

Appendix 9G

Wintering Birds Survey Reports

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**BORD NA MONA  
WINTER BIRD SURVEY  
2021-2022**

**DERRYARKIN BOG GROUP  
(DERRYARKIN, DRUMMAN,  
DERRYHINCH & BALLYBEG)**

**DRAFT REPORT**



*View of area out of recent commercial peat production, Ballybeg Bog, December 2021*

*Prepared for*

**Bord na Móna**

*by*

**BioSphere Environmental Services**

**29 La Touche Park, Greystones, Co. Wicklow**

**Tel: 01-2875249 / 087 2309906; E-mail: [maddenbio20@gmail.com](mailto:maddenbio20@gmail.com)**



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## **EXECUTIVE SUMMARY**

- A baseline study of wintering birds associated with Derryarkin Bog Group (comprising Derryarkin, Drumman, Derryhinch and Ballybeg bogs) was carried out between October 2021 and March 2022. For Derryarkin and Drumman, this followed winter bird surveys carried out at the two sites in the 2020/2021 winter, as well as in six of the previous winters since 2012/2013. For Derryhinch and Ballybeg bogs, previous winter surveys had been carried out in winters 2012/13 and 2013/14.
- Derryarkin bog comprises regenerating cutaway bog habitats, including extensive wetland habitats, regenerating bog and heath and developing scrub on cutaway. A Roadstone quarry and production facility occurs within the site and this includes a large quarry lake and sparsely vegetated areas of gravel.
- Drumman bog is a large site and includes a sector that is extensively used for quarrying. The Mongagh River flows through the central area of the site. The majority of the sector of Drumman bog to the south of the Mongagh River corridor has been in recent commercial production and still comprises mainly bare peat though there are developing areas of regenerating cutaway bog vegetation. An extensive area of regenerating cutaway bog occurs north of the Mongagh River. A large wetland area with ponds and standing water has been created in the northeast section. The gravel and sand extraction area to the south of the cutaway includes a quarry lake.
- Derryhinch Bog was until recently (January 2021) mostly in commercial production and much of the site is still largely bare or sparsely vegetated peat. A small mineral island is located in the mid-west section and is dominated by birch scrub. Further stands of birch dominated scrub occur in the extreme northwest corner of the site and along the south end of the eastern boundary. Fringe habitats found along the boundaries of the site include dry grassland and scrub. An area of cutover and remnant high bog occurs along the southern boundary (south of the railway).
- Ballybeg Bog is contiguous with Derryarkin bog to the north and Cavemount bog to the south. Ballybeg Bog is sharply divided into three main ecological units: the northern part which has been out of production for some time and is re-vegetating cutaway dominated by birch scrub, the southern part which has been in recent commercial industrial production and is still largely bare peat, and the small southern outlier of largely intact raised bog, known as Coole bog.
- The study included a desk review and consultations with relevant agencies, namely National Parks & Wildlife Service, BirdWatch Ireland and the Irish Peatland Conservation Council. Field methods employed were a combination of transect surveys, vantage point watches (following method of Scottish Natural Heritage 2017) and focused surveys for wetland birds and especially swans.
- The bog sites are not part of any designated area for nature conservation.
- A review of past bird information relating to the study area concluded that generally there is very little past information available that is specific to the Bord na Móna bogs

in the study area.

- Brief descriptions of the four bog sites are given, followed by details of target species recorded, the potential for other target species, details of other species of note recorded and an overview of the value of the site for wintering birds. Maps showing locations of sampling transects and vantage points, plus flight lines of target species, are presented.
- For **Derryarkin Bog** the principal interest is the wintering population of Whooper Swans, which peaked at 102 in January 2022. While the swans feed principally on improved grassland in fields adjoining the Bord na Móna bog site, they do at times feed on regenerating wet bog and, importantly, roost within the Bord na Móna site at night (mainly on quarry lake but also at times on flooded bog). From the survey data, including the winter surveys since 2012/13, it is considered that the Whooper population is of county or regional importance. The site also supports wintering Golden Plover and Lapwing – again, these species are attracted largely to the agricultural fields which adjoin the bog site but at times use the bog for roosting purposes. Hen Harrier uses the site in winter for foraging purposes though was recorded only once in winter 2021/22. Peregrine is regular over the site during winter (nests on a man-made structure on site). As in previous winters, Little Egret was an occasional visitor to the site in winter 2021/22. Derryarkin supports a range of other species of conservation interest. Kestrel and Snipe, both Red-listed, are regular on site during winter, along with Meadow Pipit, with Woodcock localised. Amber-listed species recorded on site included Mute Swan, Teal, Tufted Duck, Lesser Black-backed Gull, Skylark (scarce), Starling and Linnet. On the basis of an important and regular population of Whooper Swan, and also usage on a regular basis by Hen Harrier (and in some winters Merlin), as well as by wetland species such as Golden Plover and Lapwing, plus a range of other Red and Amber listed species, it is recommended from the now eight winters of survey that a rating of at least **County Importance** is considered appropriate for wintering birds at Derryarkin Bog.
- The surveys over the eight winters of survey have shown that **Drumman Bog** is used occasionally as a feeding and/or roost site by small numbers of Whooper Swans and that small parties at times pass over the site. Of particular note is the Mute Swan population, which is largely resident on site, and peaked at 138 in December 2021. Other wetland birds are fairly scarce, with occasional flocks of Lapwing and Golden Plover landing within the site though both these species regularly pass over the site. while Teal, Water Rail and Snipe are also present. A notable flock of Tufted Duck was present on site through much of the winter, with a peak count of 163 in February 2022. Drumman provides good foraging habitat for raptors, with Hen Harrier, Merlin, Peregrine, Kestrel, Sparrowhawk and Buzzard all recorded during winter. The site supports a range of other species of conservation interest. Meadow Pipit, Red-listed on basis of breeding population, occurs throughout much of the site during winter. Further Amber listed species recorded on site included Teal, Skylark, Starling and Linnet. On the basis of the occurrence of some wetland bird species (inc. Annex I listed Golden Plover) and fairly regular usage by Hen Harrier, Merlin and Kestrel, plus a range of other Red and Amber listed species, it is recommended from the seven winters of surveying that a rating of **County Importance** is considered appropriate for wintering birds at Drumman Bog.
- **Derryhinch Bog** is in an early stage of re-vegetation and has relatively low potential

for wintering birds. However, Golden Plover was recorded over the site, with birds landed on bare peat on several occasions. Snipe occurs in small numbers on site. The site provides useful habitat for various bird of prey species and especially Kestrel (Red listed) and Buzzard. Species such as Hen Harrier and Merlin could be expected to pass through the site at times. Meadow Pipit, Red-listed on basis of breeding population, occurs throughout much of the site during winter. The Red-listed Redwing is regular in area during winter and at times occurs within the site. Amber-listed species recorded on site included Skylark, Goldcrest, Starling and Linnet. On the basis of the occurrence of some wetland bird species (inc. Annex I listed Golden Plover) and fairly regular usage by bird of prey species, it is recommended from the 2021/22 winter survey that a rating of **Local Importance (higher value)** is appropriate for wintering birds at Derryhinch Bog.

- **Ballybeg Bog** is characterised by various types of habitats, with (i) well re-vegetated cutaway bog dominated by scrub, (ii) mostly bare peat from recent commercial production (now ceased), and (iii) a small area of fairly intact high bog (Coole Bog). Both Whooper Swan and Mute Swan were recorded passing over the site, presumably commuting between Derryarkin and Cavemount to the south. Golden Plover was recorded landed on bare peat on two occasions, as well as birds flying over the site. Lapwing was also recorded passing over the site. Snipe (Red-listed) occurs within the site though mostly in small numbers. The site provides useful habitat for various bird of prey species and especially Kestrel (Red listed), Sparrowhawk and Buzzard. Merlin was recorded on site in winter 2021/22, while Hen Harrier would be expected at times and Peregrine may hunt over the site. Meadow Pipit, Red-listed on basis of breeding population, occurs throughout much of the site during winter. The Red-listed Redwing is regular in area during winter and at times occurs within the site. Amber-listed species recorded on site included Skylark, Goldcrest, Starling and Linnet. On the basis of the occurrence of some wetland bird species (inc. Annex I listed Golden Plover and Merlin) and fairly regular usage by bird of prey species, it is recommended from the 2021/22 winter survey that a rating of **Local Importance (higher value)** is appropriate for wintering birds at Ballybeg Bog.

## **1.0 INTRODUCTION**

Bord na Móna is considering using some of its bogs in the midlands for wind farm development and has carried out some high level assessment of the suitability of various sites for this purpose.

As part of the planning work, Bord na Móna had commissioned baseline surveys of wintering birds on the Derryarkin Bog Group (comprising Derryarkin, Drumman, Ballybeg and Derryhinch bogs).

For Derryarkin and Drumman bogs, winter surveys were carried out in 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2018/19 and 2020/21 (project reports prepared by BES 2013, 2014, 2015, 2016, 2017, 2019, 2021).

For Ballybeg and Derryhinch bogs, winter surveys were carried out in 2012/13 and 2013/14 (project reports prepared by BES 2013, 2014).

These surveys will provide key baseline data in the assessment of the impact on birds of potential wind farm construction and operation.

To progress the above further, Bord na Móna issued a request for a bird study of the Derryarkin Bog Group (4 bog sites) in winter 2020/21.

A contract to carry out the required work was awarded to BioSphere Environmental Services in September 2021.

As with the previous winter surveys, key requirements of the study were as follows:

- Consult with appropriate bodies, such as NPWS and BWI, regarding sightings and any existing information on the site or surrounding area and discuss / agree appropriate methodologies in the context of the scale and nature of the sites
- provide GIS maps of features and sightings of interest
- provide a detailed recommended methodology for future bird surveys should the project proceed to EIS
- provide a description of the suitability of the habitats present for key species not recorded but which could potentially occur
- provide a summary of likely constraints with regard to the known bird community.

The present report considers the results of the 2021/22 surveys for the Derryarkin bog sites, with reference made to the earlier surveys.

## **2.0 SURVEY METHODS**

### **2.1 Desk Review and Consultations**

A thorough desk review had been carried out for available information for the sites in the Derryarkin Bog Group for the winter bird surveys starting in 2012/13.

Since then, the present writer is not aware of any additional sources of external information relating to the four Derryarkin Bog Group sites.

## **2.2 Field Surveys**

The tender documentation had noted the following points in respect of survey methodology:

- The Winter Bird Surveys should be undertaken between the months of October and March (i.e. 6 months) and should focus in particular on wintering waders, wildfowl - notably geese and swans, any winter Hen Harrier roosts, other raptors, Annex 1 species and birds of conservation interest.
- The survey should include all, or a selection of the following; focused wetlands surveys; transects; vantage point surveys; bog walks; roost watches; flight paths and migration studies; or other methodologies as appropriate.
- All vantage points (as described in the tender brief) should be surveyed to achieve or exceed the 36 hr observation duration required by the Vantage Point methodology (Scottish Natural Heritage, 2017).

The tender also noted that *‘adherence to approved methodologies is a key requirement of the project. However, given the scale and fragmented nature of the area to be surveyed, and the nature of the studies to be undertaken, a pragmatic approach is required. This must balance the detail required to be acceptable for a planning application for a wind farm project of very significant scale with the fact that much of the area is still utilised for industrial scale peat extraction or peat extraction has ceased only recently.’*

Taking the above into account, the following approach was taken at the sites:

### **2.2.1 Number of site visits**

Monthly site visits were made to all sites between October 2021 and March 2022 (i.e. 6 rounds of site visits).

### **2.2.2 Survey methods**

Use of the following methods was employed at the sites as relevant. However, transect surveys and vantage point watches were the main methods and a combination of these were used in all sites.

Surveys were carried out largely in suitable weather conditions, with avoidance of persistent rain, mist/fog and winds in excess of F4-5.

### **Transects surveys**

The use of transects to record birds within sites is a well-established survey method (Bibby *et al.* 2000). The method is particularly useful for open habitats such as peatlands. The value of the method is that it is repeatable over time, which is particularly relevant to the Bord na Móna cutaway bogs where habitat conditions are somewhat transient and bird communities can be expected to change over time in response to vegetation types present.

The transects selected typically followed identifiable tracks (inc. rail tracks) which made coverage quicker and also safer compared to across open bog. Further, tracks are often slightly elevated which makes recording more efficient. The number of transects used at each site was determined by the size of the site and the diversity of habitats present.

Bird recording is normally within a zone 200-300 m wide either side of the transect though the flat nature of the sites made larger sized or obvious birds (such as Golden Plover flocks) at further distances easily visible. Birds were recorded by sight (with aid of binoculars) and sound.

### **Vantage point surveys**

Vantage point surveys were carried out in accordance with the methodology used for assessing impacts of wind farms on bird communities published by Scottish Natural Heritage (2017). The purpose of these surveys was mainly to detect birds of prey and passing waterbirds (swans, geese, duck, waders etc.), though all birds observed during watches were recorded. At the Derryarkin bogs, the full duration of 36 hours of observations over the site during the winter period was achieved as required by the methodology.

A representative number of vantage points were established to provide views over large areas of the site and adjoining lands, with focus on expanses of habitats of potential value to wintering birds. The vantage points were positioned on elevated ground where feasible – these range from naturally higher ground (hillocks etc) to roads/embankments.

When a target species was sighted during a watch, the flightline was plotted onto a field map along with estimated flight height<sup>1</sup>, duration of observation and any other parameters such as age and gender of bird, behaviour of bird (e.g. hunting, flying, roosting) etc.

### **Focused surveys for wetland birds**

Search was made in the areas surrounding the bog site for potential wetland or grassland sites which could support wintering waterbirds.

#### **2.2.3 Target species**

The winter surveys were focused on the potential presence of the following groups of birds or species:

- Waterfowl, especially Whooper Swan and Greenland White-fronted Geese
- Waders, especially flocks of Golden Plover, Lapwing and Curlew
- Hen Harrier, Merlin and other birds of prey
- Any other Annex 1 species of EU Birds Directive
- Any Red or Amber listed species as given in Gilbert et al. 2021.

### **2.3 Survey Limitations**

Surveys following standard methods and within the recommended time frame were carried

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<sup>1</sup> While actual flight height of target species was estimated in field, values are given in the following bands in Appendix 2: 0-25 m; 25-175 m; >175 m

out at the Derryarkin bogs during the 2020/21 winter and hence there were no survey limitations.

However, bird populations can vary between years, mainly as a result of weather but also due to other factors such as breeding success, local disturbance at sites, etc. (see Crowe 2005). For instance, species such as Golden Plover and Lapwing are highly affected by cold weather events. Cold weather usually results in large-scale movements, particularly from their preferred inland feeding areas to the relatively ice-free coastline. Under more severe conditions, they may vacate Ireland altogether, possibly for France and Iberia. Whooper Swans may also be affected by severe cold weather and in the 2010 national census results were considered to be affected by the severe weather at the time, which resulted in flocks being widely dispersed and in locations where they had not previously been recorded as a result of the freezing-over of water bodies (Boland *et al.* 2010). It is therefore preferable to have more than one season's data in evaluating the importance of sites so as to dampen annual fluctuations in numbers (Crowe 2005). With baseline data available for each winter since 2012/13, the results of the present survey will provide a more robust assessment of the importance of the Derryarkin bogs for wintering birds.

## **2.4 Criteria for Evaluation of Ornithological Importance of Sites**

The importance of winter wetland bird populations is evaluated according to the standard 1% thresholds for national (all-Ireland) and international importance (see Crowe 2006, Boland & Crowe 2012, Delaney and Scott 2006).

Evaluation of sites may also be made on the basis of the presence of species listed in Annex I of the EU Birds Directive or species listed as 'Birds of Conservation Concern', either on the Red List (High conservation concern) or Amber List (Medium conservation concern) (after Gilbert *et al.* 2021). As evaluating sites due to the presence of such is not quantitative, a subjective assessment may need to be made – for instance, the regular presence within a site of a breeding pair of Peregrines (Annex I species) would be of more significance than the occasional record of hunting birds.

For an overall ecological assessment of the importance of a site, taking into account not just ornithological interests but also habitats, flora and other fauna types etc., reference is made to the NRA *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009). Whilst the NRA guidelines were devised specifically for road schemes, they can be applied to general environmental impact assessment. The NRA system uses the following five-point scale:

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

### **3.0 RESULTS AND DISCUSSION**

#### **3.1 Sites Designated for Nature Conservation**

No parts of the bog sites which are the subject of the present report are part of any site designated for nature conservation.

A list of designated sites within a distance of approximately 15 km of the study area is given below. These comprise Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs).

It is noted that apart from SPAs, these sites do not necessarily have ornithological interests though many would support some birds of conservation interest.

#### **Lough Ennell SPA (code 004040) and SAC (code 000685)**

Lough Ennell is a large, limestone lake. The lake is classified as a mesotrophic system by the EPA though it had been eutrophic in the past. The site is an SAC due to the presence of the Annex I habitat alkaline fen.

Lough Ennell is one of the most important midland lakes for wintering waterfowl, with nationally important populations of Mute Swan, Pochard, Tufted Duck and Coot. At times, the lake is utilised as a roost (with limited feeding) by the internationally important midland lakes population of Greenland White-fronted Goose (*c.*400 strong). The site also attracts Golden Plover (200) and Lapwing (673) though these species feed mainly outside of the SPA site.

Lough Ennell is located approximately 10 km to the north-west of Drumman and Derryarkin bogs.

#### **Raheenmore Bog SAC (code 000582)**

Raheenmore Bog is a classic example of a largely intact raised midland bog. It is located approximately 4 km southeast of Derryarkin bog.

The NPWS site synopsis notes the site is within the breeding territory of a pair of Merlin, and supports typical bogland birds such as Red Grouse and Snipe.

#### **Mount Hevey Bog SAC (code 002342)**

Mount Heavy Bog SAC is a good example of a mostly intact raised bog. It is located to the northeast of Kinnegad and approximately 11 km north east of Drumman Bog.

This site is not of known ornithological interest.

#### **Milltownpass Bog NHA (code 002323)**

This NHA is a fine example of a relatively intact raised bog. It is located approximately 3 km north of Drumman Bog.

This site is not of known ornithological interest.

#### **Molerick Bog NHA (code 001582)**

This NHA is a fine example of a relatively intact raised bog. It is located about 4 km west of Longwood and approximately 15 km northeast of Drumman Bog.

This site is not of known ornithological interest.

**Cloncrow Bog (New Forest) NHA (code 000677)**

This NHA, which is a fine example of a relatively intact raised bog, is located over 5 km west-northwest of Derryarkin.

The NHA is not of known ornithological interest.

**Black Castle Bog NHA (code 000570)**

This NHA is a good example of a relatively intact raised bog and is noted for its easterly location. It is located about 7 km east-southeast of Derryarkin bog.

This NHA site is not of known ornithological interest.

**Daingean Bog NHA (code 0002033)**

This NHA is a good example of a relatively intact raised bog. It is located about 9 km south west of Derryarkin bog.

This NHA site is not of known ornithological interest.

**Grand Canal pNHA (code 02104)**

The Grand Canal pNHA runs approximately 5 km to the south of Derryarkin.

The canal supports a wide range of ecological interests, including bird species such as Mute Swan, Moorhen, Mallard and Kingfisher.

**Royal Canal pNHA (code 02103)**

The Royal Canal pNHA passes approximately 7 km north of Drumman Bog.

The canal supports a wide range of ecological interests, including bird species such as Mute Swan, Moorhen, Mallard and Kingfisher.

**Murphy's Bridge Ridge Esker pNHA (code 01775)**

The pNHA is a good example of an esker ridge with calcareous grassland and supports the rare and protected hemp nettle. It is situated within about 8 km southwest of Derryarkin Bog.

This site is not of known ornithological interest.

### **3.2 Review of Past Data for Study Area**

Apart from a commissioned study of breeding birds at six bog sites, including Drumman Bog, in the Derrygreenagh/Ballydermot group by Dr Alex Copland (BirdWatch Ireland) in 2010 and 2011 (Copland 2010, 2011), and some general information on the two sites collated by

the Bord na Móna ecology team, there is no specific past reference to the birds of the Derryarkin bogs.

### **Bird Reports**

The recording catchment for the report *Birds in Central Ireland – Mid Shannon Bird Report* (edited by Stephen Heery) unfortunately is just on the western margin of the Derryarkin study area (report area extends east to a strip from Raheen Lough to Lough Ennel). Nevertheless, the report is a useful comparative source of information and does make reference to sites such as Lough Ennel and Raheenmore Bog, as well as occasional reference to Bord na Móna sites further east such as Ballycon bog. Issues of the report are available for the following periods: 1992-1995, 1996-1999, 2000-2003, 2004-2007, 2008-2011 and 2012-2016.

### **Other Sources of Information**

#### **NPWS**

The study area is covered by NPWS Conservation Ranger Mr Colm Malone. Colm has noted that NPWS would not have any specific bird information relating to the Derryarkin bog sites.

#### **Irish Peatland Conservation Council**

The IPCC does not have any information specific to Derryarkin and Drumman Bogs.

#### **BirdWatch Ireland**

Dr Alex Copland (formerly) of BirdWatch Ireland carried out on behalf of Bord na Móna a breeding bird survey of Drumman Bog and Ballybeg Bog as part of a study on six bog sites in the Derrygreenagh and Ballydermot group during 2010 and 2011 (see Copland 2010, 2011). However, the study was confined to breeding birds and did not include the wintering period.

### **Overall Appraisal of Available Information**

The desk review which had been carried out for the bog sites within the Derrygreenagh and Ballydermot Bog Groups concluded as follows:

*“...while there is some past bird information relating to the study area, including recent collation of bird records from the bog sites by the Bord na Móna ecology team, the information is generally derived from casual observations and is of limited value in the context of the present study. “*

This conclusion applies to the two bog sites which are the subject of the present report.

### **3.3 Derryarkin Bog**

#### **3.3.1 Site Description**

Derryarkin bog is a large site located at Derrygreenagh to the western side of the R500 road. The site adjoins Drumman bog to the east and Ballybeg bog to the southeast. Access is easily available from a road leading to the Kilmurray quarry works and an active farm (latter known as Derryarkin farm for purpose of this study). Access is also available from the Roadstone quarry facility (within the site). The site extends for up to 2 km from north to south and for up to 4 km from east to west. The site has been out of commercial peat production for a considerable time.

Derryarkin bog comprises regenerating cutaway bog habitats, including extensive wetland habitats, regenerating bog and developing scrub. Associated with the Roadstone facility is one large quarry lake with a gravel islet and several smaller lakes and ponds, as well as bare or sparsely vegetated areas of gravel. Kilmurray quarry to the southwest also has a number of large ponds, with active excavations in progress at the time of the 2021/22 survey.

The site is adjoined by further areas of cutaway bog to the west and also to the south-east. A forest plantation (on former bog) occurs to the southwest, while agricultural lands occur to the north and to the south of the site.



**Plate 1.** View of eastern sector of Derryarkin Bog showing well developed wetland habitats on cutaway bog.

### **3.3.2 Survey Locations**

**Transect 1** starts from the internal access road and follows the railway line in a northwest direction for approximately 2 km. The transect continues along the railway line in a southwest direction towards the western end of the site. This transect covers a large area of regenerating cutaway bog including the wetlands on site.

**Vantage Point 1** is located along the internal access road and looks over a large area of mainly wetland habitats.

**Vantage Point 2** is located along transect 1 and looks over much of the central area of the site including the Roadstone quarries.

**Vantage Point 3** is located towards the end of transect 1 and looks over the western sector of the site (regenerating cutaway bog with scrub).

### **3.3.3 Results and Discussion**

A summary of the variables (date, time, weather etc.) for the vantage point watches carried out at Derryarkin Bog between October 2021 and March 2022 is presented in Appendix 1. Survey raw data for the vantage point watches are presented in Appendix 5.

Scientific names of bird species are given in Appendix 9.

#### **Target species recorded**

##### Whooper Swan

As in each of the winters since 2012/13, the Derryarkin site area was used by a population of Whooper Swans through the 2021/22 winter. Swans had arrived in the Derryarkin area by the survey on 20<sup>th</sup> November, with 58 birds feeding in the adjoining grassland fields.

Numbers increased during December, with 98 present on the 16<sup>th</sup>, and 102 on 20<sup>th</sup> January (winter peak). Numbers remained at this level for remainder of winter, with 96 counted on 3<sup>rd</sup> March. At least 26 birds were still present on 25<sup>th</sup> March.

As in previous winters, most swan observations were made in the fields adjoining the cutaway bog to the south and southwest. Some usage was made of the cutaway bog by feeding swans (maximum of 34 on 24<sup>th</sup> January) and at times night roosting birds.

The Roadstone quarry pond remained the principal location for night roosting though some roosting occurred on the Kilmurray quarry ponds and, as noted, on the cutaway bog. Flightlines from the feeding fields to the ponds were recorded quite regularly in the late afternoon period, as well as in the mornings.

Flightlines were recorded on ten occasions, most were considered to represent birds flying between feeding and roost sites. Flight heights were invariably low, with all less than 20 m.

##### Mute Swan

Mute Swan was regular through the winter on Roadstone and Kilmurray quarry ponds, with at least 10 birds present on most dates through the winter. A higher count of 48 was made at the Roadstone quarry pond on 17<sup>th</sup> February, which was expected to be birds from Drumman where there was a regular winter population (at times exceeding 100 birds).

Four flightlines were recorded, which appeared mostly to involve birds commuting to or from Drumman.

#### Little Egret

One to two Little Egrets wintered in the area (inc. Drumman). Two were recorded feeding in cutaway bog on 21<sup>st</sup> October, with a further four records involving single birds.

The presence of Little Egret at these sites has been a feature in recent winters.

#### Hen Harrier

One record, as follows:

- 14<sup>th</sup> February – female type bird hunting over cutaway bog from VP1

Hen Harrier is an occasional winter visitor, 1-2 birds recorded in most winters.

#### Sparrowhawk

Sparrowhawk was recorded on four occasions through the winter. Records involved hunting birds, with a pair displaying on 28<sup>th</sup> February (breeds on site).

#### Buzzard

Buzzard was recorded on site through much of the winter – most records involved single birds but three together on 22<sup>nd</sup> October and two together on three dates (19<sup>th</sup> November, 20<sup>th</sup> January, 17<sup>th</sup> February). 1-2 pairs of Buzzard breed locally.

#### Kestrel

Kestrel was recorded on site in all months. All records were of single birds and involved male and female birds. Most observations were of hunting birds. Kestrel breeds locally

#### Peregrine

There were six records of Peregrine over the site through the winter. Peregrine breeds on site, with birds observed at the breeding location in February and March.

#### Golden Plover

A regular flock of Golden Plover winters in the pasture fields (Derryarkin farm) which adjoin the cutaway bog. This flock also frequents the Drumman bog area and fields to the north of the motorway and was estimated to be up to 1,000 birds. Birds roost at times on the cutaway bog in the eastern sector of Derryarkin.

There were eight flightlines over the site between October and February. High numbers included 400+ on 29<sup>th</sup> October, 500+ on 16<sup>th</sup> December, and 360 on 14<sup>th</sup> February.

#### Lapwing

Regular through winter in pasture fields adjoining the cutaway bog and usually associating with the Golden Plover flock (as described above). Occurs also at times on the cutaway bog.

There were six flightlines over the site between October and February. Highest number was at least 200 on 20<sup>th</sup> November.

Territorial birds observed on cutaway bog from February onwards.

#### Woodcock

Two Woodcock were flushed along a track in western sector of site on 17<sup>th</sup> December. Woodcock has been recorded in this area of site previously.

### Curlew

As in previous winters, a regular flock of Curlew was present in the Derryarkin pasture fields and at the Kilmurray quarry ponds from October to February. Numbers were mostly between 20 and 40 birds, though a higher count of 52 was made on 29<sup>th</sup> October. No flightlines were recorded over site.

### Kingfisher

On 19<sup>th</sup> November, one flew across quarry pond and landed on a willow.

### **Potential for other target species**

Merlin has been recorded on site in the past and is likely to pass through site at times.

### **Other species of note**

Greylag Goose – five on Roadstone quarry pond in March were considered feral birds.

Mallard – regular through the winter on quarry ponds and flooded bog. Peak of 50+ on Roadstone quarry pond on 29<sup>th</sup> October.

Teal – present on site (bog ponds and quarry lakes) through the winter though in relatively small numbers. Peak count of 11 on 19<sup>th</sup> November.

Tufted Duck – present on Roadstone and Kilmurray quarry ponds throughout the survey period in small numbers (<10). High counts of 77 and 68 on the Roadstone quarry pond on 24<sup>th</sup> January and 3<sup>rd</sup> March (mostly males) respectively – these were probably part of the wintering flock which was regular at Drumman.

Great Crested Grebe – two on the Roadstone quarry pond in February and three in March (one obvious pair).

Little Grebe – present through the winter on Roadstone quarry ponds (maximum of 5) and Kilmurray quarry ponds (maximum of 4). Calling birds in March.

Snipe – recorded on site in low numbers (<10) and usually singly. High count of 18 in cutaway bog on 14<sup>th</sup> February.

Redshank – two recorded at Roadstone quarry pond on 14<sup>th</sup> February.

Lesser Black-backed Gull – flock of 63 roosting on Roadstone quarry pond on 29<sup>th</sup> October. Smaller numbers (up to 28) seen on several dates in October and November.

Skylark – recorded in October (5), November (1) and March (11).

Mistle Thrush – flock of 21 birds flew across cutaway bog in western sector on 21<sup>st</sup> October. Small numbers (<5) recorded on site through much of winter.

Redwing – flocks present in marginal hedging and in fields in December and January, with high counts of 200+ on 10<sup>th</sup> December and c.300 on 6<sup>th</sup> January.

Stonechat – present through winter, with at least two territorial pairs in February and March.

Starling – large flocks observed as follows: c.2,000 on 25<sup>th</sup> November; c.6,000 on 16<sup>th</sup> December; c.5,000 on 6<sup>th</sup> January, c.3,000 on 24<sup>th</sup> January. These birds were recorded in late afternoon/evening (dusk) going to roost in conifer plantation to west of site (a regular roost used each winter).

Meadow Pipit – regular on site through the winter though in small numbers in the mid-winter period. Peak of 15 in February transect survey. Also, a flock of 28 in cutaway bog in eastern sector on 22<sup>nd</sup> October.

**SITE: DERRYARKIN – TRANSECT SURVEYS, 2021-22**

Species	Date 21/11/21	Date 19/01/22	Date 27/02/22	BoCCI Status
<b>Whooper Swan</b>		<b>58</b>	<b>45</b>	<b>A</b>
<b>Mute Swan</b>	<b>5</b>	<b>4</b>	<b>8</b>	<b>A</b>
<b>Teal</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>A</b>
Mallard	23	16	9	<b>G</b>
Grey Heron	2	1	6	<b>G</b>
Little Egret	1	0	0	<b>G</b>
Sparrowhawk	0	0	0	<b>G</b>
Buzzard	2	0	1	<b>G</b>
<b>Kestrel</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>R</b>
Moorhen	3	0	1	<b>G</b>
<b>Lapwing</b>	<b>9</b>	<b>0</b>	<b>5</b>	<b>R</b>
<b>Snipe</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>R</b>
<b>Curlew</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>R</b>
Woodpigeon	22	10	5	<b>G</b>
Magpie	3	1	1	<b>G</b>
Rook	50+	10	0	<b>G</b>
Jackdaw	30+	12	101	<b>G</b>
Hooded Crow	7	5	5	<b>G</b>
Raven	0	2	0	<b>G</b>
<b>Goldcrest</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>A</b>
Blue Tit	0	0	3	<b>G</b>
Great Tit	2	0	2	<b>G</b>
Dunnock	1	0	1	<b>G</b>
Coal Tit	7	0	4	<b>G</b>
<b>Skylark</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>A</b>
<b>Starling</b>	<b>10+</b>	<b>50</b>	<b>10</b>	<b>A</b>
Wren	7	2	9	<b>G</b>
Blackbird	5	5	7	<b>G</b>
Fieldfare	0	100+	0	<b>G</b>
Song Thrush	1	1	2	<b>G</b>
<b>Redwing</b>	<b>0</b>	<b>100+</b>	<b>0</b>	<b>R</b>
Mistle Thrush	4	2	3	<b>G</b>
Robin	5	4	9	<b>G</b>
Stonechat	3	1	3	<b>G</b>
<b>Meadow Pipit</b>	<b>10</b>	<b>8</b>	<b>15</b>	<b>R</b>
Pied Wagtail	2	2	1	<b>G</b>
Chaffinch	14	100+	12	<b>G</b>
Goldfinch	0	20+	6	<b>G</b>
<b>Linnet</b>	<b>3</b>	<b>50+</b>	<b>5</b>	<b>A</b>
Lesser Redpoll	12	8	4	<b>G</b>
Siskin	0	0	0	<b>G</b>
Reed Bunting	4	3	6	<b>G</b>

BoCCI Status: **R – Red**; **A – Amber**; **G – Green** (after Gilbert et al. 2021)

## **General discussion**

The 2021/22 survey at Derryarkin has added to the baseline winter bird assessments carried out in winters 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2018/19 and 2020/21. A consistent pattern of bird usage at the site is apparent, particular by waterbirds, but also by foraging raptors. Of principal interest is the wintering population of Whooper Swans, which peaked at 102 in January. The swans are present more or less continuously through the winter, feeding principally on improved grassland in fields adjoining the Bord na Móna bog site but at times feed on regenerating wet bog and use the local quarry ponds for night roosting (with some roosting also on the cut bogs). The average monthly peak count from November through to March was 86, which is below the threshold for national importance (*i.e.* 150) but certainly considered of regional/county importance.

As in previous years, the site also supports wintering Golden Plover and Lapwing – as with the swans, these species are attracted largely to the agricultural fields which adjoin the bog site but do at times use the cutaway bog for feeding and/or roosting purposes. It is estimated that the flock size in the wider area for Golden Plover and Lapwing was a minimum of 1,000 and 400 respectively. The number of Golden Plover within the Derryarkin site area is above the threshold for national importance (920), while the number of Lapwing is below the threshold for national importance (850).

Small numbers of other wetland species, including Mute Swan, Teal and Snipe, occur within the site, along with Little Egret and, on one occasion, Kingfisher. Woodcock (Red-listed) is also a winter visitor to the site (probably under-recorded).

Hen Harrier has been an occasional winter visitor in all the winter surveys though only one bird was recorded in the 2021/2022 winter. Peregrine is regular over the site (reflecting the presence of a nesting location on site). Sparrowhawk, Buzzard and Kestrel (Red-listed) are regular on site and in adjoining areas.

The site supports a range of other species of conservation interest. Meadow Pipit (Red-listed on basis of breeding population) occurs throughout much of the site during winter though in small numbers for the main winter period. Redwing (now a Red list species) is regular in the local hedgerows and fields though does not use the cutaway bog habitats.

Other species of interest (all Amber-listed) include Great Crested Grebe, Tufted Duck, Skylark, Goldcrest, Starling (roost on boundary of site) and Linnet.

### **3.3.4 Evaluation and Rating of Derryarkin Bog for Wintering Birds**

There follows a summary of the conservation status of species recorded on Derryarkin Bog in winter 2021/22:

#### **EU Birds Directive Annex I listed species**

- Whooper Swan
- Little Egret
- Hen Harrier
- Peregrine
- Golden Plover
- Kingfisher

#### **Red Listed species (after Gilbert et al. 2021)**

Kestrel  
Lapwing  
Golden Plover  
Snipe  
Curlew  
Woodcock  
Redwing  
Meadow Pipit

**Amber Listed species (after Gilbert et al. 2021)**

Great Crested Grebe  
Mute Swan  
Whooper Swan  
Teal  
Tufted Duck  
Lesser Black-backed Gull  
Skylark  
Starling  
Linnet

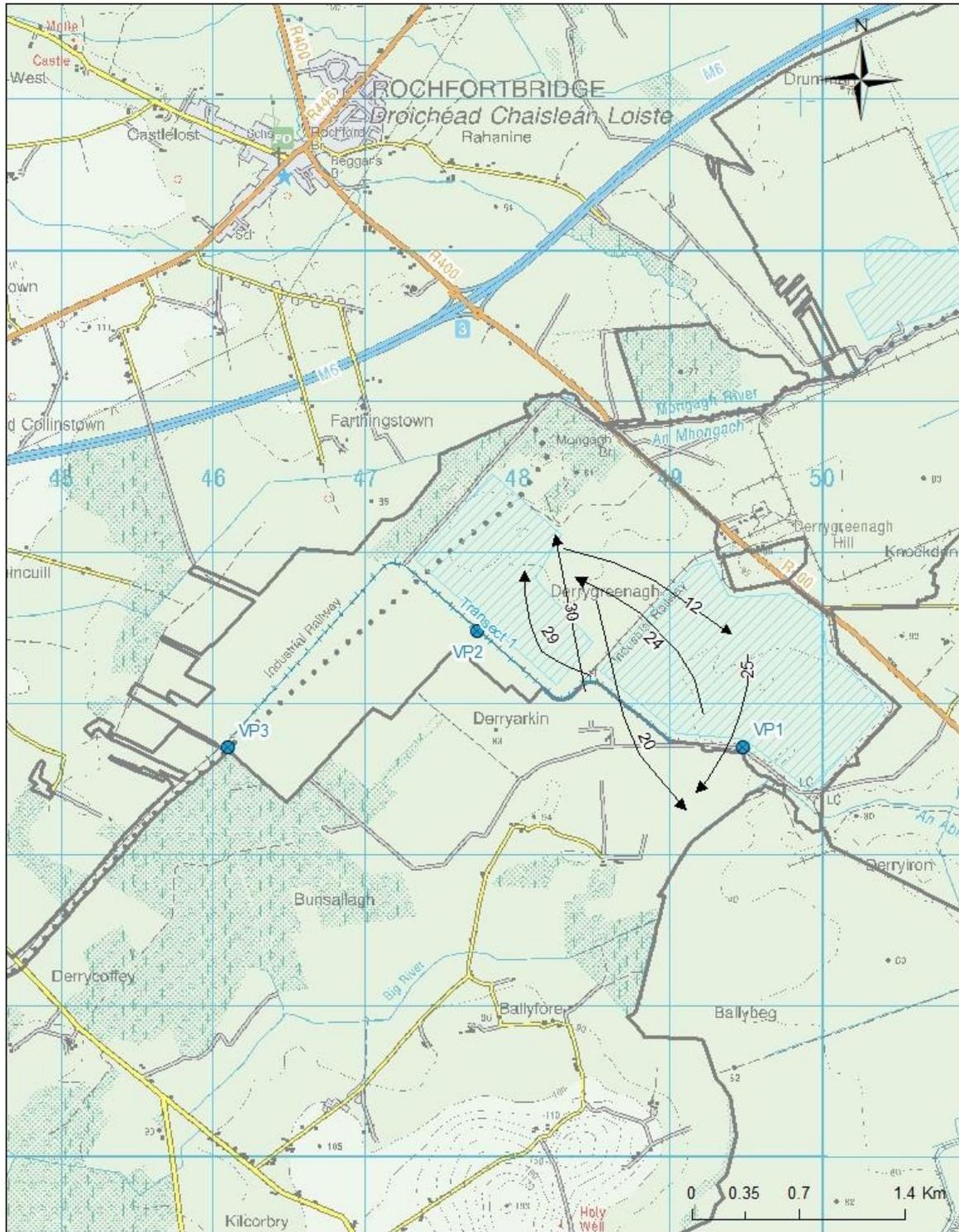
Derryarkin cutaway bog has habitats suitable for supporting a wide range of wintering birds. Of particular note is the developing wetland habitat, which includes permanent ponded areas. Also of note is a substantial artificial lake at the Roadstone works which is used by wetland birds.

Since at least the 2013/14 winter survey, the Derryarkin bog site and adjoining areas have supported a population of Whooper Swans which in some winters has reached the threshold for National Importance (though not in winter 2021/22). While the swans may at times utilise cutaway bog sites in the wider area (such as Cavemount and possibly Ballycon bogs), the Derryarkin area is the primary site for the population. On the data of recent winters, it is considered appropriate to rank the Derryarkin swan population of County or Regional importance rather than National importance.

The other main feature of the Derryarkin site is that it is used by Hen Harrier for foraging and also provides useful habitat for other raptor species including Peregrine and Kestrel.

On the basis of an important and regular population of Whooper Swan, and also usage on a regular basis by Hen Harrier as well as other wetland species such as Golden Plover and Lapwing, plus a range of Red and Amber listed species, it is recommended from the now eight winters of surveying that a rating of **County or Regional Importance** is considered appropriate for wintering birds at Derryarkin Bog.

