



## Wylfa Newydd Project

6.7.30 ES Volume G - A5025 Off-line Highway  
Improvements App G9-9 - A5025 Route  
Improvement Contract EIA: Winter Bird Survey  
Results - Winter 2013/2014

PINS Reference Number: EN010007

Application Reference Number: 6.7.30

June 2018

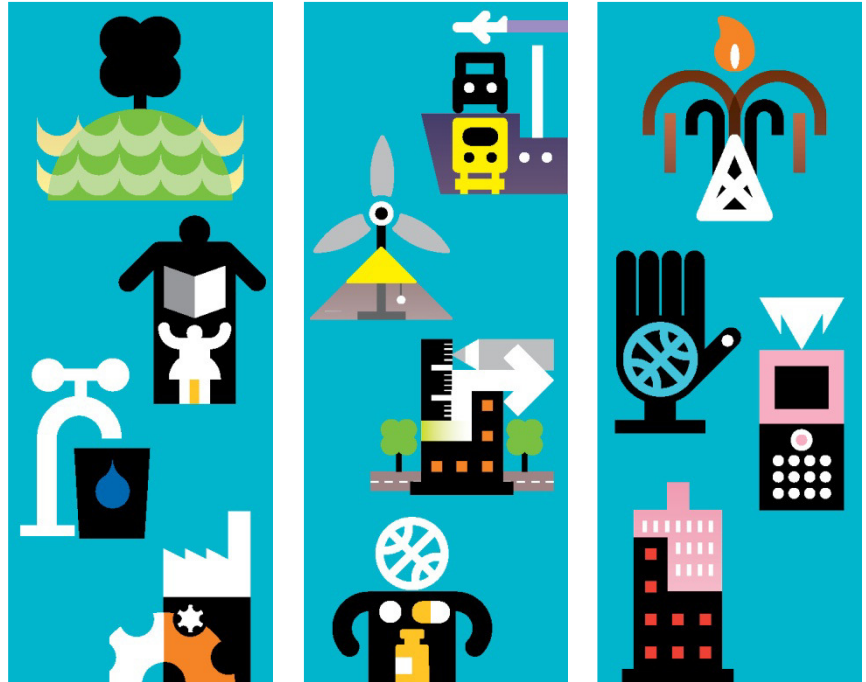
Revision 1.0

Regulation Number: 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

[This page is intentionally blank]



# A5025 Route Improvement Contract EIA

Winter Bird Survey Results  
- Winter 2013/2014

May 2014

Horizon Nuclear Power

# A5025 Route Improvement Contract EIA

Winter Bird Survey Results  
- Winter 2013/2014

May 2014

Horizon Nuclear Power

5210 Valiant Court, Gloucester Business Park, Delta Way, Gloucester, GL3 4FE



## Issue and revision record

Revision	Date	Originator	Checker	Approver	Description	Standard
A	15 May 2014	B. Purslow	I. Bray	C. Probert	First Issue	

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

# Contents

Chapter	Title	Page
1	Introduction	1
1.1	A5025 Background	1
1.2	Ecology Background	2
1.3	Scope of the Report	2
1.4	Survey Limitations	2
2	Methodology	3
2.1	Desk Study	3
2.2	Field Surveys	3
2.3	Data Analysis	4
2.3.1	Data Analysis	4
2.3.2	The 1% Rule	5
2.3.3	Observation Frequency Map	5
2.4	Limitations	6
3	Results	7
4	Recommendations	8
5	References	9
Appendices		10
Appendix A. A5025 Online and Offline Works		11
Appendix B. Overwintering Birds Utilisation Distribution		12
Appendix C. Full List of Species Observed		13
Appendix D. Distribution of Notable Species		15

# 1 Introduction

## 1.1 A5025 Background

Horizon Nuclear Power Ltd (a subsidiary of Hitachi Ltd) is proposing to build a new nuclear power station on land beside the existing operational Magnox nuclear power station on Wylfa Peninsula, Anglesey, North Wales. Horizon Nuclear Power (HNP) are currently preparing a Development Consent Order (DCO) application for the proposed power station, which will include nuclear reactors with a minimum generating capacity of up to 2,700 Mega Watts (MW) of electricity which will be submitted to The Planning Inspectorate for review.

In order to facilitate the construction and operation of the new power station, the project will require a number of additional components (which fall outside the DCO application) and these are termed 'associated developments'. One of which relates to the upgrade of the existing transport infrastructure and is termed the A5025 Route Improvement Contract (RIC). The purpose of the upgrade is to facilitate the movement of the workforce materials, and minimise the impact of the movements on local communities.

Mott MacDonald (MM) has been commissioned by HNP to undertake a Preliminary Ecological Appraisal (PEA) to identify any potential ecological impacts and constraints associated with the proposed development.

The proposed route, hereby referred to as the 'scheme', follows a 22 km length of the A5025 between National Grid references: SH4171093260; and SH3004078890. A plan showing the extent of the scheme is provided in Appendix A. The route starts at the junction of the A5 trunk road at the village of Valley, and runs in a north easterly direction towards the existing power station at Wylfa Head to the east of the Village of Cemaes. The scheme includes a small section of the un-graded road Pen-yr-Orsedd. This is located to the west of the A5025 and is situated approximately 2 km to the north of the village of Llanrhyddlad. The A5025 runs through a number of villages and small rural communities.

The scheme design is yet to be defined and a number of options are currently being considered in consultation with the Isle of Anglesey County Council (IoACC), the Highways Authority (North and Mid Wales Trunk Road Agency) and other stakeholders. It is anticipated that the majority of the works will be undertaken within the existing highway boundary (known as on-line works); however at a number of locations, works outside of the highway boundary (off-line works) may be required, which may include minor road straightening, by-passes, roundabouts and junction improvements as detailed below.

The following areas for possible offline route improvements are:

- The Valley crossroads which may require bypassing;
- Llanfachraeth where a bypass to the east of the village is being considered;
- Llanfaethlu where bends at the Black Lion Inn and Llanfaethlu may need to be straightened;
- Cefn Coch where the existing route between Bod-Hedd and Cefn Coch may need to be straightened;
- Treglele where modifications to the site access are being considered. Alternatively, a by-pass as well as potential changes to the access to Cemlyn may be required; and

Improvements along the A5025, between the construction site and Amlwch, to the proposed new workers village. A map is provided in Appendix A highlighting both the online and offline works proposed along the A5025.

## **1.2 Ecology Background**

The mosaic of farmland, woodlands, wetlands and coastline habitats of Anglesey provides diverse foraging and refuge habitat for birds and there are a number of Sites of Special Scientific Interest (SSSI) within 2 km of the road, some of which are designated due to their ornithological interest. In addition, improvements to the road are likely to require land-take in adjacent habitat where populations of winter birds may occur. Subsequently a winter bird survey area of up to 250 m from the areas of proposed road improvements was scoped in for the offline sections and up to 100 m for online sections. Winter bird surveys were carried out from November 2013 to March 2014.

## **1.3 Scope of the Report**

A new framework was set up in running from the 1<sup>st</sup> of April 2014 and Jacobs Engineering Group Inc. were commissioned to continue with the ecological surveys for the A5025 RIC. This report aims to summarise the information pertaining to reptiles that has been collated by Mott MacDonald to date, and provide a seamless mechanism to transfer the data in order for any further recommendations and/or surveys to be undertaken.

The objectives of this report are as follows:

- To present the methodology used for all reptile work;
- To present the results of the desk study & field survey work; and
- To provide brief recommendations for further survey work.

## **1.4 Survey Limitations**

It was not possible to survey some areas within the survey extent; this was largely due to limited and/or irregular land access. This had implications for timing and duration of the surveys, whereby some surveys were halted, restricted or had certain requirements (i.e. request for specific time for land access). Adverse weather conditions in particular had a negative effect on the surveys, this largely due to frequent high winds and rain which, when occurring, prevented surveys altogether.

## 2 Methodology

All ecological works followed up to date best practice guidelines provided by the Chartered Institute of Ecology and Environmental Management (CIEEM). In addition, further specific highway guidance was also followed. This is provided by The Design Manual for Roads and Bridges (DMRB), specifically Volume 10 (Environmental Design and Management) and Volume 11 (Environmental Assessment), along with relevant Interim Advice Notes (IANs), such as IAN 130/10 Ecology and Nature Conservation: Criteria for Impact Assessment which supplements DMRB Volume 11, SECTION 3 Part 4 'Ecology and Nature Conservation'.

### 2.1 Desk Study

The aims of the desk study with specific regards to winter birds was to review the presence of statutory and non-statutory designated sites within a 2 km buffer – these may be designated for the presence of birds or may provide habitat suitable for birds within the surrounding area. In addition the desk study allowed a review of any winter bird records within 2 km of the road.

The following databases were used to extract the required information outlined above:

- Cofnod – North Wales Environmental Information Service;
- Isle of Anglesey County Council;
- Anglesey Nature website: (<http://angleseynature.co.uk/>);
- Natural Resources Wales (NRW)/Countryside Council for Wales (CCW) websites: (<http://naturalresourceswales.gov.uk/splash?orig=/> and <http://www.ccw.gov.uk/landscape--wildlife/protecting-our-landscape/protected-sites-map.aspx?lang=en>);
- Joint Nature Conservation Committee (JNCC) website: (<http://jncc.defra.gov.uk/>); and
- Multi-Agency Geographic Information for the Countryside (MAGIC) website: (<http://magic.defra.gov.uk/>).

A review and summary of the desk study findings (including maps) was then carried out and presented within the A5025 Preliminary Ecological Appraisal report (Mott MacDonald, 2014). Results of the winter bird record findings are also discussed further within this report (Chapter 3).

### 2.2 Field Surveys

A survey area of up to 250 m from the areas of proposed road improvements was surveyed for the offline works and up to 100 m for the online works. This was considered to be adequate distance to cover the area affected by the construction works, including the effects of disturbance (e.g. noise) generated by the works taking into account existing baseline levels of disturbance.

Survey visits were carried out at each location once a month between November 2013 and March 2014. The transect routes included hedgerows, drains and field boundaries within the survey area.

Each survey visit was undertaken by an experienced ornithologist and an assistant. Depending on weather conditions, surveying was carried out between 0900 and 1600 where practicable. Only species and the number of each species were recorded.

Birds identified by sight or sound were registered electronically on an Ordnance Survey Master Map base map using a Trimble Nomad® handheld computer.

In order to maintain a relatively consistent ability to detect winter bird activity, surveys were planned as best as possible to avoid adverse weather conditions. Surveys were not conducted when winds exceeded a wind speed of 29 km/h, persistent precipitation or when visibility was poor, as this has the potential to heavily bias the results.

Areas within the survey area which included residential areas that will remain unaffected throughout the construction process were not subject to winter bird surveys, as it is considered that birds present within these areas will not be significantly impacted by the proposed A5025 Route Improvement Contract.

Throughout this document the English vernacular and scientific bird names used follows that of the 8th Edition of the British List (Harrop et al. 2013).

## 2.3 Data Analysis

### 2.3.1 Data Analysis

#### 2.3.1.1 Species Excluded from the Analysis

The species given in Table 2.1 below have been excluded from the analysis and assessment because they are introduced non-native species.

Table 2.1: Excluded Species

Species Name
Pheasant <i>Phasianus colchicus</i>
Little Owl <i>Athene noctua</i>

#### 2.3.1.2 Species Richness

The data was analysed and the conservation value of the farmland bird assemblage assessed according to the criteria in Table 2.2 (Fuller (1980) below.

