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**M4 Corridor around Newport**

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Survey 2014

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**M4 Corridor Around Newport**

**Wintering Bird Survey Report 2014**

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**ARUP**



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# 1 Introduction

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Ove Arup & Partners Ltd has been commissioned by Welsh Government to undertake baseline ecological surveys to inform proposals for the M4 Corridor around Newport. Should the Welsh Government adopt its draft Plan, this report provides information to inform the development of the scheme, including a Design Manual for Road and Bridges (DMRB) Stage 3 environmental assessment (HA, 1993) and consideration under The Highways (Environmental Impact Assessment) Regulations 2007.

This report identifies the presence of important habitat areas for wintering bird species, including assessing the use by wintering birds of the estuaries of the River Usk and River Ebbw.

Where appropriate, recommendations are made for further surveys and design considerations to inform the development of the scheme.

## 1.1 Background to the Project

The M4 in South Wales forms part of the Trans-European Transport Network (TEN-T), which provides connections throughout Europe by road, rail, sea and air. The M4 plays a key strategic role in connecting South Wales with the rest of Europe, providing links to Ireland via the ports in South West Wales and England and mainland Europe to the east. It is a key east-west route being the main gateway into South Wales and also one of the most heavily used roads in Wales.

Providing a facility for transporting goods, linking people to jobs and employment sites as well as serving the Welsh tourism industry, the M4 is critical to the Welsh economy. Cardiff, Newport and Swansea have ambitious regeneration strategies and Monmouthshire County Council is developing areas around Junction 23A of the M4. Rhondda Cynon Taff has important gateways onto the motorway at Junctions 32 and 34. Bridgend is served by M4 Junctions 35 and 36. Neath Port Talbot straddles the motorway and gets important access from Junctions 38 to 43. Congestion on the M4 causing unreliable journey times and reduced service levels will therefore hinder economic development in South Wales.

The M4 between Junctions 28 and 24 was originally designed as the 'Newport Bypass' with further design amendments in the 1960s to include the first motorway tunnels to be built in the UK.

The M4 Motorway between Magor and Castleton does not meet modern motorway design standards. This section of the M4 has many lane drops and lane gains, resulting in some two-lane sections, an intermittent hard shoulder and frequent junctions.

It is often congested, especially during weekday peak periods resulting in slow and unreliable journey times and stop-start conditions with incidents frequently causing delays.

This is why problems with congestion and unreliable journey times have been a fact of life on the M4 around Newport for many years. The motorway and surrounding highway network does not cope with sudden changes in demand or operation, for example as a result of accidents or extreme weather events. These issues are worse at times of peak travel (rush hour) and have worsened as the number of users on the network has increased.

Since 1991, much assessment and consultation has been undertaken to develop a preferred solution to the problems on the motorway around Newport. A detailed history is documented in the M4 Corridor around Newport WelTAG (WG, 2008) Stage 1 (Strategy Level) Appraisal Report (Ove Arup & Partners Ltd, 2013). This included the adoption of a revised TR111 route<sup>1</sup> in April 2006, which remains protected for planning purposes. The alignment of this proposed new section of motorway has been developed following extensive consultation, investigation and analysis. The aim was to minimise the impact on the environment, whilst fully meeting motorway design and safety standards. The main element of the draft Plan (the Black Route) largely follows this TR111 alignment.

The survey design is informed by the Route Options defined in the Stage 2 DRMB Environmental Report (Ove Arup & Partners Ltd, 2014).

## 1.2 Survey Objectives

The survey was conducted with two objectives:

1. to determine the use of the study area by wintering birds through winter walkover surveys, focusing on bird species listed as qualifying features of the nearby Severn Estuary Special Protection Area (SPA) and Ramsar site, but where possible all species were recorded;
2. to determine the use of and movements of birds up and down stream of the potential crossings of the River Usk and the River Ebbw through vantage point surveys.

## 1.3 Study Area

The study area for the purpose of this survey was based on a 500m buffer around the physical extents of the previous scheme studied in 2007/8 including the route alignment, potential junctions and water treatment areas. It is anticipated that any proposed route that might be taken forward would be within this corridor.

## 1.4 Relevant Legislation

Some bird species are listed as features of European designated sites, notably Special Protection Areas (SPAs) and Ramsar sites. European Sites are afforded protection in relation to development through the provisions of the Conservation of Habitats and Species Regulations 2010 (as amended). As a result, appropriate consideration needs to be made of the potential effects on the populations of birds which are features of SPAs or Ramsar Sites caused by development plans or projects.

The Natural Environment and Rural Communities (NERC) Act 2006 came into force on 1st Oct 2006. Section 42 (S42) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in Wales. The list has been drawn up in consultation with the Countryside Commission for Wales (now National Resource for Wales), as required by the Act. The S42 list is used to guide decision-makers such

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<sup>1</sup> Once a preferred route is announced, Welsh Government serves a statutory notice (TR111) on the local planning authorities requiring the line to be protected from development. This is enacted under Article 19 of The Town & Country Planning (Development Management Procedure) (Wales) Order 2012.

as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Act, to have regard to the conservation of biodiversity in Wales, when carrying out their normal functions.

## 2 Methodology

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### 2.1 Desk Study

A search was conducted in MAGIC<sup>2</sup> for SPAs and Ramsar sites, which are international designated site for their bird interest, and SSSI also designated for their bird interest were searched for within the study area and within a 1km buffer area.

The issues of the M4 Corridor around Newport has been studied on a number of occasions including detailed surveys for the Environmental Impact Assessment (EIA) of new motorways to the south of Newport in the form of the M4 Relief Road (1997-1998) and the New M4 Project (2006-2008). The results of the more recent wintering bird surveys undertaken in 2006 – 2008 were reviewed to aid comparisons with the data from this report.

### 2.2 Survey Methods

A total of three survey visits were undertaken to parts of the study area over several dates in the three months from January 2014 to March 2014. All survey work was carried out in conditions suitable for bird survey work (avoiding where possible heavy rain, fog, strong winds etc.). The weather conditions recorded during surveys are provided in Appendix A.

Four further survey visits will be conducted from September to December 2014, which will be reported subsequently.

The survey methods were derived from current best practice as described in Bird Census Techniques (Bibby, Burgess, Hill, & Mustoe, 2000) and Bird Monitoring Methods (Gilbert, Gibbons, & Evans, 1998), and conform to the recommendations of the Royal Society for Protection of Birds (RSPB), British Trust for Ornithology (BTO) and the Joint Nature Conservation Committee (JNCC).

All wintering bird surveys were carried out by teams of two surveyors, with at least one experienced in undertaking ornithological survey work. Survey notes were made using tablet devices in order to improve data collection efficiency, and include details of weather data, species present, numbers of individuals and their behaviour.

#### 2.2.1 Winter Walkover Survey

The surveys were carried out during the day, starting in the morning and aimed to be completed within four hours around the time of high tide. This follows the general Wetland Bird Survey (WeBS) Core Count methodology (BTO, 2012).

The survey consisted of surveying all areas accessible from roads and Public Rights of Way (PRoW) and any areas in which land access had been formally agreed within the study area. Within these areas, the number of birds of each species encountered in each field was recorded.

The main focus of the surveys was to record the presence of bird species listed as features of the nearby Severn Estuary SPA and Ramsar Site (target species), which are listed and described

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<sup>2</sup> Multi-Agency Geographic Information for the Countryside (MAGIC). The MAGIC website provides authoritative geographic information about the natural environment from across government.

below in the Desk Study. Where possible other notable species were recorded and have been reported on as described within the Reporting Methods section below. Surveys were conducted in a varied order and direction, to ensure field counts were made at varying times of the day and at slightly different tidal states. Efforts were made however to count areas close to tidal features near to high tide to identify any roosts that may be present.

### **2.2.2 Vantage Point Surveys**

Four hour vantage point (VP) surveys were also carried out each month at the locations of the proposed crossings of the River Usk and the River Ebbw. The location of the two vantage points is shown on Plans 8 to 13. These surveys were undertaken around the time of low water and aimed to identify the presence of target species (SPA and Ramsar site features) foraging within the intertidal areas of the Rivers Usk and Ebbw, and to identify the pattern of movement of birds up and down these rivers during the low water period. During the VP surveys all flights of target species and raptor species were recorded and mapped along with regular counts of birds foraging within the vicinity of the proposed crossings. The relative heights of flights were recorded above the water, in three categories; below 20m, between 20m and 100m, and above 100m.

At extreme low tide, lower areas of exposed mud were hidden from views from the VP locations. To address this issue, surveyors walked to the edge of the river bank every 20 minutes during this period to record species on the water and foraging on the waterline. This caused some minor disturbance to species foraging on the waterline or on the water within approximately 50m of the surveyors. The birds generally flew short distances and landed within 50m of the disturbance zone and continued to forage or roost.

### **2.2.3 Vantage Point Activity Summary Surveys**

During the vantage point surveys, a tally of other bird species was also recorded every 30 minutes; this tally included birds in flight and birds on the ground. Target species on the ground were also recorded during this survey, as these may not have been observed throughout the survey otherwise as they were not in flight. The aim of this tally-type survey was to capture a representation of bird activity, species abundance and species diversity within the vicinity of the VP Locations.

## **2.3 Reporting Methods**

The data gathered during field survey work has been displayed on plans, combining and analysing that obtained from each survey visit in order to reveal patterns of wintering bird activity throughout the study area. The most valuable habitat areas can thus be determined for the entire study area for over wintering bird species. However it should be noted that the surveys and results do not cover a complete winter period and will need to be augmented following further surveys in September to December 2014 and consultation with Natural Resources Wales.

As mentioned above, the main focus of the surveys was to record the presence of bird species listed as features of the nearby Severn Estuary SPA and Ramsar Site (target species). Where possible other notable species based on their conservation status were recorded.

The report and associated plans outline the results of the surveys broken down into different species groups, namely:

- Individual features of the SPA/Ramsar;
- Listed component features of the SPA/Ramsar assemblage;
- Other waterbirds contributing to the SPA/Ramsar assemblage;
- Bird features of Sites of Special Scientific Interest (SSSIs); and
- Other species which are Red or Amber listed<sup>3</sup> within Birds of Conservation Concern (Eaton *et al*, 2009) but not included in the above groups.

Green listed species are not covered within this report.

## 2.4 Limitations and Assumptions

The winter bird survey was carried out at appropriate times of the year and weather conditions on all visits were considered suitable. The dates of the surveys and weather conditions are shown in **Appendix A**.

Land access was not available across the entire survey area, however a representative selection of the predominant habitats, included those most suitable for target species, within the study area have been surveyed.

It should be stressed though that the findings presented in this study represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys are limited by factors which affect the presence of species, such as weather conditions, migration patterns and behaviour.

Nevertheless, these surveys were conducted at the optimal survey periods and using methodologies which were discussed and agreed with National Resource for Wales (NRW). Every effort has been made to ensure that the findings of the study present as accurate an interpretation as possible of the status of wintering birds within the study area.

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<sup>3</sup> The three BOCC Lists are described as follows:

- Red List: species that are globally threatened, whose population or range has declined rapidly in recent years, and those whose populations have declined historically and not exhibited any signs of recovery. Species that have experienced a population decline of >50%;
- Amber List: species with an unfavourable conservation status in Europe, whose populations have declined moderately in recent years, including species that show a historical decline but whose populations have shown a substantial increase, species that are rare, with localised populations and those species of international importance with UK populations and species that have experienced a population decline or breeding range decline of 25% to 49%.
- Green list: All regularly occurring species that do not qualify under any of the red or amber criteria are green listed. The green list also includes those species listed as recovering from historical decline in the last review that have continued to recover and do not qualify under any of the other criteria.

## 3 Baseline Environment

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### 3.1 Desk Study

#### 3.1.1 Designated Sites

The study area is close to the Severn Estuary European Marine Site (EMS) which includes the Special Area of Conservation (SAC), SPA and Ramsar site designations.

The proposed crossings are approximately 1.5 – 2km from the Severn Estuary EMS. The Usk is designated separately as a SAC for non-avian fauna, as such is not described below.

There are also several SSSIs within the study area and within a 1km buffer. However, only three of these specify bird interest within the citation; these are also detailed below.