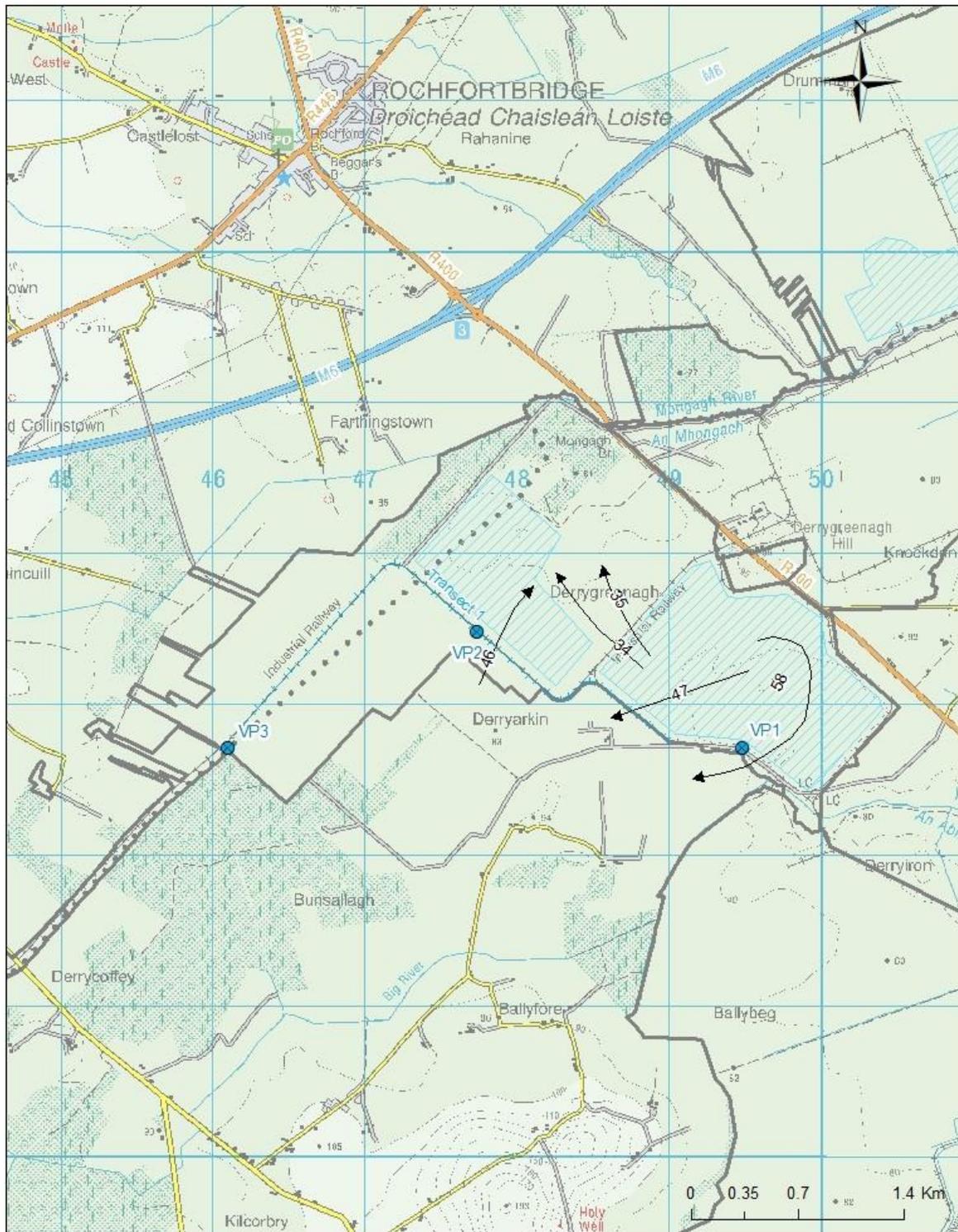
**Derryarkin Map 1a:** Map showing transect and vantage point locations, with Whooper Swan flightlines.



- Whooper Swan flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Whooper Swan observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

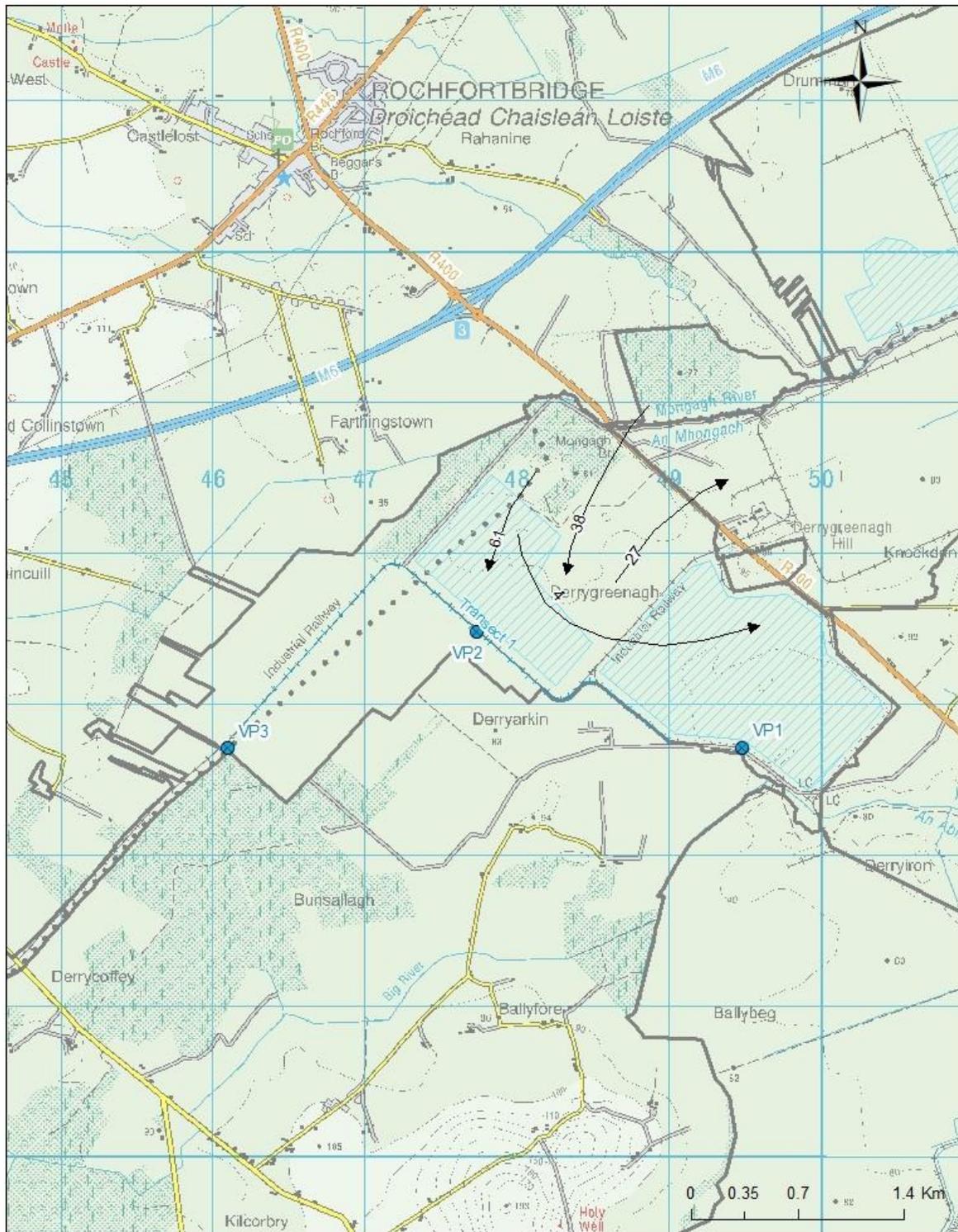
**Derryarkin Map 1b:** Map showing transect and vantage point locations, with Whooper Swan flightlines.



- ➔ Whooper Swan flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Whooper Swan observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

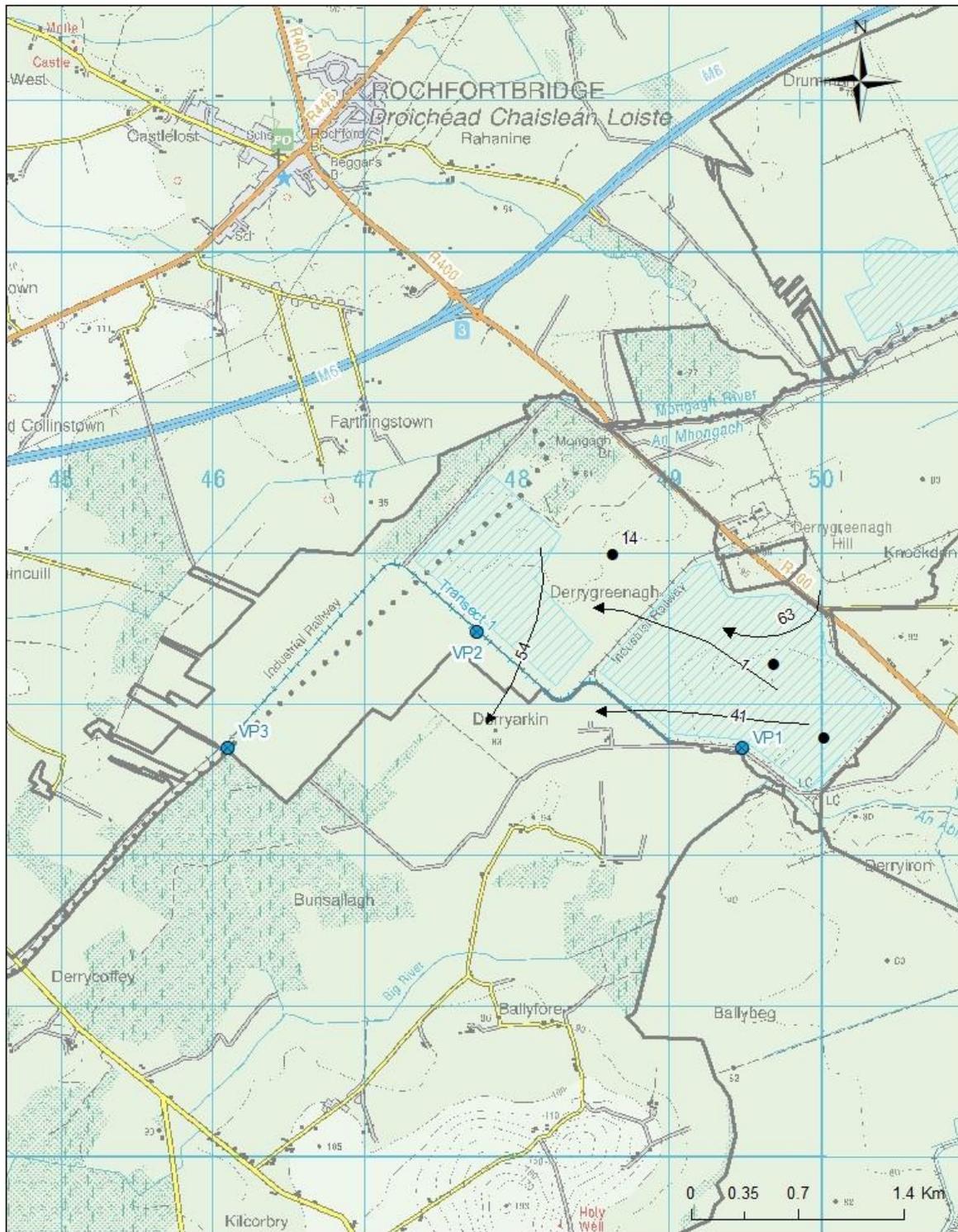
**Derryarkin Map 2:** Map showing transect and vantage point locations, with Mute Swan flightlines.



- Mute Swan
- Vantage Point
- Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Mute Swan observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

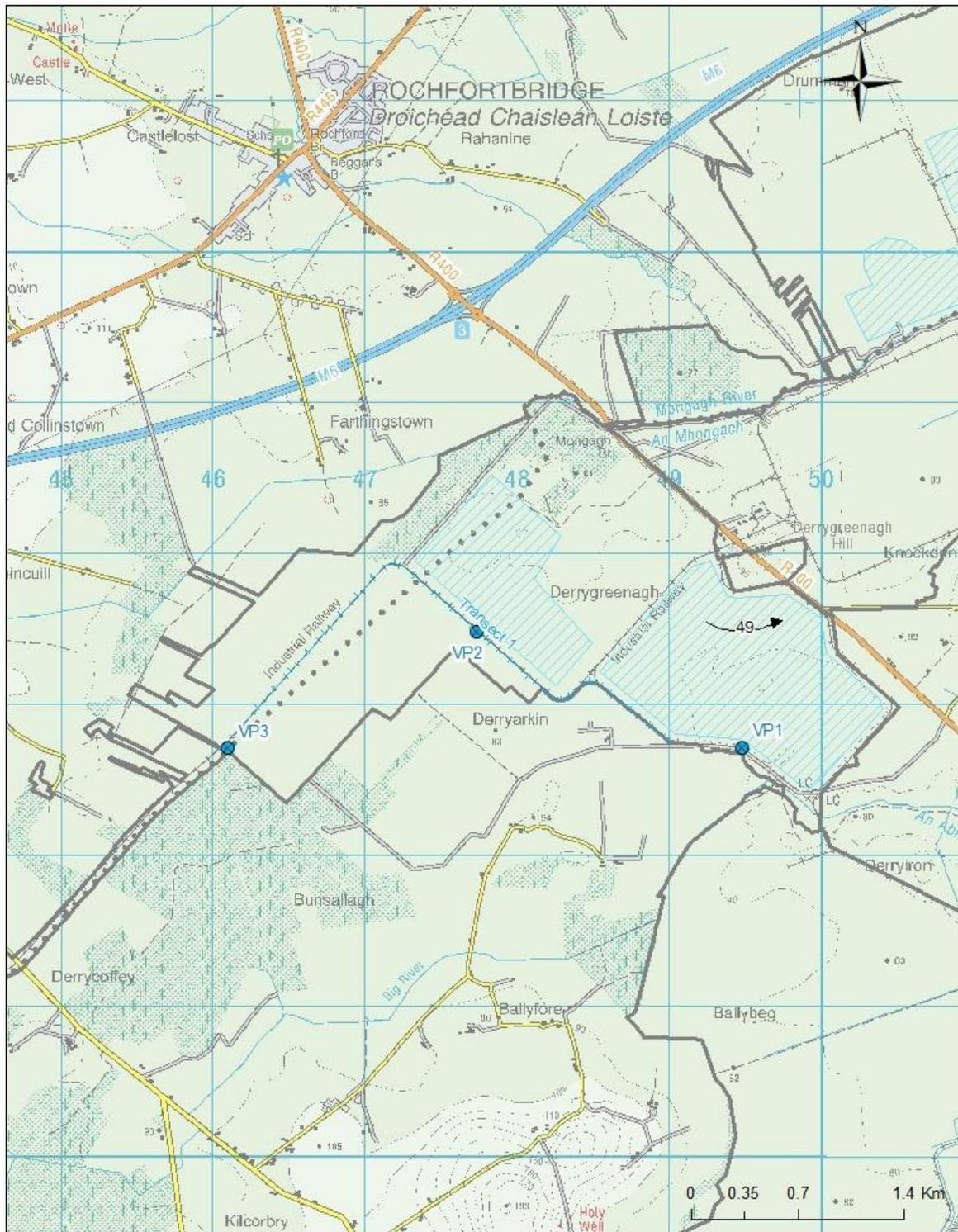
**Derryarkin Map 3:** Map showing transect and vantage point locations, with Little Egret flightlines.



- Little Egret flightline
- Little Egret
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Little Egret observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

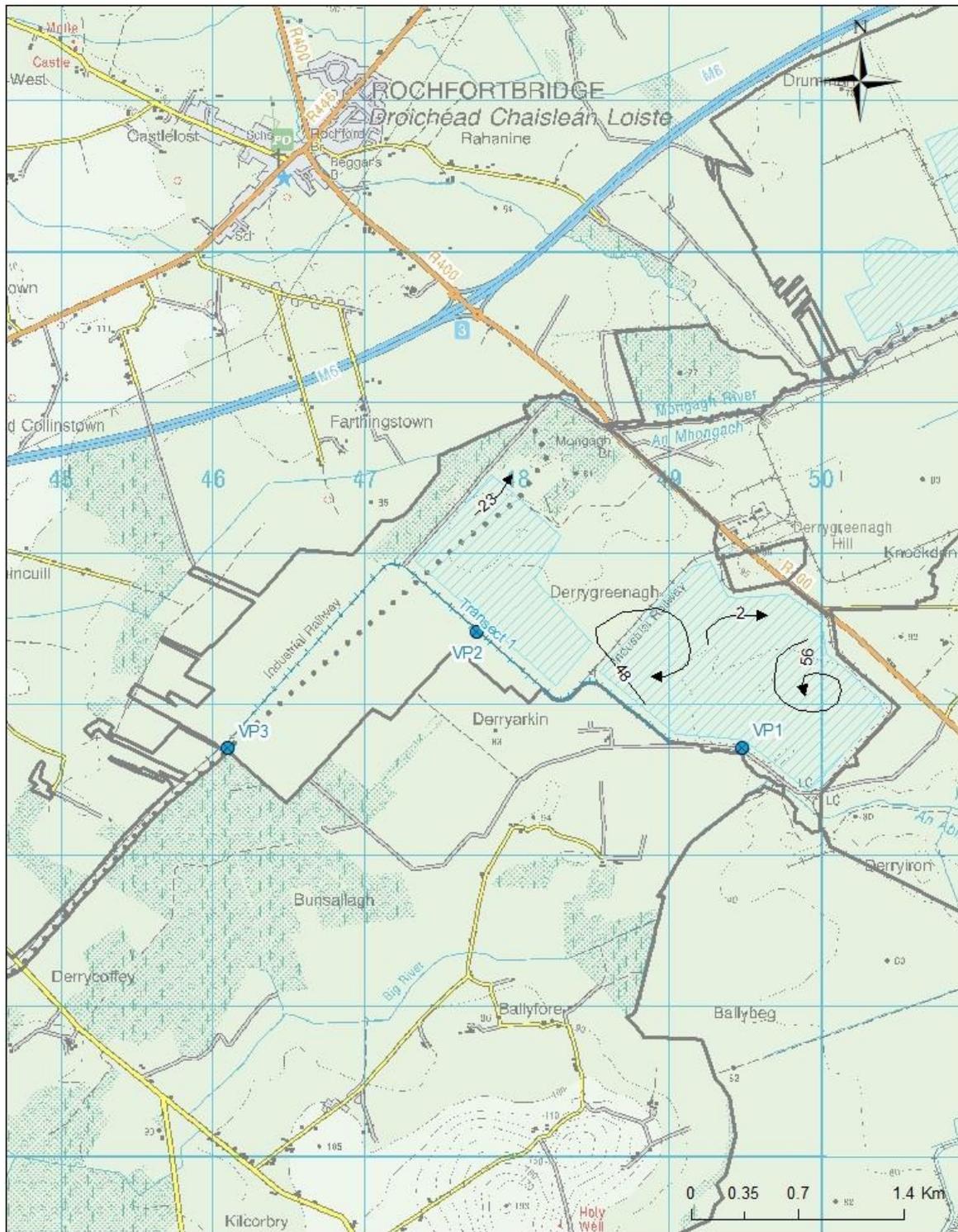
**Derryarkin Map 4:** Map showing transect and vantage point locations, with Hen Harrier flightlines.



- Hen Harrier flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Hen Harrier observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

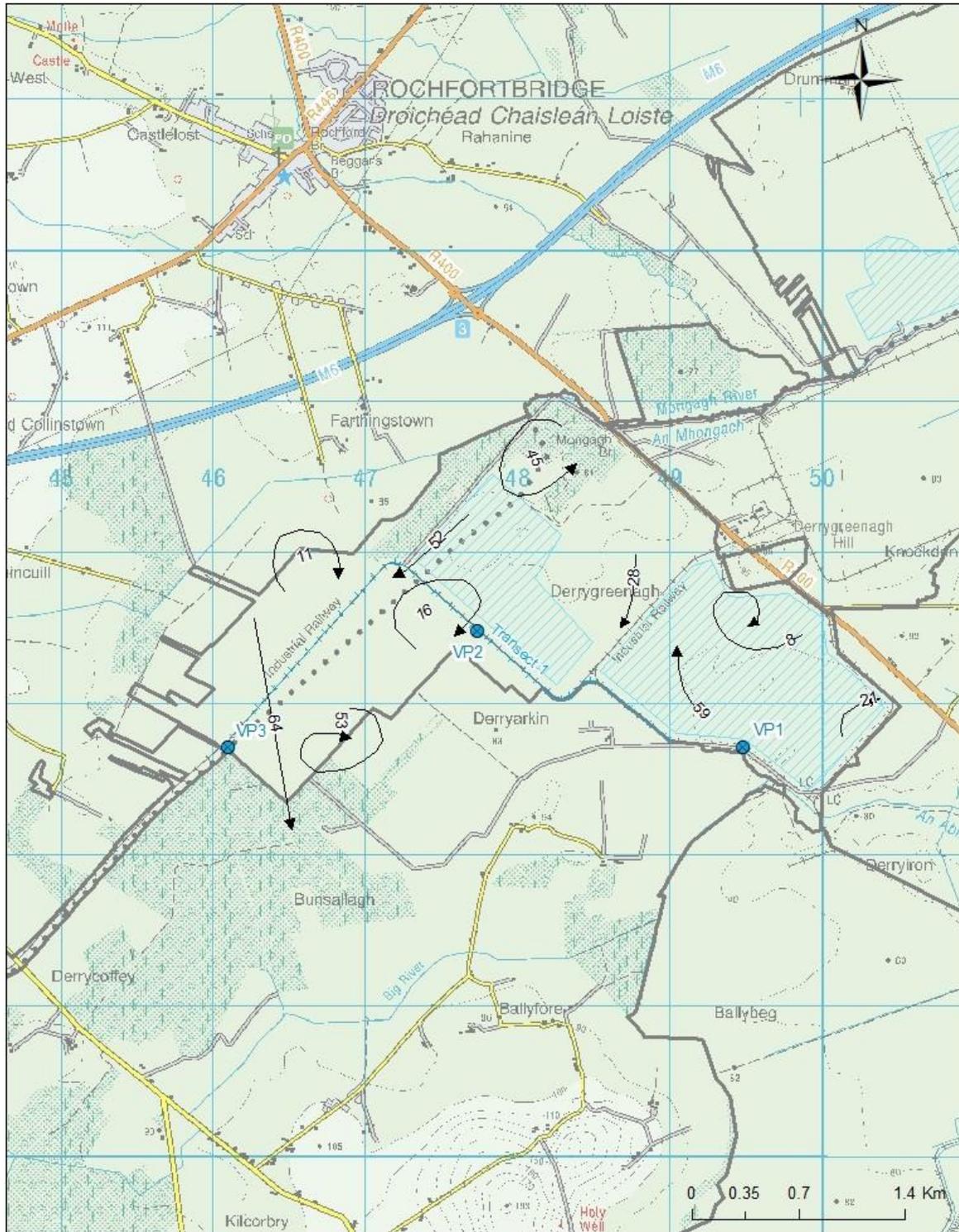
**Derryarkin Map 5:** Map showing transect and vantage point locations, with Sparrowhawk flightlines.



- Sparrowhawk flightline
- Vantage Point
- +— Transect
- BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Sparrowhawk observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

**Derryarkin Map 6:** Map showing transect and vantage point locations, with Buzzard flightlines.



- ➔ Buzzard flight line
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Buzzard observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

**Derryarkin Map 7:** Map showing transect and vantage point locations, with Peregrine flightlines.



**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Peregrine observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

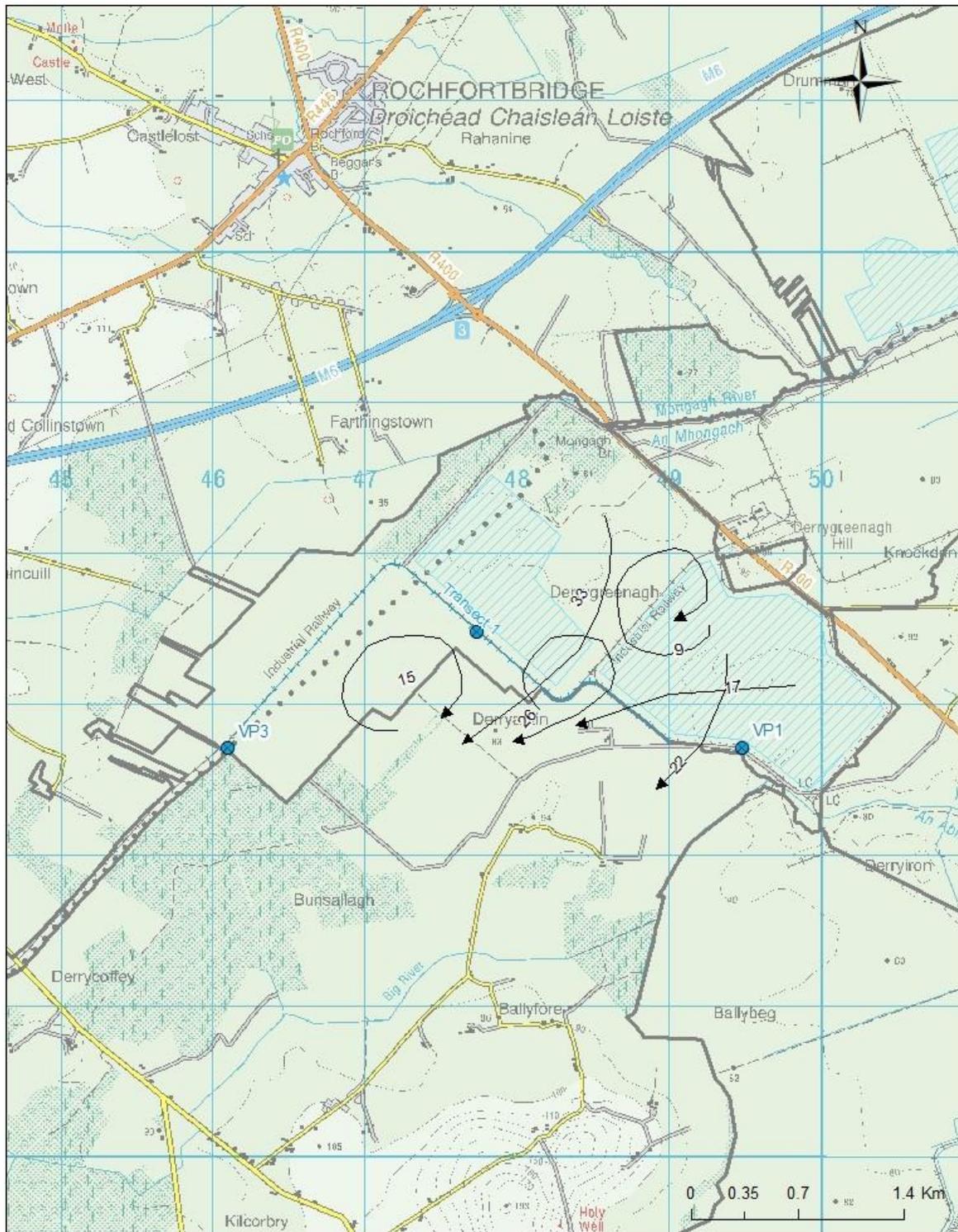
**Derryarkin Map 8:** Map showing transect and vantage point locations, with Kestrel flightlines.



- Kestrel flightline
- Vantage Point
- Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Kestrel observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

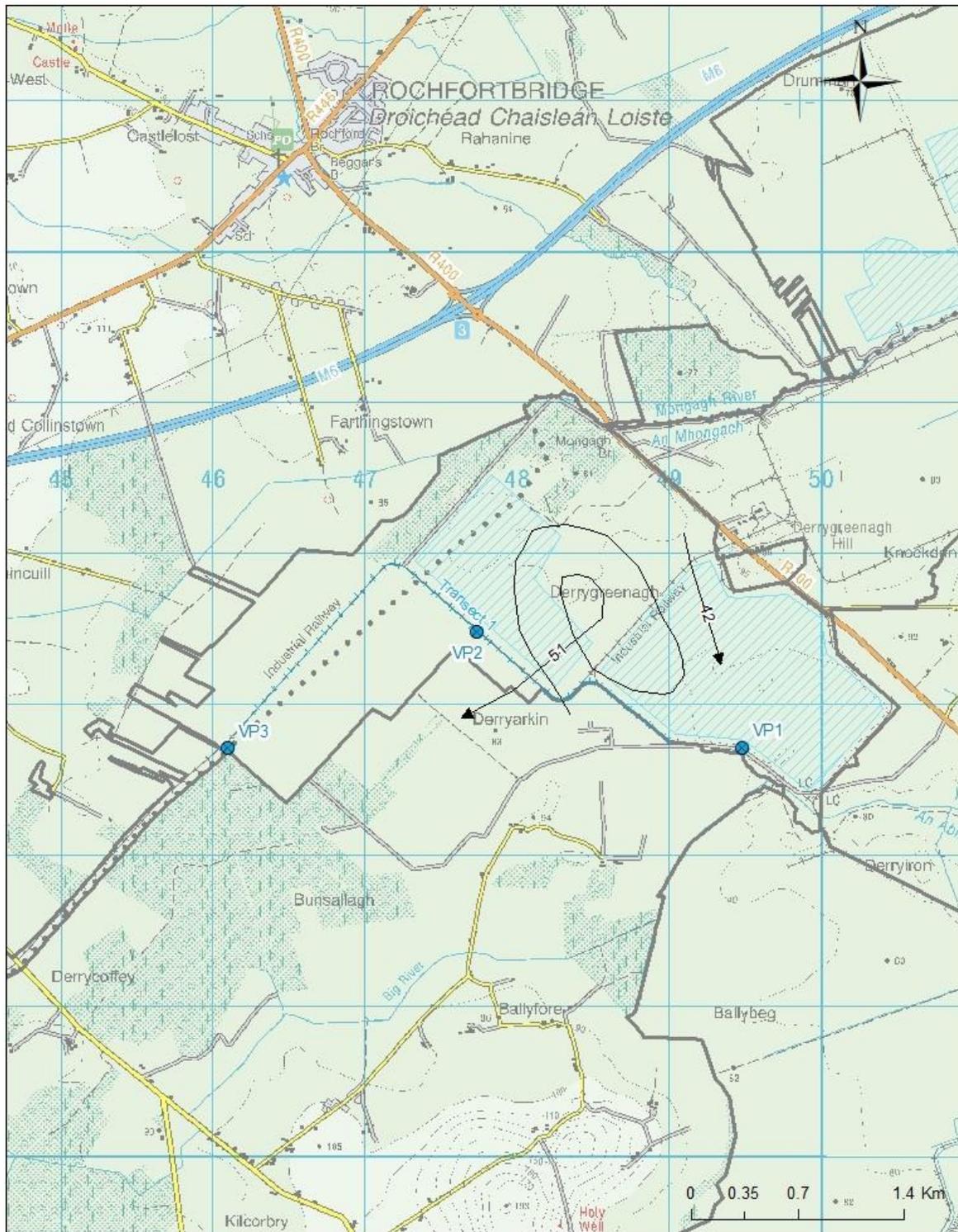
**Derryarkin Map 9a:** Map showing transect and vantage point locations, with Golden Plover flightlines.



- Golden Plover flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Golden Plover observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

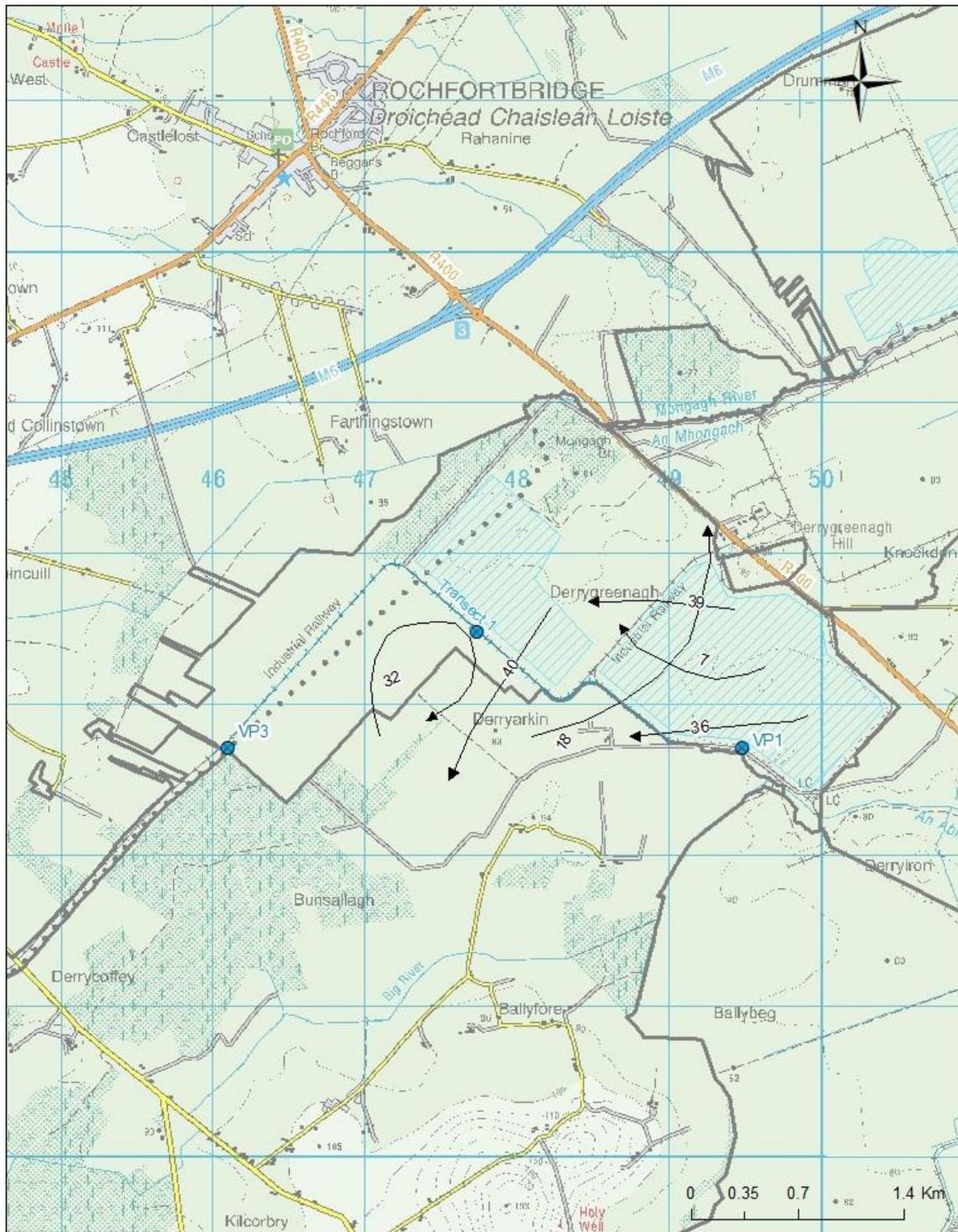
**Derryarkin Map 9b:** Map showing transect and vantage point locations, with Golden Plover flightlines.



- Golden Plover flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Golden Plover observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

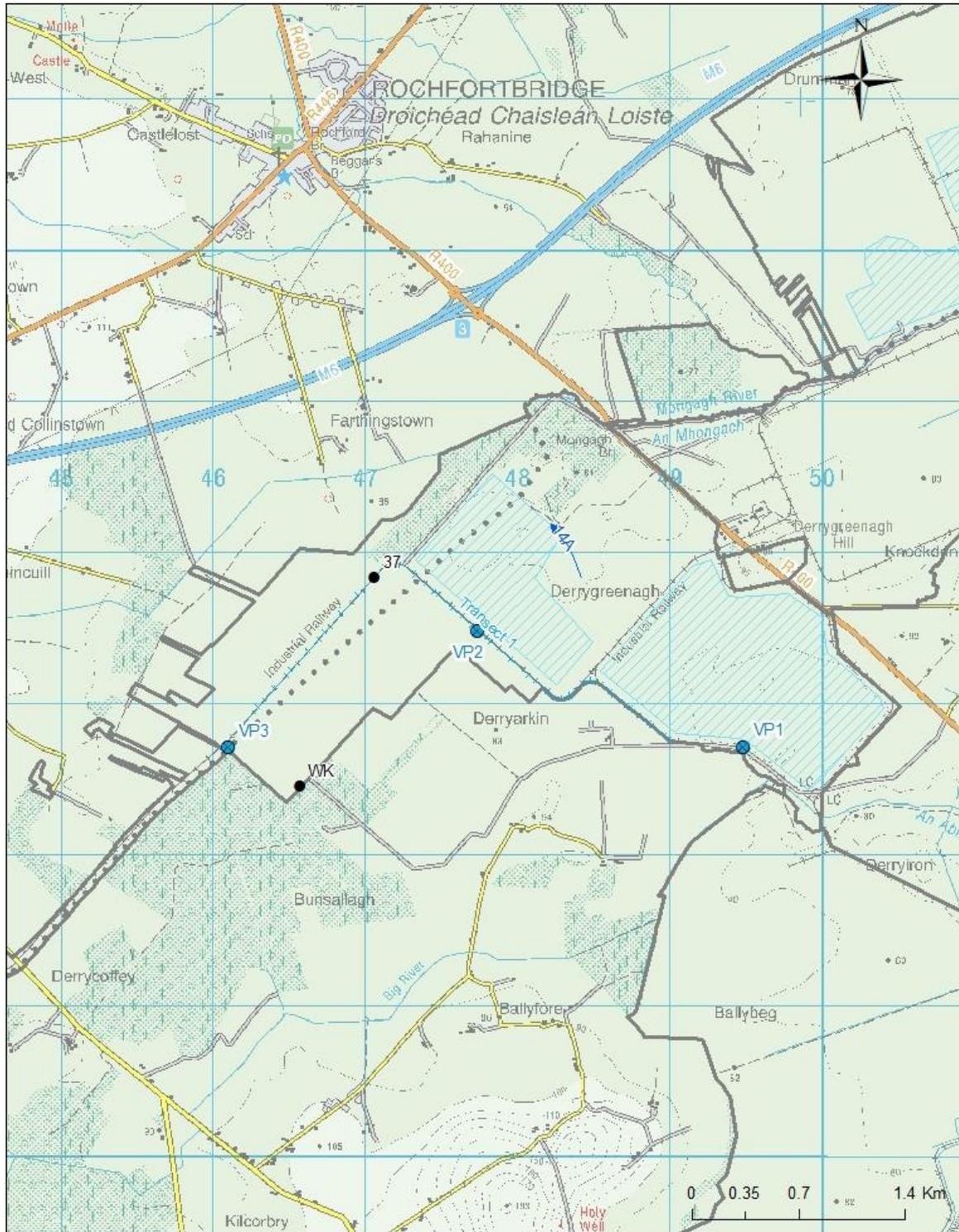
**Derryarkin Map 10:** Map showing transect and vantage point locations, with Lapwing flightlines.



- Lapwing flight line
- Vantage Point
- Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Lapwing observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

**Derryarkin Map 11:** Map showing transect and vantage point locations, with Kingfisher flightline and Woodcock location.



- ▶ Kingfisher flightline
- Woodcock
- Vantage Point
- - - Transect
- BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryarkin Kingfisher and Woodcock observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

### **3.4 Drumman Bog**

#### **3.4.1 Site Description**

Drumman Bog is a large site located between the M6 motorway (which skirts its northwest boundary) and the R400 road (which skirts its western boundary). The site adjoins Derryarkin bog to the southwest (though sites are divided by the R400). The main access to the site is along an internal road from the R400. The site extends for up to 3.5 km from north to south and for up to 4 km from east to west. In addition to commercial peat production, the site has been used extensively for quarrying and is also used for stockpiling of logs. The Mongagh River flows through the central area of the site.

Much of the sector of Drumman bog to the south of the Mongagh River has been in recent industrial peat production and comprises mainly bare peat. Scattered throughout are strips and patches of pioneering vegetation of cutaway bog, mostly birch scrub, dry grassland and poor fen communities. There are parts in recent production and comprise bare peat. Also in recent commercial production is a sector in the northeast (Carrick bog), which is somewhat separated from the rest of the site by the Mongagh River and local topography. This area is still largely bare peat.

An extensive area of cutaway bog occurs north of the Mongagh River. A large wetland area with ponds and standing water has been created in the northeast section after an outfall was blocked in 2005. The open water forms a mosaic with emergent reedbeds and extensive fringing poor fen communities. Strips of birch scrub are also present.

The established gravel and sand extraction area to the south of the cutaway (and north of Mongagh River) includes one large artificial lake, several smaller lakes or ponds and large mounds of aggregates. More recently, extraction has occurred to the south of the Mongagh River and access road, with substantial ponds now present.