Table 2.2: Species Richness Classes

Level of conservation importance	National	Regional	County	Local
No. of species present	115 +	114-85	84-55	54-25

### 2.3.2 The 1% Rule

The 1% rule widely accepted international practice of using qualifying thresholds (e.g. 1% of a population) as a tool to identify important areas for protecting birds and their habitats (Baker et al. 2006). The conservation value of each species population (within the survey area) was calculated as follows:

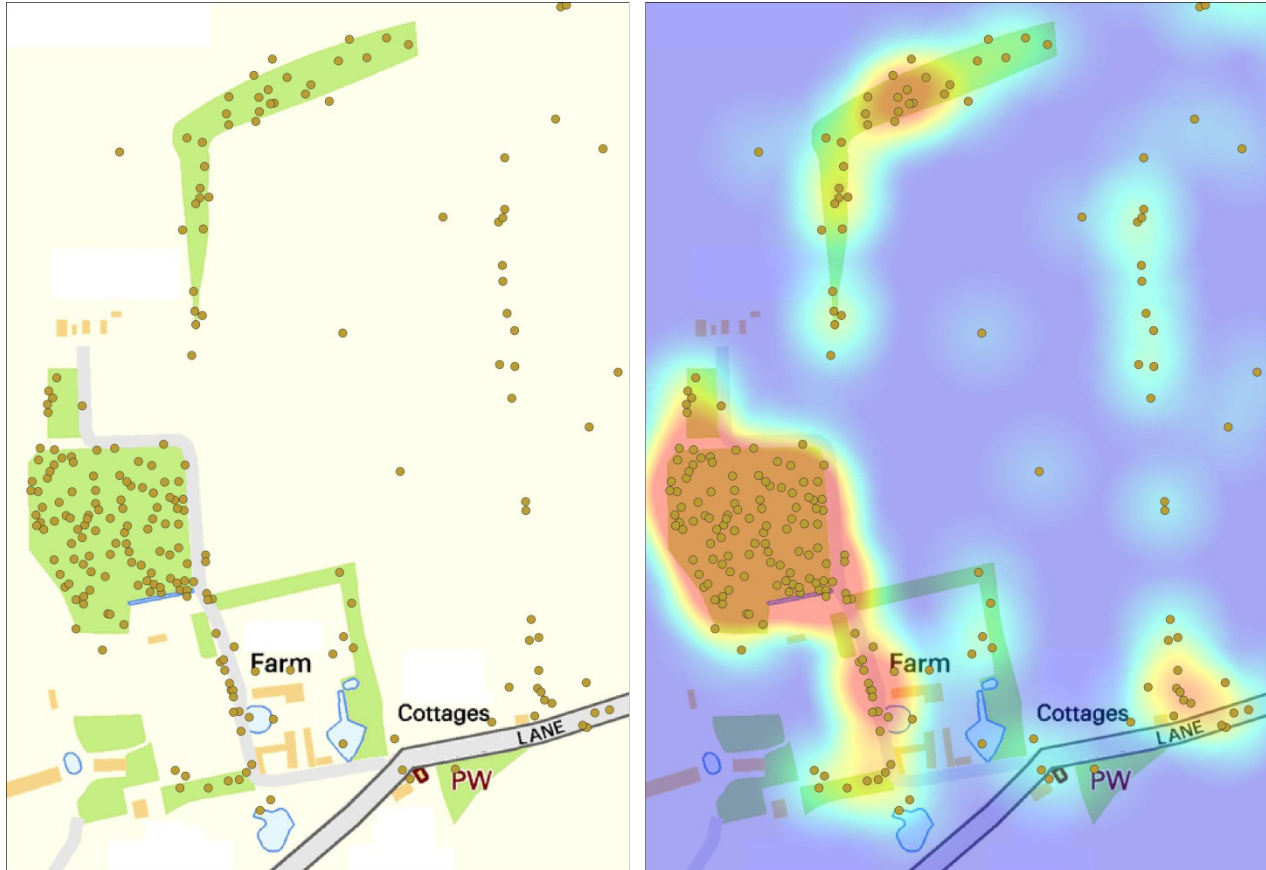
- If the distribution of a species within the survey area accounts for less than 1% of the total regional distribution in terms of the number of occupied tetrads (2 km x 2 km OS grid squares) it is considered to be of local conservation value;
- If the distribution of a species within the survey area accounts for more than 1% of the regional distribution then it is considered to be of at least county/regional conservation importance; and
- Where 1% of the regional range is exceeded, national and international 1% thresholds can be calculated to determine if the survey area populations are of national or international conservation value.

It is important to note that the valuing of ecological features may in some instances involve moderation by applying professional judgement on the basis of all of the available data, literature and local knowledge.

### 2.3.3 Observation Frequency Map

The data was used to generate an 'observation frequency' map which illustrates the frequency and density of registrations (points). The map consists of an invisible grid, where the value of each cell of the grid represents the number and density of points in that cell. The value of any one cell will also be influenced by the proximity of points in adjacent cells. Each point will be weighted according to the number of birds attributed to that point such that the value of the point will increase with increasing bird number. The graphical representation of the map depicts cell values on a continuous colour scale from dark blue (low frequency and density) to dark red (high frequency and density). An example is given in Figure 2.3. Assuming that observation frequency and density is correlated with habitat use, the map enables hotspots of habitat utilisation and therefore the importance of habitats to be easily identified. It should however be noted that areas of low habitat utilisation may be important to the ecological requirements of certain species and do not necessarily mean they have no or low ecological value.

Figure 2.3: Example observation bird point data (left) and utilisation distribution (right).



Contains Ordnance Survey Data © Crown copyright and database rights 2014

## 2.4 Limitations

The point density estimation overestimates the intensity of sample area use by winter birds on narrow, linear features such as hedgerows. This is because the area of influence attributed to each point to enable the hotspot formation is in the form of a radius around the point greater in extent than that of a linear feature such as a hedgerow.

Surveys were undertaken in daylight conditions and therefore are likely to have under recorded the presence of a small number of common crepuscular (animals that are primarily active during dawn/dusk) and nocturnal (night) species. This potential under recording is not considered significant with respect to the establishment of the baseline conditions.



## 3 Results

The surveys identified a total of 54 bird species were recorded (some species are cited in multiple conservation statuses) of which:

- Three birds listed on Annex 1 of the Birds Directive;
- Four species specially protected under Schedule 1 of the Wildlife and Countryside Act (1981) (as amended);
- Twelve species are of principle importance in Wales, with one species listed on the Anglesey BAP;
- Nine species are Red List Birds of Conservation Concern (Royal Society for Protection of Birds (RSPB) Cymru et al, 2009);
- Fourteen species are Amber List Birds of Conservation Concern (RSPB Cymru et al, 2009); and
- Twenty-nine species are Green List Birds of Conservation Concern (RSPB Cymru et al, 2009).

The map utilisation distribution of overwintering birds is provided within Appendix B and the full species list can be found in Table C.1 in Appendix C of this report. Maps showing the distribution of Birds of Conservation Concern and species of principal importance can be found in Appendix D.

Starling *Sturnus vulgaris*, House Sparrow *Passer domesticus*, Herring Gull *Larus argentatus*, Jackdaw *Corvus monedula* and Redwing *Turdus iliacus* were the most numerous species in terms of the maximum number of individuals recorded on any one survey visit.

The most frequently observed species were Robin *Erithacus rubecula*, Wren *Troglodytes troglodytes*, Blue Tit *Cyanistes caeruleus*, Blackbird *Turdus merula* and Dunnock *Prunella modularis* and in terms of relative species abundance, the top five birds were Robin, Wren, Meadow Pipit *Anthus pratensis*, Herring Gull and Song Thrush *Turdus philomelos*.

In accordance with Fuller (1980) the overwintering bird assemblage within the study area is considered on the basis of species richness to be of County conservation value.

Utilisation distribution of overwintering birds highlighted areas of higher intensity bird use in widely distributed habitats. i.e. residential gardens, wet and dry scrub, mature trees, water bodies and hedgerows.

Observed utilisation was higher in these habitats compared to open fields. The highest area of utilisation was found centred around residential gardens within the village of Llanfachraeth, probably due to the presence of bird feeders within the gardens (Map 2 of 9). Another higher area of utilisation was observed within the mature trees and scrub associated with Cefn-Coch farm (Map 6 of 9).

## 4 Recommendations

Section 42 and Birds of Conservation Concern bird species were found to be present along the length of the A5025 and within the immediate surrounding land. In particular Annex 1 and/or Schedule 1 bird species were found in the following locations:

- North of Valley;
- On the survey boundary to the south east of Llanfachraeth;
- Adjacent to the road in between Llanfachraeth and Llanfaethlu;
- North of Llanfaethlu;
- South of the road Pen-yr-Orsedd;
- Llanbadrig and to the east; and
- The end of the route at the north.

If works are expected to be carried during the winter months, a working methodology should be implemented.

A confirmed scope of works is required in order to provide additional appropriate and accurate recommendations. Examples of expected recommendations are likely to include one or more of the following:

- Implement replacement planting mitigation prior to starting works to provide alternative foraging habitat (although this would likely not be mature enough to be of benefit);
- Plan works to minimise disturbance (ie minimise time on site, vehicle movement, location of facilities and site office away from sensitive habitats); and
- Also avoid works being undertaken at multiple (sensitive) sites simultaneously to reduce cumulative impacts across scheme.

## 5 References

Baker, H., Stroud, D., Aebischer, N.J., Cranswick, P.A., Gregory, R.D., McSorley, C.A., Noble, D.G. & Rehfisch, M.M. 2006. *Population estimates of birds in Great Britain and the United Kingdom*. *British Birds* 99:25-44.

Department for Transport (2010). *Ecology and Nature Conservation: Criteria for Impact Assessment, Interim Advice Note 130/10* (available at <http://www.dft.gov.uk/ha/standards/ians/pdfs/ian130.pdf>).

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

Harrop, A.H.J., Collinson, M.J., Dudley, S.P., & Kehoe, C., 2013. The British Ornithologists' Union Records Committee (BOURC), 2013. *The British List: A Checklist of Birds of Britain (8th edition)*. *Ibis* (2013), 155, 635–676.

RSPB Cymru, Welsh Ornithological Society, Welsh Assembly Government, The Countryside Council for Wales, The BTO & The Wildfowl & Wetlands Trust, 2009. *The population status of birds in Wales 2*. RSPB, Sandy, Beds.

Highways Agency (2014). *Design Manual for Roads and Bridges: Volume 10* (available at <http://www.dft.gov.uk/ha/standards/dmr/vol10/section4.htm>).

Quantum GIS Development Team (2013). *Quantum GIS Geographic Information System*. Open Source Geospatial Foundation Project. Available: URL <http://qgis.osgeo.org>. Last accessed 19 July 2013.

# Appendices

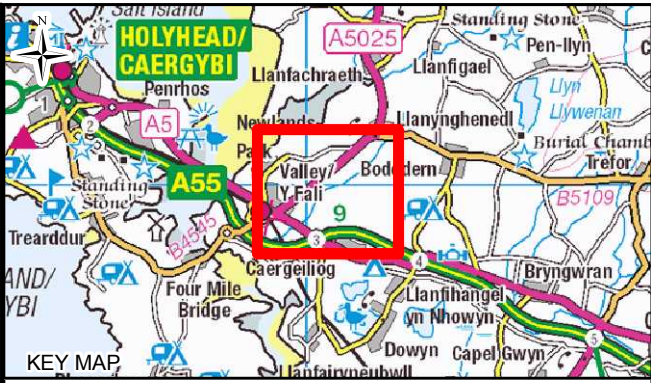
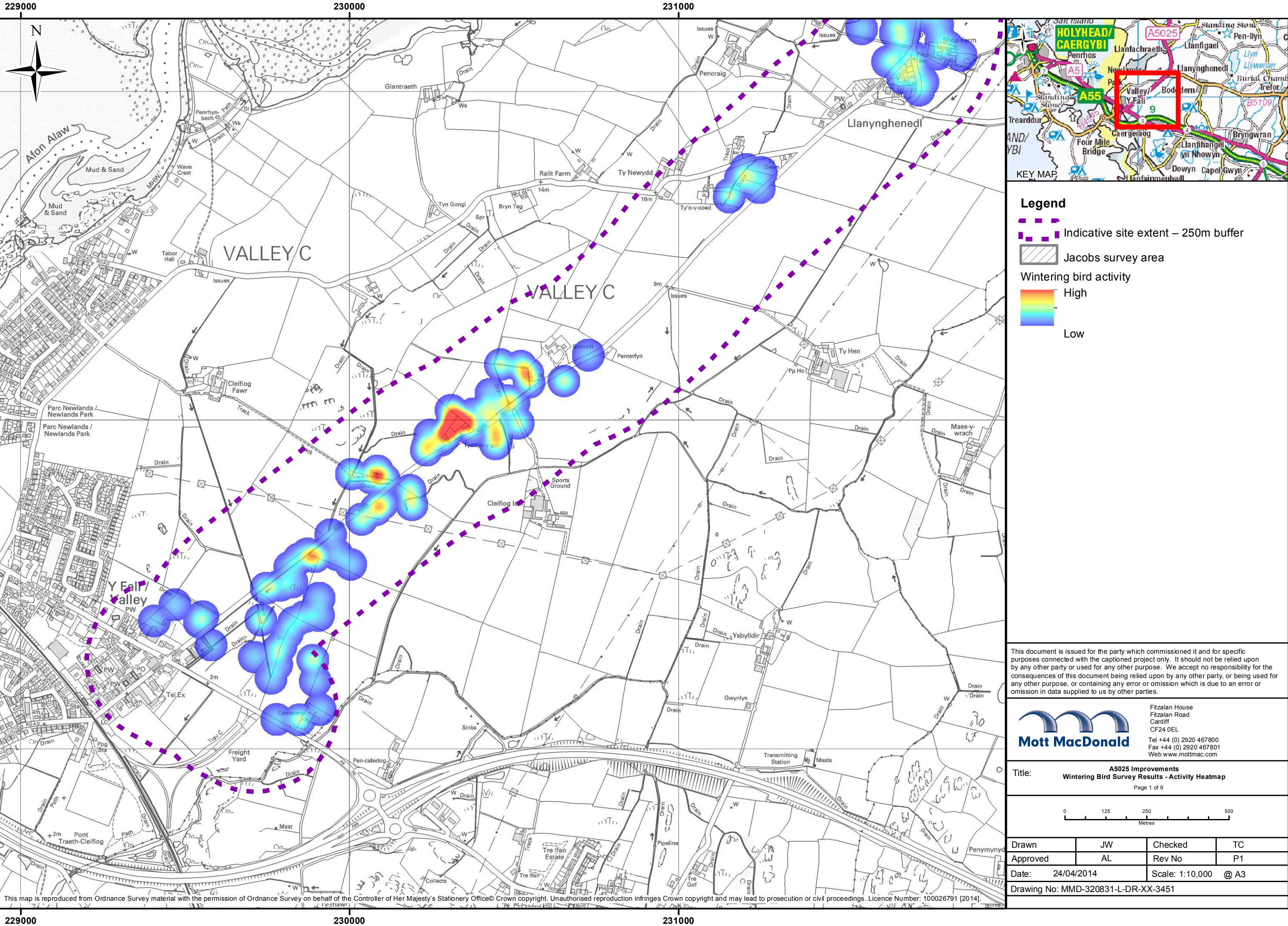
Appendix A. A5025 Online and Offline Works	11
Appendix B. Overwintering Birds Utilisation Distribution	12
Appendix C. Full List of Species Observed	13
Appendix D. Distribution of Notable Species	15

