

Appendix 6-3

Bird Survey Report

Timahoe North Bird Survey Report Winter & Breeding Bird Surveys 2016/2017

Timahoe, Co. Kildare



Planning & Environmental Consultants

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1 INTRODUCTION

McCarthy Keville O’Sullivan (MKO) was appointed by Bord na Mona in November 2016 to carry out survey works at Timahoe North for the period spanning from November 2016 to June 2017. The site is located South of Johnstown Bridge (Grid Ref: N 276,193 234,974) and approximately six kilometers east of Carbury, Co. Kildare. This report has been compiled to provide information regarding the ecological status of bird populations at the site. The site is predominately cutover bog with areas of woodland scrub and permanent wetland habitat. The entire cumulative area of the site is approximately 804ha in size, while the solar array development area is approximately 200ha in size. The development area and site boundary can be seen in Appendix 1-3 Figure 1.1.

McCarthy Keville O’Sullivan has extensive experience in carrying out ornithological surveys for proposed renewable energy sites including Cloncreen Co. Offaly, Knockalough Co. Galway and Lettergunnet Co. Galway, all of which have been granted planning permission.

This report describes the ornithological survey methods and survey data collected at Timahoe, Co. Kildare for the period from November 2016 to June 2017. This report also contains information from desktop studies. Particular attention has been paid to species of conservation importance and the identified target species.

This report is supported by Technical Appendix 1-2 which contains the raw data from the bird surveys undertaken during 2016/2017. This includes detail on survey times, weather conditions, surveyors, survey results and other additional information. Figures showing identified breeding territories during 2017 surveys are included in Appendix 1-3, while Appendices 1-4, 1-5, 1-6 and 1-7 contain extracts relevant to the Timahoe site from previous Biosphere Environmental Services (BES) reports for Bord na Mona.

The report is structured as follows:

- An introduction providing a description of the background and statement of authority regarding ornithological works.
- A description of the desktop study and consultation carried out with regards to the site.
- A comprehensive description of the ornithological surveys carried out.
- A full description of the results for all ornithological surveys carried out.

The following defines terms used in this report

- “Zones of Influence” (ZOI) for potential ornithological receptors refers to the zone within which potential effects are anticipated. ZOIs were assigned following best available guidance (SNH 2016 and McGuinness et.al 2015).

1.1 Statement of Authority

This survey report has been prepared by David Naughton (B.Sc. Environmental Science) an Ornithologist with MKO and Director of Ecology Pat Roberts (B.Sc. Environmental Science). The field surveys were undertaken by Mr. John Hehir (B.Sc. Wildlife Biology), Ms. Julie O’Connor (M.Sc. Ecological Assessment) and Mr. Patrick Manley (B.Sc. Geology). All are competent experts in bird surveying.

CVs are provided in Appendix 1-1 of this report.

2 DESK STUDY & CONSULTATION

2.1 Desk Study

A comprehensive desk study was undertaken prior to surveys in winter 2016 to search for any relevant information on species of conservation concern which may potentially make use of the study area. The assessment included a thorough review of the available ornithological data including:

- Review of previous Bord na Mona bird survey reports for winter 2012/2013 and the 2014 breeding season at Derrygreenagh Ballydermot Bog complex's. Relevant data for Timahoe was extracted and is included in Appendix 1-4, Appendix 1-5, Appendix 1-6 and Appendix 1-7.
- Review of online web-mappers: National Parks and Wildlife Service (NPWS), National Biodiversity Data Centre (NBDC), Irish Wetland Bird Survey I-WeBS.
- Review of Bird Atlases: (Balmer et al., 2013).
- Review of Birds of Conservation Concern (BoCCI) in Ireland 2014-2019 (Colhoun & Cummins, 2013)
- Review of specially requested records from the NPWS Rare and Protected Species Database.

2.2 Consultation

MKO undertook a consultation exercise during preparation of this report. Table 2.1 provides a list of the organisations consulted and notes where responses have been received.

Table 2.1 Scoping Response Summary

No.	Consultee	Response to Consultation
1	Bird Watch Ireland	Response received 09/05/2018
2	National Parks & Wildlife Services	Response received 14/05/2018

2.3 BES Reports for Bord na Mona

Surveys at the Ballydermot & Derrygreenagh Bog Groups were undertaken by Biosphere Environmental Services (BES) on behalf of Bord na Mona, for four consecutive survey seasons (i.e. two full years). A report was produced representing the findings of each survey season. Timahoe North was included in this complex of Bord na Mona sites in the four different reports. The relevant information on Timahoe North has been extracted from these reports and included as Appendices 1-4 to 1-7 inclusively. A map showing the study area for these surveys can be found in Appendix 1-3 Figure 1.1.

- Appendix 1-4 contains the findings at Timahoe North for the winter survey season 2012/2013.
- Appendix 1-5 contains the findings at Timahoe North for the breeding survey season 2013.
- Appendix 1-6 contains the findings at Timahoe North for the winter survey season 2013/2014.
- Appendix 1-7 contains the findings at Timahoe North for the breeding survey season 2014.

2.4 Method for Identification of Target Species

Following a comprehensive desk study of the site by MKO, initial surveys carried out in November 2016 and consultation, a list of “Target species” likely to occur at the site was compiled. The observation/survey work carried out on the site was specifically designed to survey for these identified target species in accordance with SNH guidance (2014). The target species list was drawn from:

- Annex I of the Birds Directive
- Special Conservation Interests (SCI) of Special Protection Areas (SPA) within the zone of likely significant effects
- Species protected under the fourth schedule of the Wildlife Acts 1976-2012
- Red listed birds of Conservation Concern
- Species of significance recorded in previous surveys of the site
- Snipe were include as a target species due to their significance in breeding wader populations in County Kildare as mentioned in previous reports.

2.5 Field Surveys

This section of the report describes the various field survey methodologies employed and survey rationale for the various survey methods undertaken. Field surveys were conducted from November 2016 – June 2017. The data provided in this report is robust and allows clear, precise and definitive conclusions to be made with regards to the likely significant effects on avian receptors identified within the subject site. Field survey methodologies have been devised to survey for the bird species composition and assemblages that occur within the study area.

2.5.1 Initial Site Assessment

Based on the results of the desk study and reconnaissance site visits, the likely importance of the study area for bird species was determined. Based on the collated information available from the above preliminary assessment and adopting a precautionary approach, a site-specific scope for the ornithological surveys was developed.

2.5.2 Winter Walkover Survey

Winter transect surveys were conducted to determine the presence of bird species of high conservation concern within area of potential suitable habitat in the study area. The survey area extended 500m outside the site boundary.

Transect routes were devised to ensure coverage of different habitat complexes between vantage point locations within the study area. Methodology was broadly based on methods described in Bibby et al. (2000). Target species were raptors, waterbirds, gulls and ground birds of conservation interest. Along with target species, all additional species observed were recorded to inform the evaluation of supporting habitat.

Walkover surveys were carried out during the months of November, December, January, February and March for the 2016/2017 winter period, with the site being visited twice a month on each occasion.

Survey effort, including details of survey duration and weather conditions, is presented in Appendix 1-2. Figure 2.1 in Appendix 1-3 shows the transect route locations.

2.5.3 Wetland Survey

Significant wetland sites within 1km outside the study area were surveyed for waterbird populations (*i.e.* waders, waterfowl, gulls, grebes and rails). The survey area extended approximately one kilometer outside the site boundary which exceeds the 500m recommendation stipulated in SNH Guidance. The extensive surveys aimed to provide contextual information for the Proposed Development site when compared to areas of suitable wintering habitat elsewhere in the surrounding hinterland. Count methodology was in line with survey methodology guidelines issued by SNH (2014) and BirdWatch Ireland (2015). An initial survey was undertaken in November 2016. No species were recorded at all in the hinterland wetlands and as such these surveys were discontinued in further months instead focusing all of the survey effort to within 500m of the site boundary as recommended in SNH guidance. Survey effort is presented in Appendix 1-2. Figure 2.2 in Appendix 1-3 shows the wetland site survey area.

2.5.4 Breeding Walkover Survey

Surveys were conducted following the O'Brien and Smith methods in 2017 (April – June). The survey area extended 500m beyond the site boundary. Transects were positioned taking into account the nature of the habitats within the site. The area between the site boundary and 500m buffer comprised of improved agricultural grassland and mature conifer plantation. Neither habitat has much potential to support any target species and proved inaccessible in any rate due to landowner issues and the density of the wood.

Audible and visual registrations were recorded during the surveys. O'Brien and Smith surveys target potential breeding territories of raptors, waterbirds and ground birds of conservation concern, (*e.g.* waders). All other species observed were recorded to assess the importance of the study area for breeding. Transect surveys were employed to identify breeding birds and the presence of passerines to inform on likely habitat loss. The area was visited on three occasions each month during the breeding season (April – June). Survey effort is presented in Appendix 1-2. Figure 2.3 in Appendix 1-3 shows the transect route locations.

2.6 Survey Justification

A comprehensive suite of bird surveys were undertaken at the site between November 2016 and June 2017, as detailed in this report.

Results from both survey seasons during 2016/2017 are derived from continuous surveying undertaken in strict accordance with SNH Guidance.

The surveys undertaken provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of proposed developments on avian receptors. The survey duration and scope is considered entirely satisfactory based on the following considerations:

- The proposed development site is predominately open cutover bog with areas of woodland scrub. Most of the areas within the development site do not provide optimal habitat for many wintering or breeding bird species.

2.7 Baseline Conditions and Receptor Evaluation

2.7.1 Desk study Results

2.7.1.1 Identification of Designated Sites within the Likely Zone of Influence

Using GIS software, sites designated for nature conservation within the potential ZOI of any proposed wind farm development were identified. The ZOI was derived utilising a precautionary approach. Sites within a 15 kilometre radius of the proposed works were identified.

In addition, and in the absence of any specific European or Irish guidance, the Scottish Natural Heritage (SNH) Guidance, *'Assessing Connectivity with Special Protection Areas (SPA)'* (2016) was consulted. This document provides guidance in relation to the identification of connectivity between proposed development proposals and Special Protection Areas. The guidance takes into consideration the distances some species may travel beyond the boundary of their SPAs and outlines information on dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects.

Designated sites located within the Likely Zone of Influence are listed below in Table 2.2 and illustrated in Appendix 1-3, Figure 2.4.

Table 2.2 Designated sites within 15 kilometres of site

Designated site and code	Distance from proposed works (Km)
Special Protection Areas (SPA)	
River Boyne and River Blackwater (004232)	9.3
Special Areas of Conservation (SAC)	
Ballynafagh Lake (001387)	4.4
Ballynafagh Bog (000391)	5.2
The Long Derries, Edenderry (000925)	7.1
River Boyne and River Blackwater (002299)	9.2
Mouds Bog (002331)	11.9
Natural Heritage Area (NHA)	
Hodgestown Bog (001393)	3.8
Carbury Bog (001388)	4.4
Molerick Bog (001582)	12.4
Black Castle Bog (000570)	14.9
Proposed Natural Heritage Area (pNHA)	
Royal Canal (002103)	3.8
Grand Canal (002104)	5.0
Donadea Wood (001391)	5.1
Ballynafagh Lake (001387)	5.4
Ballina Bog (000390)	5.9
Ballynafagh Bog (000391)	6.2
The Long Derries, Edenderry (000925)	8.1
Ballynabarny Fen (001573)	11.0
Rathmoylan Esker (000557)	11.3
Mouds Bog (000395)	12.9

2.7.1.2 Breeding and Winter Bird Atlas Records

Bird Atlas 2007-11: The breeding and wintering birds of Britain and Ireland (Balmer et al., 2013) is the most recent comprehensive work on wintering and breeding birds in Ireland.

The entire study area lies within hectad N73. Table 2.3 presents a list of species of ornithological interest recorded within the hectad.

Table 2.3 Bird atlas data for relevant hectad

Species Name	Winter Atlas 07-11 Hectad (N73)	Breeding Atlas 07-11 Hectad (N73)	Conservation Status
Hen Harrier (<i>Circus cyaneus</i>)	Present	-	Annex I EU Birds Directive
Peregrine (<i>Falco peregrinus</i>)	Present	Confirmed	Annex I EU Birds Directive
Merlin (<i>Falco columbarius</i>)	Present	Possible	Annex I EU Birds Directive
Kingfisher (<i>Alcedo atthis</i>)	Present	Possible	Annex I EU Birds Directive
Golden Plover (<i>Pluvialis apricaria</i>)	Present	-	Annex I EU Birds Directive, BOCCI Red Listed
Little Egret (<i>Egretta garzetta</i>)	Present	-	Annex I EU Birds Directive
Lapwing (<i>Vanellus vanellus</i>)	Present	Confirmed	BOCCI Red Listed
Whinchat (<i>Saxicola rubetra</i>)	-	Confirmed	BOCCI Red Listed
Woodcock (<i>Scolopax rusticola</i>)	Present	Probable	BOCCI Red Listed
Curlew (<i>Numenius arquata</i>)	Present	Confirmed	BOCCI Red Listed
Yellowhammer (<i>Emberiza citronella</i>)	Present	Probable	BOCCI Red Listed
Meadow Pipit (<i>Anthus pratensis</i>)	Present	Confirmed	BOCCI Red Listed

Twelve species listed in Annex I of the EU Birds Directive or on the BoCCI red list have been recorded within the relevant ten kilometre square during surveys for the most recent breeding and wintering bird atlases. Table 2.3 above, outlines those species recorded in the relevant hectad during the most recent breeding and winter bird atlas studies that are also protected under the EU Birds Directive or mentioned on the Birds of Conservation Concern in Ireland (BoCCI) red list.

2.7.1.3 BES Reports for Bord na Mona

Each survey season was reported on and the findings from the surveys were discussed to conclude importance of the site for the species in question.

The winter bird survey 2012-2013 report presents the following:

- **Lapwing** was observed on two occasions, both instances were small flocks.
- **Hen Harrier** was observed only once in a hunting flight during March 2013.
- **Merlin** was observed once in a hunting flight.
- **Buzzard** was observed once.
- **Snipe** were recorded on nine occasions during the entire survey period.

A tentative rating of **Local Importance** was assigned for Wetland Birds and Hen Harrier at the site.

The summer bird survey 2013 report presents the following:

- **Lapwing** – Two displaying pairs were recorded as present throughout the season.
- **Little Egret** – One bird was observed feeding in wetlands in June 2013.
- **Buzzard** – Seen regularly. Probable breeding nearby.
- **Kestrel** – Seen regularly. Probable breeding nearby.
- **Snipe** – Estimated that six pairs bred in the study area throughout the season.
- **Teal** – Estimated that two pairs breed on site.
- **Little Grebe** – Three pairs present throughout the summer.
- **Water Rail** – Heard calling from two different locations in June.

A tentative rating of **County Importance** was assigned for Breeding Wetland Birds at the site. However, it should be noted that the breeding wetland birds include Snipe which is an abundant species and may distort the rating of County Importance for Wetland Birds, as the only other wader species breeding at the site was Lapwing.

The winter bird survey 2013-2014 report presents the following:

- **Lapwing** was observed on four occasions, two observations were small flocks flying over the site, while the other two observations were displaying birds during a single survey on March 12th 2014.
- **Hen Harrier** was observed on three occasions in hunting/travelling flights.
- **Peregrine** was observed twice flying over the site.
- **Golden Plover** was observed on six occasions, each observation was of a small flock of birds.
- **Whooper Swan** was observed on four occasions, each time in a flock of less than five birds.
- **Woodcock** was observed displaying (roding) on four occasions during a survey on March 12th 2014.
- **Sparrowhawk** was observed in most months. A pair were observed displaying in February.
- **Kestrel** was observed in most months. A pair were observed in March.
- **Buzzard** was recorded throughout the season. A pair were observed displaying in February and March 2014 over the Northern part of the site.
- **Snipe** had a peak population count of thirteen birds observed in March 2014.

A tentative rating of **Local Importance** was assigned for Wetland Birds and Hen Harrier at the site.

The summer bird survey 2014 report presents the following:

- **Lapwing** – Three displaying pairs were recorded on the 24th of April but were not recorded in May. Regular presence of Hooded Crows may have caused the birds to abandon nesting attempts in the area.
- **Water Rail** – Up to four birds calling in late April.
- **Woodcock** – One bird was observed displaying in April.

- **Meadow Pipit** – Estimated to be at least 20 breeding pairs on site.
- **Buzzard** – Seen regularly. Probable breeding nearby.
- **Snipe** – Estimate of at least six displaying birds throughout the breeding season.
- **Teal** – Estimate of one to two breeding pairs throughout the breeding season.
- **Little Grebe** – Two breeding pairs present throughout the summer.
- **Water Rail** – Estimate of at different birds calling in late April.

A tentative rating of **County Importance** was assigned for Breeding Wetland Birds at the site. However, it should be noted that the breeding wetland birds include Snipe which is an abundant species and may distort the rating of County Importance for Wetland Birds, as the only other waders breeding at the site was Lapwing (included even though no birds successfully bred).

2.7.1.4 Irish Wetland Bird Survey (IWeBS) Records

The site is not within a significant distance of any IWeBS site (<15km). The nearest IWeBs site is located approximately 30km from the site.

2.7.1.5 Identification of potential waterfowl habitat

A search for suitable waterfowl roost habitat outside the site but within a one kilometre radius of it was undertaken. This used ortho-base maps and ordnance survey maps of the study area as well as an initial survey on the 28th of November 2017. No sites (e.g. ponds, rivers, lakes, reservoirs) were deemed suitable to support wintering and migratory bird species within a one kilometre radius of the study area, nor were there any waterfowl or wader species observed during the survey in November.

3 FIELD SURVEY RESULTS

3.1 Introduction

A comprehensive list of all bird species recorded within the study area is provided in Appendix 1-2, Table 1. This list also provides the conservation status of each species.

The following target species were recorded during the ornithological surveys in the 2016/2017 winter and/or breeding seasons and observations are described in the sections below:

- Whooper Swan (Annex I; EU Birds Directive)
- Golden Plover (Annex I; EU Birds Directive, BOCCI Red Listed)
- Lapwing (BOCCI Red Listed)
- Wigeon (BOCCI Red Listed)
- Woodcock (BOCCI Red Listed)
- Buzzard (Raptor Species)
- Kestrel (Raptor Species)
- Sparrowhawk (Raptor Species)
- Meadow Pipit (BOCCI Red Listed)
- Snipe (BOCCI Amber Listed, Included as target species in previous reports)

The following sections describe the observations of each target species under the individual survey headings. Raw data and maps are provided in Appendix 1-2 and Appendix 1-3 respectively.

3.2 Winter Walkover Surveys

Winter Walkover Surveys were completed following Bibby *et al.* (2000). Due to the nature of the habitat on site, much of the area on site proved inaccessible in the wetter months than it was during breeding season surveys. Most of the site does not have the potential to support the majority of the wintering target species for this site, as it is dominated by open cutover bog.

3.2.1 Whooper Swan (*Cygnus cygnus*)

This species was only observed on five occasions during winter walkovers. All observations occurred on the same day and within 80 minutes of one and other at the same transect. The observations occurred at transect 5 on the 29/11/2016. One of the observations was just audible calls from the swans with no visual, while the other observations were a flock of five observed twice and a flock of seven also observed twice. Two of the observations related to flight activity.

3.2.2 Golden Plover (*Pluvialis apricaria*)

This species was observed on six occasions during the 2016/17 winter survey period. Five of the observations were birds flushed by the surveyor during walked transects, while the other observation was an individual bird roosting on cutover bog. The six observations were all recorded on just three different surveys. All observations were of individual birds or very small flocks with numbers ranging from one to a flock of 80 birds.

3.2.3 Lapwing (*Vanellus vanellus*)

This species was only observed once during the entire survey period. Observation was of an individual alarm calling in flight over area of transitional woodland scrub. Observation was recorded from transect 1 on the 28/11/2016.

3.2.4 Wigeon (*Anas penelope*)

This species was recorded only twice during the entire winter survey period. Both observations occurred on the 28/11/2016 at Transect 1, within seven minutes of each other. One of the observations was a flock of twenty-five birds flying over the site, while the other was just an observation of eight birds on the water in the pond located in the middle of the cutover bog.

3.2.5 Woodcock (*Scolopax rusticola*)

This species was only observed once during the entire survey period. Observation was of an individual calling from area of dry siliceous heath. Observation was recorded from Transect 6 on the 29/11/2016.

3.2.6 Buzzard (*Buteo buteo*)

This species was observed in flight on three occasions throughout the entire survey period, all of which were individual birds in hunting or travelling flights. One observation was recorded from Transect 6 on 14/12/2016 while the other two were both recorded during the same survey on 20/03/2017.

3.2.7 Kestrel (*Falco tinnunculus*)

This species was observed only twice throughout the entire survey period, both of which were individuals. One observation was a bird heard calling from transitional woodland scrub while the other was a female hunting and hovering over cutover bog.

3.2.8 Meadow Pipit (*Anthus pratensis*)

This species was observed on twenty-four occasions during winter walkover surveys. Fifteen of these observations occurred in November with very few observed in February or March.

3.2.9 Snipe (*Gallinago gallinago*)

This species was observed on forty-one occasions during winter walkover surveys, spread throughout the winter season. Vast majority of observations were of individual birds or birds in small flocks flushed from vegetation or drainage ditches.

3.3 Wetland Survey Results

No waterfowl or waders were observed during hinterland survey at wetlands between the 500m and 1km buffer area of the site boundary on the 28/11/2016. No further surveys were deemed necessary with the focus instead emphasized on the survey area within 500m of the site boundary.

3.4 Breeding Walkover Survey Results

Surveys were conducted following the O'Brien and Smith methods in 2017 (April – June).

The area was visited on three occasions each month during the breeding season (April – June) with much better coverage of the area within site boundary due to bogs being drier and more traversable. The area between the site boundary and 500m buffer

comprised of improved agricultural grassland and mature conifer plantation. Neither habitat has much potential to support any target species and proved inaccessible in any rate due to landowner issues and the density of the wood.

3.4.1 Golden Plover (*Pluvialis apricaria*)

This species was observed on three occasions during the 2017 breeding season survey period. Two of the observations were birds flushed by the surveyor during walked transects, while the other observation was a small flock of 70 birds flying over cutover bog. All three observations occurred in early April (on the 4th, 5th and 6th of April 2017).

3.4.2 Lapwing (*Vanellus vanellus*)

This species was observed on four occasions during the entire survey period. All four observations were of individuals seen in the same area in April and May, with a displaying flight in the same area in June. This area has to be considered as a potential breeding area, although no nest was found, see Appendix 1-3 Figure 2.3.1.

3.4.3 Kestrel (*Falco tinnunculus*)

This species was observed only once throughout the entire survey period. Observation was a single bird in a hunting flight.

3.4.4 Sparrowhawk (*Accipiter nisus*)

This species observed only once throughout the entire survey period. Observation was a single bird in a hunting flight over transitional woodland scrub.

3.4.5 Meadow Pipit (*Anthus pratensis*)

This species was observed over 50 times during breeding walkover surveys. The majority of which occurred in June. Forty-five potential breeding territories were observed, see Appendix 1-2 Table 5 and Appendix 1-3 Figure 2.3.2.

3.4.6 Snipe (*Gallinago gallinago*)

This species was observed over twenty times during breeding walkover surveys. The majority of these observations occurred in early April. Nine potential breeding territories were observed, see Appendix 1-2 Table 5 and Appendix 1-3 Figure 2.3.1.

4 DISCUSSION

The following provides a synopsis of the combined findings of the surveys undertaken during the 2016/2017 winter season (November 2016 – March 2017) and the 2017 breeding season (April 2017 – June 2017) for each of the target species recorded and in relation to the wildfowl on the site.

4.1 Whooper Swan

During the 2016/2017 winter season surveys whooper swan were only observed on five occasions. All observations occurred on the 29/11/2016 within 80 minutes of one and other at transect 5. There were no other observations of this species on or near the site during any other surveys undertaken.

There is very little suitable wintering habitat for this species on or near the site. It is likely that all observations were just commuting through the site. Flocks were recorded in low numbers, this species is not of any major concern to the site at present. In addition this species was not observed in any significance during either the 2012/2013 or 2013/2014 winter periods. This site is of no significant importance for Whooper Swan.

This species breeds in Iceland during the summer months and is therefore was not expected to be observed during breeding walkover surveys, nor was it seen.

4.2 Golden Plover

This species was observed on six occasions during the 2016/17 winter survey period. All observations were of individual birds or very small flocks with numbers ranging from one to a flock of 80 birds.

While during the 2017 breeding season this species was only observed on three occasions. All three observations were of small flocks recorded in early April with no breeding activity observed. It is very likely that all observations in early April were just late migrating birds.

There is very little suitable breeding or wintering habitat for this species on or near the site. It is likely that all observations were just commuting through the site. Flocks were recorded in low numbers. This is re-enforced by results of previous surveys by BES where Golden Plover were not observed in any significant numbers throughout the two years of surveys. This site is of low significance for Golden Plover.

4.3 Lapwing

During the entire winter season Lapwing were only observed once. Observation was of an individual alarm calling in flight on the 28/11/2016.

While during the 2017 breeding season this species was observed on four occasions. Observations in April and May consisted of birds observed in the same general area, although not displaying any breeding activity. Two observations occurred in June within this same area, with individuals in displaying flights on this occasion. While no nest or fledged chicks were observed throughout the surveys, this area has been treated as a potential breeding territory, see Figure 2.3.1.

These results are in line with the findings from the BES survey reports, where no significant flocks are observed during any of the winter seasons, and there was a low amount of breeding activity with just a few displaying birds observed in any of the breeding seasons, but no nests or fledged chicks were recorded during any of the summer surveys. The site is of low significance for Lapwing.

4.4 Wigeon

This species was recorded only twice during the entire winter survey period. Both observations occurred on the 28/11/2016 at Transect 1, within seven minutes of each other. There were no observations of this species throughout the entire breeding season.

Wigeon were not recorded at all during any of the previous surveys at the site by BES. This highlights that the site is of low importance for Wigeon and that the observation during November 2016 was just a small flock passing through the site on way to wintering grounds elsewhere.

4.5 Woodcock

During the entire winter season Woodcock was only observed once. Observation was of an individual calling on the 29/11/2016. There were no observations of this species at all during breeding walkover surveys.

These results are in accordance with results from previous surveys by BES as there was only one reported observation of Woodcock throughout the two-year period. Observation was a displaying bird in April 2014.

Woodcock is only designated as a red listed BOCCI species for the breeding season. Based on the findings from the surveys this site is of little significance for Woodcock.

4.6 Buzzard

The range and population of this species has increased considerably in Ireland in recent years and it is now a common resident in many areas including around the survey site. During the 2016/2017 winter season surveys buzzard were observed on just three occasions throughout the entire survey period, all of which were individuals flying in a hunting or travelling flight. There were no other observations of this species on or near the site during breeding walkover surveys.

Previous surveys from BES assigned Buzzard a probable breeding status within proximity of the site during both the 2013 and 2014 breeding season. Although no confirmed breeding activity is mentioned in the reports.

This species has a green listed BOCCI status and had a very low recorded presence on site. The site is of low significance for this species.

4.7 Kestrel

This species was observed only twice throughout the entire winter survey period, both of which were individuals. In addition, this species was only observed once during breeding walkover surveys. Observations was an individual bird in a hunting flight.

Previous surveys from BES assigned Kestrel a probable breeding status within proximity of the site during 2013 breeding season, although no confirmed breeding activity is mentioned in the reports, just regular observations. However, there were no reported records of Kestrel during the following 2014 breeding season.

This species was rarely recorded on the site and is not dependent upon it.

4.8 Sparrowhawk

This species was not observed throughout the entire winter survey period. During the 2017 breeding season this species was only observed once, in a hunting flight.

Previous surveys by BES indicate similar findings, with this species only recorded during the 2013/2014 winter period, highlighting that the species does not regularly utilize this site.

This is a common and widespread species in Ireland and these low levels of activity are not significant.

4.9 Meadow Pipit

This species was observed numerously throughout both winter walkover and breeding walkover surveys. Forty-five breeding territories were identified for this species within the site.

Surveys by BES during the 2014 breeding season estimated approximately twenty breeding pairs on site. This shows a marked increase in breeding population since then with the numbers more than doubled in the 2017 findings.

While this species is red listed on the Birds of Conservation Concern Ireland for breeding birds, it is one of the most common bird species in Ireland and recent data shows that the species has recovered from the hard winters of 7-8 years ago. Due the now widespread and abundant population of Meadow Pipit, it is not envisaged that the site is of particular significance for the species.

4.10 Snipe

This species was observed numerously throughout both winter walkover and breeding walkover surveys. Nine breeding territories were identified for this species within the site.

Surveys by BES during both the 2013 and the 2014 breeding seasons estimated approximately six breeding pairs on site in both years. This shows a marked increase in breeding population since then with the numbers of breeding pairs up 50% in the 2017 findings.

Snipe is a common and abundant species throughout Ireland but has been assigned a tentative rating of County Importance for the Timahoe site. However, as seen in Figure 2.3.1, Snipe along with other wetland birds do not utilise the project site to a large extent for breeding, instead they are predominately found in the more suitable wetter areas to the South.

4.11 Additional Wetland Bird Species

Due to suitable wetland habitat in the surrounding areas of the site a number of other species of less significance were observed. Details of these species can be found in Appendix 1-2, while Table 1 in Appendix 1-2 shows the conservation status of each species as justification of omission from the target species list.

The species observed during surveys included Grey Heron, Little Grebe, Mallard, Moorhen and Teal. None of these species were observed in any great abundance during either breeding or winter walkover surveys. Breeding territories for all of the above species can be seen in Figure 2.3.1, with the exception of Grey Heron which was only observed once during breeding walkover surveys, flying over the site. Breeding territories are almost exclusively south of the proposed development area in the more suitable wetland habitat. The project site provides lower quality habitat for these species and as such, they are more likely to be found in the surrounding wetland areas to the south.

4.12 Additional Passerine Species

A number of passerines and song birds were observed during both winter and breeding walkovers. Details of these species can be found in Appendix 1-2 Table 1, along with their conservation status as justification of omission from the target species list. However, it is likely that the proposed development will have a significant impact on many of the passerines observed due to habitat loss. Scrub clearance and construction works outside of the breeding season will mitigate any potential impact to the breeding populations of song birds and passerines.

The species most commonly observed during surveys included Blackbird, Blue Tit, Bullfinch, Chiffchaff, Chaffinch, Coal Tit, Dunnock, Lesser Redpoll, Long-tailed Tit, Robin, Wren, Reed Bunting and Willow Warbler. None of these species were observed in any great abundance during either breeding or winter walkover surveys. These species were observed throughout the study area, including the development area, in both the breeding and winter seasons. It is possible that the proposed development will have a significant impact on many of the passerine species listed above. The impacts to these birds can be mitigated by undertaking scrub clearance outside of the breeding season.

5 CONCLUSIONS

Very few issues have been identified, which may lead to constraints on the proposed development or require mitigation measures to reduce or rectify any potential effects on the avifauna of the receiving environment at the Timahoe site. While the initial survey area contains observations of breeding wetland birds such as Lapwing and Snipe, the solar array development area has been refined as seen in Figure 1.1. Very few observations of target species were recorded within the proposed project area during the dedicated bird surveys undertaken at the site. The majority of target bird species activity at the site (in particular breeding wetland birds) were observed within wetland areas occurring outside of the development footprint.

While previous survey reports between 2012 and 2014 attribute County importance for Breeding Wetland Birds, it should be noted that this is highly influenced by breeding pairs of Snipe. This species is widespread and abundant in Ireland and is only afforded Amber status under BOCCI guidelines. The only other wader of notable mention is Lapwing.

However, Lapwing were only observed in low numbers, with no confirmed nests or fledged chicks observed in any of the three breeding seasons examined in this report. There are records of displaying birds, but due to the low recorded presence and unsuccessful breeding attempts by this species, this site is not of any significant importance for breeding Lapwing.