**Plate 2.** View of pond which has developed within quarried area of site – a substantial Mute Swan population occurs here in winter.

A conifer plantation in the northeast sector was developed by Coillte in the 1990s, with a further plantation in the northwest.

In recent years felled trees have been stored along parts of the main access road through the site and the storage area has been extended into the quarry zone.

The Mongagh River, which is within the Boyne catchment, is the main watercourse associated with the site. The channel has been deepened and is skirted by large berms. Natural riparian zones are poorly developed along the river.

The site is adjoined by slivers of bog to the east and north-west, with agricultural land to the south.

### **3.4.2 Survey Locations**

**Transect 1** starts from the internal access road and traverses the northern sector of the site along a straight line with two offline loops. This transect covers a large area of regenerating cutaway bog including the wetlands on site.

**Transect 2** also starts from the internal access road and traverses the southern sector of the site. The transect includes two offline sections. This transect covers a large area of regenerating cutaway bog as well as bare peat areas.

**Transect 3** runs from the centre of the site eastwards along the Mongagh River towards the eastern offshoot (recent commercial peat field).

**Vantage Point 1** is located along transect 1 and looks over much of the northern sector of the site including wetland habitats.

**Vantage Point 2** is located along transect 2 and looks over much of the southern sector of the site.

**Vantage Point 3** is located off the R500 road and looks over the south-western part of the site, though large parts of the central area of the site are visible.

**Vantage Point 4** is located in the extreme north-eastern offshoot (Carrick bog) and looks over this entire sector. All of the area is recent commercial peat fields.

### **3.4.3 Results and Discussion**

A summary of the variables (date, time, weather etc.) for the vantage point watches carried out at Drumman Bog between October 2021 and March 2022 is presented in Appendix 2. Survey raw data for the vantage point watches are presented in Appendix 6.

Scientific names of bird species are given in Appendix 9.

## **Target species recorded**

### Whooper Swan

Whooper Swan is an occasional visitor to Drumman bog and mostly in small numbers.

Three on quarry pond on 23<sup>rd</sup> November later took flight in a westwards direction. Five flew north over the northwest corner of the site on 14<sup>th</sup> January.

As in previous winters, it is considered that the records at Drumman involve birds associated with the Derryarkin flock.

### Mute Swan

A substantial flock of Mute Swan occurred on site through the winter – this flock had also been present through the summer and previous winter (2020/21). Most of the birds are adults.

On 27<sup>th</sup> October, 62 birds in large flock, plus 18 on other ponds (total of 80). On 23<sup>rd</sup> November, a high count of 132 swans was made, with a winter peak of 138 on 9<sup>th</sup> December. Numbers had decreased to 99 birds on 26<sup>th</sup> January, with 47 on 12<sup>th</sup> February. A total of 68 birds was present on 12<sup>th</sup> March.

Flightlines were recorded four occasions, and involved internal site movements.

### Little Egret

One to two Little Egrets wintered in the area (inc. Derryarkin). At Drumman, the birds were recorded feeding or roosting both in the wetlands north of the Mongagh River and in the large quarry pond to the south. Records were of single birds other than two together on 12<sup>th</sup> February.

The presence of Little Egret at these sites has been a feature in recent winters.

### Hen Harrier

There were two records, as follow:

- Female type bird hunting over cutaway in southern sector of site on 24<sup>th</sup> November 2021.
- Male hunting in northern sector on 14<sup>th</sup> January 2022.

Hen Harrier is an occasional visitor to Drumman and is recorded on site in most winters.

### Sparrowhawk

There were eight records of Sparrowhawk on site through the winter.

All records were of single birds other than two (in display) on 23<sup>rd</sup> February. Most records were of birds hunting.

Sparrowhawk is known to breed on site.

### Buzzard

Buzzard was regularly recorded within and around site through the winter.

Two together were recorded on five dates, with three interacting on 11<sup>th</sup> February. Birds were recorded hunting, flying and circling.

It is considered that the Drumman site is within the range of one to two pairs of breeding

Buzzard.

### Kestrel

Kestrel was recorded on site throughout the winter period (apart from in March), with a total of ten records. All were of single birds, involving both males and females. Most of the birds were hunting actively on site.

Kestrel breeds locally (though probably not on site).

### Merlin

There were two records of Merlin during the surveys, both in the southern sector of the site. On 27<sup>th</sup> January, a male bird was observed perched on bog and then hunting. On 23<sup>rd</sup> February, one was observed briefly flying through scrub.

Surveys over several winters have shown that Merlin is a regular though scarce winter visitor to Drumman bog. As birds have also been recorded in summer, it is expected that there is a breeding territory in the local area (though not necessarily on site).

### Peregrine

Peregrine was recorded on seven occasions through the winter. Apart from a circling female bird on 13<sup>th</sup> March, all records were of single birds flying over the site.

The birds observed in winter at Drumman are considered to be associated with the breeding pair at Derryarkin (which nests on a man-made structure).

### Golden Plover

Golden Plover was recorded at Drumman on seven occasions during the winter. Records were between 23<sup>rd</sup> October and 11<sup>th</sup> February. The largest flock was c.400 over the northeast sector on 21<sup>st</sup> December – this flock landed briefly on bare peat.

The plover which occur at Drumman are almost certainly from the regular wintering population (estimated up to 1,000 birds) which frequents the fields at Derryarkin as well as fields to the north of the motorway.

### Lapwing

Lapwing was recorded over site on six occasions, with breeding birds present during March. Numbers were relatively low, with the largest flock being c.200. Birds were recorded roosting on bare peat or at the wetlands on three of the occasions.

It is noted that there is a regular wintering flock of several hundreds centred in the fields at Derryarkin and to the north of the motorway.

### Lesser Black-backed Gull

There were three records on two dates, 24<sup>th</sup> November and 24<sup>th</sup> February.

### **Potential for other target species**

Kingfisher could be expected at times to pass through the site.

### **Other species of note**

Mallard – present throughout winter though in relatively small numbers (peak of 65 on 27<sup>th</sup>

October). Mostly recorded from quarry ponds though also singles or pairs flushed from drains and ponds throughout site.

Teal – peak count of 18 on quarry ponds on 22<sup>nd</sup> November.

Wigeon – 22 on large quarry pond on 22<sup>nd</sup> November. Wigeon is a scarce visitor to the site.

Tufted Duck – flock of at least 140 on central quarry pond on 27<sup>th</sup> October. 26 there on 10<sup>th</sup> December and c.30 on 24<sup>th</sup> January. Large flock of 163 on central pond on 17<sup>th</sup> February (almost all male birds). This flock also utilised the large Roadstone quarry pond at Derryarkin (77 there on 24<sup>th</sup> January).

Little Grebe – small numbers (up to 7) on quarry ponds through winter period. Displaying pairs in March.

Great Crested Grebe – three on quarry ponds in February and March (inc. pair).

Water Rail: heard from large drain near VP2 on 27<sup>th</sup> January and 10<sup>th</sup> March.

Ringed Plover – two at quarry ponds in March.

Snipe – recorded in small numbers (max. 9) on transects walks and on some vantage point watches.

Skylark – recorded in October (4), November (1) and March (9) (latter territorial birds).

Mistle Thrush – 23 flew across southern area of site on 23<sup>rd</sup> October. Otherwise, low numbers (<5) on most visits.

Redwing – flocks present locally from December to January, with high count of 300+ on 23<sup>rd</sup> November.

Robin - present on site through winter in scrub habitats (though in low numbers).

Stonechat – recorded on most visits through the winter. Two territorial pairs in March.

Meadow Pipit – regular on site through the winter though mostly in small numbers (<10). One flock of 22 birds on transect walk on 17<sup>th</sup> November. Territorial birds on site in March.

Goldcrest – present on site through winter in scrub habitats (though in low numbers).

Starling – large flocks recorded in late afternoon period as follows: 5,000+ flying north through site from 15.30 hrs on 20<sup>th</sup> December; c.4,000 flying northwest across site from 15.15 hrs on 14<sup>th</sup> January; c.5,000 flew northwards across site from 16.10 hrs on 27<sup>th</sup> January.

Linnnet – relatively small numbers (up to 30) scattered across site through the winter.

**SITE: DRUMMAN – TRANSECT SURVEYS, 2021-2022**

Species	Date 17/11/21	Date 16/01/22	Date 25/02/22	BoCCI Status
<b>Mute Swan</b>	<b>82</b>	<b>30</b>	<b>27</b>	<b>A</b>
Mallard	20	9	11	<b>G</b>
<b>Tufted Duck</b>	<b>72</b>	<b>60</b>	<b>120</b>	<b>A</b>
<b>Teal</b>	<b>9</b>	<b>0</b>	<b>5</b>	<b>A</b>
Pheasant	3	0	2	<b>G</b>
Grey Heron	3	3	7	<b>G</b>
Sparrowhawk	0	0	0	<b>G</b>
Buzzard	1	0	2	<b>G</b>
<b>Kestrel</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>R</b>
Moorhen	1	2	4	<b>G</b>
<b>Lapwing</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>R</b>
<b>Snipe</b>	<b>5</b>	<b>2</b>	<b>6</b>	<b>R</b>
Woodpigeon	50+	12	6	<b>G</b>
Magpie	3	2	4	<b>G</b>
Jay	0	0	2	<b>G</b>
Jackdaw	0	20+	3	<b>G</b>
Hooded Crow	5	2	4	<b>G</b>
Raven	5	0	0	<b>G</b>
<b>Goldcrest</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>A</b>
Blue Tit	3	0	2	<b>G</b>
Great Tit	2	1	1	<b>G</b>
Dunnock	0	0	2	<b>G</b>
Coal Tit	12	5	4	<b>G</b>
<b>Skylark</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>A</b>
Long-tailed Tit	0	0	6	<b>G</b>
<b>Starling</b>	<b>100+</b>	<b>20</b>	<b>10</b>	<b>A</b>
Wren	9	5	10	<b>G</b>
Blackbird	6	4	7	<b>G</b>
Fieldfare	0	100+	0	<b>G</b>
Song Thrush	2	0	3	<b>G</b>
<b>Redwing</b>	<b>0</b>	<b>60+</b>	<b>0</b>	<b>R</b>
Mistle Thrush	7	1	3	<b>G</b>
Robin	4	4	7	<b>G</b>
Stonechat	3	2	3	<b>G</b>
<b>Meadow Pipit</b>	<b>22</b>	<b>7</b>	<b>15</b>	<b>R</b>
Pied Wagtail	3	2	2	<b>G</b>
Chaffinch	50	26	10	<b>G</b>
Goldfinch	20+	5	10+	<b>G</b>
<b>Linnet</b>	<b>15</b>	<b>0</b>	<b>4</b>	<b>A</b>
Lesser Redpoll	28	9	4	<b>G</b>
Reed Bunting	5	2	5	<b>G</b>

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

## **General discussion**

The 2021/22 winter survey at Drumman bog has added to the baseline winter bird assessments carried out in winters 2012/13, 2013/14, 2014/15, 2015/16, 2016/17, 2018/19 and 2020/21.

The recent survey confirmed that Whooper Swans pass over the site on occasions and feed/roost on the quarry ponds (though in small numbers). Mute Swan is regular on the quarry ponds in very substantial numbers, along with relatively low numbers of Mallard and Teal. Wigeon was recorded on one date. A large flock of Tufted Duck was present at times through the winter and also visited the quarry ponds at Derryarkin.

Golden Plover and Lapwing were recorded over the site on occasions, with birds landing on the bare peat and wetland areas - these birds are considered to be part of larger populations of these species that winter in the local area extending to Derryarkin and to fields north of the motorway. Snipe was fairly widespread on site though in small numbers. Up to two Little Egrets wintered between Drumman and Derryarkin. Lesser Black-backed Gull was recorded in autumn and spring.

As in previous winter surveys, the 2021/22 survey showed that Drumman provides good foraging habitat for raptors, with Hen Harrier, Merlin, Peregrine, Kestrel, Sparrowhawk and Buzzard all recorded on site. The long-term data shown that Hen Harrier and Merlin are regular winter visitors to the site (usually several records of each during winter).

The site supports a range of other species of conservation interest. Meadow Pipit, Red listed on basis of breeding population, occurs throughout much of the site during winter. The Red-listed Redwing is regular in area during winter and at times occurs on site.

Amber-listed species recorded on site included Skylark, Goldcrest, Starling and Linnet.

### **3.4.4 Evaluation and Rating of Drumman Bog for Wintering Birds**

There follows a summary of the conservation status of species recorded on Drumman Bog in winter 2021/22:

#### **EU Birds Directive Annex I listed species**

- Whooper Swan
- Little Egret
- Merlin
- Peregrine
- Golden Plover

#### **Red Listed species (after Gilbert et al. 2021)**

- Kestrel
- Golden Plover
- Lapwing
- Snipe
- Redwing
- Meadow Pipit

#### **Amber Listed species (after Gilbert et al. 2021)**

Mute Swan  
Whooper Swan  
Great Crested Grebe  
Wigeon  
Teal  
Tufted Duck  
Lesser Black-backed Gull  
Skylark  
Goldcrest  
Starling  
Linnet

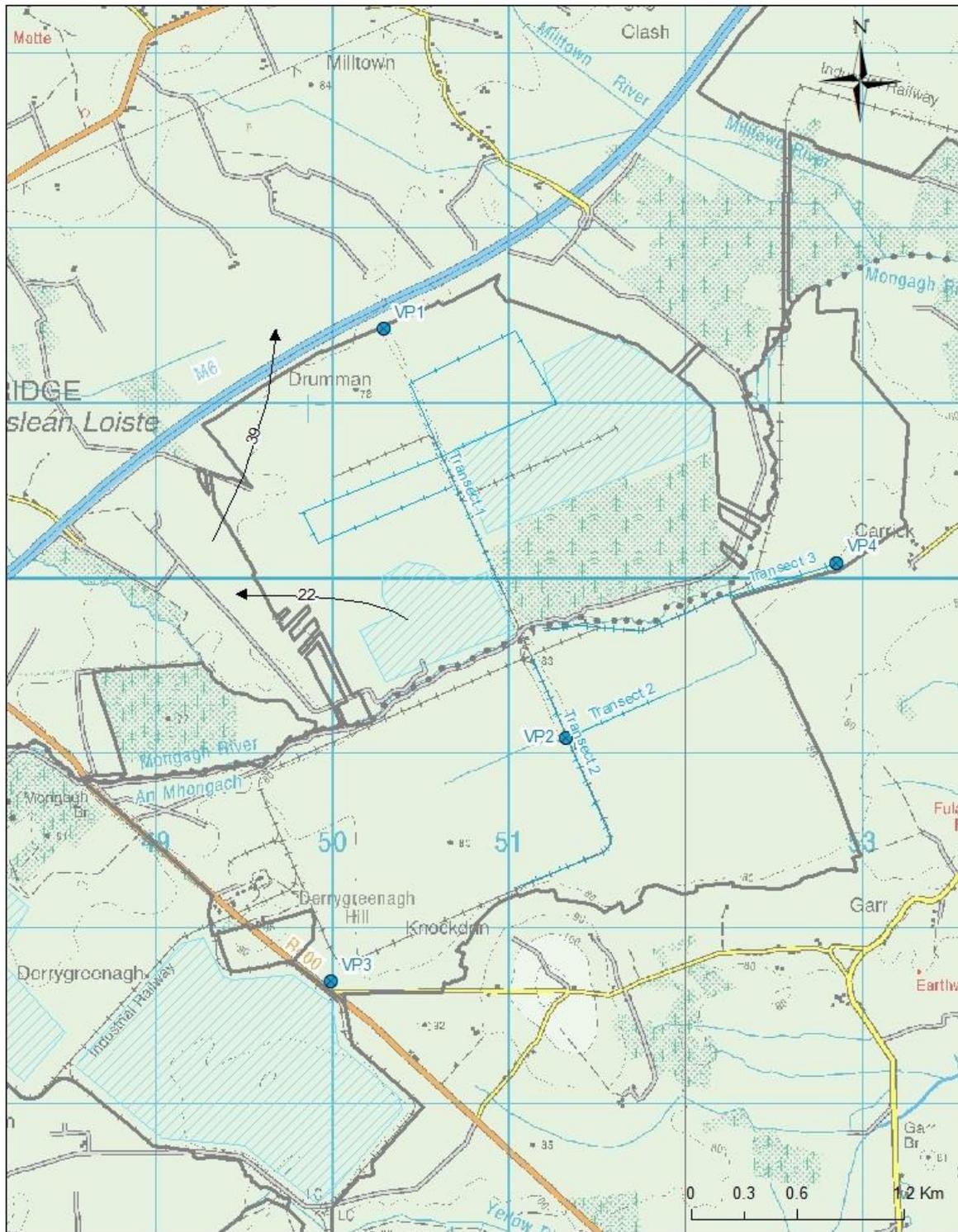
Overall, the site has habitats suitable for supporting a wide range of wintering birds, including wetland birds. These are particularly well developed to the north of the Mongagh River corridor though birds of prey regularly hunt in the southern sector as well (where cutaway habitats are in early stage of revegetation).

While a range of wetland species occur on site, these are mostly present in small numbers. However, the regular presence of a substantial wintering flock of Mute Swan is notable, as is the occasional use of the site by Golden Plover and Lapwing.

A feature of the Drumman site is that it is used regularly for hunting by birds of prey, including Merlin, Hen Harrier and the Red-listed Kestrel.

On the basis of presence of some wetland bird species and usage by various Annex I listed species, plus a range of Red- and Amber-listed species, it is recommended from the now eight winters of surveying that a rating of **County Importance** is considered appropriate for wintering birds at Drumman Bog.

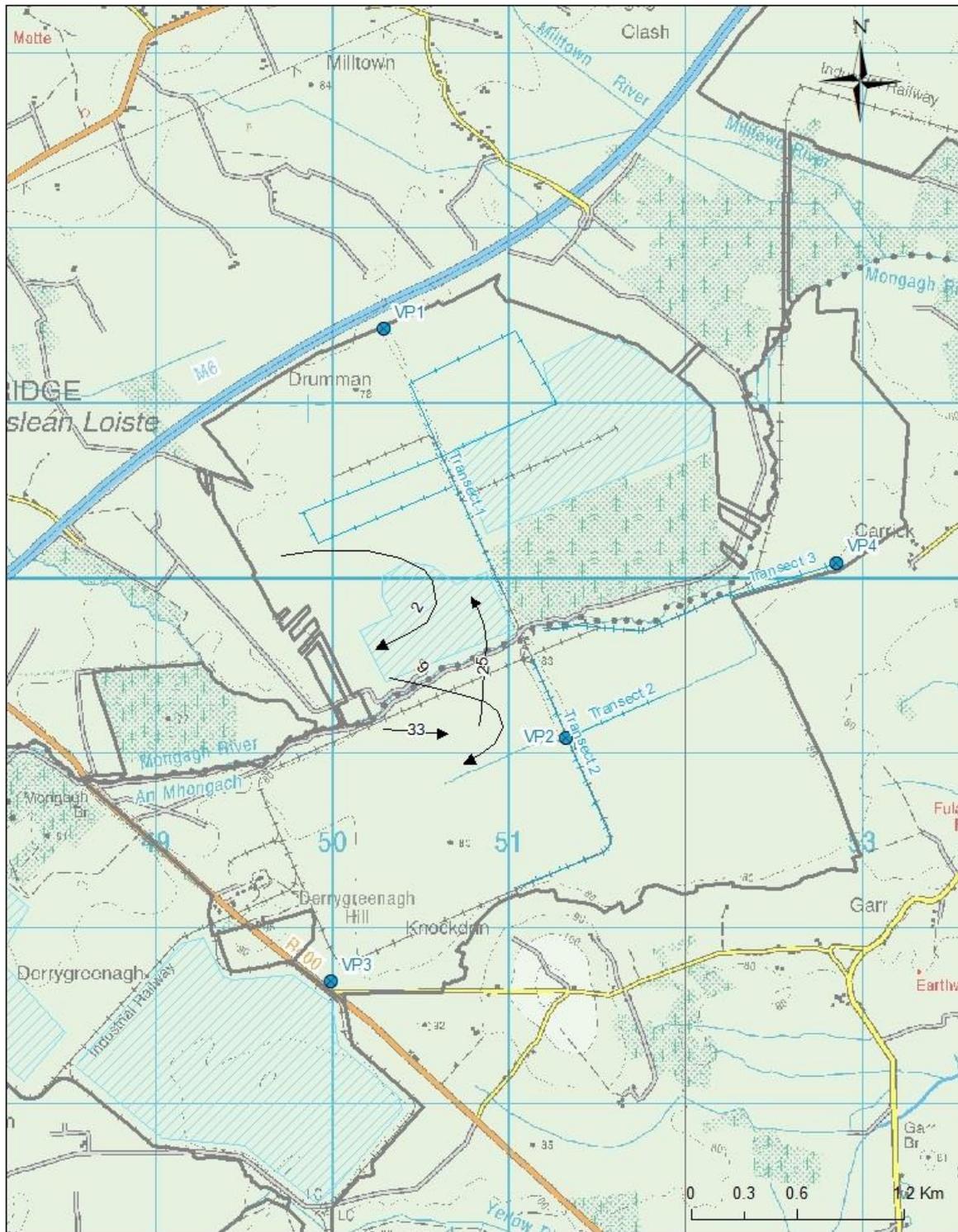
**Drumman Map 1:** Map showing transect and vantage point locations, with Whooper Swan flightlines.



- ➔ Whooper Swan flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Drumman Whooper Swan observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 17th August 2022

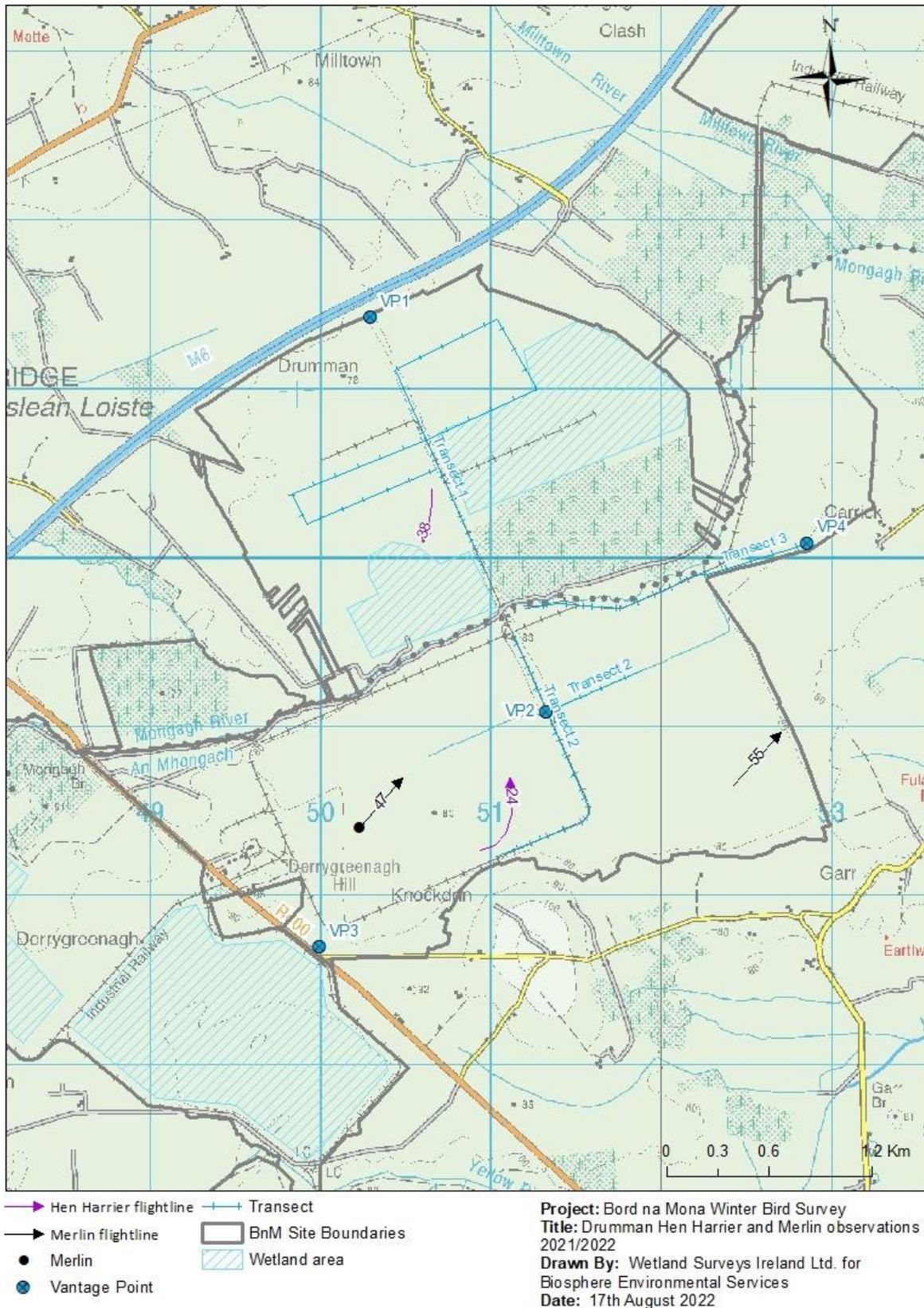
**Drumman Map 2:** Map showing transect and vantage point locations, with Mute Swan flightlines.



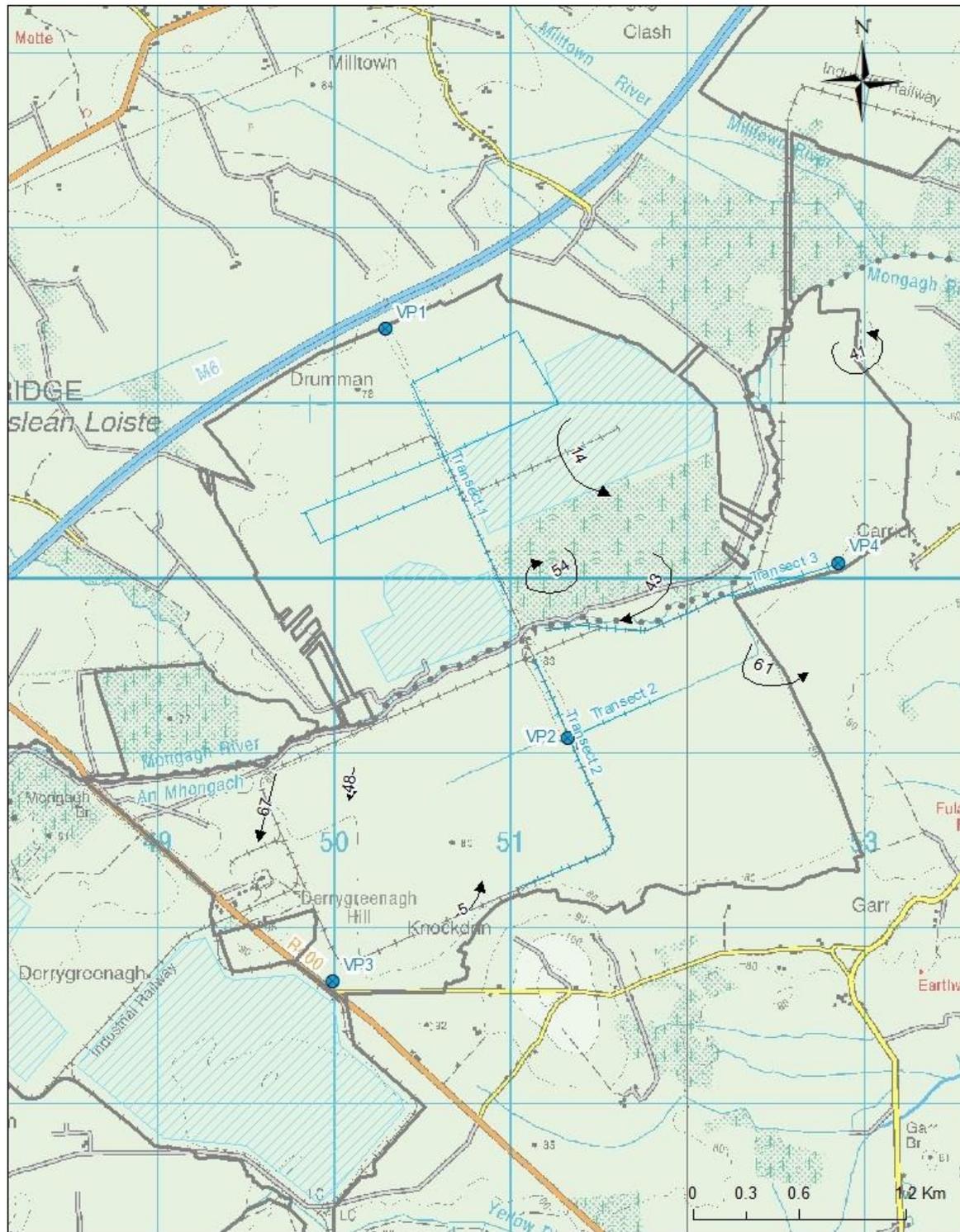
- ➔ Mute Swan
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Drumman Mute Swan observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 17th August 2022

**Drumman Map 3:** Map showing transect and vantage point locations, with Hen Harrier and Merlin flightlines.



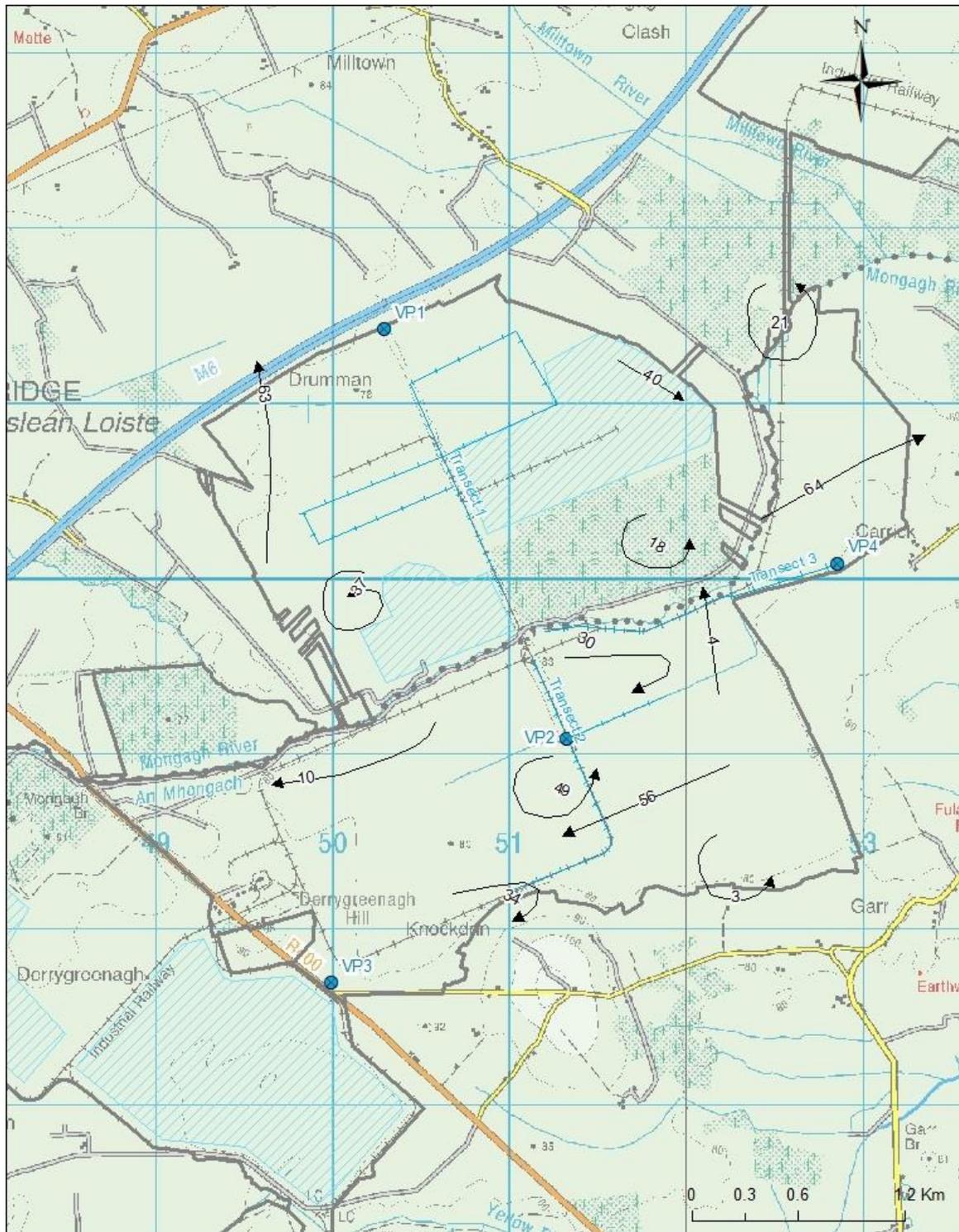
**Drumman Map 4:** Map showing transect and vantage point locations, with Sparrowhawk flightlines.



- Sparrowhawk flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Drumman Sparrowhawk observations 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
 Date: 17th August 2022

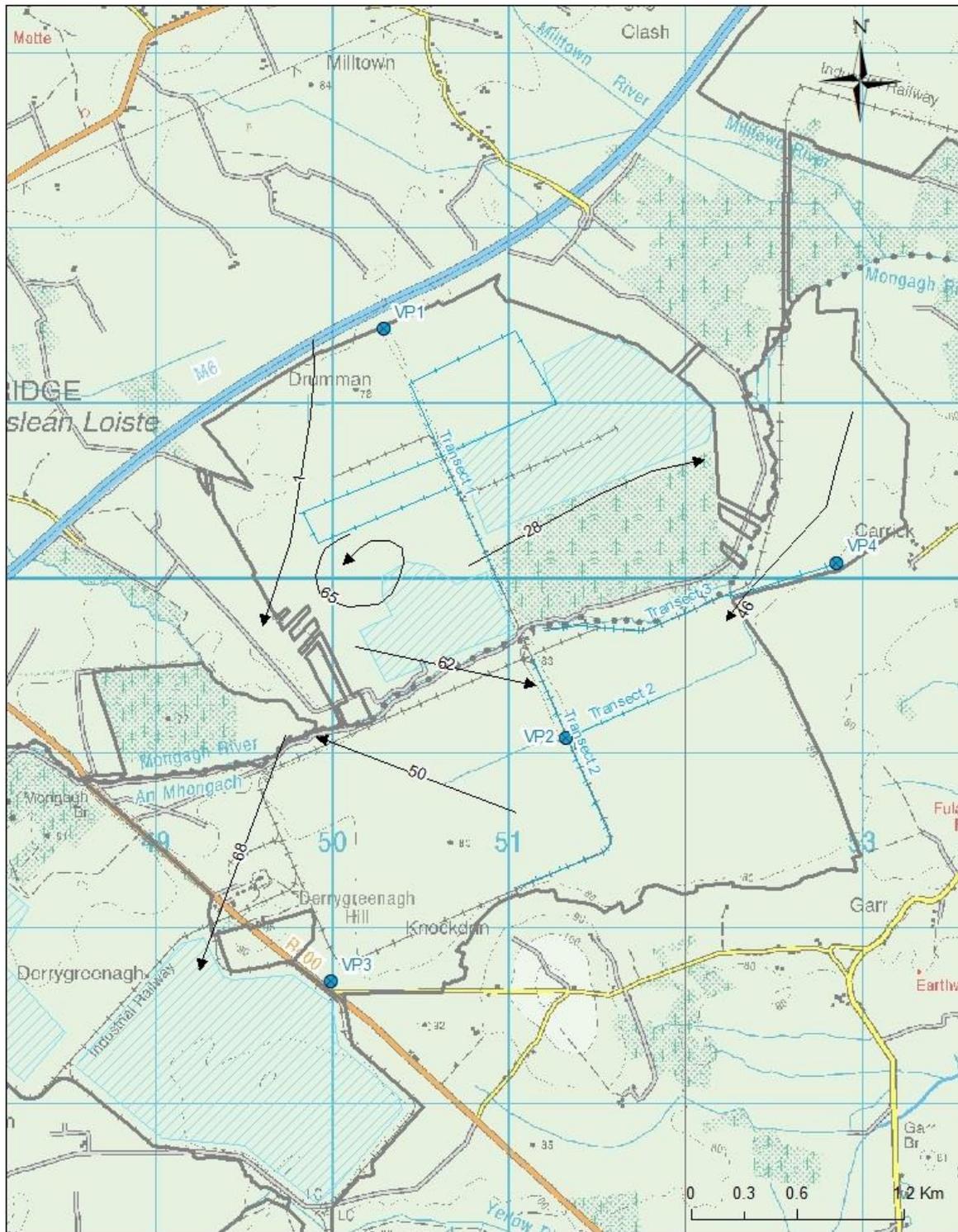
**Drumman Map 5:** Map showing transect and vantage point locations, with Buzzard flightlines.



- ➔ Buzzard flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Drumman Buzzard observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 17th August 2022

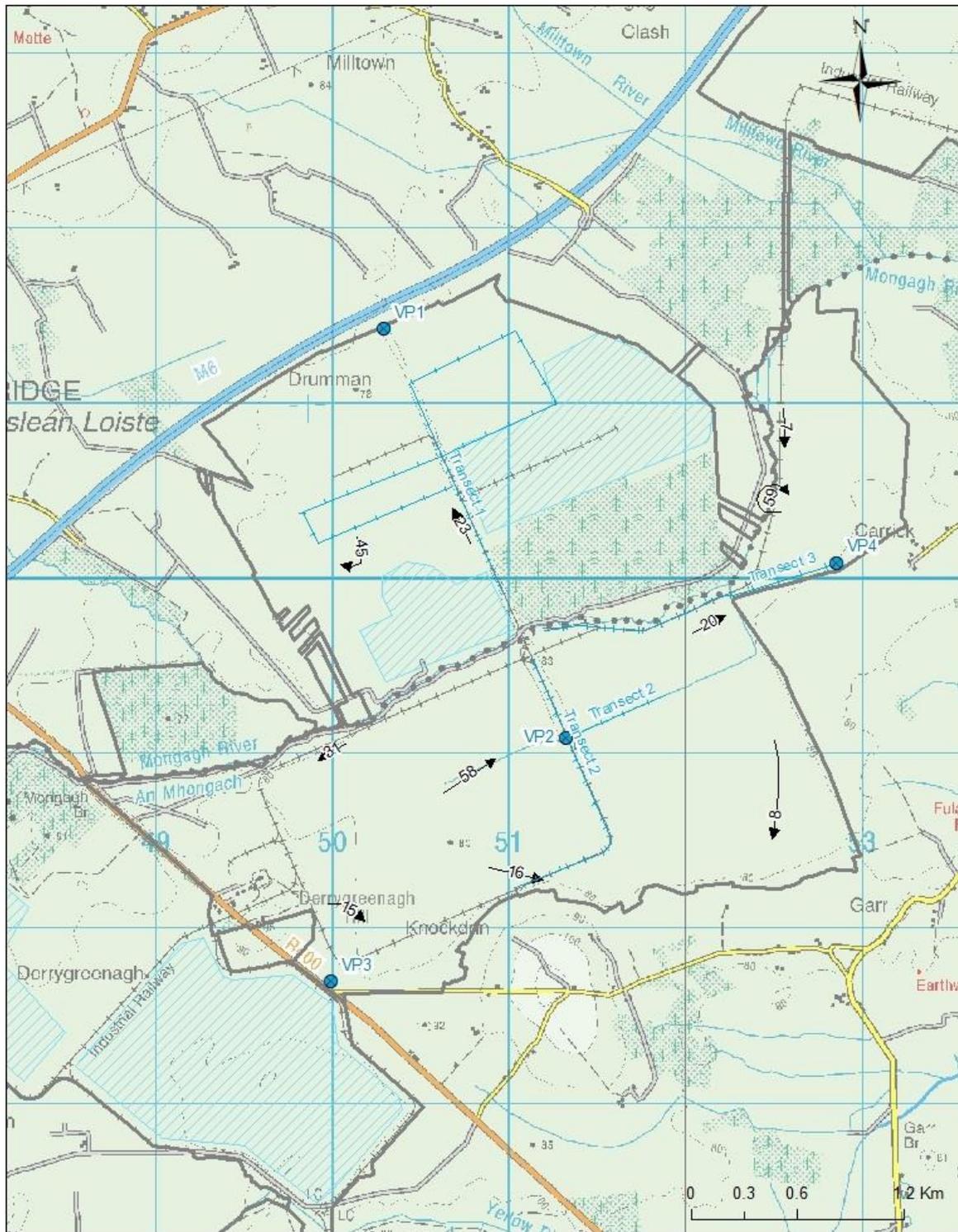
**Drumman Map 6:** Map showing transect and vantage point locations, with Peregrine flightlines.