## Appendix A. A5025 Online and Offline Works



## Appendix B. Overwintering Birds Utilisation Distribution





**Legend**

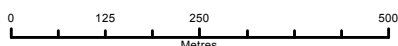
- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity**  
 High  
Low

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



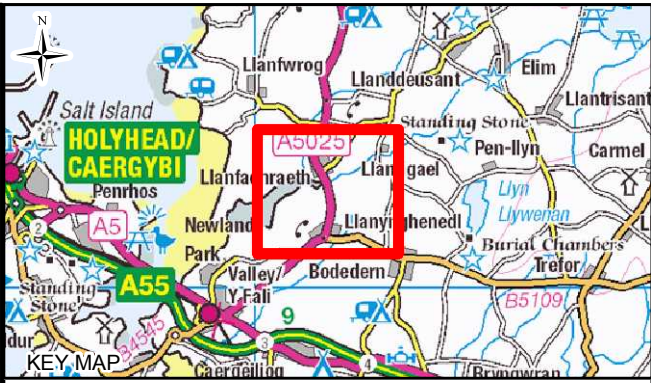
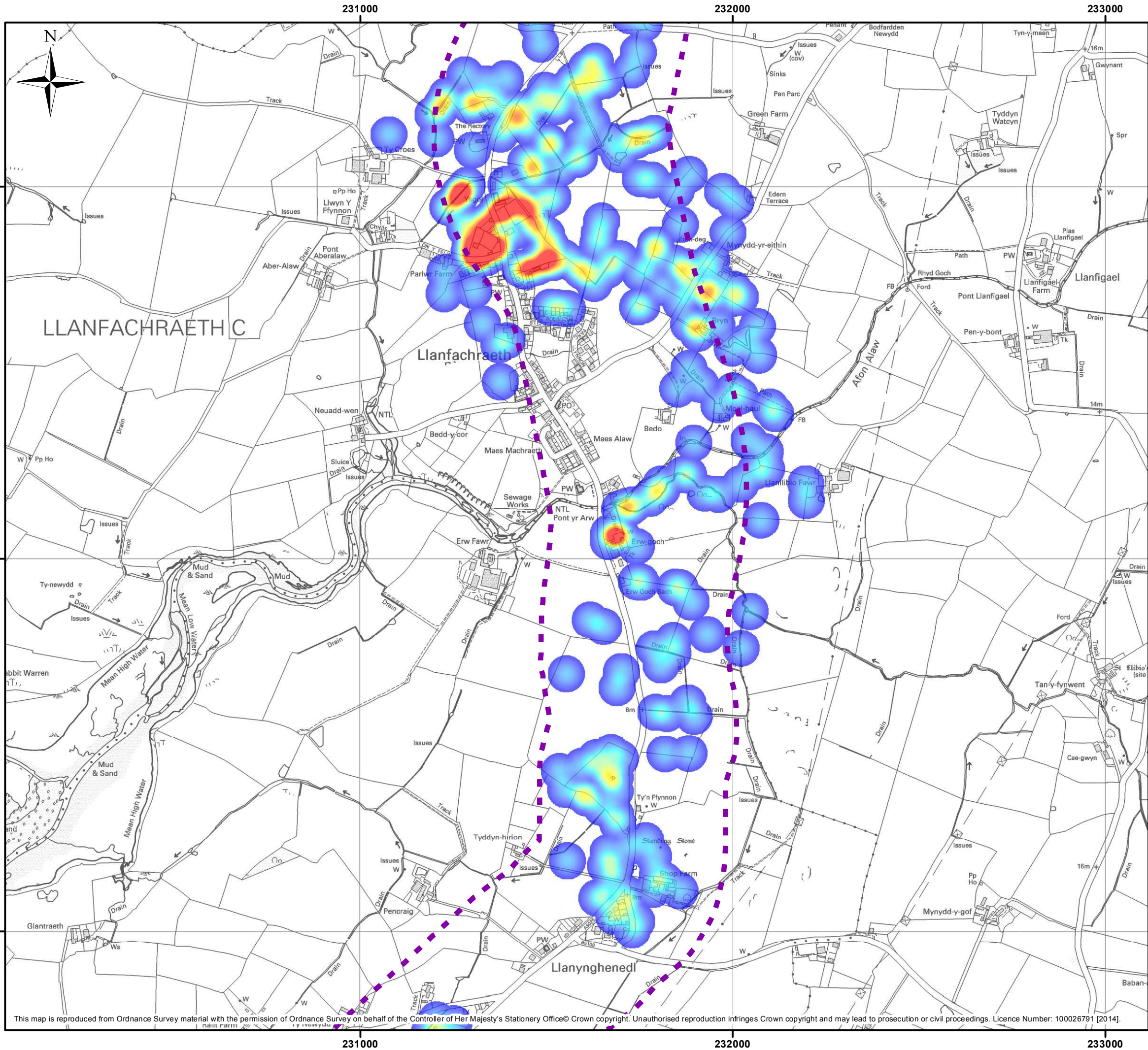
Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**  
Page 1 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3451		





**Legend**

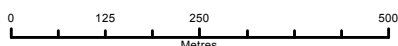
- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity
- High
- Low

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



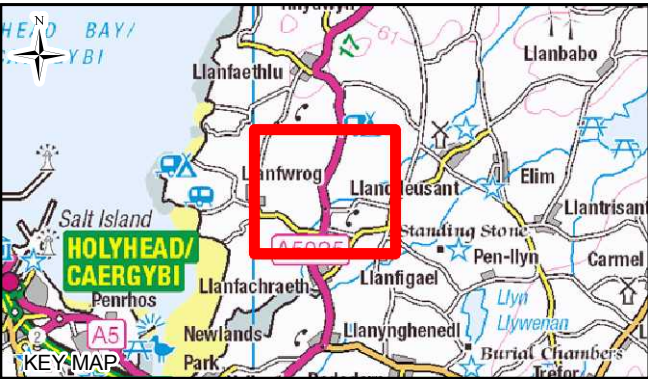
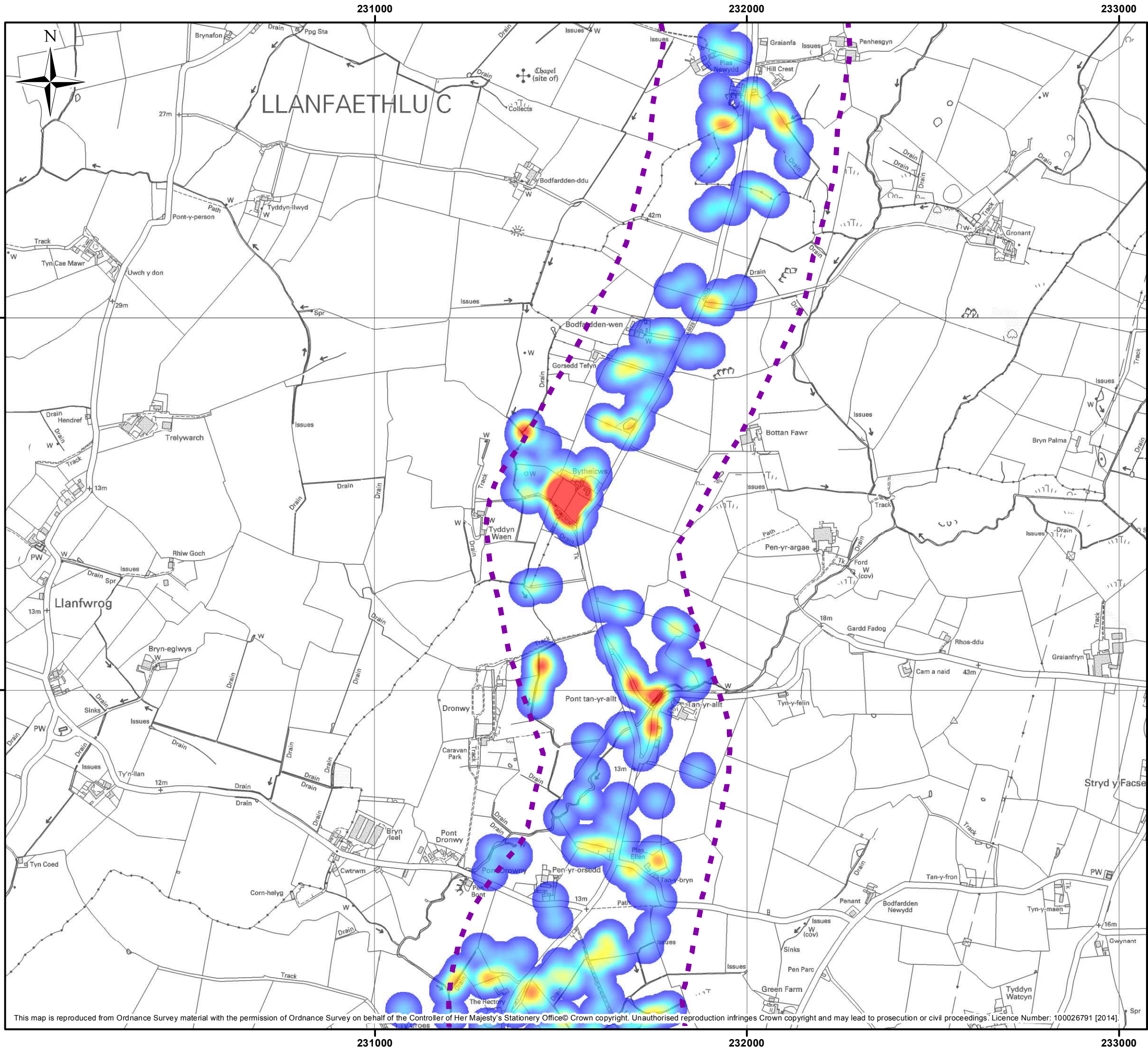
Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**  
Page 2 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3452		





Legend

- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity
  - High
  - Low

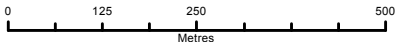
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

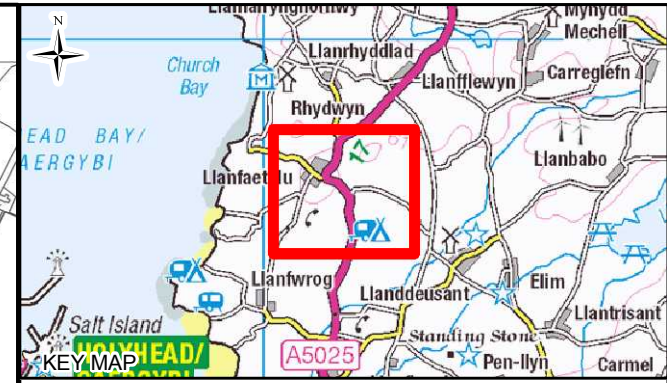
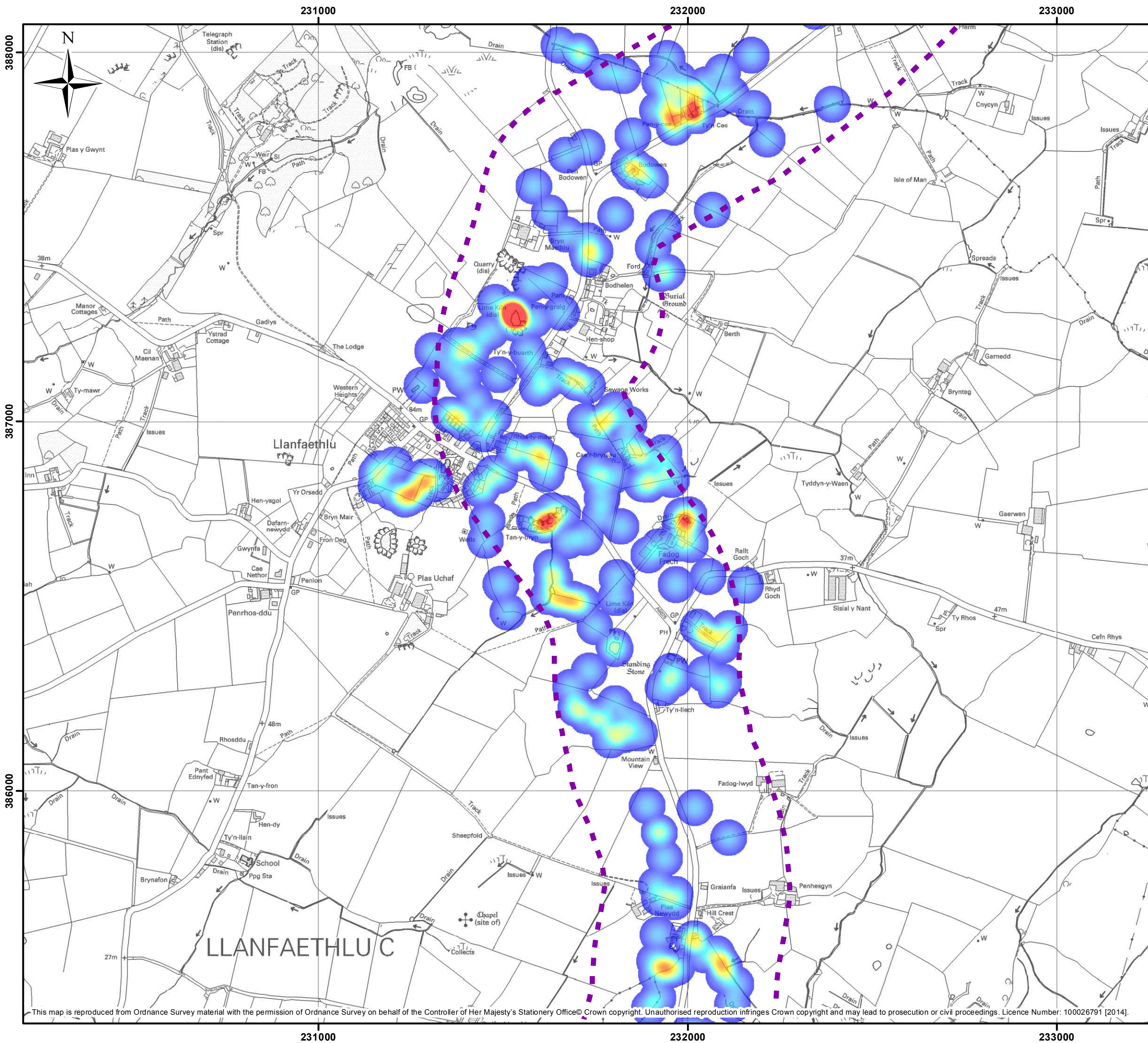
Title: A5025 Improvements  
Wintering Bird Survey Results - Activity Heatmap