Meadow Pipit were observed throughout the breeding and winter seasons in reasonable numbers with a number of breeding territories identified during the 2017 surveys. However, while this species was included on the Birds of Conservation Concern Ireland red list for breeding populations, it is now one of the most common bird species in Ireland. Recent data shows that the species has recovered from the hard winters of 7-8 years ago and that the population is recovering strongly. Due to the widespread and abundant nature of this species it is not envisaged to be of any significant concern.

All other target species recorded on site were observed in very low numbers with no breeding activity by any species observed. The site is of no real importance for wintering birds with only small flocks or individual birds observed in most cases.

However, it is likely that the proposed development will have a significant impact on many of the passerines observed, including Meadow Pipit, due to habitat loss. These species have been observed utilizing the development area in both winter and breeding walkover surveys, with a number of probable or confirmed breeding birds observed in the areas. Scrub clearance and construction works outside of the breeding season will mitigate any potential impact to the breeding populations of song birds and passerines.

6 REFERENCES

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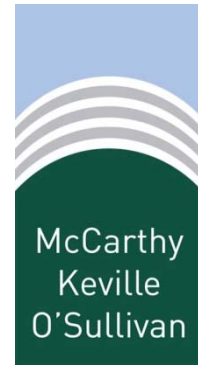
Appendix 1-1

Curriculum Vitae



CURRICULUM VITAE

DAVID NAUGHTON



David is an Ornithologist with McCarthy, Keville & O'Sullivan Ltd. and has been a valuable member of the team since joining in March 2017. David graduated with an honours B.Sc. Degree in Environmental Science from NUIG in 2016. David has a wide range of ecological experience including vegetation surveys, terrestrial invertebrate surveys, freshwater invertebrate surveys, river surveys for salmonids and other fish species, small mammal surveys and habitat identification. David also has experience in GIS software systems for use in interpreting ecological data, including Mapinfo, ArcGIS and Viewshed Analysis software. David has experience in report writing and received a first class in his final year thesis during his undergraduate course. David has been involved in the production of data, maps, appendices and collision risk assessment of several EIAR/EIS bird chapters, as well as producing interim reports. He is also involved in the project management and communication process between surveyors, clients and other members of staff to ensure that the surveys are carried out correctly and efficiently.

Current Role	Ornithologist
Qualifications	B.Sc. (Hons) Environmental Science, 2 nd Class Honours Grade 1 National University of Ireland, Galway
Relevant Experience	<ul style="list-style-type: none"> July 2014 – Inland Fisheries, Roscommon: Carrying out surveys of small rivers and tributaries around the Roscommon and Leitrim area. Also presented a display at the Ballygar Festival and performed data analysis on Salmon and Brown Trout numbers using excel. June 2014 – Teagasc, Castlerea, Roscommon: Working in the offices and going on advisory farm visits concerning environmental issues such as Agri-Environmental Schemes and HNV farmland.
Practical Skills and Aptitudes	<ul style="list-style-type: none"> Experience in Collision Risk Assessment for EIAR Bird Chapters using statistical analysis. Proficient in using Microsoft Office Programs, Arc GIS Mapping Software through GIS modules, and Mapinfo though working at MKO. Experience in plant identification including vegetation relevés and quadrat surveys. Experience in aquatic and terrestrial invertebrate collection and identification Experience in habitat classification Completed habitat management plan for Knockma woodlands in 3rd Year of undergraduate course. Undertook modules on EIAs/EISs and Appropriate Assessment in final year of undergraduate course. Involved in the production of several reports and EIARs/EISs. Responsible for the preparation of data and GIS maps for use in ornithology reports/EIARs. High level of proficiency in GIS and data management due to these responsibilities. Highly efficient in viewshed analysis for vantage points using, GIS software “Windfarm”.
Management /Supervision	<ul style="list-style-type: none"> Involved in the project management and survey planning of numerous windfarm projects. During the past year has been involved in the training and management of more junior members of staff. Training responsibilities include project management, GIS, viewshed analysis and data management.

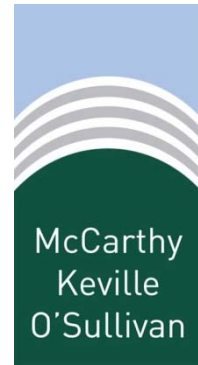
	<ul style="list-style-type: none"> • Also responsible for training surveyors on GIS and data management and ensuring that their data submitted is of the highest quality. • Responsible for the quality of incoming data from surveyors through supervision and quality checks of submitted data, and contacting surveyors regularly to ensure data is submitted on time and of a sufficient quality. • Regular health and safety contact for surveyors during weekend surveys.
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • Member of the sports and social committee within MKO • Regularly in contact with surveyors and clients as part of project management for various sites and projects. • Oral presentations during final year thesis (2016), as well as presentations on various microbiology, zoology and ecology modules throughout the four year undergraduate course in NUIG. • Presented a display of fish species and eels for Inland Fisheries at the Ballygar festival in July 2014. • Working as part of a production team for 7 months between August 2016 and March 2017 for the manufacturing of drug eluting stents in Medtronic Inc. was valuable for increasing communication skills and teamwork traits.
Licenses Held	<ul style="list-style-type: none"> • Full, clean driving licence • Safe Pass Holder
Physical / Other	<ul style="list-style-type: none"> • Member of the MKO Sports and social committee and has been involved in the organization and running of team bonding events. • Full member of Bat Conservation Ireland



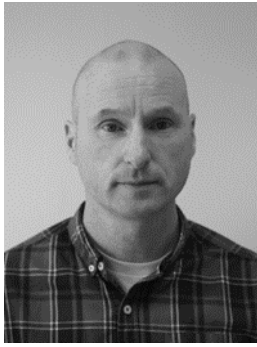
CURRICULUM VITAE

PAT ROBERTS

Pat Roberts is a Senior Ecologist and director of the Ecology team with McCarthy O'Sullivan Ltd. with over 12 years' experience. Pats key strengths include his depth of knowledge and experience of a wide range of ecological and biodiversity topics. He currently manages the ecological team within MKO and ensures that the outputs from that team are of a very high standard and meet the requirements of the clients.

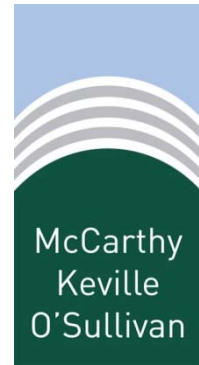


Current Role	Senior Ecologist/Director of Ecology
Qualifications	<ul style="list-style-type: none"> BTEC N. Dip (Countryside Management) (1995) B.Sc. (Environmental Science) (2005) National University of Ireland, Galway
Memberships	<ul style="list-style-type: none"> Member of Chartered Institute of Ecology and Environmental Management (CIEEM)
Years of Experience	<ul style="list-style-type: none"> 12 years post graduate experience working as a professional ecologist Over 10 years previous experience working as a nature conservation warden, tree surgeon/surveyor
Key Strengths & Areas of Expertise	<ul style="list-style-type: none"> In depth knowledge and experience in ecological surveying for a wide range of habitats and species including Habitats, Bats, Mammals, Marsh Fritillary, Freshwater Pearl Mussel, Invasive Species, Aquatic Macro-invertebrates Over 12 years post graduate experience of providing ecological services in relation to a wide range of developments at the planning, construction and monitoring stages Excellent understanding of the Appropriate Assessment process and the requirements thereof in relation to plans and projects. Level of knowledge and experience to provide advice and services tailored to the requirements of the client
Role in MKO & Relevant Experience	<ul style="list-style-type: none"> Director of the Ecology team at MKO with responsibility for ensuring that the outputs from that team are of a very high standard and meet the requirements of the clients and relevant legislation and guidelines. Overseeing ecological assessments, Appropriate Assessment services and input into EIARs for numerous large scale developments including windfarms, flood relief schemes road projects, amenity, leisure and commercial projects Overseeing invasive species surveying, treatment and management Overseeing Ecological Clerk of Work services provided by the company for a variety of clients including Local Authorities, Private Contractors and Irish Water
Personal Skills & Achievements	<ul style="list-style-type: none"> Twelve years ecological experience with eight years project management experience Proficient in use of MS Office programs, GIS Mapping Software, AutoCAD Certificate in Mammal Identification (Mammal Society) Freshwater Invertebrate Sampling (Field Studies Council) Bat Detector Workshop (Bat Conservation Ireland) Bats & Arboriculture Training Course, (BCT & Arboricultural Association) Assessing Forest Structure for Restoration Management Plans (CIEEM) Fresh Water Pearl Phase 1 & Phase 2 Surveying (Evelyn Moorkens)



CURRICULUM VITAE

JOHN HEHIR



John Hehir is an Assistant Ornithologist with McCarthy Keville O'Sullivan Ltd. John has over 5 years of experience working on a number of conservation projects in Ireland. John took up his position with McCarthy Keville O'Sullivan in November 2016. Prior to joining McCarthy Keville O'Sullivan John worked as an intern ecologist for Westmeath County Council. John also has over four years of experience working as a conservation support worker for Birdwatch Ireland. John's key strengths include bird identification, various field surveying methodologies, data management and report writing. In his time with McCarthy Keville O'Sullivan, John has performed bird surveys for nine different windfarm applications.

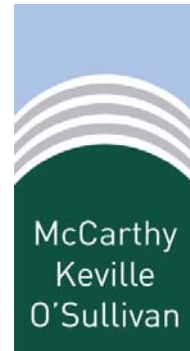
Current Role	Assistant Ornithologist.
Qualifications	Bsc. Wildlife Biology, Institute of Technology, Tralee, Co. Kerry (2015).
Years of Experience	2 years of experience in McCarthy Keville O'Sullivan
Relevant Experience	<p>Relevant Work Experience:</p> <ul style="list-style-type: none"> • 2016 – Present – Assistant Ornithologist, McCarthy, Keville, O'Sullivan. • 2016 – Intern Ecologist, Westmeath, Co. Council. • 2015 – Conservation Support Worker, Birdwatch Ireland. • 2014 – Conservation Support Worker, Irish Grey Partridge Conservation Trust. • 2008 - 2011 – Conservation Support Worker, Birdwatch Ireland. <p>Relevant Surveys for MKO:</p> <ul style="list-style-type: none"> • Timahoe Solar, County Laois (Client: Bord na Mona) -Carried out breeding walkover surveys for this site. • Garryhinch Windfarm, County Offaly (Client: Bord na Mona) -Carried out Vantage point surveys and winter walkovers for this site. • Cloncreen Windfarm, County Offaly (Client: Bord na Mona) -Carried out Vantage point surveys, waterfowl surveys and hen harrier roost surveys for this site. • Derryadd Windfarm, County Longford (Client: Bord na Mona) -Carried out Vantage point surveys, breeding walkovers and breeding raptor surveys for this site. • Coole Windfarm, County Westmeath (Site located on raised bogs) -Carried out Vantage pint surveys, Greenland white-fronted goose surveys and waterfowl distribution surveys for this site. • Carrownagowan Windfarm, County Clare (Client: Coillte) -Carried out Vantage point surveys and breeding raptor surveys for this site. • Cullenagh Windfarm, County Laois (Client: Coillte) -Carried out Vantage point surveys, winter walkover, breeding walkovers, breeding raptor surveys and breeding woodcock surveys for this site. • Clonbern Windfarm, County Galway -Carried out Vantage point surveys, waterfowl surveys and hen harrier roost surveys for this site. • Cahermurphy Windfarm, County Clare (Client: Enerco Ltd.) -Carried out Vantage point surveys and breeding walkovers for this site.

Practical Skills and Aptitudes	<ul style="list-style-type: none"> • Assistant Ornithologist on a number of energy infrastructure projects. • Proficient in GIS and MapInfo software. • Very high level of bird identification. • Experienced in the collation and analysis of data for use in reports and EIARs. • Proficient in use of Excel and other Microsoft Software. • Vast amounts of experience in various different survey methodologies, including Vantage point surveys, walkover surveys, raptor surveys, hen harrier roost surveys and waterfowl/waders surveys.
Management/ Supervision	<ul style="list-style-type: none"> • Responsible for organizing and managing staff training events in the past during time spent with Birdwatch Ireland. • Experience coordinating and liaising with volunteers/surveyors with Birdwatch Ireland and McCarthy Keville O’Sullivan.
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • John has good presentation skills which he developed through his time in college and also working with Birdwatch Ireland. • John has good communication skills through working with Birdwatch Ireland, Westmeath County Council, and McCarthy Keville O’Sullivan. During these posts John has been a key line of communication for the public, clients, landowners, and other surveyors/members of staff. • Compiled a bi-weekly article on biodiversity and important ecological issues.
Licenses Held	<ul style="list-style-type: none"> • Full Clean Driving Licence • Safe Pass



CURRICULUM VITAE

JULIE O'SULLIVAN



Julie is an Ecologist with McCarthy Keville O'Sullivan. She holds a BSc (Hons) in Biology from University College London and a Masters in Ecological Assessment from University College Cork. Prior to taking up her position in July 2016, Julie gained experience in practical habitat management and developed a range of field skills in plant, habitat, bird and bat surveying through working with several conservation organisations in the UK and Ireland including the RSPB, Cumbria Wildlife Trust and Bat Conservation Trust. Julie has experience surveying birds through her involvement with the RSPB in Northern Ireland. Julie is trained in bat survey, terrestrial invertebrate and freshwater macroinvertebrate sampling and in taking vegetation relevés of vascular plants and bryophytes. She also has experience in habitat identification, habitat mapping, Annex I habitat quality assessment and Phase 1 habitat survey. Since joining MKO Julie has worked on several renewable energy developments, utilising a broad range of bird survey methodologies including vantage point surveys, breeding raptor, adapted brown & shepherd and waterfowl distribution surveys. Julie is also part of a team of bird usage surveyors working on the Shannon/Fergus Estuary. Within MKO Julie is responsible for independently carrying out and planning field surveys in accordance with required Scottish Natural Heritage standards as part of the ornithology team.

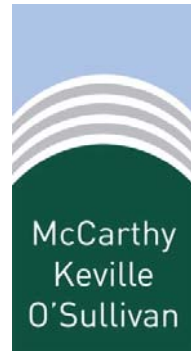
Current Role	Ecologist
Qualifications	<ul style="list-style-type: none"> • MSc. Ecological Assessment, University College Cork, 2014 • BSc. (Hons) Biology, University College London, 2009
Years of Experience	<ul style="list-style-type: none"> • Ecologist / Ornithologist with McCarthy Keville O'Sullivan (July 2016 – present). • Peatland Restoration trainee with the RSPB/Cumbria Wildlife Trust in Cumbria (July - December 2015). • Residential Warden with the RSPB at Portmore Lough in Northern Ireland (January - July 2015). • Intern Ecologist with Westmeath County Council (Sept 2012 - July 2013)
Relevant Experience	<p>Ornithologist with McCarthy Keville O'Sullivan. Responsible for carrying out a wide range of ornithological surveys using methodologies including Brown & Shepherd, O'Brien and Smith, WeBS, vantage point surveys, migratory wildfowl surveys, Hen Harrier roost surveys and wintering bird surveys, in accordance with the relevant SNH guidance and methodologies laid out in Hardy et al. (2013).</p> <p>Peatland Restoration trainee with the RSPB/Cumbria Wildlife Trust, UK. This involved identification and mapping of peatland erosion features remotely using GIS applications and ground truthing in the field using a mobile mapping device. Recording vegetation community, sphagnum species, peat depth and extent of erosion, in order to write management plans. Further conservation work included practical peatland restoration, dry stone walling, hedge laying and working in the juniper nurse, ecological survey of hay meadows, recording vascular plant relevés.</p> <p>Residential Warden, RSPB Portmore Lough, Northern Ireland. Responsible for carrying out bird surveys with the RSPB in Northern Ireland in 2015, including wintering wader and waterfowl counts, Webs survey, breeding wader surveys, Red Kite survey, farmland bird survey. Other ecological survey included an NVC survey of RSPB Portmore Lough nature reserves grassland habitats and recording vascular plant relevés as part of the long-term monitoring of restoration hay meadows.</p> <p>Internship with Westmeath County Council</p>

	Carried out field research and Phase 1 habitat surveys of council owned lands.
Practical Skills and Aptitudes	<ul style="list-style-type: none"> • Experience in carrying out bird surveys in accordance with the relevant SNH guidance and methodologies laid out in Hardy et al. (2013). • Working Independently and effectively in the field. • Proficient in use of MS Office programs and GIS Mapping Software. • Experience in vascular plant identification and habitat surveying.
Management/ Supervision	<ul style="list-style-type: none"> • Experience managing and coordinating large teams of volunteers for the RSPB Futurescapes Project. • Coordination and planning of surveys with ornithology team members.
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • Work as part of a large multidisciplinary team, collating and contributing data for inclusion in EIS. • Experience in environmental education training for the general public, including school children and local community groups. • Writing scientific reports both for research and professionally.
Licenses Held	<ul style="list-style-type: none"> • Full Clean Driving License • Current Safe Pass
Physical / Other	<p>Courses and training attended:</p> <p>Bat Identification Workshop (Bat Conservation Trust, 2010)</p> <p>National Vegetation Classification, Grasslands (Field Studies Council, 2012)</p> <p>Field Identification Skills Certificate (BSBI, 2012)</p> <p>Introduction to QGIS (CIEEM, 2012)</p> <p>Sedge Identification (Cedar, 2015)</p> <p>Mire ecology and sphagnum Identification (Ptyxis Ecology, 2015)</p> <p>Peatland Ecology (Natural England, 2015)</p> <p>Mire ecology (RSPB, 2015)</p>



CURRICULUM VITAE

Patrick Manley



Patrick Manley is an Ornithologist at McCarthy Keville O'Sullivan. He attended University College Dublin where he completed a BSc (Hons) in Geology. Prior to joining the company Patrick worked as part of the conservation team in BirdWatch Ireland, on projects such as the Dublin bay birds project, Kilcoole Little Tern conservation project and the results based agri-environmental scheme for breeding waders. He has extensive experience surveying birds through other projects such as the Irish wetlands bird survey, the Inishmurray all-island breeding birds survey, the national Hen Harrier survey and the countryside bird survey.

Current Role	Ornithologist
Qualifications	BSc Geology, University College Dublin (2013).
Years of Experience	2 years post graduate experience in wildlife conservation and monitoring.
Relevant Experience	<p>Relevant Work Experience:</p> <ul style="list-style-type: none"> Field ornithologist as part of the Little Tern Conservation Project with BirdWatch Ireland for two breeding seasons (2015 & 2016). Patrick gained experience in monitoring and protecting a vulnerable species and in the collection, collation and analyses of large data sets. He was also responsible for liaising with the public, the writing of weekly reports and full technical reports at the end of each breeding season. Agri-Environmental Liaison Officer for the Results Based Agri-Environmental Payment Scheme with BirdWatch Ireland. Patrick gained experience in liaising with land owners, coordinating and finalizing terms with participants of the scheme. He also gained skills in the ecological applications for GIS, in training landowners in land management for breeding birds and in carrying out breeding bird surveys. Conservation Team Intern with the Dublin Bay Birds Project for BirdWatch Ireland. Patrick gained experience in compiling, proofing and analysing large datasets, as well as waterbird monitoring during various tidal and weather conditions and writing technical reports Field Assistant with the Dublin Bay Birds Project with BirdWatch Ireland. Patrick gained experience doing waterbird surveys, radio tracking surveys and the tracking of colour ringed waders. He also gained experience in collating, proofing and validating large datasets. He was also responsible for fitting colour rings to waders during multiple catching sessions. Volunteer Bird Surveyor on various projects including the Irish wetlands bird survey, the Inishmurray all-island breeding bird survey, the national Hen Harrier survey and the countryside bird survey. <p>Relevant Surveys for MKO:</p> <ul style="list-style-type: none"> Timahoe Solar, County Laois (Client: Bord na Mona) -Carried out breeding walkover surveys for this site. Derrryadd Windfarm, County Longford (Client: Bord na Mona) -Carried out Vantage point surveys, waterfowl surveys and breeding raptor surveys for this site. Coole Windfarm, County Westmeath (Site located on raised bogs) -Carried out Vantage point surveys, breeding walkovers, breeding raptor surveys, breeding woodcock surveys and waterfowl distribution surveys for this site. Lissinagroagh Windfarm, County Leitrim (Client: Coillte)

	<ul style="list-style-type: none"> -Carried out Vantage point surveys for this site. • Slieve Rusheen Windfarm, County Cavan (Client: Coillte) <ul style="list-style-type: none"> -Carried out Vantage point surveys, winter walkovers, hen harrier roost surveys and red grouse surveys for this site. • Cullenagh Windfarm, County Laois (Client: Coillte) <ul style="list-style-type: none"> -Carried out Vantage point surveys for this site. • Carrownagowan Windfarm, County Clare (Client: Coillte) <ul style="list-style-type: none"> -Carried out Vantage point surveys, waterfowl surveys, hen harrier roost surveys and winter walkovers for this site. • Glenard Windfarm, County Donegal (Client: Coillte) <ul style="list-style-type: none"> -Carried out Vantage point surveys for this site. • Cahermurphy Windfarm, County Clare (Client: Mid Clare Renewable Energy Ltd.) • Clonbern Windfarm, County Galway <ul style="list-style-type: none"> -Carried out Vantage point surveys, and waterfowl surveys for this site. -Carried out Vantage point surveys for this site • Ardderroo Windfarm, County Galway (Client: Enerco) <ul style="list-style-type: none"> -Carried out Vantage point surveys, hen harrier/white-tailed eagle roost surveys and waterfowl surveys for this site. • Boolynagheragh Windfarm, County Clare (Client: Enerco) <ul style="list-style-type: none"> -Carried out pre-commencement hen harrier surveys for this site.
Practical Skills and Aptitudes	<ul style="list-style-type: none"> • Proficient in GIS and MapInfo software. • Proficient in MS Office. • Experience surveying birds using line transects, vantage point counts, flush counts, mist netting, radio tracking and GSM trackers.
Management/ Supervision	<ul style="list-style-type: none"> • Experience managing field sites and coordinating large teams of volunteers for the Little Tern Conservation Projects 2015 and 2016. • Experience coordinating and supervising volunteers during the all-island seabird survey on Inishmurray. • Experience coordinating and liaising with volunteers/surveyors with BirdWatch Ireland and Irish Midlands Ringing Group on various projects.
Interpersonal & Communication Skills	<ul style="list-style-type: none"> • Experience coordinating workloads and delegating tasks as a member of both large and small teams of volunteers on a number of different projects with BirdWatch Ireland and the Irish Midlands Ringing Group, often in challenging fieldwork environments. • Experience as lead author or co-author on technical project reports. • Managed public relations and public outreach for the Little Tern Conservation Project in 2015 and 2016 (including an appearance on RTE series "EcoEye" in January 2016). • Experience giving bird ringing demonstrations to various groups including BirdWatch Ireland branch members, Dublin Field Naturalist club and during heritage week.
Licenses Held	<ul style="list-style-type: none"> • Full clean driving licence • SafePass
Physical / Other	<ul style="list-style-type: none"> • Qualified bird ringer with British Trust for Ornithology and committee member of the Irish Midlands Ringing Group.

Appendix 1-2

Birds Technical Appendix

Table 1: List of All Species Observed During MKO Surveys at Timahoe

Species Name	Latin Name	Conservation Status	Target Spp. Y/N
Whooper Swan	<i>Cygnus Cygnus</i>	Annex I; EU Birds Directive	Y
Golden Plover	<i>Pluvialis apricaria</i>	Annex I; EU Birds Directive, BOCCI Red Listed	Y
Lapwing	<i>Vanellus vanellus</i>	BOCCI Red Listed	Y
Wigeon	<i>Anas penelope</i>	BOCCI Red Listed	Y
Woodcock	<i>Scolopax rusticola</i>	BOCCI Red Listed	Y
Kestrel	<i>Falco tinnunculus</i>	BOCCI Amber Listed	Y
Sparrowhawk	<i>Accipiter nisus</i>	BOCCI Amber Listed	Y
Buzzard	<i>Buteo buteo</i>	BOCCI Green Listed	Y
Meadow Pipit	<i>Anthus pratensis</i>	BOCCI Red Listed	Y
Snipe	<i>Gallinago gallinago</i>	BOCCI Amber Listed	Y
Teal	<i>Anas crecca</i>	BOCCI Amber Listed	N
Lesser Black-backed Gull	<i>Larus fuscus</i>	BOCCI Amber Listed	N
Little Grebe	<i>Tachybaptus ruficollis</i>	BOCCI Amber Listed	N
Mallard	<i>Anas platyrhynchos</i>	BOCCI Green Listed	N
Grey Heron	<i>Ardea cinerea</i>	BOCCI Green Listed	N
Moorhen	<i>Gallinula chloropus</i>	BOCCI Green Listed	N
Blackbird	<i>Turdus merula</i>	BOCCI Green Listed	N
Blackcap	<i>Sylvia atricapilla</i>	BOCCI Green Listed	N
Blue Tit	<i>Parus caeruleus</i>	BOCCI Green Listed	N
Bullfinch	<i>Pyrrhula pyrrhula</i>	BOCCI Green Listed	N
Chaffinch	<i>Fringilla coelebs</i>	BOCCI Green Listed	N
Chiffchaff	<i>Phylloscopus collybita</i>	BOCCI Green Listed	N
Coal Tit	<i>Parus ater</i>	BOCCI Green Listed	N
Crossbill	<i>Loxia curvirostra</i>	BOCCI Green Listed	N
Dunnock	<i>Prunella modularis</i>	BOCCI Green Listed	N
Goldfinch	<i>Carduelis carduelis</i>	BOCCI Green Listed	N
Great Tit	<i>Parus major</i>	BOCCI Green Listed	N
Greenfinch	<i>Carduelis chloris</i>	BOCCI Green Listed	N
Hooded Crow	<i>Corvus cornix</i>	BOCCI Green Listed	N
House Sparrow	<i>Passer domesticus</i>	BOCCI Green Listed	N
Jay	<i>Garrulus glandarius</i>	BOCCI Green Listed	N

Table 1: List of All Species Observed During MKO Surveys at Timahoe

Species Name	Latin Name	Conservation Status	Target Spp. Y/N
Lesser Redpoll	<i>Carduelis flammea cabaret</i>	BOCCI Green Listed	N
Linnet	<i>Carduelis cannabina</i>	BOCCI Green Listed	N
Long-tailed Tit	<i>Aegithalus caudatus</i>	BOCCI Green Listed	N
Mistle thrush	<i>Turdus viscivorus</i>	BOCCI Green Listed	N
Pied wagtail	<i>Motacilla alba yarrellii</i>	BOCCI Green Listed	N
Raven	<i>Corvus corax</i>	BOCCI Green Listed	N
Reed Bunting	<i>Emberiza schoeniclus</i>	BOCCI Green Listed	N
Robin	<i>Erithacus rubecula</i>	BOCCI Green Listed	N
Rook	<i>Corvus frugilegus</i>	BOCCI Green Listed	N
Siskin	<i>Carduelis spinus</i>	BOCCI Green Listed	N
Song Thrush	<i>Turdus philomelos</i>	BOCCI Green Listed	N
Starling	<i>Sturnus vulgaris</i>	BOCCI Green Listed	N
Stonechat	<i>Saxicola torquata</i>	BOCCI Green Listed	N
Willow Warbler	<i>Phylloscopus trochilus</i>	BOCCI Green Listed	N
Wood Pigeon	<i>Columba palumbus</i>	BOCCI Green Listed	N
Wren	<i>Troglodytes troglodytes</i>	BOCCI Green Listed	N

Table 2: Survey Effort

Date	Season	Survey Method	Transect	Survey Duration	Weather Conditions	Comments
28/11/2016	Non-Breeding	Winter Walkover	Transects 1-4	05:02 starting at 10:20	wind speed and direction:Calm, ; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
29/11/2016	Non-Breeding	Winter Walkover	Transects 5-8	07:10 starting at 08:15	wind speed and direction:Calm, ; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
14/12/2016	Non-Breeding	Winter Walkover	1	01:00 starting at 08:30	wind speed and direction:Light Air, W; visibility: Good (>2km); Rain: Light Showers; Frost: None ; Snow: None	
14/12/2016	Non-Breeding	Winter Walkover	2	01:00 starting at 09:30	wind speed and direction:Light Air, W; visibility: Moderate (1-2km); Rain: Heavy Rain; Frost: None ; Snow: None	
14/12/2016	Non-Breeding	Winter Walkover	3 and 4	01:00 starting at 10:30	wind speed and direction:Light Air, W; visibility: Moderate (1-2km); Rain: Heavy Rain; Frost: None ; Snow: None	
14/12/2016	Non-Breeding	Winter Walkover	5	01:00 starting at 11:30	wind speed and direction:Light Air, W; visibility: Moderate (1-2km); Rain: Heavy Rain; Frost: None ; Snow: None	
14/12/2016	Non-Breeding	Winter Walkover	6	01:00 starting at 13:00	wind speed and direction:Light Air, W; visibility: Moderate (1-2km); Rain: Heavy Rain; Frost: None ; Snow: None	
14/12/2016	Non-Breeding	Winter Walkover	8	00:55 starting at 15:00	wind speed and direction:Light Air, W; visibility: Moderate (1-2km); Rain: Heavy Rain; Frost: None ; Snow: None	
14/12/2016	Non-Breeding	Winter Walkover	7	01:00 starting at 14:00	wind speed and direction:Light Air, W; visibility: Moderate (1-2km); Rain: Heavy Rain; Frost: None ; Snow: None	
24/01/2017	Non-Breeding	Winter Walkover		01:00 starting at 09:20	wind speed and direction:Light Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
24/01/2017	Non-Breeding	Winter Walkover		01:00 starting at 10:20	wind speed and direction:Light Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	

Table 2: Survey Effort

Date	Season	Survey Method	Transect	Survey Duration	Weather Conditions	Comments
24/01/2017	Non-Breeding	Winter Walkover		01:00 starting at 11:20	wind speed and direction:Gentle Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
24/01/2017	Non-Breeding	Winter Walkover		01:00 starting at 12:20	wind speed and direction:Light Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
24/01/2017	Non-Breeding	Winter Walkover		01:00 starting at 13:40	wind speed and direction:Light Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
24/01/2017	Non-Breeding	Winter Walkover		01:00 starting at 14:40	wind speed and direction:Light Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
24/01/2017	Non-Breeding	Winter Walkover		01:00 starting at 15:40	wind speed and direction:Light Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
13/02/2017	Non-Breeding	Winter Walkover		01:00 starting at 09:30	wind speed and direction:Moderate Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
13/02/2017	Non-Breeding	Winter Walkover		01:00 starting at 10:30	wind speed and direction:Moderate Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
13/02/2017	Non-Breeding	Winter Walkover		01:00 starting at 11:30	wind speed and direction:Gentle Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
13/02/2017	Non-Breeding	Winter Walkover		00:30 starting at 12:30	wind speed and direction:Gentle Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
13/02/2017	Non-Breeding	Winter Walkover		01:00 starting at 13:15	wind speed and direction:Gentle Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
13/02/2017	Non-Breeding	Winter Walkover		01:00 starting at 14:15	wind speed and direction:Gentle Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	