- Peregrine flightline
- Vantage Point
- +— Transect
- BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Drumman Peregrine observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 17th August 2022

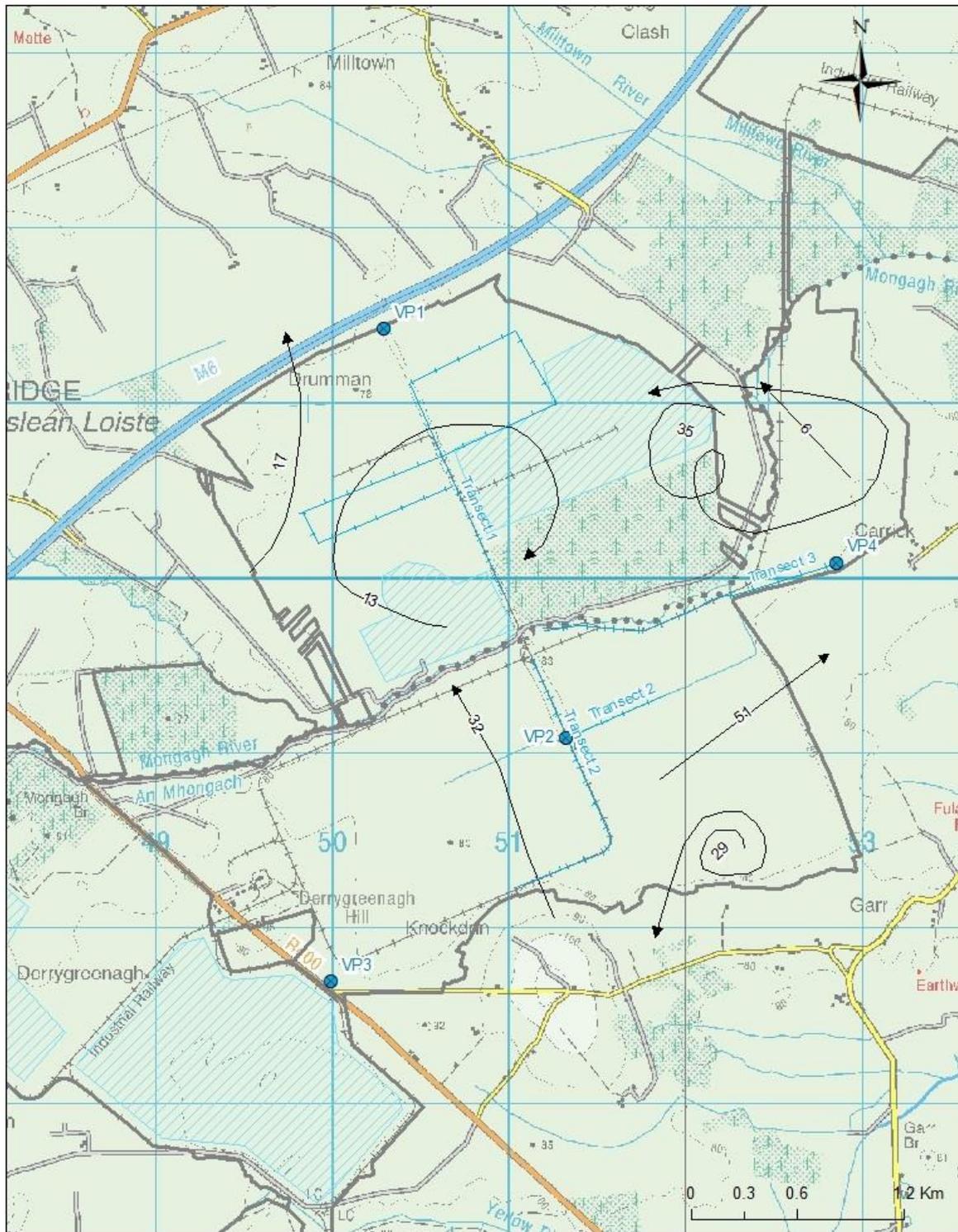
**Drumman Map 7:** Map showing transect and vantage point locations, with Kestrel flightlines.



- Kestrel flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Drumman Kestrel observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 17th August 2022

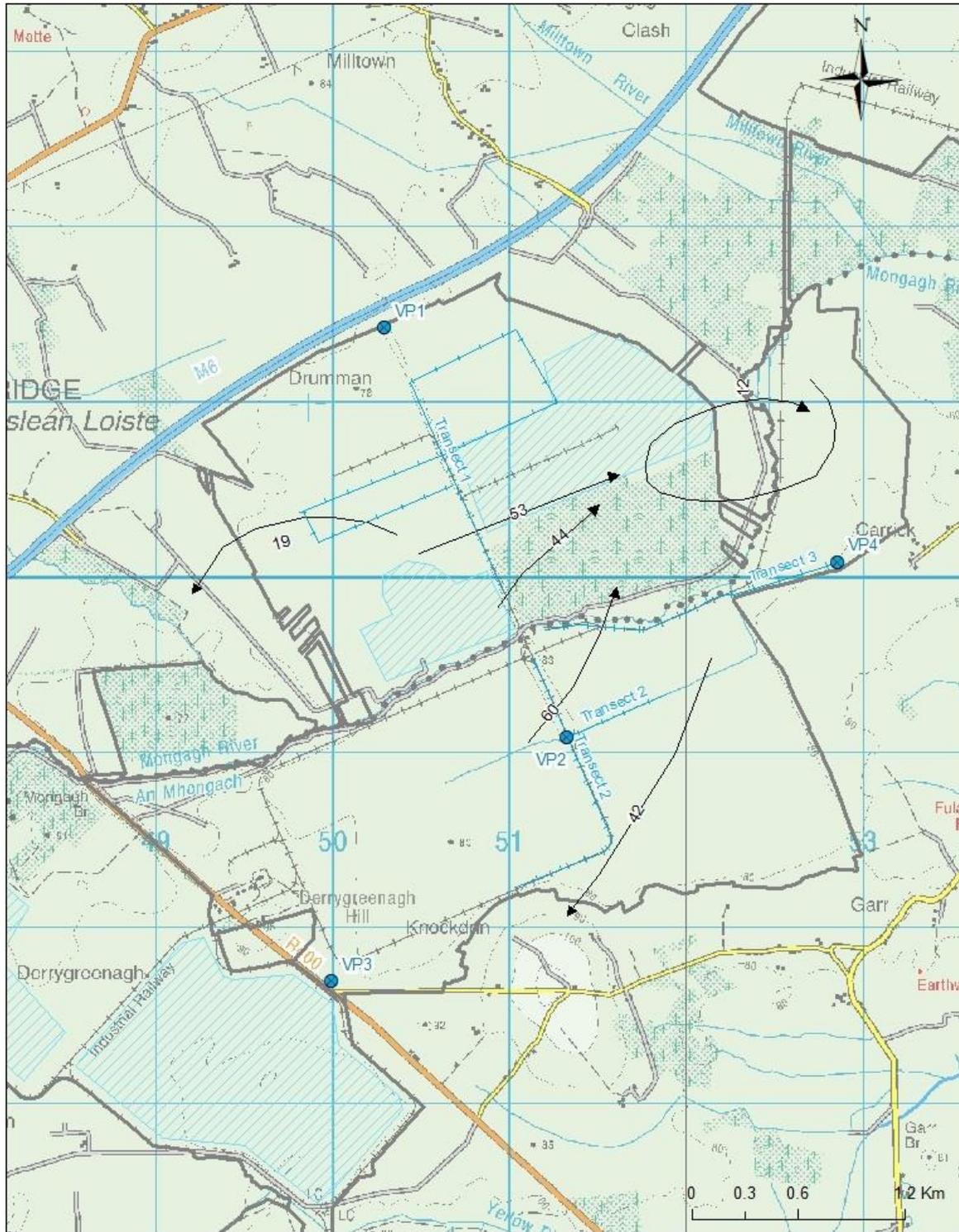
**Drumman Map 8:** Map showing transect and vantage point locations, with Golden Plover flightlines.



- Golden Plover flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Drumman Golden Plover observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 17th August 2022

**Drumman Map 9:** Map showing transect and vantage point locations, with Lapwing flightlines.



- Lapwing flightline
- Vantage Point
- +— Transect
- BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Drumman Lapwing observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 17th August 2022



### **3.5 Derryhinch Bog**

#### **3.5.1 Site Description**

Derryhinch Bog is a medium sized site located approximately 1.5 km east of Milltownpass. It is connected by a rail line to Drumman Bog, which is located approximately 1 km to the south-southwest. The main access to the site is from a private lane leading from a third class road to the north. The entire western boundary of the bog is bounded by the M6 motorway. The site extends for up to 1.5 km from north to south and for approximately 2.5 km from east to west.

Until recently (January 2021), the majority of Derryhinch Bog had been in commercial production and was almost entirely bare peat. A small mineral island is located in the mid-west section and is dominated by birch scrub. Further stands of birch dominated scrub occur in the extreme northwest corner of the site and along the south end of the eastern boundary. Fringe habitats found along the boundaries of the site include dry grassland and scrub. An area of cutover and remnant high bog occurs along the southern boundary (south of the railway).

Since production ceased, the site is in early stage of re-vegetation, though wetlands with permanent water are largely absent. During wet periods, ponding forms and especially in the southwest sector where some wetland vegetation is developing (see Plate 1).

A substantial area of cutover bog adjoins the site to the east and northeast. Agricultural land occurs to the north and southwest, while there are stands of commercial conifer forest to the south.

#### **3.5.2 Survey locations**

**Transect 1** runs along the northern, eastern and much of the southern boundary of the site.

**Vantage Point 1** is located in the centre of the northern boundary and gives a sweeping southwards view over almost the entire site.

**Vantage Point 2** is located off the motorway and gives a view eastwards over the entire western half of the site.

#### **3.5.3 Results and Discussion**

A summary of the variables (date, time, weather etc.) for the vantage point watches carried out at Derryhinch Bog between October 2021 and March 2022 is presented in Appendix 3. Survey raw data for the vantage point watches are presented in Appendix 7.

Scientific names of bird species are given in Appendix 9.



**Plate 1.** Derryhinch Bog – some wetland development is occurring in the south-west sector of the site though this is expected to mostly dry out during summer (March 2022).

### **Target species recorded**

#### Mute Swan

A party of 5 birds flew across site on 11<sup>th</sup> December.

#### Sparrowhawk

There were five records of Sparrowhawk on site through the winter.

Three of the records were of hunting birds through scrub, with two records of pairs in display (25<sup>th</sup> February & 13<sup>th</sup> March). Sparrowhawk is known to breed on site.

#### Buzzard

Buzzard was the most frequently recorded bird of prey during the winter and was recorded throughout the site.

Most of the records involved single birds hunting and flying. Pairs interacting and/or displaying were recorded on 26<sup>th</sup> October and 10<sup>th</sup> February.

Several pairs of Buzzard are known to breed within the wider area of Derryhinch.

#### Kestrel

Kestrel was recorded on site throughout the winter period, with a total of eight records. All were of single birds, involving both males and females. Most of the birds were hunting actively on site.

Kestrel breeds locally (though probably not on site).

### Peregrine

Peregrine was recorded flying over the site on five occasions through the winter. All records were of single birds.

The birds observed in winter at Derryhinch are considered to be associated with the breeding pair at Derryarkin (which nests on a man-made structure).

### Golden Plover

Golden Plover was recorded on three dates as follows:

On 28<sup>th</sup> October, a flock of c.400 birds flew in from the west and landed on bare peat for c.1 hour. The flock then got up and flew south.

On 17<sup>th</sup> November, a flock of c.40 birds arose from bare peat and flew southwards – it is expected that they had been roosting on the peat since the start of the morning watch.

On 11<sup>th</sup> December, a flock of c.150 birds flew in from the north and landed on bare peat in central area of site for c. 20 minutes. The flock then got up and flew south.

The plover which occur at Derryhinch are almost certainly from the regular wintering population (estimated up to 1,000 birds) which frequents the fields at Derryarkin as well as fields to the north of the motorway, and also at times Drumman Bog.

### Lesser Black-backed Gull

A flock of 22 birds flew into site on 25<sup>th</sup> February and landed on bare peat. The flock appeared to be mostly sub-adults.

### **Potential for other target species**

Hen Harrier and Merlin (recorded on site in March 2013) could be expected at times to pass through the site.

Lapwing had been recorded on site in winter 2013/14.

### **Other species of note**

Mallard – recorded on several occasions in large drains and ponded areas, though in low numbers (1-4).

Snipe – snipe is fairly scarce on site being recorded mainly in the developing wetland area in the southwest sector where up to 10 birds were flushed in early March.

Skylark – recorded in October (3) and March (7) (latter territorial birds).

Mistle Thrush – recorded regularly on site, with peak count of 11 on 26<sup>th</sup> October.

Redwing – flocks present in marginal hedging and flying over site on several dates in December and January. Highest count was c.500 on 11<sup>th</sup> December (accompanied by similar number of Fieldfares).

Robin - present on site through winter in scrub habitats (though in low numbers).

Stonechat – recorded on most visits through the winter. Two territorial pairs in March.

Meadow Pipit – regular on site through the winter though mostly in small numbers (<10). Total of 21 on transect walk on 27<sup>th</sup> February comprised flocking birds and some territorial birds.

Goldcrest – present on site through winter in scrub habitats (though in low numbers).

Starling – large flocks recorded in late afternoon period as follows: 2,000+ flying south over site from 15.15 hrs on 11<sup>th</sup> December; 3,000+ flying southeast across site from 15.00 hrs on 28<sup>th</sup> December (came in from over motorway); up to 5,000 flew generally southwards over site from 16.15 hrs on 19<sup>th</sup> January.

Linnet – flock of c.60 with chaffinches and goldfinches along northern margin of site on 20<sup>th</sup> November.

**SITE: DERRYHINCH – TRANSECT SURVEYS, 2021-2022**

Species	Date 20/11/21	Date 15/01/22	Date 27/02/22	BoCCI Status
Mallard	3	0	2	<b>G</b>
Pheasant	2	1	4	<b>G</b>
Grey Heron	1	0	0	<b>G</b>
Sparrowhawk	0	0	1	<b>G</b>
Buzzard	1	0	1	<b>G</b>
<b>Kestrel</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>R</b>
<b>Snipe</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>R</b>
Woodpigeon	10+	9	14	<b>G</b>
Magpie	1	1	2	<b>G</b>
Jay	0	0	0	<b>G</b>
Jackdaw	20	10	8	<b>G</b>
Hooded Crow	3	1	3	<b>G</b>
Raven	4	0	0	<b>G</b>
<b>Goldcrest</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>A</b>
Blue Tit	2	0	1	<b>G</b>
Great Tit	1	0	1	<b>G</b>
Dunnock	0	0	2	<b>G</b>
Coal Tit	4	2	1	<b>G</b>
<b>Skylark</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>A</b>
Long-tailed Tit	5	0	0	<b>G</b>
<b>Starling</b>	<b>50</b>	<b>20</b>	<b>20</b>	<b>A</b>
Wren	11	4	7	<b>G</b>
Blackbird	9	8	5	<b>G</b>
Fieldfare	0	50+	0	<b>G</b>
Song Thrush	1	1	2	<b>G</b>
<b>Redwing</b>	<b>0</b>	<b>50+</b>	<b>0</b>	<b>R</b>
Mistle Thrush	3	2	2	<b>G</b>
Robin	5	2	4	<b>G</b>
Stonechat	2	1	3	<b>G</b>
<b>Meadow Pipit</b>	<b>14</b>	<b>10</b>	<b>21</b>	<b>R</b>
Pied Wagtail	4	0	3	<b>G</b>
Chaffinch	c.100	12	10+	<b>G</b>
Goldfinch	20+	0	12	<b>G</b>
<b>Linnet</b>	<b>60</b>	<b>5</b>	<b>2</b>	<b>A</b>
Lesser Redpoll	30+	10	10	<b>G</b>
Reed Bunting	2	0	3	<b>G</b>

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

## **General discussion**

The 2021/22 winter survey at Derryhinch bog has added to the baseline winter bird assessments carried out in winters 2012/13 and 2013/14 (albeit the earlier surveys were at time when commercial production was in progress).

While bog rehabilitation, and especially wetland development, is still at an early development stage at Derryhinch, the site provides useful habitat for various bird of prey species and especially Kestrel (Red listed) and Buzzard. Species such as Hen Harrier and Merlin could be expected to pass through the site at times.

These birds are considered to be associated with a regular winter population in the wider areas which uses cutaway bogs and agricultural fields. Snipe (Red-listed) also occurs though mainly in the area in the southwest where some wetland vegetation is developing. Lesser Black-backed Gull was recorded landed in the site on one occasion.

The site supports a range of other species of conservation interest. Meadow Pipit, Red listed on basis of breeding population, occurs throughout much of the site during winter. The Red-listed Redwing is regular in area during winter and at times occurs within the site.

Amber-listed species recorded on site included Skylark, Goldcrest, Starling and Linnet.

### **3.5.4 Evaluation and Rating of Derryhinch Bog for Wintering Birds**

There follows a summary of the conservation status of species recorded on Derryhinch Bog in winter 2021/22:

#### **EU Birds Directive Annex I listed species**

Peregrine (flying over)

Golden Plover

#### **Red Listed species (after Gilbert et al. 2021)**

Kestrel

Golden Plover

Snipe

Redwing

Meadow Pipit

#### **Amber Listed species (after Gilbert et al. 2021)**

Mute Swan (flying over)

Lesser Black-backed Gull

Skylark

Goldcrest

Starling

Linnet

Overall, the site has developing habitats suitable for supporting a range of wintering birds, including some wetland birds and notably Golden Plover.

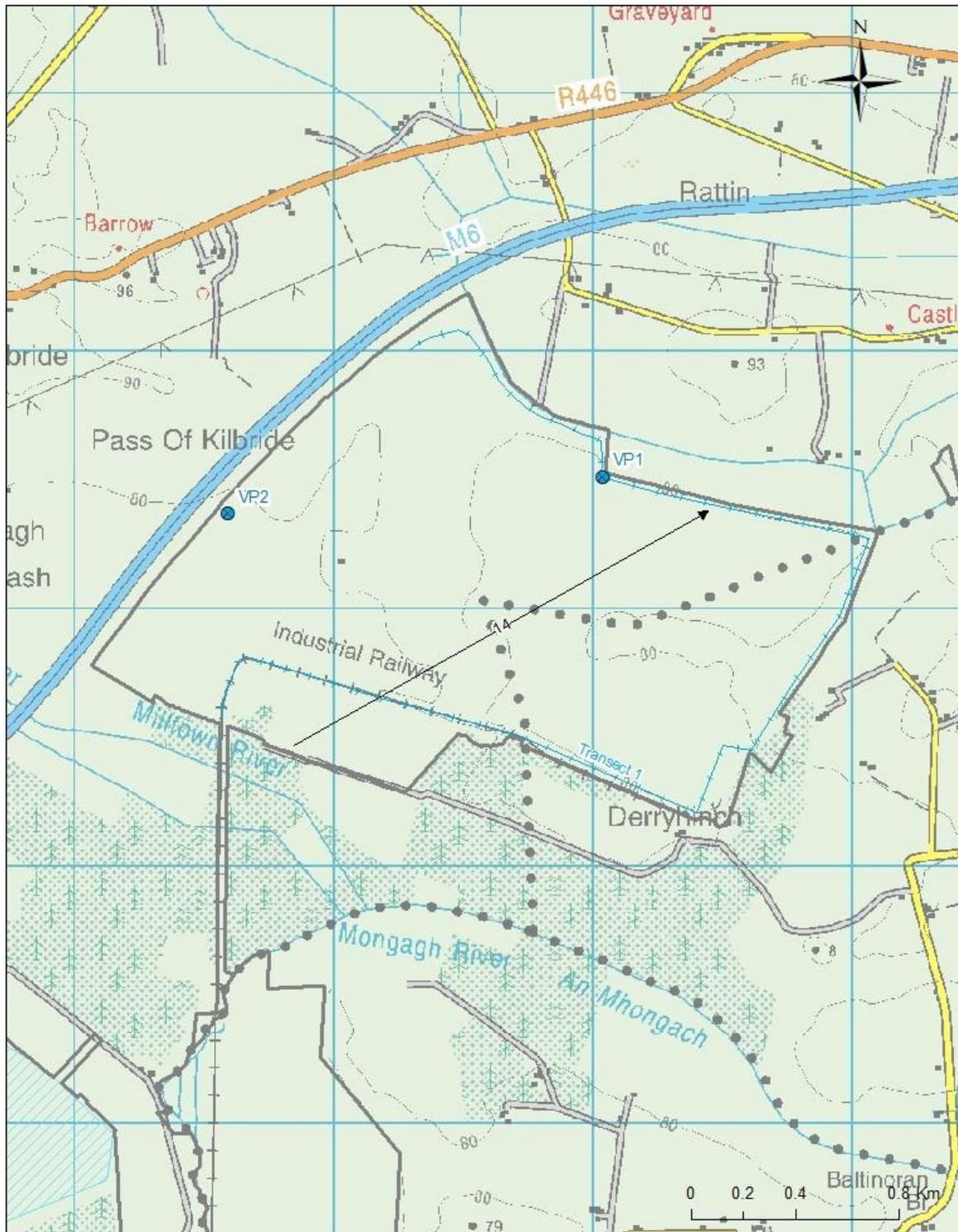
A feature of Derryhinch Bog is that it is used regularly for hunting by birds of prey, notably

Kestrel, Buzzard and Sparrowhawk.

From the location of the site, it can be considered as part of a larger complex of cutaway bog sites, comprising Drumman, Derryarkin and Ballybeg bogs.

On the basis of usage of the site by Annex I listed species, plus some Red- and Amber-listed species, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Derryhinch Bog.

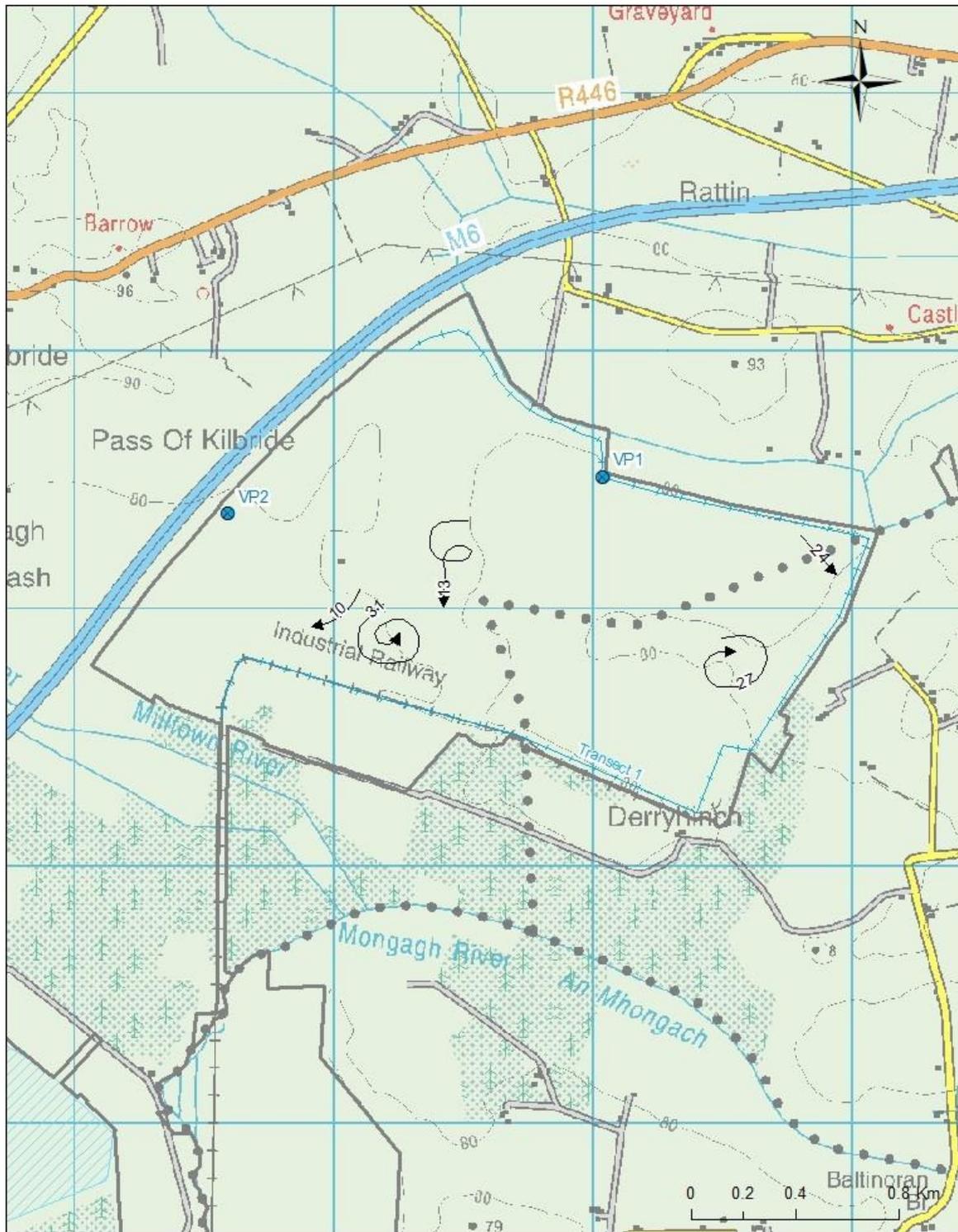
**Derryhinch Map 1:** Map showing transect and vantage point locations, with Mute Swan flightlines.



- Mute Swan
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryhinch Mute Swan observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

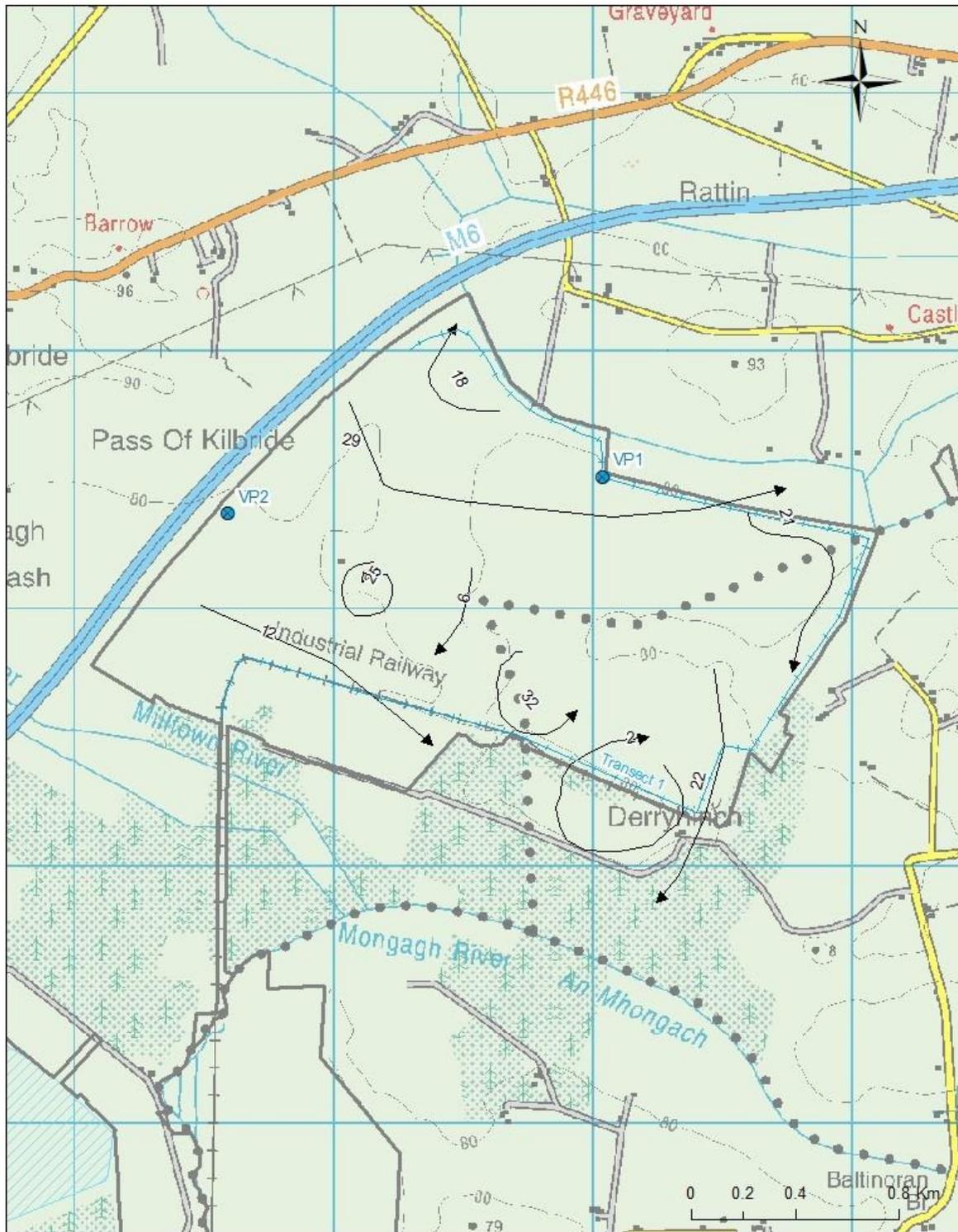
**Derryhinch Map 2:** Map showing transect and vantage point locations, with Sparrowhawk flightlines.



- Sparrowhawk flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Derryhinch Sparrowhawk observations 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
 Date: 15th August 2022

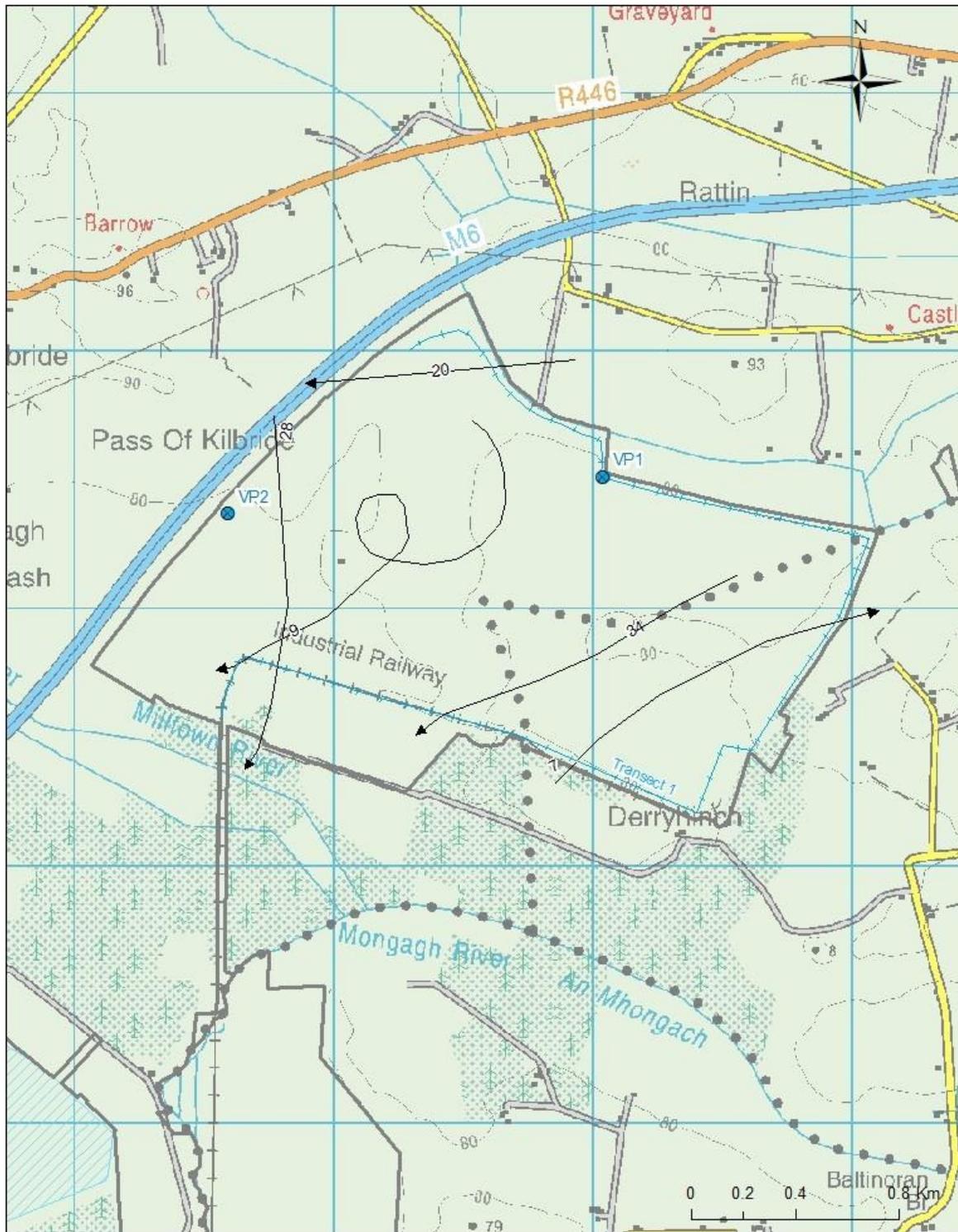
**Derryhinch Map 3:** Map showing transect and vantage point locations, with Buzzard flightlines.



- Buzzard flightline
- Vantage Point
- Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryhinch Buzzard observations  
 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
**Date:** 15th August 2022

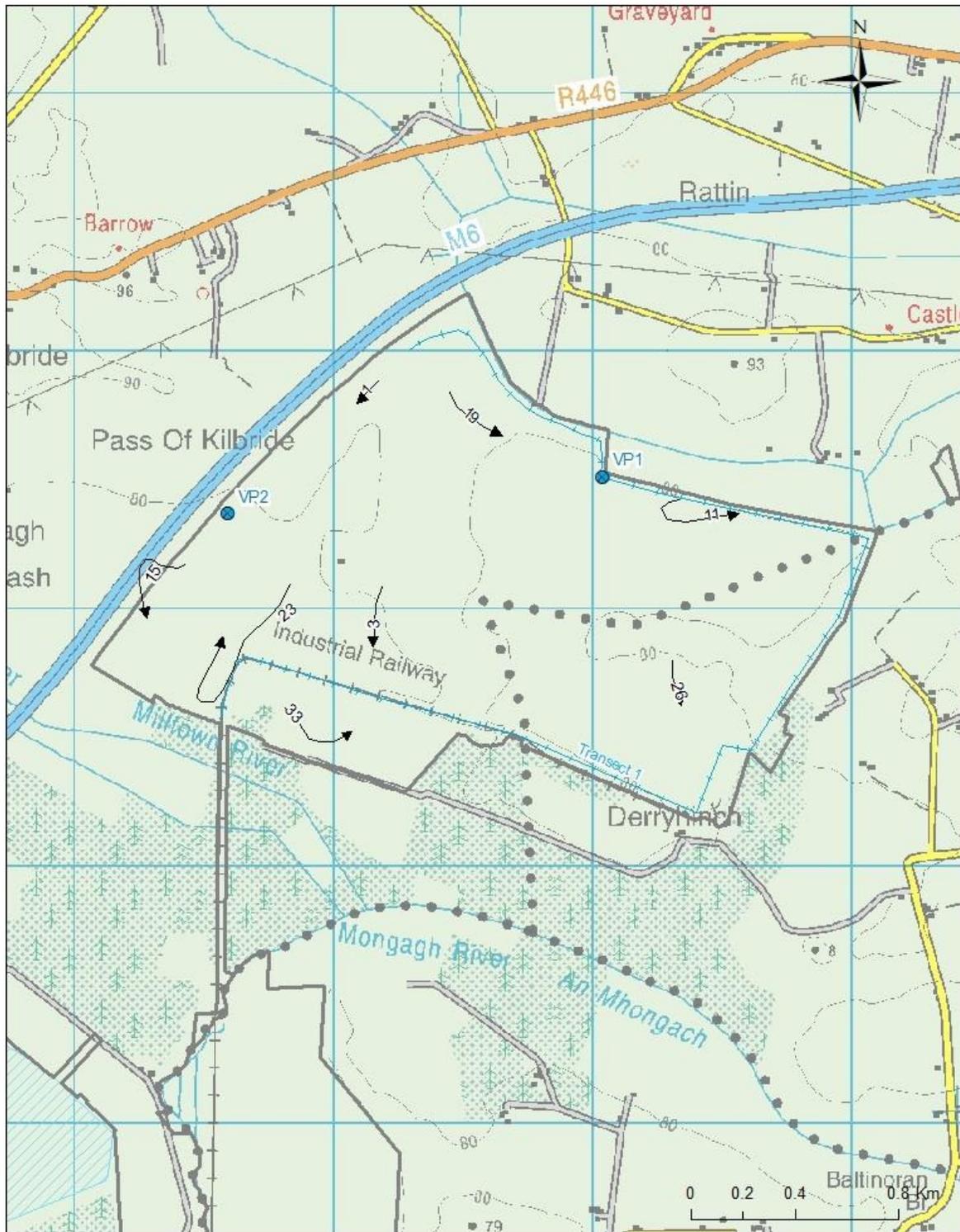
**Derryhinch Map 4:** Map showing transect and vantage point locations, with Peregrine flightlines.



- Peregrine flightline
- Vantage Point
- +— Transect
- BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryhinch Peregrine observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

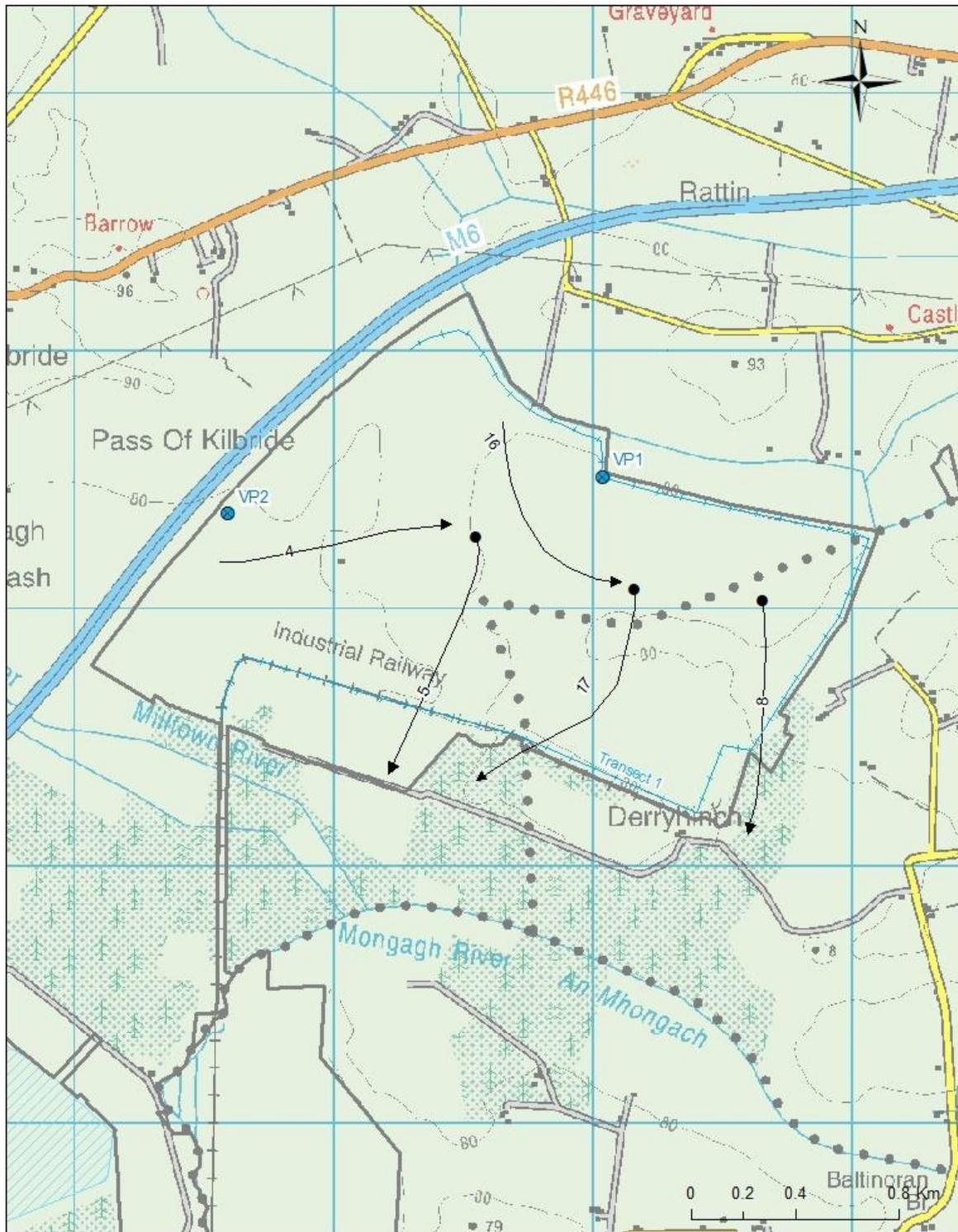
**Derryhinch Map 5:** Map showing transect and vantage point locations, with Kestrel flightlines.