Page 3 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3453		





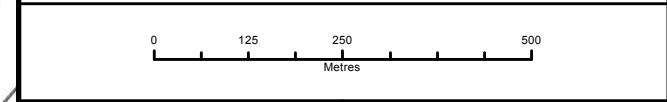
**Legend**

- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity**  
 High  
Low

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

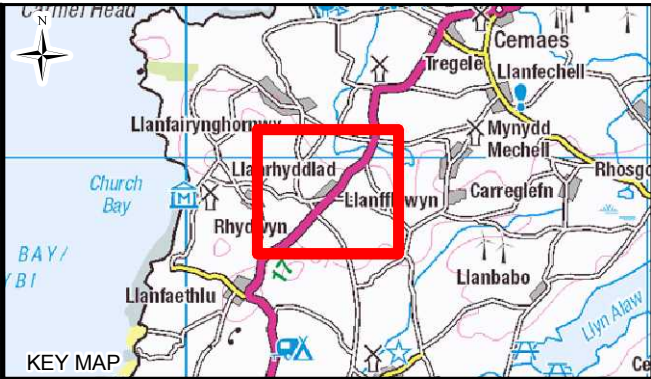
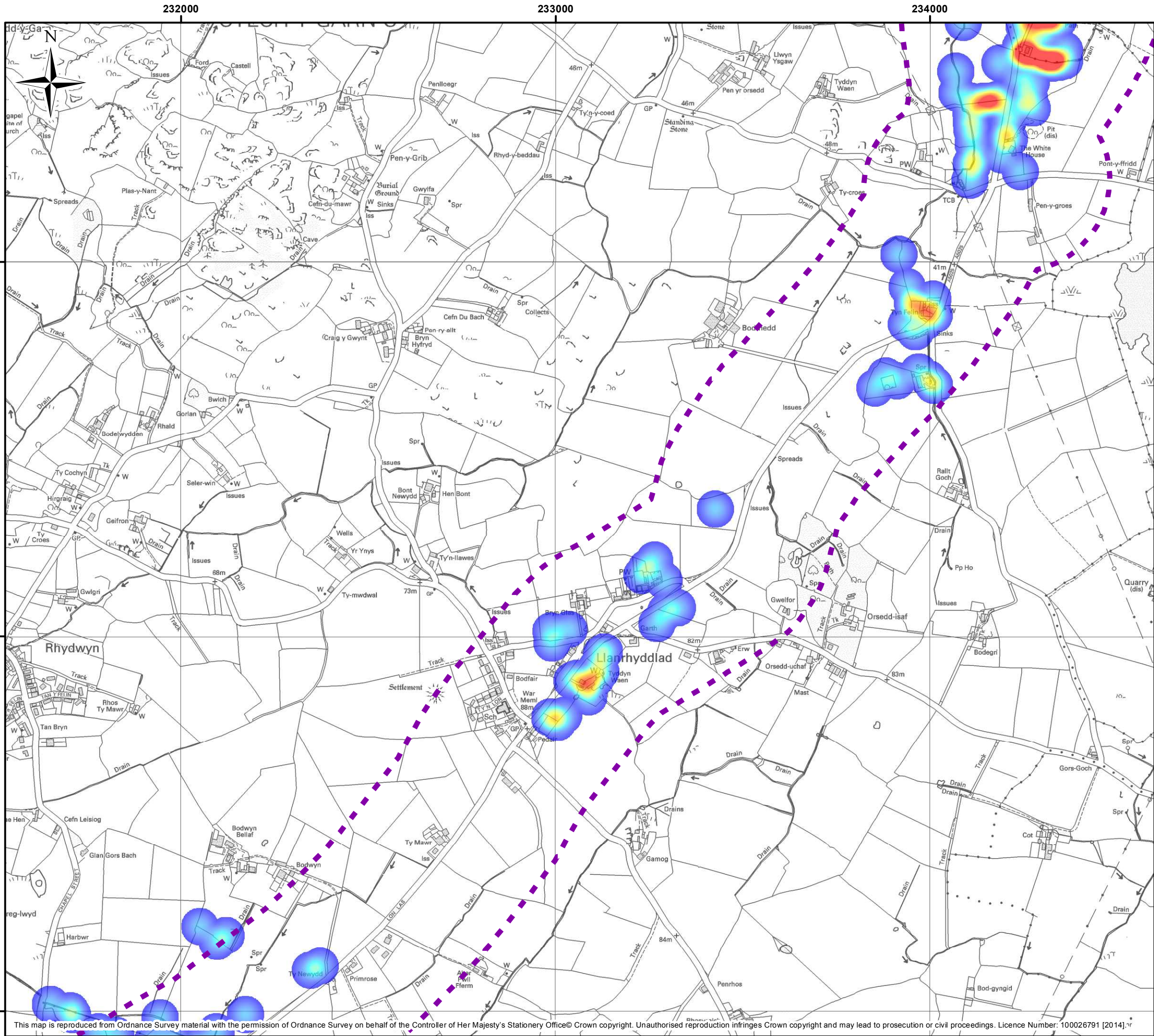
Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web [www.mottmac.com](http://www.mottmac.com)

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**  
Page 4 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3454		





**Legend**

- Indicative site extent – 250m buffer
- Jacobs survey area

Wintering bird activity

High

Low

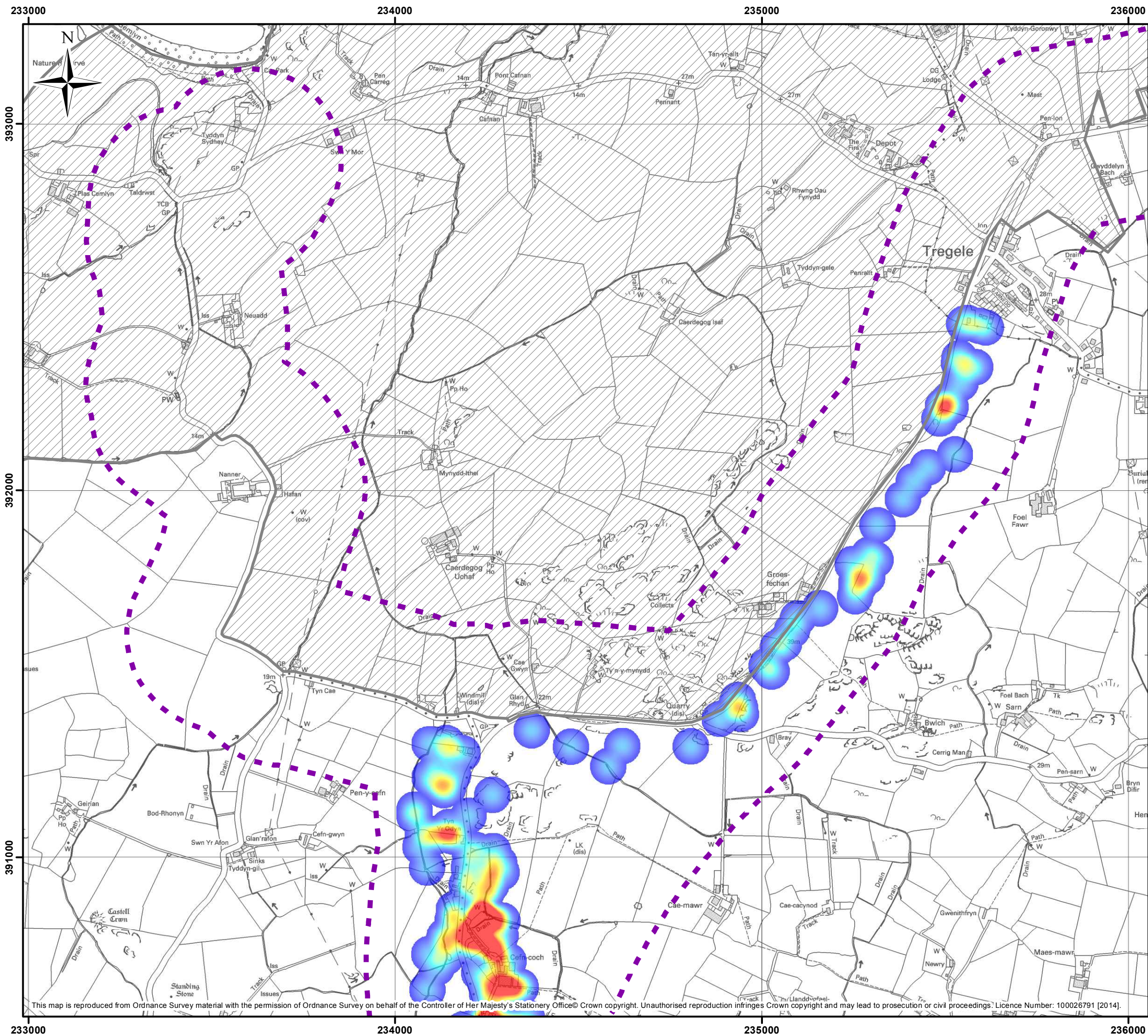
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web [www.mottmac.com](http://www.mottmac.com)