##### 3.1.1.1 Severn Estuary SPA and Ramsar Site

The Severn Estuary is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. The site is of importance during the spring and autumn migration periods for waders moving up the west coast of Britain, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders. These bird features are listed under the SPA and Ramsar designations. It is noted that since the SPA was designated in 1995 there have been changes in both the numbers of birds using the estuary and in the thresholds for designation. These changes were highlighted by the SPA review published by JNCC in (Stroud, et al., 2001) and may be the subject of formal changes to the SPA designation in the future; however at the time of this report the legally protected species are those on the original 1995 citation. For the purposes of this report, the features of the SPA are taken to be those on the 1995 citation and any additional species identified in the SPA 2001 review (highlighted as such below).

This SPA features taken from the JCNN website and Regulation 33 Package (CCW, 2009) are listed below:

- Overwintering population of Bewick's swan (*Cygnus columbianus bewickii*) - 280 individuals representing at least 4.0% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6);
- Overwintering population of European white-fronted goose (*Anser albifrons albifrons*) - 3,002 individuals (5yr peak mean: 1988/9 to 1992/3) representing 50% of the British population and 1% of the north west European population (the SPA 2001 review advises the removal of this species from the citation);
- Overwintering population of dunlin (*Calidris alpina alpina*) - 44,624 individuals representing at least 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6);
- Overwintering population of redshank (*Tringa totanus*) - 2,330 individuals representing at least 1.6% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6);



- Overwintering population of shelduck (*Tadorna tadorna*) - 3,330 individuals representing at least 1.1% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6);
- Overwintering population of gadwall (*Anas strepera*) - 330 individuals (5yr peak mean: 1988/9 to 1992/3) representing 2.8% of the north west European population (the SPA 2001 review advises the removal of this species from the citation);
- Overwintering population of curlew (*Numenius arquata*) - 3,903 individuals representing at least 1.1% of the wintering Europe - breeding population (5 year peak mean 1991/2 - 1995/6) (the SPA 2001 review advises the addition of this species to the citation);
- Overwintering population of pintail (*Anas acuta*) - 599 individuals representing at least 1.0% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6) (the SPA 2001 review advises the addition of this species to the citation);
- Migratory (passage) population of ringed plover (*Charadrius hiaticula*) - 655 individuals representing at least 1.3% of the Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6) (the SPA 2001 review advises the addition of this species to the citation); and
- Overwintering assemblage population regularly supports 93,986 individual waterfowl (5 year peak mean 1991/2 - 1995/6). This includes all species of waterfowl. Listed component species are: gadwall, shelduck, pintail, dunlin, curlew, redshank, spotted redshank (*Tringa erythropus*), bewick's swan, wigeon (*Anas penelope*), lapwing (*Vanellus vanellus*), teal (*Anas crecca*), mallard (*Anas platyrhynchos*), shoveler (*Anas clypeata*), pochard (*Aythya farina*), tufted duck (*Aythya fuligula*), ringed plover, grey plover (*Pluvialis squatarola*), European white-fronted goose, and whimbrel (*Numenius phaeopus*).

The Severn Estuary Ramsar Site birds' features taken from the Regulation 33 Package (CCW, 2009) and the revised Criteria (2005) currently used on JNCC website, are as follows:

#### **Ramsar criterion 6 – species/populations occurring at levels of international importance.**

##### **Qualifying Species/populations (as identified at designation):**

- Bewick's swan – 229 overwintering individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9-2002/3);
- European white-fronted goose – 2076 overwintering individuals, representing an average of 35.8% of the GB population (5 year peak mean for 1996/7-2000/01);
- Dunlin – 25082 overwintering individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3);
- Redshank – 2616 overwintering individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3);
- Shelduck - 3223 overwintering individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3); and
- Gadwall – 241 overwintering individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3).

**Species/populations identified subsequent to designation for possible future consideration under criterion 6.**

**Species with peak counts in winter:**

- Teal - 4456 overwintering individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3); and
- Pintail - 756 overwintering individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3).

**Species with peak counts in spring/autumn:**

- Ringed plover - 740 passage individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3).

**Species regularly supported during the breeding season:**

- Lesser black-backed gull (*Larus fuscus graellsii*) – 4167 apparently occupied nests, representing an average of 2.8% of the breeding population (Seabird 2000 Census).

**Ramsar criterion 5:** qualifies as it supports an assemblage of international importance - (1998/99-2002/2003 5 year peak mean was 70,919 waterfowl).

**Noteworthy fauna - Species currently occurring at levels of national importance:**

**Species with peak counts in winter:**

Overwintering assemblage population waterfowl (other than above) listed as noteworthy species are: wigeon, shoveler, pochard, water rail (*Rallus aquaticus*), spotted redshank.

**Species with peak counts in spring/autumn:**

Spring/autumn passage assemblage population waterfowl (other than above) listed as noteworthy species are: little egret (*Egretta garzetta*), ruff (*Philomachus pugnax*), whimbrel, curlew and greenshank (*Tringa nebularia*).

**Species regularly supported during the breeding season:**

Herring gull (*Larus argentatus argenteaus*), 1540 apparently occupied nests, representing an average of 1.1% of the GB population (Seabird 2000 Census).

### **3.1.1.2 Severn Estuary SSSI**

The Severn Estuary SSSI underpins the SPA and Ramsar designations. In addition to the SPA and Ramsar features, other species included within the SSSI citation are snipe (*Gallinago gallinago*), knot (*Calidris canutus*) and turnstone (*Arenaria interpres*).

### **3.1.1.3 Newport Wetlands SSSI**

In winter, the extensive network of reens, reedbeds and coastline that lie within the boundary of Newport Wetlands SSSI support nationally important numbers of shoveler and black-tailed godwit (*Limosa limosa*). Other over-wintering species that use the site include gadwall, wigeon, shelduck, dunlin, redshank, whimbrel and curlew. During the summer, the wet grasslands, saline lagoons and reedbeds on the site support an exceptional variety of breeding birds, including nationally (UK) important breeding populations of avocet (*Recurvirostra avosetta*), redshank,

lapwing, water rail (*Rallus aquaticus*), Cetti's warbler (*Cettia cetti*) and bearded tit (*Panurus biarmicus*). In addition, breeding populations of ringed plover and little ringed plover (*Charadrius. Dubius*) are also present.

This SSSI lies approximately 1km to the south of the study area.

#### 3.1.1.4 River Usk SSSI (Lower Usk)

The River Usk (Lower Usk) SSSI supports a wide range of bird species throughout the year in its riverine and estuarine habitats. Species include kingfisher (*Alcedo atthis*), grey wagtail (*Motacilla cinerea*) and dipper (*Cinclus cinclus*) occur with increasing frequency above the tidal limit at Newbridge. In addition the lower reaches of the River Usk are an important area for wintering and passage migrants including teal, greenshank and green sandpiper (*Tringa ochropus*).

#### 3.1.2 Previous Studies

The issues of the M4 Corridor around Newport has been studied on a number of occasions including detailed surveys for the Environmental Impact Assessment (EIA) of new motorways to the south of Newport in the form of the M4 Relief Road (1997-1998) and the New M4 Project (2006-2008). The results of the more recent wintering bird surveys undertaken in 2006 – 2008 have been review and compared to the current findings within the conclusions of this report.

Arup conducted a previous wintering bird survey for the former 'New M4' scheme during the winter of 2006/2007. During these surveys the proposed route was surveyed four times from December 2006 to March 2007.

A total of 82 species was recorded along the indicative line of the proposal throughout the surveys. Of the species recorded in 2006/2007, 36 species were noted to be of conservation concern due to their SPA or Ramsar site citation, SSSI citation, listing on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), UKBAP species or listing as red or amber birds on the Birds of Conservation Concern 2002-2007 (Gregory, et al., 2002). A total of 4 species recorded in 2006/2007 were listed as qualifying features on the Severn Estuary SPA, being curlew, gadwall, redshank and shelduck, the latter three also being listed as features on the Severn Estuary Ramsar site citation. Teal have also been subsequently identified for possible consideration under criterion 6 on the Ramsar designation. Thus a total of 5 species recorded were listed under criterion 6. A further 10 species recorded would be class under the waterfowl assemblage for both the SPA and Ramsar site designations.

## **3.2 Field Surveys**

### **3.2.1 Site Description**

The study area comprises a range of habitat types and topography, resulting in different values and potential usage by overwintering and migrating bird species. The western end of the study area is located within predominantly farmland habitat fringing the coastal plain of the Gwent Levels. This area is characterised by small woodland copses and large agricultural fields, including both arable and pasture.

As the study area bends southwards from the existing M4 motorway it descends from this slightly raised area into the Gwent Levels. The majority of the central section of the study area comprises Newport City and the working area of Newport docks and the active landfill sites.

This central section also includes areas of wet flood plain grazing marshes and the reed network within the Gwent Levels SSSI, and the River Ebbw and the River Usk. The flood plains of the rivers have narrow bands of salt marsh, reed fringes and mudflats.

The eastern end of the study area includes areas within the Gwent Levels SSSI at Tatton Farm and Bareland Common, and part of the Llanwern steelworks, with habitats present including large reed beds, reens and settlement lagoons. This area is relatively undisturbed and isolated.

The far eastern end of the study area is situated on slightly higher ground to the north of the town of Magor where the study area re-joins the existing M4 corridor. This area mainly consists of grazed fields, farm pasture with intact hedgerows and woodland areas.

### **3.2.2 Summary of Bird Sightings**

A total of 68 bird species were recorded during the surveys from January to March 2014, 46 of these are considered to be species of interest due to being qualifying features of the SPA, Ramsar site, listed on the citation of SSSIs or are red or amber listed on the BOCC. Of these 5 species are listed features on the SPA and Ramsar site; being redshank, curlew, gadwall shelduck and teal. A further 5 species are listed on the SPA and/or Ramsar site assemblage; being little egret, spotted redshank, lapwing, mallard and grey plover.

Only species of interest have been described within this report. These species are discussed in the following sections.

### 3.2.3 Winter Walkover Survey

#### 3.2.3.1 SPA/Ramsar Features

A full list of all species recorded during the 2013/14 Winter Walkover Surveys, their scientific names and conservation status, along with the total number of observations and maximum count for each species can be viewed in Appendix B. The locations of the land parcels where these species were observed within the study area are shown on Plan 1 to Plan 7.

Redshank and gadwall were the only individual qualifying feature of the Severn Estuary SPA recorded during the winter walkover surveys. Teal, which were identified as an additional species under criterion 6 in revised 2005 criteria were also recorded.

Redshank was only recorded in February and March, with a maximum of 130 birds recorded in February 2014 near the mouth of the River Ebbw. This species was recorded in a total of three land parcels in February and one field in March. These sightings were all located near the River Ebbw which is on the southern edge of the study area, as shown on Plan 3. The largest count of 130 near the mouth of the River Ebbw suggests a high tide roost location.

Gadwall were only observed during the March survey within large reens within the field network south of Tata Steel, with a max count of two individuals, as shown on Plan 5 and Table 1.

Teal were recorded within a maximum of four land parcels over the February and March survey, two of which were within a large pond adjacent to the golf course south west of Castleton (as shown on Plan 1), one within the River Ebbw on the bend close to the landfill site (Plan 3), and one within a large reen within the reen network south of Tata steel (Plan 5) and Table 1. The maximum count of 40 birds was recorded within the River Ebbw.

Including redshank, gadwall and teal, a total three bird species specifically listed on the Severn Estuary SPA and/or the Ramsar site designation for wintering and passage were recorded during the wintering bird survey. These also included; mallard, lapwing and little egret.

Mallard were observed in the most number of fields spread throughout the survey area with higher numbers observed around more significant water bodies and within the reen network of the Gwent Levels SSSI, as shown on Plans 1 to 7. A maximum count of 12 birds were recorded in February within a large pond adjacent to the golf course south west of Castleton, as shown on Plan 1 and in Table 1.

Lapwing were observed in January and March, with a maximum count in of 28 birds in the wet pasture grazing fields to the west of the River Ebbw in March, as shown on Plan 3 and Table 1. Lapwing were only recorded in three land parcels in January and four fields in March, as well as the fields to the west of the River Ebbw, lapwing were observed in a field on the southern boundary of the study area south east of Tata Steel (as shown on Plan 5), within a field north east of junction 23A of the M4 (as shown on Plan 6), and within a large field between Magor and Rogiet (as shown on Plan 7).

Little egret were recorded in small numbers, with a maximum count of two birds in February and March. The majority of the records were from the River Ebbw and the fields to the west of the Ebbw channel, as shown on Plan 3. The other record was from fields south of Tata Steel, as shown on Plan 4.