Table 2: Survey Effort

Date	Season	Survey Method	Transect	Survey Duration	Weather Conditions	Comments
13/02/2017	Non-Breeding	Winter Walkover		01:00 starting at 15:15	wind speed and direction:Gentle Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
13/02/2017	Non-Breeding	Winter Walkover		00:45 starting at 16:15	wind speed and direction:Gentle Breeze, E; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
20/03/2017	Non-breeding	Winter Walkover		00:40 starting at 09:20	wind speed and direction:Light Breeze, SW; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
20/03/2017	Non-breeding	Winter Walkover		01:00 starting at 10:00	wind speed and direction:Light Breeze, SW; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
20/03/2017	Non-breeding	Winter Walkover		01:00 starting at 11:00	wind speed and direction:Gentle Breeze, SW; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
20/03/2017	Non-breeding	Winter Walkover		01:00 starting at 12:00	wind speed and direction:Moderate Breeze, SW; visibility: Good (>2km); Rain: Drizzle Mist; Frost: None ; Snow: None	
20/03/2017	Non-breeding	Winter Walkover		01:00 starting at 13:30	wind speed and direction:Moderate Breeze, SW; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
20/03/2017	Non-breeding	Winter Walkover		01:00 starting at 14:30	wind speed and direction:Gentle Breeze, SW; visibility: Good (>2km); Rain: Drizzle Mist; Frost: None ; Snow: None	
20/03/2017	Non-breeding	Winter Walkover		00:30 starting at 15:30	wind speed and direction:Gentle Breeze, SW; visibility: Good (>2km); Rain: Drizzle Mist; Frost: None ; Snow: None	
28/11/2016	Non-Breeding	Wetland survey	1km boundary	01:00 starting at 15:30	wind speed and direction:Calm, ; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	No species recorded on hinterland wetlands.
04/04/2017	Breeding	Breeding Walkovers		01:00 starting at 06:25	Wind Speed and Direction:Light Air, NW; Visibility: Good (>2km); Cloud Height: 150-	

Table 2: Survey Effort

Date	Season	Survey Method	Transect	Survey Duration	Weather Conditions	Comments
					500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
04/04/2017	Breeding	Breeding Walkovers		01:00 starting at 07:25	Wind Speed and Direction:Light Breeze, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 33-66 Rain: None; Frost: None ; Snow: None	
04/04/2017	Breeding	Breeding Walkovers		01:00 starting at 08:25	Wind Speed and Direction:Light Breeze, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 33-66 Rain: None; Frost: None ; Snow: None	
04/04/2017	Breeding	Breeding Walkovers		01:00 starting at 09:25	Wind Speed and Direction:Light Breeze, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 33-66 Rain: None; Frost: None ; Snow: None	
04/04/2017	Breeding	Breeding Walkovers		01:00 starting at 10:25	Wind Speed and Direction:Light Breeze, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 33-66 Rain: None; Frost: None ; Snow: None	
04/04/2017	Breeding	Breeding Walkovers		01:00 starting at 11:25	Wind Speed and Direction:Light Air, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 33-66 Rain: None; Frost: None ; Snow: None	
05/04/2017	Breeding	Breeding Walkovers		01:00 starting at 06:23	Wind Speed and Direction:Light Breeze, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
05/04/2017	Breeding	Breeding Walkovers		01:00 starting at 07:23	Wind Speed and Direction:Light Air, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
05/04/2017	Breeding	Breeding Walkovers		01:00 starting at 08:23	Wind Speed and Direction:Light Air, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	

Table 2: Survey Effort

Date	Season	Survey Method	Transect	Survey Duration	Weather Conditions	Comments
05/04/2017	Breeding	Breeding Walkovers		01:00 starting at 09:53	Wind Speed and Direction:Light Air, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
05/04/2017	Breeding	Breeding Walkovers		01:00 starting at 10:53	Wind Speed and Direction:Light Breeze, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
05/04/2017	Breeding	Breeding Walkovers		01:00 starting at 11:53	Wind Speed and Direction:Light Breeze, NW; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
06/04/2017	Breeding	Breeding Walkovers		01:00 starting at 06:21	Wind Speed and Direction:Light Air, W; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
06/04/2017	Breeding	Breeding Walkovers		01:00 starting at 07:21	Wind Speed and Direction:Light Air, W; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
06/04/2017	Breeding	Breeding Walkovers		01:00 starting at 08:21	Wind Speed and Direction:Light Air, W; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
06/04/2017	Breeding	Breeding Walkovers		01:00 starting at 09:51	Wind Speed and Direction:Light Air, W; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
06/04/2017	Breeding	Breeding Walkovers		01:00 starting at 10:51	Wind Speed and Direction:Light Air, W; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	

Table 2: Survey Effort

Date	Season	Survey Method	Transect	Survey Duration	Weather Conditions	Comments
06/04/2017	Breeding	Breeding Walkovers		01:00 starting at 11:51	Wind Speed and Direction:Light Air, W; Visibility: Good (>2km); Cloud Height: 150-500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
15/05/2017	Breeding	Breeding Walkovers		03:46 starting at 05:29	wind speed and direction:Moderate Breeze, S; visibility: Good (>2km); Rain: Heavy Rain; Frost: None ; Snow: None	
22/05/2017	Breeding	Breeding Walkovers		06:10 starting at 05:20	wind speed and direction:Gentle Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
23/05/2017	Breeding	Breeding Walkovers		05:33 starting at 05:17	wind speed and direction:Light Breeze, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
24/05/2017	Breeding	Breeding Walkovers		02:35 starting at 05:15	wind speed and direction:Light Air, S; visibility: Good (>2km); Rain: None; Frost: None ; Snow: None	
09/06/2017	Breeding	Breeding Walkovers		02:00 starting at 04:53	Wind Speed and Direction:Light Breeze, S; Visibility: Good (>2km); Cloud Height: >500m; Cloud Cover %: 0-33 Rain: None; Frost: None ; Snow: None	
09/06/2017	Breeding	Breeding Walkovers		02:00 starting at 06:53	Wind Speed and Direction:Light Breeze, S; Visibility: Good (>2km); Cloud Height: >500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
09/06/2017	Breeding	Breeding Walkovers		02:19 starting at 08:53	Wind Speed and Direction:Light Breeze, S; Visibility: Good (>2km); Cloud Height: >500m; Cloud Cover %: 0-33 Rain: None; Frost: None ; Snow: None	
12/06/2017	Breeding	Breeding Walkovers		01:00 starting at 04:54	Wind Speed and Direction:Light Breeze, S; Visibility: Good (>2km); Cloud Height: >500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	

Table 2: Survey Effort

Date	Season	Survey Method	Transect	Survey Duration	Weather Conditions	Comments
12/06/2017	Breeding	Breeding Walkovers		03:00 starting at 05:54	Wind Speed and Direction:Light Breeze, S; Visibility: Good (>2km); Cloud Height: >500m; Cloud Cover %: 66-100 Rain: Light Showers; Frost: None ; Snow: None	
12/06/2017	Breeding	Breeding Walkovers		01:18 starting at 08:54	Wind Speed and Direction:Gentle Breeze, S; Visibility: Good (>2km); Cloud Height: >500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	
13/06/2017	Breeding	Breeding Walkovers		03:09 starting at 04:58	Wind Speed and Direction:Light Breeze, S; Visibility: Good (>2km); Cloud Height: >500m; Cloud Cover %: 66-100 Rain: None; Frost: None ; Snow: None	