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**  
Page 5 of 9

Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No: MMD-320831-L-DR-XX-3455			





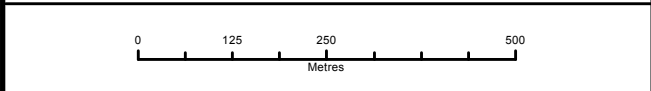
**Legend**

- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity**
  - High
  - Low

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

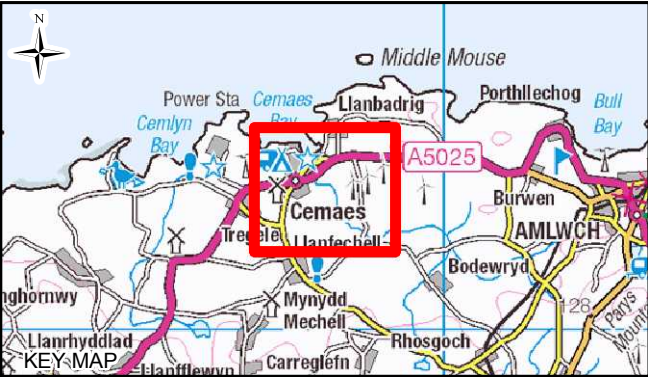
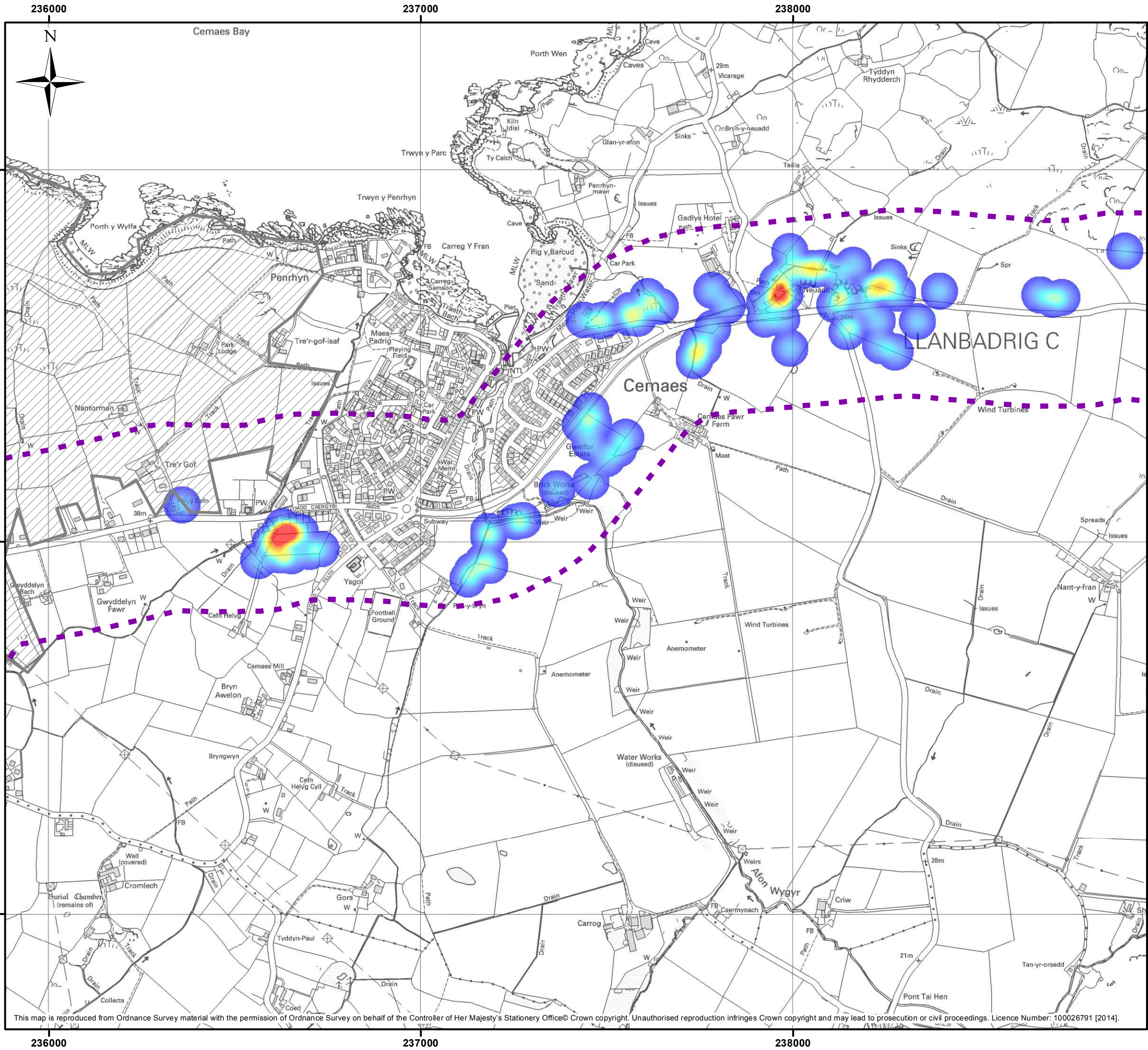
Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**  
Page 6 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No: MMD-320831-L-DR-XX-3456			

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office© Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Licence Number: 100026791 [2014].





**Legend**

- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity
  - High
  - Low

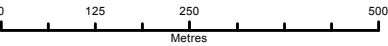
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

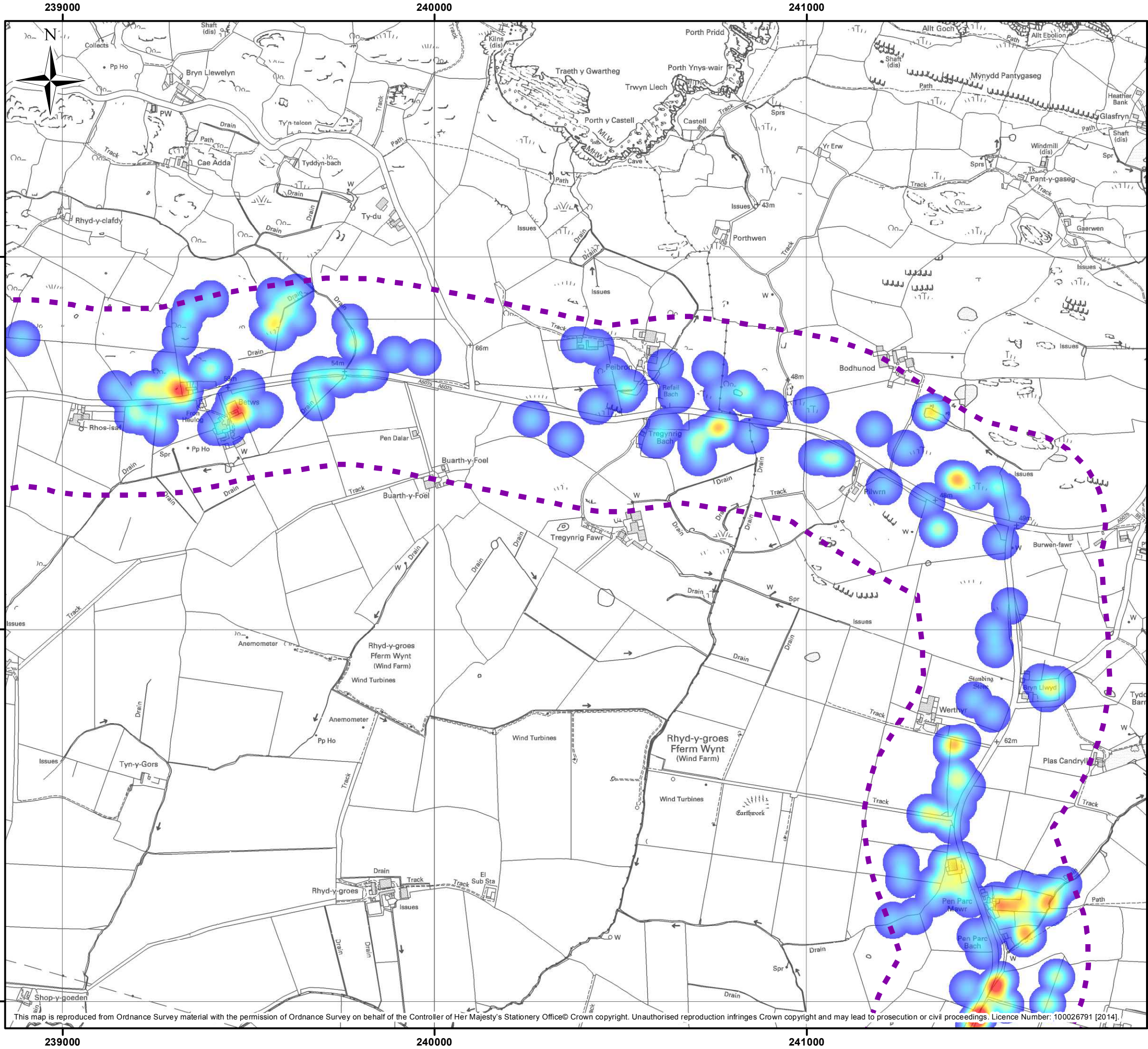
Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**

Page 7 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3457		





**Legend**

- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity
  - High
  - Low

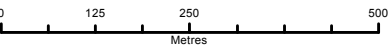
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

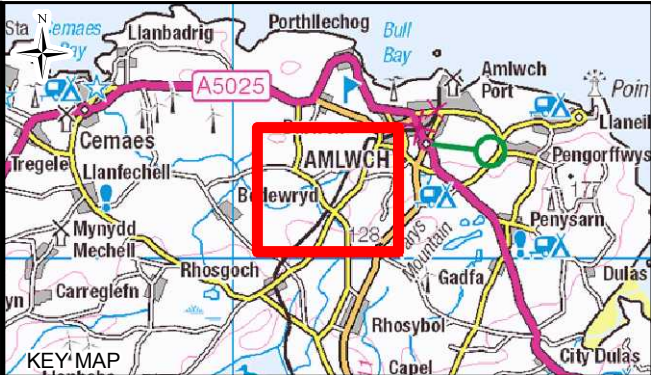
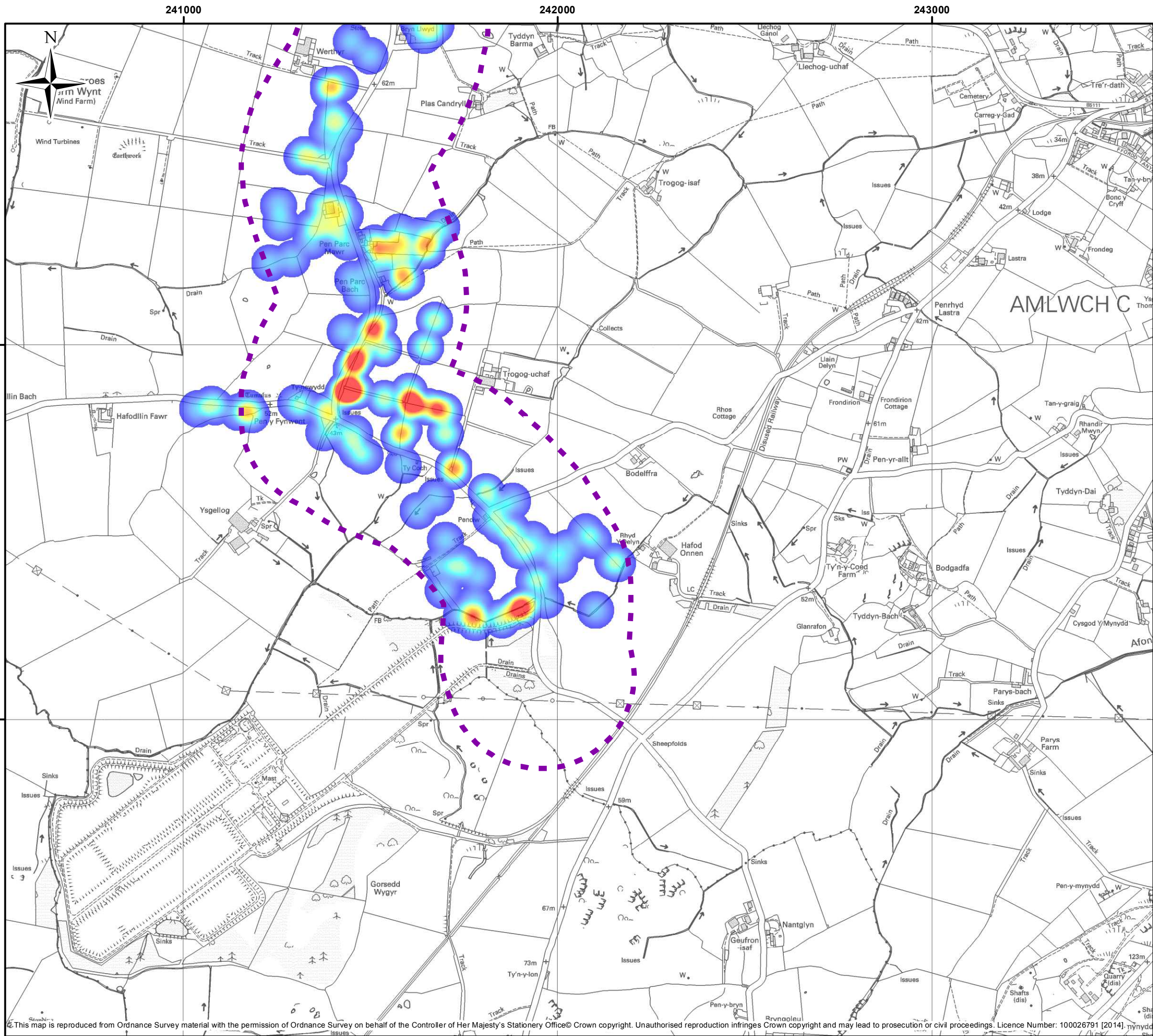
Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**

Page 8 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No: MMD-320831-L-DR-XX-3458			





### Legend

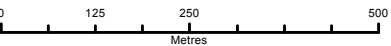
- Indicative site extent – 250m buffer
- Jacobs survey area
- Wintering bird activity
  - High
  - Low

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Activity Heatmap**  
Page 9 of 9



Drawn	JW	Checked	TC
Approved	AL	Rev No	P1
Date:	24/04/2014	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3459		