Records of specifically named SPA and Ramsar site species recorded during the survey are summarised in Table 1 which should be viewed in conjunction with Plan 1 to 7 which shows the locations of the records.

Table 1 Summary of specifically listed bird features of the Severn Estuary SPA/Ramsar recorded during winter walkover surveys

Species	Jan 2014		Feb 2014		Mar 2014		Number of Field observations	Max count overall during surveys
	No. of Fields	Max Count	No. of Fields	Max Count	No. of Fields	Max Count		
Individual features at designation (1995)								
Redshank	0	0	3	130	1	40	4	130
Gadwall	0	0	0	0	3	2	3	2
Individual features identified subsequent to designation (revised criteria 2005)								
Teal	0	0	3	40	4	7	7	40
Noteworthy / component waterbirds (revised criteria 2005)								
Little egret	0	0	3	2	4	2	7	2
Mallard	4	4	19	12	23	11	46	12
Lapwing	3	23	0	0	4	28	7	28

Birds that constitute the wintering waterfowl assemblage for the Severn Estuary SPA/Ramsar designations, but which are not listed component species, that were observed within the study area are listed within Table 2.

All were observed in relatively low numbers and in few locations, and are typical of those species expected to be observed within the Gwent Levels and surrounding habitat.

Mute swan were recorded in largest numbers with maximum count of 41 and 30 birds, both of which were recorded in grazing fields west of the River Ebbw, as shown on Plan 3.

All other species were recorded in small numbers in typical wintering habitat for individual species. These are not further discussed here but are shown in Table 2 below and locations are shown on Plan 1 to 7.

Table 2 Summary of other waterbird species contributing to the Severn Estuary SPA/Ramsar assemblage feature recorded during winter walkover surveys

Species	Jan 2014		Feb 2014		Mar 2014		Number of Field observations	Max count overall during surveys
	No. of Fields	Max Count	No. of Fields	Max Count	No. of Fields	Max Count		
Mute swan	4	3	11	30	7	41	22	41
Coot	1	8	2	5	3	6	6	8
Cormorant	0	0	0	0	2	2	2	2
Little grebe	0	0	1	1	3	4	4	4
Moorhen	2	1	6	3	6	6	14	6
Common sandpiper	0	0	1	1	0	0	1	1
Grey heron	0	0	8	2	7	1	15	2

Species	Jan 2014		Feb 2014		Mar 2014		Number of Field observations	Max count overall during surveys
	No. of Fields	Max Count	No. of Fields	Max Count	No. of Fields	Max Count		
Greylag goose	0	0	1	17	1	7	2	17
Snipe	0	0	0	0	1	1	1	1
Oystercatcher	0	0	2	2	1	2	3	2

### 3.2.3.2 SSSI features

A total of three records of Cetti's warbler were recorded during the wintering walkover survey, one in January and two in March 2014, as shown in Table 3. These records were from the banks of the River Usk and nearby, as shown on Plans 3 and 4.

Table 3 Summary of SSSI species recorded during winter walkover surveys

Species	Jan 2013		Feb 2013		Mar 2013		Number of Field observations	Max count overall during surveys
	No. of Fields	Max Count	No. of Fields	Max Count	No. of Fields	Max Count		
Cetti's Warbler	1	1	0	0	2	1	3	1

### 3.2.3.3 Other Notable Bird Species

During the winter walkover surveys surveyors aimed to record all species, although focussing on SPA, Ramsar site and SSSI species. The other species recorded are listed in Table A1 in Appendix A and shown on Plans 1 to 7, where they have been divided into red and amber listed species according to BOCC3; species less than amber BOCC3 (green or not listed) have not been considered within this report.

Species recorded in flocks greater than 50 birds include: fieldfare (*Turdus pilaris*) maximum count 200 birds, starling (*Sturnus vulgaris*) maximum count 350, redwing (*Turdus iliacus*) maximum count 200, black-headed gull (*Chroicocephalus ridibundus*) maximum count 300, common gull (*Larus canus*) maximum count 300, and herring gull maximum count 250, as shown in Appendix B. Sightings of these birds were relatively spread out over the study area generally within grazing pastures, as shown on Plan 1 to Plan 7.

In January, two high counts for common gull and black headed gull were recorded on a large field south of Rush Wall on the southern edge of survey area (Plan 5). All other records of gulls were within land parcels spread through the study area. Fieldfare, redwing and starling were only present in large groups in January and February. The largest flock for fieldfare were found in January south of the LG Plant and Percoed Reen (Plan 2) and in February south of Green Moor Lane between Llandeenny and Magor (Plan 6). The largest flock of redwing were found in January in a field within Tata Steel, south of Parish Reen (Plan 4) and in February east of Green Lane and south of Percoed Reen (Plan 2). Fieldfare and redwing were found to flock together in February south of the railway line near to Green Lane (Plan 2). No large flocks seen in same field twice but large flocks of starling were observed in adjacent fields near to Duffryn, east of Lighthouse Road and west of the River Usk. A large flock of starling were observed in February north of the Newport Landfill Site. In January, two large flocks of starling were observed on a field south of Rush Wall (Plan 5), adjacent to the field where large counts of gull were made.

### 3.2.4 Vantage Point Surveys

The raw data for the vantage point surveys are detailed in Appendix C. The raw data is analysed and reported for both the River Usk and the River Ebbw vantage points in the following sections.

#### 3.2.4.1 SPA/Ramsar Features

##### River Usk Vantage Point

Redshank and curlew were the only individual feature recorded during the vantage point surveys. A total of six flights were recorded of redshank, all being under 20m in height, and with a peak flock size of eight birds recorded flying across the River Usk in March 2014, as shown on Plan 8 and in

Table 4. Four curlew flights were recorded in the River Usk, one above 100m and three below 20m, as shown on Plan 9 and in

Table 4.

Mallard was the only listed component species recorded during the VP survey. A total of 13 flights were recorded of mallard flying up and down the Usk, with two flights being high (above 100m) over the docks, as shown on Plan 11 and in

Table 4. Maximum flock recorded was only of six birds, recorded in February 2014.

Table 4 Summary of specifically listed SPA/Ramsar species flights recorded from the River Usk Vantage Point.

Species	Jan 2014		Feb 2014		Mar 2014		Total Number of Flights	Max Flock Count Overall
	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count		
Redshank	0	0	4	4	2	8	6	8
Curlew	0	0	2	1	2	1	4	1
Mallard	3	3	6	6	4	3	13	6

The only other waterbird species recorded on the River Usk during the VP surveys were oystercatcher and cormorant. Three oystercatcher flights were recorded, all within the estuary and below 20m in height, as shown on Plan 12 and in Table 5. A total of six cormorant flights were recorded flying above the estuary or over the docks, as shown Plan 12 and in Table 5.

Table 5 Summary of other waterbird species flight lines recorded during River Usk Vantage Point.

Species	Jan 2014		Feb 2014		Mar 2014		Total Number of Flights	Max Flock Count Overall
	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count		
Cormorant	0	0	1	1	5	1	6	1
Oystercatcher	0	0	1	2	2	2	3	2



### **River Ebbw Vantage Point**

Redshank, curlew and shelduck were the only individual SPA/Ramsar features recorded during the vantage point surveys on the River Ebbw. Teal, which were identified as an additional species under criterion 6 in revised 2005 criteria were also recorded. Grey plover was also listed as a component of the Ramsar under interest feature 9 on the original 1995 criteria.

A single flight of two shelduck was record flying up the River Ebbw above 100m in height in January 2014, as shown on Plan9 and in Table 6. Two curlew flights were recorded over the Ebbw, one between 20m and 100m and one below 20m as shown on Plan 9 and in Table 6.

A total of 19 flights were recorded of redshank with a peak flock of 180 recorded flying down the Ebbw in January 2014, as shown on Plan 8, and in Table 6. The mean redshank flock size however was 26 birds, with a median flock size of 7 due to more than 75% of the flocks being less than 40 birds, as shown in Table C2 in Appendix C.

All of the redshank flights were recorded flying below 20m, predominantly up and down the channel, as shown on Plan 8.

During the VP survey on the River Ebbw, it was noted that redshank appear to have two roosts during mid to high tide; one was near the mouth of the Ebbw and other was further up the Ebbw opposite the southern area of the Landfill site, as shown on Plan 8.

A total of eight flights were recorded of teal flying low, all below 20m in height, with a maximum count of 57 birds recorded in January 2014, as shown on Plan 12 and in Table 6. The mean teal flock size was 11 birds, with a median flock size of 4 birds, see Appendix C for flights breakdown.

Three other listed component / noteworthy species were recorded during the VP survey being mallard, lapwing and little egret.

A total of 10 flights were recorded of mallard flying within the Ebbw and surrounding area, as shown on Plan 11 and in Table 6. The maximum flock size recorded was three birds recorded in January and March 2014, as shown on Plan 11 and in Table 6. Appendix C shows the breakdown of flights.

A total of four flights of lapwing were recorded around the Ebbw; two in January and two in March 2014 with maximum counts of 12 and 28 birds, respectively, as shown on Plan 10 and in Table 6. The mean flock size was 11 birds and the median 7 birds as the other two flights recorded were of two birds (as shown in Appendix C).

A total of 19 flights were recorded of little egret flying within the channel and the fields to the west of the Ebbw, as shown on Plan 10 and Table 7. The maximum flock size recorded was three birds recorded flying from the eastern bank to the western bank of the river near the mouth in March 2014, as shown on Plan 10. The majority of the flights however were of single birds (as shown in Appendix C), with a mean flock size of 1.3 birds and median flock size of 1.

A single flight of six grey plover was recorded of flying out of a side channel in March 2014, as shown on Plan 12 and in Table 6.

Table 6 Summary of specifically listed SPA/Ramsar species flights recorded from the River Ebbw Vantage Point

Species	Jan 2014		Feb 2014		Mar 2014		Total Number of Flights	Max Flock Count Overall
	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count		
Redshank	6	180	6	80	7	39	19	180
Shelduck	1	2	0	0	0	0	1	2
Curlew	0	0	1	1	1	1	2	1
Teal	1	57	3	11	4	4	8	57
Mallard	1	3	4	2	5	3	10	3
Lapwing	2	12	0	0	2	28	4	28
Little egret	7	2	8	2	4	3	19	3
Grey Plover	0	0	0	0	1	6	1	6

Four other waterbird species were recorded on or near the River Ebbw during the VP surveys; grey heron, mute swan, cormorant and oystercatcher.

Three flights of grey heron were recorded, one in February and two in March with a maximum flock of two birds, as shown on Plan 12 and in Table 7.

A total of five mute swan flights were recorded in the fields to the west of the River Ebbw, with a maximum flock size of two birds, as shown on Plan 12 and in Table 7. Mute swans in larger flock sizes were present within these fields during the surveys (and as shown in the wintering walkover surveys above); however few flights during the daylight surveys were observed.

A total of six cormorant flights were recorded flying above the river channel or over the docks, with a maximum flock recorded of four birds in March 2014, as shown on Plan 12 and in Table 7.

Five oystercatcher flights were recorded comprising one or two bird flocks, both within the river channel and over the docks, as shown on Plan 12 and in Table 7.

Table 7 Summary of other waterbird species flight lines recorded during River Ebbw Vantage Point

Species	Jan 2014		Feb 2014		Mar 2014		Total Number of Flights	Max Flock Count Overall
	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count		
Grey Heron	0	0	1	1	2	2	3	2
Mute Swan	2	1	1	1	2	2	5	2
Cormorant	2	1	2	1	2	4	6	4
Oystercatcher	1	2	2	2	2	2	5	2

### 3.2.4.2 SSSI Features

As noted, the majority of wintering and passage species listed on local SSSI designations are also covered on the SPA/Ramsar designations and as such are discussed above. Other SSSI species not covered by the SPA/Ramsar designations were not observed during the vantage point surveys.

### 3.2.4.3 Other Notable Bird Species

Only a small number of flights were recorded of three raptor species, these being buzzard, kestrel and merlin. Table 8 shows these species and numbers recorded, and Plan 13 shows the location of the flights.

Table 8 Summary of raptor species flight lines recorded during Vantage Point surveys.

Species	Jan 2013		Feb 2013		Mar 2013		Total Number of Flights	Max Flock Count Overall
	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count	No. of Flights	Max Flock Count		
Buzzard (Ebbw VP)	0	0	0	0	4	1	4	1
Kestrel (Ebbw VP)	0	0	1	1	0	0	1	1
Merlin (Usk VP)	0	0	1	1	0	0	1	1

### 3.2.5 Vantage Point Activity Summary Survey

#### 3.2.5.1 SPA/Ramsar Features

The results from the 30 minute vantage point activity summary survey are shown for the River Ebbw and River Usk in Appendix B.