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	10:27:00	Blackbird	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Perched, calling.	JOS
28/11/2016	1	10:40:00	Blackbird	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:55:00	Blackbird	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:16:00	Blackbird	1	WS, (Scrub/ transitional woodland) In flight amongst willows.	JOS
28/11/2016	1	11:18:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:24:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:51:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:55:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:58:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:02:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:10:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:53:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:10:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:47:00	Blackbird	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	4	14:30:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	4	14:30:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	14:48:00	Blackbird	1		JOS
28/11/2016	4	15:10:00	Blackbird	1	WN7, (Bog woodland) Calling	JOS
29/11/2016	1		Blackbird	1	WN7, (Bog woodland)	JOS
29/11/2016	5	08:17:00	Blackbird	1	Calling	JOS
29/11/2016	5	08:38:00	Blackbird	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	09:05:00	Blackbird	5	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	09:35:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:37:00	Blackbird	1	Calling.	JOS
29/11/2016	5	09:45:00	Blackbird	1	Calling.	JOS
29/11/2016	5	09:51:00	Blackbird	2	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	09:55:00	Blackbird	1	WS1, (Scrub/ transitional woodland) FW4, (Drainage ditches) Calling.	JOS
29/11/2016	5	09:58:00	Blackbird	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	10:09:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	10:22:00	Blackbird	1	Calling.	JOS
29/11/2016	6	10:48:00	Blackbird	1	Calling.	JOS
29/11/2016	6	10:54:00	Blackbird	1	Calling.	JOS
29/11/2016	6	11:46:00	Blackbird	1	PB4, (Cutover bog) Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	6	11:51:00	Blackbird	1	Calling.	JOS
29/11/2016	7	14:15:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:40:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:01:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:15:00	Blackbird	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	1		Blackbird	1	PB4, (Cutover bog) Calling	JH
14/12/2016	2		Blackbird	1	PB4, (Cutover bog) Calling	JH
14/12/2016	4		Blackbird	2	PB4, (Cutover bog) Calling	JH
14/12/2016	8		Blackbird	1	PB4, (Cutover bog) Calling	JH
24/01/2017			Blackbird	2	WS, (Scrub/ transitional woodland) Calling from cover	JH
24/01/2017			Blackbird	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Blackbird	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Blackbird	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
24/01/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Blackbird	2	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
24/01/2017			Blackbird	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Blackbird	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
24/01/2017			Blackbird	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blackbird	2	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
13/02/2017			Blackbird	4	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling and Flying	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling from cover	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Travelling	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blackbird	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
13/02/2017			Blackbird	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Blackbird	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
20/03/2017			Blackbird	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
28/11/2016	1	10:32:00	Blue tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:34:00	Blue tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:48:00	Blue tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling. Perched	JOS
28/11/2016	1	11:12:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:14:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:18:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:24:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:25:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	14:05:00	Blue tit	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:37:00	Blue tit	1	WS1, (Scrub/ transitional woodland) Fly, perch, call.	JOS
29/11/2016	5	08:18:00	Blue tit	1	Calling	JOS
29/11/2016	5	08:38:00	Blue tit	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	10:16:00	Blue tit	1	Calling.	JOS
29/11/2016	6	10:45:00	Blue tit	1	WN7, (Bog woodland) Calling in birch woodland.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
20/03/2017			Blackbird	2	WS, (Scrub/ transitional woodland bog) PB4, (Cutover bog) Calling	JH
20/03/2017			Blackbird	1	WS, (Scrub/ transitional woodland) Calling	JH
28/11/2016	1	10:32:00	Blue tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:34:00	Blue tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:48:00	Blue tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling. Perched	JOS
28/11/2016	1	11:12:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:14:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:18:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:24:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:25:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Blue tit	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	14:05:00	Blue tit	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:37:00	Blue tit	1	WS1, (Scrub/ transitional woodland) Fly, perch, call.	JOS
29/11/2016	5	08:18:00	Blue tit	1	Calling	JOS
29/11/2016	5	08:38:00	Blue tit	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	10:16:00	Blue tit	1	Calling.	JOS
29/11/2016	6	10:45:00	Blue tit	1	WN7, (Bog woodland) Calling in birch woodland.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Blue Tit	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Blue Tit	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
28/11/2016	1	10:30:00	Bullfinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:33:00	Bullfinch	6	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling in flight. Perch in willow. Band 1.	JOS
28/11/2016	1	10:47:00	Bullfinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:11:00	Bullfinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:12:00	Bullfinch	1	PB4, (Cutover bog) WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:20:00	Bullfinch	4	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Bullfinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:17:00	Bullfinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:35:00	Bullfinch	1	WN7, (Bog woodland) Calling	JOS
29/11/2016	1		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	1		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	6	10:54:00	Bullfinch	3	In flight, Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
14/12/2016	6		Buzzard	1	PB4, (Cutover bog) WD4, (Conifer plantation) Flying	JH
20/03/2017			Buzzard	1	PB4, (Cutover bog) Hunting and flying on	JH
20/03/2017			Buzzard	1	PB4, (Cutover bog) Hunting and gliding on wind	JH
28/11/2016	1	10:31:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:34:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:37:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:10:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:14:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:20:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:21:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:54:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:03:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:20:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	10:25:00	Chaffinch	1	Calling. In flight.	JOS
29/11/2016	5	10:33:00	Chaffinch	1	Calling.	JOS
29/11/2016	6	10:45:00	Chaffinch	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	6	10:49:00	Chaffinch	1	WN7, (Bog woodland) Calls from willows.	JOS
29/11/2016	6	10:51:00	Chaffinch	5	In flight.	JOS
29/11/2016	6	11:37:00	Chaffinch	1	WD4, (Conifer plantation) Calling in conifers.	JOS
29/11/2016	6	11:48:00	Chaffinch	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	12:00:00	Chaffinch	1	HH1, (Dry siliceous heath) Calling.	JOS
29/11/2016	6	12:05:00	Chaffinch	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:40:00	Chaffinch	1	In flight, calling.	JOS
29/11/2016	7	13:40:00	Chaffinch	1	Calling.	JOS
29/11/2016	7	13:47:00	Chaffinch	1	Calling.	JOS
29/11/2016	7	13:55:00	Chaffinch	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:58:00	Chaffinch	1	Calling.	JOS
29/11/2016	7	14:15:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:52:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	14:59:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	5		Chaffinch	40	PB4, (Cutover bog) Flying	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	3	14:02:00	Coal tit	3	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	14:03:00	Coal tit	2	WN7, (Bog woodland) Calling	JOS
28/11/2016	4	14:39:00	Coal tit	4	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	14:43:00	Coal tit	1	Calling	JOS
28/11/2016	4	15:13:00	Coal tit	2	WN7, (Bog woodland) Calling	JOS
29/11/2016	1		Coal Tit	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Coal Tit	1	WN7, (Bog woodland)	JOS
29/11/2016	5	09:01:00	Coal tit	3	FW4, (Drainage ditches) On birches by drain.	JOS
29/11/2016	5	09:32:00	Coal tit	1	Calling.	JOS
29/11/2016	5	10:02:00	Coal tit	1	Calling.	JOS
29/11/2016	5	10:12:00	Coal tit	1	Calling.	JOS
29/11/2016	5	10:16:00	Coal tit	1	Calling.	JOS
29/11/2016	6	10:52:00	Coal tit	1	WD4, (Conifer plantation) Perch and call from conifers	JOS
29/11/2016	6	10:58:00	Coal tit	4	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	10:59:00	Coal tit	4	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:12:00	Coal tit	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:39:00	Coal tit	1	WD4, (Conifer plantation) Calling in conifers.	JOS
29/11/2016	6	11:41:00	Coal tit	1	WD4, (Conifer plantation) Calling in conifers.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	11:03:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling. Perched on birch tree.	JOS
28/11/2016	1	11:08:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:21:00	Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:21:00	Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:05:00	Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:10:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:15:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:21:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling. In flight.	JOS
28/11/2016	3	14:02:00	Dunnock	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:30:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	15:00:00	Dunnock	1	Calling	JOS
28/11/2016	4	15:07:00	Dunnock	1	WN7, (Bog woodland)	JOS
29/11/2016	1		Dunnock	1	WN7, (Bog woodland)	JOS
29/11/2016	5	08:20:00	Dunnock	1	Calling	JOS
29/11/2016	5	09:31:00	Dunnock	1	Calling.	JOS
29/11/2016	5	09:32:00	Dunnock	1	Calling.	JOS
29/11/2016	5	09:42:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Golden Plover	1	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Golden Plover	1	PB4, (Cutover bog) Perched on PB4	JH
20/03/2017			Golden Plover	80	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Golden Plover	3	PB4, (Cutover bog) Flushed by observer	JH
28/11/2016	1	11:28:00	Goldfinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	5	08:47:00	Goldfinch	1	PB4, (Cutover bog) In flight, calling.	JOS
24/01/2017			Great Tit	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
24/01/2017			Great Tit	3	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Great Tit	1	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
13/02/2017			Great Tit	2	WS, (Scrub/ transitional woodland) Calling from cover	JH
13/02/2017			Great Tit	2	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
13/02/2017			Great Tit	1	WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Perched in Birch Tree	JH
20/03/2017			Great Tit	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Great Tit	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
14/12/2016	1		Greenfinch	2	PB4, (Cutover bog) Perched	JH
13/02/2017			Greenfinch	1	WS, (Scrub/ transitional woodland) Calling	JH
28/11/2016	1	11:33:00	Grey heron	1	WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Hooded Crow	2	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
20/03/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
28/11/2016	2	13:10:00	Jay	1	WS1, (Scrub/ transitional woodland) Calling	JOS
24/01/2017			Jay	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Jay	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Jay	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Jay	1	WS, (Scrub/ transitional woodland) Calling	JH
29/11/2016	5	09:25:00	Kestrel	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
13/02/2017			Kestrel	1	PB4, (Cutover bog) Hunting and Hovering - Female	JH
28/11/2016	1	11:30:00	Lapwing	1	WS, (Scrub/ transitional woodland) Calling. On site. Alarm calling, flies high over bog band 3, calling ~3 minutes	JOS
28/11/2016	4	15:05:00	Lesser Black-backed Gull	2		JOS
28/11/2016	2	12:48:00	Lesser redpoll	6	PB4, (Cutover bog) WS1, (Scrub/ transitional woodland) Calling in flight.	JOS
28/11/2016	2	12:50:00	Lesser redpoll	2	WS1, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
24/01/2017			Lesser Redpoll	35	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
13/02/2017			Lesser Redpoll	1	WS, (Scrub/ transitional woodland) WS2, (Immature woodland) Calling	JH
28/11/2016	1	10:48:00	Linnet	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) In flight, perch, Calling	JOS
28/11/2016	1	11:54:00	Linnet	10	WS, (Scrub/ transitional woodland) Calling, in flight, band 1.	JOS
28/11/2016	2	13:21:00	Linnet	14	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:32:00	Linnet	10	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:39:00	Linnet	5	WN7, (Bog woodland) Calling	JOS
29/11/2016	5	09:05:00	Linnet	1	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	10:25:00	Linnet	1	Calling. In flight.	JOS
29/11/2016	6	10:45:00	Linnet	3	Calling. In flight.	JOS
29/11/2016	6	11:53:00	Linnet	3	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:58:00	Linnet	1	WD4, (Conifer plantation) Calling.	JOS
14/12/2016	1		Linnet	5	PB4, (Cutover bog) Travelling	JH
28/11/2016	1	10:25:00	Long-tailed tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Perched, calling.	JOS
28/11/2016	1	10:34:00	Long-tailed tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:46:00	Long-tailed tit	10	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:13:00	Long-tailed tit	3	WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	08:20:00	Mallard	3	Calling. In flight band 2	JOS
29/11/2016	5	08:48:00	Mallard	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	08:48:00	Mallard	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	6	11:22:00	Mallard	13	PB4, (Cutover bog) Calling.	JOS
29/11/2016	6	11:24:00	Mallard	12	Roosting on cutover bog/pond, disturbed by surveyor. 10 fly north west, 2 fly south east calling.	JOS
29/11/2016	6	11:26:00	Mallard	2	Fly North from pond	JOS
24/01/2017			Mallard	2	PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) Flushed by observer	JH
13/02/2017			Mallard	3	PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) Flushed by observer	JH
20/03/2017			Mallard	1	PB4, (Cutover bog) Travelling	JH
28/11/2016	1	11:56:00	Meadow pipit	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling, in flight, perches on birch tree.	JOS
28/11/2016	2	12:35:00	Meadow pipit	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	14:06:00	Meadow pipit	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	08:48:00	Meadow pipit	1	PB4, (Cutover bog) Calling, fly.	JOS
29/11/2016	5	08:48:00	Meadow pipit	3	PB4, (Cutover bog) In heather perched. Calling. Fly.	JOS
29/11/2016	5	08:48:00	Meadow pipit	7	PB4, (Cutover bog) Fly, drop down into heather.	JOS
29/11/2016	5	08:55:00	Meadow pipit	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	09:01:00	Meadow pipit	5	PB4, (Cutover bog) calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	11:52:00	Moorhen	1	WS, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	5	09:01:00	Moorhen	1	On pond.	JOS
14/12/2016	7		Moorhen	1	PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) Perched	JH
28/11/2016	4	14:33:00	Pied wagtail	1	WS1, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	7	14:12:00	Pied wagtail	1	Calling. In flight.	JOS
28/11/2016	1	11:33:00	Raven	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:54:00	Raven	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:17:00	Raven	2	WS1, (Scrub/ transitional woodland) In flight, Calling.	JOS
28/11/2016	3	14:19:00	Raven	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:51:00	Raven	1	PB4, (Cutover bog) Calling, in flight.	JOS
28/11/2016	4	15:13:00	Raven	5	Soaring and calling, band 3.	JOS
29/11/2016	6	10:55:00	raven	1	In flight, Calling.	JOS
29/11/2016	6	11:52:00	Raven	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:58:00	Raven	1	Calling.	JOS
24/01/2017			Raven	1	PB4, (Cutover bog) Travelling	JH
24/01/2017			Raven	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Raven	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	11:28:00	Robin	1	WS, (Scrub/ transitional woodland) In flight, perch in willows.	JOS
28/11/2016	1	11:38:00	Robin	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	1	12:06:00	Robin	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:13:00	Robin	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:21:00	Robin	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:41:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing	JOS
28/11/2016	2	12:47:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing	JOS
28/11/2016	2	12:48:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing	JOS
28/11/2016	2	13:10:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:11:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing.	JOS
28/11/2016	2	13:21:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:23:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:35:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:37:00	Robin	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:37:00	Robin	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:40:00	Robin	1	WN7, (Bog woodland)	JOS
28/11/2016	3	13:41:00	Robin	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:46:00	Robin	1	WN7, (Bog woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	10:16:00	Robin	1	Singing.	JOS
29/11/2016	5	10:38:00	Robin	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	6	10:48:00	Robin	1	Calling.	JOS
29/11/2016	6	10:52:00	Robin	1	Sings.	JOS
29/11/2016	6	11:01:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing.	JOS
29/11/2016	6	11:23:00	Robin	1	Singing.	JOS
29/11/2016	7	13:40:00	Robin	1	Calling.	JOS
29/11/2016	7	13:51:00	Robin	1	Calling.	JOS
29/11/2016	7	14:06:00	Robin	1	Calling.	JOS
29/11/2016	7	14:17:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:25:00	Robin	1	Singing.	JOS
29/11/2016	7	14:28:00	Robin	1	Calling.	JOS
29/11/2016	7	14:29:00	Robin	1	Calling.	JOS
29/11/2016	7	14:32:00	Robin	1	Singing.	JOS
29/11/2016	7	14:43:00	Robin	1	PB4, (Cutover bog) Calling/singing.	JOS
29/11/2016	7	14:51:00	Robin	1	WS1, (Scrub/ transitional woodland) In flight, band 2, calling.	JOS
29/11/2016	8	15:01:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
24/01/2017			Rook	2	PB4, (Cutover bog) Travelling	JH
24/01/2017			Rook	2	PB4, (Cutover bog) Travelling	JH
24/01/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Rook	1	WS, (Scrub/ transitional woodland) GA1, (Improved agricultural grassland) Travelling	JH
13/02/2017			Rook	2	WS, (Scrub/ transitional woodland) GA1, (Improved agricultural grassland) Travelling	JH
13/02/2017			Rook	3	PB1, (Raised bog) PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	2	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
14/12/2016	4		Siskin	1	PB4, (Cutover bog) Calling	JH
28/11/2016	3	13:54:00	Snipe	1	WS, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	7	13:56:00	Snipe	1	Flight band 1, calling.	JOS
14/12/2016	2		Snipe	2	PB4, (Cutover bog) Flying	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	9	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	6	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	5	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	4	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	5	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	24	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	4	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	09:35:00	Whooper swan	5	Calling. Flight band 2, ~15m, calling.	JOS
28/11/2016	1	11:38:00	Wigeon	8	PB4, (Cutover bog) On pond on cutover bog.	JOS
28/11/2016	1	11:45:00	Wigeon	25	PB4, (Cutover bog) In flight. Band 1/2	JOS
13/02/2017			Wood Pigeon	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
13/02/2017			Wood Pigeon	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) Flushed by observer	JH
13/02/2017			Wood Pigeon	3	PB4, (Cutover bog) Travelling	JH
13/02/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Perched	JH
13/02/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) GA1, (Improved agricultural grassland) Travelling	JH
13/02/2017			Wood Pigeon	2	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
20/03/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Wood Pigeon	2	WS, (Scrub/ transitional woodland) Flushed by observer	JH
29/11/2016	6	11:50:00	Woodcock	1	HH1, (Dry siliceous heath) Calling.	JOS
28/11/2016	1	10:20:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Perched, calling.	JOS
28/11/2016	1	10:27:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:46:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	2	13:28:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:52:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	13:54:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	13:58:00	Wren	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	14:07:00	Wren	1	Calling	JOS
28/11/2016	3	14:17:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	14:22:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:32:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:41:00	Wren	1	Calling	JOS
28/11/2016	4	14:43:00	Wren	1	Calling	JOS
28/11/2016	4	14:44:00	Wren	1	Calling	JOS
28/11/2016	4	14:50:00	Wren	1	Calling	JOS
28/11/2016	4	14:50:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:50:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	15:03:00	Wren	1	Calling	JOS
28/11/2016	4	15:07:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	15:08:00	Wren	1	PB4, (Cutover bog) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	09:39:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:41:00	Wren	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	09:43:00	Wren	1	Calling.	JOS
29/11/2016	5	09:45:00	Wren	1	Calling.	JOS
29/11/2016	5	09:46:00	Wren	1	Perch.	JOS
29/11/2016	5	09:50:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:53:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:59:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	10:00:00	Wren	1	Calling.	JOS
29/11/2016	5	10:06:00	Wren	1	Calling.	JOS
29/11/2016	5	10:09:00	Wren	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	10:10:00	Wren	1	Calling.	JOS
29/11/2016	5	10:20:00	Wren	1	Calling.	JOS
29/11/2016	5	10:26:00	Wren	1	Calling.	JOS
29/11/2016	5	10:30:00	Wren	1	WS1, (Scrub/ transitional woodland) Perched on birch tree.	JOS
29/11/2016	5	10:36:00	Wren	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	5	10:36:00	Wren	1	WN7, (Bog woodland) Calling in birch woodland.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	7	14:08:00	Wren	1	Calling in birch trees.	JOS
29/11/2016	7	14:10:00	Wren	1	Calling.	JOS
29/11/2016	7	14:15:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:25:00	Wren	1	Calling.	JOS
29/11/2016	7	14:26:00	Wren	1	Calling.	JOS
29/11/2016	7	14:32:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:36:00	Wren	1	Calling.	JOS
29/11/2016	7	14:40:00	wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:46:00	wren	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	8	15:01:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:05:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:07:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:07:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:11:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	1		Wren	1	PB4, (Cutover bog) Calling	JH
24/01/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Wren	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling from cover	JH
24/01/2017			Wren	1	PB4, (Cutover bog) Calling from cover	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	6	11:05:00	Blue tit	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	14:58:00	Blue tit	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	4		Blue Tit	4	PB4, (Cutover bog) Perched	JH
14/12/2016	8		Blue Tit	2	PB4, (Cutover bog) Perched	JH
24/01/2017			Blue Tit	3	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling from cover	JH
24/01/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
24/01/2017			Blue Tit	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Blue Tit	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) WS2, (Immature woodland) Calling	JH
13/02/2017			Blue Tit	3	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
13/02/2017			Blue Tit	5	WS, (Scrub/ transitional woodland) Perched in Treeline	JH
13/02/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) Perched in scrub	JH
13/02/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Perched in Birch Tree	JH
13/02/2017			Blue Tit	4	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
13/02/2017			Blue Tit	1	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Blue Tit	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Blue Tit	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Blue Tit	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
28/11/2016	1	10:30:00	Bullfinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:33:00	Bullfinch	6	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling in flight. Perch in willow. Band 1.	JOS
28/11/2016	1	10:47:00	Bullfinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:11:00	Bullfinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:12:00	Bullfinch	1	PB4, (Cutover bog) WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:20:00	Bullfinch	4	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Bullfinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:17:00	Bullfinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:35:00	Bullfinch	1	WN7, (Bog woodland) Calling	JOS
29/11/2016	1		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	1		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Bullfinch	1	WN7, (Bog woodland)	JOS
29/11/2016	6	10:54:00	Bullfinch	3	In flight, Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	6	11:05:00	Bullfinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	13:51:00	Bullfinch	1	Calling.	JOS
29/11/2016	7	14:03:00	Bullfinch	1	Calling.	JOS
29/11/2016	7	14:52:00	Bullfinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:11:00	Bullfinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	1		Bullfinch	2	PB4, (Cutover bog) Calling	JH
14/12/2016	3		Bullfinch	3	PB4, (Cutover bog) Travelling	JH
14/12/2016	7		Bullfinch	2	PB4, (Cutover bog) Perched	JH
24/01/2017			Bullfinch	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
24/01/2017			Bullfinch	2	WS, (Scrub/ transitional woodland) Perched in Scrub	JH
24/01/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Travelling	JH
24/01/2017			Bullfinch	1	PB4, (Cutover bog) Travelling	JH
24/01/2017			Bullfinch	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Bullfinch	1	PB4, (Cutover bog) Perched in Birch Tree	JH
13/02/2017			Bullfinch	2	WS, (Scrub/ transitional woodland) WS2, (Immature woodland) Calling	JH
13/02/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) WS2, (Immature woodland) Travelling	JH
13/02/2017			Bullfinch	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Bullfinch	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
14/12/2016	6		Buzzard	1	PB4, (Cutover bog) WD4, (Conifer plantation) Flying	JH
20/03/2017			Buzzard	1	PB4, (Cutover bog) Hunting and flying on	JH
20/03/2017			Buzzard	1	PB4, (Cutover bog) Hunting and gliding on wind	JH
28/11/2016	1	10:31:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:34:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:37:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:10:00	Chaffinch	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:14:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:20:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:21:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:11:00	Chaffinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:54:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:03:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:20:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	2	13:21:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:24:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:37:00	Chaffinch	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:39:00	Chaffinch	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	4	14:30:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	14:38:00	Chaffinch	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:47:00	Chaffinch	1	Calling	JOS
28/11/2016	4	15:14:00	Chaffinch	1	WN7, (Bog woodland) Calling	JOS
29/11/2016	2		Chaffinch	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Chaffinch	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Chaffinch	1	WN7, (Bog woodland)	JOS
29/11/2016	3		Chaffinch	1	WN7, (Bog woodland)	JOS
29/11/2016	5	09:01:00	Chaffinch	1	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	09:37:00	Chaffinch	1	Calling.	JOS
29/11/2016	5	09:59:00	Chaffinch	1	Calling.	JOS
29/11/2016	5	10:01:00	Chaffinch	1	Calling.	JOS
29/11/2016	5	10:02:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	10:10:00	Chaffinch	1	Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	10:25:00	Chaffinch	1	Calling. In flight.	JOS
29/11/2016	5	10:33:00	Chaffinch	1	Calling.	JOS
29/11/2016	6	10:45:00	Chaffinch	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	6	10:49:00	Chaffinch	1	WN7, (Bog woodland) Calls from willows.	JOS
29/11/2016	6	10:51:00	Chaffinch	5	In flight.	JOS
29/11/2016	6	11:37:00	Chaffinch	1	WD4, (Conifer plantation) Calling in conifers.	JOS
29/11/2016	6	11:48:00	Chaffinch	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	12:00:00	Chaffinch	1	HH1, (Dry siliceous heath) Calling.	JOS
29/11/2016	6	12:05:00	Chaffinch	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:40:00	Chaffinch	1	In flight, calling.	JOS
29/11/2016	7	13:40:00	Chaffinch	1	Calling.	JOS
29/11/2016	7	13:47:00	Chaffinch	1	Calling.	JOS
29/11/2016	7	13:55:00	Chaffinch	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:58:00	Chaffinch	1	Calling.	JOS
29/11/2016	7	14:15:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:52:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	14:59:00	Chaffinch	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	5		Chaffinch	40	PB4, (Cutover bog) Flying	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
14/12/2016	8		Chaffinch	4	PB4, (Cutover bog) Travelling	JH
24/01/2017			Chaffinch	3	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Perched in Birch Tree	JH
24/01/2017			Chaffinch	7	WS, (Scrub/ transitional woodland) Perched in Scrub	JH
24/01/2017			Chaffinch	3	PB4, (Cutover bog) Perched in Birch Tree	JH
13/02/2017			Chaffinch	6	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Travelling	JH
20/03/2017			Chaffinch	4	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Chaffinch	2	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Chaffinch	5	WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Perched on Conifer Tree	JH
20/03/2017			Chiffchaff	1	WS, (Scrub/ transitional woodland) Calling	JH
28/11/2016	1	10:46:00	Coal tit	3	WL2, (Treelines) WS, (Scrub/ transitional woodland) In flight, perch, Calling	JOS
28/11/2016	1	11:27:00	Coal tit	3	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:47:00	Coal tit	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:50:00	Coal tit	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:05:00	Coal tit	4	WS1, (Scrub/ transitional woodland) Calling, in flight, perch on birch trees by drain.	JOS
28/11/2016	2	13:21:00	Coal tit	1	WS1, (Scrub/ transitional woodland) Calling. Perch.	JOS
28/11/2016	2	13:30:00	Coal tit	2	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:40:00	Coal tit	3	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:43:00	Coal tit	1	Conifer tree Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	3	14:02:00	Coal tit	3	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	14:03:00	Coal tit	2	WN7, (Bog woodland) Calling	JOS
28/11/2016	4	14:39:00	Coal tit	4	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	14:43:00	Coal tit	1	Calling	JOS
28/11/2016	4	15:13:00	Coal tit	2	WN7, (Bog woodland) Calling	JOS
29/11/2016	1		Coal Tit	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Coal Tit	1	WN7, (Bog woodland)	JOS
29/11/2016	5	09:01:00	Coal tit	3	FW4, (Drainage ditches) On birches by drain.	JOS
29/11/2016	5	09:32:00	Coal tit	1	Calling.	JOS
29/11/2016	5	10:02:00	Coal tit	1	Calling.	JOS
29/11/2016	5	10:12:00	Coal tit	1	Calling.	JOS
29/11/2016	5	10:16:00	Coal tit	1	Calling.	JOS
29/11/2016	6	10:52:00	Coal tit	1	WD4, (Conifer plantation) Perch and call from conifers	JOS
29/11/2016	6	10:58:00	Coal tit	4	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	10:59:00	Coal tit	4	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:12:00	Coal tit	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:39:00	Coal tit	1	WD4, (Conifer plantation) Calling in conifers.	JOS
29/11/2016	6	11:41:00	Coal tit	1	WD4, (Conifer plantation) Calling in conifers.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	6	11:47:00	Coal tit	1	Calling.	JOS
29/11/2016	6	11:48:00	Coal tit	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:49:00	Coal tit	1	FW4, (Drainage ditches) Calling.	JOS
29/11/2016	6	11:55:00	Coal tit	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	12:03:00	Coal tit	10	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:40:00	Coal tit	1	Calling.	JOS
29/11/2016	7	14:14:00	Coal tit	2	WS1, (Scrub/ transitional woodland) Calling. In flight.	JOS
24/01/2017			Coal Tit	2	WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Coal Tit	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Coal Tit	2	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Coal Tit	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Coal Tit	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
29/11/2016	5	10:16:00	Crossbill	1	Calling.	JOS
28/11/2016	1	10:36:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:40:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) In flight, perch, Calling	JOS
28/11/2016	1	10:50:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:56:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	11:03:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling. Perched on birch tree.	JOS
28/11/2016	1	11:08:00	Dunnock	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:21:00	Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:21:00	Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:05:00	Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:10:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:15:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:21:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling. In flight.	JOS
28/11/2016	3	14:02:00	Dunnock	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:30:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	15:00:00	Dunnock	1	Calling	JOS
28/11/2016	4	15:07:00	Dunnock	1	WN7, (Bog woodland)	JOS
29/11/2016	1		Dunnock	1	WN7, (Bog woodland)	JOS
29/11/2016	5	08:20:00	Dunnock	1	Calling	JOS
29/11/2016	5	09:31:00	Dunnock	1	Calling.	JOS
29/11/2016	5	09:32:00	Dunnock	1	Calling.	JOS
29/11/2016	5	09:42:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	10:36:00	Dunnock	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	5	10:37:00	Dunnock	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	6	11:08:00	Dunnock	1	Calling.	JOS
29/11/2016	6	11:18:00	Dunnock	1	Calling, perch.	JOS
29/11/2016	6	11:34:00	Dunnock	1	WD4, (Conifer plantation) Calling in conifers.	JOS
29/11/2016	7	14:05:00	Dunnock	1	Calling.	JOS
29/11/2016	7	14:15:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:47:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:05:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:08:00	Dunnock	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
24/01/2017			Dunnock	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Dunnock	2	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Dunnock	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Dunnock	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
24/01/2017			Golden Plover	3	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Golden Plover	50	PB4, (Cutover bog) Flushed by observer	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Golden Plover	1	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Golden Plover	1	PB4, (Cutover bog) Perched on PB4	JH
20/03/2017			Golden Plover	80	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Golden Plover	3	PB4, (Cutover bog) Flushed by observer	JH
28/11/2016	1	11:28:00	Goldfinch	1	WS, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	5	08:47:00	Goldfinch	1	PB4, (Cutover bog) In flight, calling.	JOS
24/01/2017			Great Tit	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
24/01/2017			Great Tit	3	WS, (Scrub/ transitional woodland) Calling	JH
13/02/2017			Great Tit	1	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
13/02/2017			Great Tit	2	WS, (Scrub/ transitional woodland) Calling from cover	JH
13/02/2017			Great Tit	2	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
13/02/2017			Great Tit	1	WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Perched in Birch Tree	JH
20/03/2017			Great Tit	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Great Tit	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
14/12/2016	1		Greenfinch	2	PB4, (Cutover bog) Perched	JH
13/02/2017			Greenfinch	1	WS, (Scrub/ transitional woodland) Calling	JH
28/11/2016	1	11:33:00	Grey heron	1	WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
24/01/2017			Grey Heron	1	PB4, (Cutover bog) FW4, (Drainage ditches) Flushed by observer	JH
20/03/2017			Grey Heron	1	PB4, (Cutover bog) FW4, (Drainage ditches) Travelling	JH
28/11/2016	1	12:15:00	Hooded crow	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:41:00	Hooded crow	1	WS1, (Scrub/ transitional woodland) Fly, calling	JOS
29/11/2016	5	09:05:00	Hooded crow	1	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	09:37:00	Hooded crow	1	Calling.	JOS
29/11/2016	5	09:43:00	Hooded crow	1	Calling.	JOS
29/11/2016	5	09:59:00	Hooded crow	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	10:05:00	Hooded crow	1	Calling.	JOS
29/11/2016	5	10:20:00	Hooded crow	1	Calling.	JOS
29/11/2016	6	10:55:00	Hooded crow	1	In flight, Calling.	JOS
14/12/2016	6		Hooded Crow	1	PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
24/01/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
24/01/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
24/01/2017			Hooded Crow	1	PB4, (Cutover bog) WD4, (Conifer plantation) Travelling	JH
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Hooded Crow	2	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
20/03/2017			Hooded Crow	1	PB4, (Cutover bog) Travelling	JH
28/11/2016	2	13:10:00	Jay	1	WS1, (Scrub/ transitional woodland) Calling	JOS
24/01/2017			Jay	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Jay	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Jay	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Jay	1	WS, (Scrub/ transitional woodland) Calling	JH
29/11/2016	5	09:25:00	Kestrel	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
13/02/2017			Kestrel	1	PB4, (Cutover bog) Hunting and Hovering - Female	JH
28/11/2016	1	11:30:00	Lapwing	1	WS, (Scrub/ transitional woodland) Calling. On site. Alarm calling, flies high over bog band 3, calling ~3 minutes	JOS
28/11/2016	4	15:05:00	Lesser Black-backed Gull	2		JOS
28/11/2016	2	12:48:00	Lesser redpoll	6	PB4, (Cutover bog) WS1, (Scrub/ transitional woodland) Calling in flight.	JOS
28/11/2016	2	12:50:00	Lesser redpoll	2	WS1, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	3	14:05:00	Lesser redpoll	20	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	14:10:00	Lesser redpoll	20	WS1, (Scrub/ transitional woodland) In flight, perch on birch tree, calling.	JOS
28/11/2016	3	14:25:00	Lesser redpoll	10	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	14:41:00	Lesser redpoll	13	Calling	JOS
28/11/2016	4	14:45:00	Lesser redpoll	4	Calling	JOS
28/11/2016	4	14:52:00	Lesser redpoll	1	In flight, calling, band 1.	JOS
29/11/2016	5	10:06:00	Lesser redpoll	3	Calling.	JOS
29/11/2016	5	10:20:00	Lesser redpoll	1	PB4, (Cutover bog) Calling. Flock in flight, band 1, over bog.	JOS
29/11/2016	5	10:34:00	Lesser redpoll	2	Calling. In flight.	JOS
29/11/2016	6	11:23:00	Lesser redpoll	4	Calling.	JOS
29/11/2016	7	13:40:00	Lesser redpoll	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:55:00	Lesser redpoll	4	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	14:31:00	Lesser redpoll	12	WS1, (Scrub/ transitional woodland) In flight, calling, perch on birch trees.	JOS
29/11/2016	7	14:34:00	Lesser redpoll	10	WS1, (Scrub/ transitional woodland) In birch trees calling.	JOS
29/11/2016	7	14:52:00	lesser redpoll	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
24/01/2017			Lesser Redpoll	9	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Travelling	JH
24/01/2017			Lesser Redpoll	4	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
24/01/2017			Lesser Redpoll	35	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
13/02/2017			Lesser Redpoll	1	WS, (Scrub/ transitional woodland) WS2, (Immature woodland) Calling	JH
28/11/2016	1	10:48:00	Linnet	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) In flight, perch, Calling	JOS
28/11/2016	1	11:54:00	Linnet	10	WS, (Scrub/ transitional woodland) Calling, in flight, band 1.	JOS
28/11/2016	2	13:21:00	Linnet	14	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:32:00	Linnet	10	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:39:00	Linnet	5	WN7, (Bog woodland) Calling	JOS
29/11/2016	5	09:05:00	Linnet	1	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	10:25:00	Linnet	1	Calling. In flight.	JOS
29/11/2016	6	10:45:00	Linnet	3	Calling. In flight.	JOS
29/11/2016	6	11:53:00	Linnet	3	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:58:00	Linnet	1	WD4, (Conifer plantation) Calling.	JOS
14/12/2016	1		Linnet	5	PB4, (Cutover bog) Travelling	JH
28/11/2016	1	10:25:00	Long-tailed tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Perched, calling.	JOS
28/11/2016	1	10:34:00	Long-tailed tit	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:46:00	Long-tailed tit	10	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:13:00	Long-tailed tit	3	WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	2	12:54:00	Long-tailed tit	10	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:13:00	Long-tailed tit	4	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:24:00	Long-tailed tit	4	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	14:15:00	Long-tailed tit	3	WS1, (Scrub/ transitional woodland) Calling in birch trees	JOS
28/11/2016	4	14:44:00	Long-tailed tit	5	Calling	JOS
28/11/2016	4	15:09:00	Long-tailed tit	10	WN7, (Bog woodland) Calling	JOS
28/11/2016	4	15:20:00	Long-tailed tit	2	WS1, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	2		Long-tailed Tit	3	WN7, (Bog woodland)	JOS
29/11/2016	5	08:55:00	Long-tailed tit	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	10:30:00	Long-tailed tit	14	Calling.	JOS
29/11/2016	6	11:08:00	Long-tailed tit	10	WS1, (Scrub/ transitional woodland) Calling in willows.	JOS
29/11/2016	6	11:22:00	Long-tailed tit	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	6	11:57:00	Long-tailed tit	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	14:08:00	Long-tailed tit	1	Calling in birch trees.	JOS
29/11/2016	7	14:30:00	Long-tailed tit	1	Calling.	JOS
14/12/2016	5		Long-tailed Tit	5	PB4, (Cutover bog) Perched	JH
24/01/2017			Long-tailed Tit	2	WS, (Scrub/ transitional woodland) Travelling	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	08:20:00	Mallard	3	Calling. In flight band 2	JOS
29/11/2016	5	08:48:00	Mallard	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	08:48:00	Mallard	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	6	11:22:00	Mallard	13	PB4, (Cutover bog) Calling.	JOS
29/11/2016	6	11:24:00	Mallard	12	Roosting on cutover bog/pond, disturbed by surveyor. 10 fly north west, 2 fly south east calling.	JOS
29/11/2016	6	11:26:00	Mallard	2	Fly North from pond	JOS
24/01/2017			Mallard	2	PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) Flushed by observer	JH
13/02/2017			Mallard	3	PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) Flushed by observer	JH
20/03/2017			Mallard	1	PB4, (Cutover bog) Travelling	JH
28/11/2016	1	11:56:00	Meadow pipit	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling, in flight, perches on birch tree.	JOS
28/11/2016	2	12:35:00	Meadow pipit	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	14:06:00	Meadow pipit	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	08:48:00	Meadow pipit	1	PB4, (Cutover bog) Calling, fly.	JOS
29/11/2016	5	08:48:00	Meadow pipit	3	PB4, (Cutover bog) In heather perched. Calling. Fly.	JOS
29/11/2016	5	08:48:00	Meadow pipit	7	PB4, (Cutover bog) Fly, drop down into heather.	JOS
29/11/2016	5	08:55:00	Meadow pipit	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	09:01:00	Meadow pipit	5	PB4, (Cutover bog) calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	10:01:00	Meadow pipit	1	Calling.	JOS
29/11/2016	5	10:13:00	Meadow pipit	1	Calling.	JOS
29/11/2016	6	11:10:00	Meadow pipit	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	6	11:14:00	Meadow pipit	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	7	13:40:00	Meadow pipit	1	Calling.	JOS
29/11/2016	7	13:58:00	Meadow pipit	1	Calling.	JOS
29/11/2016	7	14:20:00	Meadow pipit	1	Calling. In flight.	JOS
24/01/2017			Meadow Pipit	2	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
24/01/2017			Meadow Pipit	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
24/01/2017			Meadow Pipit	1	PB4, (Cutover bog) Calling	JH
13/02/2017			Meadow Pipit	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Meadow Pipit	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Meadow Pipit	1	PB4, (Cutover bog) Calling	JH
20/03/2017			Meadow Pipit	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Perched on Willow Bush	JH
20/03/2017			Meadow Pipit	2	PB4, (Cutover bog) Travelling	JH
20/03/2017			Meadow Pipit	1	PB4, (Cutover bog) Calling	JH
28/11/2016	2	12:41:00	Mistle thrush	1	WS1, (Scrub/ transitional woodland) In flight.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	11:52:00	Moorhen	1	WS, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	5	09:01:00	Moorhen	1	On pond.	JOS
14/12/2016	7		Moorhen	1	PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) Perched	JH
28/11/2016	4	14:33:00	Pied wagtail	1	WS1, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	7	14:12:00	Pied wagtail	1	Calling. In flight.	JOS
28/11/2016	1	11:33:00	Raven	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:54:00	Raven	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:17:00	Raven	2	WS1, (Scrub/ transitional woodland) In flight, Calling.	JOS
28/11/2016	3	14:19:00	Raven	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:51:00	Raven	1	PB4, (Cutover bog) Calling, in flight.	JOS
28/11/2016	4	15:13:00	Raven	5	Soaring and calling, band 3.	JOS
29/11/2016	6	10:55:00	raven	1	In flight, Calling.	JOS
29/11/2016	6	11:52:00	Raven	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:58:00	Raven	1	Calling.	JOS
24/01/2017			Raven	1	PB4, (Cutover bog) Travelling	JH
24/01/2017			Raven	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Raven	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Raven	1	PB4, (Cutover bog) Travelling	JH
28/11/2016	1	10:46:00	Reed bunting	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) In flight, perch, Calling	JOS
29/11/2016	5	08:37:00	Reed bunting	6	FW4, (Drainage ditches) PB4, (Cutover bog) Perched on willows by drain on cutover bog.	JOS
29/11/2016	5	09:05:00	Reed bunting	5	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	09:10:00	Reed bunting	1	PB4, (Cutover bog) In flight, calling.	JOS
29/11/2016	5	09:10:00	Reed bunting	7	PB4, (Cutover bog) In flight, perch.	JOS
29/11/2016	7	13:51:00	Reed bunting	1	Fly	JOS
13/02/2017			Reed Bunting	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Perched in Willow Bushes	JH
20/03/2017			Reed Bunting	1	PB4, (Cutover bog) Perched in Birch Tree	JH
28/11/2016	1	10:32:00	Robin	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:43:00	Robin	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:47:00	Robin	1	WL2, (Treelines) WS, (Scrub/ transitional woodland)	JOS
28/11/2016	1	10:51:00	Robin	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:11:00	Robin	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:11:00	Robin	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:12:00	Robin	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:18:00	Robin	1	WS, (Scrub/ transitional woodland) Perched on birch. Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	11:28:00	Robin	1	WS, (Scrub/ transitional woodland) In flight, perch in willows.	JOS
28/11/2016	1	11:38:00	Robin	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	1	12:06:00	Robin	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:13:00	Robin	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:21:00	Robin	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:41:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing	JOS
28/11/2016	2	12:47:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing	JOS
28/11/2016	2	12:48:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing	JOS
28/11/2016	2	13:10:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:11:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing.	JOS
28/11/2016	2	13:21:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:23:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:35:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:37:00	Robin	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:37:00	Robin	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:40:00	Robin	1	WN7, (Bog woodland)	JOS
28/11/2016	3	13:41:00	Robin	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:46:00	Robin	1	WN7, (Bog woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	3	13:49:00	Robin	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	13:54:00	Robin	1	Calling	JOS
28/11/2016	4	14:34:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	4	14:49:00	Robin	1	Calling	JOS
28/11/2016	4	15:01:00	Robin	1	Calling	JOS
29/11/2016	1		Robin	1	WN7, (Bog woodland)	JOS
29/11/2016	1		Robin	1	WN7, (Bog woodland)	JOS
29/11/2016	1		Robin	1	WN7, (Bog woodland)	JOS
29/11/2016	3		Robin	1	WN7, (Bog woodland)	JOS
29/11/2016	3		Robin	1	WN7, (Bog woodland)	JOS
29/11/2016	5	08:30:00	Robin	1		JOS
29/11/2016	5	08:35:00	Robin	1	Singing	JOS
29/11/2016	5	08:38:00	Robin	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	08:45:00	Robin	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	08:47:00	Robin	1	PB4, (Cutover bog) In flight, calling.	JOS
29/11/2016	5	08:48:00	Robin	1	PB4, (Cutover bog) Calling, fly, perch.	JOS
29/11/2016	5	09:05:00	Robin	1	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	10:09:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	10:16:00	Robin	1	Singing.	JOS
29/11/2016	5	10:38:00	Robin	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	6	10:48:00	Robin	1	Calling.	JOS
29/11/2016	6	10:52:00	Robin	1	Sings.	JOS
29/11/2016	6	11:01:00	Robin	1	WS1, (Scrub/ transitional woodland) Singing.	JOS
29/11/2016	6	11:23:00	Robin	1	Singing.	JOS
29/11/2016	7	13:40:00	Robin	1	Calling.	JOS
29/11/2016	7	13:51:00	Robin	1	Calling.	JOS
29/11/2016	7	14:06:00	Robin	1	Calling.	JOS
29/11/2016	7	14:17:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:25:00	Robin	1	Singing.	JOS
29/11/2016	7	14:28:00	Robin	1	Calling.	JOS
29/11/2016	7	14:29:00	Robin	1	Calling.	JOS
29/11/2016	7	14:32:00	Robin	1	Singing.	JOS
29/11/2016	7	14:43:00	Robin	1	PB4, (Cutover bog) Calling/singing.	JOS
29/11/2016	7	14:51:00	Robin	1	WS1, (Scrub/ transitional woodland) In flight, band 2, calling.	JOS
29/11/2016	8	15:01:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	8	15:03:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:05:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:15:00	Robin	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	2		Robin	1	PB4, (Cutover bog) Perched	JH
24/01/2017			Robin	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing/ Perched in Birch Tree	JH
24/01/2017			Robin	2	PB4, (Cutover bog) Singing	JH
24/01/2017			Robin	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
24/01/2017			Robin	1	WS, (Scrub/ transitional woodland) Singing	JH
24/01/2017			Robin	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
24/01/2017			Robin	1	PB4, (Cutover bog) Perched in Birch Tree	JH
13/02/2017			Robin	1	WS, (Scrub/ transitional woodland) Singing	JH
13/02/2017			Robin	1	Singing	JH
20/03/2017			Robin	1	WS, (Scrub/ transitional woodland) Singing	JH
20/03/2017			Robin	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Robin	1	WS, (Scrub/ transitional woodland) Singing	JH
20/03/2017			Robin	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
28/11/2016	4	14:55:00	Rook	2	PB4, (Cutover bog) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
24/01/2017			Rook	2	PB4, (Cutover bog) Travelling	JH
24/01/2017			Rook	2	PB4, (Cutover bog) Travelling	JH
24/01/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Rook	1	WS, (Scrub/ transitional woodland) GA1, (Improved agricultural grassland) Travelling	JH
13/02/2017			Rook	2	WS, (Scrub/ transitional woodland) GA1, (Improved agricultural grassland) Travelling	JH
13/02/2017			Rook	3	PB1, (Raised bog) PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	2	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
20/03/2017			Rook	1	PB4, (Cutover bog) Travelling	JH
14/12/2016	4		Siskin	1	PB4, (Cutover bog) Calling	JH
28/11/2016	3	13:54:00	Snipe	1	WS, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	7	13:56:00	Snipe	1	Flight band 1, calling.	JOS
14/12/2016	2		Snipe	2	PB4, (Cutover bog) Flying	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
14/12/2016	4		Snipe	7	PB4, (Cutover bog) Flying	JH
14/12/2016	5		Snipe	3	PB4, (Cutover bog) Flying	JH
14/12/2016	5		Snipe	1	PB4, (Cutover bog) Flying	JH
14/12/2016	7		Snipe	2	PB4, (Cutover bog) Flying	JH
14/12/2016	8		Snipe	1	PB4, (Cutover bog) Flying	JH
24/01/2017			Snipe	27	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	7	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	6	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	21	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	10	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	5	PB4, (Cutover bog) Flushed by observer	JH
24/01/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	2	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	7	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	24	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	2	PB4, (Cutover bog) Flushed by observer	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	9	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	6	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	5	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	4	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	5	PB4, (Cutover bog) Flushed by observer	JH
13/02/2017			Snipe	24	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	4	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Snipe	1	PB4, (Cutover bog) Flushed by observer	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
20/03/2017			Snipe	3	PB4, (Cutover bog) Flushed by observer	JH
14/12/2106	2		Snipe	5	PB4, (Cutover bog) Flying	JH
24/01/2017			Song Thrush	2	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Song Thrush	3	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
13/02/2017			Song Thrush	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
20/03/2017			Song Thrush	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Song Thrush	1	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
13/02/2017			Starling	1	PB4, (Cutover bog) Travelling	JH
28/11/2016	1	11:28:00	Stonechat	1	WS, (Scrub/ transitional woodland) Calling. In flight, perch.	JOS
29/11/2016	5	08:38:00	Stonechat	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	6	11:28:00	Teal	1	On pond, flies south.	JOS
14/12/2016	8		Teal	3	PB4, (Cutover bog) FW4, (Drainage ditches) Flying	JH
20/03/2017			Teal	2	FL8, (Other artificial lakes and ponds) PB4, (Cutover bog) Flushed by observer	JH
29/11/2016	5	08:15:00	Whooper swan	-	Heard calling - no visual.	JOS
29/11/2016	5	08:48:00	Whooper swan	5	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	09:00:00	Whooper swan	7	PB4, (Cutover bog) On pond calling.	JOS
29/11/2016	5	09:16:00	Whooper swan	7	PB4, (Cutover bog) In flight, band 1, then b (~15m), calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	09:35:00	Whooper swan	5	Calling. Flight band 2, ~15m, calling.	JOS
28/11/2016	1	11:38:00	Wigeon	8	PB4, (Cutover bog) On pond on cutover bog.	JOS
28/11/2016	1	11:45:00	Wigeon	25	PB4, (Cutover bog) In flight. Band 1/2	JOS
13/02/2017			Wood Pigeon	1	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Travelling	JH
13/02/2017			Wood Pigeon	1	PB4, (Cutover bog) Travelling	JH
13/02/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) Flushed by observer	JH
13/02/2017			Wood Pigeon	3	PB4, (Cutover bog) Travelling	JH
13/02/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Perched	JH
13/02/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) GA1, (Improved agricultural grassland) Travelling	JH
13/02/2017			Wood Pigeon	2	WS, (Scrub/ transitional woodland) Perched in Birch Tree	JH
20/03/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Flushed by observer	JH
20/03/2017			Wood Pigeon	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Wood Pigeon	2	WS, (Scrub/ transitional woodland) Flushed by observer	JH
29/11/2016	6	11:50:00	Woodcock	1	HH1, (Dry siliceous heath) Calling.	JOS
28/11/2016	1	10:20:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Perched, calling.	JOS
28/11/2016	1	10:27:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:46:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	10:54:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:05:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:27:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:28:00	Wren	1	PB4, (Cutover bog) WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:34:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:38:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	1	11:56:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	11:57:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:00:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:16:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:20:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:41:00	Wren	1	WS1, (Scrub/ transitional woodland) Fly	JOS
28/11/2016	2	12:41:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:10:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:12:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:21:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling. Perch	JOS
28/11/2016	2	13:24:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	2	13:28:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:52:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	13:54:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	13:58:00	Wren	1	WN7, (Bog woodland) Calling	JOS
28/11/2016	3	14:07:00	Wren	1	Calling	JOS
28/11/2016	3	14:17:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	3	14:22:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:32:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:41:00	Wren	1	Calling	JOS
28/11/2016	4	14:43:00	Wren	1	Calling	JOS
28/11/2016	4	14:44:00	Wren	1	Calling	JOS
28/11/2016	4	14:50:00	Wren	1	Calling	JOS
28/11/2016	4	14:50:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	14:50:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	15:03:00	Wren	1	Calling	JOS
28/11/2016	4	15:07:00	Wren	1	PB4, (Cutover bog) Calling	JOS
28/11/2016	4	15:08:00	Wren	1	PB4, (Cutover bog) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	4	15:12:00	Wren	1	Gorse on cutover bog, Calling	JOS
28/11/2016	4	15:15:00	Wren	1	FW4, (Drainage ditches) WS1, (Scrub/ transitional woodland) Calling	JOS
29/11/2016	1		Wren	1	WN7, (Bog woodland)	JOS
29/11/2016	1		Wren	1	WN7, (Bog woodland)	JOS
29/11/2016	2		Wren	1	WN7, (Bog woodland)	JOS
29/11/2016	3		Wren	1	WN7, (Bog woodland)	JOS
29/11/2016	3		Wren	1	WN7, (Bog woodland)	JOS
29/11/2016	5	08:18:00	Wren	1	Calling	JOS
29/11/2016	5	08:20:00	Wren	1		JOS
29/11/2016	5	08:38:00	Wren	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	08:48:00	Wren	1	PB4, (Cutover bog) Perch, call, fly.	JOS
29/11/2016	5	08:48:00	Wren	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	09:01:00	Wren	1	WS1, (Scrub/ transitional woodland) PB4, (Cutover bog) calling.	JOS
29/11/2016	5	09:05:00	Wren	1	PB4, (Cutover bog) calling.	JOS
29/11/2016	5	09:32:00	Wren	1	FW4, (Drainage ditches) WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:33:00	Wren	1	Calling.	JOS
29/11/2016	5	09:35:00	Wren	1	PB4, (Cutover bog) Calling.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	09:39:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:41:00	Wren	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	09:43:00	Wren	1	Calling.	JOS
29/11/2016	5	09:45:00	Wren	1	Calling.	JOS
29/11/2016	5	09:46:00	Wren	1	Perch.	JOS
29/11/2016	5	09:50:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:53:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	09:59:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	5	10:00:00	Wren	1	Calling.	JOS
29/11/2016	5	10:06:00	Wren	1	Calling.	JOS
29/11/2016	5	10:09:00	Wren	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	5	10:10:00	Wren	1	Calling.	JOS
29/11/2016	5	10:20:00	Wren	1	Calling.	JOS
29/11/2016	5	10:26:00	Wren	1	Calling.	JOS
29/11/2016	5	10:30:00	Wren	1	WS1, (Scrub/ transitional woodland) Perched on birch tree.	JOS
29/11/2016	5	10:36:00	Wren	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	5	10:36:00	Wren	1	WN7, (Bog woodland) Calling in birch woodland.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	5	10:37:00	Wren	1	WN7, (Bog woodland) Calling in birch woodland.	JOS
29/11/2016	6	10:49:00	Wren	1	Calls	JOS
29/11/2016	6	11:00:00	wren	1	WS1, (Scrub/ transitional woodland) Calling in birch tree.	JOS
29/11/2016	6	11:05:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling, in birch trees.	JOS
29/11/2016	6	11:05:00	Wren	2	WS1, (Scrub/ transitional woodland) Perch, call, willows.	JOS
29/11/2016	6	11:24:00	Wren	1	Calling.	JOS
29/11/2016	6	11:45:00	Wren	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	6	11:47:00	Wren	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	6	11:58:00	Wren	1	HH1, (Dry siliceous heath) Calling.	JOS
29/11/2016	6	12:05:00	Wren	4	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:40:00	Wren	1	Calling.	JOS
29/11/2016	7	13:40:00	Wren	1	Calling.	JOS
29/11/2016	7	13:51:00	Wren	2	Fly	JOS
29/11/2016	7	13:55:00	Wren	1	WD4, (Conifer plantation) Calling.	JOS
29/11/2016	7	13:56:00	Wren	1	Calling.	JOS
29/11/2016	7	13:58:00	Wren	1	Calling.	JOS
29/11/2016	7	14:00:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling in birch trees.	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
29/11/2016	7	14:08:00	Wren	1	Calling in birch trees.	JOS
29/11/2016	7	14:10:00	Wren	1	Calling.	JOS
29/11/2016	7	14:15:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:25:00	Wren	1	Calling.	JOS
29/11/2016	7	14:26:00	Wren	1	Calling.	JOS
29/11/2016	7	14:32:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:36:00	Wren	1	Calling.	JOS
29/11/2016	7	14:40:00	wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	7	14:46:00	wren	1	PB4, (Cutover bog) Calling.	JOS
29/11/2016	8	15:01:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:05:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:07:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:07:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
29/11/2016	8	15:11:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling.	JOS
14/12/2016	1		Wren	1	PB4, (Cutover bog) Calling	JH
24/01/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling	JH
24/01/2017			Wren	2	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling from cover	JH
24/01/2017			Wren	1	PB4, (Cutover bog) Calling from cover	JH

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
13/02/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling from cover	JH
13/02/2017			Wren	1	PB4, (Cutover bog) Calling from cover	JH
13/02/2017			Wren	1	PB4, (Cutover bog) Calling from cover	JH
13/02/2017			Wren	1	PB4, (Cutover bog) Perched on Ling Heather	JH
13/02/2017			Wren	1	PB4, (Cutover bog) Calling from cover	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) Calling	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
20/03/2017			Wren	1	WS, (Scrub/ transitional woodland) Alarm Calling	JH
20/03/2017			Wren	1	PB4, (Cutover bog) Calling	JH
28/11/2016	1	10:50:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	10:52:00	Wren	1	WL2, (Treelines) WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:07:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS

Table 3: Winter Walkover Survey Data

Survey Date	VP/Trans/Qu ad No.	Time of Observation	Species	No. of birds	Habitat and Activity	Surveyor
28/11/2016	1	12:07:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	1	12:14:00	Wren	1	WS, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:45:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	12:51:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	2	13:01:00	Wren	1	WS1, (Scrub/ transitional woodland) Calling	JOS
28/11/2016	3	13:39:00	Wren	1	WN7, (Bog woodland) Calling	JOS
29/11/2016	5	08:38:00	Wren	1	PB4, (Cutover bog) Calling	JOS
29/11/2016	5	10:15:00	Wren	1	Calling, perched on birch.	JOS

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	04/04/2017	Blackbird	1		WS, (Scrub/ transitional woodland) Calling	JH
	04/04/2017	Blackbird	1	Male	WS, (Scrub/ transitional woodland) Calling	JH
	04/04/2017	Blackbird	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Blackbird	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Blackbird	1		WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Calling	JH
	05/04/2017	Blackbird	1	Male	WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Blackbird	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Blackbird	1	Male	PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Blackbird	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	15/05/2017	Blackbird				PM
	22/05/2017	Blackbird				PM
	22/05/2017	Blackbird				PM
	22/05/2017	Blackbird				PM
	22/05/2017	Blackbird				PM
	22/05/2017	Blackbird				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	06/04/2017	Blackcap	1		WS, (Scrub/ transitional woodland) Calling	JH
	12/06/2017	Blackcap				PM
	05/04/2017	Blue Tit	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Blue Tit	3		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
	05/04/2017	Blue Tit	1		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
	06/04/2017	Blue Tit	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Blue Tit	1		WS, (Scrub/ transitional woodland) Calling	JH
	22/05/2017	Blue Tit	2			PM
	24/05/2017	Blue Tit				PM
	13/06/2017	Blue Tit	10			PM
	05/04/2017	Bullfinch	1		WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Bullfinch	3	2 Male and 1 Female	WS, (Scrub/ transitional woodland) Perched	JH
	06/04/2017	Bullfinch	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	04/04/2017	Chaffinch	2		WS, (Scrub/ transitional woodland) Calling	JH
	04/04/2017	Chaffinch	1		WS, (Scrub/ transitional woodland) Perched	JH
	04/04/2017	Chaffinch	1		WS, (Scrub/ transitional woodland) Perched	JH
	04/04/2017	Chaffinch	2		WS, (Scrub/ transitional woodland) Perched	JH
	05/04/2017	Chaffinch	1	Male	WS, (Scrub/ transitional woodland) Calling	JH

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch	2			PM
	23/05/2017	Chaffinch				PM
	23/05/2017	Chaffinch				PM
	24/05/2017	Chaffinch				PM
	24/05/2017	Chaffinch				PM
	24/05/2017	Chaffinch				PM
	24/05/2017	Chaffinch				PM
	24/05/2017	Chaffinch				PM
	24/05/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch	3			PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM
	09/06/2017	Chaffinch				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	13/06/2017	Chaffinch				PM
	04/04/2017	Chiffchaff	1		WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Calling	JH
	06/04/2017	Chiffchaff	1		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
	15/05/2017	Chiffchaff				PM
	22/05/2017	Chiffchaff				PM
	22/05/2017	Chiffchaff				PM
	22/05/2017	Chiffchaff				PM
	23/05/2017	Chiffchaff				PM
	09/06/2017	Chiffchaff				PM
	09/06/2017	Chiffchaff				PM
	09/06/2017	Chiffchaff				PM
	09/06/2017	Chiffchaff				PM
	09/06/2017	Chiffchaff				PM
	09/06/2017	Chiffchaff				PM
	09/06/2017	Chiffchaff				PM
	05/04/2017	Coal Tit	1		WS, (Scrub/ transitional woodland) Calling	JH
	23/05/2017	Coal Tit				PM
	22/05/2017	Collared Dove				PM
	09/06/2017	Collared Dove				PM
	22/05/2017	Coot				PM
	22/05/2017	Cormorant				PM
	23/05/2017	Cuckoo				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	23/05/2017	Cuckoo				PM
	09/06/2017	Cuckoo	2			PM
	09/06/2017	Cuckoo				PM
	09/06/2017	Cuckoo				PM
	12/06/2017	Cuckoo				PM
	12/06/2017	Cuckoo				PM
	04/04/2017	Dunnock	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Dunnock	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Dunnock	2		PB4, (Cutover bog) Calling	JH
	06/04/2017	Dunnock	1		WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Dunnock	2		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	15/05/2017	Dunnock				PM
	22/05/2017	Dunnock				PM
	22/05/2017	Dunnock				PM
	22/05/2017	Dunnock				PM
	23/05/2017	Dunnock				PM
	23/05/2017	Dunnock				PM
	23/05/2017	Dunnock				PM
	24/05/2017	Dunnock				PM
	09/06/2017	Dunnock				PM
	12/06/2017	Dunnock				PM
	12/06/2017	Dunnock				PM
	13/06/2017	Dunnock				PM
	23/05/2017	Garden Warbler				PM
	22/05/2017	Goldcrest				PM
	22/05/2017	Goldcrest				PM
	22/05/2017	Goldcrest				PM
	22/05/2017	Goldcrest				PM
	22/05/2017	Goldcrest				PM
	22/05/2017	Goldcrest				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	22/05/2017	Goldcrest				PM
	23/05/2017	Goldcrest				PM
	23/05/2017	Goldcrest				PM
	23/05/2017	Goldcrest				PM
	23/05/2017	Goldcrest				PM
	23/05/2017	Goldcrest				PM
	24/05/2017	Goldcrest				PM
	24/05/2017	Goldcrest				PM
	09/06/2017	Goldcrest				PM
	09/06/2017	Goldcrest				PM
	12/06/2017	Goldcrest				PM
	13/06/2017	Goldcrest				PM
GP001	04/04/2017	Golden Plover	70		PB4, (Cutover bog) Flying over	JH
GP002	05/04/2017	Golden Plover	3		PB4, (Cutover bog) Flushed by observer	JH
GP003	06/04/2017	Golden Plover	1		PB4, (Cutover bog) Flushed by observer	JH
	06/04/2017	Goldfinch	2	1 Male and 1 Female	PB4, (Cutover bog) Perched on Willow Bush	JH
	23/05/2017	Goldfinch				PM
	09/06/2017	Goldfinch				PM
	09/06/2017	Goldfinch				PM
	09/06/2017	Goldfinch				PM
	12/06/2017	Goldfinch				PM
	12/06/2017	Goldfinch				PM
	12/06/2017	Goldfinch	2			PM
	23/05/2017	Grasshopper Warbler				PM
	23/05/2017	Grasshopper Warbler				PM
	09/06/2017	Grasshopper Warbler				PM
	12/06/2017	Great Black-backed Gull	2			PM
	04/04/2017	Great Tit	1		WS, (Scrub/ transitional woodland) Calling	JH

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	05/04/2017	Great Tit	1		WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Calling	JH
	06/04/2017	Great Tit	1		WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Great Tit	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	15/05/2017	Great Tit				PM
	15/05/2017	Great Tit				PM
	15/05/2017	Great Tit				PM
	15/05/2017	Great Tit				PM
	15/05/2017	Great Tit				PM
	22/05/2017	Great Tit				PM
	22/05/2017	Great Tit				PM
	22/05/2017	Great Tit				PM
	23/05/2017	Great Tit				PM
	23/05/2017	Great Tit				PM
	23/05/2017	Great Tit				PM
	23/05/2017	Great Tit	2			PM
	23/05/2017	Great Tit				PM
	23/05/2017	Great Tit				PM
	24/05/2017	Great Tit				PM
	09/06/2017	Great Tit				PM
	09/06/2017	Great Tit				PM
	09/06/2017	Great Tit				PM
	13/06/2017	Great Tit				PM
	13/06/2017	Great Tit				PM
	05/05/2017	Grey Heron	1		PB4, (Cutover bog) Travelling	JH
	22/05/2017	Grey Heron				PM
	15/05/2017	Hooded Crow	2			PM
	15/05/2017	Hooded Crow				PM
	15/05/2017	Hooded Crow				PM
	22/05/2017	Hooded Crow				PM
	22/05/2017	Hooded Crow				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	13/06/2017	Hooded Crow	5			PM
	13/06/2017	Hooded Crow	2			PM
	05/04/2017	House Sparrow	2		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
	06/04/2017	House Sparrow	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	22/05/2017	House Sparrow	2			PM
	09/06/2017	House Sparrow				PM
	09/06/2017	House Sparrow				PM
	09/06/2017	Jackdaw				PM
	09/06/2017	Jay				PM
K0xx	09/06/2017	Kestrel	1		Hunting	PM
	22/05/2017	Kestrel				PM
L01	06/04/2017	Lapwing	1		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
L01	24/05/2017	Lapwing				PM
L01	09/06/2017	Lapwing				PM
L01	09/06/2017	Lapwing				PM
LB01	09/06/2017	Lesser Black-backed Gull				PM
LB02	09/06/2017	Lesser Black-backed Gull	30			PM
LB03	09/06/2017	Lesser Black-backed Gull				PM
LB04	12/06/2017	Lesser Black-backed Gull	58			PM
LB04	13/06/2017	Lesser Black-backed Gull	24			PM
	22/05/2017	Lesser Black-backed Gull				PM
	09/06/2017	Lesser Black-backed Gull	30			PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	09/06/2017	Lesser Black-backed Gull				PM
	09/06/2017	Lesser Black-backed Gull				PM
	09/06/2017	Lesser Black-backed Gull				PM
	13/06/2017	Lesser Black-backed Gull				PM
	13/06/2017	Lesser Black-backed Gull				PM
	06/04/2017	Lesser Redpoll	6		WS, (Scrub/ transitional woodland) Calling	JH
	12/06/2017	Lesser Redpoll				PM
	06/04/2017	Linnet	2		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Linnet	14		WS, (Scrub/ transitional woodland) Calling	JH
	22/05/2017	Linnet				PM
	22/05/2017	Linnet				PM
	23/05/2017	Linnet				PM
	09/06/2017	Linnet				PM
	09/06/2017	Linnet				PM
	12/06/2017	Linnet	4			PM
	04/04/2017	Little Grebe	2		PB4, (Cutover bog) FW4, (Drainage ditches) Calling	JH
	05/04/2017	Little Grebe	2		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	06/04/2017	Little Grebe	2		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	06/04/2017	Little Grebe	1		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	22/05/2017	Little Grebe				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	22/05/2017	Magpie				PM
	23/05/2017	Magpie				PM
	09/06/2017	Magpie	2			PM
	09/06/2017	Magpie				PM
	09/06/2017	Magpie				PM
	09/06/2017	Magpie				PM
	04/04/2017	Mallard	3		PB4, (Cutover bog) FW4, (Drainage ditches) on FW4 area of PB4	JH
	05/04/2017	Mallard	1		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	05/04/2017	Mallard	3		PB4, (Cutover bog) Flying over site	JH
	06/04/2017	Mallard	1	1 Female	PB4, (Cutover bog) FW4, (Drainage ditches) Female Feigned injury - Possible nesting behaviour	JH
	06/04/2017	Mallard	2	1 Male and 1 Female	PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4- Flushed by observer	JH
	06/04/2017	Mallard	2		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	15/05/2017	Mallard				PM
	22/05/2017	Mallard	2			PM
	22/05/2017	Mallard	2			PM
	23/05/2017	Mallard	2			PM
MP06	15/05/2017	Meadow Pipit				PM
MP01	15/05/2017	Meadow Pipit				PM
MP01	22/05/2017	Meadow Pipit				PM
MP13	22/05/2017	Meadow Pipit				PM
MP19	22/05/2017	Meadow Pipit				PM
MP19	22/05/2017	Meadow Pipit				PM
MP30	23/05/2017	Meadow Pipit				PM
MP32	23/05/2017	Meadow Pipit				PM
MP37	23/05/2017	Meadow Pipit				PM
MP32	23/05/2017	Meadow Pipit				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
MP33	23/05/2017	Meadow Pipit				PM
MP23	23/05/2017	Meadow Pipit				PM
MP24	23/05/2017	Meadow Pipit				PM
MP25	23/05/2017	Meadow Pipit				PM
MP25	23/05/2017	Meadow Pipit				PM
MP26	23/05/2017	Meadow Pipit				PM
MP41	23/05/2017	Meadow Pipit				PM
MP39	23/05/2017	Meadow Pipit				PM
MP43	23/05/2017	Meadow Pipit				PM
MP31	24/05/2017	Meadow Pipit				PM
MP30	24/05/2017	Meadow Pipit				PM
MP20	09/06/2017	Meadow Pipit				PM
MP18	09/06/2017	Meadow Pipit				PM
MP17	09/06/2017	Meadow Pipit				PM
MP16	09/06/2017	Meadow Pipit				PM
MP01	09/06/2017	Meadow Pipit				PM
MP04	09/06/2017	Meadow Pipit				PM
MP14	09/06/2017	Meadow Pipit				PM
MP02	09/06/2017	Meadow Pipit				PM
MP15	09/06/2017	Meadow Pipit				PM
MP44	12/06/2017	Meadow Pipit				PM
MP45	12/06/2017	Meadow Pipit				PM
MP43	12/06/2017	Meadow Pipit				PM
MP42	12/06/2017	Meadow Pipit				PM
MP39	12/06/2017	Meadow Pipit				PM
MP38	12/06/2017	Meadow Pipit				PM
MP40	12/06/2017	Meadow Pipit				PM
MP35	12/06/2017	Meadow Pipit				PM
MP34	12/06/2017	Meadow Pipit				PM
MP25	12/06/2017	Meadow Pipit				PM
MP26	12/06/2017	Meadow Pipit				PM
MP27	12/06/2017	Meadow Pipit				PM
MP33	12/06/2017	Meadow Pipit				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
MP32	12/06/2017	Meadow Pipit				PM
MP28	12/06/2017	Meadow Pipit				PM
MP29	12/06/2017	Meadow Pipit				PM
MP21	12/06/2017	Meadow Pipit				PM
MP36	12/06/2017	Meadow Pipit				PM
MP31	13/06/2017	Meadow Pipit				PM
MP22	13/06/2017	Meadow Pipit				PM
MP12	13/06/2017	Meadow Pipit				PM
MP11	13/06/2017	Meadow Pipit				PM
MP10	13/06/2017	Meadow Pipit				PM
MP09	13/06/2017	Meadow Pipit				PM
MP08	13/06/2017	Meadow Pipit				PM
MP06	13/06/2017	Meadow Pipit				PM
MP07	13/06/2017	Meadow Pipit				PM
MP05	13/06/2017	Meadow Pipit				PM
MP03	13/06/2017	Meadow Pipit				PM
	23/05/2017	Meadow Pipit				PM
	24/05/2017	Meadow Pipit				PM
	09/06/2017	Meadow Pipit				PM
	12/06/2017	Meadow Pipit				PM
	05/04/2017	Moorhen	2		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	06/04/2017	Moorhen	2		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	06/04/2017	Moorhen	2		PB4, (Cutover bog) FL8, (Other artificial lakes and ponds) On wet area of PB4	JH
	12/06/2017	Moorhen				PM
	22/05/2017	Northern Wheatear				PM
	09/06/2017	Pheasant				PM
	12/06/2017	Pheasant	3			PM
	13/06/2017	Pheasant				PM
	09/06/2017	Pied Wagtail				PM
	22/05/2017	Raven				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	23/05/2017	Raven				PM
	23/05/2017	Raven				PM
	09/06/2017	Raven				PM
	09/06/2017	Raven				PM
	12/06/2017	Raven				PM
	12/06/2017	Red Grouse				PM
	04/04/2017	Reed Bunting	2		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Perched	JH
	05/04/2017	Reed Bunting	1		PB4, (Cutover bog) Perched	JH
	06/04/2017	Reed Bunting	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Perched	JH
	23/05/2017	Reed Bunting				PM
	09/06/2017	Reed Bunting				PM
	04/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	04/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	04/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Singing	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Singing	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Singing	JH
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	05/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	06/04/2017	Robin	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
	06/04/2017	Robin	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
	06/04/2017	Robin	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Robin	1		WS, (Scrub/ transitional woodland) Singing	JH
	06/04/2017	Robin	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Robin	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
	06/04/2017	Robin	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Singing	JH
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	15/05/2017	Robin				PM
	22/05/2017	Robin				PM
	22/05/2017	Robin				PM
	22/05/2017	Robin				PM
	22/05/2017	Robin				PM
	22/05/2017	Robin				PM
	22/05/2017	Robin				PM
	22/05/2017	Robin				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	12/06/2017	Robin				PM
	12/06/2017	Robin				PM
	12/06/2017	Robin				PM
	12/06/2017	Robin				PM
	12/06/2017	Robin				PM
	12/06/2017	Robin				PM
	12/06/2017	Robin				PM
	12/06/2017	Robin				PM
	13/06/2017	Robin				PM
	13/06/2017	Robin				PM
	13/06/2017	Robin				PM
	13/06/2017	Robin				PM
	13/06/2017	Robin				PM
	15/05/2017	Rook				PM
	22/05/2017	Rook	2			PM
	09/06/2017	Rook	2			PM
	23/05/2017	Scaup				PM
	09/06/2017	Scaup				PM
	09/06/2017	Scaup				PM
	24/05/2017	Sedge Warbler				PM
	12/06/2017	Skylark				PM
	13/06/2017	Skylark				PM
	13/06/2017	Skylark				PM
	13/06/2017	Skylark				PM
	13/06/2017	Skylark				PM
	04/04/2017	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH
	04/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	05/05/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	05/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	05/04/2017	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	05/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	05/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	06/04/2017	Snipe	3		PB4, (Cutover bog) Flushed by observer	JH
	06/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	06/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	06/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	06/04/2017	Snipe	2		PB4, (Cutover bog) Flushed by observer	JH
	06/04/2017	Snipe	1		PB4, (Cutover bog) Flushed by observer	JH
	22/05/2017	Snipe				PM
	22/05/2017	Snipe	2			PM
	23/05/2017	Snipe				PM
	12/06/2017	Snipe				PM
SN03	09/06/2017	Snipe				PM
	09/06/2017	Snipe				PM
SN06	13/06/2017	Snipe				PM
SN05	09/06/2017	Snipe				PM
	04/04/2017	Song Thrush	1		WS, (Scrub/ transitional woodland) Perched	JH
	05/04/2017	Song Thrush	1		WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Calling	JH
	05/04/2017	Song Thrush	1		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
	15/05/2017	Song Thrush				PM
	15/05/2017	Song Thrush				PM
	15/05/2017	Song Thrush				PM
	15/05/2017	Song Thrush				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
SH001	04/04/2017	Sparrowhawk	1		WS, (Scrub/ transitional woodland) Hunting	JH
	22/05/2017	Sparrowhawk				PM
	15/05/2017	Starling				PM
	09/06/2017	Starling				PM
	09/06/2017	Starling				PM
	09/06/2017	Starling				PM
	06/04/2017	Stonechat	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	22/05/2017	Stonechat				PM
	22/05/2017	Stonechat				PM
	22/05/2017	Stonechat				PM
	09/06/2017	Stonechat				PM
	09/06/2017	Stonechat	2			PM
	09/06/2017	Stonechat	3			PM
	12/06/2017	Stonechat				PM
	22/05/2017	Swallow				PM
	22/05/2017	Swallow				PM
	22/05/2017	Swallow	2			PM
	22/05/2017	Swallow	4			PM
	22/05/2017	Swallow	5			PM
	09/06/2017	Swift	2			PM
09/06/2017	Swift				PM	
12/06/2017	Swift				PM	
	04/04/2017	Teal	2		PB4, (Cutover bog) FW4, (Drainage ditches) On FW4 area of PB4. Flushed by Observer	JH
	05/04/2017	Teal	2		PB4, (Cutover bog) FW4, (Drainage ditches) Roosting in Drainage Ditch.	JH
	05/04/2017	Teal	4		PB4, (Cutover bog) Flushed by observer	JH
	22/05/2017	Whinchat				PM
	22/05/2017	Whinchat				PM
	23/05/2017	Whinchat				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	22/05/2017	Wood Pigeon				PM
	23/05/2017	Wood Pigeon				PM
	23/05/2017	Wood Pigeon				PM
	23/05/2017	Wood Pigeon				PM
	23/05/2017	Wood Pigeon				PM
	23/05/2017	Wood Pigeon				PM
	23/05/2017	Wood Pigeon				PM
	23/05/2017	Wood Pigeon	2			PM
	24/05/2017	Wood Pigeon				PM
	24/05/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	09/06/2017	Wood Pigeon				PM
	12/06/2017	Wood Pigeon				PM
	12/06/2017	Wood Pigeon				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	13/06/2017	Wood Pigeon				PM
	13/06/2017	Wood Pigeon				PM
	13/06/2017	Wood Pigeon				PM
	13/06/2017	Wood Pigeon				PM
	04/04/2017	Wren	1		WS, (Scrub/ transitional woodland) Calling	JH
	04/04/2017	Wren	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Wren	1		WS, (Scrub/ transitional woodland) Calling	JH
	05/04/2017	Wren	1		WS, (Scrub/ transitional woodland) WD4, (Conifer plantation) Alarm Calling	JH
	05/04/2017	Wren	2		WS, (Scrub/ transitional woodland) PB4, (Cutover bog) Calling	JH
	06/04/2017	Wren	1		PB4, (Cutover bog) WS, (Scrub/ transitional woodland) Calling	JH
	06/04/2017	Wren	1		WS, (Scrub/ transitional woodland) Alarm Calling	JH
	06/04/2017	Wren	1		WS, (Scrub/ transitional woodland) Alarm Calling	JH
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	15/05/2017	Wren				PM
	22/05/2017	Wren				PM
	22/05/2017	Wren				PM
	22/05/2017	Wren				PM

Table 4: Breeding Walkover Survey Data

Map Reference	Survey Date	Species	No. of birds	Sex/age	Habitat and Activity	Surveyor
	09/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
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	12/06/2017	Wren				PM
	12/06/2017	Wren				PM
	13/06/2017	Wren				PM
	13/06/2017	Wren				PM
	13/06/2017	Wren				PM
	13/06/2017	Wren				PM
	13/06/2017	Wren				PM
	13/06/2017	Wren				PM
	13/06/2017	Wren				PM
	13/06/2017	Wren				PM

Table 5: Identified Breeding Territories

Territory ID	Species	Activity April	Activity May	Activity June
SN01	Snipe		Displaying	
SN02	Snipe	Displaying	Displaying	
SN03	Snipe		Pair Displaying	Displaying
SN04	Snipe			Displaying
SN05	Snipe			Displaying
SN06	Snipe			Displaying
SN07	Snipe		Displaying	Flushed
SN08	Snipe		Displaying	
SN09	Snipe		Displaying	
MP01	Meadow Pipit		Displaying	Displaying
MP02	Meadow Pipit			Displaying
MP03	Meadow Pipit			Displaying
MP04	Meadow Pipit			Displaying
MP05	Meadow Pipit			Displaying
MP06	Meadow Pipit		Displaying	Displaying
MP07	Meadow Pipit			Displaying
MP08	Meadow Pipit			Displaying
MP09	Meadow Pipit			Displaying
MP10	Meadow Pipit			Displaying
MP11	Meadow Pipit			Displaying
MP12	Meadow Pipit			Displaying
MP13	Meadow Pipit		Displaying	
MP14	Meadow Pipit			Displaying
MP15	Meadow Pipit			Displaying
MP16	Meadow Pipit		Displaying	Displaying
MP17	Meadow Pipit			Displaying
MP18	Meadow Pipit			Displaying
MP19	Meadow Pipit		Displaying	
MP20	Meadow Pipit		Displaying	Displaying
MP21	Meadow Pipit		Seen	Displaying
MP22	Meadow Pipit			Displaying
MP23	Meadow Pipit		Displaying	
MP24	Meadow Pipit		Displaying	

Table 5: Identified Breeding Territories

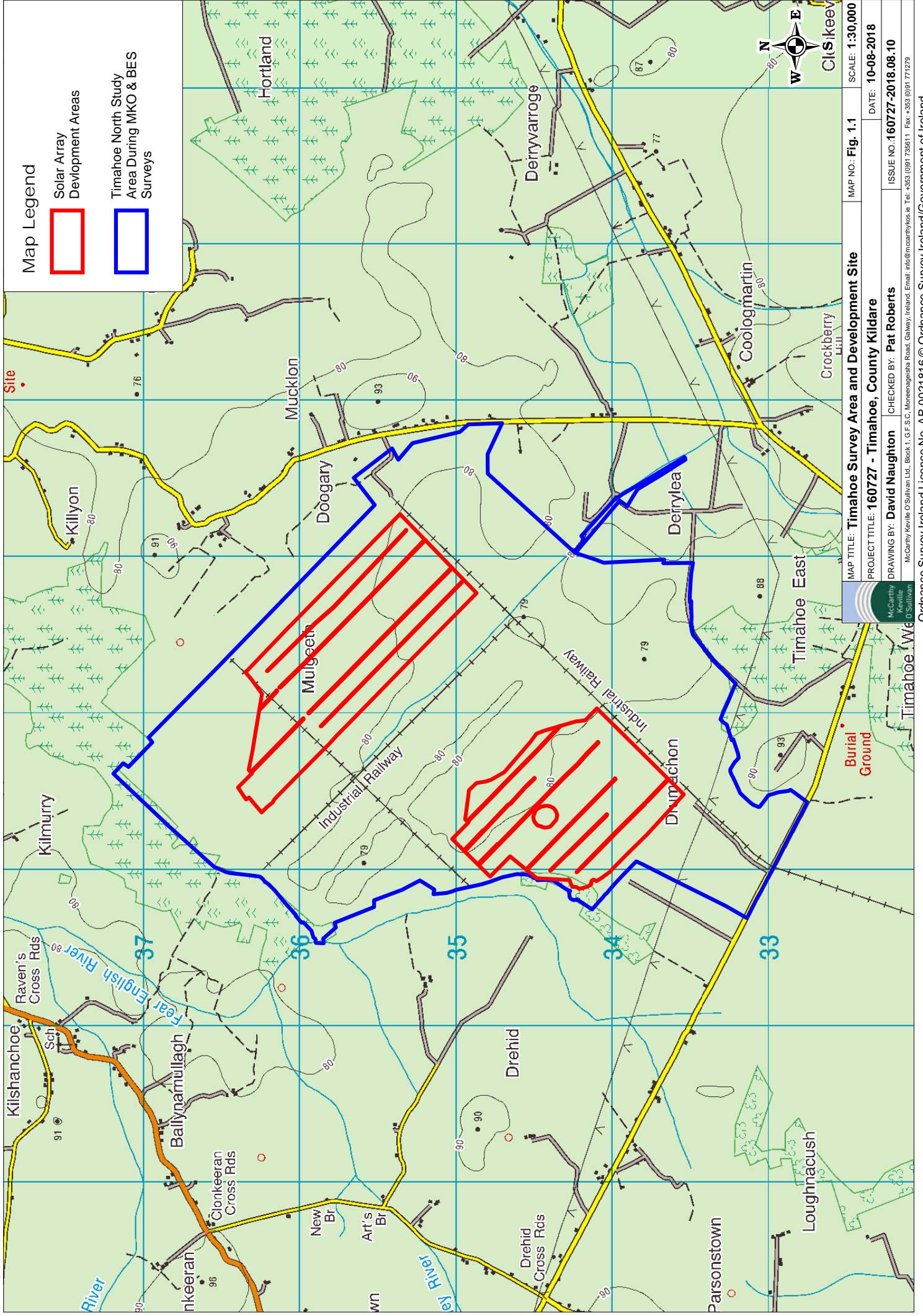
Territory ID	Species	Activity April	Activity May	Activity June
MP25	Meadow Pipit		Displaying	Displaying
MP26	Meadow Pipit		Displaying	Displaying
MP27	Meadow Pipit			Displaying
MP28	Meadow Pipit			Displaying
MP29	Meadow Pipit			Displaying
MP30	Meadow Pipit		Displaying	
MP31	Meadow Pipit		Displaying	Displaying
MP32	Meadow Pipit		Displaying	Displaying
MP33	Meadow Pipit		Displaying	
MP34	Meadow Pipit			Displaying
MP35	Meadow Pipit			Displaying
MP36	Meadow Pipit			Displaying
MP37	Meadow Pipit		Displaying	
MP38	Meadow Pipit		Seen	Displaying
MP39	Meadow Pipit		Displaying	Displaying
MP40	Meadow Pipit		Displaying	Displaying
MP41	Meadow Pipit			Displaying
MP42	Meadow Pipit			Displaying
MP43	Meadow Pipit		Displaying	Displaying
MP44	Meadow Pipit			Displaying
MP45	Meadow Pipit			Displaying
MA01	Mallard		Seen	
MA02	Mallard	Seen		
MA03	Mallard	Seen		
MA04	Mallard	Seen		
MA05	Mallard	Seen		
MA06	Mallard	Seen		
MA07	Mallard		Pair Seen	
MH01	Moorhen			Calling
MH02	Moorhen			Calling
MH03	Moorhen	Calling		
MH04	Moorhen		Calling	Calling
MH05	Moorhen	Calling		

Table 5: Identified Breeding Territories

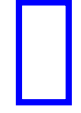
Territory ID	Species	Activity April	Activity May	Activity June
MH06	Moorhen	Calling		
MH07	Moorhen		Calling	
LG01	Little Grebe	Pair Seen		
LG02	Little Grebe		Heard	
LG03	Little Grebe	Seen		
LG04	Little Grebe	Pair Heard		
LG05	Little Grebe	Heard		
L01	Lapwing	Seen	Seen	Displaying

Appendix 1-3

Figures




Map Legend



Solar Array
Development Areas

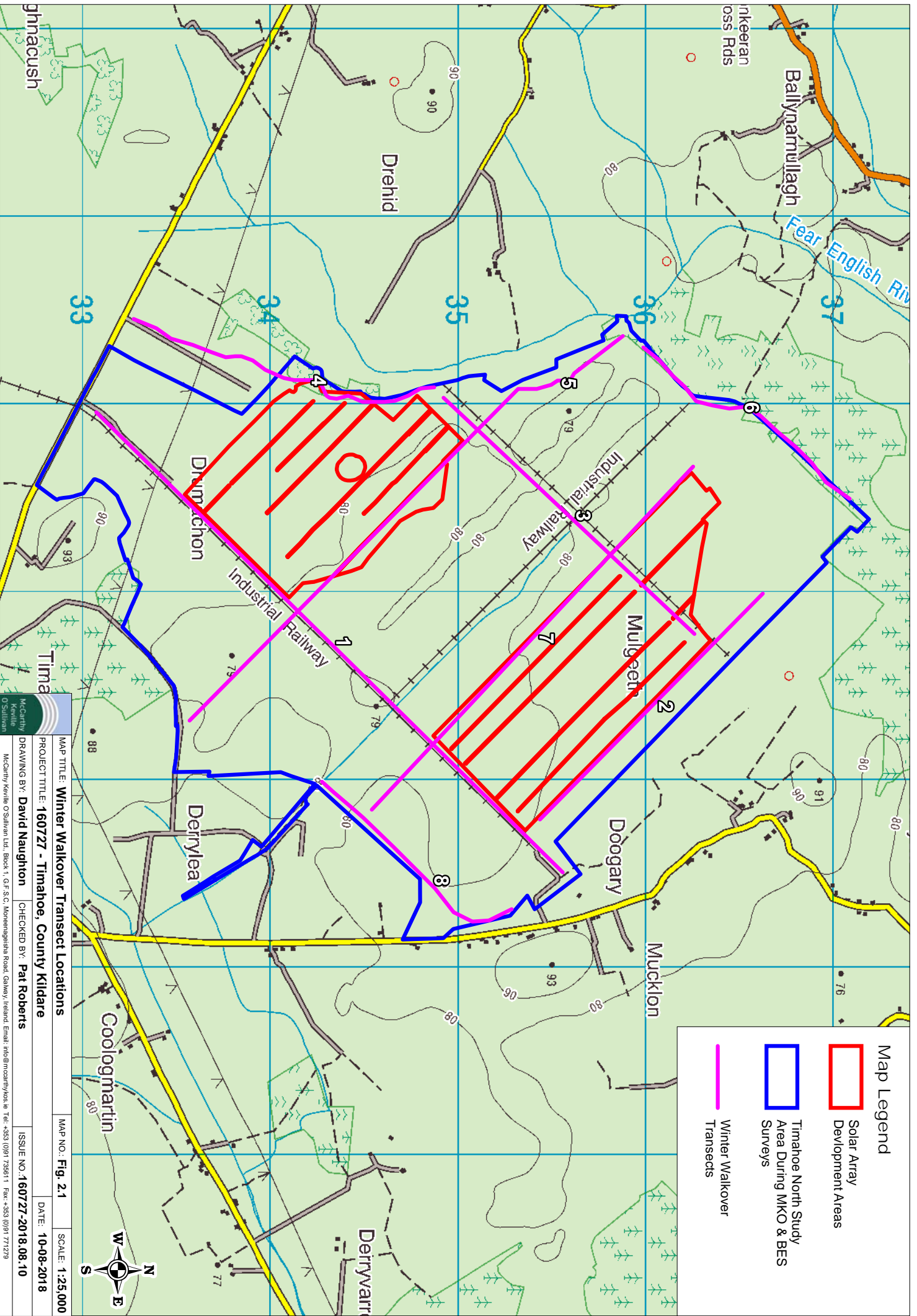
Timahoe North Study
Area During MKO & BES
Surveys