- Kestrel flightline
- Vantage Point
- Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Derryhinch Kestrel observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022

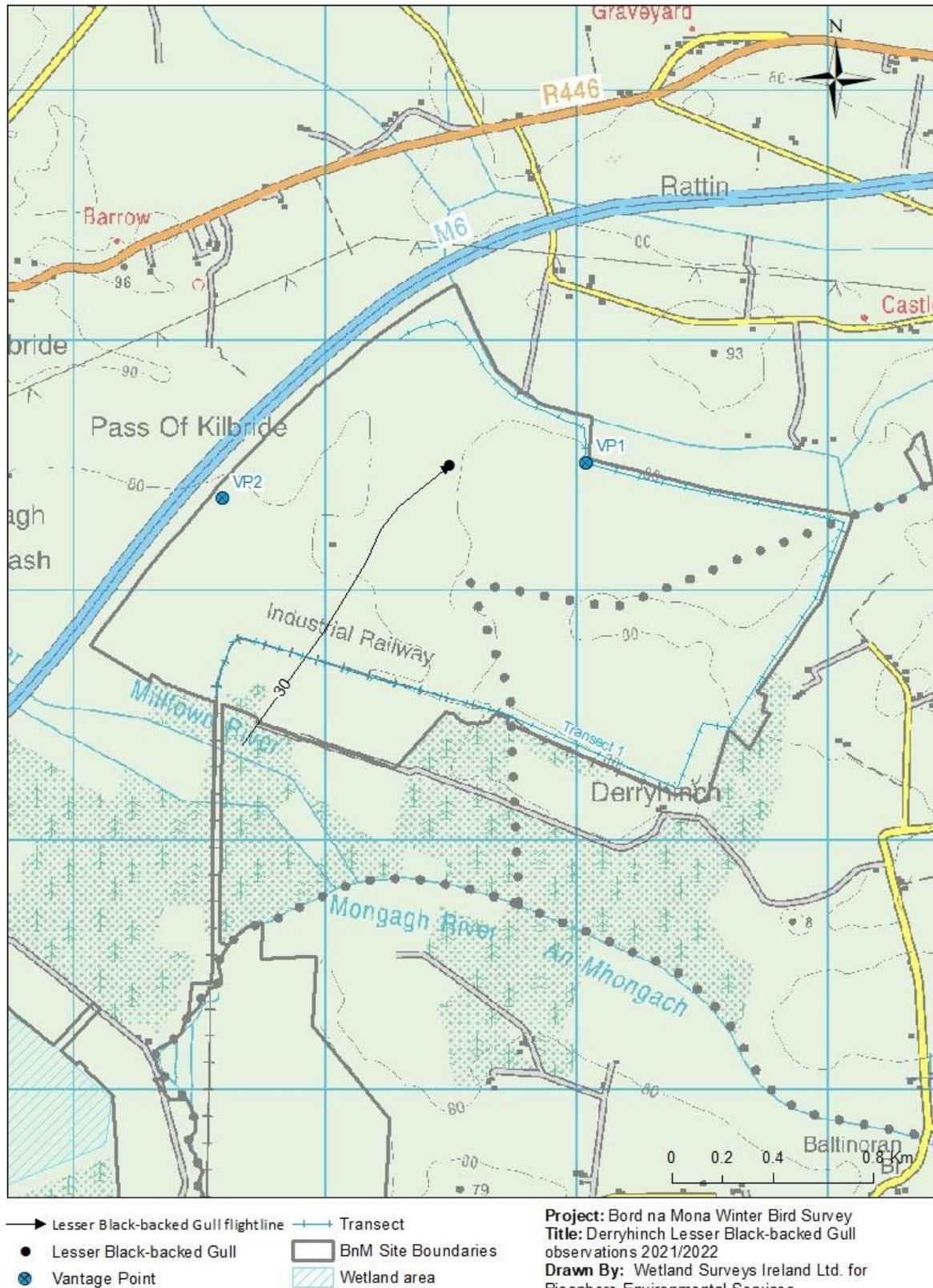
**Derryhinch Map 6:** Map showing transect and vantage point locations, with Golden Plover Swan flightlines.



- Golden Plover flightline
- Golden Plover
- Vantage Point
- +— Transect
- BnM Site Boundaries
- ▨ Wetland area

**Project:** Bord na Mona Winter Bird Survey  
**Title:** Derryhinch Golden Plover observations 2021/2022  
**Drawn By:** Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
**Date:** 15th August 2022

**Derryhinch Map 7:** Map showing transect and vantage point locations, with Lesser Black-backed Gull flightlines.



### **3.6 Ballybeg Bog**

#### **3.6.1 Site Description**

Ballybeg Bog is located to the west of the R400 road and between Croghan Hill and the town of Rhode. It is contiguous with Derryarkin bog to the north and Cavemount bog to the south. The most southern sector is an outlier from the main site and lies between a local road and the Grand Canal pNHA.

In addition to recent commercial peat production (now ceased since January 2021), a large area (c.60 ha) of cutaway east of the main railway line had been planted with alder as a biomass trial for East Offaly Power. The extreme northeast section of the site had been used for gravel extraction.

Ballybeg Bog is sharply divided into three main ecological units: the northern part which has been out of production for some time and is re-vegetating cutaway, the southern part which has been in recent commercial industrial production, and the small southern outlier of largely intact raised bog, known as Coole bog.

The northern cutaway sector contains a range of habitats but is dominated by birch scrub or developing bog woodland. There are some small wetlands with permanent or temporary water. Wetland vegetation, however, is poorly developed. Bare peat still occurs in places. As noted, a substantial portion of the cutaway has been developed as an Alder biomass trial, and is classified as short rotation coppice.

The southern part of the site is in the early stage of re-vegetation though as of yet vegetation cover is sparse. A portion to the east of the railway line and west-southwest of the (former) Works area comprises disturbed ground associated with the old Rhode Power Station. This area is dominated by scrub, dense bracken and dry grassland.

An area of undeveloped high bog occurs in the southernmost sector of the site (part of this bog is not within Bord na Móna ownership). This is largely intact bog though there is active turbary along the western margin and a network of surface drains had been inserted in the past. A remnant strip of high bog also occurs along the northeast boundary, while patches of cutover bog occur in places along the margins of the site.

The site is adjoined by slivers of bog to the east and north-west, with agricultural land to the south and west.

#### **3.6.2 Survey locations**

**Transect 1** follows the train track through the site.

**Vantage Point 1** is located along the northeast boundary of the site and gives a view over the entire northern sector of the site.

**Vantage Point 2** is located on a peat track in the central areas of the site (at edge of the established cutaway) and gives a view over much of the southern sector of the site.

**Vantage Point 3** is located on the train track near the southern entrance to the site and gives a view over the extreme southernmost parts of site, including the Coole Bog outlier.

### **3.5.3 Results and Discussion**

A summary of the variables (date, time, weather etc.) for the vantage point watches carried out at Ballybeg Bog between October 2021 and March 2022 is presented in Appendix 4. Survey raw data for the vantage point watches are presented in Appendix 8.

Scientific names of bird species are given in Appendix 9.



**Plate 1.** The southern sector of Ballybeg Bog is still largely bare peat after recent commercial production. Looking west across site towards Croghanhill, September 2021.



**Plate 2.** The northern sector of Ballybeg Bog is mostly dominated by birch scrub, with some shallow pools though with sparse vegetation, September 2021.

### **Target species recorded**

#### Mute Swan

There were two records: a party of three flew southwards towards Cavemount on 30<sup>th</sup> October and a pair flew southeast on 16<sup>th</sup> January.

Mute swan occurs regularly at Derryarkin/Drumman and Cavemount, and birds may also be observed along the canal. Some interaction is expected between the locations.

#### Whooper Swan

There were five flightlines over the site, as follows:

On 21<sup>st</sup> November, a party of 7 was observed flying northwest over the site at 15.14 hrs.

On 29<sup>th</sup> November, a party of 9 flew south over the site at 16.10 hrs.

On 11<sup>th</sup> December, a party of 6 was observed flying north over the site at 14.56 hrs.

On 20<sup>th</sup> December, a party of 6 was observed flying south over southern part of site at 15.15 hrs.

On 13<sup>th</sup> February, a party of 5 flew northwards from Cavemount at 08.48 hrs.

The pattern of flightlines indicates that there is some movement of Whooper Swans between Cavemount Bog and Derryarkin. However, the numbers recorded were relatively low and not on a regular basis. The observations at Derryarkin have shown that the majority of feeding swans use the local quarry ponds for night roosting.

### Sparrowhawk

There were six records of Sparrowhawk on site through the winter.

Two of the records (20<sup>th</sup> October & 22<sup>nd</sup> February) involved circling pairs, with the other records of single birds. All of the records were from the northern half of the site.

Sparrowhawk is known to breed on site.

### Buzzard

Buzzard was recorded frequently during the winter and throughout the site.

Three of the records (21<sup>st</sup> November, 22<sup>nd</sup> January, 22<sup>nd</sup> February) involved pairs interacting / displaying, with the other records involving single birds hunting and/or flying.

Several pairs of Buzzard are known to breed within the wider area of Ballybeg.

### Kestrel

Kestrel was recorded on site throughout the winter period, with a total of twelve records. Apart from a pair together on 15<sup>th</sup> March, all records were of single birds, involving both males and females. Most of the birds were hunting actively on site.

Kestrel breeds locally (though probably not on site).

### Merlin

There was one record of Merlin on 13<sup>th</sup> February – this involved a bird hunting low over sparsely vegetated bog. The bird may have been roosting on peat beforehand as it was not seen flying in to the area.

Merlin is expected to be an occasional winter visitor to the site.

### Peregrine

Peregrine was recorded flying over the site on two occasions, 29<sup>th</sup> November and 25<sup>th</sup> February.

The birds observed in winter at Ballybeg are considered to be associated with the breeding pair at Derryarkin (which nests on a man-made structure).

### Golden Plover

Golden Plover was recorded on three dates as follows:

On 26<sup>th</sup> October, a flock of c.80 birds was roosting on bare peat in the southern sector of the site and then flew northwards.

On 22<sup>nd</sup> November, a flock of 50+ birds flew in from northwest and landed on bare peat for approximately 50 minutes. The birds then got up and flew back northwards.

On 22<sup>nd</sup> January, a flock of c.200 birds was observed circling over the northern boundary of the site.

The plover which occur at Ballybeg are almost certainly from the regular wintering population (estimated up to 1,000 birds) which frequents the fields at Derryarkin as well as fields to the north of the motorway, and also at times Drumman Bog.

### Lapwing

Lapwing was recorded on three dates as follows:

On 30<sup>th</sup> October, a flock of 28 birds flew northwards over the southern part of the site.

On 29<sup>th</sup> November, a flock of 100+ birds was observed circling over the northern boundary of the site.

On 20<sup>th</sup> December, a flock of 18 birds flew southwards over the site.

The Lapwing which occur at Ballybeg are expected to be associated with the wintering population (estimated up to 400 birds) which frequents the fields at Derryarkin as well as fields to the north of the motorway, and also at times Drumman Bog. Birds may at times also utilise Cavemount Bog.

### **Potential for other target species**

Hen Harrier could be expected at times to pass through the site (one recorded in site in March 2013).

### **Other species of note**

Mallard – recorded on several occasions in large drains and ponded areas, though in low numbers (up to 3).

Snipe – snipe is fairly scarce on site, with 1-2 birds being recorded mainly in the few wetland areas in the northern part of site and on the southernmost bog (Coole). However, 11 were flushed from a wet area of Coole Bog on 13<sup>th</sup> February.

Skylark – recorded in March (4) (territorial birds).

Mistle Thrush – recorded regularly on site, with peak count of 19 on 30<sup>th</sup> October.

Redwing – flocks present in marginal hedging in southern sector of site and also passing over site in December and January. Highest count was c.200 on 16<sup>th</sup> January (accompanied by several hundred Fieldfares).

Robin - present on site through winter in scrub habitats.

Stonechat – recorded on most visits through the winter. Three territorial pairs in March.

Meadow Pipit – regular on site through the winter though mostly in small numbers (<10). Total of 23 on transect walk on 26<sup>th</sup> February comprised mostly territorial birds.

Goldcrest – present on site through winter in scrub habitats (though in low numbers).

Starling – large flocks recorded passing over site in late afternoon periods from late-November to February, with estimates of over 1,000 birds as follows: c.2,000 west over site from 16.05 hrs on 29<sup>th</sup> November; c.4,000 northwest across site from 15.45 hrs on 18<sup>th</sup> December; c.6,000 north over site from 16.00 hrs on 22<sup>nd</sup> January; c.2,000 flew northwest across site from 16.25 hrs on 13<sup>th</sup> February.

Linnet – regular on site in numbers up to 20 through the winter.

**SITE: BALLYBEG – TRANSECT SURVEYS, 2021-2022**

Species	Date 01/12/21	Date 23/01/22	Date 26/02/22	BoCCI Status
Mallard	0	0	3	<b>G</b>
Pheasant	2	0	1	<b>G</b>
Grey Heron	2	0	1	<b>G</b>
Sparrowhawk	0	0	0	<b>G</b>
Buzzard	2	1	0	<b>G</b>
<b>Kestrel</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>R</b>
<b>Lapwing</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>R</b>
<b>Snipe</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>R</b>
Woodpigeon	20+	6	10	<b>G</b>
Magpie	3	1	3	<b>G</b>
Jay	1	0	1	<b>G</b>
Jackdaw	24	10+	15	<b>G</b>
Hooded Crow	2	4	4	<b>G</b>
Raven	0	3	0	<b>G</b>
<b>Goldcrest</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>A</b>
Blue Tit	0	2	2	<b>G</b>
Great Tit	1	1	2	<b>G</b>
Dunnock	0	0	1	<b>G</b>
Coal Tit	6	0	4	<b>G</b>
<b>Skylark</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>A</b>
Long-tailed Tit	0	0	5	<b>G</b>
<b>Starling</b>	<b>100+</b>	<b>200+</b>	<b>12</b>	<b>A</b>
Wren	7	4	11	<b>G</b>
Blackbird	12	5	6	<b>G</b>
Fieldfare	0	50+	0	<b>G</b>
Song Thrush	2	0	2	<b>G</b>
<b>Redwing</b>	<b>0</b>	<b>40+</b>	<b>0</b>	<b>R</b>
Mistle Thrush	2	3	2	<b>G</b>
Robin	4	3	5	<b>G</b>
Stonechat	5	2	6	<b>G</b>
<b>Meadow Pipit</b>	<b>17</b>	<b>12</b>	<b>23</b>	<b>R</b>
Pied Wagtail	5	2	2	<b>G</b>
Chaffinch	30+	8	20+	<b>G</b>
Goldfinch	14	5	4	<b>G</b>
<b>Linnet</b>	<b>12</b>	<b>9</b>	<b>2</b>	<b>A</b>
Lesser Redpoll	20+	13	17	<b>G</b>
Reed Bunting	3	2	3	<b>G</b>

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

## **General discussion**

The 2021/22 winter survey at Ballybeg bog has added to the baseline winter bird assessments carried out in winters 2012/13 and 2013/14 (albeit the earlier surveys were at time when commercial production was in progress over the central and southern parts of site).

While bog rehabilitation, and especially wetland development, is still at an early development stage at Ballybeg, the site provides useful habitat for various bird of prey species and especially Kestrel (Red listed), Sparrowhawk and Buzzard. Species such as Hen Harrier and Merlin pass through the site at times and Peregrine may hunt over the site (site is within the range of the breeding pair at Derryarkin).

Golden Plover was recorded landed on bare peat on two occasions, as well as birds flying over the site. Lapwing was also recorded over the site. These two species are considered to be associated with the regular winter populations in the wider Derryarkin area, though birds may also commute to Cavemount bog. Snipe (Red-listed) occurs within the site though mostly in small numbers. Both Whooper Swan and Mute Swan were recorded flying over the site. These birds are expected to be commuting between Derryarkin and Cavemount, as Ballybeg does not presently have habitats to support swans.

The site supports a range of other species of conservation interest. Meadow Pipit, Red listed on basis of breeding population, occurs throughout much of the site during winter. The Red-listed Redwing is regular in area during winter and at times occurs within the site. Amber-listed species recorded on site included Skylark, Goldcrest, Starling and Linnet.

### **3.6.4 Evaluation and Rating of Ballybeg Bog for Wintering Birds**

There follows a summary of the conservation status of species recorded on Ballybeg Bog in winter 2021/22:

#### **EU Birds Directive Annex I listed species**

- Whooper Swan (flying over)
- Merlin
- Peregrine (flying over)
- Golden Plover

#### **Red Listed species (after Gilbert et al. 2021)**

- Kestrel
- Golden Plover
- Lapwing
- Snipe
- Redwing
- Meadow Pipit

#### **Amber Listed species (after Gilbert et al. 2021)**

- Mute Swan (flying over)
- Whooper Swan (flying over)
- Skylark
- Goldcrest

Starling

Linnet

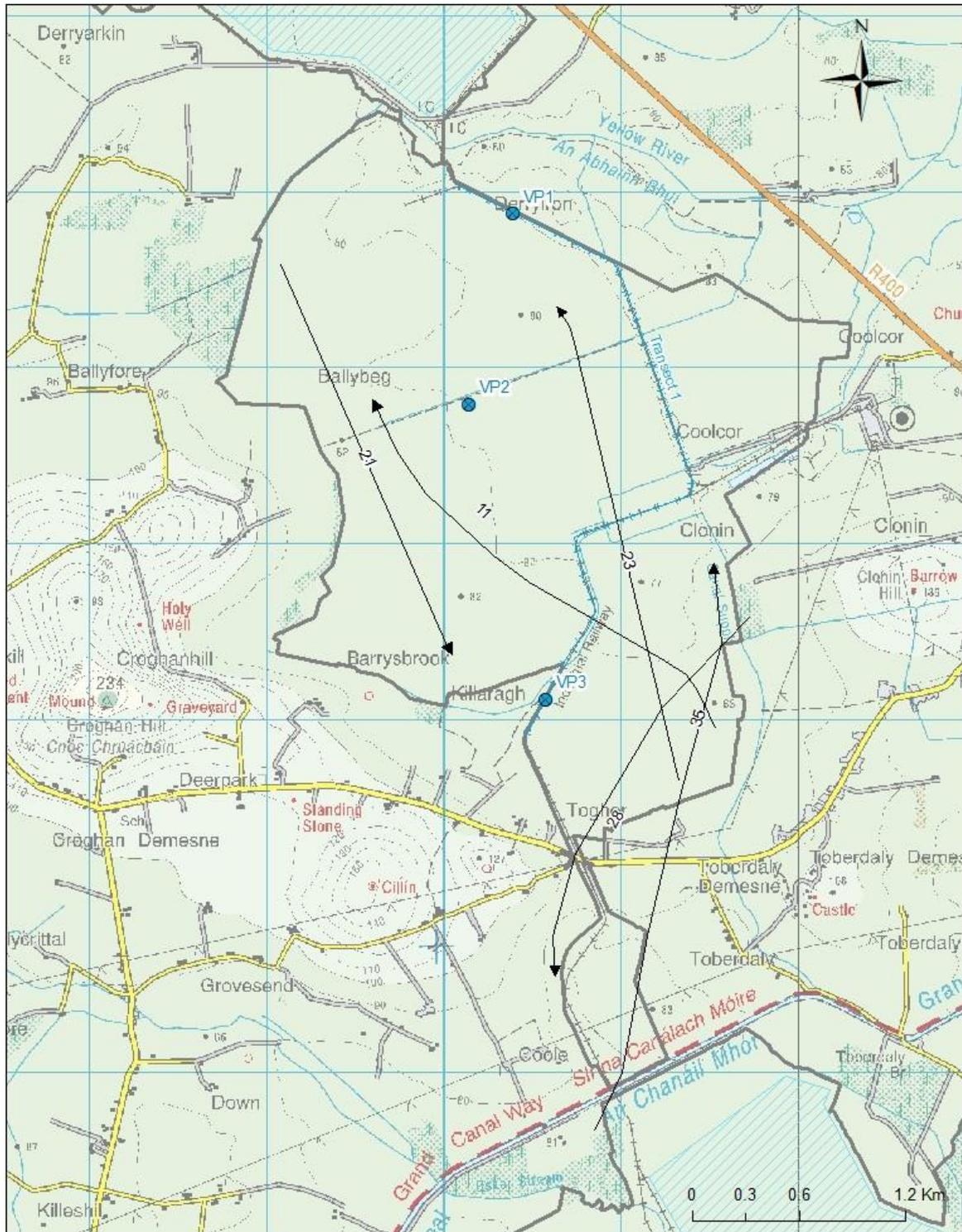
Overall, the site has existing and developing habitats suitable for supporting a range of wintering birds, including some wetland birds and notably Golden Plover.

A feature of Ballybeg Bog is that it is used regularly for hunting by birds of prey, notably Kestrel, Buzzard and Sparrowhawk but also on occasions by Merlin. The site is also within the range of a local breeding pair of Peregrine.

From the location of the site, it can be considered as part of a larger complex of cutaway bog sites, comprising Derryarkin, Drumman and Ballybeg bogs, along with Cavemount Bog to the south.

On the basis of usage of the site by Annex I listed species, plus some Red- and Amber-listed species, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Ballybeg Bog.

**Ballybeg Map 1:** Map showing transect and vantage point locations, with Whooper Swan flightlines.



- ➔ Whooper Swan flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Whooper Swan observations 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
 Date: 15th August 2022

**Ballybeg Map 2:** Map showing transect and vantage point locations, with Mute Swan flightlines.

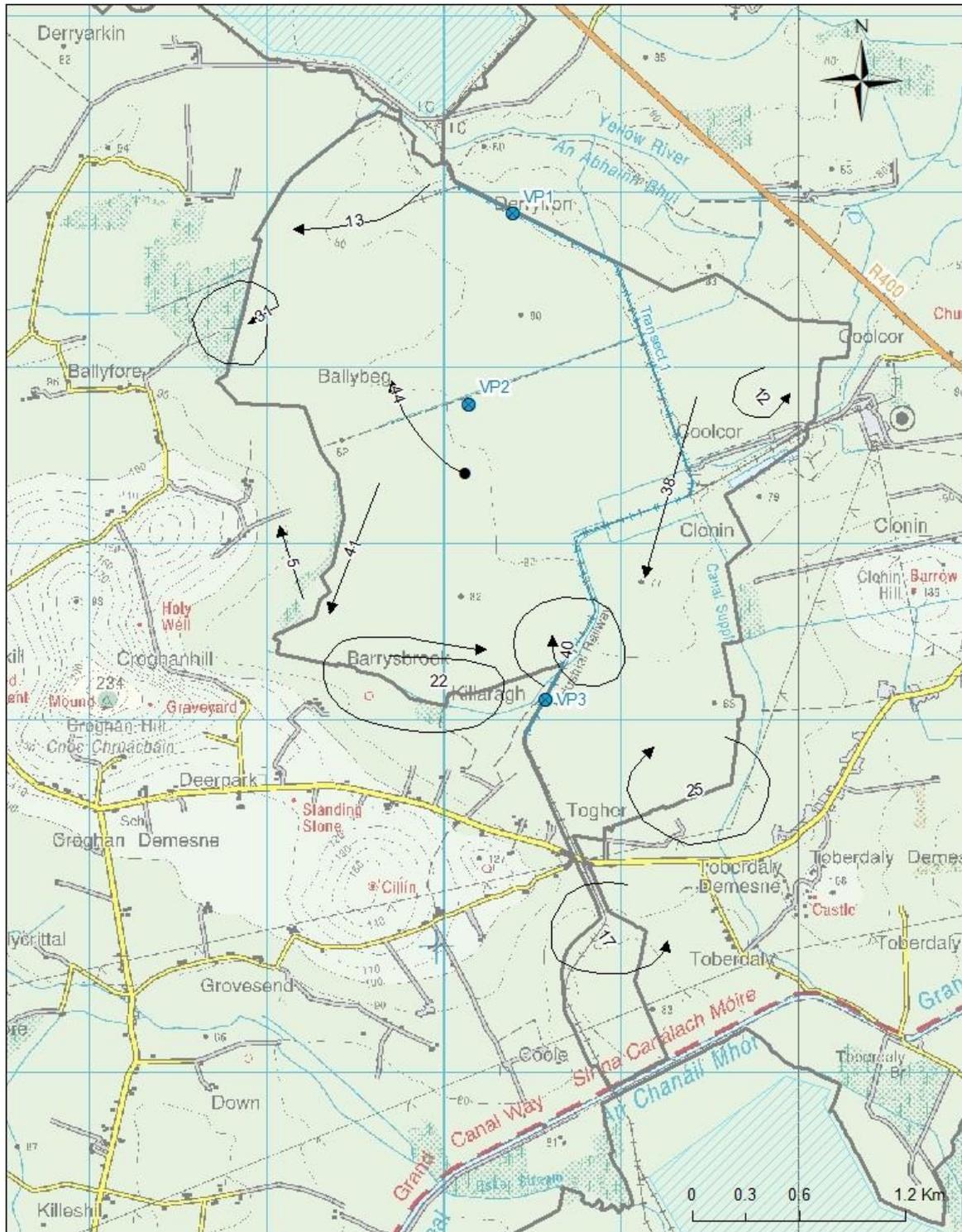


- ➔ Mute Swan
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Mute Swan observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022



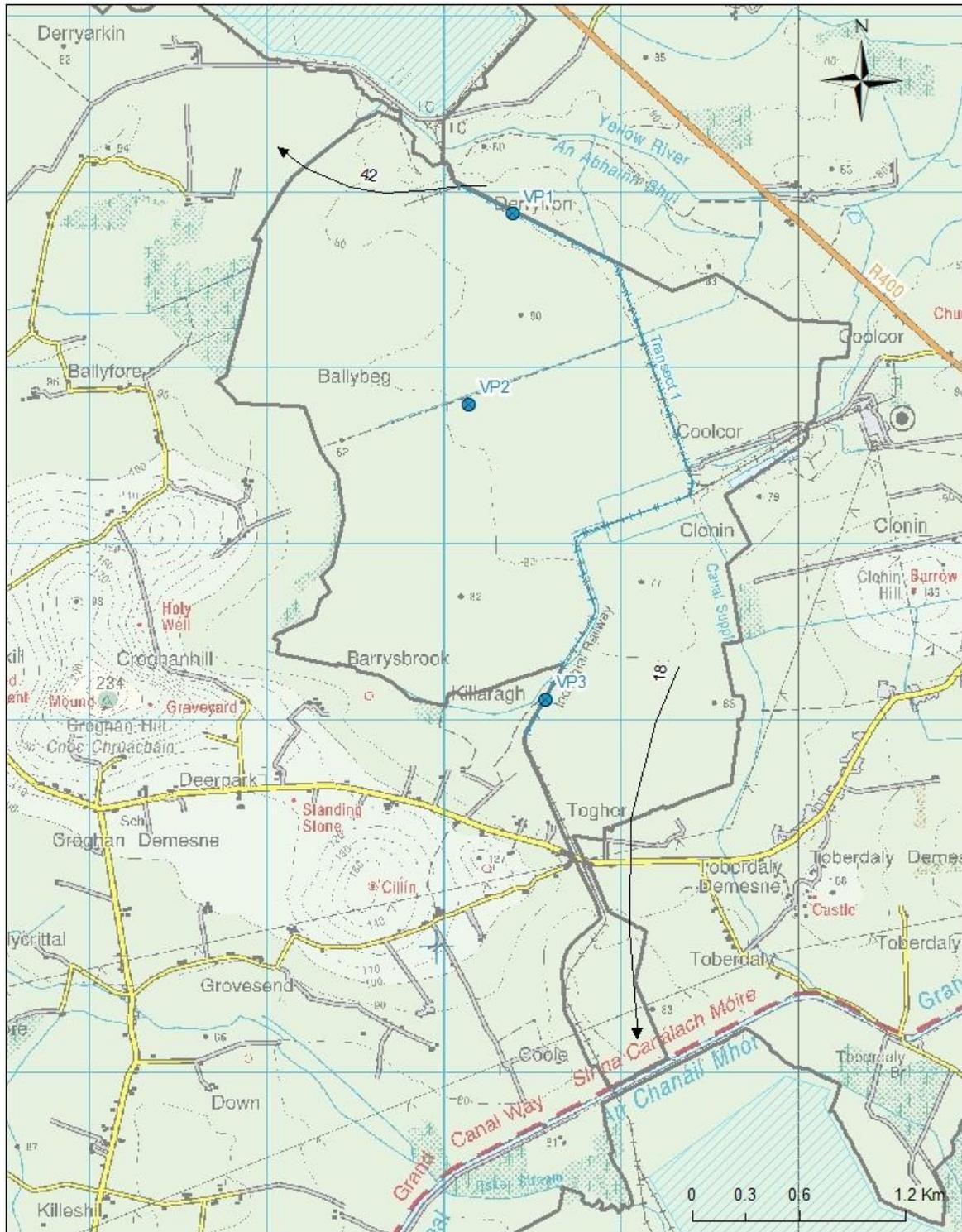
**Ballybeg Map 4:** Map showing transect and vantage point locations, with Buzzard flightlines.



- ➔ Buzzard flightline
- Buzzard
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Buzzard observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022

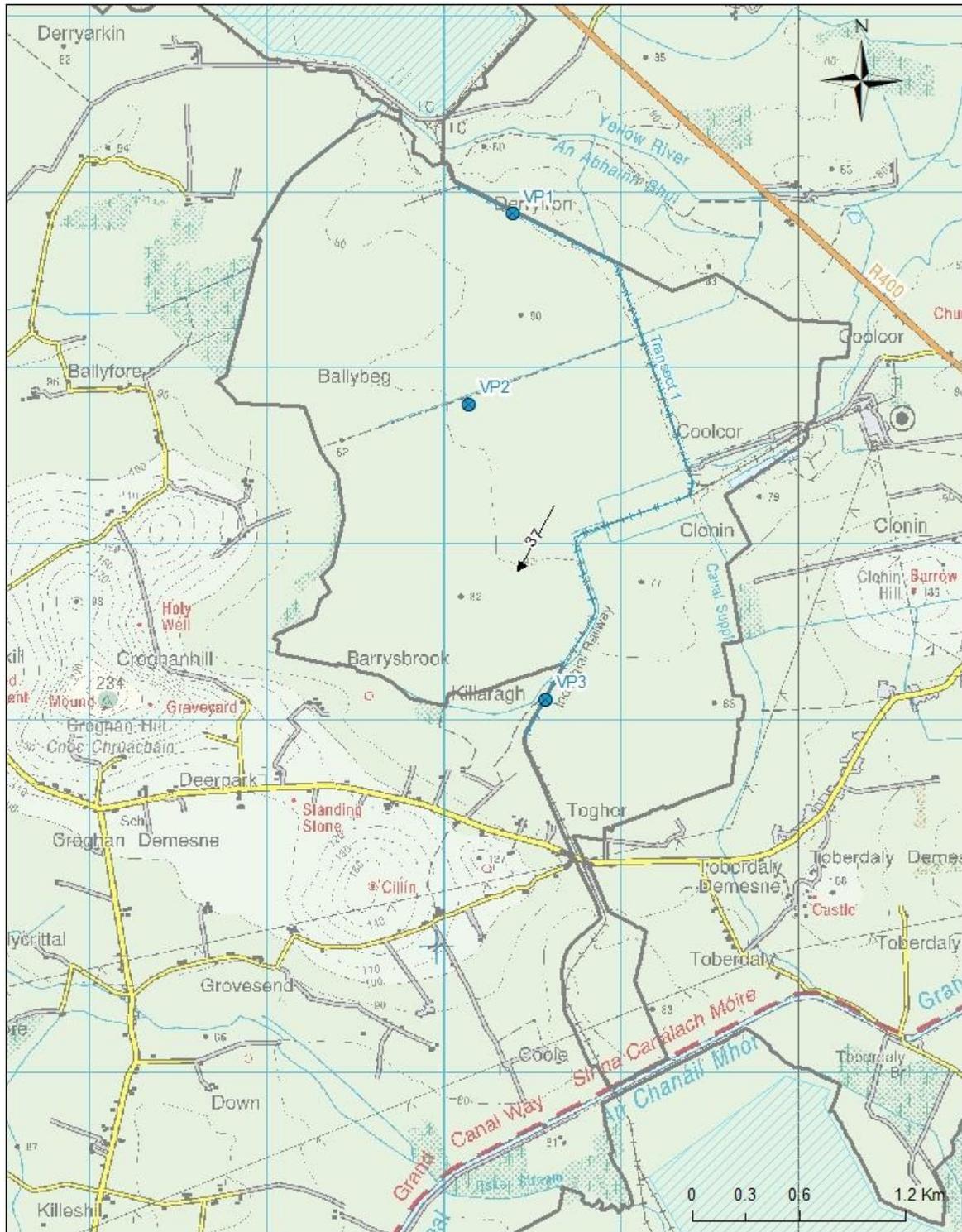
**Ballybeg Map 5:** Map showing transect and vantage point locations, with Peregrine flightlines.



- Peregrine flightline
- Vantage Point
- Transect
- BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Peregrine observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022

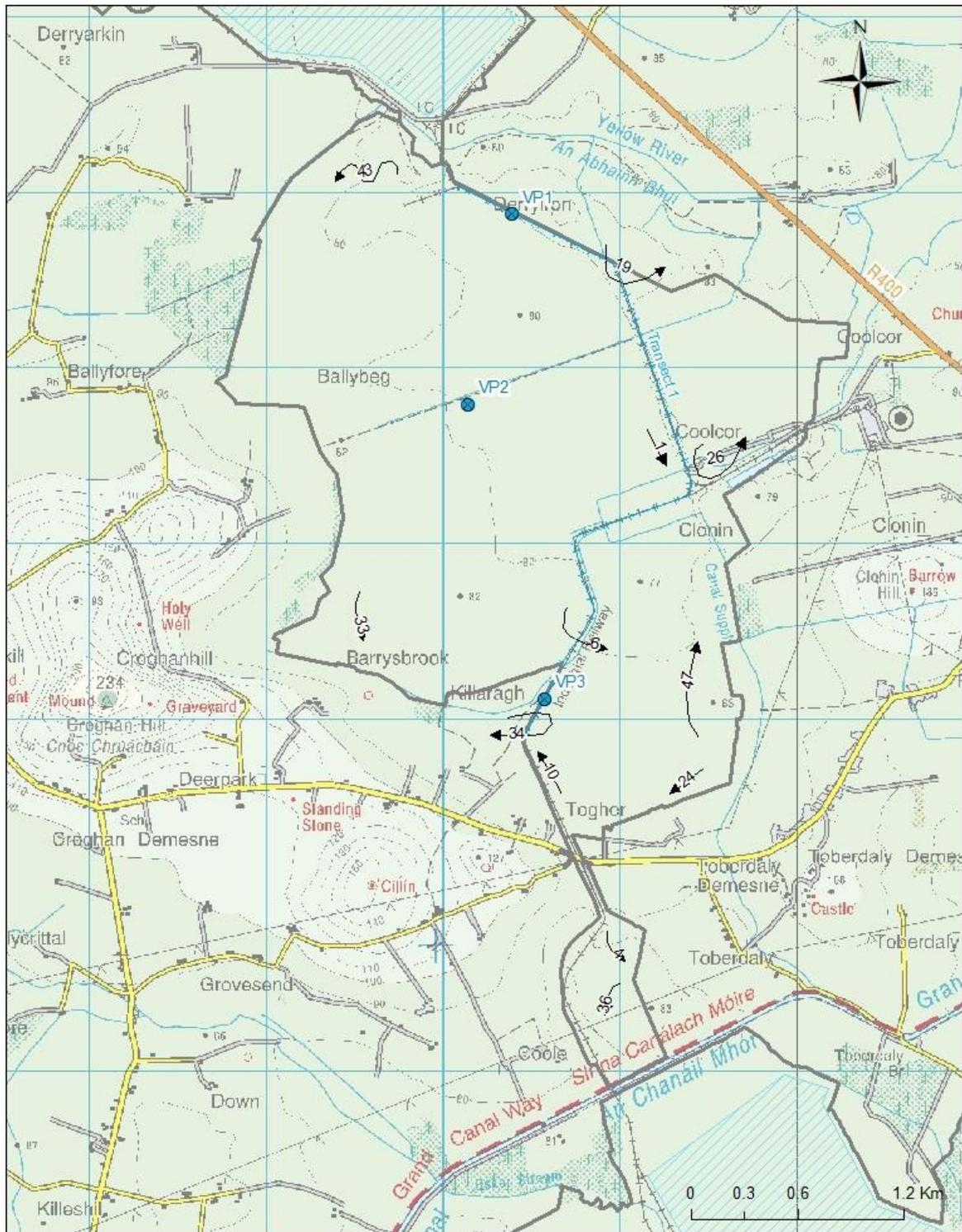
**Ballybeg Map 6:** Map showing transect and vantage point locations, with Merlin flightlines.



- Merlin flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Merlin observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022

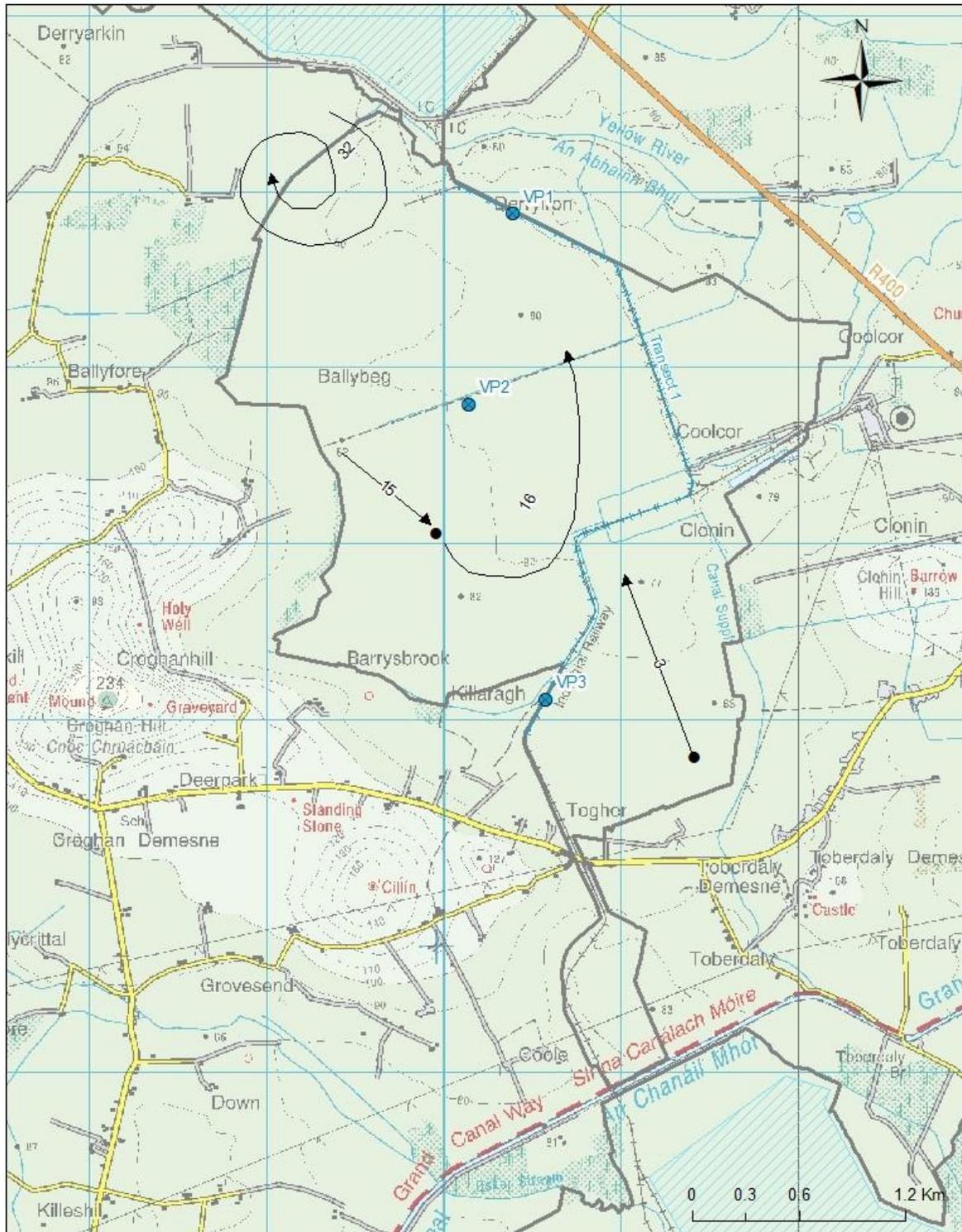
**Ballybeg Map 7:** Map showing transect and vantage point locations, with Kestrel flightlines.



