motacilla alba</i>	PW
Redwing <i>Turdus iliacus</i>	RE
Reed bunting <i>Emberiza schoeniclus</i>	RB
Redshank <i>Tringa totanus</i>	RK
Robin <i>Erithacus rubecula</i>	R.
Raven <i>Corvus corax</i>	RN
Stonechat <i>Saxicola rubicola</i>	SC
Starling <i>Sturnus vulgaris</i>	SG
Snipe <i>Gallinago gallinago</i>	SN
Skylark <i>Alauda arvensis</i>	S.
Swift <i>Apus apus</i>	SI
Stock dove <i>Columba oenas</i>	SD
Swallow <i>Hirundo rustica</i>	SL
Short-eared owl <i>Asio flammeus</i>	SE
Shoveler <i>Anas clypeata</i>	SV
Song thrush <i>Turdus philomelos</i>	ST
Shelduck <i>Tadorna tadorna</i>	SU

Hoo Station GRIP 3 Reopening of the Grain Branch Line for Passenger Services  
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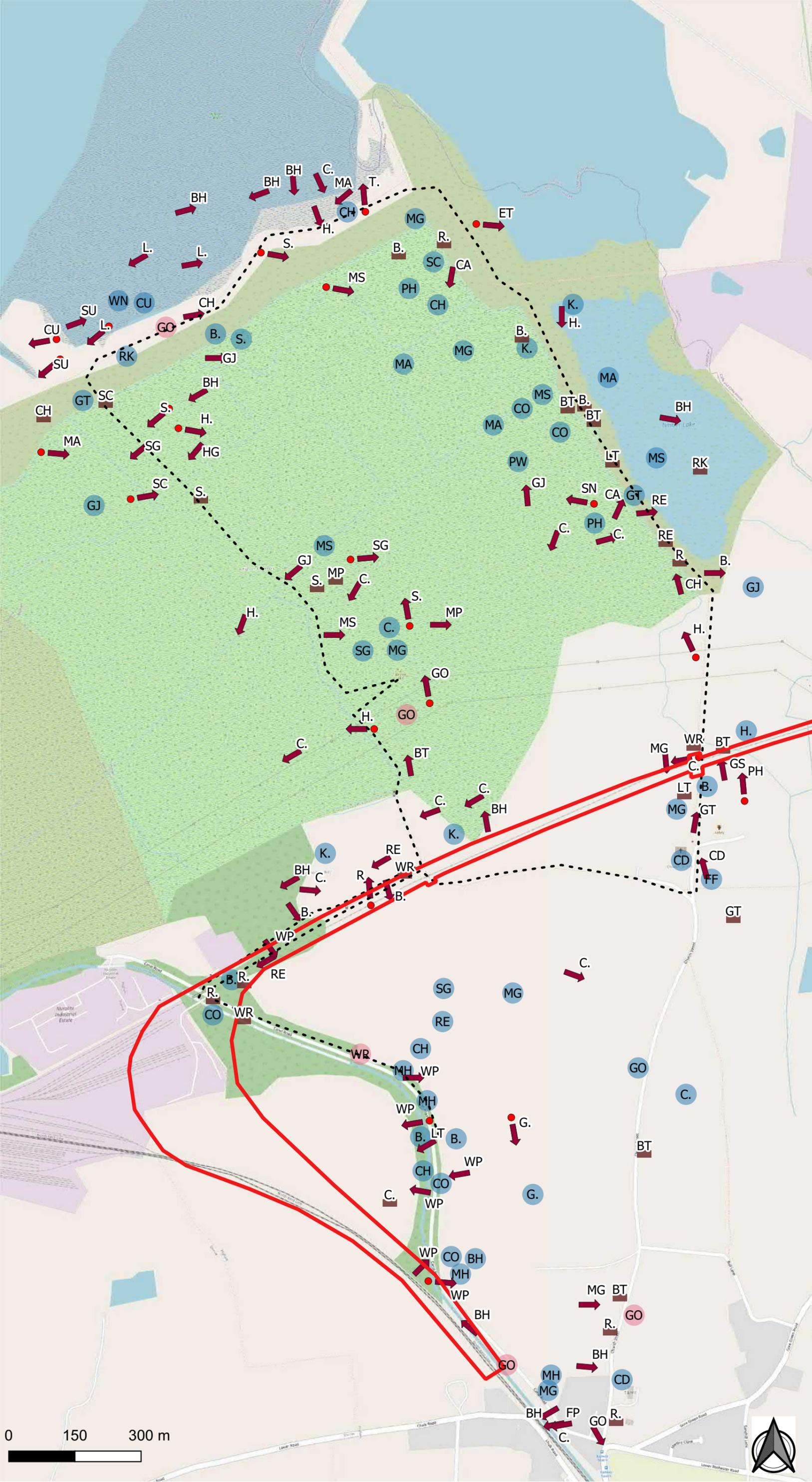
Species	BTO Code
Teal <i>Anas crecca</i>	T.
Tufted duck <i>Aythya fuligula</i>	TU
Wigeon <i>Anas Penelope</i>	WN
White-fronted Goose <i>Anser albifrons</i>	WG
Woodpigeon <i>Columba palumbus</i>	WP
Wren <i>Troglodytes troglodytes</i>	WR
Whooper swan <i>Cygnus cygnus</i>	WS