 DRAWING BY: **David Naughton** CHECKED BY: **Pat Roberts**
 McCarthy Kenille O'Sullivan Ltd, Block 1, G.F.S.C. Moneenagisha Road, Galway, Ireland. Email: info@mcCarthyKeniLe.ie Tel: +353 (0)91 735611 Fax: +353 (0)91 712729
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MAP TITLE: **Timahoe Survey Area and Development Site** MAP NO.: **Fig. 1.1** SCALE: **1:30,000**
 PROJECT TITLE: **160727 - Timahoe, County Kildare** DATE: **10-08-2018**
 ISSUE NO.: **160727-2018.08.10**



Cl/S/keevy



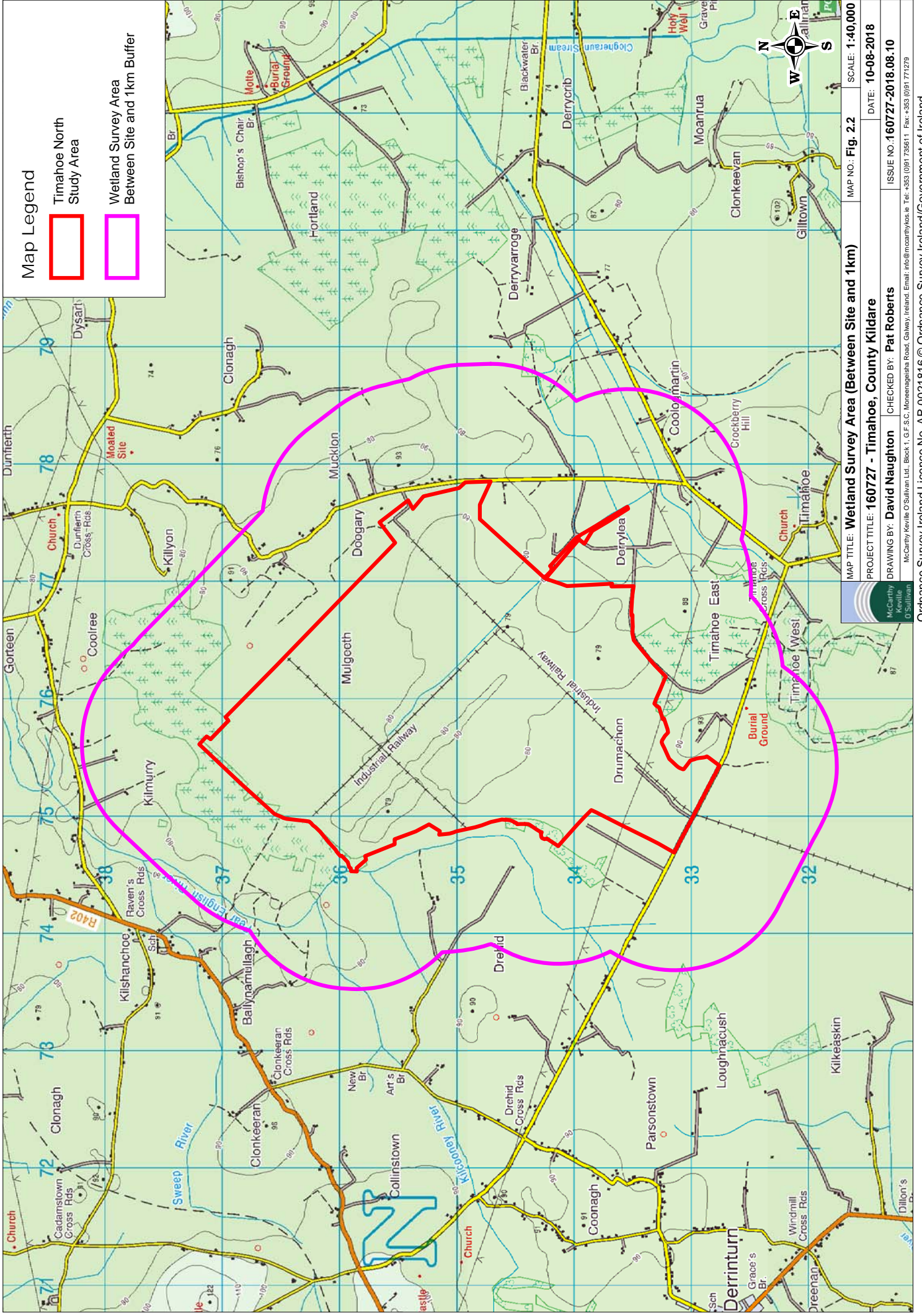
Map Legend

- ▭ Solar Array Development Areas
- ▭ Timahoe North Study Area During MKO & BES Surveys
- Winter Walkover Transects

MAP TITLE: Winter Walkover Transect Locations
 SCALE: 1:25,000
 PROJECT TITLE: 160727 - Timahoe, County Kildare
 DRAWING BY: David Naughton
 CHECKED BY: Pat Roberts
 ISSUE NO.: 160727-2018.08.10
 DATE: 10-08-2018
 MAP NO.: Fig. 2.1



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Map Legend

- Timahoe North Study Area
- Wetland Survey Area Between Site and 1km Buffer

MAP NO.: **Fig. 2.2** SCALE: **1:40,000**

PROJECT TITLE: **Wetland Survey Area (Between Site and 1km)**

DRAWING BY: **David Naughton** CHECKED BY: **Pat Roberts**

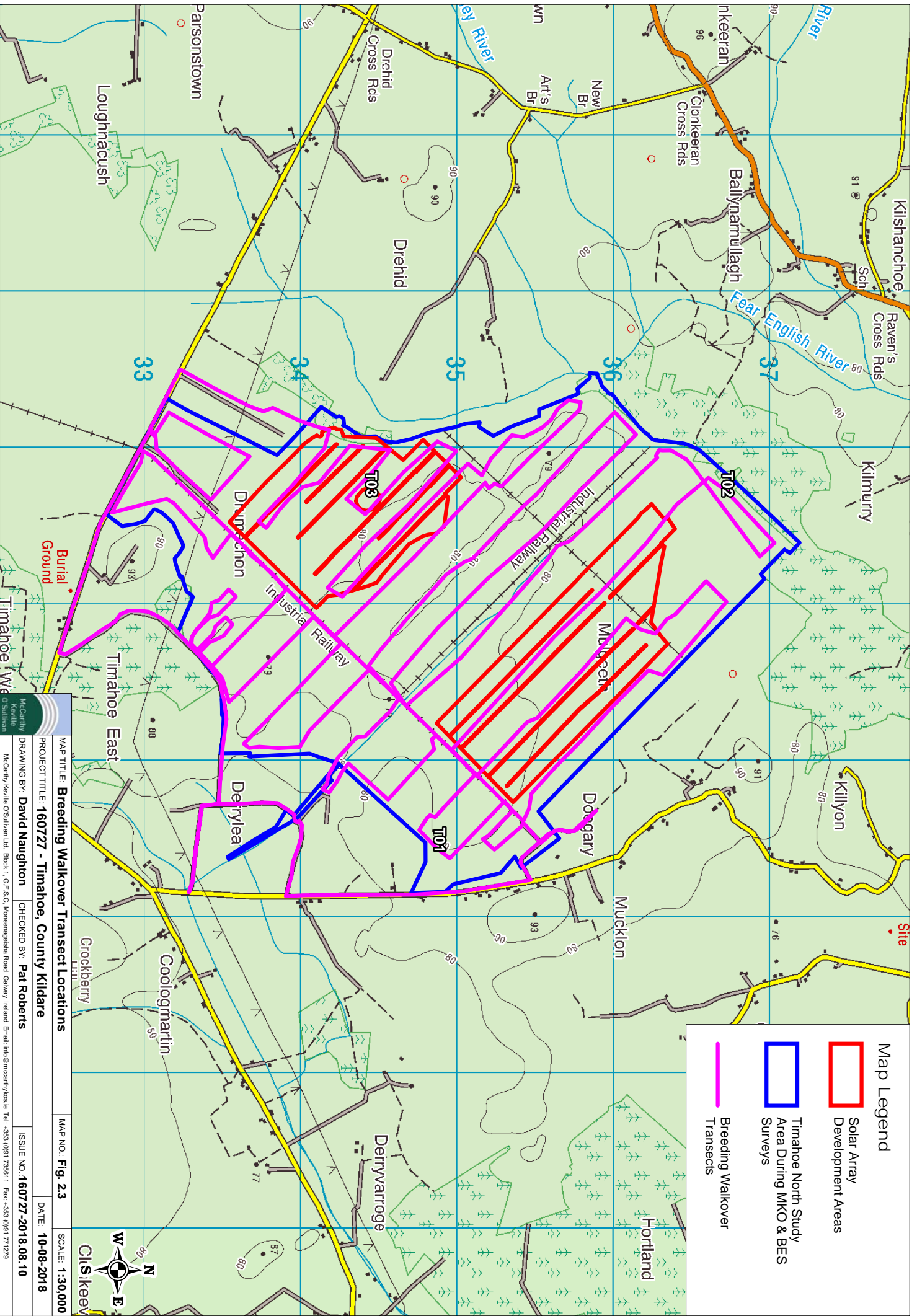
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Map Legend

- Solar Array Development Areas
- Timahoe North Study Area During MKO & BES Surveys
- Breeding Walkover Transects

MAP TITLE: **Breeding Walkover Transect Locations**

PROJECT TITLE: **160727 - Timahoe, County Kildare**


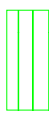




DRAWING BY: **David Naughton** CHECKED BY: **Pat Roberts**

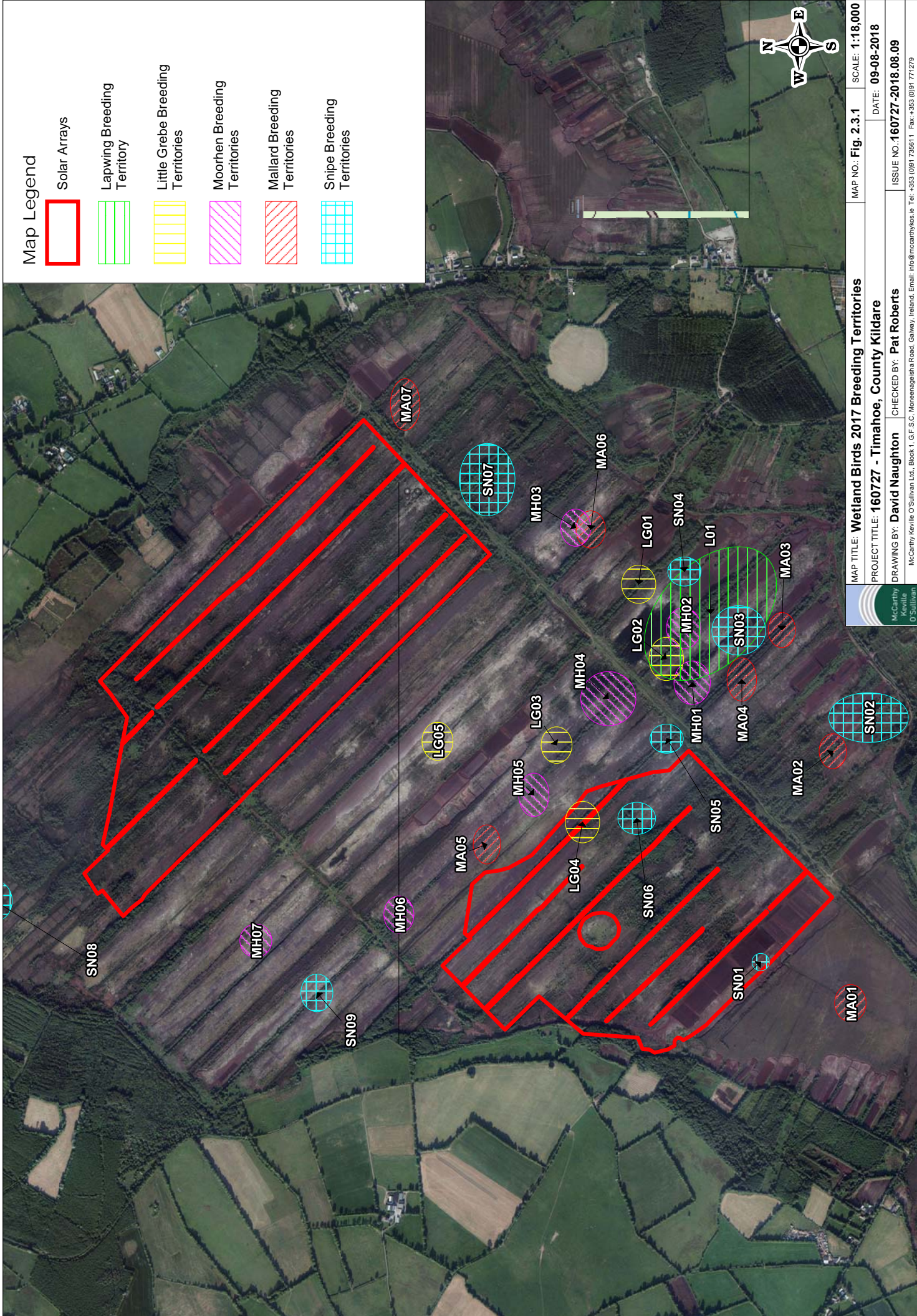
MAP NO.: **Fig. 2.3** SCALE: **1:30,000**

ISSUE NO.: **160727-2018.08.10** DATE: **10-08-2018**

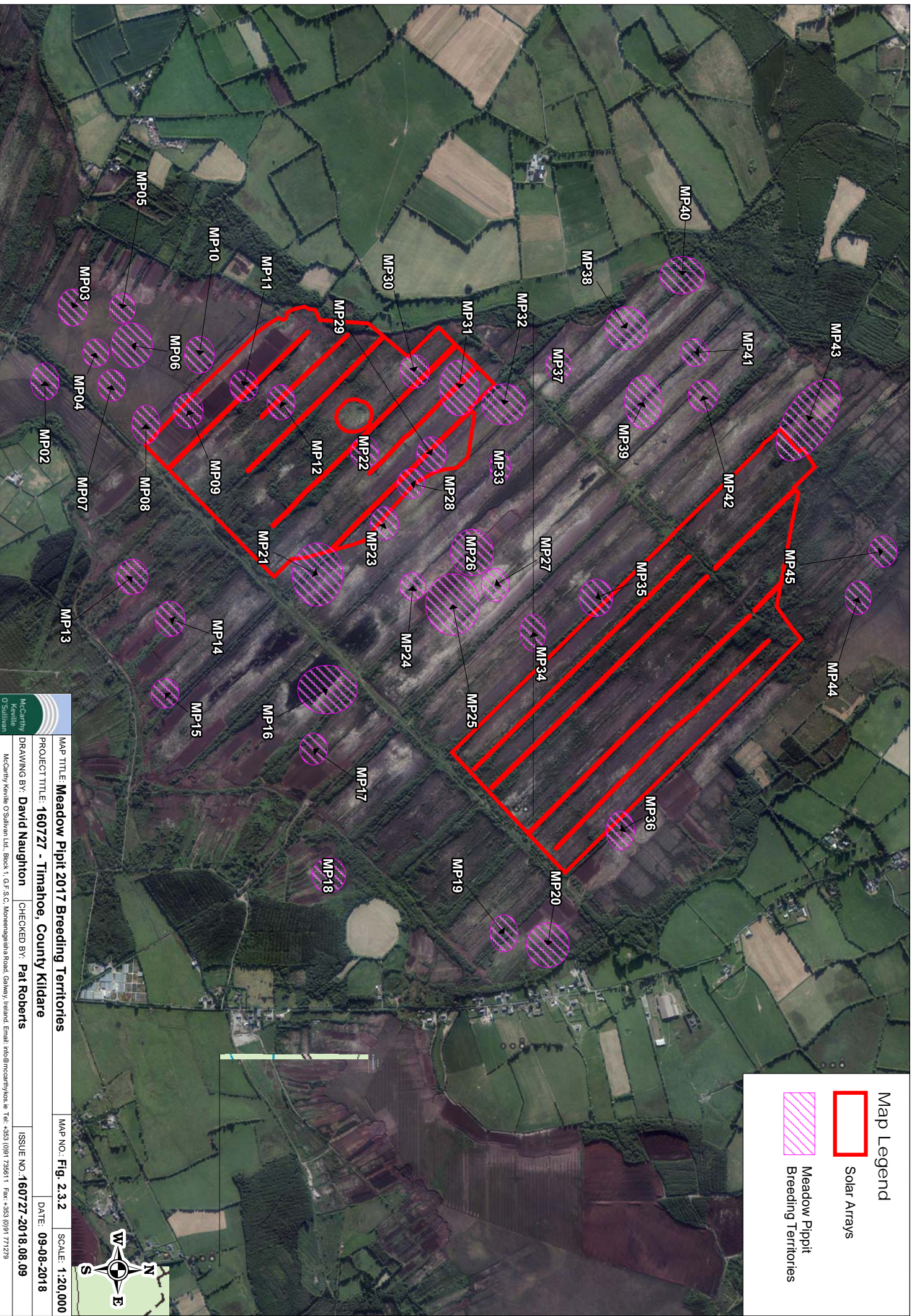
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Map Legend

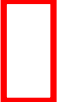

-  Solar Arrays
-  Lapwing Breeding Territory
-  Little Grebe Breeding Territories
-  Moorhen Breeding Territories
-  Mallard Breeding Territories
-  Snipe Breeding Territories




	MAP TITLE: Wetland Birds 2017 Breeding Territories	MAP NO.: Fig. 2.3.1	SCALE: 1:18,000
	PROJECT TITLE: 160727 - Timahoe, County Kildare		DATE: 09-08-2018
	DRAWING BY: David Naughton	CHECKED BY: Pat Roberts	ISSUE NO.: 160727-2018.08.09
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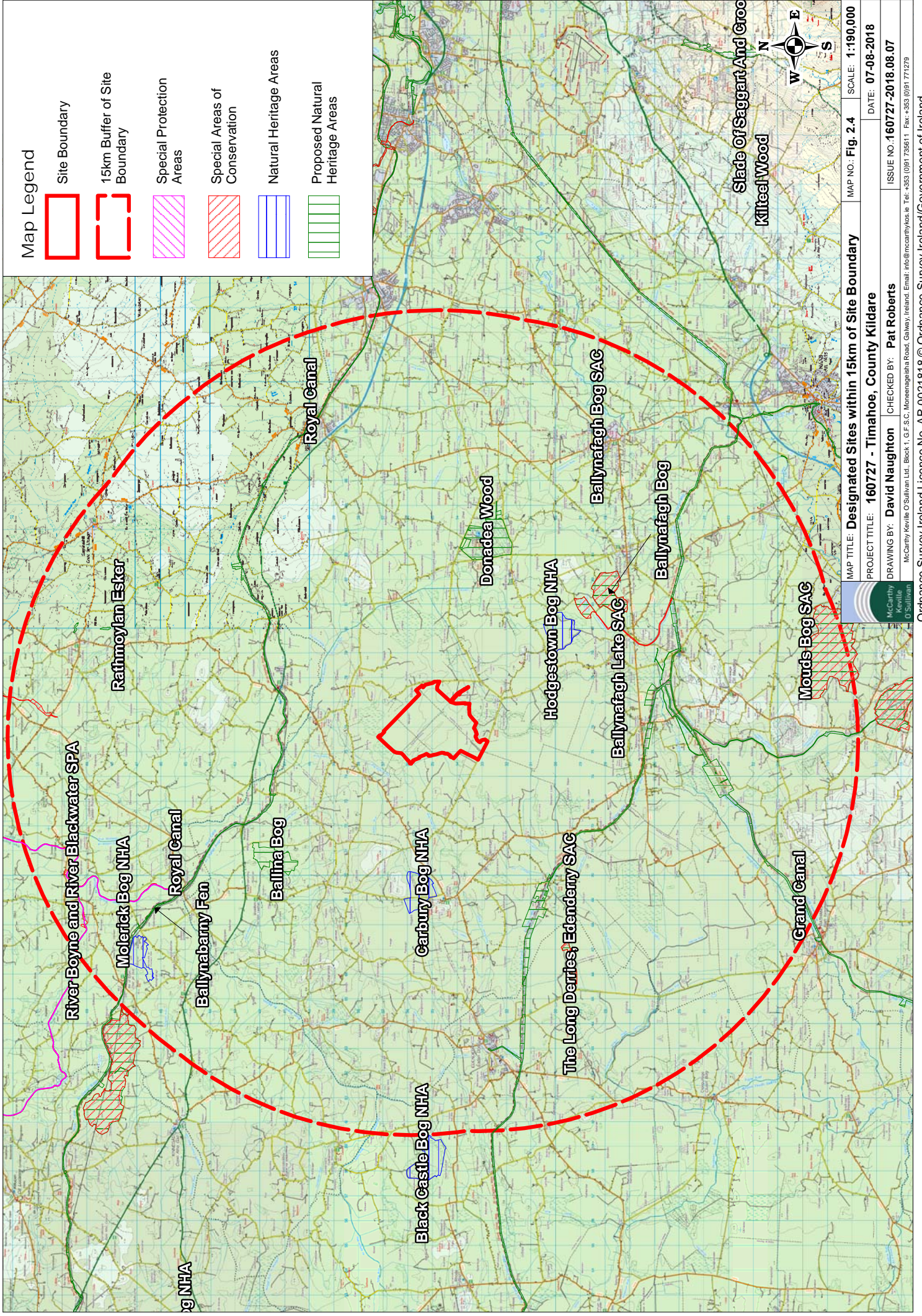
Map Legend

-  Solar Arrays
-  Meadow Pippit Breeding Territories





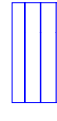



	MAP TITLE: Meadow Pippit 2017 Breeding Territories	MAP NO.: Fig. 2.3.2	SCALE: 1:20,000
	PROJECT TITLE: 160727 - Timahoe, County Kildare	DRAWING BY: David Naughton	CHECKED BY: Pat Roberts
<small>McCarthy Kenille O'Sullivan Ltd., Block 1, G.F.S.C. Moorenagalla Road, Galway, Ireland. Email: info@mcCarthyKos.ie Tel: +353 (0)91 726511 Fax: +353 (0)91 771279</small>	ISSUE NO.: 160727-2018.08.09	DATE: 09-08-2018	

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Map Legend

-  Site Boundary
-  15km Buffer of Site Boundary
-  Special Protection Areas
-  Special Areas of Conservation
-  Natural Heritage Areas
-  Proposed Natural Heritage Areas

MAP TITLE: Designated Sites within 15km of Site Boundary
 MAP NO.: Fig. 2.4
 SCALE: 1:190,000
 PROJECT TITLE: 160727 - Timahoe, County Kildare
 DRAWING BY: David Naughton
 CHECKED BY: Pat Roberts
 DATE: 07-08-2018
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Appendix 1-4

Winter Bird Survey 2012-2013 Report - Timahoe Extracts from Derrygreenagh
Ballydermot

**BORD NA MONA
WINTER BIRD SURVEY 2012-2013
BALLYDERMOT & DERRYGREENAGH
BOG GROUP**

**FINAL REPORT
SEPTEMBER 2013**

Prepared for

Bord na Móna

by

**Biosphere Environmental Services
29 La Touche Park, Greystones, Co. Wicklow
Tel: 01-2875249 E-mail: maddenb@eircom.net**



SITE: TIMAHOE NORTH

Timahoe North is a medium to large sized site located north of the road between Timahoe and the R402. It adjoins Timahoe South (to the other side of the public road). The site extends for up to 4 km from north to south and for approximately 2.5 km from east to west.

Timahoe North has been out of commercial production for a considerable time and is dominated by regenerating cutaway bog with extensive scrub cover. Some well developed wetlands occur within the site, with permanent open water. A substantial area of remnant bog occurs at the southern end of the site.

The site is surrounded mostly by agricultural land, though some afforestation occurs immediately to the north.

Survey locations

Transect 1 starts from the site entrance and follows a direct line through the site to the north entrance at Doogary.

Transect 2 is a rectangular shaped circuit through an extensive area of regenerating cutaway bog to the west of the main track through the site.

Transect 3 is a loop over the remnant bog at the southern end of the site.

Vantage Point 1 is located midway along the central track (Transect 1) and looks eastwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 2 is also located midway along the central track (Transect 1) but looks westwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 3 is located along Transect 2 in the western part of the site and looks over the westernmost part of the site.

Target species recorded

Hen Harrier

A ringtail (female/imm male) was recorded hunting over the eastern sector of the site on 16th March 2013.

Merlin

One was observed hunting over the regenerating bog on 18th February 2013.

Potential for other target species

Whooper Swan

Whooper Swans may on occasions drop into this site as there are suitable wetland areas.

Golden Plover

The site has limited potential for Golden Plover.

Other species of note

Little Grebe – at least two birds calling from wetland area on 18th February and 16th March

2013.

Mute Swan – one to two birds present on each survey visit.

Buzzard – two birds over extreme northern part of site on 18th February 2103.

Teal – six on 11th December 2012, two on 17th January, three on 18th February, four on 16th March.

Water Rail – one heard calling from wetland habitat on 17th January 2013.

Lapwing – eight on 11th December 2012, 30 on 17th January 2013.

Snipe – six on 11th December 2012 (all on remnant bog), three on 18th February 2013.

Skylark – singles on January and February, three on 16th March 2013.

Linnet – eight on 11th December 2012, 12 on 18th February and four on 16th March 2013.

Overview

Timahoe North has well developed cutaway bog habitats, including permanent wetlands. The site has potential for Whooper Swans though the frequency of disturbance (especially shooting) during winter is high. Both Hen Harrier and Merlin were recorded hunting on site, with good foraging habitat available for both. The site supports a range of other species of interest, including Little Grebe, Teal, Lapwing, Snipe and Water Rail.



Timahoe North, Plate 1: view looking eastwards over wetlands in east sector of site.

Timahoe North: Map showing transect and vantage point locations, with records of target species.

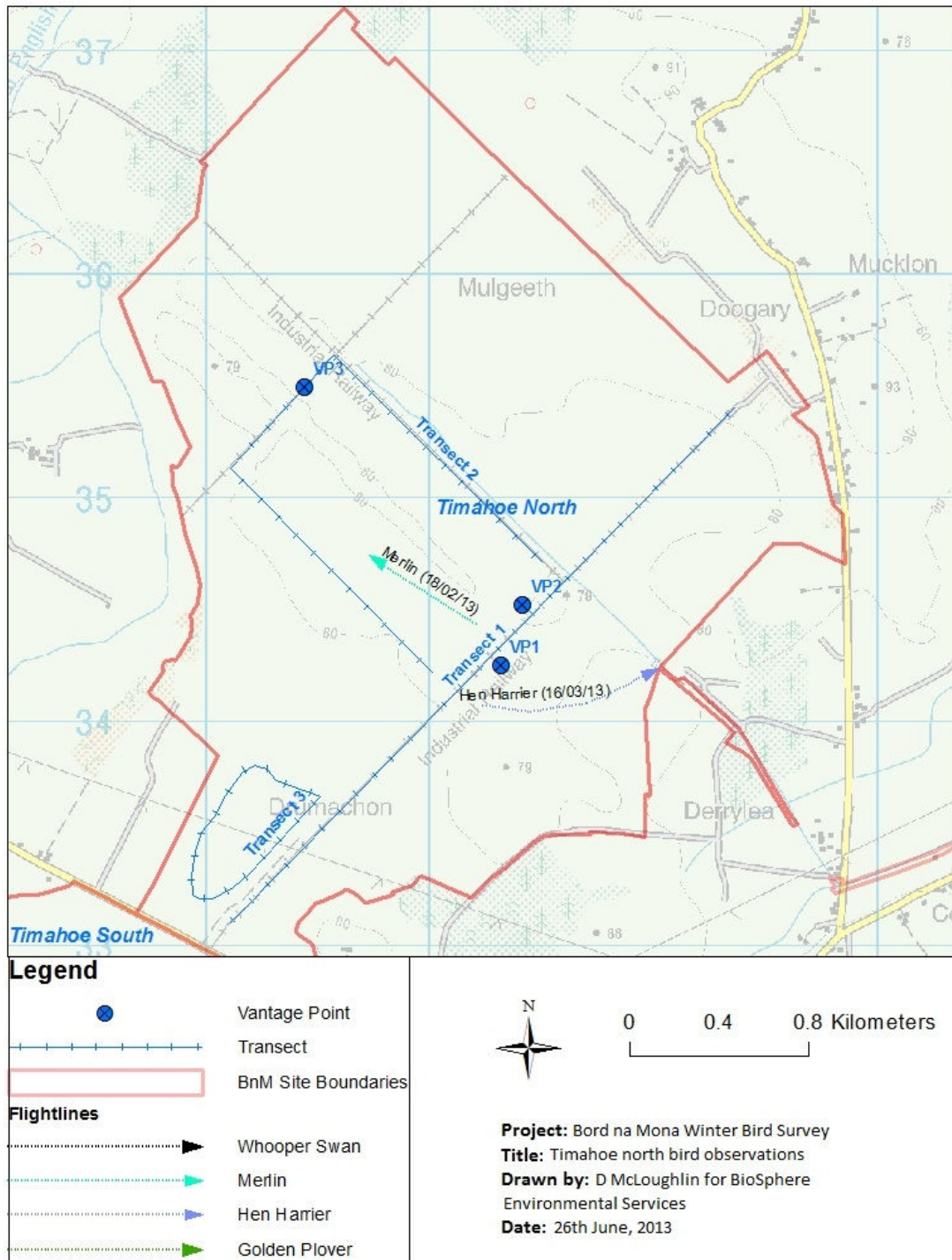


Table 5. Sites considered with ornithological importance on the basis of the 2012/13 winter survey.