## Appendix C. Full List of Species Observed

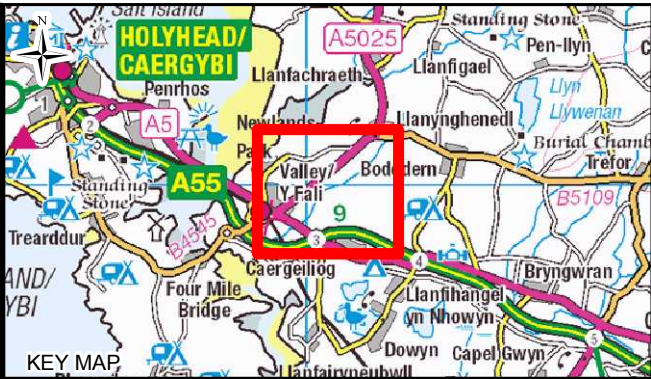
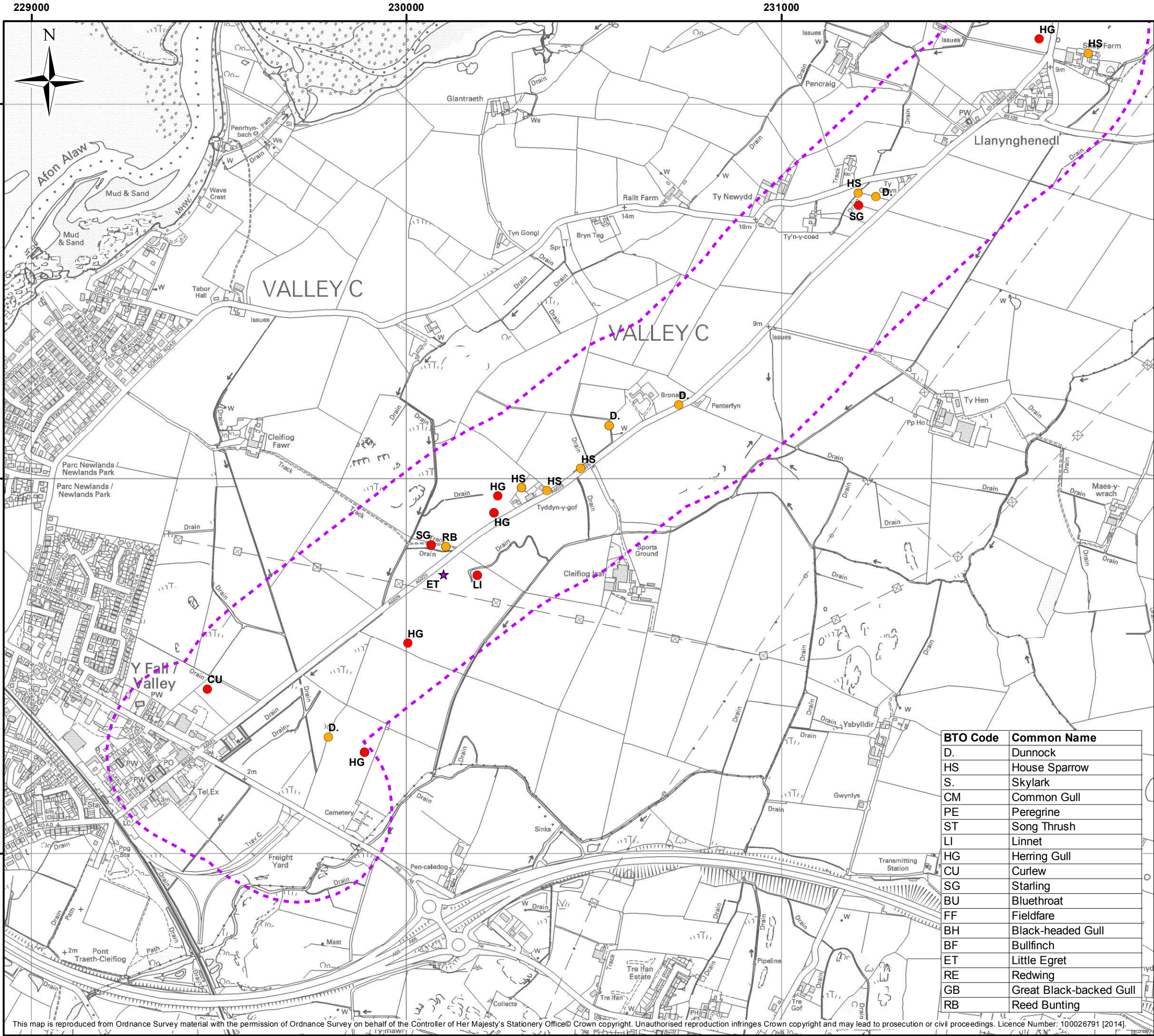
Table C.1: Full species list of bird observed during winter bird surveys

British Vernacular Name	Scientific Name	Annex 1	Schedule 1	Section 4	LBAP	Birds of Conservation Concern
Robin	<i>Erithacus rubecula</i>					Green
Dunnock	<i>Prunella modularis</i>			x		Green
Wren	<i>Troglodytes troglodytes</i>					Green
Magpie	<i>Pica pica</i>					Green
Meadow Pipit	<i>Anthus pratensis</i>					Amber
Blue Tit	<i>Cyanistes caeruleus</i>					Green
Blackbird	<i>Turdus merula</i>					Green
Goldcrest	<i>Regulus regulus</i>					Amber
Snipe	<i>Gallinago gallinago</i>					Amber
Linnet	<i>Carduelis cannabina</i>			x		Red
Mallard	<i>Anas platyrhynchos</i>					Amber
Common Gull	<i>Larus canus</i>					Red
Great Tit	<i>Parus major</i>					Green
Chaffinch	<i>Fringilla coelebs</i>					Green
Rook	<i>Corvus frugilegus</i>					Green
Collared Dove	<i>Streptopelia decaocto</i>					Green
Great Spotted Woodpecker	<i>Dendrocopos major</i>					Green
Goldfinch	<i>Carduelis carduelis</i>					Green
Woodpigeon	<i>Columba palumbus</i>					Green
House Sparrow	<i>Passer domesticus</i>			x		Amber
Moorhen	<i>Gallinula chloropus</i>					Green
Peregrine	<i>Falco peregrinus</i>	x	x			Green
Buzzard	<i>Buteo buteo</i>					Green
Herring Gull	<i>Larus argentatus</i>			x		Red
Curlew	<i>Numenius arquata</i>			x		Red
Song Thrush	<i>Turdus philomelos</i>			x		Amber
Grey Wagtail	<i>Motacilla cinerea</i>					Green
Pied Wagtail	<i>Motacilla alba yarrellii</i>					Green
Carrion Crow	<i>Corvus corone</i>					Green
Starling	<i>Sturnus vulgaris</i>			x		Red
Bluethroat	<i>Luscinia svecica</i>	x	x			Green
Jackdaw	<i>Corvus monedula</i>					Green
Raven	<i>Corvus corax</i>					Green

British Vernacular Name	Scientific Name	Annex 1	Schedule 1	Section 4	LBAP	Birds of Conservation Concern
Teal	<i>Anas crecca</i>					Amber
Fieldfare	<i>Turdus pilaris</i>		x			Amber
Reed Warbler	<i>Acrocephalus scirpaceus</i>					Green
Mistle Thrush	<i>Turdus viscivorus</i>					Green
Reed Bunting	<i>Emberiza schoeniclus</i>			x		Amber
Skylark	<i>Alauda arvensis</i>			x	x	Amber
Black-headed Gull	<i>Chroicocephalus ridibundus</i>			x		Red
Long-tailed Tit	<i>Aegithalos caudatus</i>					Amber
Bullfinch	<i>Pyrrhula pyrrhula</i>			x		Red
Little Egret	<i>Egretta garzetta</i>	x				Green
Redwing	<i>Turdus iliacus</i>		x			Amber
Grey Heron	<i>Ardea cinerea</i>					Green
Oystercatcher	<i>Haematopus ostralegus</i>					Amber
Great Black-backed Gull	<i>Larus marinus</i>					Red
Greenfinch	<i>Chloris chloris</i>					Green
Lapwing	<i>Vanellus vanellus</i>			x		Red
Tawny Owl	<i>Strix aluco</i>					Green
Lesser Black-backed Gull	<i>Larus fuscus</i>					Amber
Sparrowhawk	<i>Accipiter nisus</i>					Green

## Appendix D. Distribution of Notable Species





- Legend**
- Indicative site extent - 250m buffer
  - Jacobs survey area
- Bird Species Protection Status:**
- Annex 1
  - Annex 1 & Schedule 1
  - Schedule 1
- Bird Species Conservation Status:**
- Section 42
  - Section 42 & LBAP
  - Section 42 & BoCC - Red
  - BoCC - Red

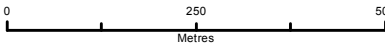
BTO Code	Common Name
D.	Dunnock
HS	House Sparrow
S.	Skylark
CM	Common Gull
PE	Peregrine
ST	Song Thrush
LI	Linnet
HG	Herring Gull
CU	Curlew
SG	Starling
BU	Bluethroat
FF	Fieldfare
BH	Black-headed Gull
BF	Bullfinch
ET	Little Egret
RE	Redwing
GB	Great Black-backed Gull
RB	Reed Bunting

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



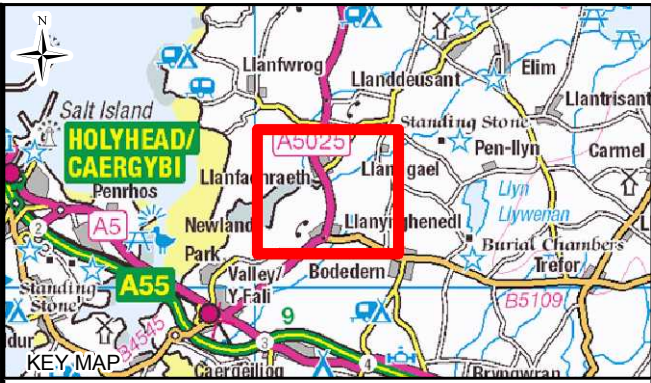
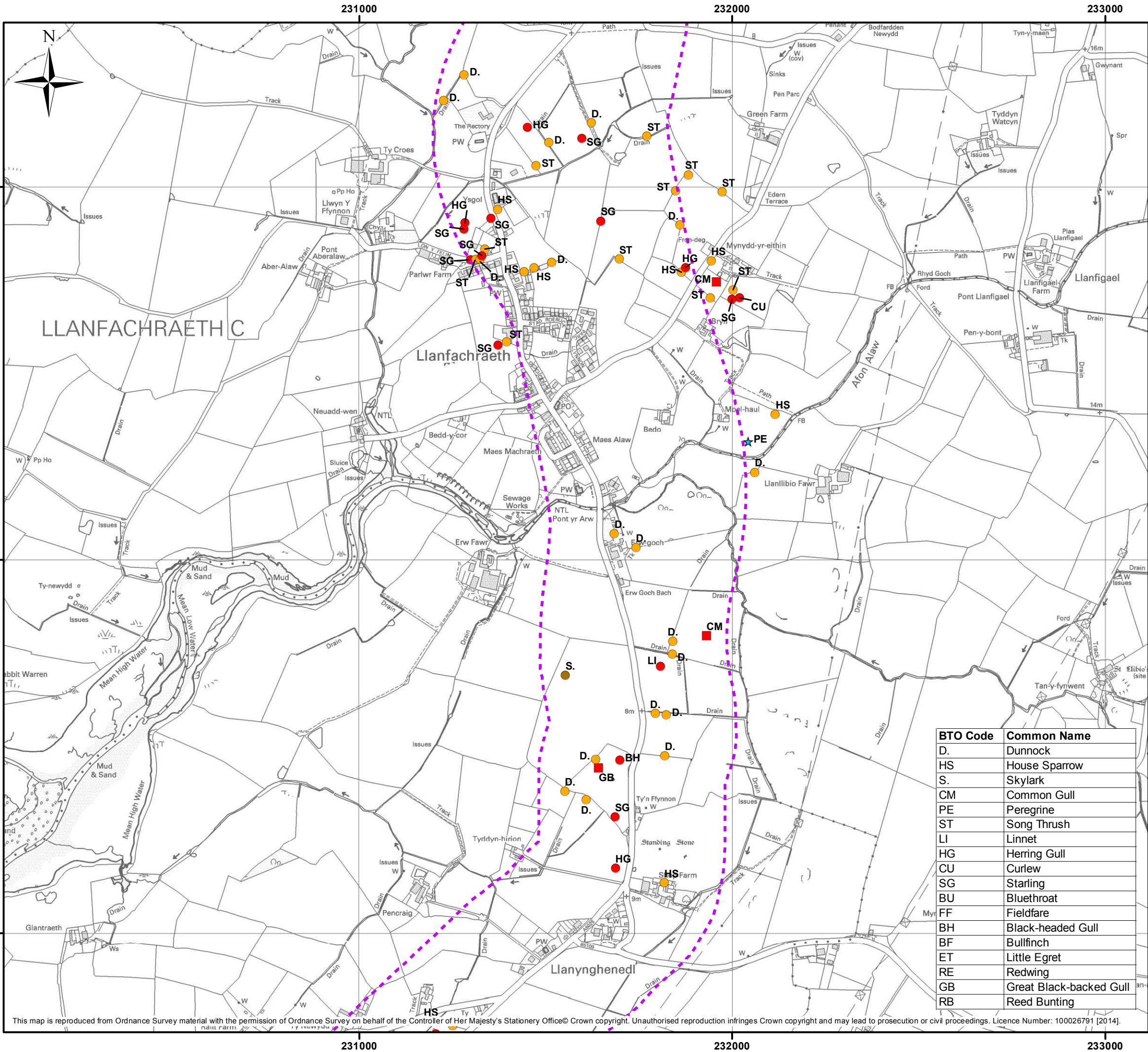
Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Protected and Notable Species**  
Page 1 of 9



Drawn	TC	Checked	RB
Approved	AL	Rev No	P1
Date:	17/05/2013	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3451		





- Legend**
- Indicative site extent - 250m buffer
  - Jacobs survey area
- Bird Species Protection Status:**
- Annex 1
  - Annex 1 & Schedule 1
  - Schedule 1
- Bird Species Conservation Status:**
- Section 42
  - Section 42 & LBAP
  - Section 42 & BoCC - Red
  - BoCC - Red

BTO Code	Common Name
D.	Dunnock
HS	House Sparrow
S.	Skylark
CM	Common Gull
PE	Peregrine
ST	Song Thrush
LI	Linnet
HG	Herring Gull
CU	Curlew
SG	Starling
BU	Bluethroat
FF	Fieldfare
BH	Black-headed Gull
BF	Bullfinch
ET	Little Egret
RE	Redwing
GB	Great Black-backed Gull
RB	Reed Bunting

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

**Mott MacDonald**

Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Protected and Notable Species**  
Page 2 of 9