The maximum count of redshank during this survey was of 103 birds from the River Ebbw VP in March 2014 (as shown in Table D.1 Appendix D), whereas the maximum count of birds in flight was in January of 180 birds, as detailed above.

Mallard and teal were also recorded in higher numbers during this summary count. Teal were recorded on the water and intertidal mud of the River Ebbw and River Usk, with the River Ebbw having a maximum count 57 birds in January 2014. The River Usk saw smaller numbers of teal with a maximum count of 5 in March, as shown in Table D.1 Appendix D. Mallard were also recorded within the River Ebbw and River Usk, with a maximum count of 31 birds recorded in the River Usk in March 2014. Mallard were only recorded in the River Ebbw in March with a maximum count of only three birds, as shown in Table D.2 Appendix D.

As mentioned above, mute swan were recorded grazing and roosting in the pasture fields to the west of the River Ebbw and as such higher numbers were recorded during the activity summary survey than those flying during the vantage point survey. A maximum count of 67 birds was recorded in March 2014, as shown in Table D.1 Appendix D. Similarly, lapwing were recorded foraging and roosting within these pasture fields to the west of the River Ebbw in March 2014, with a maximum count of 28 birds, as shown in Table D.1 Appendix D.

Little egret were also recorded within the River Ebbw and in the fields to the west during this survey, with a maximum count of six in February 2014, as shown in Table D.1 Appendix D.

Other waterbirds were recorded in low numbers during the 30 activity summary, including curlew, oystercatcher, spotted redshank, grey plover, grey heron and cormorant, as shown in Table D.1 and D.2 Appendix D.

Large numbers of herring gull and lesser black-backed gull were recorded over and around the landfill site between the River Ebbw and the River Usk. A maximum count of 800 herring gulls and 41 lesser black-backed gull were recorded over the active landfill site in March 2014 from the River Ebbw VP, with an average flock size of 202 and 15 birds, respectively over the survey period (as shown in Table C.1 Appendix C). Flights were not recorded for these species during the wintering bird survey, due to their designation being associated with breeding birds.

### 3.2.5.2 SSSI Features

A single grey wagtail was recorded in January 2014 during the 30 minute activity summary on the River Usk VP, as shown in Table D.2 Appendix D.

### 3.2.5.3 Other Notable Bird Species

Large flocks of black-headed gulls, along with the herring gulls and lesser black-backed gulls as mentioned above, were recorded over the tip, with a maximum count of 200 being recorded in February 2014, as shown in Table D.1 Appendix D. Other gull species were recorded in much lower numbers included, common gull, greater black-backed gull (*Larus marinus*) and Mediterranean gull (*Ichthyaetus melanocephalus*), as shown in Table D.1 and D.2 Appendix D.

All other species recorded were birds typical of the habitats present within the surrounding area of the VPs, including species such as linnet, starling and buzzard, as shown in Table D.1 and D.2 Appendix D.

## 4 Conclusions

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A total of 68 species were recorded during the winter January to March 2014 surveys, of which 46 were considered to be birds of conservation concern; and of these ten were specifically listed for their wintering presence on the SPA and/or Ramsar site citation (being redshank, curlew, shelduck, gadwall, teal, mallard, little egret, grey plover, spotted redshank, and lapwing). A further nine species were recorded that may be considered part of the waterfowl and waterbird assemblage of the Severn Estuary SPA/Ramsar site.

Of these species, redshank was observed to be using the River Ebbw in the greatest numbers and the most frequently, and was observed less frequently within the River Usk. Two mid to high tide redshank roosts were recorded on the River Ebbw, one of which is located close to the potential bridge crossing, the other being near the mouth of the river.

The maximum count of redshank are relatively low compared to the cited SPA population of 2,330 and the BTO latest published count (2010/11)<sup>4</sup> of 2,920; being 5.6% and 4.5% of these populations, respectively. Nevertheless, approximately 5% of the population would be significant if negatively affected by the scheme.

A maximum count of 57 teal were also recorded foraging and roosting within the River Ebbw, which equates to approximately 1.3% of the Ramsar site population of 4459 birds as cited in Regulation 33 Package (CCW, 2009). Any potential effects on populations of SPA/Ramsar site species over 1% of the cited population (or most up to date population estimate) is likely to be regarded as having a significant effect. As such, teal have the potential to be significantly affected by the scheme,

Although not specifically listed on the SPA or Ramsar site designation, mute swans were also recorded grazing and roosting close to the River Ebbw in the wet pasture grazing fields to the west of the river. A maximum count of 41 birds was recorded in these fields during the wintering walkover surveys and a maximum count of 67 birds was recorded in the same area during the vantage point activity surveys. These maximum counts represent 10.3% and 16.8%, respectively, of the wintering population within the Severn Estuary based on the latest BTO<sup>5</sup> count (2010/11) of 400 birds.

Other SPA and/or Ramsar site species were recorded in noteworthy numbers or regularly through the survey period include, teal (maximum count 57) and lapwing (maximum count 28) both of which were also within the River Ebbw or within the grazing pasture to the west of the river.

All other records of bird species were relatively low and as expected for the various habitats present within the study area.

### 4.1 Recommendations

As highlighted above, the area of the River Ebbw within the study area, the wet grazing pasture fields to the west of the River Ebbw and the mouth of the River Ebbw (which lies just outside of the study area) were shown to have the highest abundance and frequency of SPA/Ramsar site species. Redshank were recorded in relatively high numbers within the River Ebbw, with the

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<sup>4</sup> <http://www.bto.org/news-events/press-releases/wales-internationally-important-wintering-waterbirds>

<sup>5</sup> <http://www.bto.org/news-events/press-releases/wales-internationally-important-wintering-waterbirds>

maximum count being approximately 5% of the SPA population. Two redshank roosts were observed during the mid to high tides, one of which is close the proposed river crossing. As such, this species needs further consideration in terms of the potential construction and operation impacts to this SPA and Ramsar site qualifying species.

Teal and mute swan were also recorded within the River Ebbw and the fields to the west, within potentially significant numbers. Further investigation may be required to determine the level of impact to SPA/Ramsar species within this area and whether the impact should be reduced through design, such as keeping the route as far north as possible within this area to avoid disturbances.

The wintering birds surveys during the winter 2014/15 should focus on these sensitive areas of the scheme, to determine the level of potential impacts.

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## **Figures**

**Figure 1** – Species Status and Count (Plan 1)

**Figure 2** – Species Status and Count (Plan 2)

**Figure 3** – Species Status and Count (Plan 3)

**Figure 4** – Species Status and Count (Plan 4)

**Figure 5** – Species Status and Count (Plan 5)

**Figure 6** – Species Status and Count (Plan 6)

**Figure 7** – Species Status and Count (Plan 7)

**Figure 8** – Redshank Vantage Point Flightlines (Plan 8)

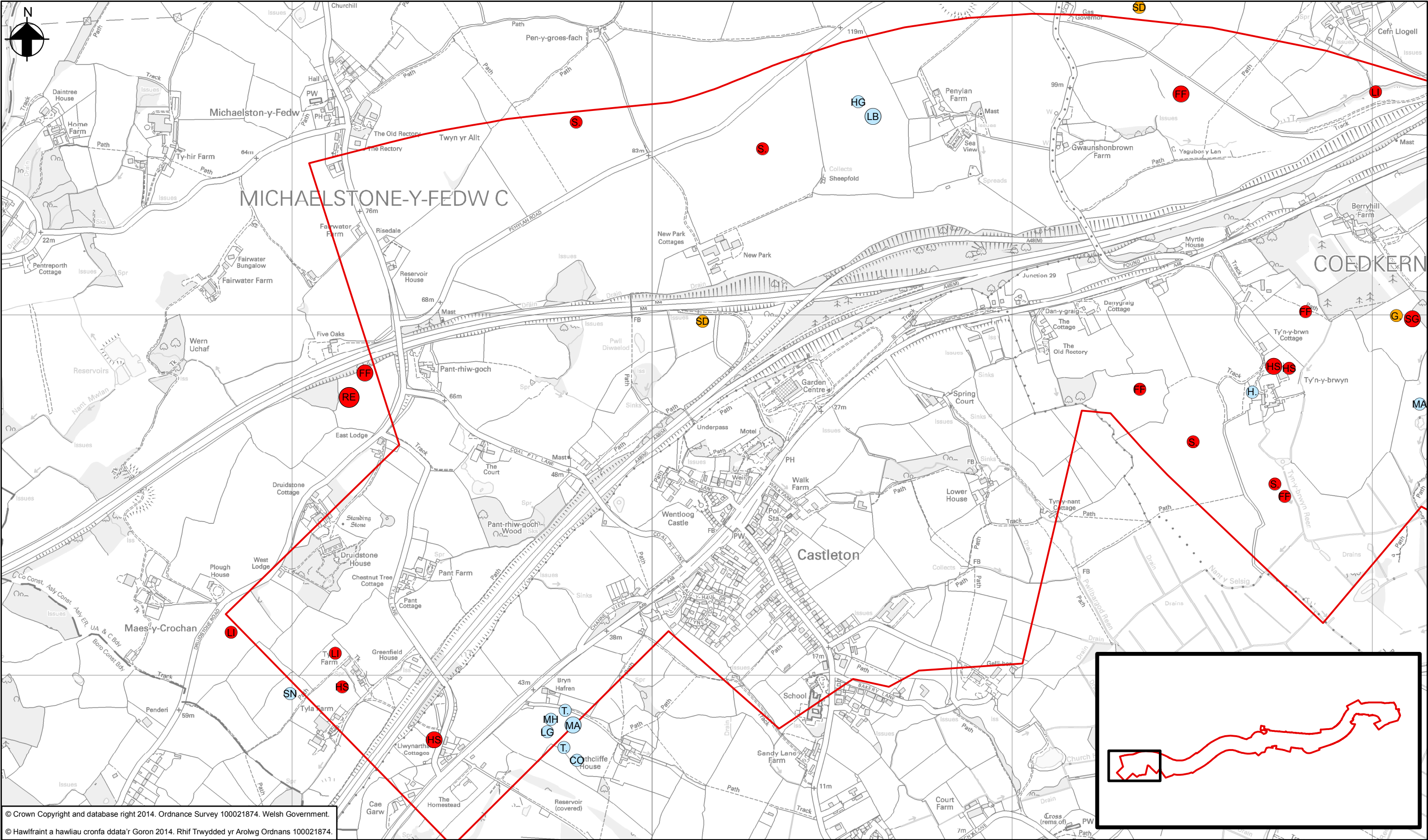
**Figure 9** – Curlew and Shelduck Vantage Point Flightlines (Plan 9)

**Figure 10** – Lapwing and Little Egret Vantage Point Flightlines (Plan 10)

**Figure 11** – Mallard Vantage Point Flightlines (Plan 11)

**Figure 12** – Other Waterbird Vantage Point Flightlines (Plan 12)

**Figure 13** – Raptor Vantage Point Flightlines (Plan 13)



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**Legend**

Study Area

**Bird Counts**

SPA and Ramsar Site Species

SSSI Species

BOCC Red Listed Species

BOCC Amber Listed Species

1 - 10 birds

10 - 50 birds

50 - 100 birds

100 - 500 birds

500 - 1000 birds

BZ : Buzzard

C. : Carrion Crow

CG : Canada Goose

CO : Coot

FF : Fieldfare

G. : Green Woodpecker

GL : Grey Wagtail

H. : Grey Heron

HS : House Sparrow

JD : Jackdaw

LB : Lesser Black-backed Gull

LG : Little Grebe

LI : Linnet

MA : Mallard

MH : Moorhen

RE : Redwing

RG : Raven

HS : House Sparrow

SD : Stock Dove

SK : Siskin

SN : Snipe

T. : Teal

F1	2014-07-08	SJ	PW	HP
For Issue				
Issue	Date	By	Chkd	Appd

Client

Llywodraeth Cymru  
Welsh Government

Transport Department for Economy, Science and Transport  
Welsh Government  
Cathays Park  
Cardiff  
CF10 3NQ

Trafnidiaeth  
Adran Economi, Gwyddoniaeth a Thrafnidiaeth  
Llywodraeth Cymru  
Parc Cathays  
Caerdydd  
CF10 3NQ

Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres

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Scale at A3

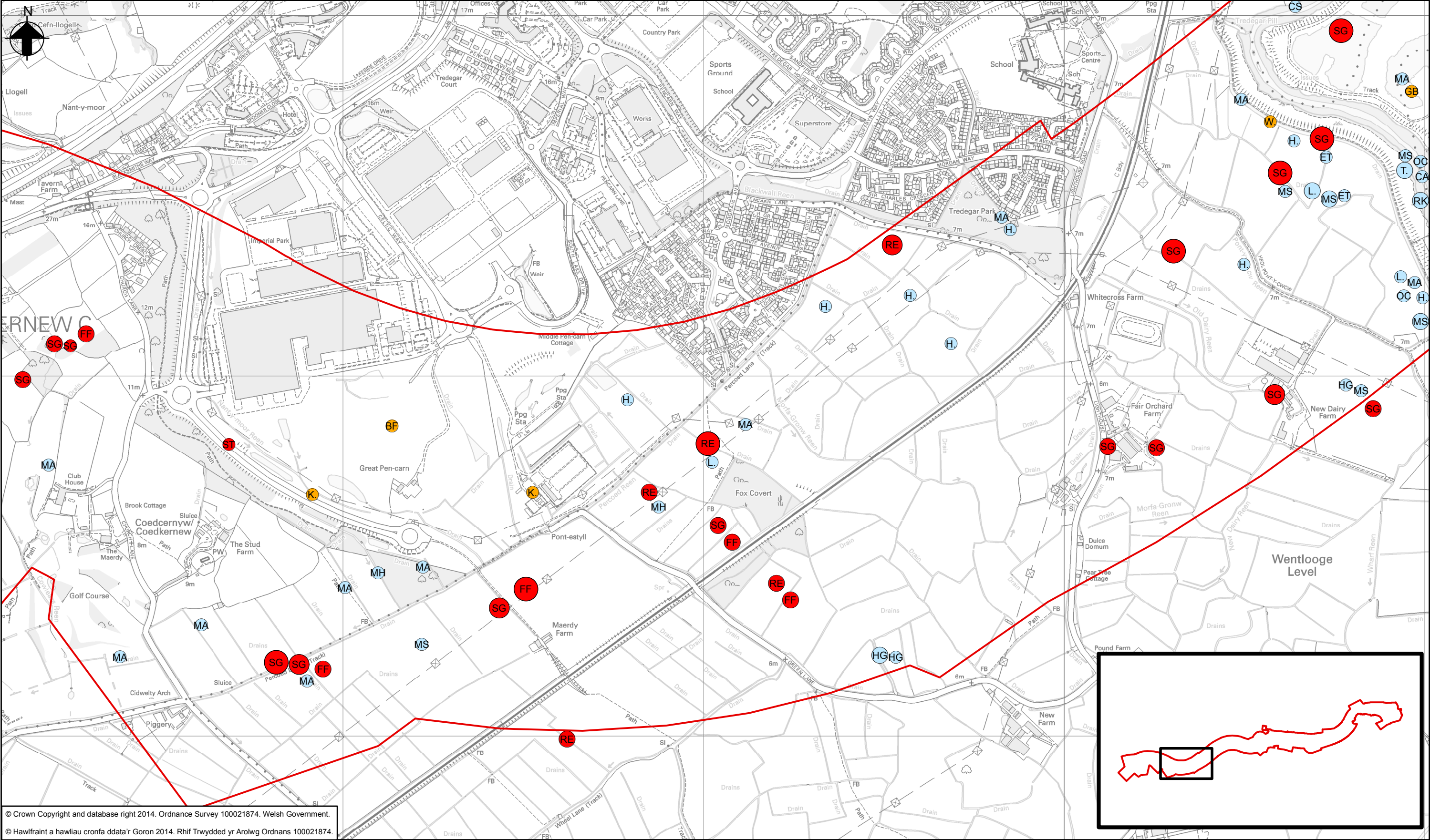
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Drawing Title

**Wintering Bird Survey Report 2014  
Species Status and Counts  
Plan 1**

Job No	Drawing Status
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Drawing No	Issue
<b>M4-OA-01-02-DR-Z-WB-0001</b>	<b>F1</b>





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**Legend**

Study Area

● SPA and Ramsar Site Species

● SSSI Species

● BOCC Red Listed Species

● BOCC Amber Listed Species

**Bird Counts**

1 - 10 birds

10 - 50 birds


50 - 100 birds

100 - 500 birds

500 - 1000 birds

BF : Bullfinch	backed Gull	RK : Redshank		
BZ : Buzzard	H. : Grey Heron	RN : Raven		
CA : Cormorant	J. : Jay	SG : Starling		
CS : Common Sandpiper	K. : Kestrel	SH : Sparrowhawk		
ET : Little Egret	L. : Lapwing	SK : Siskin		
FF : Fieldfare	MA : Mallard	ST : Song Thrush		
G. : Green Woodpecker	MH : Moorhen	T. Teal		
GB : Great Black-	MS : Mute Swan	W. Wheatear		
	OC : Oystercatcher	SH : Sparrowhawk		
	RE : Redwing	SK : Siskin		
F1	2014-07-08	SJ	PW	HP
For Issue				
Issue	Date	By	Chkd	Appd

Client



Llywodraeth Cymru  
Welsh Government

Transport  
Department for Economy, Science and  
Transport  
Welsh Government  
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Cardiff  
CF10 3NQ

Trafnidiaeth  
Adran Economi, Gwyddoniaeth a  
Thrafnidiaeth  
Llywodraeth Cymru  
Parc Cathays  
Caerdydd  
CF10 3NQ

Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres

0 62.5 125 250

Scale at A3

**1:10,000**

**ARUP**

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Drawing Title

**Wintering Bird Survey Report 2014  
Species Status and Counts  
Plan 2**

Job No

**117300-01**

Drawing Status

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Drawing No

**M4-OA-01-02-DR-Z-WB-0002**

Issue

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11

## Bird Counts

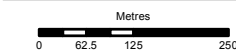
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For Issue				
Issue	Date	By	Chkd	Appd

Transport  
Department for Economy, Science and  
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Trafnidiaeth  
Adran Economi, Gwyddoniaeth a  
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### Coridor yr M4 o amgylch Casnewydd



Scale at A3  
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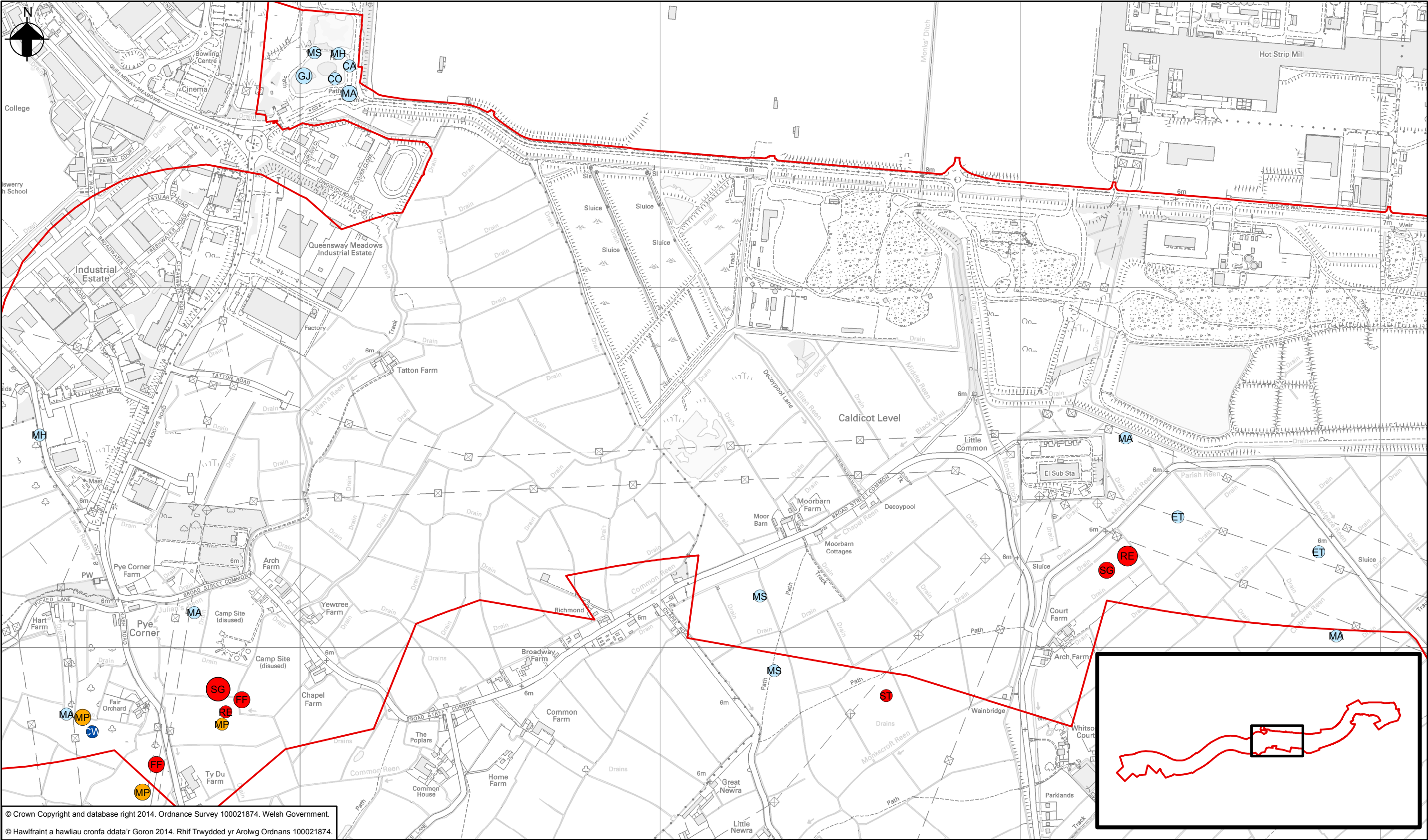
### Species Status and Counts

#### Plan 3

Drawing Status  
**For Issue**

Issue	F1
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**Legend**

Study Area

SPA and Ramsar Site Species

SSSI Species

BOCC Red Listed Species

BOCC Amber Listed Species

**Bird Counts**

1 - 10 birds

10 - 50 birds

50 - 100 birds

100 - 500 birds

500 - 1000 birds

BZ : Buzzard  
CA : Cormorant  
CD : Collared Dove  
CG : Canada Goose  
CO : Coot  
CW : Cetti's Warbler  
ET : Little Egret

FF : Fieldfare  
GJ : Greylag Goose  
MA : Mallard  
MH : Moorhen  
MP : Meadow Pipit  
MS : Mute Swan  
RE : Redwing  
SG : Starling  
ST : Song Thrush

F1	2014-07-08	SJ	PW	HP
For Issue				
Issue	Date	By	Chkd	Appd

Client

Llywodraeth Cymru  
Welsh Government

Transport  
Department for Economy, Science and Transport  
Welsh Government  
Cathays Park  
Cardiff  
CF10 3NQ

Trafnidiaeth  
Adran Economi, Gwyddoniaeth a Thrafnidiaeth  
Llywodraeth Cymru  
Perc Cathays  
Caerdydd  
CF10 3NQ

Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres

0 62.5 125 250

Scale at A3

**1:10,000**

Drawing Title

**Wintering Bird Survey Report 2014  
Species Status and Counts  
Plan 4**

Job No	Drawing Status
<b>117300-01</b>	<b>For Issue</b>
Drawing No	Issue
<b>M4-OA-01-02-DR-Z-WB-0004</b>	<b>F1</b>





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### Legend

 Study Area

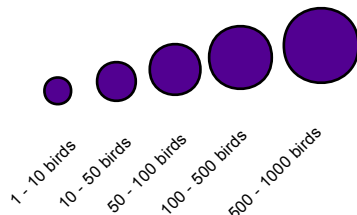
● SPA and Ramsar Site Species

● SSSI Species

 BOCC Red Listed Species

 BOCC Amber Listed Species

## Bird Counts



BH : Black-headed L. : Lapwing	SG : Starling
Gull	LB : Lesser Black-backed Gull
BZ : Buzzard	ST : Song Thrush
CM : Common	T. Teal
Gull	LG : Little Grebe
FF : Fieldfare	LI : Linnet
GA : Gadwall	M. : Listle Thrush
H. : Grey Heron	MA : Mallard
HS : House	MH : Moorhen
Sparrow	MS : Mute Swan
	RE : Redwing