Site	Interests	Tentative rating
Drumman (mainly north of Mongagh River)	Whooper Swan Golden Plover Wetland birds	Local (higher value)
Derryarkin (all)	Whooper Swan Golden Plover Wetland birds Hen Harrier	Local (higher value)
Clonad	Golden Plover	Local (but subject to further assessment)
Cavemount (east of railway only)	Whooper Swan	National
Ballycon (all apart from westernmost end)	Whooper Swan Wetland birds Hen Harrier	Local (higher value)
Derryounce (lakes)	Whooper Swan Wetland birds	Local
Garryhinch (potential for winter roost)	Hen Harrier	Local
Lullymore (wetlands in northeast)	Whooper Swan Wetland birds	Local
Timahoe North (wetlands)	Wetland birds Hen Harrier	Local
Timahoe South (wetland east of landfill & quarry pond)	Wetland birds	Local

Note re. rating of sites

As described in the Methods, wetland sites can be rated quantitatively based on bird populations reaching recognised threshold levels for national or international importance. Below the national level, however, there is no quantitative system for rating bird populations. In the Winter Wetlands Survey 1984/85 – 1986/87, Sheppard (1993) assigned all sites with some wetland birds, such as Raheen Lough (15 Mute Swans, 30 Whooper Swans), as ‘Regionally/Locally Important Sites’.

In the first main review of the I-WeBS project, Crowe (2005) describes internationally and nationally important sites following the standard criteria, and then includes a category ‘Other notable sites’ which are ‘other sites deemed important, as they support significant concentrations of gulls, or occasionally support concentrations of international or national importance of other water bird species’. Any other sites where counts took place are included in a fourth category of sites ‘Other sites covered’.

Using the standard assessment method based on population size, only one site in the study

area, Cavemount, meets the criteria of national importance.

All other sites would be in the 'Regionally/Locally Important Sites' category of Sheppard (1993) or the 'Other notable sites' (perhaps Ballycon, Drumman, Derryarkin) or 'Other sites covered' categories of Crowe (2005)

For EIA purposes, these sites will in due course be assessed on their general ecological importance, including breeding birds, habitats, mammals, etc., and the ecological valuation classification proposed by the NRA (2009) is likely to be more appropriate for their assessment.

It is therefore considered useful for the present report to assign all other sites to the 'Local' category, with the NRA rating of Local (higher value) given to those sites which are important in the context of the Whooper Swan population in the overall area.

While all the sites in the study area support various wintering bird species, including a range of Amber list species (i.e. birds of medium conservation concern), all of these species occur widely in the general countryside and are not dependent on, or necessarily closely associated with, the Bord na Móna sites. However, many of the bog sites provide extensive areas of relatively undisturbed habitats (mainly regenerating bog/heath and scrub, and remnant bog) and thus are useful refuges for these commoner species. The sites with extensive areas of such habitats are as follows:

- Drumman
- Derryarkin
- Ballybeg – north and eastern sectors
- Ballycon
- Clonsast North
- Clonsast (other than conifer plantations)
- Garryhinch
- Glashabaun South
- Lullymore
- Timahoe North
- Timahoe South

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Appendix 1-5

Summer Bird Survey 2013 Report - Timahoe Extracts from Derrygreenagh
Ballydermot

**BORD NA MONA
SUMMER BIRD SURVEY 2013**

**BALLYDERMOT & DERRYGREENAGH
BOG GROUP**

FINAL REPORT

APRIL 2014

Prepared for

Bord na Móna

by

**Biosphere Environmental Services
29 La Touche Park, Greystones, Co. Wicklow
Tel: 01-2875249 E-mail: maddenb@eircom.net**



SITE: TIMAHOE NORTH

Timahoe North is a medium to large sized site located north of the road between Timahoe and the R402. It adjoins Timahoe South (to the other side of the public road). The site extends for up to 4 km from north to south and for approximately 2.5 km from east to west.

Timahoe North has been out of commercial production for a considerable time and is dominated by regenerating cutaway bog with extensive scrub cover. Some well developed wetlands occur within the site, with permanent open water. A substantial area of remnant bog occurs at the southern end of the site.

The site is surrounded mostly by agricultural land, though some afforestation occurs immediately to the north.

Survey locations

Transect 1 starts from the site entrance and follows a direct line through the site to the north entrance at Doogary.

Transect 2 is a rectangular shaped circuit through an extensive area of regenerating cutaway bog to the west of the main track through the site.

Transect 3 is a loop over the remnant bog at the southern end of the site.

Vantage Point 1 is located midway along the central track (Transect 1) and looks eastwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 2 is also located midway along the central track (Transect 1) but looks westwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 3 is located along Transect 2 in the western part of the site and looks over the westernmost part of the site.

Target species recorded

Teal

Estimated two pairs bred on site.

Little Grebe

Three pairs present through summer.

Lapwing

Two displaying pairs present through season.

Ringed Plover

A single bird on 13th July was a migrant.

Snipe

Estimated 6 pairs bred on site

Redshank

Three birds on 13th July were considered migrants.

Black-headed Gull

A single bird in June was a non-breeding bird.

Potential for other target species

Timahoe North could attract hunting Merlin if nesting occurred in wider area.

Other species of note

Grey Heron – 1-2 present regularly but not breeding on site.

Little Egret – 1 feeding in wetland on 9th June. Breeding may occur locally.

Buzzard – seen regularly in area of site. Probably breeds locally.

Kestrel – single birds in April and July. Probably breeds locally.

Water Rail – heard calling from two different locations in June.

Skylark – estimated 3 territories.

Sand Martin - recorded feeding over site but not breeding.

Swallow - recorded feeding over site but not breeding.

House Martin - recorded feeding over site but not breeding.

Grasshopper Warbler – one heard reeling in May.

Linnet – at least one pair on site.

Overview

Timahoe North has well developed cutaway bog habitats, including permanent wetlands. The site supports nesting Lapwing and Snipe, as well as other wetland species such as Teal, Little Grebe and Water Rail. Several wetland species were recorded though not as breeding species – these were Little Egret, Ringed Plover, Redshank and Black-headed Gull. A range of other Amber listed species nest on site, including Grasshopper Warbler and Skylark.

SITE: TIMAHOE NORTH – BREEDING BIRDS 2013

Species	Maximum Breeding Evidence	No. of pairs (where relevant)	Breeding Status	BoCCI Status
Teal	P	2	Probable	A
Mallard	FL		Confirmed	G
Grey Heron	U		Non-breeding	G
Little Egret	U	1 i	Non-breeding	G
Little Grebe	S	3	Possible	A
Buzzard	F		Non-breeding	G
Kestrel	F		Non-breeding	A
Water Rail	S	2	Possible	A
Moorhen	P		Probable	G
Ringed Plover	M	1 i	Non-breeding	A
Lapwing	A	2	Probable	R
Snipe	D	6	Probable	A
Redshank	M	3 i	Non-breeding	R
Black-headed Gull	U	1 i	Non-breeding	R
Woodpigeon	P		Probable	G
Cuckoo	S	2	Possible	G
Jay	H		Possible	G
Magpie	P		Probable	G
Hooded Crow	P		Probable	G
Raven	F		Non-breeding	G
Blue Tit	P		Probable	G
Great Tit	P		Probable	G
Coal Tit	P		Probable	G
Skylark	T	3	Probable	A
Sand Martin	F		Non-breeding	A
Swallow	F		Non-breeding	A
House Martin	F		Non-breeding	A
Long-tailed Tit	P		Probable	G
Willow Warbler	P		Probable	G
Blackcap	S		Possible	A
Whitethroat	P		Possible	G
Grasshopper Warbler	S	1	Possible	A
Sedge Warbler	S		Possible	G
Wren	P		Probable	G
Blackbird	P		Probable	G
Song Thrush	P		Probable	G
Mistle Thrush	P		Confirmed	A
Robin	P		Probable	G
Dunnock	H		Possible	A
Pied Wagtail	H		Possible	A
Meadow Pipit	P		Probable	G
Chaffinch	P		Probable	G
Goldfinch	P		Probable	G
Siskin	H		Possible	G

Bord na Móna Summer Bird Survey 2013: Derrygreenagh/Ballydermot Bog Group

Linnet	P	1	Probable	A
Lesser Redpoll	FL		Confirmed	G
Bullfinch	P		Probable	G
Reed Bunting	P		Probable	G

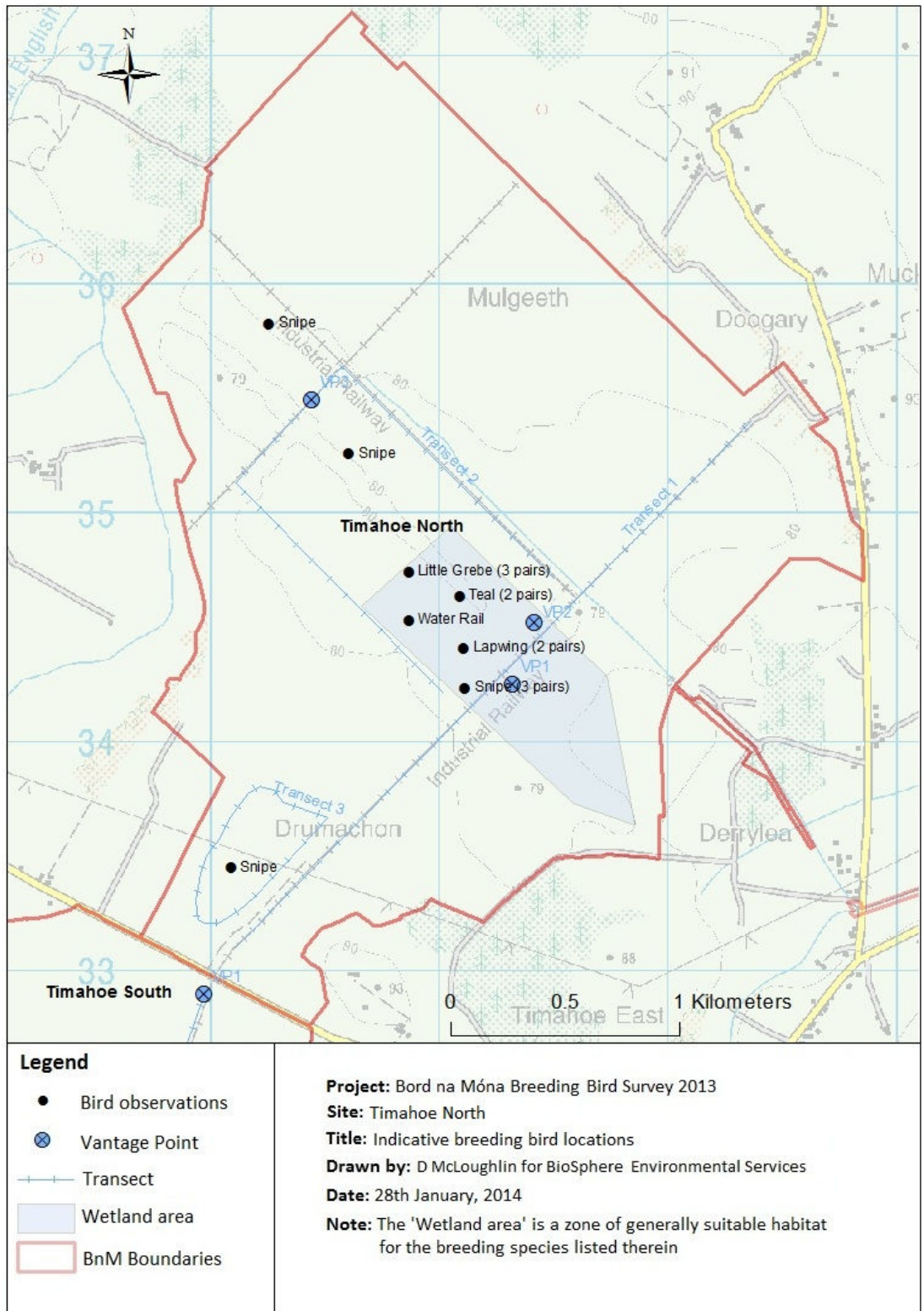
Breeding Status Codes are detailed in Appendix 2

BoCCI Status: **R – Red**; **A – Amber**; **G – Green**



Timahoe North, Plate 1: view looking eastwards over wetlands in east sector of site.

Timahoe North: Map showing transect and vantage point locations, with records of target species.



coastal species but now adapted to breeding on cut bogs). While only single pairs of Curlew and Redshank (possibly 2 pairs) were recorded, these species have shown serious declines in recent decades (78% and 55% respectively according to Bird Atlas) and even single breeding pairs are of importance. Further, geographically these records are at the eastern edge of the national ranges (apart from a few coastal nesting Redshank in Co Wicklow). The scatter of breeding Teal is also significant, as this is a further species showing significant long-term decline in Ireland.

Table 2. Summary of main wetland bird species recorded breeding (possible/probable/confirmed) at cutaway bog sites, summer 2013. Numbers given refer to estimated number of pairs. MS – Mute Swan, T. = Teal, LG = Little Grebe, WA = Water Rail, RP = Ringed Plover, L. = Lapwing, SN = Snipe, CU = Curlew, CS = Common Sandpiper.

Site	MS	T.	LG	WA	RP	L.	SN	CU	RK	CS
Kinnegad	-	-	-	-	-	-	1	-	-	-
Derryhinch	-	-	-	-	-	-	-	-	-	-
Drumman	3	-	3	-	6	1	7	-	-	-
Derryarkin	1	1	6	-	8	5	4	-	-	1
Ballybeg	-	-	-	-	1	-	2	-	-	-
Torr	1*	-	-	-	-	1*	3*	-	-	-
Cavemount	2	1+	1	-	7	9	3	-	1	-
Ballycon	2	1	1	1	3	6	5	-	1	-
Daingean Derries	-	-	-	-	-	-	1	-	-	-
Daingean Rathdrum	-	-	-	-	-	-	6	-	-	-
Diangean Townpark	-	-	-	-	-	-	5	-	-	-
Clonad	-	-	-	-	-	-	1	-	-	-
Clooncreen	1*	-	1*	-	-	-	-	-	-	-
Ballykeane	2*	-	1*	-	-	1*	5*	-	-	-
Clonsast N.	-	-	-	-	1	2	3	-	-	-
Clonsast	-	-	-	-	-	-	1	-	-	-
Derryounce	1	-	1	1	-	-	2	-	-	-
Derrylea	-	-	-	-	-	-	1	-	-	-
Ummeras	-	-	-	-	-	-	1	-	-	-
Garryhinch	-	-	-	-	-	-	1	-	-	-
Garrymore	-	-	-	-	-	-	1*	-	-	-
Ticknevin	-	-	-	-	-	-	2	-	-	-
Ballydermot	-	1	-	-	-	-	2	-	-	-
Blackriver	-	-	-	-	-	-	2	1	-	-
Lullymore	-	-	1	1	-	2	4	-	-	-
Lodge	-	-	-	-	-	-	-	1**	-	-
Lodge North	-	-	-	-	-	-	-	1**	-	-
Timahoe North	-	2	3	1	-	2	6	-	-	-
Timahoe South	1	1	1	-	-	-	8	-	-	-
Totals	14	6	19	4	26	39	77	2	2	1

* = location outside Bord na Móna site but within 200 m

** = location outside Bord na Móna site but within 500 m (one territory common to 2 sites)

4.5 Non-wetland species - overview

The cutaway bogs also provide useful habitat to a range of other species for nesting and/or

feeding purposes.

Skylark, a characteristic species of bog habitats, has a particularly widespread breeding distribution being found on almost all sites and with substantial populations on some. Skylark has declined throughout Ireland in recent decades, with a 14% decline registered by the Bird Atlas project since the 1968-72 Atlas. In an analysis of population trends in widespread breeding birds in Ireland between 1998 and 2008, Skylark was one of the few species to register a statistically significant decline (-2.98% per year) (Crowe *et al.* 2010). **Linnet** and **Grasshopper Warbler** were other species of conservation importance that nested widely on the cutaway bog sites. The presence of two possible breeding records for **Whinchat** (Garryhinch, Timahoe South) is noteworthy as this summer visitor has declined dramatically in recent decades and now has an extremely restricted distribution in Ireland (see Balmer *et al.* 2013).

During summer, **Kestrel**, **Sparrowhawk** and **Buzzard** were recorded regularly within the cutaway bog sites. Sparrowhawk nested in some sites within areas of scrub or woodland, while the other two species used the sites largely for feeding purposes. In the analysis of widespread breeding birds in Ireland, Crowe *et al.* (2010) identified a statistically significant decline (-3.09% per year) in the Kestrel population. While Sparrowhawk and Buzzard are not listed of conservation concern in Ireland, their occurrence is of some note as they are top predators and indicative of a normal functioning environment.

Woodcock, a wader not necessarily associated with wetlands during the breeding season, was recorded at 10 bog sites and may well occur at others as it is an extremely difficult species to census. Despite the problems with surveying this species, it is considered that a real population decline has occurred throughout Ireland in recent decades, so the fairly widespread occurrence in the study area is notable.

Apart from the listed species of conservation importance, the cutaway bog sites support a range of species some of which have localised distributions and have shown declines in recent years. **Cuckoo** was a regularly recorded species throughout the study area. While exact locations of birds can be difficult to pin-point, many were recorded within the sites, with fledged young seen on Ballydermot bog in July. Meadow pipit, one of the most frequent species recorded on the sites, is generally considered the commonest host species for Cuckoo in Ireland so the widespread occurrence of Cuckoo is not surprising. The Bird Atlas 2007-11 showed the Cuckoo population in Ireland to have declined substantially (26% decline) since the 1968-72 Breeding Atlas (Balmer *et al.* 2013). A significant decline (-1.08% per year) in the Cuckoo population in Ireland was also identified in the assessment of population trends of widespread breeding birds in Ireland by Crowe *et al.* (2010). Other summer visitors, while not showing recent population declines, were also found within most of the site – these included **Whitethroat**, **Sedge Warbler** and **Willow Warbler**.

Resident species in Ireland with localised distributions which were commonly recorded breeding within the sites included **Meadow Pipit**, **Lesser Redpoll** and **Reed Bunting**. The **Stonechat** population in Ireland was heavily affected by the severe winters of 2009/10 and 2010/11, with the breeding population much reduced (see Lovatt & Madden 2013). Stonechat was recorded in at least 10 sites and the population is expected to continue to increase.

4.6 Evaluation of Sites for Breeding Species

As noted in the methods section, unlike the evaluation of wintering wetland sites no particular quantitative method is available to assess the importance of sites for most breeding birds (gulls are an exception as national populations of ‘seabirds’ are reasonably well known – see Mitchell *et al.* 2004). Generally, the value is determined by the presence of ‘listed’ species as described in this report and which are as follows:

- Annex I EU Birds Directive species
- Birds of Conservation Concern - Red List (High conservation concern) species
- Birds of Conservation Concern – Amber List (Moderate conservation concern) species

However, a subjective assessment may still be required which might consider how the birds are using the site during summer and, if nesting, the number of breeding pairs involved. For instance, while Peregrine is an EU Birds Directive Annex I species, the presence of an occasional hunting bird within a site is not of high significance as Peregrines have very large territories and would cover large tracts of countryside including bog sites when hunting. However, if a pair of Peregrines was nesting within a site, there would be a higher significance. A further example is the numbers of nesting pairs of a species such as Lapwing (Red list) at a site – while one or two nesting pairs is of note, the viability of the species surviving as a breeding species in such low numbers may be doubtful due to predation and other reasons. Therefore, such a site would be ranked lower than a site with maybe four or five pairs where there is a greater prospect of long-term survival of the species at the site.

The Bird Atlas 2007-11 project has provided useful information on recent distribution of all nesting species and has analysed trends since the first Atlas project in 1968-72 (allowing for differences in methodologies etc). The results of this project, as well as other monitoring studies (as referred to in species discussion), are also considered.

On the basis of the above, an attempt is made to divide the sites according to the five-point scale used by the National Roads Authority (*Guidelines for Assessment of Ecological Impacts of National Road Schemes*, (NRA 2009) though it is noted that an ecological ranking of a site would also normally consider habitats, flora and other fauna types etc.. The NRA system uses the following scale:

- International Importance
- National Importance
- County Importance
- Local Importance (higher value)
- Local Importance (lower value)

International Importance

There are no sites which are rated of International Importance on the basis of breeding birds.

National Importance

Derryarkin qualifies as being of National Importance on the basis of the breeding colony of Black-headed Gull. The Seabird 2000 national seabird census (Mitchell *et al.* 2004) gave a

national population estimate of 13,983 pairs for the period 1998-2002, with the bulk of the breeding birds in Northern Ireland. Even with a lower estimate of 150 pairs at Derryarkin (but possibly up to 200 pairs) the colony exceeds the 1% national threshold.

It is considered that three sites can be certainly ranked at County Importance level but probably at National Importance level on account of the assemblage of breeding wetland birds but especially waders and notably Lapwing which is Red listed. Derryarkin, Cavemount and Ballycon qualify on this basis. A summary of the key species is given below:

	Derryarkin	Cavemount	Ballycon
Ringed Plover	8	7	3
Lapwing	5	9	6
Snipe	4	3	5
Redshank	-	1	1
Common Sandpiper	1	-	-
Total wader pairs	18	21	15

Each of these three sites also has breeding Mute Swan, Teal and Little Grebe.

County Importance

A suite of five sites is identified as of County Importance on the basis of breeding wetland birds (but with two or less pairs of Lapwing).

	Drumman	Clonsast N	Lullymore	Timahoe N	Timahoe S
Ringed Plover	6	1	-	-	-
Lapwing	1	2	2	2	-
Snipe	7	3	4	6	8
Total wader pairs	14	6	6	8	8

The following can be added to the above – Mute Swan at Drumman & Timahoe South; Little Grebe at each apart from Clonsast North; Teal at Timahoe North & South; Water Rail at Lullymore and Timahoe North.

In addition, Blackriver bog is rated as of County Importance as it has breeding Curlew (Red list) and Snipe (2 pairs).

Local Importance (higher value)

Two sites are identified in this category on the basis of significant numbers of breeding Snipe:

- Daingean Rathdrum (6 pairs)
- Daingean Townparks (5 pairs)

While Snipe is a relatively widespread breeding species in Ireland, the Bird Atlas 2007-11 showed the population to have declined by 34% since the 1968-72 Breeding Atlas (Balmer *et al.* 2013). Any site with 5 or more breeding pairs could be considered as of importance.

A further site, Derrycastle, is also ranked in this category on the basis of a well developed wetland bird community, with breeding Mute Swan, Little Grebe, Water Rail and Snipe (2 pairs).

Local Importance (lower value)

All other sites are considered to be of Local Importance (lower value) (see Table 3). Each site provides some habitat for nesting birds, which include widespread but nevertheless declining species such as Skylark. These sites may also be used as hunting grounds for important species such as Peregrine and Kestrel. Breeding Snipe (1-2 pairs) occur at ten of the sites.

Table 3. Rating of importance of sites for breeding birds on basis of 2013 summer survey.

Site	Interests	Tentative rating
Derryarkin (most of site apart from western leg)	Black-headed Gulls; Breeding wetland birds, especially Lapwing	National
Cavemount (east of railway only)	Breeding wetland birds, especially Lapwing & Redshank	National
Ballycon (all apart from westernmost end)	Breeding wetland birds, especially Lapwing & Redshank	National
Drumman (north of Mongagh River)	Breeding wetland birds	County
Clonsast North (mainly NE sector)	Breeding wetland birds	County
Lullymore (wetlands in northeast)	Breeding wetland birds	County
Timahoe North (wetlands only)	Breeding wetland birds	County
Timahoe South (quarry and wetland in north part of site only)	Breeding wetland birds	County
Blackriver (northern bog only)	Curlew	County
Daingean Rathdrum (eastern sector only)	Snipe	Local (higher value)
Daingean Townpark	Snipe	Local (higher value)
Derrycastle (lakes only)	Breeding wetland birds	Local (higher value)
Kinnegad	Amber species (inc. Snipe)	Local (lower value)
Derryhinch	Amber species	Local (lower value)
Ballybeg	Amber species (inc. Snipe & Ringed Plover)	Local (lower value)
*Torr	Amber species	Local (lower value)
Daingean Derries	Amber species (inc. Snipe)	Local (lower value)
Clonad	Amber species (inc. Snipe)	Local (lower value)
*Cloonreen	Amber species	Local (lower value)

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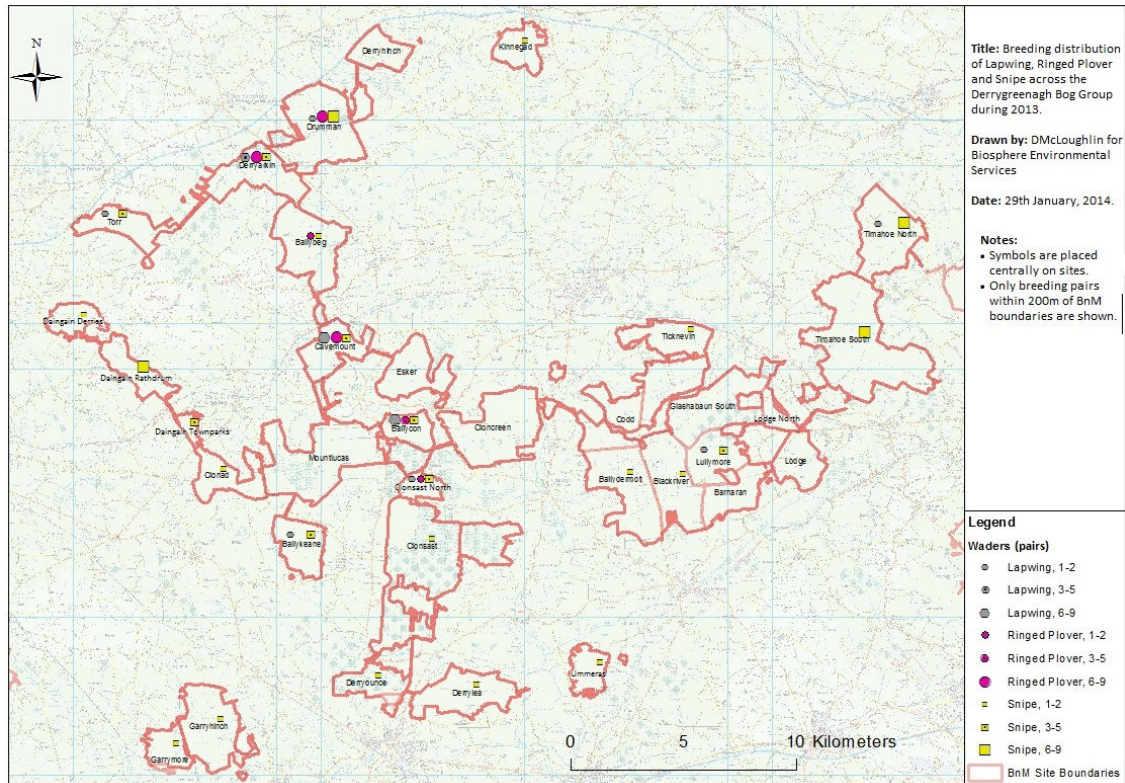


Figure 1. Breeding distribution of Lapwing, Ringed Plover and Snipe across the Derrygreenagh-Ballydermot Bog Group, summer 2013.

Appendix 1-6

Winter Bird Survey 2013-2014 Report - Timahoe Extracts from Derrygreenagh
Ballydermot

**BORD NA MONA
WINTER BIRD SURVEY 2013-2014**

**BALLYDERMOT & DERRYGREENAGH
BOG GROUP**

FINAL REPORT

OCTOBER 2014



Whooper Swans at Ballycon, December 2013

Prepared for

Bord na Móna

by

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SITE: TIMAHOE NORTH

Timahoe North is a medium to large sized site located north of the road between Timahoe and the R402. It adjoins Timahoe South (to the other side of the public road). The site extends for up to 4 km from north to south and for approximately 2.5 km from east to west.

Timahoe North has been out of commercial production for a considerable time and is dominated by regenerating cutaway bog with extensive scrub cover. Some well developed wetlands occur within the site, with permanent open water. A substantial area of remnant bog occurs at the southern end of the site.

The site is surrounded mostly by agricultural land, though some afforestation occurs immediately to the north.

Survey locations

Transect 1 starts from the site entrance and follows a direct line through the site to the north entrance at Doogary.

Transect 2 is a rectangular shaped circuit through an extensive area of regenerating cutaway bog to the west of the main track through the site.

Transect 3 is a loop over the remnant bog at the southern end of the site.

Vantage Point 1 is located midway along the central track (Transect 1) and looks eastwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 2 is also located midway along the central track (Transect 1) but looks westwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 3 is located along Transect 2 in the western part of the site and looks over the westernmost part of the site.

Target species recorded

Whooper Swan

On 14th October, a flock of four flew southwards over site.

On 15th November, one flew over site in a north direction at c.50 m height.

On 11th January, a flock of four flew east to west across site.

On 8th February, a flock of three flew east to west across site.

Hen Harrier

On 15th November, a ringtail (female type) flew in a northwest direction over site at a height of 15 m (approx.). It was being mobbed by Hooded Crows.

On 11th January, a ringtail flew low (c.10 m) over bog (seen from transect 3). Bird was foraging.

On 16th January, a ringtail was observed hunting over site (probably same bird as on 11th).

Peregrine

On 12th October, female flew over eastern sector of site.

On 17th November, a probable male flew west over site.

Golden Plover

On 12th October, a flock of 15 flew high eastwards across site.

On 14th October, a flock of approximately 20 was over western boundary.

On 14th November, a flock of approximately 60 flew west to east across site.

On 17th November, a flock of approximately 30 flew east over site.

On 10th March, a flock of 25 flew northeast over site.

On 11th March, a flock of 15 were circling over site at c.150 m height & continued northwards.

Lapwing

On 14th October, a flock of c.40 flew south over site.

On 22nd December, a flock of c.50 flew south over site.

Two on 12th March were displaying birds.

Curlew

Flock of 16 flew south over site on 10th March.

Potential for other target species

Site has potential for hunting Merlin (one recorded in winter 2012/13).

Other species of note

Mute Swan – present in small numbers (peak of 4) in October, November, January & February.

Teal – high counts of 18 on 15th November and 28 on 12th March. Small numbers observed arriving into site during vantage point watches.

Little Grebe – present in late winter with a peak of 5 on 12th March.

Buzzard – recorded in October, November, February and March. Pair observed displaying over northern part of site in February and March.

Sparrowhawk – recorded in most months, with a displaying pair in February.

Kestrel – recorded in all months, mostly single birds hunting. Pair on 10th March.

Water Rail – one to two in November, January and February. Six on 12th March (early breeding behaviour).

Snipe – peak of 13 on 12th March 2014.

Jack Snipe – one on 6th February 2014.

Woodcock – four displaying (roding) on 12th March 2013.

Black-headed Gull - flock of c.20 passing over site on 10th February.

Skylark – two in October and November, four in March.

Starling – regular in small numbers (up to 50) through the winter.

Meadow Pipit – regular on site through the winter with peak of 14 on 6th February.

Linnet – peak of five in March.