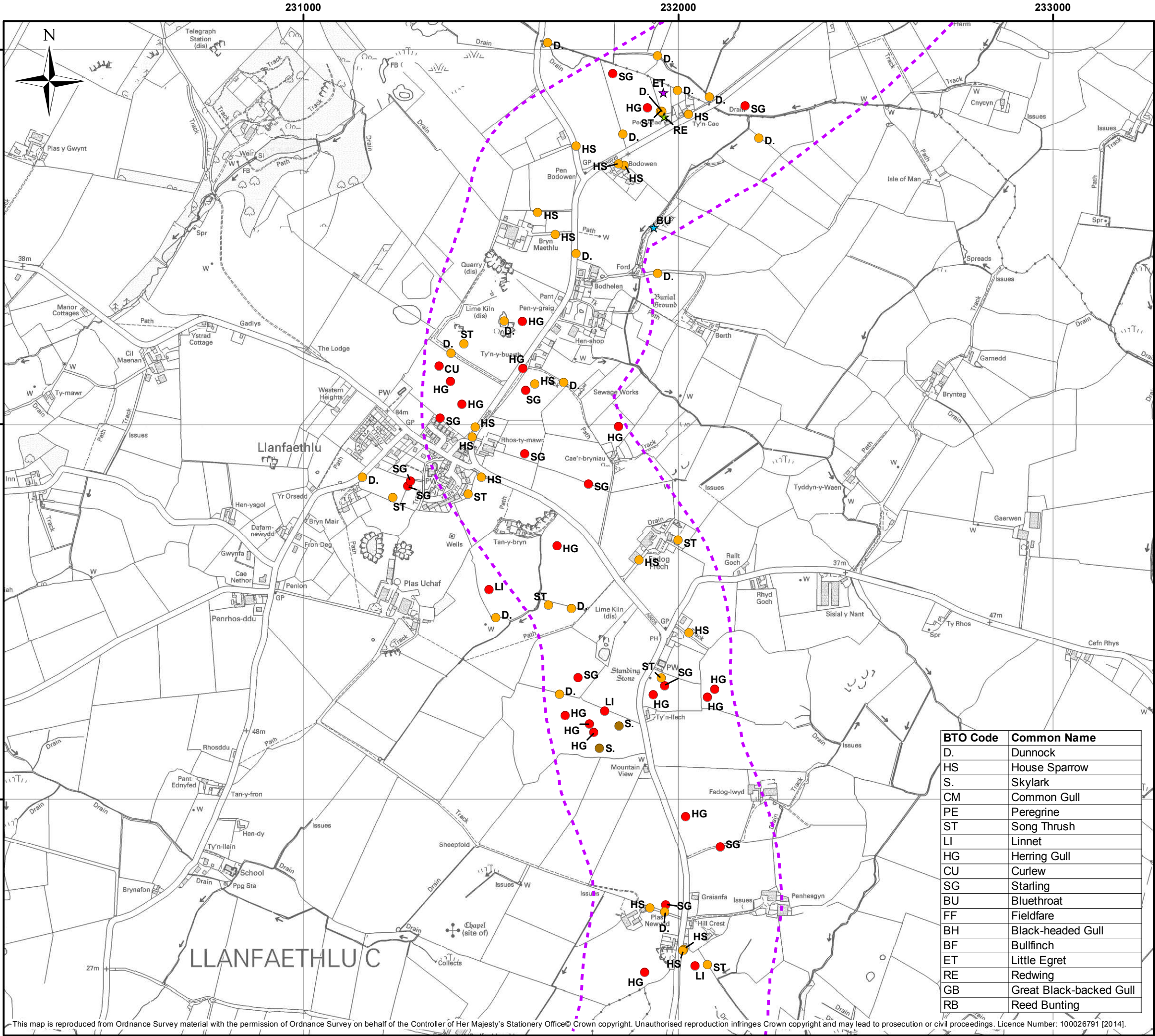
0 250 500  
Metres

Drawn	TC	Checked	RB
Approved	AL	Rev No	P1
Date:	17/05/2013	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3452		









- Legend**
- Indicative site extent - 250m buffer
  - Jacobs survey area
- Bird Species Protection Status:**
- Annex 1
  - Annex 1 & Schedule 1
  - Schedule 1
- Bird Species Conservation Status:**
- Section 42
  - Section 42 & LBAP
  - Section 42 & BoCC - Red
  - BoCC - Red

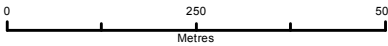
BTO Code	Common Name
D.	Dunnock
HS	House Sparrow
S.	Skylark
CM	Common Gull
PE	Peregrine
ST	Song Thrush
LI	Linnet
HG	Herring Gull
CU	Curlew
SG	Starling
BU	Bluethroat
FF	Fieldfare
BH	Black-headed Gull
BF	Bullfinch
ET	Little Egret
RE	Redwing
GB	Great Black-backed Gull
RB	Reed Bunting

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Protected and Notable Species**  
Page 4 of 9

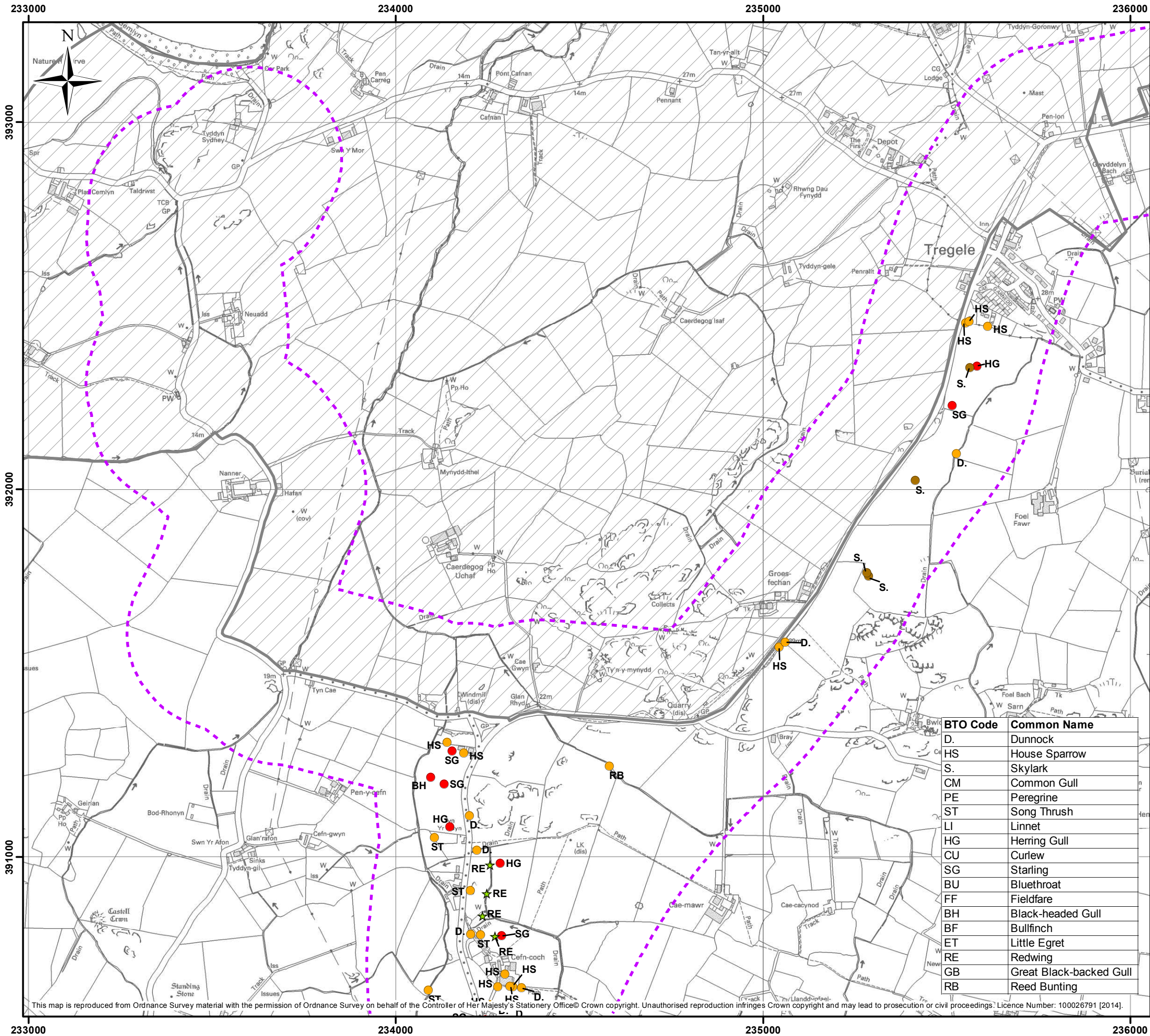


Drawn	TC	Checked	RB
Approved	AL	Rev No	P1
Date:	17/05/2013	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3454		









- Legend**
- Indicative site extent - 250m buffer
  - Jacobs survey area
- Bird Species Protection Status:**
- Annex 1
  - Annex 1 & Schedule 1
  - Schedule 1
- Bird Species Conservation Status:**
- Section 42
  - Section 42 & LBAP
  - Section 42 & BoCC - Red
  - BoCC - Red

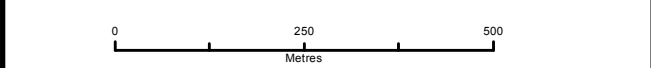
BTO Code	Common Name
D.	Dunnock
HS	House Sparrow
S.	Skylark
CM	Common Gull
PE	Peregrine
ST	Song Thrush
LI	Linnet
HG	Herring Gull
CU	Curlew
SG	Starling
BU	Bluetthroat
FF	Fieldfare
BH	Black-headed Gull
BF	Bullfinch
ET	Little Egret
RE	Redwing
GB	Great Black-backed Gull
RB	Reed Bunting

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



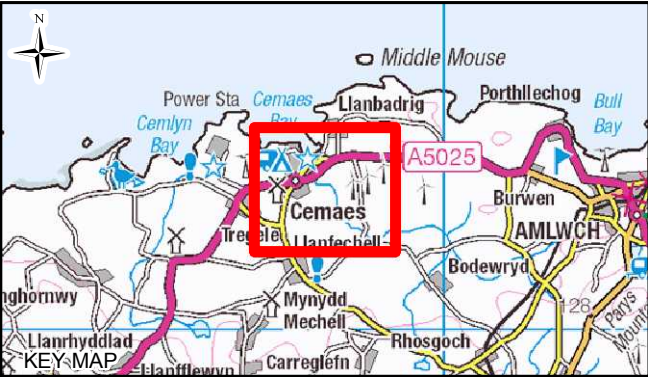
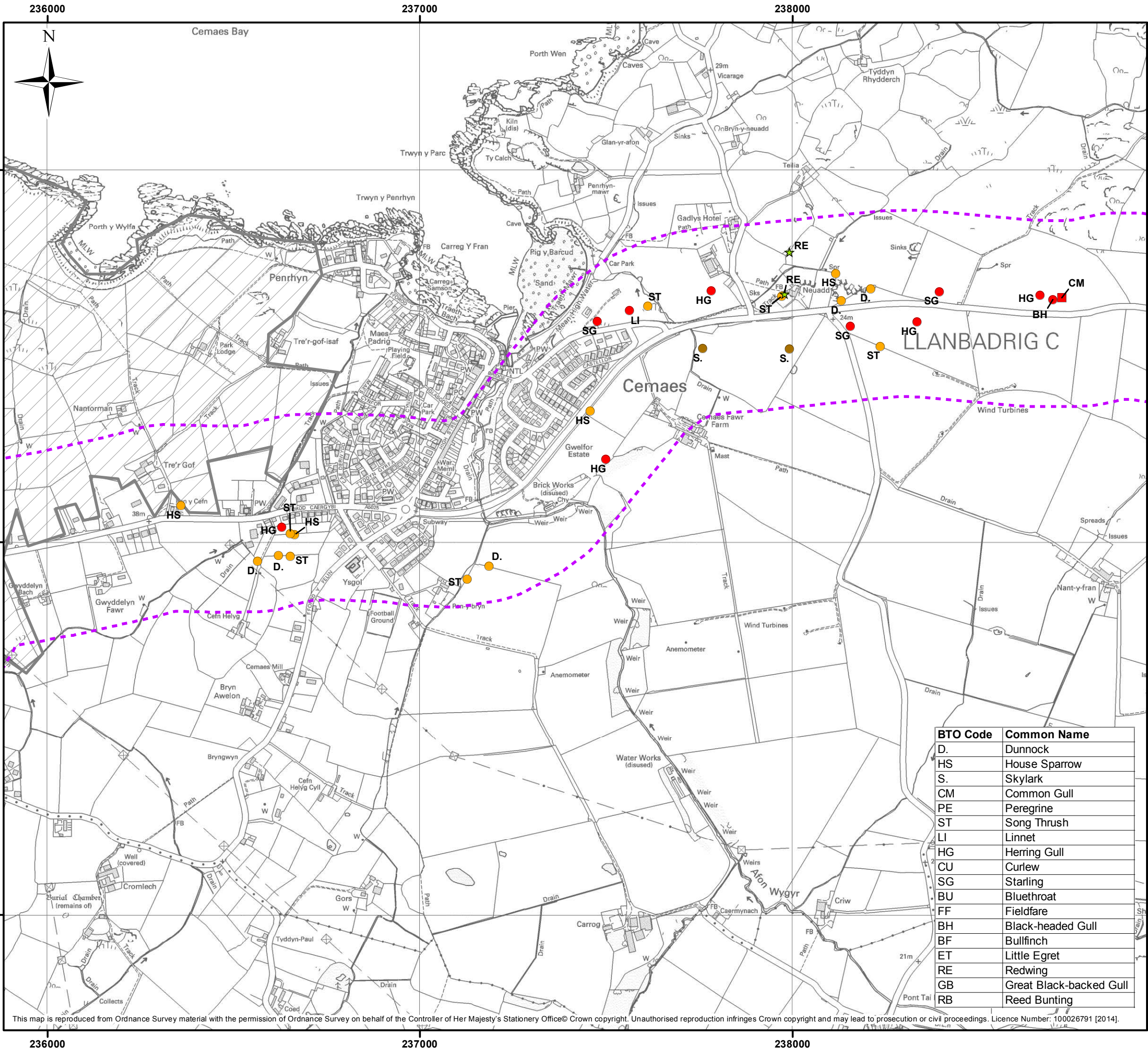
Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Protected and Notable Species**  
Page 6 of 9