F1	2014-07-08	SJ	PW	HP
For Issue				
Issue	Date	By	Chkd	Appd

Client



Llywodraeth Cymru  
Welsh Government

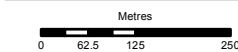
Transport  
Department for Economy, Science and  
Transport  
Welsh Government  
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Cardiff  
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Trafnidiaeth  
Adran Economi, Gwyddoniaeth a  
Thrafnidiaeth  
Llywodraeth Cymru  
Parc Cathays  
Caerdydd  
CF10 3NQ

Job Title

## M4 Corridor Around Newport

### Coridor yr M4 o amgylch Casnewydd



Scale at A3  
**1:10,000**

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[www.arup.com](http://www.arup.com)

Drawing Title

# Wintering Bird Survey Report 2014

## Species Status and Counts

### Plan 5

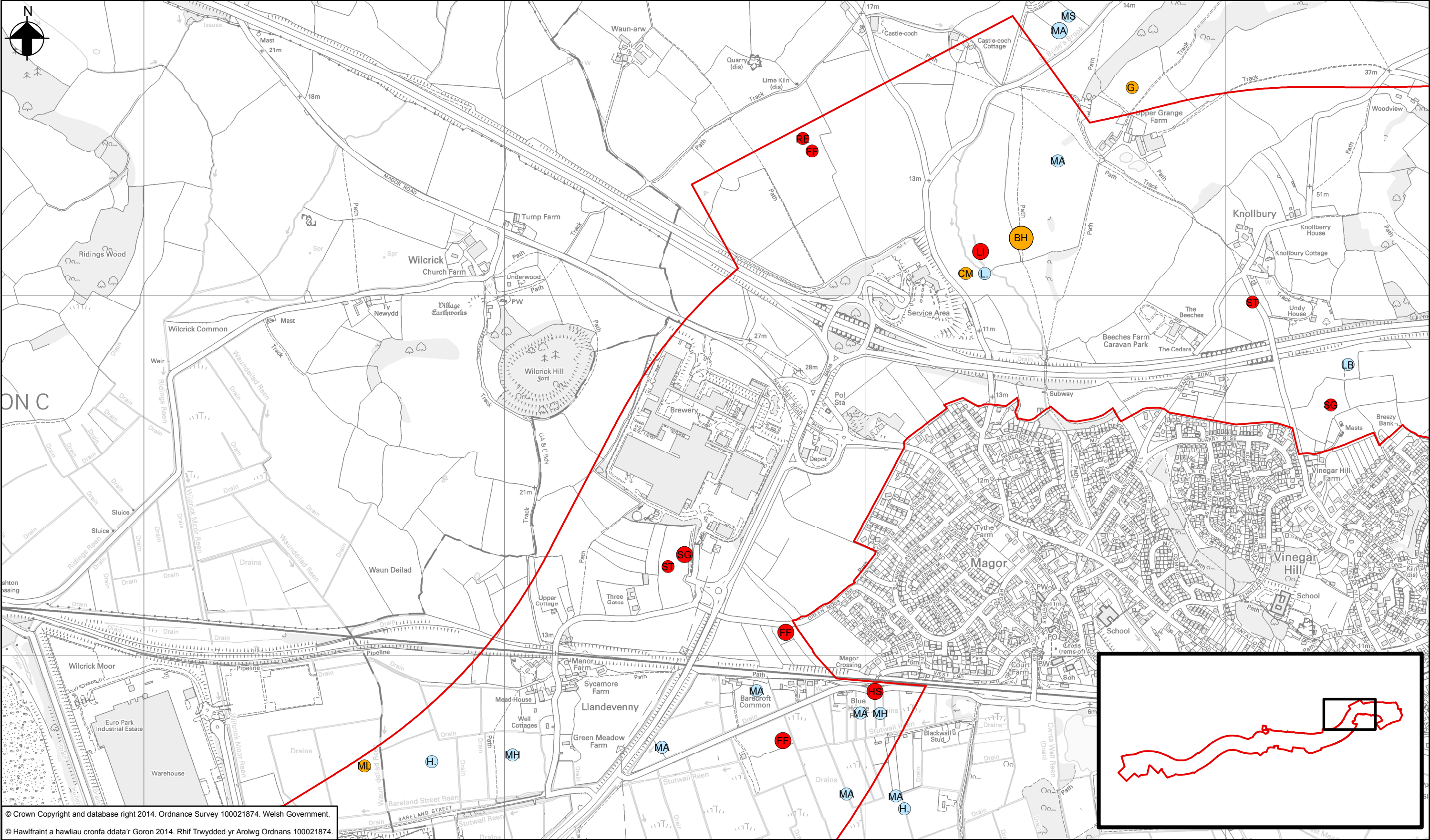
Job No  
**117300-01**

Drawing Status  
**For Issue**

Drawing No  
**M4-OA-01-02-DR-Z-WB-0005**

Issue	F1
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**Legend**

Study Area

**Bird Counts**

1 - 10 birds

10 - 50 birds

50 - 100 birds

100 - 500 birds

500 - 1000 birds

SPA and Ramsar Site Species

SSSI Species

BOCC Red Listed Species

BOCC Amber Listed Species

BH : Black-headed Gull

BZ : Buzzard

CM : Cormorant

FF : Fieldfare

GA : Gadwall

H : Grey Heron

HS : House Sparrow

L : Lapwing

LB : Lesser Black-backed Gull

LG : Little Grebe

LI : Linnet

M : Mistle Thrush

MA : Mallard

MH : Moorhen

ML : Merlin

MS : Mute Swan

RE : Redwing

RN : Raven

RO : Rook

SG : Starling

ST : Song Thrush

F1

2014-07-08

SJ

PW

HP

For Issue

Issue

Date

By

Chkd

Appd

Llywodraeth Cymru

Welsh Government

Client

Transport Department for Economy, Science and Transport

Welsh Government

Cathays Park

Cardiff

CF10 3NQ

Trafnidiaeth

Adran Economi, Gwyddoniaeth a Thrafnidiaeth

Llywodraeth Cymru

Parc Cathays

Caerdydd

CF10 3NQ

Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres

0 62.5 125 250

Scale at A3

**1:10,000**

Drawing Title

**Wintering Bird Survey Report 2014**

**Species Status and Counts**

**Plan 6**

Job No

**117300-01**

Drawing Status

**For Issue**

Drawing No

**M4-OA-01-02-DR-Z-WB-0006**

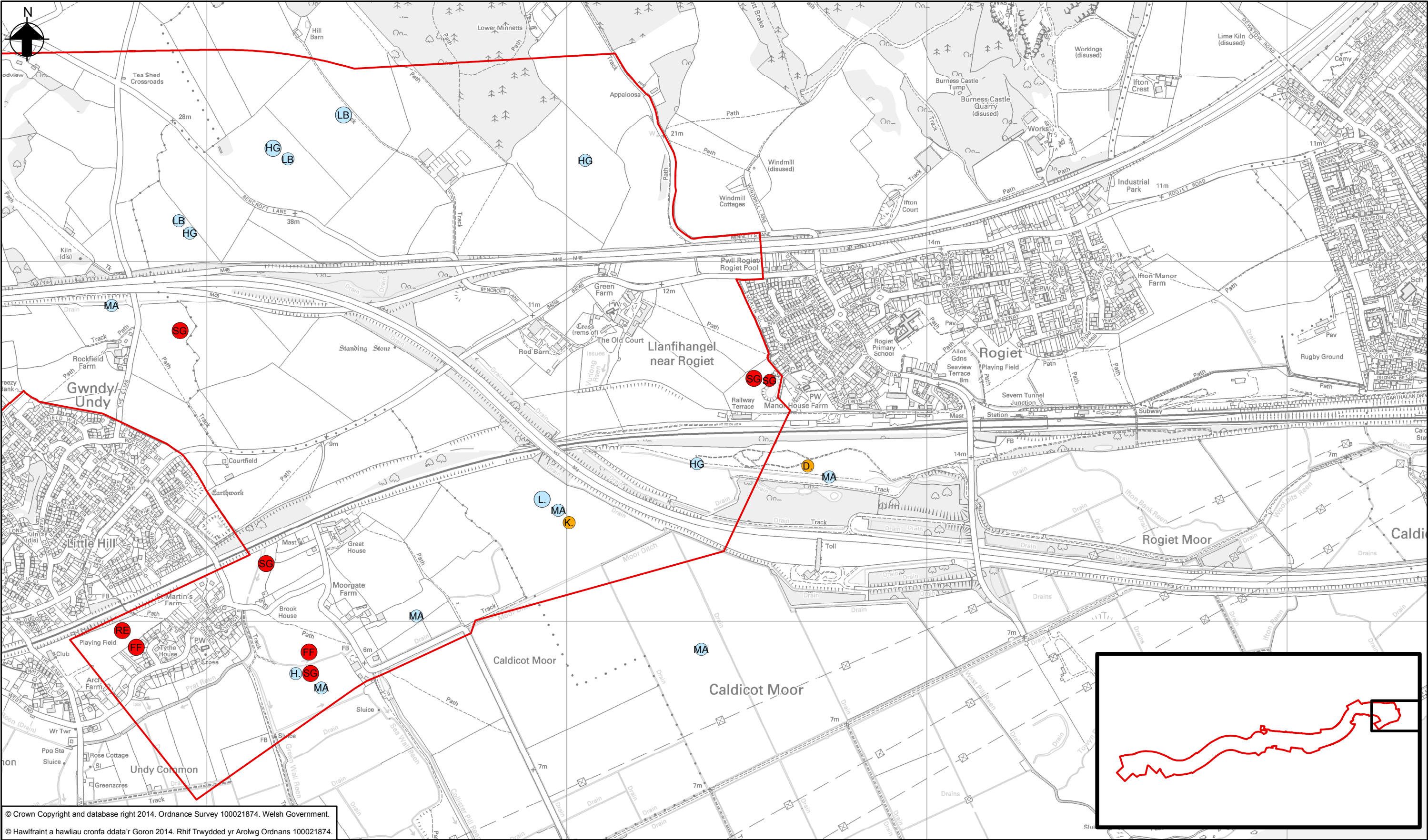
Issue

**F1**

I:\global\Europe\Cardiff\Jobs\117000\117300-014 Internal Project Data\4-80 GIS\4-84 Map Documents\ENV\_Environment\Ecology\Survey results\WBS\_10K.mxd

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**Legend**

Study Area

SPA and Ramsar Site Species

SSSI Species

BOCC Red Listed Species

BOCC Amber Listed Species

**Bird Counts**

1 - 10 birds

10 - 50 birds

50 - 100 birds

100 - 500 birds

500 - 1000 birds

B. : Blackbird	H. : Grey Heron	R. : Robin		
BC : Blackcap	HG : Herring Gull	RE : Redwing		
BT : Blue Tit	JD : Jackdaw	RN : Raven		
BZ : Buzzard	K. : Kestrel	RO : Rook		
C. : Carrion Crow	L. : Lapwing	SG : Starling		
CC : Chiffchaff	LB : Lesser Black-backed Gull	WP : Woodpigeon		
D. : Dunnock	MA : Mallard	WR : Wren		
FF : Fieldfare	MG : Magpie			
GO : Goldfinch	PW : Pied Wagtail			
GR : Greenfinch				
F1	2014-07-08	SJ	PW	HP
For Issue				
Issue	Date	By	Chkd	Appd

Client

Llywodraeth Cymru  
Welsh Government

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Adran Economi, Gwyddoniaeth a  
Thrafnidiaeth  
Llywodraeth Cymru  
Perc Cathays  
Caerdydd  
CF10 3NQ

Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres  
0 62.5 125 250

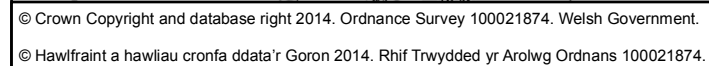
Scale at A3

**1:10,000**




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Drawing Title	
<b>Wintering Bird Survey Report 2014 Species Status and Counts Plan 7</b>	
Job No	Drawing Status
<b>117300-01</b>	<b>For Issue</b>
Drawing No	Issue
<b>M4-OA-01-02-DR-Z-WB-0007</b>	<b>F1</b>