- Kestrel flightline
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Kestrel observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022

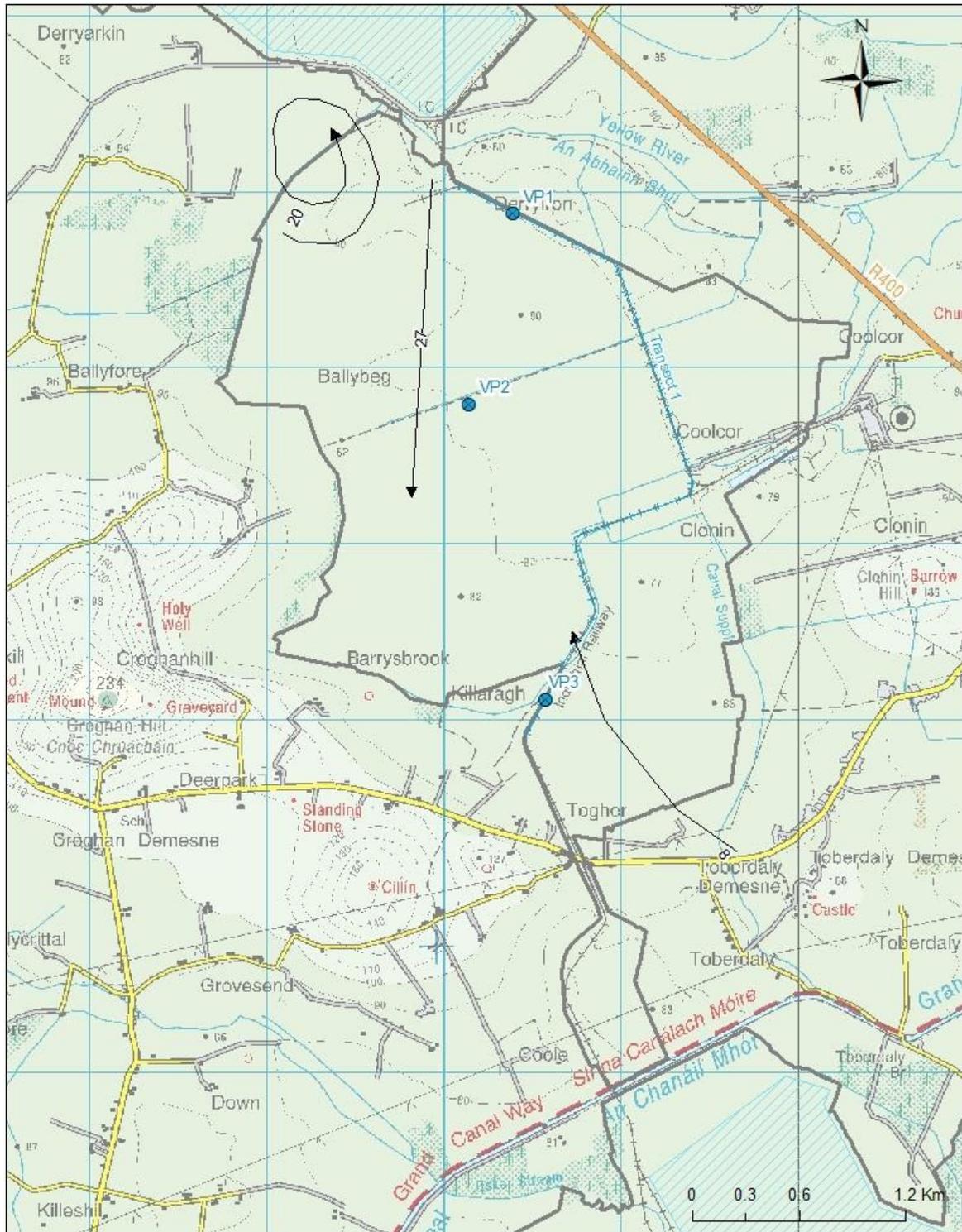
**Ballybeg Map 8:** Map showing transect and vantage point locations, with Golden Plover flightlines.



- Golden Plover flightline
- Golden Plover
- Vantage Point
- +— Transect
- BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Golden Plover observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022

**Ballybeg Map 9:** Map showing transect and vantage point locations, with Lapwing flightlines.



- Lapwing flight line
- Vantage Point
- Transect
- BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Lapwing observations  
 2021/2022  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 15th August 2022

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**APPENDIX 1.**

**Summary of vantage point (VP) watch variables, Derryarkin Bog,  
October 2021 to March 2022**

Date	Season	VP no.	Duration (hrs)	Start Time	Weather conditions
21/10/2021	Winter	1	3	08:15	Dry, Good visibility, SW wind, F3
21/10/2021	Winter	3	3	12:15	Dry, Good visibility, SW wind, F3
22/10/2021	Winter	2	3	09:30	Dry, Good visibility, SW wind, F2
22/10/2021	Winter	1	3	14:00	Dry, Good visibility, SW wind, F3
29/10/2021	Winter	2	3	09:15	Showers, Good visibility, W wind, F2
29/10/2021	Winter	3	3	13:00	Showers, Good visibility, W wind, F2
19/11/2021	Winter	2	3	09:00	Dry, Good visibility, N wind, F2
19/11/2021	Winter	3	3	14:00	Dry, Good visibility, NW wind, F2
20/11/2021	Winter	1	3	08:30	Dry, Good visibility, W wind, F3
20/11/2021	Winter	3	3	12:15	Dry, Good visibility, W wind, F3
25/11/2021	Winter	1	3	09:30	Drizzle, Good visibility, SW wind, F2
25/11/2021	Winter	2	3	14:30	Dry, Good visibility, SW wind, F2
10/12/2021	Winter	1	3	08:00	Dry, Good visibility, E wind, F2
10/12/2021	Winter	2	3	13:00	Dry, Good visibility, E wind, F2
16/12/2021	Winter	3	3	09:30	Dry, Good visibility, SW wind, F4
16/12/2021	Winter	2	3	14:00	Dry, Good visibility, SW wind, F3
17/12/2021	Winter	1	3	08:45	Dry, Good visibility, SW wind, F2
17/12/2021	Winter	3	3	12:30	Dry, Good visibility, W wind, F2
06/01/2022	Winter	2	3	09:30	Showers, Good visibility, SW wind, F3
06/01/2022	Winter	1	3	13:30	Dry, Good visibility, SW wind, F2
20/01/2022	Winter	3	3	09:00	Dry, Good visibility, S wind, F2
20/01/2022	Winter	2	3	13:30	Dry, Good visibility, S wind, F2
24/01/2022	Winter	1	3	08:30	Dry, Good visibility, W wind, F4
24/01/2022	Winter	3	3	13:30	Dry, Good visibility, W wind, F3
14/02/2022	Winter	1	3	09:00	Dry, Good visibility, SE wind, F2
14/02/2022	Winter	2	3	13:00	Dry, Good visibility, S wind, F2
17/02/2022	Winter	3	3	08:00	Dry, Good visibility, SW wind, F2
17/02/2022	Winter	2	3	12:00	Dry, Good visibility, SW wind, F2
28/02/2022	Winter	1	3	10:00	Dry, Good visibility, W wind, F3
28/02/2022	Winter	3	3	14:00	Dry, Good visibility, W wind, F3
11/03/2022	Winter	1	3	08:30	Drizzle, Mod visibility, SE wind, F1
11/03/2022	Winter	2	3	12:30	Showers, Good visibility, S wind, F2
14/03/2022	Winter	3	3	09:45	Dry, Good visibility, SW wind, F3

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

<b>Date</b>	<b>Season</b>	<b>VP no.</b>	<b>Duration (hrs)</b>	<b>Start Time</b>	<b>Weather conditions</b>
14/03/2022	Winter	2	3	14:00	Dry, Good visibility, SW wind, F3
25/03/2022	Winter	1	3	10:00	Dry, Good visibility, SW Wind, F3
25/03/2022	Winter	3	3	14:00	Dry, Good visibility, SW Wind, F2

## APPENDIX 2

### Summary of vantage point (VP) watch variables, Drumman Bog, October 2021 to March 2022

Date	Season	VP no.	Duration (hrs)	Start Time	Weather conditions
19/10/2021	Winter	1	3	09:15	Dry, good visibility, S wind, F2
19/10/2021	Winter	2	3	13:30	Dry, good visibility, S wind, F2
23/10/2021	Winter	3	3	08.30	Showers, good visibility, SW wind, F3
23/10/2021	Winter	4	3	13:00	Showers, good visibility, SW wind, F3
25/10/2021	Winter	2	3	08.15	Showers, good visibility, SW wind, F3
25/10/2021	Winter	3	3	13:30	Dry, good visibility, W wind, F2
27/10/2021	Winter	4	3	10:00	Dry, good visibility, NW wind, F2
27/10/2021	Winter	1	3	14.00	Dry, good visibility, NW wind, F2
15/11/2021	Winter	3	3	08:15	Dry, Good visibility, SW wind, F3
15/11/2021	Winter	1	3	13:00	Dry, Good visibility, SW wind, F2
16/11/2021	Winter	2	3	09.00	Dry, Good visibility, W wind, F2
16/11/2021	Winter	4	3	13:30	Dry, Good visibility, W wind, F2
23/11/2021	Winter	1	3	09:15	Showers, Good visibility, SW wind, F3
23/11/2021	Winter	4	3	14:00	Showers, Good visibility, SW wind, F3
24/11/2021	Winter	3	3	08:30	Drizzle, Mod visibility, SE wind, F3
24/11/2021	Winter	2	3	12:30	Showers, Good visibility, SE wind, F3
09/12/2021	Winter	1	3	09:15	Dry, Good visibility, SW wind, F2
09/12/2021	Winter	2	3	13:00	Dry, Good visibility, SW wind, F2
18/12/2021	Winter	3	3	08:45	Showers, Good visibility, NW Wind, F3
18/12/2021	Winter	4	3	13:00	Dry, Good visibility, NW Wind, F3
20/12/2021	Winter	3	3	08:30	Dry, Good visibility, SW wind, F3
20/12/2021	Winter	2	3	12:30	Dry, Good visibility, SW wind, F3
21/12/2021	Winter	4	3	09:30	Dry, Good visibility, W wind, F1
21/12/2021	Winter	1	3	12:45	Showers, Good visibility, W wind, F1
14/01/2022	Winter	3	3	08:30	Dry, Good visibility, W wind, F2
14/01/2022	Winter	1	3	13:30	Dry, Good visibility, W wind, F2
15/01/2022	Winter	4	3	09:15	Dry, Good visibility, NW wind, F3
15/01/2022	Winter	2	3	14:00	Dry, Good visibility, NW wind, F3
26/01/2022	Winter	1	3	09:10	Showers, Good visibility, SW wind, F4
26/01/2022	Winter	4	3	12.45	Dry, Good visibility, SW wind, F3
27/01/2022	Winter	3	3	08:15	Dry, Good visibility, W wind, F2
27/01/2022	Winter	2	3	12:30	Dry, good visibility, W wind, F2

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

<b>Date</b>	<b>Season</b>	<b>VP no.</b>	<b>Duration (hrs)</b>	<b>Start Time</b>	<b>Weather conditions</b>
11/02/2022	Winter	3	3	08:00	Dry, Good visibility, S wind, F2
11/02/2022	Winter	2	3	12:30	Dry, Good visibility, S wind, F2
12/02/2022	Winter	4	3	09:30	Dry, Good visibility, SW wind, F3
12/02/2022	Winter	1	3	14:00	Dry, Good visibility, SW wind, F3
23/02/2022	Winter	1	3	09:15	Drizzle clearing, Mod-good visibility, S wind, F2
23/02/2022	Winter	2	3	13:15	Dry, Good visibility, SW wind, F3
24/02/2022	Winter	3	3	08:30	Showers, Good visibility, NW wind, F3
24/02/2022	Winter	4	3	13:00	Showers, Good visibility, NW wind, F3
10/03/2022	Winter	2	3	09:15	Showers, Good visibility, W wind, F3
10/03/2022	Winter	4	3	13:15	Dry, Good visibility, W wind, F3
12/03/2022	Winter	1	3	08:45	Dry, Good visibility, SW wind, F2
12/03/2022	Winter	3	3	13:30	Dry, Good visibility, SW wind, F2
13/03/2022	Winter	4	3	09:30	Dry, good visibility, NW wind, F3
13/03/2022	Winter	1	3	14:00	Dry, good visibility, NW wind, F3
23/03/2022	Winter	3	3	10:00	Dry, good visibility, S wind, F2
23/03/2022	Winter	2	3	14:00	Dry, good visibility, S wind, F2

**APPENDIX 3**

**Summary of vantage point (VP) watch variables, Derryhinch Bog,  
October 2021 to March 2022**

<b>Date</b>	<b>Season</b>	<b>VP no.</b>	<b>Duration (hrs)</b>	<b>Start Time</b>	<b>Weather conditions</b>
26/10/2021	Winter	1	3	09:30	Dry, Good visibility, W wind, F2
26/10/2021	Winter	2	3	14:15	Dry, Good visibility, W wind, F3
28/10/2021	Winter	2	3	08:00	Dry, Good visibility, SW wind, F1
28/10/2021	Winter	1	3	13.00	Dry, Good visibility, SW wind, F2
17/11/2021	Winter	1	3	09.00	Drizzle, Mod visibility, SE wind, F2
17/11/2021	Winter	2	3	13.00	Dry, Good visibility, S wind, F3
26/11/2021	Winter	1	3	09:30	Showers, Good visibility, NW wind, F3
26/11/2021	Winter	2	3	14:30	Showers, Good visibility, NW wind, F3
11/12/2021	Winter	2	3	08:45	Dry, Good visibility, SW wind, F2
11/12/2021	Winter	1	3	13:00	Dry, Good visibility, SW wind, F2
28/12/2021	Winter	1	3	09.30	Dry, Good visibility, W wind, F3
28/12/2021	Winter	2	3	13:00	Dry, Good visibility, W wind, F3
10/01/2022	Winter	2	3	08:30	Showers, Good visibility, S wind, F2
10/01/2022	Winter	1	3	13:00	Dry, Good visibility, SW wind, F3
19/01/2022	Winter	1	3	09:00	Dry, Good visibility, SW wind, F2
19/01/2022	Winter	2	3	13.30	Dry, Good visibility, SW wind, F2
10/02/2022	Winter	1	3	09:00	Dry, Good visibility, N wind, F2
10/02/2022	Winter	2	3	13:30	Dry, Good visibility, N wind, F2
25/02/2022	Winter	3	3	08:00	Dry, Good visibility, W wind, F3
25/02/2022	Winter	2	3	12:00	Dry, Good visibility, W wind, F3
13/03/2022	Winter	1	3	08:00	Showers, good visibility, SE wind, F2
13/03/2022	Winter	2	3	12:00	Showers, Good visibility, SE wind, F2
26/03/2022	Winter	1	3	10:30	Dry, Good visibility, SW wind, F3
26/03/2022	Winter	2	3	14:30	Dry, Good visibility, SW wind, F3

**APPENDIX 4**

**Summary of vantage point (VP) watch variables, Ballybeg Bog,  
October 2021 to March 2022**

<b>Date</b>	<b>Season</b>	<b>VP no.</b>	<b>Duration (hrs)</b>	<b>Start Time</b>	<b>Weather conditions</b>
20/10/2021	Winter	1	3	09:30	Dry, Good visibility, W wind, F2
20/10/2021	Winter	2	3	14:00	Dry, Good visibility, W wind, F3
26/10/2021	Winter	3	3	08:30	Showers, Good visibility, SW wind, F3
26/10/2021	Winter	2	3	12.30	Dry, Good visibility, SW wind, F3
30/10/2021	Winter	1	3	07:45	Drizzle, Mod-good visibility, NW wind, F2
30/10/2021	Winter	3	3	14.30	Showers, Good visibility, NW wind, F2
21/11/2021	Winter	3	3	08.15	Drizzle, Good visibility, S wind, F2
21/11/2021	Winter	2	3	13.00	Dry, Good visibility, S wind, F3
22/11/2021	Winter	1	3	09:00	Dry, Good visibility, W wind, F3
22/11/2021	Winter	2	3	13:00	Dry, Good visibility, W wind, F3
29/11/2021	Winter	3	3	08:45	Dry, Good visibility, SW wind, F2
29/11/2021	Winter	1	3	14.00	Dry, Good visibility, SW wind, F2
11/12/2021	Winter	1	3	08:30	Showers, Good visibility, E wind, F3
11/12/2021	Winter	2	3	12:30	Showers, Good visibility, E wind, F3
18/12/2021	Winter	3	3	09.00	Dry, Good visibility, SW wind, F2
18/12/2021	Winter	2	3	13:30	Dry, Good visibility, SW wind, F2
20/12/2021	Winter	1	3	09.00	Dry, Good visibility, NW wind, F3
20/12/2021	Winter	3	3	13:30	Dry, Good visibility, NW wind, F3
16/01/2022	Winter	2	3	09:15	Dry, Good visibility, SW wind, F3
16/01/2022	Winter	3	3	13:00	Dry, Good visibility, SW wind, F2
22/01/2022	Winter	1	3	08:30	Dry, Good visibility, W wind, F3
22/01/2022	Winter	2	3	12.30	Dry, Good visibility, W wind, F3
25/01/2022	Winter	1	3	08:45	Showers, Good visibility, W wind, F4
25/01/2022	Winter	3	3	13:30	Showers, Good visibility, W wind, F3
13/02/2022	Winter	3	3	08:00	Dry, Good visibility, S wind, F2
13/02/2022	Winter	2	3	12:00	Dry, Good visibility, S wind, F2
22/02/2022	Winter	1	3	09:30	Dry, Good visibility, SW wind, F3
22/02/2022	Winter	2	3	14:00	Dry, Good visibility, SW wind, F3
25/02/2022	Winter	1	3	09:00	Dry, Good visibility, NW wind, F3
25/02/2022	Winter	3	3	13:00	Dry, Good visibility, NW wind, F3
15/03/2022	Winter	1	3	09:15	Drizzle, Mod-good visibility, S wind, F1

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

<b>Date</b>	<b>Season</b>	<b>VP no.</b>	<b>Duration (hrs)</b>	<b>Start Time</b>	<b>Weather conditions</b>
15/03/2022	Winter	2	3	12:30	Showers, Good visibility, S wind, F2
26/03/2022	Winter	3	3	09:45	Dry, Good visibility, SW wind, F3
26/03/2022	Winter	2	3	14:00	Dry, Good visibility, SW wind, F3
29/03/2022	Winter	3	3	10:00	Dry, Good visibility, W Wind, F3
29/03/2022	Winter	1	3	14:00	Dry, Good visibility, W Wind, F2

**APPENDIX 5**

**Vantage Point raw data & flight activity, Derryarkin Bog,  
October 2021 – March 2022**

Date	VP No	Map Reference	Species	No.	Flight Time	Flight Duration (s)	Band 1 (0-25m)	Band 2 (25-175m)	Band 3 (175+m)	Comments
21/10/2021	1	1	Little Egret	2	09.45	120	60	60	0	Two feeding / resting, then flew up
		2	Sparrow hawk	1	11.13	30	30	0	0	Hunting
21/10/2021	3	3	Kestrel	1	13.14	180	60	120	0	Flying / hunting - male
22/10/2021	2	4	Mute Swan	7	10.20	120	90	30	0	On pond, flew up
		5	Peregrine	1	11.37	90	0	90	0	Flew in and out
		6	Kestrel	1	11.56	60	60	0	0	Hunting
22/10/2021	1	7	Lapwing	22	14.50	120	90	30	0	Flew up
		8	Buzzard	3	15.14	600		300	300	Trio interacting
29/10/2021	2	9	Golden plover	400+	10.10	300	0	200	100	Flock circling – later seen landed on bog
		10	Kestrel	2	11.01	180	120	60	0	Two – pair ?
23/10/2021	3	11	Buzzard	1	15.45	120	90	30	0	Flying / hunting
19/11/2021	2	12	Whooper Swan	12	09:35	90	90	0	0	Flew from pond Circling
		13	Peregrine	2	11.15	180	0	180	0	
		14	Little Egret	1						On pond
		14a	King fisher	1	11.38	30	30	0	0	Flew over pond and landed on a willow – not seen leaving
19/11/2021	3	15	Golden Plover	200+	15.16	180	0	100	80	Circling over site & fields
		16	Buzzard	2	15.42	120	0	120	0	Flying
20/11/2021	1	17	Golden plover	150+	09.12	90	30	60	0	Flock flew up from bog
		18	Lapwing	200+	09.40	120	90	30	0	Flock flying towards Drumman
		19	Kestrel	1	10.49	60	60	0	0	Hunting along road - female
20/11/2021	3									No target species
25/11/2021	1	20	Whooper Swan	28	09.44	120	120	0	0	Flock flying to grassland – 20+ already there
		21	Buzzard	1	09.58	45	45	0	0	
		22	Golden plover	28	10.14	60	30	30	0	Flock had been roosting
25/11/	2	23	Sparrow	1	15.09	20	20	0	0	Hunting

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	VP No	Map Reference	Species	No.	Flight Time	Flight Duration (s)	Band 1 (0-25m)	Band 2 (25-175m)	Band 3 (175+m)	Comments
2021			hawk							
		24	Whooper swan	36	15.58	90	90	0	0	Flew to quarry pond & settled
10/12/2021	1	25	Whooper Swan	28	08.45	60	60	0	0	Flew to feeding fields – had been roosting
		26	Golden plover	200+	10.40	300	60	140	100	Flock circling (from grass field)
10/12/2021	2	27	Mute swan	12	14.15	60	60	0	0	Flew towards Drumman
		28	Buzzard	1	15.09	90	60	30	0	Hunting
		29	Whooper swan	35	15.46	60	60	0	0	To roost
		30	Whooper swan	26	15.55	60	60	0	0	To roost
16/12/2021	3	31	Kestrel	1	10.12	120	60	60	0	Hunting
		32	Lapwing	100+	11.30	300	150	150	0	Circling
16/12/2021	2	33	Golden Plover	500+	16.12	120	0	120	0	Large flock flew in
		34	Whooper swan	18	16.10	60	60	0	0	To roost
		35	Whooper swan	40	16.24	180	180	0	0	Arrive in parties
17/12/2021	1	36	Lapwing	34	09.20	90	90	0	0	Flew towards field
17/12/2021	3	37	Wood cock	2	16.15					Flushed on way back from watch – birds separated by c.10 m
06/01/2022	2	38	Mute swan	8	10:15	60	60	0	0	Flew in from Drumman
		39	Lapwing	33	10.46	90	60	30	0	Flew in & settled at pond edge
		40	Lapwing	33	10.59	60	60	0	0	Towards fields
06/01/2022	1	41	Little Egret	1	14.15	60	60	0	0	
		42	Golden Plover	40	15.24	90	40	50	0	Flew in from Drumman direction & landed on bog
		43	Kestrel	1	15.37	60	0	60	0	Flying
20/01/2022	3	44	Peregrine	1	10:15	90	0	90	0	Flying
20/01/2022	2	45	Buzzard	2	14:20	180	0	90	90	Pair interacting
		46	Whooper swan	27	16.12	60	60	0	0	Flew to pond (others heard flying in on way back)
24/01/	1	47	Whooper	34	09.09	90	90	0	0	Had been roosting –

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	VP No	Map Reference	Species	No.	Flight Time	Flight Duration (s)	Band 1 (0-25m)	Band 2 (25-175m)	Band 3 (175+m)	Comments
2022			swan							lots of feathers
		48	Sparrow hawk	1	10.40	120	0	60	60	Female circling
24/01/2022	3									No target species GP flock heard to east but not seen
14/02/2022	1	49	Hen Harrier	1	10.13	60	60	0	0	Female type hunting
		50	Peregrine	1	10.54	90	0	90	0	Male flying
14/02/2022	2	51	Golden plover	300+	13.50	600	0	300	300	Flock circling over site – returned to fields
		52	Buzzard	1	15.11	60	60	0	0	Hunting
17/02/2022	3	53	Buzzard	2	09.53	240	0	100	140	Pair
17/02/2022	2	54	Little Egret	1	12.55	60	60	0	0	Flew presumably into Kilmurray ponds
		55	Peregrine	1	14.15	90	30	60	0	Bird circled and landed on silo
28/02/2021	1	56	Sparrow hawk	2	10.56	300	0	100	200	Pair in display
			Lapwing							At least 3 territorial birds
28/02/2021	3	57	Kestrel	1	15.25	90	60	30	0	Hunting - dropped
11/03/2022	1	58	Whooper swan	7	09.45	60	60	0	0	Had been feeding on bog – flew into field to join others there
		59	Buzzard	1	10.40	60	60	0	0	Hunting low
11/03/2022	2	60	Kestrel	1	12.55	60	0	60	0	Over quarry works
14/03/2022	3									No target species
14/03/2022	2	61	Mute swan	5	16:04	60	60	0	0	Flew in to pond. Also on pond: Tufted duck 22, Great crested Grebe pair, Little Grebe – 2 prs, Coot pr
25/03/2022	1	62	Peregrine	1	11.15	90	30	60	0	Male flew towards Kilmurray area
		63	Little Egret	1	12.32	60	60	0	0	Flew in and settled to feed
25/03/2022	3	64	Buzzard	1	14.16	90	0	90	0	Flying over site

**APPENDIX 6**

**Vantage Point raw data & flight activity, Drumman Bog,  
October 2021 – March 2022**

Date	V P N o	Map Ref.	Species	No.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
19/10/ 2021	1	1	Peregrine	1	10:11	90	0	90	0	Flew across west of site
		2	Mute swan	8	10.55	120	60	30	0	Flew in to ponds (40+ already there)
19/10/ 2021	2	3	Buzzard	2	14.40	180	0	100	80	Pair rising
		4	Buzzard	1	15.12	120	120	0	0	Hunting
23/10/ 2021	3	5	Sparrow hawk	1	09.54	30	30	0	0	Female hunting
23/10/ 2021	4	6	Golden plover	15	13.25	60	30	30	0	On peat, got up
		7	Kestrel	1	15.23	90	60	30	0	Hunting
25/10/ 2021	2	8	Kestrel	1	10.08	120	0	120	0	Flying
25/10/ 2021	3	9	Mute swan	21	14:12	120	120	0	0	Flew onto pond
		10	Buzzard	1	14.35	150	120	30	0	Hunting
		11	Little Egret	1	15.12	90	90	0	0	Flew into pond
27/10/ 2021	4	12	Lapwing	200	10.44	300	100	200	0	Flock circling
27/10/ 2021	1	13	Golden plover	150 +	15.05	600	0	300	300	Flock active over area
		14	Sparrow hawk	1	15.45	60	0	60	0	Drifting
15/11/ 2021	3	15	Kestrel	1	09.18	120	60	60	0	Hovering, then dropped - male
		16	Kestrel	1	09.56	60	0	60	0	Flying – same male bird
15/11/ 2021	1	17	Golden plover	80	14.24	90	0	90	0	Flew over site north over motorway
		18	Buzzard	2	15.00	180	0	60	120	Circling over wood
		19	Lapwing	44	15.24	120	30	90	0	Flock got up and flew west
16/11/ 2021	2	20	Kestrel	1	10.09	60	60	0	0	Hunting
16/11/ 2021	4	21	Buzzard	2	13.35	300	0	150	150	Pair circling over conifers
23/11/ 2021	1	22	Whooper swan	3	09.25	60	60	0	0	Flew up from ponds
		23	Kestrel	1	11.48	180	30	150	0	Hunting along edge of main track

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	V P N O	Map Ref.	Species	No.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
23/11/ 2021	4									No target species
24/11/ 2021	3	24	Hen harrier	1	10.10	45	45	0	0	Female type hunting actively
		25	Mute swan	6	10.45	60	60	0	0	Flew up from main pond
24/11/ 2021	2	26	Lesser black back gull	13	15.28	120	0	120	0	Loose flock
		27	Lesser Black back gull	8	15.42	75	0	75	0	As above
09/12/ 2021	1	28	Peregrine	1	10:24	60	0	60	0	
09/12/ 2021	2	29	Golden Plover	60+	13.28	120	0	120	0	Circling & flew south
		30	Buzzard	1	14.52	180	60	120	0	Hunting
18/12/ 2021	3	31	Kestrel	1	09.32	60	60	0	0	Hunting along margin
		32	Golden plover	200 +	10.40	180	0	80	100	Large flock north
18/12/ 2021	4									No target species
20/12/ 2021	3	33	Mute swan	4	09.12	60	60	0	0	Flew in to pond
		34	Buzzard	1	10.23	120	120	0	0	Hunting
20/12/ 2021	2									No target species
21/12/ 2021	4	35	Golden plover	400	11.12	600	60	240	300	Large flock swirling – landed briefly on bog and then up
21/12/ 2021	1	36	Little egret	1	14.14	60	60	0	0	Flew in to wetland
		37	Buzzard	2	15.10	180	0	180	0	Pair interacting
14/01/ 2022	3									No target species
14/01/ 2022	1	38	Hen harrier	1	13.48	60	60	0	0	Male hunting
		39	Whooper swan	5	14.34	90	60	30	0	Flying north of motorway
		40	Buzzard	1	15.08	60	60	0	0	Flying
15/01/ 2022	4	41	Sparrow hawk	1	10.41	90	0	90	0	Female type circling
15/01/ 2022	2	42	Lapwing	44	14.54	180	0	180	0	Loose flock southwest
26/01/ 2022	1	43	Sparrow hawk	1	10.25	90	0	90	0	Circling over wood
		44	Lapwing	9	10.48	90	60	30	0	Flew in to ponds
		45	Kestrel	1	11.15	180	90	90	0	Hunting

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	V P N o	Map Ref.	Species	No.	Flight Time	Flight Duration (s)	Band 1 (0-25m)	Band 2 (25-175m)	Band 3 (175+m)	Comments
26/01/2022	4	46	Peregrine	1	14:25	90	0	90	0	Male flying
27/01/2022	3	47	Merlin	1	10.10	30	30	0	0	Male bird perched, then hunting over bog
		48	Sparrow hawk	1	10.38	20	20	0	0	Hunting
27/01/2022	2									No target species
11/02/2022	3	49	Buzzard	2	09:04	300	0	200	100	Pair in display
		50	Peregrine	1	09:48	60	0	60	0	Flew fast NW
11/02/2022	2	51	Golden plover	60+	12.56	180	0	80	100	Flock moving NE
12/02/2022	4									No target species
12/02/2021	1	52	Little egret	2	15.19	120	60	60	0	2 feeding at ponds, got up flew west
		53	Lapwing	5	15.48	60	60	0	0	May have got up from wetland in site, landed again
23/02/2022	1	54	Sparrow hawk	2	11.28	300		150	150	Pair circling, interacting
23/02/2022	2	55	Merlin	1	14.50	30	3	0	0	Bird glimpsed flying through scrub
		56	Buzzard	1	15.08	90	0	90	0	
24/02/2022	3	57	Lesser black-back gull	15	08.48	90	30	60	0	Probably had been roosting on pond
		58	Kestrel	1	10.10	60	60	0	0	Flying low - male
24/02/2022	4	59	Kestrel	1	14.18	120	60	60	0	Hunting along margin
10/03/2022	2	60	Lapwing	5	10.24	90	90	0	0	Flying low
		61	Sparrow hawk	1	10.50	120	0	120	0	Circling
10/03/2022	4									No target species
12/03/2022	1	62	Peregrine	1	09.18	90	0	90	0	
		63	Buzzard	1	10.26	120	0	120	0	Flying out of site
12/03/2022	3									Not target species
13/03/2022	4	64	Buzzard	1	10:49	90	0	90	0	Flew across bog
13/03/2022	1	65	Peregrine	1	15.19	300	0	300	0	Circling – female type
		66	Little	1	16.09	120	60	60	0	Bird on wetland

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	V P N o	Map Ref.	Species	No.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
			Egret							got up - flew towards main pond
23/03/ 2022	3	67	Sparrow hawk	1	11.11	120	60	60	0	Circling
		68	Peregrine	1	11.42	45	0	45	0	Flying fast – probable male
23/03/ 2022	2									No target species

APPENDIX 7

Vantage Point raw data & flight activity, Derryhinch Bog,  
October 2021 – March 2022

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
26/10/ 2021	1	1	Kestrel	1	10.14	180	90	90	0	Hovering male bird
		2	Buzzard	2	11.35	300	0	200	100	2 circling / interacting
26/10/ 2021	2	3	Kestrel	1	15.15	90	0	90	0	Probably same male as earlier
28/10/ 2021	2	4	Golden plover	40	09.10	340	30	180	100	Flock came in, landed for c. 1hr, then up again
		5	Golden plover	40	10.12	120	40	80	0	As above
28/10/ 2021	1	6	Buzzard	1	15.25	120	120	0	0	Hunting low
		7	Peregrine	1	15.50	90	0	90	0	Flying
17/11/ 2021	1	8	Golden plover	40	11.08	120	30	90	0	Flock got up from bare peat – probably there unseen from start of watch
17/11/ 2021	2	9	Peregrine	1	14:42	300	0	200	100	Came in high, bit of circling / drifting over site, female type
		10	Sparrow hawk	1	15.35	20	20	0	0	Hunting
26/11/ 2021	1	11	Kestrel	1	11.04	180	90	90	0	Male hunting along edge of track
26/11/ 2021	2	12	Buzzard	1	15.00	120	0	120	0	Flying
		13	Sparrow hawk	1	15.42	120	0	120	0	Female type circling /gliding
11/12/ 2021	2	14	Mute Swan	5	09.23	120	120	0	0	Flew low and direct across site
		15	Kestrel	1	10.18	180	60	120	0	Flying / hunting along boundary
11/12/ 2021	1	16	Golden plover	12	15.19	240	60	180	0	Flock flew in, landed for c.20 minutes then out again
		17	Golden plover	12	15.40	180	30	150	0	As above
28/12/ 2021	1									No target species

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
2021										
28/12/ 2021	2	18	Buzzard	1	14.10	90	60	30	0	a bit of hunting then flew out of site
		19	Kestrel	1	15.40	60	60	0	0	Hunting
10/01/ 2022	2	20	Peregrine	1	10.18	45	0	45	0	Flying direct
10/01/ 2022	1	21	Buzzard	1	15.14	180	0	180	0	Flying
		22	Buzzard	1	15.42	90	90	0	0	Probably same bird as earlier
19/01/ 2022	1									No target species
19/01/ 2022	2	23	Kestrel	1	14.15	300	100	200	0	Hunting actively - male
10/02/ 2022	1	24	Sparrow hawk	1	09:48	30	30	0	0	Hunting
		25	Buzzard	2	11.40	360	0	160	200	Pair soaring
10/02/ 2022	2	26	Kestrel	1	15.09	90	90	0	0	Hovering low, then dropped
25/02/ 2022	1	27	Sparrow hawk	2	10.05	600	0	400	200	Pair in display
		28	Peregrine	1	10.48	60	0	60	0	Flew over SW sector of site
25/02/ 2022	2	29	Buzzard	1	13.10	180	0	180	0	Flew in from motorway and drifted over VP1
		30	Lesser Black- back Gull	22	15.35	240	40	200	0	Loose flock flew in and landed on bog. Still present when leaving. A lot of sub-adults
13/03/ 2022	1	31	Sparrow hawk	2	09.45	280	0	100	180	Pair in display
		32	Buzzard	1	10.08	120	0	120	0	Flying
13/03/ 2022	2	33	Kestrel	1	14.19	90	0	90	0	Hunting
26/03/ 2022	1	34	Peregrine	1	12.10	120	0	120	0	Male
26/03/ 2022	2									No target species Party of 10+ sand martins

**APPENDIX 8**

**Vantage Point raw data & flight activity, Ballybeg Bog,  
October 2021 – March 2022**

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
20/10/ 2021	1									No target species
20/10/ 2021	2	1	Kestrel	1	15.02	120	60	60	0	Male hunting
		2	Sparrow hawk	2	15.48	300	0	200	100	Probable pair
26/10/ 2021	3	3	Golden plover	80	08.40	120	30	90	0	Flock on bare peat flew up northwards
		4	Kestrel	1	09.28	180	60	120	0	Male hunting over bog
26/10/ 2021	2	5	Buzzard	1	13.01	90	0	90	0	Off site
		6	Kestrel	1	14.52	60	60	0	0	Probable same male
30/10/ 2021	1	7	Sparrow hawk	1	09.10	30	30	0	0	Hunting
30/10/ 2021	3	8	Lapwing	28	15.24	120	0	120	0	Flock moving north
		9	Mute Swan	3	16.09	90	90	0	0	Flying direct towards Cavemount
21/11/ 2021	3	10	Kestrel	1	09.18	90	30	60	0	Female along track hovering
21/11/ 2021	2	11	Whooper swan	7	15:14	240	120	120		Flew NW losing height
		12	Buzzard	2	15.43	300	0	200	100	Two flying / interacting
22/11/ 2021	1	13	Buzzard	1	10.10	180	0	180	0	Flying / hunting
		14	Sparrow hawk	1	11.00	60	0	60	0	Flying - female
22/11/ 2021	2	15	Golden plover	50 +	14.52	60	30	30	0	Flock flew in & landed on bare peat –
		16	Golden plover	50 +	15.38	180	30	100	50	Flock got up and circled northward
29/11/ 2021	3	17	Buzzard	1	09.52	180	0	180	0	Flying
		18	Peregrine	1	11.11	120	0	120	0	Flew towards Cavemount
29/11/ 2021	1	19	Kestrel	1	14.18	180	70	110	0	Hovering on boundary
		20	Lapwing	10 0+	15.27	300	0	200	100	Flock circling

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
		21	Whooper swan	9	16.10	240	120	120	0	Flying south presumed towards Cavemount - calling
11/12/ 2021	1									No target species
11/12/ 2021	2	22	Buzzard	1	12.44	300	100	200	0	Flying / hunting on & off site
		23	Whooper swan	6	14.56	120	120	0	0	Flying low north
18/12/ 2021	3	24	Kestrel	1	10.04	180	0	180	0	Flying / hovering
		25	Buzzard	1	10.37	300	0	200	100	Bird circling & rising
18/12/ 2021	2	26	Kestrel	1	14.14	90	60	30	0	Hunting
20/12/ 21	1	27	Lapwing	18	10.10	120	0	120	0	Flying south
20/12/ 21	3	28	Whooper swan	6	15.15	150	120	30	0	Flying towards Cavemount, losing height & calling
16/01/ 2022	2	29	Sparrow hawk	1	10.12	30	30	0	0	Hunting
		30	Mute swan	2	11.59	90	0	90	0	Pair flying SSE
16/01/ 2022	3									No target species
22/01/ 2022	1	31	Buzzard	2	10.53	360	0	320	340	Pair interacting & rising
		32	Golden plover	20 0+	11.11	300	0	100	200	Flock circling
22/01/ 2022	2	33	Kestrel	1	13.21	60	60	0	0	Hunting – bird dropped to ground
25/01/ 2022	1									No target species
25/01/ 2022	3	34	Kestrel	1	14.14	120	60	60	0	Male hovering / hunting over track
13/02/ 2022	3	35	Whooper swan	5	08.48	120	120	0	0	Party of 5 flying north (from Cavemount) up east side of site
		36	Kestrel	1	10.19	90	0	90	0	Hovering just at pylon
13/02/ 2022	2	37	Merlin	1	13.34	60	60	0	0	Probably had been roosting on peat – hunting low
		38	Buzzard	1	14.45	120	120	0	0	Flying
22/02/ 2022	1	39	Sparrow	2	10.40	300	0	150	150	Pair circling /

*Bord na Móna Winter Bird Survey 2021/22: Derryarkin Bog Group*

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
2022			hawk							interacting
22/02/ 2022	2	40	Buzzard	2	15.05	600	0	200	400	Pair rising high out of sight
		41	Buzzard	1	16.27	120	120	0	0	Flying low across bog
25/02/ 2022	1	42	Peregrine	2	09.27	60	0	60	0	Male bird flying leisurely
25/02/ 2022	3									No target species
15/03/ 2022	1	43	Kestrel	2	11.24	400	0	300	100	Pair interacting / display Also, c.20 sand martins
15/03/ 2022	2	44	Buzzard	1	12.50	60	60	0	0	Bird on peat, got up & flew north
		45	Sparrow hawk	1	14.14	120	60	60	0	Bird circling
26/03/ 2022	3	46	Mute swan	1	10.13	60	60	0	0	Flying east to west
26/03/ 2022	2									No target species 2 wheatears along track
29/03/ 2022	3	47	Kestrel	1	11.32	120	0	120	0	Flying
29/03/ 2022	1									No target species

## APPENDIX 5

### Scientific Names of Bird Species

Little Grebe	<i>Tachybaptus ruficollis</i>
Great Crested Grebe	<i>Podiceps cristatus</i>
Grey Heron	<i>Ardea cinerea</i>
Little Egret	<i>Egretta garzetta</i>
Whooper Swan	<i>Cygnus cygnus</i>
Mute Swan	<i>Cygnus olor</i>
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>
Greylag Goose	<i>Anser anser</i>
Teal	<i>Anas crecca</i>
Wigeon	<i>Anas penelope</i>
Mallard	<i>Anas platyrhynchos</i>
Tufted Duck	<i>Aythya fuligula</i>
Buzzard	<i>Buteo buteo</i>
Hen Harrier	<i>Circus cyaneus</i>
Sparrowhawk	<i>Accipiter nisus</i>
Kestrel	<i>Falco tinnunculus</i>
Merlin	<i>Falco columbarius</i>
Peregrine	<i>Falco peregrinus</i>
Red Grouse	<i>Lagopus lagopus</i>
Moorhen	<i>Gallinula chloropus</i>
Pheasant	<i>Phasianus colchicus</i>
Water Rail	<i>Rallus aquaticus</i>
Ringed Plover	<i>Charadrius hiaticula</i>
Golden Plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Jack Snipe	<i>Lymnocyptus minimus</i>
Snipe	<i>Gallinago gallinago</i>
Woodcock	<i>Scolopax rusticola</i>
Greenshank	<i>Tringa nebularia</i>
Curlew	<i>Numenius arquata</i>
Black-headed Gull	<i>Chroicocephalus ridibundus</i>
Lesser Black-backed Gull	<i>Larus fuscus</i>
Long-eared Owl	<i>Asio otus</i>
Kingfisher	<i>Alcedo atthis</i>
Woodpigeon	<i>Columba palumbus</i>
Skylark	<i>Alauda arvensis</i>
Meadow Pipit	<i>Anthus pratensis</i>
Pied Wagtail	<i>Motacilla alba</i>
Wren	<i>Troglodytes troglodytes</i>
Robin	<i>Erithacus rubecula</i>
Stonechat	<i>Saxicola torquata</i>
Blackbird	<i>Turdus merula</i>
Fieldfare	<i>Turdus pilaris</i>
Song Thrush	<i>Turdus philomelos</i>
Mistle Thrush	<i>Turdus viscivorus</i>
Goldcrest	<i>Regulus regulus</i>
Coal Tit	<i>Parus ater</i>
Blue Tit	<i>Parus caeruleus</i>

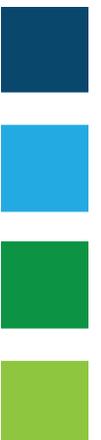
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Great Tit	<i>Parus major</i>
Magpie	<i>Pica pica</i>
Hooded Crow	<i>Corvus corone</i>
Raven	<i>Corvus corax</i>
Starling	<i>Sturnus vulgaris</i>
Chaffinch	<i>Fringilla coelebs</i>
Goldfinch	<i>Carduelis carduelis</i>
Siskin	<i>Carduelis spinus</i>
Linnet	<i>Carduelis cannabina</i>
Lesser Redpoll	<i>Carduelis flammea</i>
Bullfinch	<i>Pyrrhula pyrrhua</i>
Reed Bunting	<i>Emberiza schoeniclus</i>

# Bord na Móna

## Energy Park Wind Farm

### Winter 2022/23 Bird Surveys: Summary Report



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## Document Control Sheet

Document Reference	Energy Park Winter 2022/23 Bird Surveys: Summary Report
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Rev	Description	Author	Date	Reviewer	Date	Approval	Date
A	First Issue	JM	17/08/2023	CN	17/08/2023	CN	17/08/2023

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## 1. BACKGROUND

This report details the results of bird surveys undertaken by TOBIN Consulting Engineers at the proposed Energy Park Wind Farm Site from October 2022 to March 2023.