## **Appendix B**

# **Wintering Bird Survey Maps**

Legend

- Site Red Line Boundary
- Survey Transect Route
- Bird Singing
- Bird Calling
- ↑ Bird Flight Direction
- ↑ Bird Flight Direction & Taking Off
- Bird Seen Only



Hoo Station GRIP 3-  
Reopening of the Grain  
Branch Line for  
Passenger Services

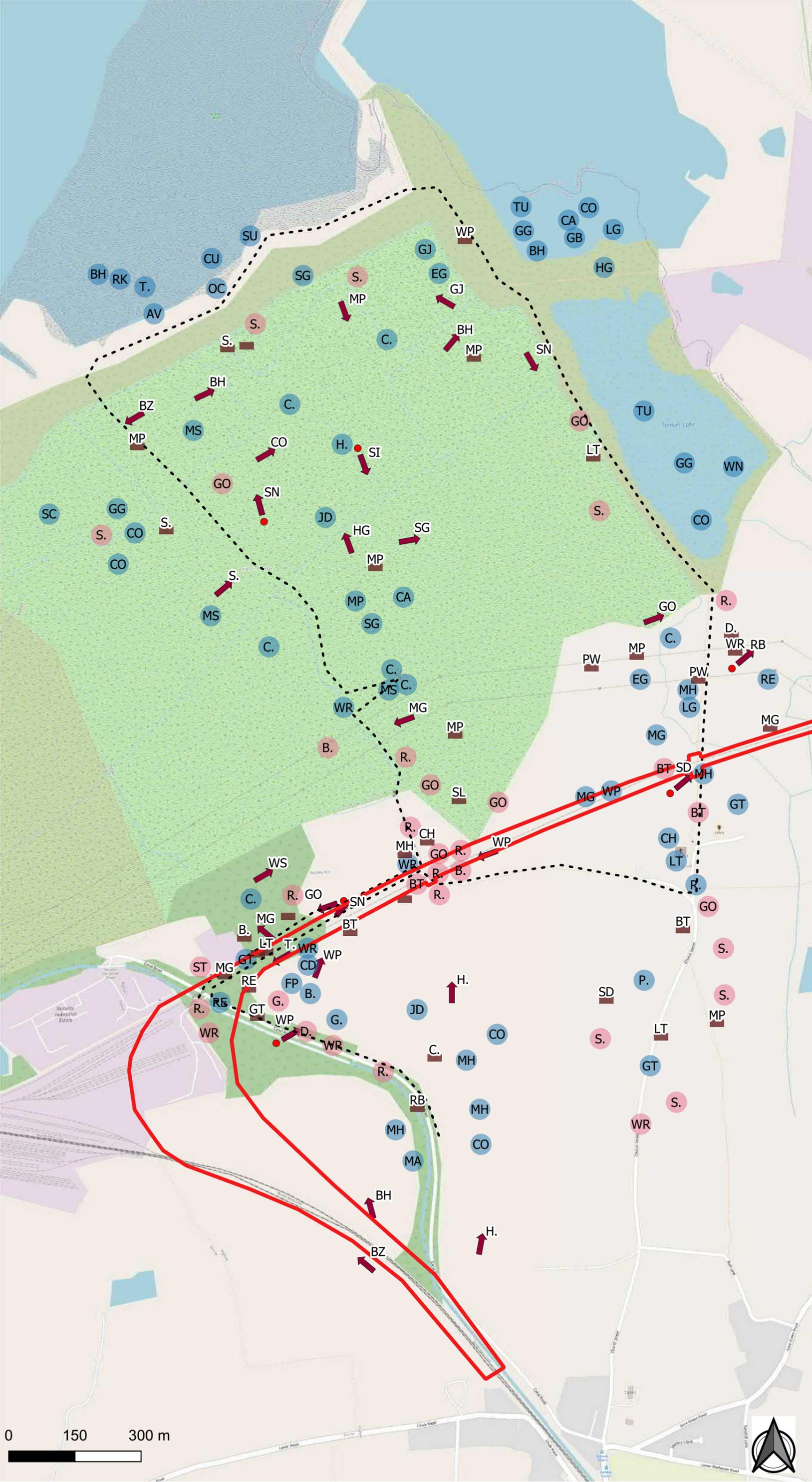
Wintering Bird Map

December 2019



Legend

- Site Red Line Boundary
- Survey Transect Route
- Bird Singing
- Bird Calling
- ↑ Bird Flight Direction
- ↑ Bird Flight Direction & Taking Off
- Bird Seen Only