Overview

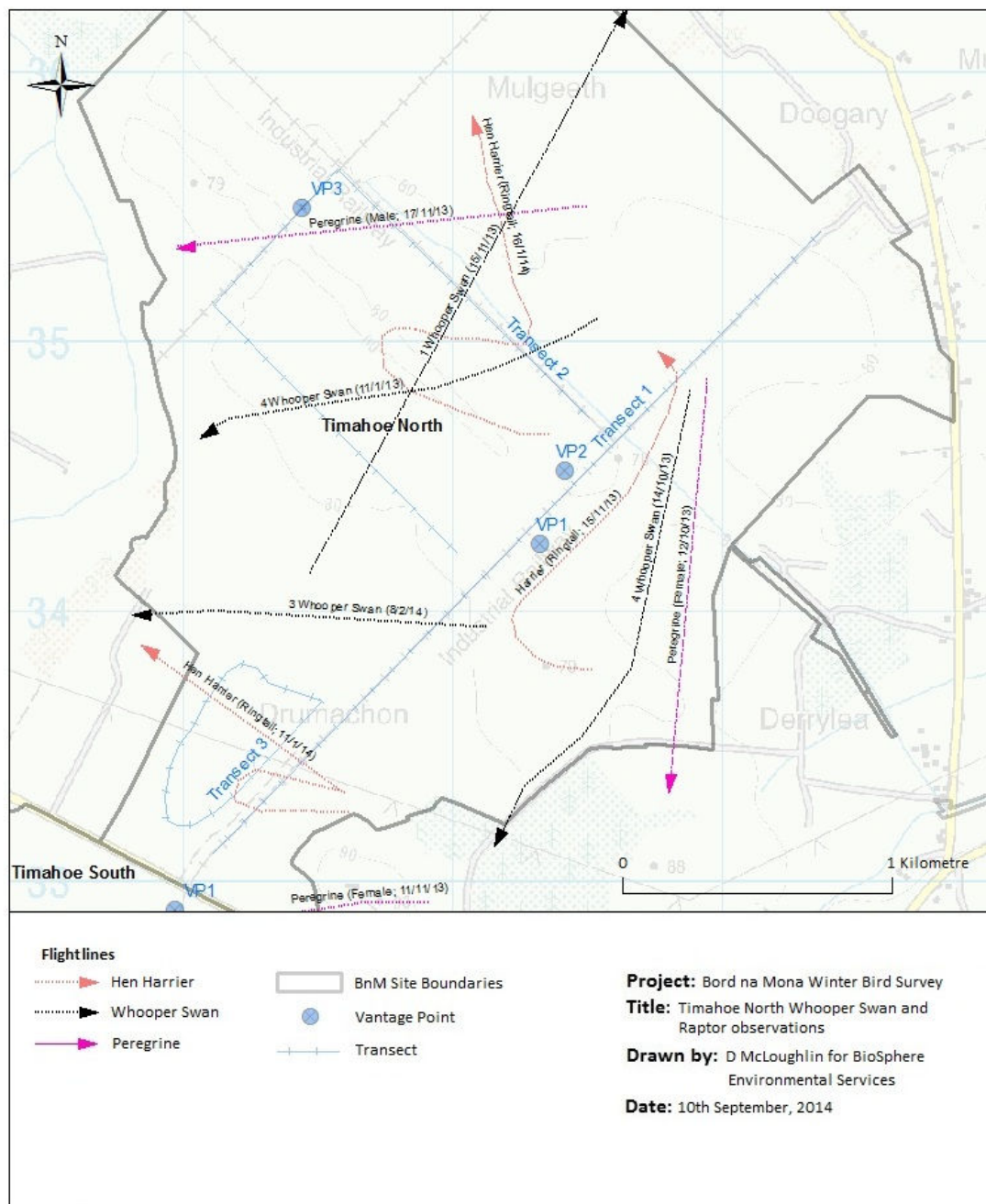
Timahoe North has well developed cutaway bog habitats, including permanent wetlands.

While Whooper Swan passed over the site several times in small numbers, no birds were recorded using the site over the two winters. Golden Plover pass over the site and could potentially roost in the wetland zone.

Hen Harrier was recorded hunting within the site in both winters. Peregrine passed over the site on two occasions.

The site supports a range of other species of conservation interest though all in small numbers. These include Little Grebe, Teal, Snipe, Jack Snipe, Woodcock and Water Rail.

Timahoe North Map 1, showing transect and vantage point locations, with records of Whooper Swan, Hen Harrier and Peregrine.



In the first main review of the I-WeBS project, Crowe (2005) describes internationally and nationally important sites following the standard criteria, and then includes a category ‘Other notable sites’ which are ‘other sites deemed important, as they support significant concentrations of gulls, or occasionally support concentrations of international or national importance of other water bird species’. Any other sites where counts took place are included in a fourth category of sites ‘Other sites covered’.

In the report for winter 2012/13, it was considered that selected key species (or receptors) of conservation value should be used in assessing the importance of the sites in the study area. The assessment would take into account how the species is utilising the resources of the site. For instance, use of a site by feeding Whooper Swans is of some importance whereas records of swans merely flying over the site is not usually of importance (though of course would be considered in the context of assessment of impacts of a wind farm on local bird populations).

On the basis of the results of the now two winter surveys, it is proposed that the following species and/or receptors should be used in assessing the importance of the sites for wintering birds:

- Whooper Swan – regular occurrence on a site (for feeding and/or roosting), especially in the context of the site being part of the range for a nationally important population
- Hen Harrier – regular occurrence on a site, i.e. more than one known record, and with potential for winter roosting (it is noted that a single record of Hen Harrier at a site is not of particular importance as all sites have some habitat that could attract foraging birds)
- Golden Plover – more than one occurrence of birds roosting on a site, though sites identified on this criterion alone are unlikely to be of high importance
- Peregrine and/or Merlin – where these species are utilising the site (e.g. hunting, roosting) rather than just flying over
- Wetland bird assemblage – i.e. sites which support a range of bird species characteristic of wetland habitats

Using these criteria, the sites can be divided (tentatively) into those with significant ornithological importance and those with low importance (latter perhaps supporting a range of bird species of the countryside, including some with local distributions). Note that for some sites which meet the ‘importance’ criteria, only certain parts of the site are of interest (see below).

For EIA purposes, the relevant sites will in due course be assessed on their overall ecological importance, including wintering and breeding birds, habitats, mammals etc., and the ecological valuation classification proposed by the NRA (2009) is likely to be used in such assessments. It is therefore considered useful for the present winter bird report to rate the sites according to the NRA categories as described in the Methods section, and repeated here:

- International Importance
- National Importance
- County Importance

- Local Importance (higher value)
- Local Importance (lower value)

A deviation is made from the above in respect of the two Local categories, which are merged as 'Local'. The reason for this is that there is no guidance on defining what a 'local' area is in terms of ecology and also the difference between these two categories is not really clear.

It is stressed that the ratings given are still somewhat tentative, as rating of sites on the basis of wetland bird species is preferably done using five year periods so as to dampen annual fluctuation in numbers (Crowe 2005). Further, the ratings have to be somewhat subjective as there are no criteria available for rating sites on the presence of dispersed species such as Hen Harrier or Peregrine. Nevertheless, due to the intensity of survey over the two winters, and the availability of some previous information from the Bord na Móna ecology team, it is considered that the ratings given do represent a realistic assessment of the importance of the sites for wintering birds and are unlikely to change significantly with the addition of further winter survey data.

Only two sites, Cavemount and Derryarkin, are rated of National Importance and this largely reflects the intense use of the sites by Whooper Swans (see Table 7). While numbers of swans at Cavemount exceeded the threshold for international importance for part of the winter, it is recommended that longer term data are required to assign an international importance rating to the site (assuming such numbers are repeated over coming winters). These sites also attract wintering Hen Harriers and support a range of other wetland birds (though mostly in relatively low numbers).

Four of the sites are rated of County importance. Two of these sites, Drumman and Ballycon, have well developed wetland habitat which supports various wetland species, including Whooper Swan (especially Ballycon). These two sites also attract Hen Harriers, with Drumman being a regular location for Merlin. Clooncreen, while predominantly in commercial production, is rated as of county importance as it supported substantial numbers of Whooper Swans for part of the winter and was also used by Hen Harriers and regularly by Peregrines. Garryhinch is rated of county importance on the basis of high Hen Harrier activity and the almost certain presence of a winter roost.

All other sites are rated of Local importance. The locally rated sites vary greatly in their size and complexity, from Ummeras, which is a small site with low diversity of habitats, to Timahoe North, which is a large site with a high diversity of habitats. The interests in these sites are mostly usage (hunting or roosting) by Hen Harrier, Peregrine, Merlin and Golden Plover and also the presence of various Amber listed species. A few of the sites also support small numbers of Whooper Swans though not regularly. Several of the sites are also listed on the basis of having some well developed wetland habitat with open water, which support wetland bird species (such as Mute Swan, Little Grebe and Water Rail).

Overall, the results of the surveys over the two winters have shown that the majority of the cutaway bog sites in the Derrygreenagh/Ballydermot group, with some notable exceptions, are of relatively low importance for wintering birds. However, all the sites support some species of conservation interest as well as a range of common bird species of the countryside.

Table 7. Rating of importance of sites for wintering birds on basis of 2012/13 & 2013/14 winter surveys.

Site	Key interests	Tentative rating
Cavemount (east of railway only)	¹ Whooper Swan Hen Harrier Wetland birds	National
Derryarkin (most of site)	² Whooper Swan Hen Harrier Wetland birds	National
Drumman (most of site)	Hen Harrier Merlin Peregrine ³ Whooper Swan Wetland birds	County
Ballycon (most of site)	Whooper Swan Hen Harrier Wetland birds	County
Clooncreen (only marginal areas)	⁴ Whooper Swan Hen Harrier Peregrine	County
Garryhinch	Hen Harrier (roost)	County
Kinnegad	Peregrine Merlin (1 record) Golden Plover Amber list species	Local
Derryhinch	Peregrine Merlin (1 record) Golden Plover Amber list species	Local
Toor	Hen Harrier Peregrine Amber list species	Local
Ballybeg	Golden Plover Amber list species	Local
Esker	Peregrine Merlin (1 record) Golden Plover Amber list species	Local
Derrycricket	Amber list species	Local
Daingean Derries	Peregrine Amber list species	Local
Daingean Rathdrum	Amber list species	Local
Daingean Townparks	Amber list species	Local

Bord na Móna Winter Bird Survey 2013/14: Derrygreenagh/Ballydermot Bog Group

Clonad	Golden Plover Amber list species	Local
Ballykeane	⁵ Whooper Swan Amber list species	Local
Clonsast North	⁶ Whooper Swan Hen Harrier (1 record) Amber list species	Local
Clonsast (exc. afforested area of site)	⁷ Whooper Swan Hen Harrier Golden Plover Amber listed species	Local
Derryounce (exc. afforested area of site)	⁸ Whooper Swan Golden Plover Wetland birds Amber listed species	Local
Derrylea	Hen Harrier (1 record) Amber listed species	Local
Ummeras	Amber listed species	Local
Garrymore	Hen Harrier Merlin (x 1) Golden Plover Amber listed species	Local
BALLYDERMOT		
Ticknevin	Peregrine Golden Plover Amber listed species	Local
Glashabaun North	Peregrine Golden Plover Amber listed species	Local
Glashabaun South	Amber listed species	Local
Codd North	Peregrine Golden Plover Amber listed species	Local
Codd South	Golden Plover Amber listed species	Local
Ballydermot	Hen Harrier Peregrine Golden Plover Amber listed species	Local
Blackriver	Hen Harrier (x 1) Golden Plover Amber listed species	Local
Lullymore (wetlands in northeast)	⁹ Whooper Swan Hen Harrier Wetland birds Amber listed species	Local
Barnaran	Golden Plover Amber listed species	Local
Lodge	Golden Plover Amber listed species	Local
Lodge North	Amber listed species	Local
Timahoe North	Hen Harrier	Local

	Wetland birds Amber listed species	
Timahoe South	Hen Harrier Peregrine Wetland birds Amber listed species	Local

¹ while numbers of swans exceeded the threshold for international importance for part of winter, longer term data are required to assign an international importance rating to the site

² while numbers of Whooper Swans did not reach the threshold for national importance, the site is very important in supporting part of such a population that uses several sites in the wider area

³ occasional usage of wetlands/ponds by Whooper Swans for roosting and/or feeding but mainly in winter 2012/13

⁴ flooded bog area used by substantial numbers of Whooper Swans for part of winter 2013/14

⁵ quarry & grassland to west of bog used by Whooper Swans (up to 14) in winter 2012/13 but in winter 2013/14 only recorded there in November

⁶ small numbers recorded on ponds in north-east of site in winter 2013/14 only

⁷ recorded feeding on grassland in farm outside of Bord na Móna property

⁸ used by only small numbers in winters 2012/13 & 2013/14 but formerly more important

⁹ wetland in northeast of site used by small numbers of swans

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Appendix 1-7

Summer Bird Survey 2014 Report - Timahoe Extracts from Derrygreenagh
Ballydermot

**BORD NA MONA
SUMMER BIRD SURVEY 2014**

**BALLYDERMOT & DERRYGREENAGH
BOG GROUP**

FINAL REPORT

MAY 2015



View of regenerating cutaway vegetation at Drumman bog

Prepared for

Bord na Móna

by

**Biosphere Environmental Services
29 La Touche Park, Greystones, Co. Wicklow
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SITE: TIMAHOE NORTH

Timahoe North bog is a medium to large sized site located north of the road between Timahoe and the R402. It adjoins Timahoe South (to the other side of the public road). The site extends for up to 4 km from north to south and for approximately 2.5 km from east to west.

Timahoe North has been out of commercial production for a considerable time and is dominated by regenerating cutaway bog with extensive scrub cover. Some well developed wetlands occur within the site, with permanent open water. A substantial area of remnant bog occurs at the southern end of the site.

The site is surrounded mostly by agricultural land, though some afforestation occurs immediately to the north.

Survey locations

Transect 1 starts from the site entrance and follows a direct line through the site to the north entrance at Doogary.

Transect 2 is a rectangular shaped circuit through an extensive area of regenerating cutaway bog to the west of the main track through the site.

Transect 3 is a loop over the remnant bog at the southern end of the site.

Vantage Point 1 is located midway along the central track (Transect 1) and looks eastwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 2 is also located midway along the central track (Transect 1) but looks westwards over an extensive area of regenerating cutaway bog with well developed wetlands.

Vantage Point 3 is located along Transect 2 in the western part of the site and looks over the westernmost part of the site.

Target species recorded

Teal

Up to three birds on each visit suggesting that 1-2 pairs bred on site.

Little Grebe

Two pairs present through summer.

Water Rail

Up to 4 different birds calling in late April.

Lapwing

Three displaying pairs present on 24th April. Only a single bird on 26th May which did not appear territorial. Regular presence of Hooded Crows may have caused birds to abandon nesting attempts.

Snipe

At least 6 displaying birds in May.

Woodcock

One displaying bird on 24th April.

Meadow Pipit

Estimate of at least 20 pairs on site.

Potential for other target species

Timahoe North provides suitable hunting habitat for Merlin.

Other species of note

Buzzard – seen regularly in area of site. Probably breeds locally.

Kestrel – single bird in April.

Skylark – estimated 7 territories.

Sand Martin - recorded feeding over site but not breeding.

Swallow - recorded feeding over site but not breeding.

Goldcrest – breeds on site.

Grasshopper Warbler – two heard reeling in June.

Robin – breeds widely in scrub.

Mistle Thrush – at least one pair bred on site.

Stonechat – two pairs bred on site

Linnet – at least one pair on site.

Overview

Timahoe North has well developed cutaway bog habitats, including permanent wetlands. The site supports nesting Lapwing and Snipe, as well as other wetland species such as Teal, Little Grebe and Water Rail. High numbers of Hooded Crows may have deterred the Lapwing from nesting. Woodcock and Meadow Pipit (Red listed) breed on site. A range of other Amber listed species nest, notably Skylark, Stonechat and Linnet.

SITE: TIMAHOE NORTH – BREEDING BIRDS 2014

Species	Maximum Breeding Evidence	No. of pairs (where relevant)	Breeding Status	BoCCI Status
Teal	P	1-2	Probable	A
Mallard	FL	2+	Confirmed	G
Grey Heron	U		Non-breeding	G
Little Grebe	P	2	Probable	A
Buzzard	F		Non-breeding	G
Kestrel	F		Non-breeding	A
Water Rail	S	4	Possible	A
Moorhen	P	3+	Probable	G
Lapwing	A	4	Probable	R
Snipe	D	6	Probable	A
Woodcock	D	1	Probable	R
Woodpigeon	P		Probable	G
Cuckoo	S	2	Possible	G
Jay	H		Possible	G
Magpie	P		Probable	G
Hooded Crow	P		Probable	G
Raven	F		Non-breeding	G
Blue Tit	P		Probable	G
Great Tit	P		Probable	G
Coal Tit	P		Probable	G
Skylark	FL	7	Confirmed	A
Sand Martin	F		Non-breeding	A
Swallow	F		Non-breeding	A
Long-tailed Tit	P		Probable	G
Willow Warbler	P		Probable	G
Blackcap	S		Possible	G
Whitethroat	FL		Confirmed	G
Grasshopper Warbler	S	1	Possible	G
Sedge Warbler	S		Possible	G
Wren	P		Probable	G
Blackbird	P		Probable	G
Song Thrush	P		Probable	G
Mistle Thrush	FL	1	Confirmed	A
Robin	FL		Confirmed	A
Stonechat	FL	2	Confirmed	A
Duncock	H		Possible	A
Pied Wagtail	H		Possible	A
Meadow Pipit	FL	20+	Confirmed	R
Chaffinch	P		Probable	G
Goldfinch	P		Probable	G
Siskin	H		Possible	G
Linnet	P	1	Probable	A
Lesser Redpoll	FL		Confirmed	G
Bullfinch	P		Probable	G

Reed Bunting	P		Probable	G

Breeding Status Codes are detailed in Appendix 2

BoCCI Status: **R – Red**; **A – Amber**; **G – Green**



Timahoe North, Plate 1: view looking eastwards over wetlands in east sector of site.

Timahoe North: Map showing transect and vantage point locations, with records of target species.

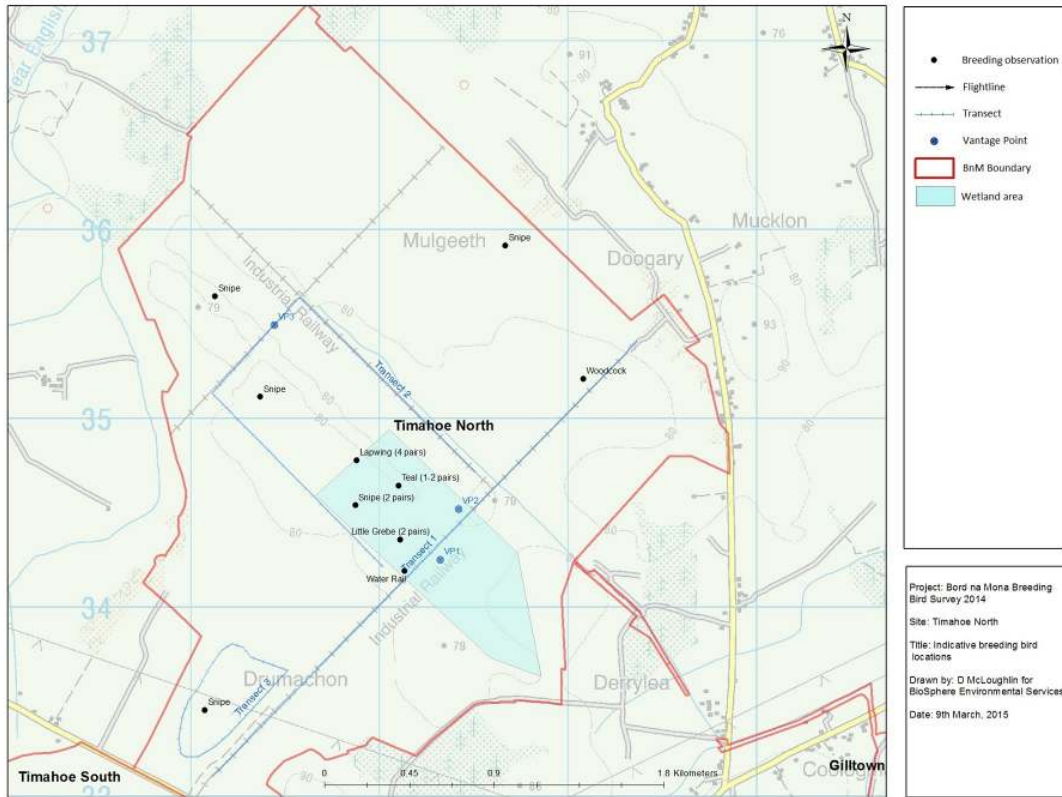


Table 2. Summary of main wetland bird species recorded breeding (possible/probable/confirmed) at cutaway bog sites, summer 2014. Numbers given refer to estimated number of pairs. MS – Mute Swan, T. = Teal, LG = Little Grebe, WA = Water Rail, RP = Ringed Plover, L. = Lapwing, SN = Snipe, CU = Curlew, CS = Common Sandpiper.

Site	MS	T.	LG	WA	RP	L.	SN	CU	RK	CS
Kinnegad	-	-	-	-	-	-	3	-	-	-
Derryhinch	-	-	-	-	-	-	1	-	-	-
Drumman	3	-	2	-	4	1	5	-	-	-
Derryarkin	3	1	2	-	9	8	10	-	-	1
Ballybeg	-	-	-	-	-	-	3	-	-	-
Toor	-	-	-	-	-	-	2*	-	-	-
Cavemount	1	1	1	-	5	6	3	-	1-2?	-
Ballycon	1	1	1	1+	3	10	5	-	-	-
Daingean Derries	-	-	-	-	-	2	3	-	-	-
Daingean Rathdrum	-	-	-	-	-	-	4	-	-	-
Daingean Townpark	-	-	-	-	-	-	2	-	-	-
Cloncreen	1*	-	-	-	-	2	-	-	-	-
Ballykeane	3*	-	1*	-	-	4*	2*	-	-	-
Clonsast N.	-	-	-	-	2	3	3	-	-	-
Clonsast	-	-	-	-	-	-	1	-	-	-
Derryounce	1	-	1	1+	-	-	2	-	-	-
Derrylea	-	-	-	-	-	-	2	-	-	-
Ummeras	-	-	-	-	-	-	2	-	-	-
Garryhinch	-	-	-	-	-	1?	2	-	-	-
Garrymore	-	-	-	-	-	-	-	-	-	-
Ticknevin	-	-	-	-	-	-	3	-	-	-
Glashabaun South	-	-	-	-	-	-	1	-	-	-
Ballydermot	-	-	-	-	-	-	3	-	-	-
Blackriver	-	-	-	-	-	-	3	1	-	-
Lullymore	-	-	1	1	-	3	3	-	-	-
Lodge	-	-	-	-	-	-	-	1**	-	-
Lodge North	-	-	-	-	-	-	-	1**	-	-
Timahoe North	-	2	2	4	-	2	6	-	-	-
Timahoe South	1	2	1	-	-	-	6	-	-	-
Totals	14	7	12	7+	23	42	82	2	1-2	1

* = location outside Bord na Móna site but within 200 m

** = location outside Bord na Móna site but within 500 m (one territory common to 2 sites)

4.5 Non-wetland species - overview

The cutaway bogs also provide useful habitat to a range of other species of conservation importance for nesting and/or feeding purposes.

Meadow Pipit and **Skylark**, characteristic species of bog habitats, both have a particularly widespread breeding distribution being found on almost all sites and with substantial populations on some. Meadow Pipit and Skylark have declined throughout Ireland in recent decades, with 3% and 14% respective declines registered by the Bird Atlas project since the 1968-72 Atlas. In an analysis of population trends in widespread breeding birds in Ireland between 1998 and 2008, Meadow Pipit and Skylark was among the few species to register statistically significant declines (-1.1 & -2.98% per year respectively) (Crowe et al. 2010).

Linnet and **Stonechat**, and to a lesser extent **Mistle Thrush**, are other species of conservation importance that are characteristic species of open country and which nested widely on the cutaway bog sites. The Stonechat population in Ireland was heavily affected by the severe winters of 2009/10 and 2010/11, with the breeding population much reduced (see Lovatt & Madden 2013). The widespread occurrence on the bogs of Stonechat in 2014 indicates good recovery since the population crash.

Starling, **Goldcrest** and **Robin** are Amber listed species that are widespread in scrub and woodland habitats on the cutaway bogs though are not particularly associated with bog habitats.

The common hirundine species (**Swallow**, **Sand Martin**, **House Martin**) will nest on the bog sites where suitable nest sites occur (buildings in case of Swallow and House Martin) but feed commonly over the sites during summer. **Swift** is a further species that may be found feeding over the sites but not nesting.

Sparrowhawk breeds on sites where suitable woodland and scrub habitats occur. **Kestrel** and **Buzzard** were recorded regularly within the cutaway bog sites, using the sites largely for feeding purposes. In the analysis of widespread breeding birds in Ireland, Crowe *et al.* (2010) identified a statistically significant decline (-3.09% per year) in the Kestrel population though an increase (1.22 per year) in the Sparrowhawk population. The occurrence of these relatively common raptor species across the study area is of some note as they are top predators and indicative of a normal functioning environment.

Woodcock, a wader not necessarily associated with wetlands during the breeding season, was recorded at 15 bog sites and may well occur at others as it is an extremely difficult species to census. Despite the problems with surveying this species, it is considered that a real population decline has occurred throughout Ireland in recent decades (hence Red list status), so the fairly widespread occurrence in the study area is notable.

Apart from the listed species of conservation importance, the cutaway bog sites support a range of other species some of which have localised distributions and have shown declines in recent years. **Cuckoo** was a regularly recorded species throughout the study area. While exact locations of birds can be difficult to pin-point, many were recorded within the sites. Meadow pipit, one of the most frequent species recorded on the sites, is generally considered the commonest host species for Cuckoo in Ireland so the widespread occurrence of Cuckoo is not surprising. The Bird Atlas 2007-11 showed the Cuckoo population in Ireland to have declined substantially (26% decline) since the 1968-72 Breeding Atlas (Balmer *et al.* 2013). A significant decline (-1.08% per year) in the Cuckoo population in Ireland was also identified in the assessment of population trends of widespread breeding birds in Ireland by Crowe *et al.* (2010). Other summer visitors, while not showing recent population declines, were also found within many of the site – these included **Whitethroat**, **Sedge Warbler**,

Willow Warbler and to a lesser extent **Blackcap**. Resident species in Ireland with localised distributions which were commonly recorded breeding within the sites included **Lesser Redpoll** and **Reed Bunting**.

4.6 Evaluation of Sites for Breeding Species

As noted in the methods section, unlike the evaluation of wintering wetland bird populations no particular quantitative method is available to assess the importance of sites for most breeding birds (gulls are an exception as national populations of ‘seabirds’ are reasonably well known – see Mitchell *et al.* 2004). Generally, the value is determined by the presence of ‘listed’ species as described in this report and which are as follows:

- Annex I EU Birds Directive species
- Birds of Conservation Concern - Red List (High conservation concern) species
- Birds of Conservation Concern – Amber List (Moderate conservation concern) species

However, a subjective assessment may still be required which might consider how the birds are using the site during summer and, if nesting, the number of breeding pairs involved. For instance, while Peregrine is an EU Birds Directive Annex I species, the presence of an occasional hunting bird within a site is not of high significance as Peregrines have large territories and would cover large tracts of countryside including bog sites when hunting. However, if a pair of Peregrines were nesting within a site, there would be a higher significance. A further example is the numbers of nesting pairs of a species such as Lapwing (Red list) at a site – while one or two nesting pairs is of note, the viability of the species surviving as a breeding species in such low numbers may be doubtful due to predation and other reasons. Therefore, such a site would be ranked lower than a site with maybe four or five pairs where there is a greater prospect of long-term survival of the species at the site.

The Bird Atlas 2007-11 project has provided useful information on recent distribution of all nesting species and has analysed trends since the first Atlas project in 1968-72 (allowing for differences in methodologies etc). The results of this project, as well as other monitoring studies (as referred to in species discussion), are also considered.

On the basis of the above, an attempt is made to divide the sites according to the five-point scale used by the National Roads Authority (*Guidelines for Assessment of Ecological Impacts of National Road Schemes*, (NRA 2009) though it is noted that an ecological ranking of a site would also normally consider habitats, flora and other fauna types etc.. The NRA system uses the following scale:

- International Importance
- National Importance
- County Importance
- Local Importance (higher value)
- Local Importance (lower value)

International Importance

There are no sites which are rated of International Importance on the basis of breeding birds.

National Importance

Derryarkin is considered to qualify as being of National Importance on the basis of the breeding colony of Black-headed Gulls. The Seabird 2000 national seabird census (Mitchell *et al.* 2004) gave a national population estimate of 13,983 pairs for the period 1998-2002, with the bulk of the breeding birds in Northern Ireland. With an estimate of 150 pairs at Derryarkin (but possibly up to 200 pairs) in 2013 and an estimate of 110 pairs in 2014 (giving a minimum 2 year average of 130 pairs), the colony is just a little off the 1% threshold for national importance (i.e. 140 pairs). When considered with the nearby Cavemount colony (c.160 adults), which is likely to be satellite colony of the main one at Derryarkin, the combined total easily exceeds the 1% National level. Also, with further declines in inland colonies since Seabird 2000 (see McGreal 2011), the numbers at Derryarkin would almost certainly now be of more significance.

It is considered that three sites can be ranked certainly at the County Importance level but probably at National Importance level on account of the assemblage of breeding wetland birds but especially waders and notably Lapwing which is Red listed. Derryarkin, Cavemount and Ballycon qualify on this basis. A summary of the key species is given below:

	Derryarkin	Cavemount	Ballycon
Ringed Plover	9	5	3
Lapwing	8	6	10
Snipe	10	3	5
Redshank	-	1	?
Common Sandpiper	1	-	-
Total wader pairs	28	15	18

Each of these three sites also has breeding Mute Swan, Teal and Little Grebe and, as already noted, a colony of Black-headed Gulls was established at Cavemount in 2014.

County Importance

A suite of five sites is identified as of County Importance on the basis of breeding wetland birds (but with three or less pairs of Lapwing).

	Drumman	Clonsast N	Lullymore	Timahoe N	Timahoe S
Ringed Plover	4	2	-	-	-
Lapwing	1	3	3	2	-
Snipe	5	3	3	6	6
Total wader pairs	10	8	6	8	6

The following wetland species can be added to the above sites –

Mute Swan & Little Grebe at Drumman

Little Grebe & Water Rail at Lullymore

Teal, Little Grebe & Water Rail at Timahoe North

Mute Swan, Teal & Little Grebe at Timahoe South

In addition, Blackriver bog is rated as of County Importance as it has breeding Curlew (Red list) and Snipe (3 pairs).

All of the above five sites were also rated as of County Importance on the basis of the 2013 breeding survey.

Local Importance

All other sites are ranked as Local Importance (higher value). This is on the basis of at least one Red listed species breeding and in all cases one or more Amber listed species. The cutaway bogs are of particular importance for Meadow Pipit, which is an ubiquitous and very characteristic species on the bogs. Woodcock, also Red listed, is a further fairly widespread species of the bog sites. Each of the locally important sites support several Amber listed species, and notably Snipe, Skylark, Mistle Thrush, Stonechat and Linnet, which are characteristic of bog and related habitats. Kestrel, and to a lesser extent Sparrowhawk, are further widespread species of the bog sites.

Table 3. Rating of importance of sites for breeding birds on basis of 2014 summer survey. For National and County sites, only the birds of highest interest are listed.

Site	Interests	Tentative rating
Derryarkin	Black-headed Gulls; Breeding wetland birds, especially Lapwing	National
Cavemount (mainly east of railway)	Breeding wetland birds, especially Lapwing, Redshank & Black-headed Gulls	National
Ballycon (all apart from westernmost end)	Breeding wetland birds, especially Lapwing	National
Drumman (mainly north of Mongagh River)	Breeding wetland birds	County
Clonsast North (mainly NE sector)	Breeding wetland birds	County
Lullymore (esp. wetlands in northeast)	Breeding wetland birds	County
Timahoe North (esp. wetlands only)	Breeding wetland birds	County
Timahoe South (esp. quarry and wetland in north part of site)	Breeding wetland birds	County
Blackriver (mainly northern remnant bog)	Curlew	County
Kinnegad	Meadow Pipit Amber species (inc. Snipe)	Local (higher value)
Derryhinch	Meadow Pipit Amber species (inc. Snipe)	Local (higher value)
Ballybeg	Meadow Pipit	Local (higher value)

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