### 1.1 VANTAGE POINT SURVEY

Twelve Vantage Points (VPs) across the Energy Park were surveyed over a total of 472 hours during the non-breeding/winter period 2022/23. The survey results include almost 19,000 individuals of 27 species flying over the Energy Park site, with October and November 2022 being the months with highest flight activity (**Table 1.1**). Moreover, records were also taken during the VP surveys of non-flying birds (**Table 1.2**), and 848 individuals were observed roosting/perching at the Energy Park site during the winter 2022/23.

**Table 1.1: Summary of 2022/23 Vantage Point Surveys (Target Species Flying Observation)**

Species	October	November	December	January	February	March	Total
European Golden Plover	8,097	6,840	452		8		15,397
Northern Lapwing	180	1,085	150	886	71		2,372
Whooper Swan	31	6	55	225		7	324
Mute Swan	106	23	14	11	21	13	188
Common Buzzard	17	20	27	8	26	25	123
Common Kestrel	28	22	14	27	10	18	119
Grey Plover	88						88
Mallard	29	15	3	5	6	9	67
Eurasian Curlew	9		32				41
Lesser Black-backed Gull	22	3	4			2	31
Eurasian Sparrowhawk	5	7	7	7	2		28
Grey Heron	9	1	1	5	5	3	24
Redwing			20				20
Black-headed Gull	8		5			5	18
Peregrine Falcon	1	3		5	2	1	12
Merlin			2	2		5	9
Hen Harrier	1	1	2		1	3	8
Mew Gull			7				7
Ruddy Turnstone		5					5
Common Snipe	3			1			4
Little Egret	1			2			3
Great Black-backed Gull						2	2
Pink-footed Goose				2			2
Little Grebe			1				1
Greylag Goose			1				1
Common Redshank			1				1
Cormorant	1						1
<b>Total</b>	<b>8,636</b>	<b>8,031</b>	<b>798</b>	<b>1,186</b>	<b>152</b>	<b>93</b>	<b>18,896</b>

Table 1.2: Summary of 2022/23 Vantage Point Surveys (Target Species Non-Flying Occurrences)

Species	October	November	December	January	February	March	Total
European Golden Plover	367						367
Whooper Swan				194	102	29	325
Redwing		10	37	12	6	12	77
Eurasian Curlew		42	17				59
Northern Lapwing			1			4	5
Mallard				3			3
Common Kestrel				2			2
Pink-footed Goose					1	1	2
Great Crested Grebe					2		2
Common Buzzard					2		2
Little Grebe					1		1
Mute Swan				1			1
Common Snipe				1			1
Grey Heron		1					1
<b>Total</b>	<b>367</b>	<b>53</b>	<b>55</b>	<b>213</b>	<b>114</b>	<b>46</b>	<b>848</b>

## 1.2 HEN HARRIER ROOST SURVEY 2022/23

Activity of any birds of prey observed during the Hen Harrier Roost Survey 2022/23 was recorded, but the most relevant result was the identification of a Hen Harrier ringtail roosting in the immediate vicinity of the Drumman bog (Table 1.3).

Table 1.3: Summary of 2022/23 Hen Harrier Roost Survey Results

	October	November	December	January	February	Total
<b>Common Buzzard</b>						
Flying		1				1
<b>Common Kestrel</b>						
Hunting	1	1				2
<b>Hen Harrier</b>						
Hunting	1		1	6		8
Hunting/Roosting					1	1
Roosting				2	1	3
<b>Total</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>4</b>

### 1.3 I-WeBS 2022/23

Almost 4,000 waterbirds, belonging to 28 species, were observed over the Zone of Influence for wintering waterbirds during the I-WeBS in the winter season 2022/23. European Golden Plover, Northern Lapwing and Common Coot were the most abundant species, each with 700 or more sightings, in total (Table 1.4).

Table 1.4: Summary of I-WeBS 2022/23 Results

Species	October	November	December	January	February	March	Total
European Golden Plover	205		7	6	560	1	779
Northern Lapwing	40	12	85	28	569	24	758
Common Coot	4		15	350	255	76	700
Little Grebe	24	2	5	306	9	12	358
Eurasian Teal	9	33	51	121	86	41	341
Mute Swan	27	96	58	61	54	23	319
Mallard	17	25	34	49	58	31	214
Whooper Swan	6	15	25	7	52		105
Common Snipe	20	13	2	6	5	3	49
Common Moorhen	1	8	2	3	3	27	44
Eurasian Wigeon					20	23	43
Grey Heron	7	7	5	6	3	5	33
Tufted Duck		15	12				27
Cormorant	2	2	2	1		12	19
Common Buzzard	5	3	4		3	2	17
Black-headed Gull	1		7		4	3	15
Great Crested Grebe	2	3			2	3	10
Common Kestrel	4	1	1				6
Northern Shoveler					2	2	4
Ringed Plover					3	1	4
Little Egret				1	2	1	4
Great Egret	1	1					2
Eurasian Sparrowhawk		1				1	2
Water Rail	1			1			2
Osprey	2						2
Peregrine Falcon						1	1
Lesser Black-backed Gull		1					1
Merlin				1			1
<b>Total</b>	<b>378</b>	<b>238</b>	<b>315</b>	<b>947</b>	<b>1,690</b>	<b>292</b>	<b>3,860</b>

### 1.4 WINTER 2022/23 TRANSECT SURVEY

Twelve transects across the Energy Park site were surveyed during the winter 2022/23, registering 511 individual birds, of 24 species (Table 1.5). Whooper Swan and Common Snipe

were the most abundant species, summing up to almost 60% of the total bird sightings over this survey.

**Table 1.5: Summary of Winter 2022/23 Transects Survey Results**

Species	October	November	December	January	February	March	Total
Whooper Swan	5		72	103	14	12	206
Common Snipe	5	57	4	14	11	7	98
Tufted Duck					35		35
Mute Swan	4	17		7	4		32
Northern Lapwing		24				7	31
European Golden Plover		1	30				31
Mallard	2	6		3		10	21
Redwing						10	10
Meadow Pipit	7						7
Eurasian Teal	4				2		6
Eurasian Wigeon				4			4
Common Kestrel		1		2	1		4
Grey Heron	1	2			1		4
Common Greenshank			3				3
Peregrine Falcon		1	1	1			3
Gadwall			3				3
Common Kingfisher				1		1	2
Common Buzzard					1	1	2
Little Grebe					2		2
Eurasian Curlew		2					2
Great Black-backed Gull						2	2
Eurasian Sparrowhawk					1		1
Hen Harrier		1					1
Greylag Goose			1				1
<b>Total</b>	<b>28</b>	<b>112</b>	<b>114</b>	<b>135</b>	<b>72</b>	<b>50</b>	<b>511</b>

## 1.5 WHOOPER SWAN ABUNDANCE AT THE ENERGY PARK

The abundance and frequency of observations of Whooper Swan during the bird surveys at the Energy Park site over the winter season 2022/23 warrants a preliminary dedicated analysis of this species occurrence. In fact, following Percival (2003), which defines two important factors for the classification of the Energy Park Site’s importance to Whooper Swan:

- National Important Site – site holds >1% of the national population; and
- Regional Important Site – site holds >1% of the regional population.

Considering the most recent Whooper Swan Census results (Burke *et al.*, 2021), the national population of Whooper Swan is 19,111 individuals, whereas the regional (Offaly County) population of Whooper Swan is 1,506 individuals. **Table 1.6** includes the maximum number of

Whooper Swan individuals recorded during the winter 2022/23 bird surveys, appropriately coloured when the abundance is of National Importance (>191 individuals) or Regional Importance (>15 individuals)

**Table 1.6: Summary of Winter 2022/23 Whooper Swan Observations**

Abundance higher than 1% of County population



Abundance higher than 1% of National population



Date	Maximum number of birds
<b>VP (non-flights)</b>	
19/10/2022	320
22/11/2022	21
23/11/2022	10
20/12/2022	17
22/12/2022	25
23/12/2022	12
25/01/2023	1
26/01/2023	12
27/01/2023	152
02/02/2023	1
22/02/2023	102
23/02/2023	6
26/03/2023	12
28/03/2023	29
<b>I-WeBS</b>	
20/10/2020	6
24/11/2020	10
21/12/2020	14
04/11/2022	1
19/12/2022	6
30/01/2023	7
01/02/2023	3
20/02/2023	8
21/02/2023	22
<b>Winter Transects</b>	
19/10/2022	5
15/12/2022	32
24/01/2023	103
03/02/2023	14
23/03/2023	12
<b>Incidentals</b>	
20/10/2022	4
20/12/2022	62
26/01/2023	3
27/01/2023	7



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## 2. REFERENCES

Burke, B., McElwaine, J.G., Fitzgerald, N., Kelly, S.B.A., McCulloch, N., Walsh, A.J. and Lewis, L.J. (2021) *Population size, breeding success and habitat use of Whooper Swan *Cygnus cygnus* and Bewick's Swan *Cygnus columbianus bewickii* in Ireland: results of the 2020 International Swan Census*, *Irish Birds*, 43, pp. 57–70.

Percival, S.M. (2003) *Birds and Wind Farms in Ireland: a Review of Potential Issues and Impact Assessment*. Ecology Consulting, Durham, UK.





[www.tobin.ie](http://www.tobin.ie)

 TOBIN Consulting Engineers

 @tobinengineers

**Galway**  
Fairgreen House,  
Fairgreen Road,  
Galway,  
H91 AXK8,  
Ireland.  
Tel: +353 (0)91 565 211

**Dublin**  
Block 10-4,  
Blanchardstown Corporate Park,  
Dublin 15,  
D15 X98N,  
Ireland.  
Tel: +353 (0)1 803 0406

**Castlebar**  
Market Square,  
Castlebar,  
Mayo,  
F23 Y427,  
Ireland.  
Tel: +353 (0)94 902 1401

**Limerick**  
Unit 4, Crescent Court,  
St Nessian's Road, Dooradoyle,  
Limerick  
V94V298  
Ireland  
Tel: +353 (0)61 976 262

**Sligo**  
The Gateway Building, Floor 3  
Northwest Business Park  
Collooney, Sligo  
F91W40H  
Ireland  
Tel: +353 (0)71 9318 844

**BORD NA MONA  
WINTER BIRD SURVEY  
2022-2023**

**BALLYBEG BOG**



*View of central area of Ballybeg Bog in early stage of re-vegetation (looking westwards)*

*Prepared for*

**Bord na Móna**

*by*

**BioSphere Environmental Services**

**29 La Touche Park, Greystones, Co. Wicklow**

**Tel: 01-2875249 / 087 2309906; E-mail: [maddenbio20@gmail.com](mailto:maddenbio20@gmail.com)**



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## **APPENDICES**

APPENDIX 1 – Ballybeg Bog: Summary of vantage point (VP) watch variables, October 2022 to March 2023

APPENDIX 2 – Ballybeg Bog: Vantage Point raw data & flight activity, October 2022 to March 2023

APPENDIX 3. Scientific names of bird species

## **EXECUTIVE SUMMARY**

- A baseline study of wintering birds associated Ballybeg Bog was carried out between October 2022 and March 2023. This followed a similar study in winter 2021/2022. Previous winter bird surveys had been carried out in 2012/13 and 2013/14 when part of site was still in commercial production.
- Ballybeg Bog is contiguous with Derryarkin bog to the north and Cavemount bog to the south. Ballybeg Bog is sharply divided into three main ecological units: the northern part which has been out of production for some considerable time and is re-vegetating cutaway dominated by birch scrub and woodland, the southern part which has been in commercial industrial production up to 2021 and is still largely bare peat though with pioneer bog vegetation, and the small southern outlier of largely intact raised bog, known as Coole bog.
- Field methods employed were a combination of transect surveys, vantage point watches (following method of Scottish Natural Heritage 2017) and focused surveys for wetland birds and especially swans, including monthly visits to Derryarkin Bog and Cavemount Bog.
- Ballybeg Bog is characterised by various types of habitats, with (i) well re-vegetated cutaway bog dominated by scrub and low woodland, (ii) areas of pioneer bog vegetation and bare peat where commercial production had occurred (now ceased), and (iii) a small area of fairly intact high bog (Coole Bog). Both Whooper Swan and Mute Swan were recorded passing over the site, presumably commuting between Derryarkin and Cavemount (where both species occur regularly). There was one record of Whooper Swan (no. 3) landed on a ponded wetland within the site. Golden Plover and Lapwing was recorded passing over the site, along with Little Egret. Snipe (Red-listed) occurs within the site though mostly in small numbers. The site provides useful habitat for various bird of prey species and especially Kestrel (Red listed), Sparrowhawk and Buzzard. Merlin was recorded on site on one occasion (as it had in previous winter), and Peregrine hunts over the site. Meadow Pipit, Red-listed on basis of breeding population, occurs throughout much of the site during winter. The Red-listed Redwing is regular in area during winter and at times occurs within the site. Amber-listed species recorded on site included Skylark, Goldcrest, Starling and Linnet. On the basis of the occurrence of some wetland bird species and fairly regular usage by bird of prey species, it is recommended from the 2022/23 winter survey (supported by the previous 2021/22 winter data) that a rating of **Local Importance (higher value)** is appropriate for wintering birds at Ballybeg Bog.

## **1.0 INTRODUCTION**

As part of the planning work for energy related projects, Bord na Móna commissioned a baseline survey of birds in winter 2022/2023 on Ballybeg Bog in County Offaly.

Ballybeg is part of the Derryarkin Bog Group (comprising also Derryarkin, Drumman and Derryhinch bogs). A previous winter bird survey had been carried out at Ballybeg, along with the other bogs in the Group, in 2021/2022. Prior to that, winter bird surveys had been carried out in 2012/2013 and 2013/2014 when much of bog was in commercial production. Breeding bird surveys have also been carried out in 2021 and 2022.

A contract to carry out the required work was awarded to BioSphere Environmental Services in October 2022.

The present report considers the results of the 2022/23 surveys for Ballybeg Bog, with reference made to earlier surveys at Ballybeg and the other bogs.

## **2.0 SURVEY METHODS**

### **2.1 Desk Review and Consultations**

A thorough desk review had been carried out previously for available information for the sites in the overall Derryarkin Bog Group for winter and breeding birds.

Since then, the present writer is not aware of any additional sources of external information relating to Ballybeg Bog or the adjoining bog sites.

### **2.2 Field Surveys**

The tender documentation had noted the following points in respect of survey methodology:

- The Winter Bird Surveys should be undertaken between the months of October and March, *i.e.* 6 months, and should focus in particular on wintering waders, wildfowl - notably geese and swans, any winter Hen Harrier roosts, other raptors, Annex 1 species and birds of conservation interest.
- The survey should include all, or a selection of the following; focused wetlands surveys; transects; vantage point surveys; bog walks; roost watches; flight paths and migration studies; or other methodologies as appropriate.
- All vantage points (as described in the tender brief) should be surveyed to achieve or exceed the 36 hr observation duration required by the Vantage Point methodology (Scottish Natural Heritage, 2017).

The tender also noted that ‘*adherence to approved methodologies is a key requirement of the project. However, given the scale and fragmented nature of the area to be surveyed, and the nature of the studies to be undertaken, a pragmatic approach is required. This must balance the detail required to be acceptable for a planning application for a wind farm project of very significant scale with the fact that much of the area is still utilised for industrial scale peat extraction or peat extraction has ceased only recently.*’

Taking the above into account, the following approach was taken at the sites:

### **2.2.1 Number of site visits**

Monthly site visits were made to Ballybeg Bog between October 2022 and March 2023 (i.e. 6 rounds of site visits).

### **2.2.2 Survey methods**

Use of the following methods was employed at the site as relevant. However, transect surveys and vantage point watches were the main methods and a combination of these were used. In addition, focused surveys for presence of Whooper Swans at Derryarkin Bog and Cavemount Bog were carried out.

Surveys were carried out largely in suitable weather conditions, with avoidance of persistent rain, mist/fog and winds in excess of F4-5.

### **Transects surveys**

The use of transects to record birds within sites is a well-established survey method (Bibby *et al.* 2000). The method is particularly useful for open habitats such as peatlands. The value of the method is that it is repeatable over time, which is particularly relevant to the Bord na Móna cutaway bogs where habitat conditions are somewhat transient and bird communities can be expected to change over time in response to vegetation types present.

The transects selected typically followed identifiable tracks (inc. rail tracks) which made coverage quicker and also safer compared to across open bog. Further, tracks are often slightly elevated which makes recording more efficient. The number of transects used was determined by the size of the site and the diversity of habitats present.

Bird recording is normally within a zone 200-300 m wide either side of the transect though the flat nature of the sites made larger sized or obvious birds (such as Golden Plover flocks) at further distances easily visible. Birds were recorded by sight (with aid of binoculars) and sound.

One transect route had been selected in the previous surveys on this site (**Transect no. 1**) – this follows the Bord na Móna train track through the site from north to south.

### **Vantage point surveys**

Vantage point surveys were carried out in accordance with the methodology used for assessing impacts of wind farms on bird communities published by Scottish Natural Heritage (now NatureScot) (2017). The purpose of these surveys was mainly to detect birds of prey and passing waterbirds (swans, geese, duck, waders etc.), though all birds observed during watches were recorded. At the Derryarkin bogs, the full duration of 36 hours of observations over the site during the winter period was achieved as required by the methodology.

A representative number of vantage points were established to provide views over large areas of the site and adjoining lands, with focus on expanses of habitats of potential value to wintering birds. The vantage points were positioned on elevated ground where feasible – these range from naturally higher ground (hillocks etc) to roads/embankments.

When a target species was sighted during a watch, the flightline was plotted onto a field map along with estimated flight height<sup>1</sup>, duration of observation and any other parameters such as age and gender of bird, behaviour of bird (e.g. hunting, flying, roosting) etc.

Three vantage points has been selected for this site in previous surveys, as follows:

**Vantage Point 1** is located along the northeast boundary of the site and gives a view over the entire northern sector of the site.

**Vantage Point 2** is located on a peat track in the central areas of the site (at edge of the established cutaway) and gives a view over much of the southern sector of the site.

**Vantage Point 3** is located on the train track near the southern entrance to the site and gives a view over the extreme southernmost parts of site, including the Coole Bog outlier.

### **Focused surveys for wetland birds**

Surveys were carried out in each month (apart from October) for wetland birds, and principally Whooper Swan, at Derryarkin Bog to the north of Ballybeg and at Cavemount Bog to the south of Ballybeg Bog.

#### **2.2.3 Target species**

The winter surveys were focused on the potential presence of the following groups of birds or species:

- Waterfowl, especially Whooper Swan and Greenland White-fronted Geese
- Waders, especially flocks of Golden Plover, Lapwing and Curlew
- Hen Harrier, Merlin and other birds of prey
- Any other Annex 1 species of EU Birds Directive
- Any Red or Amber listed species as given in Gilbert et al. 2021.

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<sup>1</sup> While actual flight height of target species was estimated in field, values are given in the following bands in Appendix 2: 0-25 m; 25-175 m; >175 m

### **2.3 Survey Limitations**

Surveys following standard methods and within the recommended time frame were carried out at Ballybeg Bog during the 2022/23 winter and hence there were no survey limitations.

However, bird populations can vary between years, mainly as a result of weather but also due to other factors such as breeding success, local disturbance at sites, etc. (see Crowe 2005). For instance, species such as Golden Plover and Lapwing are highly affected by cold weather events. Cold weather usually results in large-scale movements, particularly from their preferred inland feeding areas to the relatively ice-free coastline. Under more severe conditions, they may vacate Ireland altogether, possibly for France and Iberia. Whooper Swans may also be affected by severe cold weather and in the 2010 national census results were considered to be affected by the severe weather at the time, which resulted in flocks being widely dispersed and in locations where they had not previously been recorded as a result of the freezing-over of water bodies (Boland *et al.* 2010). It is therefore preferable to have more than one season's data in evaluating the importance of sites so as to dampen annual fluctuations in numbers (Crowe 2005). With baseline data available now for two winter periods (and since winter 2012/2013 for the adjoining Derryarkin and Drumman Bogs), the results of the surveys will provide a fairly robust assessment of the importance of Ballybeg Bog for wintering birds.

### **2.4 Criteria for Evaluation of Ornithological Importance of Sites**

The importance of winter wetland bird populations is evaluated according to the standard 1% thresholds for national (all-Ireland) and international importance (see Crowe 2006, Boland & Crowe 2012, Delaney and Scott 2006).

Evaluation of sites may also be made on the basis of the presence of species listed in Annex I of the EU Birds Directive or species listed as 'Birds of Conservation Concern', either on the Red List (High conservation concern) or Amber List (Medium conservation concern) (after Gilbert *et al.* 2021). As evaluating sites due to the presence of such is not quantitative, a subjective assessment may need to be made – for instance, the regular presence within a site of a breeding pair of Peregrines (Annex I species) would be of more significance than the occasional record of hunting birds.

For an overall ecological assessment of the importance of a site, taking into account not just ornithological interests but also habitats, flora and other fauna types etc., reference is made to the NRA *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009). Whilst the NRA guidelines were devised specifically for road schemes, they can be applied to general environmental impact assessment. The NRA system uses the following five-point scale:

- International Importance
- National Importance

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

### **3.0 RESULTS AND DISCUSSION**

#### **3.1 Site Description**

Ballybeg Bog is located to the west of the R400 road and between Croghan Hill and the town of Rhode. It is contiguous with Derryarkin bog to the north and Cavemount bog to the south. The most southern sector is an outlier from the main site and lies between a local road and the Grand Canal pNHA.

In addition to recent commercial peat production (now ceased since January 2021), a large area (c.60 ha) of cutaway east of the main railway line had been planted with alder as a biomass trial for East Offaly Power. The extreme northeast section of the site had been used for gravel extraction.

Ballybeg Bog is sharply divided into three main ecological units: the northern part which has been out of production for some time and is re-vegetating cutaway, the southern part which has been in recent commercial industrial production, and the small southern outlier of largely intact raised bog, known as Coole bog.

The northern cutaway sector contains a range of habitats but is dominated by birch scrub or developing bog woodland. There are some small wetlands with permanent or temporary water. Wetland vegetation, however, is poorly developed. Bare peat still occurs in places. As noted, a substantial portion of the cutaway has been developed as an Alder biomass trial, and is classified as short rotation coppice.

The southern part of the site is in the early stage of re-vegetation though as of yet vegetation cover is sparse. A portion to the east of the railway line and west-southwest of the (former) Works area comprises disturbed ground associated with the old Rhode Power Station. This area is dominated by scrub, dense bracken and dry grassland.

An area of undeveloped high bog occurs in the southernmost sector of the site (part of this bog is not within Bord na Móna ownership). This is largely intact bog though there is active turbary along the western margin and a network of surface drains had been inserted in the past. A remnant strip of high bog also occurs along the northeast boundary, while patches of cutover bog occur in places along the margins of the site.

The site is adjoined by slivers of bog to the east and north-west, with agricultural land to the south and west.

### **3.2 Results and Discussion**

A summary of the variables (date, time, weather etc.) for the vantage point watches carried out at Ballybeg Bog between October 2022 and March 2023 is presented in Appendix 1. Survey raw data for the vantage point watches are presented in Appendix 2.

Scientific names of bird species are given in Appendix 3.



**Plate 1.** View of ponded area in February 2023 – a small party of Whooper Swan was present here on 5<sup>th</sup> February 2023.



**Plate 2.** The northern sector of Ballybeg Bog is mostly dominated by birch scrub and low woodland, with occasional shallow pools sparsely vegetated.

### **Target species recorded**

#### Mute Swan

There were three records involving small numbers (max. 4) of birds moving north and south over the site.

Mute swan occurs regularly at the Derryarkin/Drumman bog and at Cavemount to the south of Ballybeg, and birds may also be observed along the canal. Some interaction is expected between the various locations.

#### Whooper Swan

There were four flightlines over the site, as follows:

On 12<sup>th</sup> December, a party of 9 was observed flying northwards over the site at 10.14 hrs.

On 18<sup>th</sup> January, a party of 4 flew south over the site at 16.32 hrs.

On 21<sup>st</sup> January, a party of 12 was observed flying south over the site at 09.57 hrs.

On 5<sup>th</sup> February, a party of 3 were observed on a wetland within the site – these later flew north over site.

The pattern of flightlines indicates that there is some movement of Whooper Swans between Cavemount Bog and Derryarkin. These are regular wintering sites for Whooper Swan, as follows:

- At Cavemount, birds were present from December to March, with a peak of 28 on 19<sup>th</sup>

January.

- At Derryarkin, birds were observed from mid-November to early late-March, with a peak of over 120 on 5<sup>th</sup> February.

However, the numbers recorded at Ballybeg were relatively low and not on a regular basis. The observations at Derryarkin have shown that the majority of feeding swans use the local quarry ponds for night roosting (rather than flying to Cavemount). The record of three birds on a wetland in Ballybeg in February represents the first time birds were observed (by present author) actually using the developing wetland habitats within Ballybeg.

#### Little Egret

A Little Egret flew over the northeast sector of the site on 18<sup>th</sup> February.

Little Egret is a regular species at Derryarkin and Drumman Bogs and also occurs at Cavemount. There is some pond habitat, including silt ponds, at Ballybeg suitable for the species.

#### Sparrowhawk

There were three records of Sparrowhawk on site through the winter.

One records (18<sup>th</sup> February) involved a displaying pair over the northern sector of site (where sparrowhawk is known to breed).

#### Buzzard

Buzzard was recorded frequently during the winter and throughout the site.

Four of the records involved pairs interacting / displaying, with the other records involving single birds hunting and/or flying.

Several pairs of Buzzard are known to breed within the wider area of Ballybeg.

#### Kestrel

Kestrel was recorded on site throughout the winter period, with a total of ten records. All were of single birds, involving both males and females. Most of the birds were hunting actively on site.

Kestrel breeds locally (though not on site).

#### Merlin

There was one record of Merlin on 12<sup>th</sup> December – this involved a bird observed perched along the side of the track in southern sector of site – it then flew a short distance out of site.

Merlin is expected to be an occasional winter visitor to the site (one also recorded in February 2022).

#### Peregrine

Peregrine was recorded flying over the site on two dates. The first record was on 29<sup>th</sup> October, when a bird landed on bare peat with a prey item – it later flew northwards. The second record involved a bird circling high over northern part of site on 5<sup>th</sup> February.

The birds observed in winter at Ballybeg are considered to be associated with the breeding pair at Derryarkin (which nests on a man-made structure).

### Golden Plover

There was one record of Golden Plover involving a flock of over 200 circling high over the northernmost part of site and drifting over Derryarkin.

The plover which occur at Ballybeg are almost certainly from the regular wintering population (sometimes up to 1,000 birds) which frequents the fields at Derryarkin as well as fields to the north of the motorway, and also at times Drumman Bog.

### Lapwing

Lapwing was recorded on three dates during a severe cold spell in December. Two of the records involved bird flying northwards over the site, and one involved a flock (200+) circling over northernmost part of site.

While these records may have been associated with local cold weather movements, there is a regular wintering population (estimated up to 400 birds) which frequents the fields at Derryarkin as well as fields to the north of the motorway, and also at times Drumman Bog. Birds may at times also utilise Cavemount Bog.

### **Potential for other target species**

Hen Harrier could be expected at times to pass through the site - one had been recorded within the site in March 2013 and the species is occasional during winter at Derryarkin and Drumman bogs.

### **Other species of note**

Mallard – recorded on site in small numbers (up to 6 maximum), mostly in area of Bord na Móna ponds in eastern sector.

Snipe – snipe is fairly scarce on site, with 1-2 birds being recorded mainly in the few wetland areas in the northern part of site and on the southernmost bog (Coole).

Skylark – small numbers (<4) present in October, with returning breeding birds present from late February.

Mistle Thrush – recorded regularly on site, with peak count of 11 on 25<sup>th</sup> October.

Redwing – large flocks, along with Fieldfares, present in marginal hedging from late November into January. High numbers particularly through cold spell in December. Numbers regularly in the hundreds.

Robin - present on site through winter in scrub habitats.

Stonechat – recorded on most visits through the winter. At least two territorial pairs in March.

Meadow Pipit – regular on site through the winter though mostly in small numbers (<10). Total of 21 on transect walk on 27<sup>th</sup> November. Loose flock of c.30 in southernmost part of site (Coole Bog area) on 25<sup>th</sup> October.

Goldcrest – present on site through winter in scrub habitats (though in low numbers).

Starling – large flocks recorded passing over site in late afternoon periods from late-November to mid-February, with estimates of over 1,000 birds as follows: c.1,000+ flew northwest over site from on 9<sup>th</sup> December; c.2,000 northwards over site on 19<sup>th</sup> December;

probably up to 4,000 northwards over site on 20<sup>th</sup> January.

Linnet – regular on site in small numbers (<10), though flock of 50+ on track alongside Coole Bog on 29<sup>th</sup> October.

**SITE: BALLYBEG – TRANSECT SURVEYS, 2022-2023**

Species	Date 27/11/22	Date 19/01/23	Date 23/02/23	BoCCI Status
Mallard	4	0	2	<b>A</b>
Pheasant	1	1	0	<b>G</b>
Grey Heron	1	2	0	<b>G</b>
Sparrowhawk	0	0	0	<b>G</b>
Buzzard	1	0	1	<b>G</b>
<b>Kestrel</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>R</b>
<b>Snipe</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>R</b>
Woodpigeon	30+	20	20	<b>G</b>
Magpie	4	0	1	<b>G</b>
Jackdaw	12	6	8	<b>G</b>
Hooded Crow	6	2	3	<b>G</b>
Raven	2	0	0	<b>G</b>
<b>Goldcrest</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>A</b>
Blue Tit	2	0	3	<b>G</b>
Great Tit	1	0	2	<b>G</b>
Dunnock	1	0	1	<b>G</b>
Coal Tit	9	2	7	<b>G</b>
<b>Skylark</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>A</b>
Long-tailed Tit	11	0	0	<b>G</b>
<b>Starling</b>	<b>50+</b>	<b>200+</b>	<b>20</b>	<b>A</b>
Wren	9	3	15	<b>G</b>
Blackbird	8	4	7	<b>G</b>
Fieldfare	120+	60	0	<b>G</b>
Song Thrush	4	2	2	<b>G</b>
<b>Redwing</b>	<b>100+</b>	<b>50+</b>	<b>0</b>	<b>R</b>
Mistle Thrush	7	0	3	<b>G</b>
Robin	3	1	4	<b>G</b>
Stonechat	7	3	5	<b>G</b>
<b>Meadow Pipit</b>	<b>21</b>	<b>8</b>	<b>16</b>	<b>R</b>
Pied Wagtail	6	0	4	<b>G</b>
Chaffinch	12	7	10+	<b>G</b>
Goldfinch	0	0	12	<b>G</b>
<b>Linnet</b>	<b>30+</b>	<b>0</b>	<b>6</b>	<b>A</b>
Lesser Redpoll	20+	9	14	<b>G</b>
Reed Bunting	3	1	4	<b>G</b>

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

## **General discussion**

The 2022/2023 winter survey at Ballybeg bog has added to the baseline winter bird assessment carried out in winter 2021/2022 (earlier surveys had been carried out in winters 2012/13 & 2013/14 when commercial production was in progress over the central and southern parts of site).

While bog rehabilitation, and especially wetland development, is still at an early development stage over part of Ballybeg, the site provides useful habitat for various bird of prey species and especially Kestrel (Red listed), Sparrowhawk and Buzzard. There was one record of Merlin within the site (as there had been in previous winter) and Peregrine hunts over the site (site is within the range of the breeding pair at Derryarkin). It is likely that Hen Harrier passes through the site at times (one had been recorded in March 2013).

Whooper Swan was recorded flying over the site, with one record of three landed on a ponded area within site. The Whooper Swans are expected to be commuting between Derryarkin and Cavemount bogs. Little Egret was recorded flying over the site but can be expected to utilise the site at times.

There were records of Golden Plover and Lapwing flying over the site, though in October and November 2021 Golden Plover had been recorded resting on the bare peat. These two species are considered to be associated with the regular winter populations in the wider Derryarkin area. Snipe (Red-listed) occurs within the site though in small numbers.

The site supports a range of other species of conservation interest. Meadow Pipit, Red listed on basis of breeding population, occurs throughout much of the site during winter. The Red-listed Redwing is regular in area during winter and at times occurs within the site. Amber-listed species recorded on site included Skylark, Goldcrest, Starling and Linnet.

### **3.3 Evaluation and Rating of Ballybeg Bog for Wintering Birds**

There follows a summary of the conservation status of species recorded on Ballybeg Bog in winter 2022/23:

#### **EU Birds Directive Annex I listed species**

- Whooper Swan
- Little Egret
- Merlin
- Peregrine
- Golden Plover

#### **Red Listed species (after Gilbert *et al.* 2021)**

- Kestrel
- Golden Plover

Lapwing  
Snipe  
Redwing  
Meadow Pipit

**Amber Listed species (after Gilbert *et al.* 2021)**

Mute Swan (flying over)  
Whooper Swan  
Mallard  
Skylark  
Goldcrest  
Starling  
Linnet

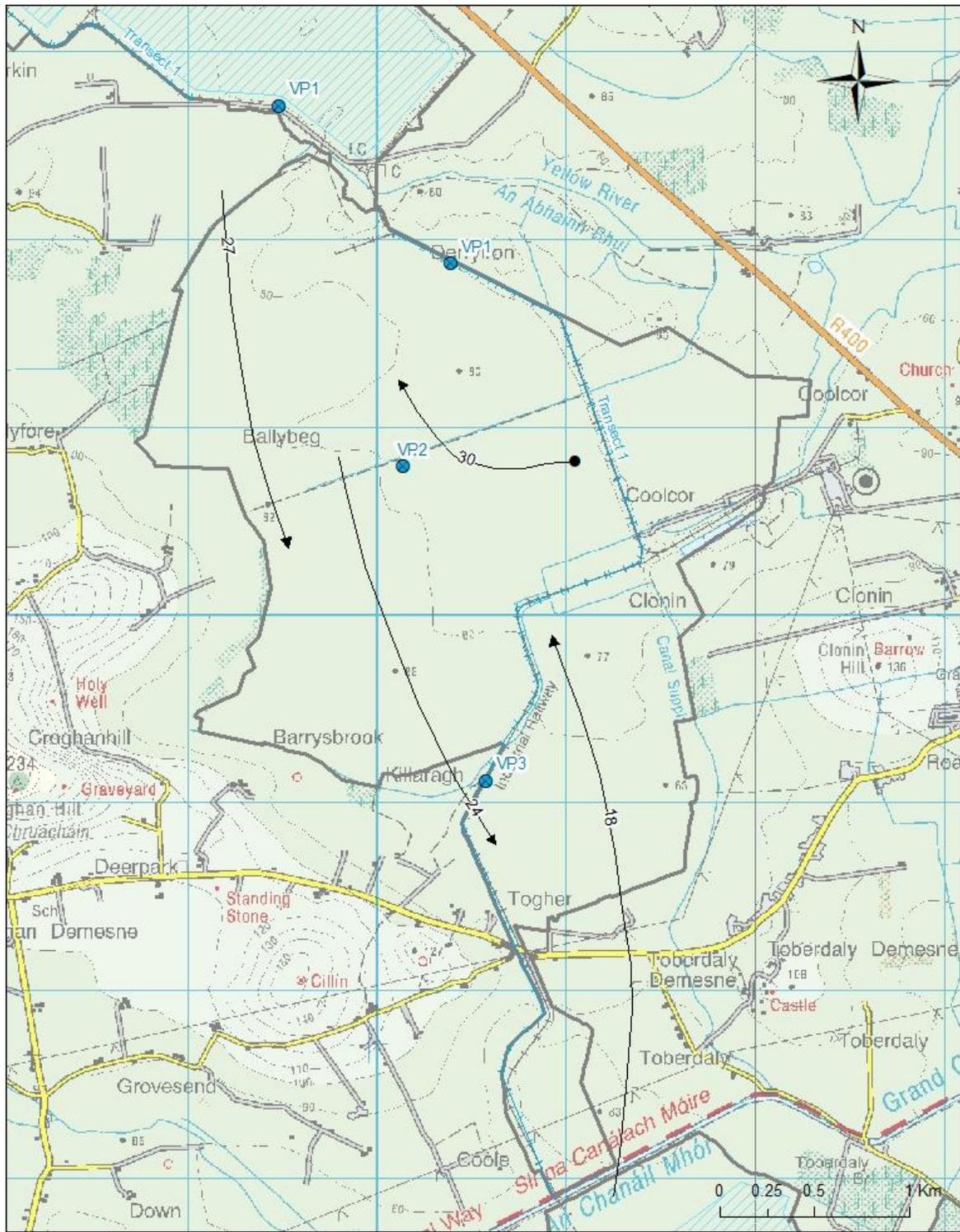
Overall, the site has existing and developing habitats suitable for supporting a range of wintering birds, including some wetland birds.

A feature of Ballybeg Bog is that it is used regularly for hunting by birds of prey, notably Kestrel, Buzzard and Sparrowhawk but also on occasions by Merlin. The site is also within the range of a local breeding pair of Peregrine.