Drawn	TC	Checked	RB
Approved	AL	Rev No	P1
Date:	17/05/2013	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3456		





- Legend**
- Indicative site extent - 250m buffer
  - Jacobs survey area
  - Bird Species Protection Status:**
    - Annex 1
    - Annex 1 & Schedule 1
    - Schedule 1
  - Bird Species Conservation Status:**
    - Section 42
    - Section 42 & LBAP
    - Section 42 & BoCC - Red
    - BoCC - Red

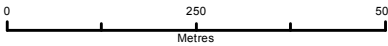
BTO Code	Common Name
D.	Dunnock
HS	House Sparrow
S.	Skylark
CM	Common Gull
PE	Peregrine
ST	Song Thrush
LI	Linnet
HG	Herring Gull
CU	Curlew
SG	Starling
BU	Bluethroat
FF	Fieldfare
BH	Black-headed Gull
BF	Bullfinch
ET	Little Egret
RE	Redwing
GB	Great Black-backed Gull
RB	Reed Bunting

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



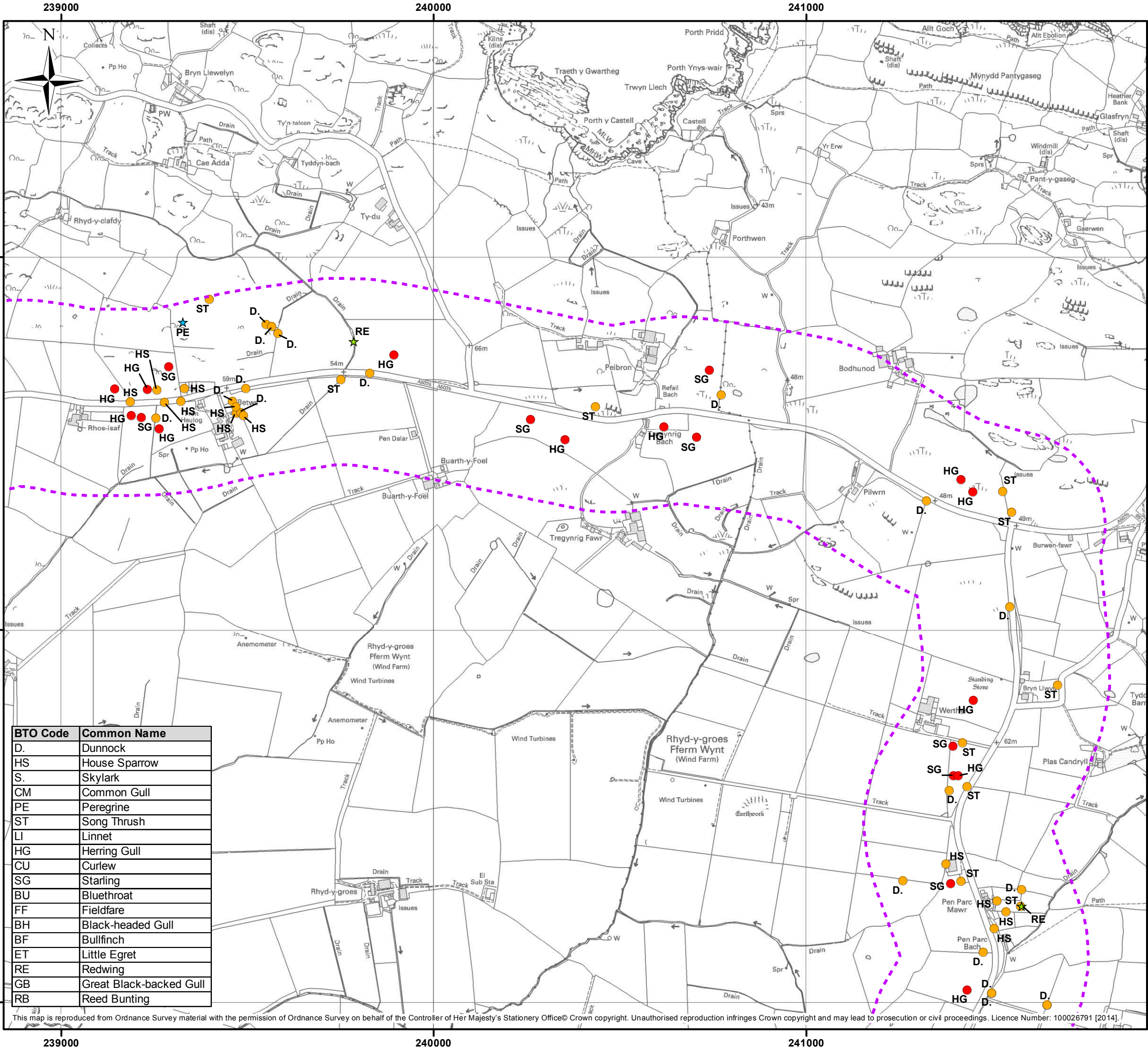
Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Protected and Notable Species**  
Page 7 of 9



Drawn	TC	Checked	RB
Approved	AL	Rev No	P1
Date:	17/05/2013	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3457		





**Legend**

Indicative site extent - 250m buffer

Jacobs survey area

**Bird Species Protection Status:**

- Annex 1
- Annex 1 & Schedule 1
- Schedule 1

**Bird Species Conservation Status:**

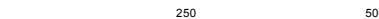
- Section 42
- Section 42 & LBAP
- Section 42 & BoCC - Red
- BoCC - Red

BTO Code	Common Name
D.	Dunnock
HS	House Sparrow
S.	Skylark
CM	Common Gull
PE	Peregrine
ST	Song Thrush
LI	Linnet
HG	Herring Gull
CU	Curlew
SG	Starling
BU	Bluethroat
FF	Fieldfare
BH	Black-headed Gull
BF	Bullfinch
ET	Little Egret
RE	Redwing
GB	Great Black-backed Gull
RB	Reed Bunting

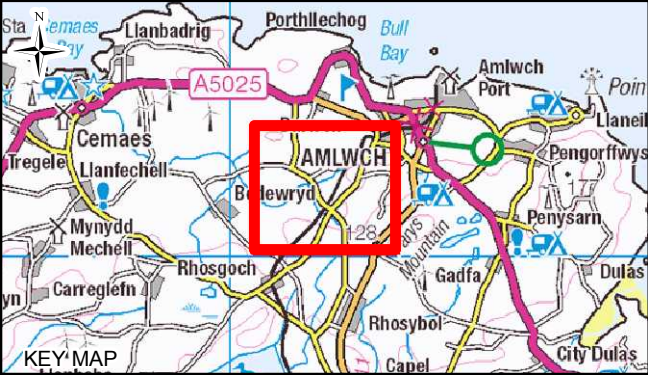
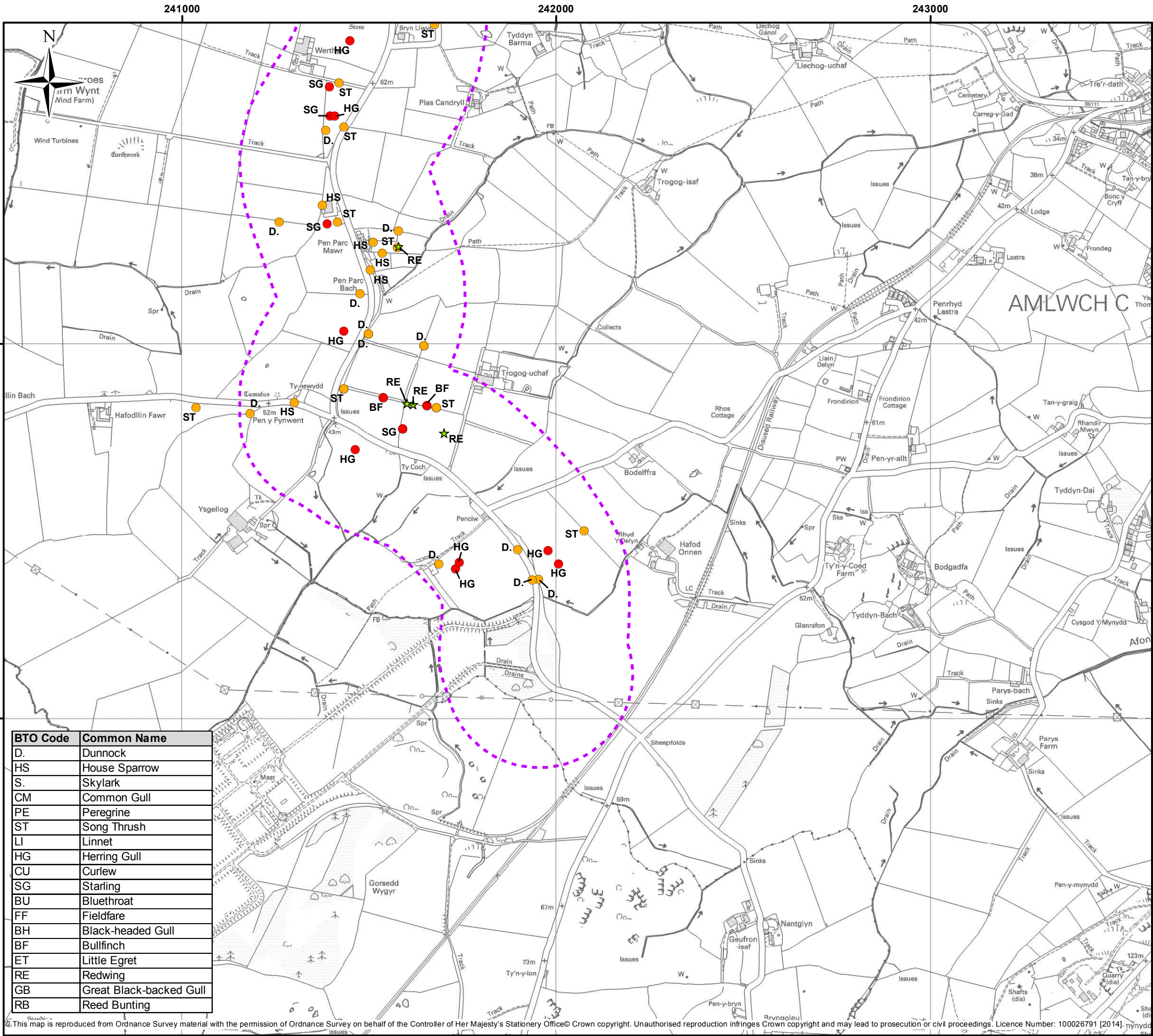
This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: **A5025 Improvements**  
**Wintering Bird Survey Results - Protected and Notable Species**  
Page 8 of 9

			
Drawn	TC	Checked	RB
Approved	AL	Rev No	P1
Date:	17/05/2013	Scale: 1:10,000	@ A3
Drawing No: MMD-320831-L-DR-XX-3458			





- Legend**
- Indicative site extent - 250m buffer
  - Jacobs survey area
- Bird Species Protection Status:**
- Annex 1
  - Annex 1 & Schedule 1
  - Schedule 1
- Bird Species Conservation Status:**
- Section 42
  - Section 42 & LBAP
  - Section 42 & BoCC - Red
  - BoCC - Red

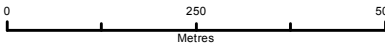
BTO Code	Common Name
D.	Dunnock
HS	House Sparrow
S.	Skylark
CM	Common Gull
PE	Peregrine
ST	Song Thrush
LI	Linnet
HG	Herring Gull
CU	Curlew
SG	Starling
BU	Bluethroat
FF	Fieldfare
BH	Black-headed Gull
BF	Bullfinch
ET	Little Egret
RE	Redwing
GB	Great Black-backed Gull
RB	Reed Bunting

This document is issued for the party which commissioned it and for specific purposes connected with the captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.



Fitzalan House  
Fitzalan Road  
Cardiff  
CF24 0EL  
Tel +44 (0) 2920 467800  
Fax +44 (0) 2920 467801  
Web www.mottmac.com

Title: A5025 Improvements  
Wintering Bird Survey Results - Protected and Notable Species  
Page 9 of 9



Drawn	TC	Checked	RB
Approved	AL	Rev No	P1
Date:	17/05/2013	Scale: 1:10,000	@ A3
Drawing No:	MMD-320831-L-DR-XX-3459		