**Average Flight Height**

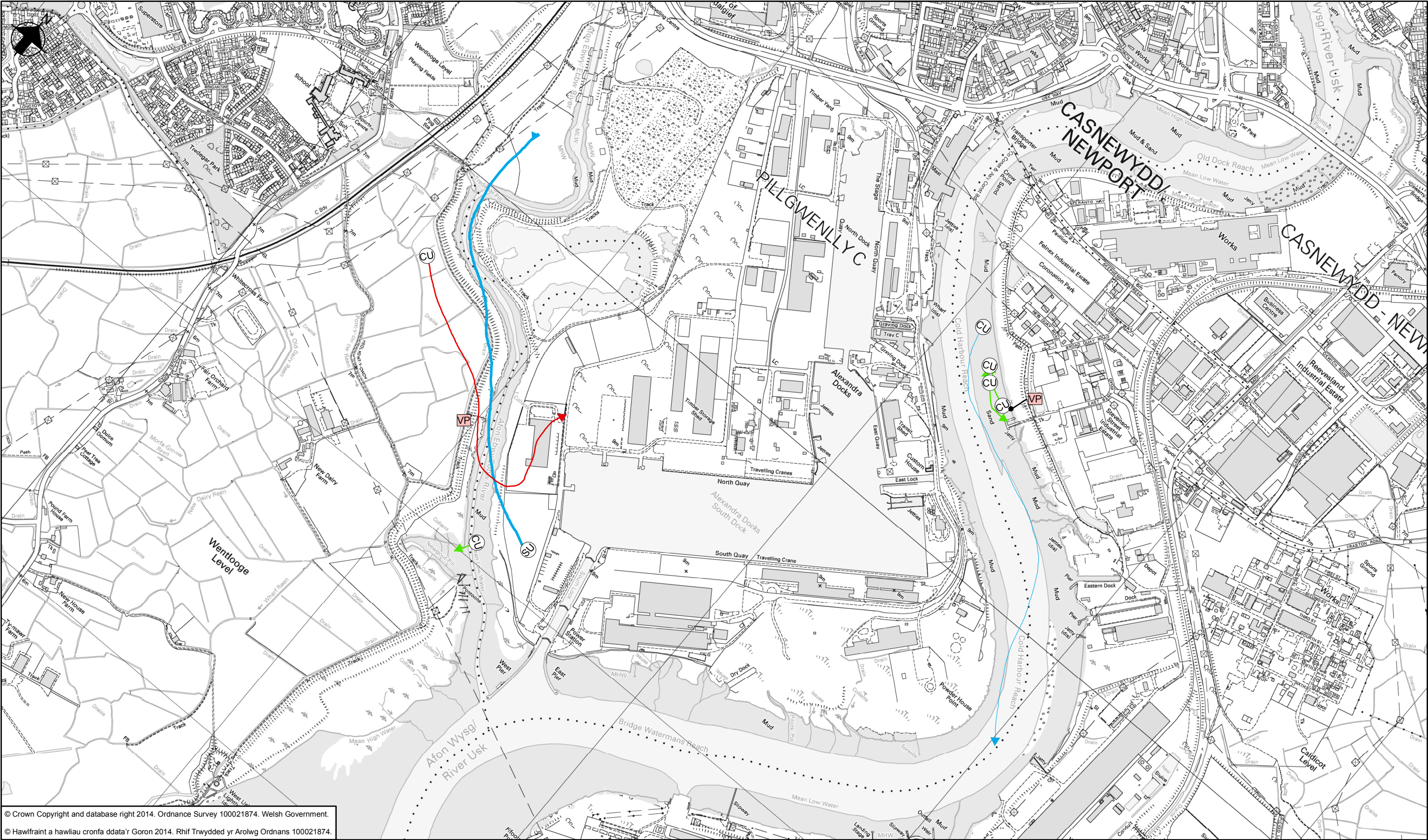
-  < 20m
-  20 - 100m
-  >100m

**VP** Vantage Point Locations

 Roost Locations

Issue	F1
-------	----





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**Legend**

**Line Width**

- Single Bird
- 2 Birds
- 2 - 10 Birds
- 10 - 50 Birds
- 50 - 100 Birds
- > 100 Birds

**Average Flight Height**


- < 20m
- 20 - 100m
- >100m

**Vantage Point Locations**

VP

CU : Curlew  
SU : Shelduck

Client

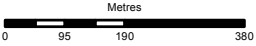


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Welsh Government

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Thrafnidiaeth  
Llywodraeth Cymru  
Parc Cathays  
Caerdydd  
CF10 3NQ

Job Title  
**M4 Corridor Around Newport**  
**Coridor yr M4 o amgylch Casnewydd**



Scale at A3  
**1:12,000**

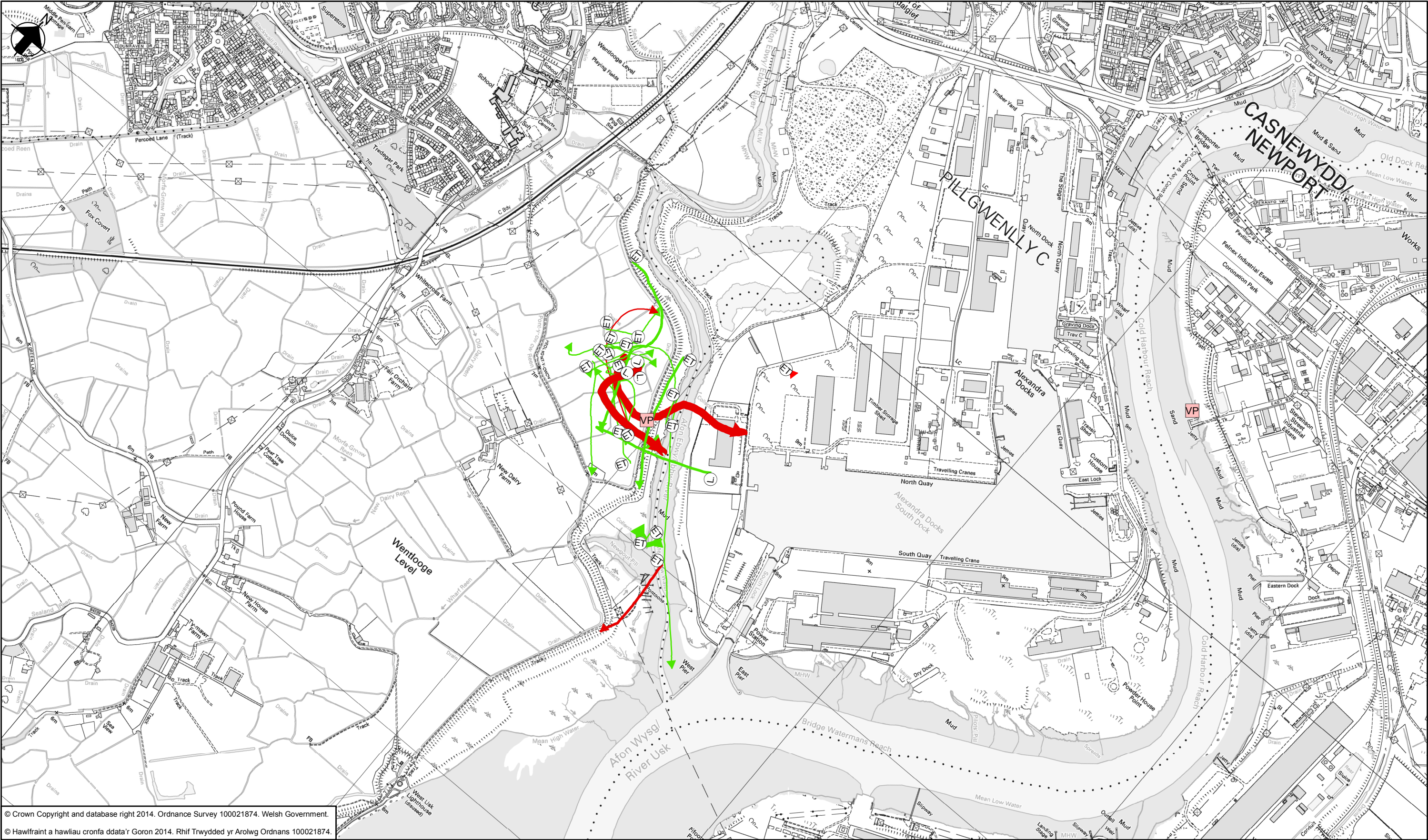
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Drawing Title  
**Wintering Bird Survey Report 2014**  
**Curlew & Shelduck Vantage Point Flightlines**  
**Plan 9**

Job No <b>117300-01</b>	Drawing Status <b>For Issue</b>
Drawing No <b>M4-OA-01-02-DR-Z-WB-0009</b>	Issue <b>F1</b>





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**Legend**

**Line Width**

- Single Bird
- 2 Birds
- 2 - 10 Birds
- 10 - 50 Birds
- 50 - 100 Birds
- > 100 Birds

**Average Flight Height**


- < 20m
- 20 - 100m
- > 100m

**VP** Vantage Point Locations

L : Lapwing  
ET : Little Egret

F1	2014-07-08	JE	TS	PW
For Issue				
Issue	Date	By	Chkd	Appd

Client



Llywodraeth Cymru  
Welsh Government

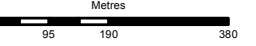
Transport  
Department for Economy, Science and  
Transport  
Welsh Government  
Cathays Park  
Cardiff  
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Trafnidiaeth  
Adran Economi, Gwyddoniaeth a  
Thrafnidiaeth  
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Caerdydd  
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Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**



Metres

Scale at A3

**1:12,000**

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Drawing Title

**Wintering Bird Survey Report 2014  
Lapwing & Little Egret Vantage Point Flightlines  
Plan 10**

Job No

**117300-01**

Drawing Status

**For Issue**

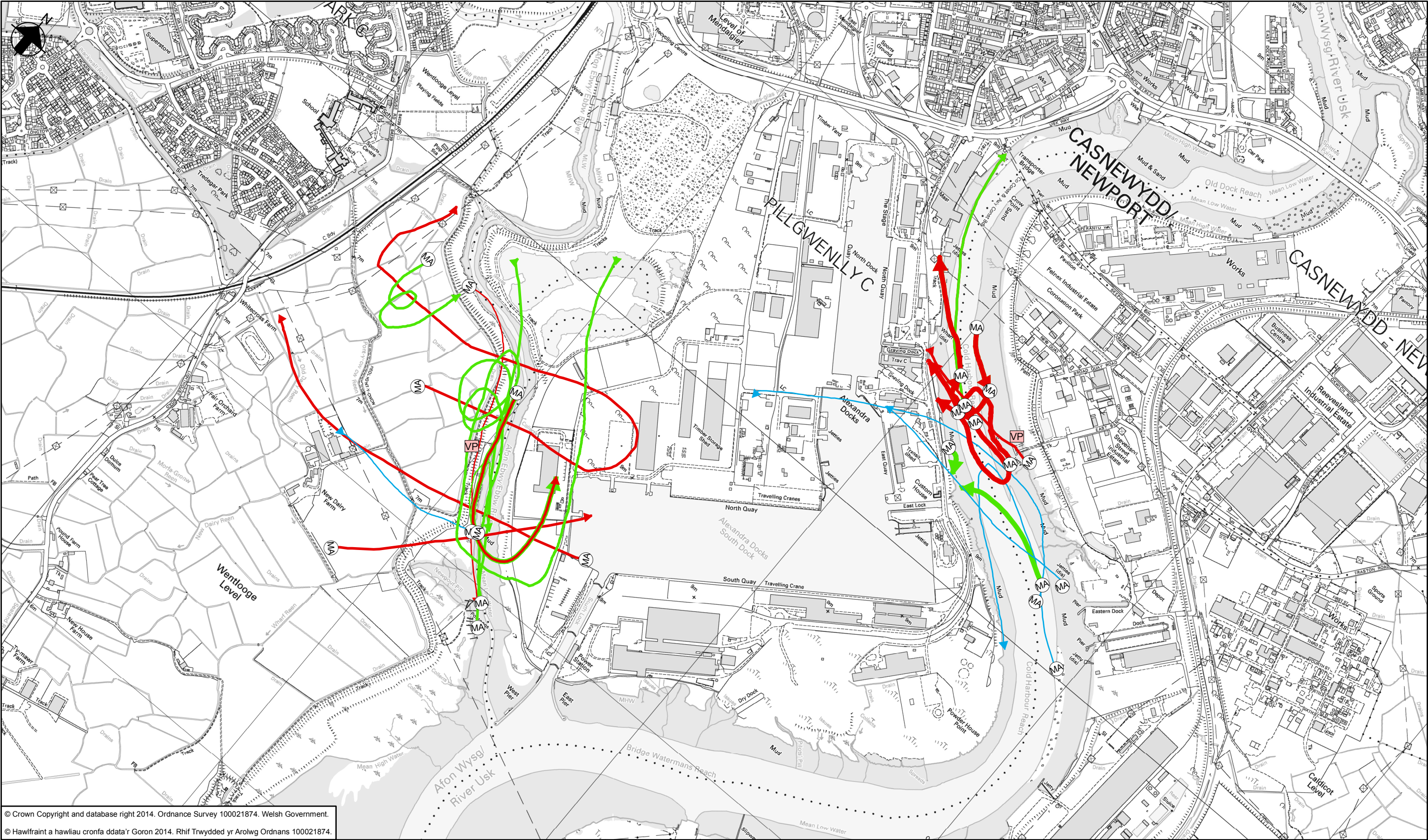
Drawing No

**M4-OA-01-02-DR-Z-WB-0010**

Issue

**F1**





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**Legend**

**Line Width**

- Single Bird
- 2 Birds
- 2 - 10 Birds
- 10 - 50 Birds
- 50 - 100 Birds
- > 100 Birds