Hoo Station GRIP 3-  
Reopening of the Grain  
Branch Line for  
Passenger Services

Wintering Bird Map

January 2020 (Survey 1)

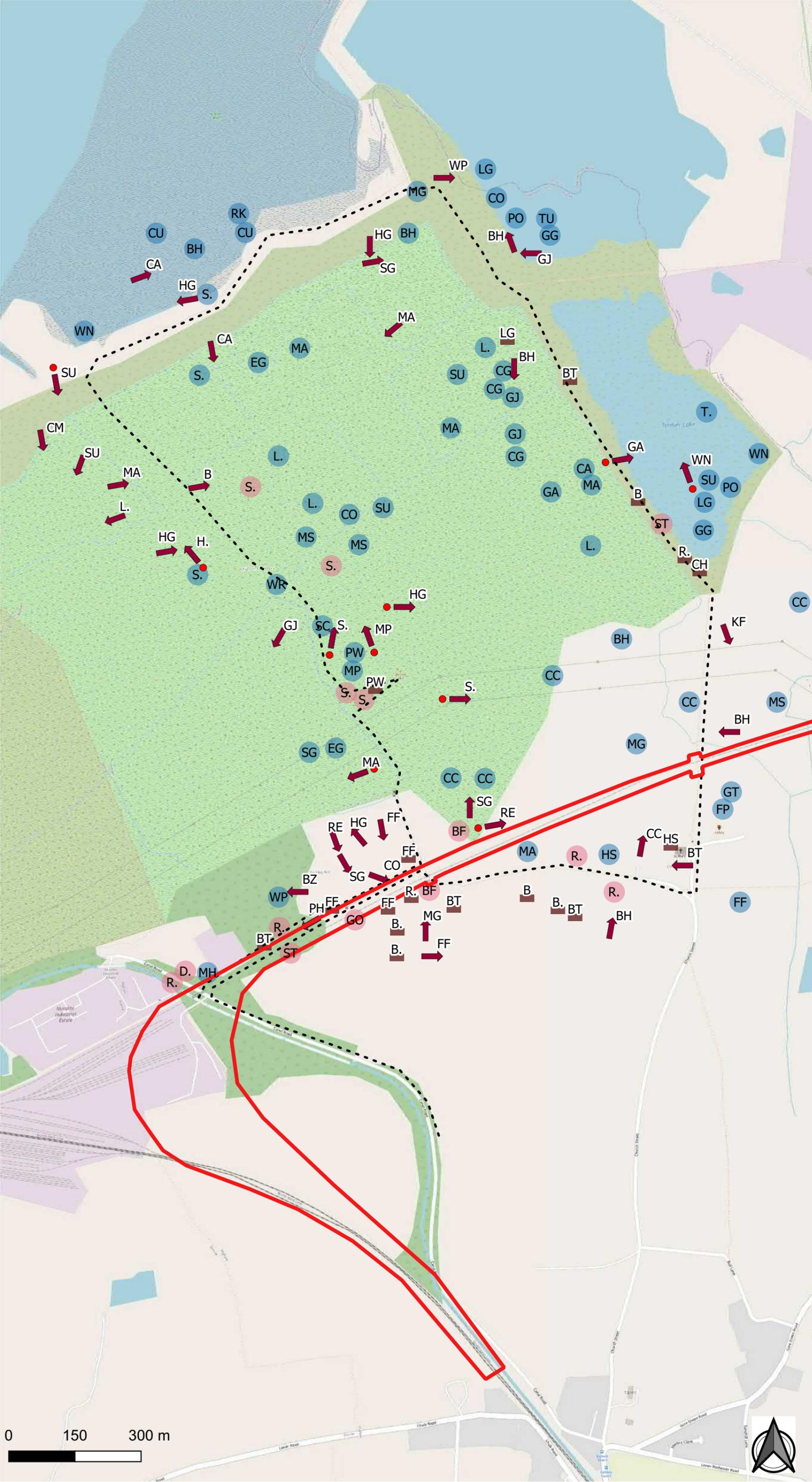






Legend

-  Site Red Line Boundary
-  Survey Transect Route
-  Bird Singing
-  Bird Calling
-  Bird Flight Direction
-  Bird Flight Direction & Taking Off
-  Bird Seen Only



Hoo Station GRIP 3- Reopening of the Grain Branch Line for Passenger Services

Wintering Bird Map

February 2020 (Survey 2)