**Average Flight Height**

- < 20m
- 20 - 100m
- > 100m

**VP** Vantage Point Locations

MA : Mallard

F1	2014-07-08	JE	TS	PW
For Issue				
Issue	Date	By	Chkd	Appd

Client

Llywodraeth Cymru  
Welsh Government

Transport  
Department for Economy, Science and  
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Welsh Government  
Cathays Park  
Cardiff  
CF10 3NQ

Trafnidiaeth  
Adran Economi, Gwyddoniaeth a  
Thrafnidiaeth  
Llywodraeth Cymru  
Perc Cathays  
Caerdydd  
CF10 3NQ

Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres  
0 95 190 380

Scale at A3

**1:12,000**

**ARUP**

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Drawing Title

**Wintering Bird Survey Report 2014  
Mallard Vantage Point Flightlines  
Plan 11**

Job No

**117300-01**

Drawing Status

**For Issue**

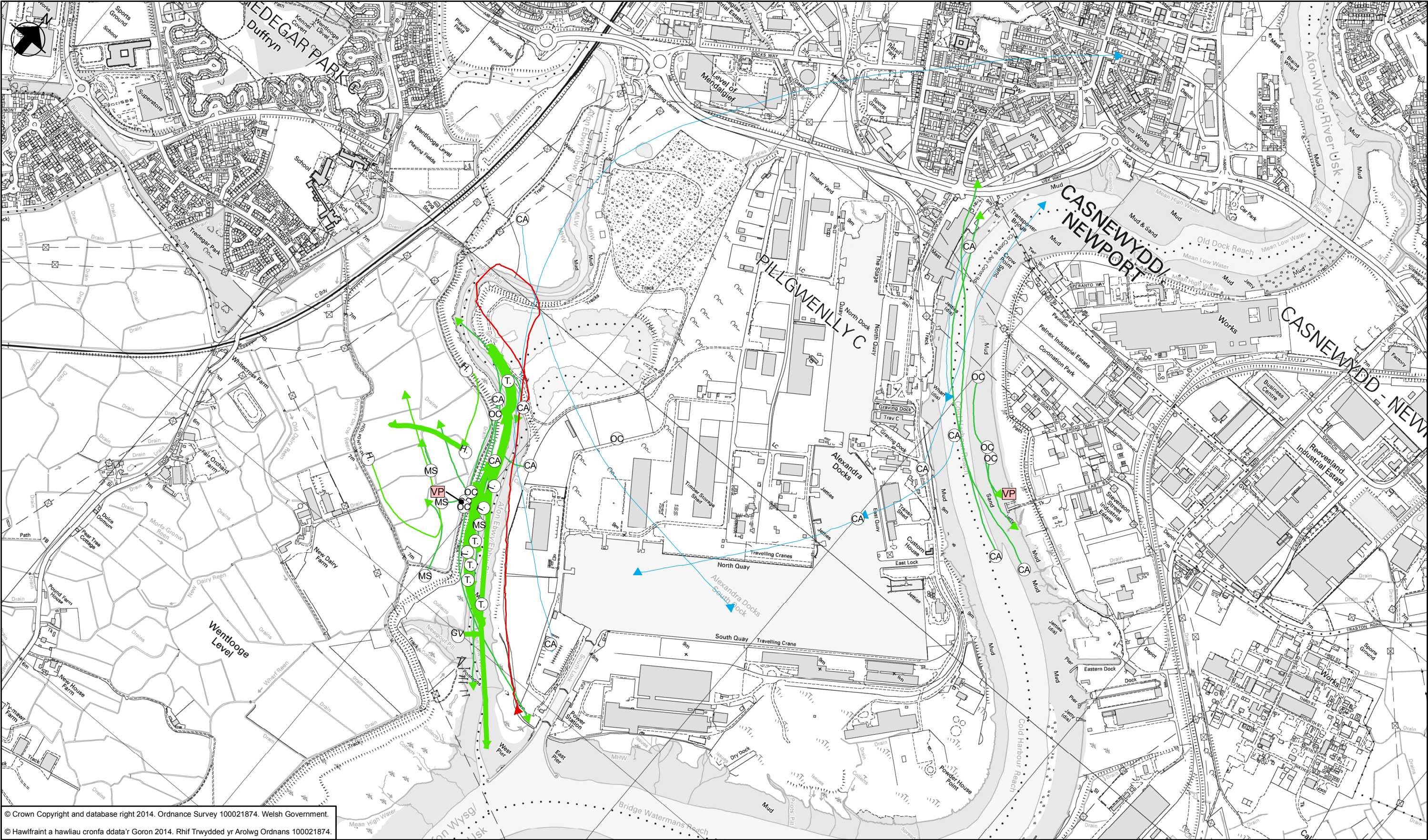
Drawing No

**M4-OA-01-02-DR-Z-WB-0011**

Issue

**F1**





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**Legend**

**Line Width**

Single Bird

2 Birds

2 - 10 Birds

10 - 50 Birds

50 - 100 Birds

> 100 Birds

**Average Flight Height**

< 20m

20 - 100m

>100m

**Vantage Point Locations**

VP

Vantage Point Locations

**CA : Cormorant**

**GV : Grey Plover**


**H : Grey Heron**

**MS : Mute Swan**

**OC : Oystercatcher**

**T : Teal**

F1	2014-06-18	JE	TS	PW
For Issue				
Issue	Date	By	Chkd	Appd



**Llywodraeth Cymru**  
**Welsh Government**

Client

Transport  
Department for Economy, Science and  
Transport  
Welsh Government  
Cathays Park  
Cardiff  
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Adran Economi, Gwyddoniaeth a  
Trafnidiaeth  
Llywodraeth Cymru  
Perc Cathays  
Caerdydd  
CF10 3NQ

**Job Title**

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres

0 95 190 380

Scale at A3

**1:12,000**

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**Drawing Title**

**Wintering Bird Survey Report 2014**  
**Other Waterbird Vantage Point Flightlines**  
**Plan 12**

**Job No**

**117300-01**

**Drawing Status**

**For Issue**

**Drawing No**

**M4-OA-01-02-DR-Z-WB-0012**

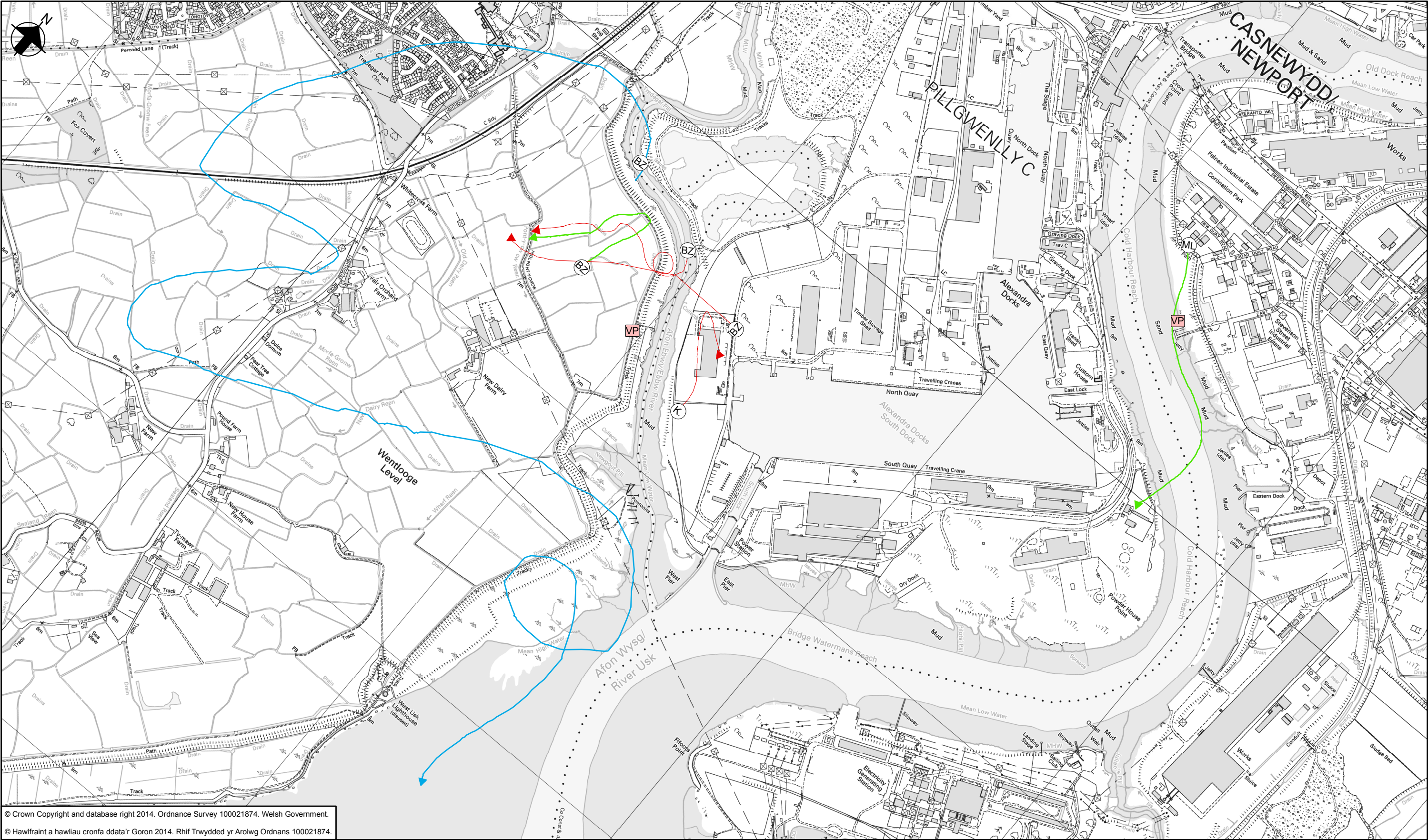
**Issue**

**F1**

\\global\europa\Cardiff\Jobs\117000\117300-014 Internal Project Data\4-80 GIS\4-84 Map Documents\ENV\_Environment\Ecology\Survey results\WBS\_Flightlines.mxd

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**Legend**

**Line Width**

- Single Bird
- 2 Birds
- 2 - 10 Birds
- 10 - 50 Birds
- 50 - 100 Birds
- > 100 Birds

**Average Flight Height**

- < 20m
- 20 - 100m
- >100m

**Vantage Point Locations**

VP

**BZ : Buzzard**  
**K : Kestrel**  
**ML : Merlin**

F1	2014-07-08	JE	TS	PW
For Issue				
Issue	Date	By	Chkd	Appd

Client

**Llywodraeth Cymru**  
**Welsh Government**

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Welsh Government  
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Cardiff  
CF10 3NQ

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Adran Economi, Gwyddoniaeth a  
Thrafnidiaeth  
Llywodraeth Cymru  
Perc Cathays  
Caerdydd  
CF10 3NQ

Job Title

**M4 Corridor Around Newport**

**Coridor yr M4 o amgylch Casnewydd**

Metres

Scale at A3

**1:12,000**

**ARUP**

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Drawing Title

**Wintering Bird Survey Report 2014**  
**Raptor Vantage Point Flightlines**  
**Plan 13**

Job No

**117300-01**

Drawing Status

**For Issue**

Drawing No

**M4-OA-01-02-DR-Z-WB-0013**

Issue

**F1**