From the location of the site, it can be considered as part of a larger complex of cutaway bog sites, comprising Derryarkin, Drumman and Derryhinch bogs, along with Cavemount Bog to the south.

On the basis of usage of the site by Annex I listed species, plus some Red- and Amber-listed species, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Ballybeg Bog.

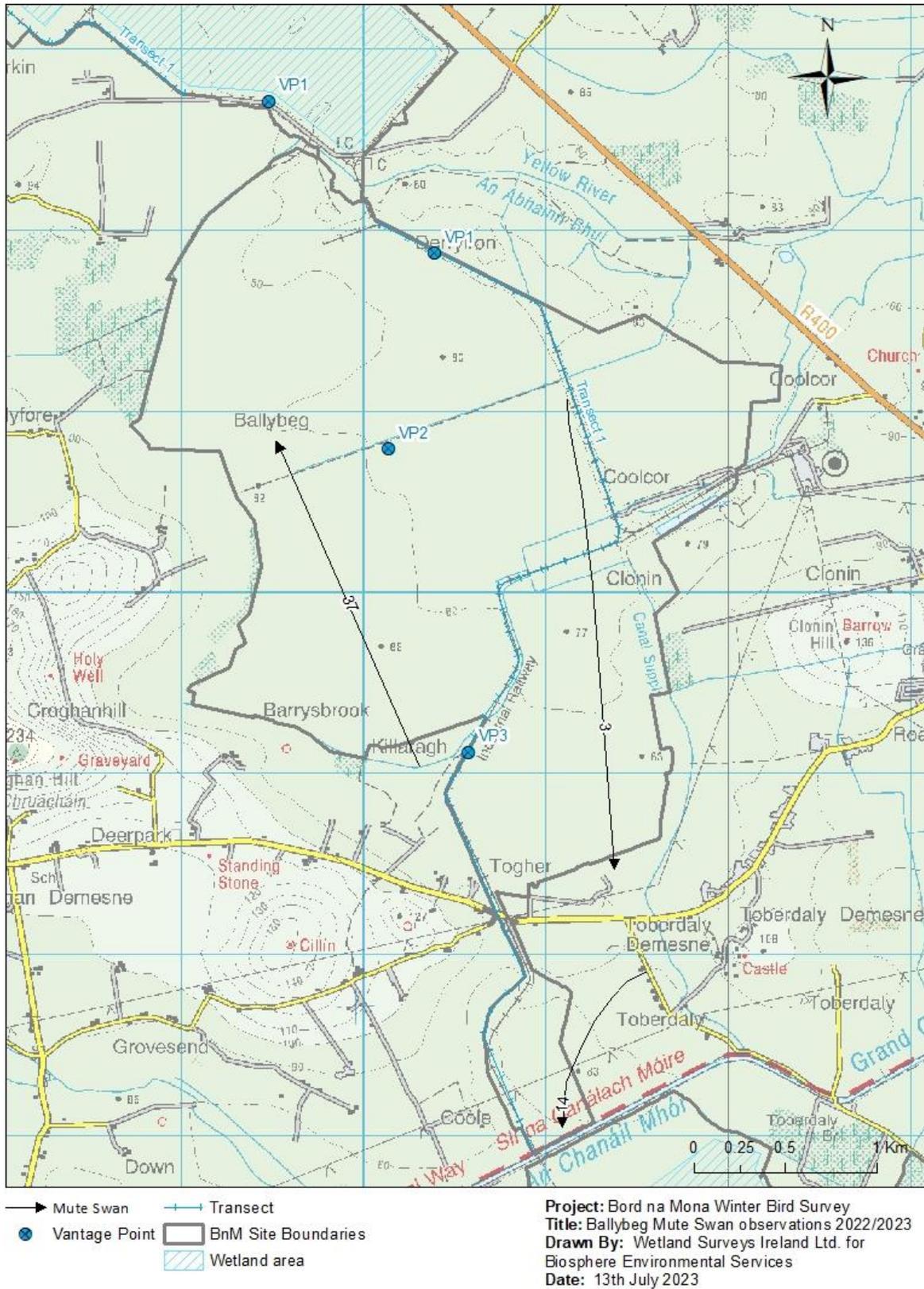
**Ballybeg Map 1:** Map showing transect and vantage point locations, with Whooper Swan flightlines.



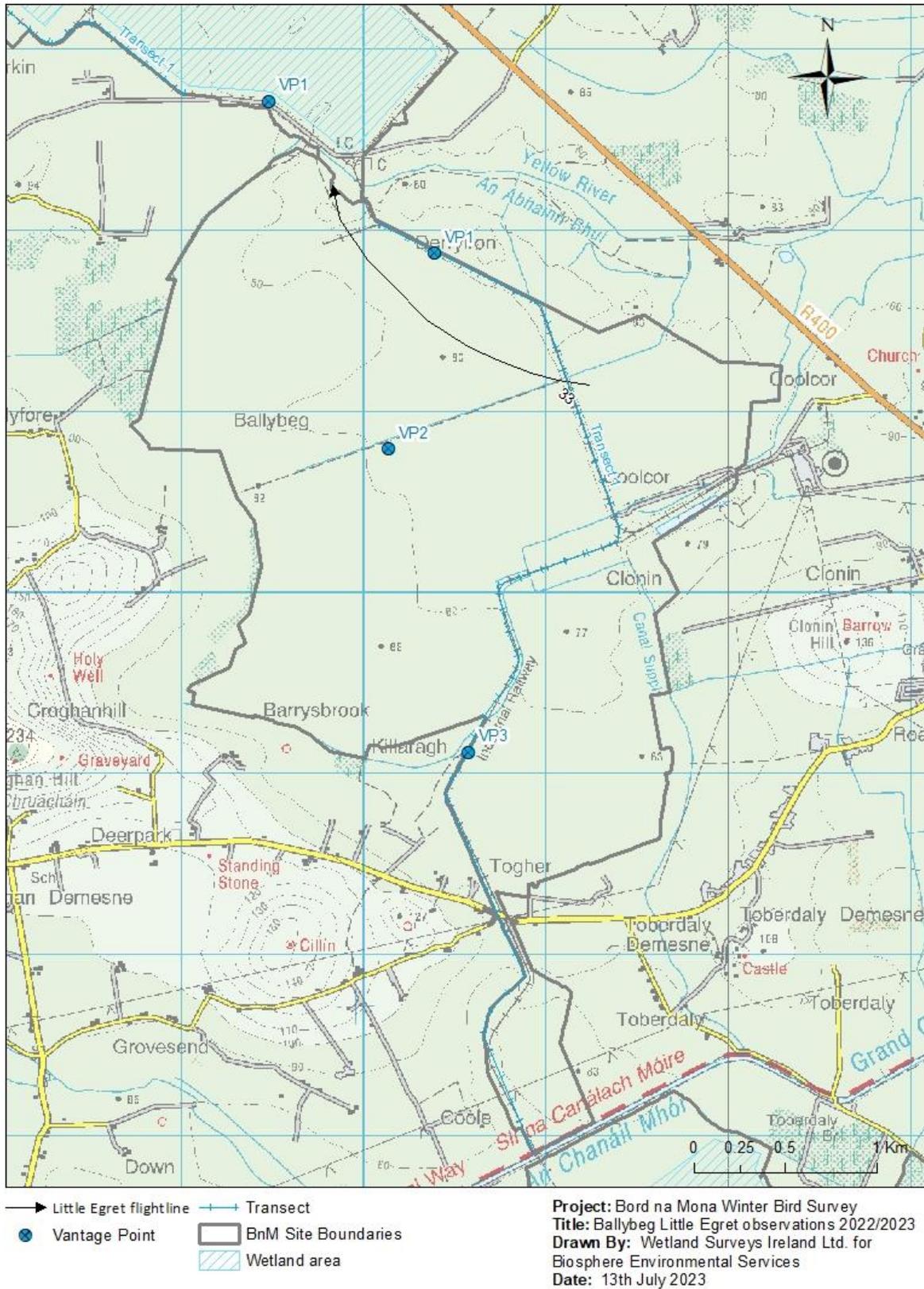
- Whooper Swan flightline
- Whooper Swan
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Whooper Swan observations 2022/2023  
 Drawn By: Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
 Date: 13th July 2023

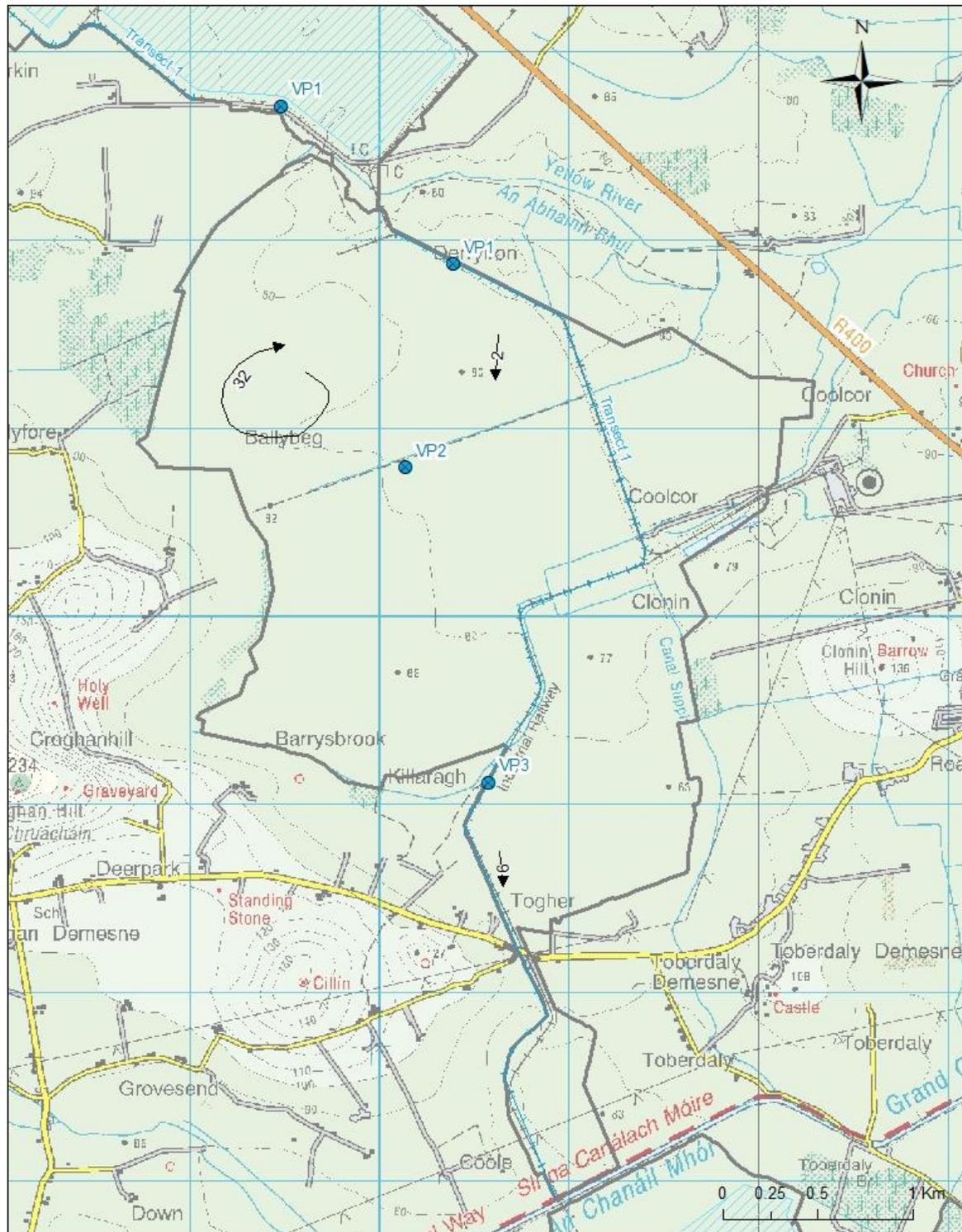
**Ballybeg Map 2:** Map showing transect and vantage point locations, with Mute Swan flightlines.



**Ballybeg Map 3:** Map showing transect and vantage point locations, with Little Egret flightlines.



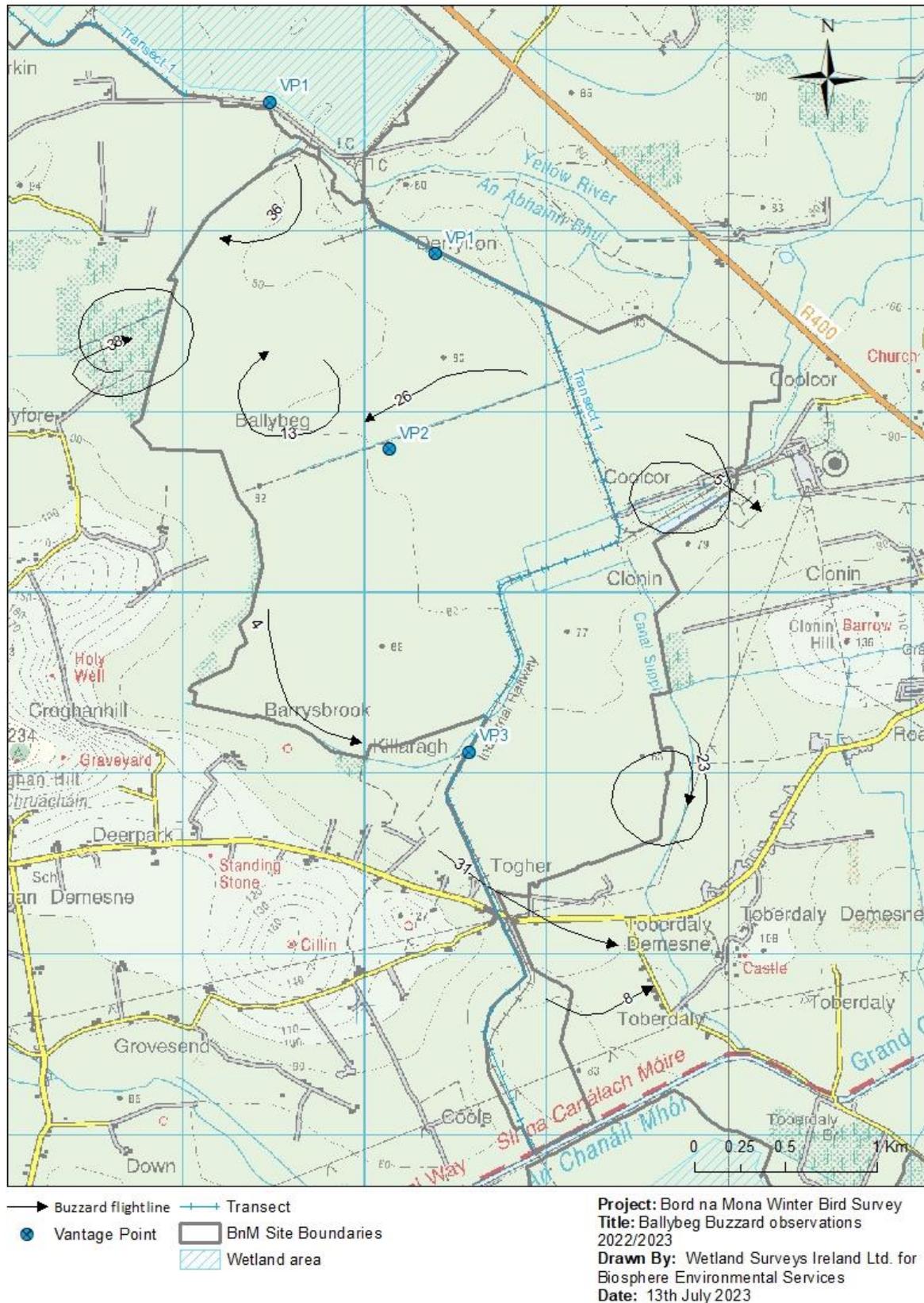
**Ballybeg Map 4:** Map showing transect and vantage point locations, with Sparrowhawk flightlines.



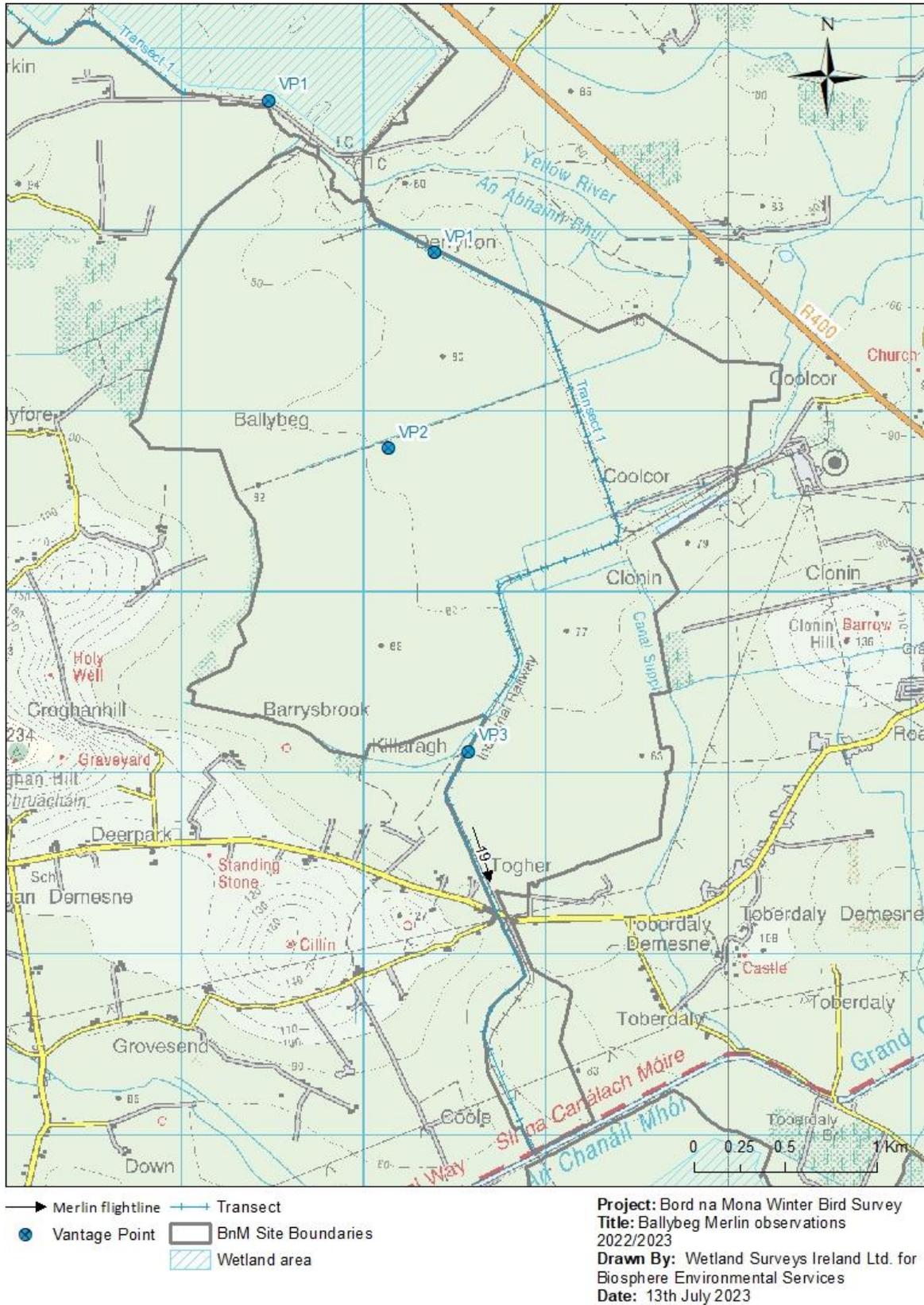
- Sparrowhawk flightline
- Vantage Point
- Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Sparrowhawk observations  
 2022/2023  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 13th July 2023

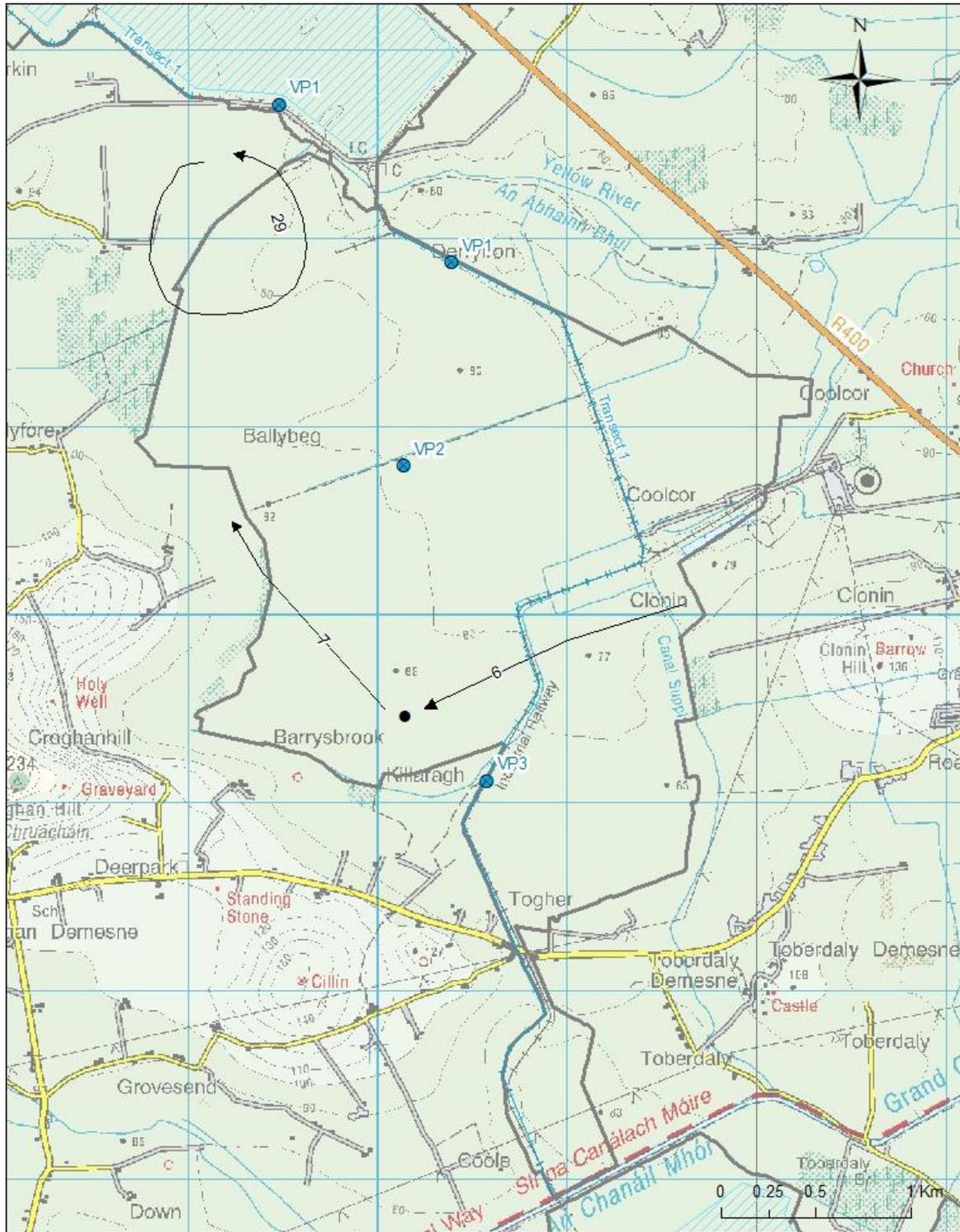
**Ballybeg Map 5:** Map showing transect and vantage point locations, with Buzzard flightlines.



**Ballybeg Map 6:** Map showing transect and vantage point locations, with Merlin flightlines.



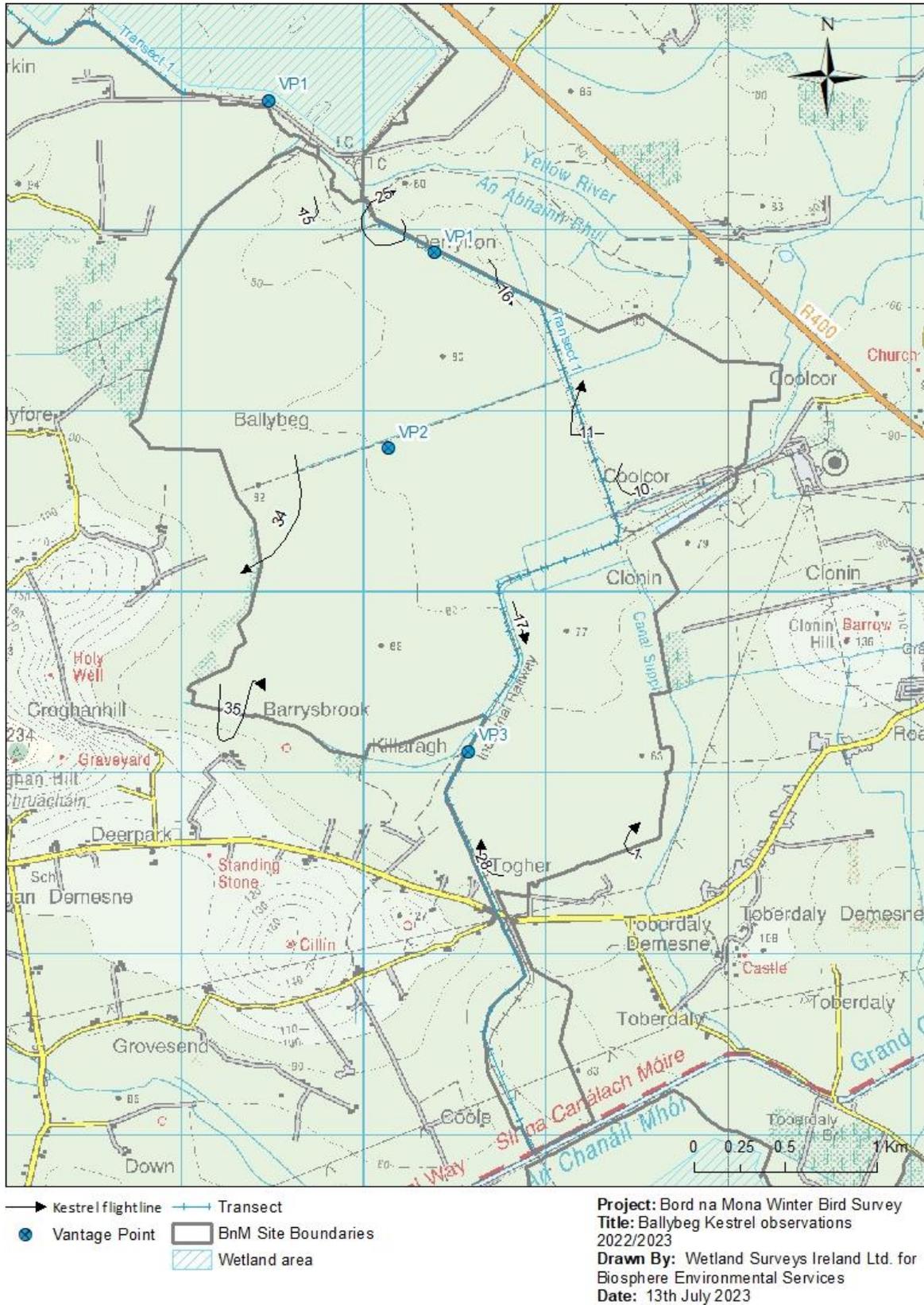
**Ballybeg Map 7:** Map showing transect and vantage point locations, with Peregrine flightlines.



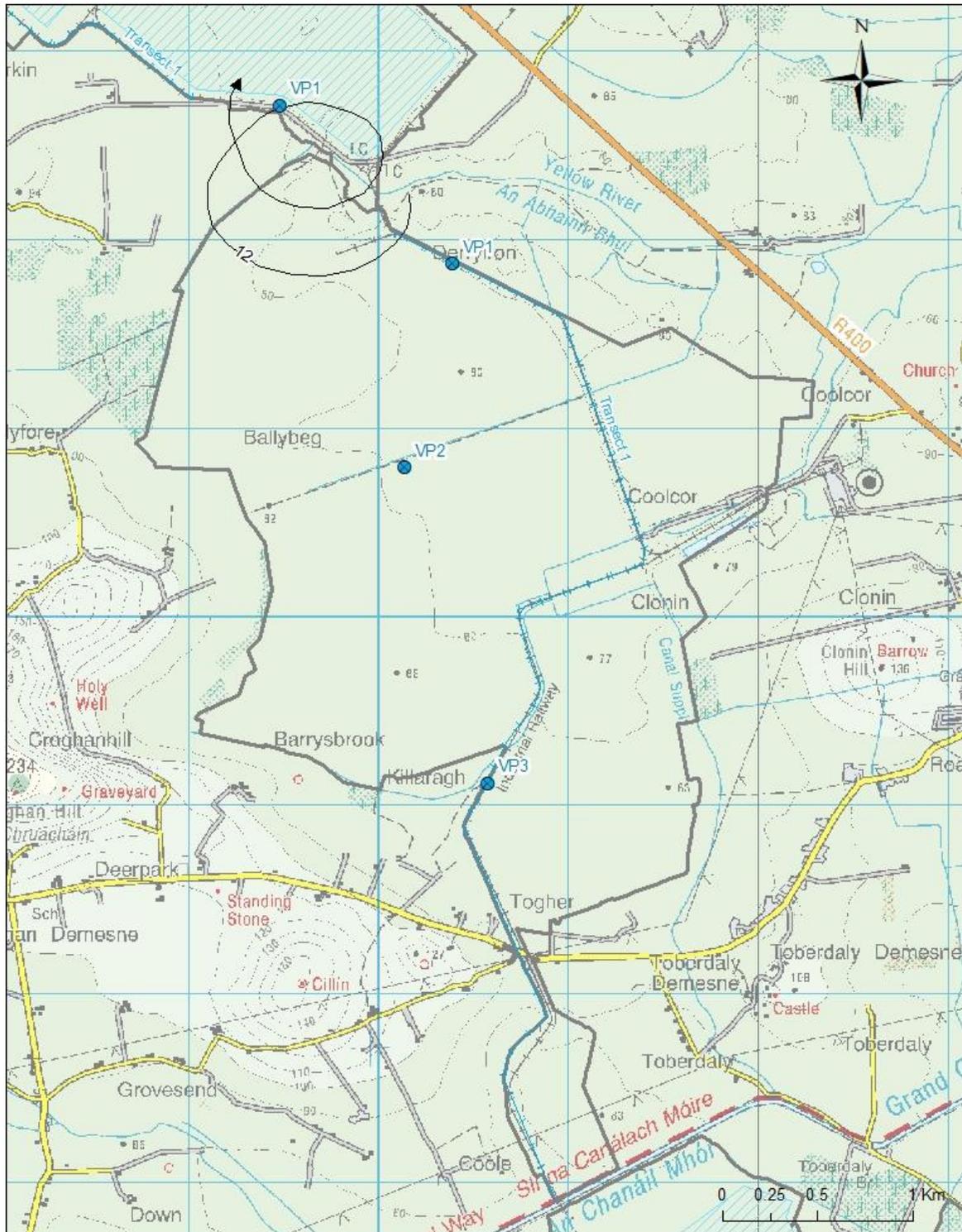
- Peregrine flightline
- Peregrine
- Vantage Point
- +— Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Peregrine observations  
 2022/2023  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 13th July 2023

**Ballybeg Map 8:** Map showing transect and vantage point locations, with Kestrel flightlines.



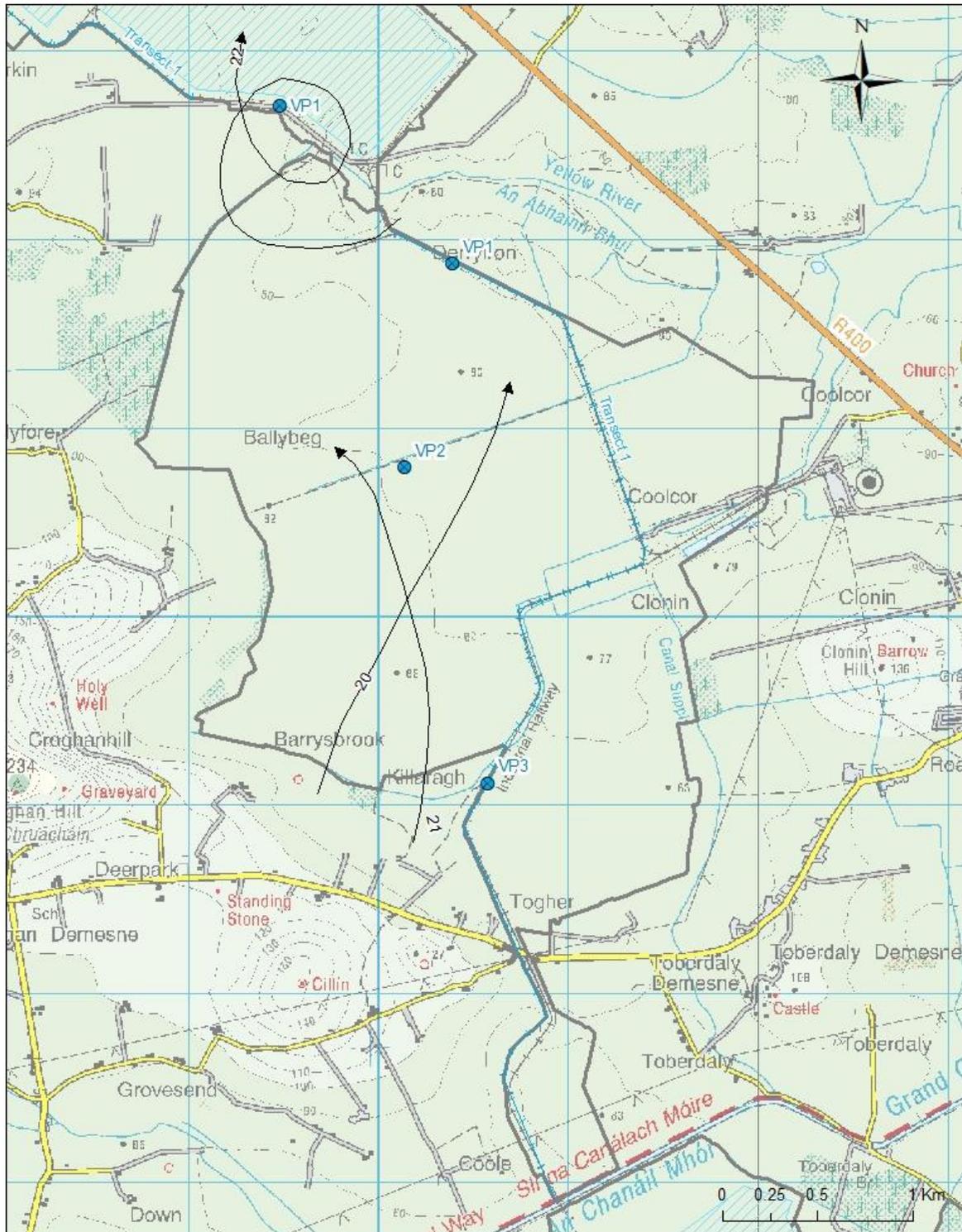
**Ballybeg Map 9:** Map showing transect and vantage point locations, with Golden Plover flightlines.



- Golden Plover flightline
- Vantage Point
- Transect
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Golden Plover observations 2022/2023  
 Drawn By: Wetland Surveys Ireland Ltd. for Biosphere Environmental Services  
 Date: 13th July 2023

**Ballybeg Map 10:** Map showing transect and vantage point locations, with Lapwing flightlines.



- Lapwing flightline
- +— Transect
- Vantage Point
- ▭ BnM Site Boundaries
- ▨ Wetland area

Project: Bord na Mona Winter Bird Survey  
 Title: Ballybeg Lapwing observations  
 2022/2023  
 Drawn By: Wetland Surveys Ireland Ltd. for  
 Biosphere Environmental Services  
 Date: 13th July 2023

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## APPENDIX 1

### Summary of vantage point (VP) watch variables, Ballybeg Bog, October 2022 to March 2023

Date	Season	VP no.	Duration (hrs)	Start Time	Weather conditions
25/10/2022	Winter	3	3	08:00	Dry, Good visibility, SW wind, F3
25/10/2022	Winter	1	3	12:00	Dry, Good visibility, SW wind, F3
28/10/2022	Winter	2	3	10:15	Showers, Good visibility, W wind, F2-3
28/10/2022	Winter	1	3	14.30	Dry, Good visibility, SW wind, F2-3
29/10/2022	Winter	2	3	07:45	Dry, Good visibility, W wind, F2
29/10/2022	Winter	3	3	13.30	Showers, Good visibility, NW wind, F3
21/11/2022	Winter	2	3	08.15	Showers, Good visibility, NW wind, F3
21/11/2022	Winter	3	3	13.30	Dry, Good visibility, NW wind, F3
25/11/2022	Winter	1	3	09:30	Dry, Good visibility, S wind, F2
25/11/2022	Winter	3	3	13:30	Dry, Good visibility, S wind, F2
26/11/2022	Winter	1	3	08:00	Dry, Good visibility, SW wind, F3
26/11/2022	Winter	2	3	12.00	Dry, Good visibility, SW wind, F3
09/12/2022	Winter	2	3	08:30	Dry, Good visibility, E wind, F3
09/12/2022	Winter	1	3	12:30	Dry, Good visibility, E wind, F3
12/12/2022	Winter	3	3	09.00	Dry, Good visibility, SE wind, F1
12/12/2022	Winter	2	3	13:30	Dry, Good visibility, SE wind, F2
19/12/2022	Winter	1	3	09.00	Showers, Good visibility, SW wind, F3
19/12/2022	Winter	3	3	13:30	Dry, Good visibility, SNW wind, F3
18/01/2023	Winter	3	3	09:15	Dry, Good visibility, W wind, F3
18/01/2023	Winter	2	3	14:00	Dry, Good visibility, W wind, F3
20/01/2023	Winter	1	3	08:00	Dry, Good visibility, SW wind, F4
20/01/2023	Winter	2	3	12.00	Dry, Good visibility, SW wind, F3
21/01/2023	Winter	1	3	09:00	Showers, Good visibility, SW wind, F2
21/01/2023	Winter	3	3	13:30	Showers, Good visibility, W wind, F3
05/02/2023	Winter	1	3	07:45	Showers, Good visibility, NW wind, F2
05/02/2023	Winter	2	3	14:00	Showers, Good visibility, NW wind, F2
18/02/2023	Winter	3	3	09:30	Dry, Good visibility, SW wind, F3
18/02/2023	Winter	1	3	13:00	Dry, Good visibility, SW wind, F3
22/02/2023	Winter	3	3	08:45	Dry, Good visibility, SW wind, F2
22/02/2023	Winter	2	3	13:30	Dry, Good visibility, SNW wind, F3

*Bord na Móna Winter Bird Survey 2022/23: Ballybeg Bog*

<b>Date</b>	<b>Season</b>	<b>VP no.</b>	<b>Duration (hrs)</b>	<b>Start Time</b>	<b>Weather conditions</b>
07/03/2023	Winter	1	3	10:00	Showers, Mod-good visibility, S wind, F2
07/03/2023	Winter	2	3	14:30	Showers, Good visibility, S wind, F3
16/03/2023	Winter	3	3	08:00	Dry, Good visibility, W wind, F4
16/03/2023	Winter	1	3	12:00	Dry, Good visibility, W wind, F4
27/03/2023	Winter	2	3	07:15	Dry, Good visibility, SW Wind, F3
27/03/2023	Winter	3	3	11:00	Dry, Good visibility, SW Wind, F3

APPENDIX 2

Vantage Point raw data & flight activity, Ballybeg Bog,  
October 2022 – March 2023

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
25/10/ 2022	3	1	Kestrel	1	09.56	150	60	90	0	Male hunting
25/10/ 2022	1	2	Sparrow hawk	1	12.43	20	20	0	0	Hunting
28/10/ 2022	2	3	Mute Swan	4	11.19	180	0	180	0	Flying towards Cavemount
		4	Buzzard	1	11.50	90	60	30	0	Hunting low
28/10/ 2022	1									No target species
29/10/ 2022	2	5	Buzzard	2	09.24	240	0	160	80	Two rising
		6	Peregrine	1	10.06	75	25	50	0	Male flew in and land on bare peat – appeared to have prey item
		7	Peregrine	1	10.17	40	20	20	0	Bird flew up
29/10/ 2022	3	8	Buzzard	1	14.25	60	0	60	0	Flying
		9	Sparrow hawk	1	14.48	30	30	0	0	Hunting along track
21/11/ 2022	2	10	Kestrel	1	09.54	120	60	60	0	Hovering then dropped – female type
		11	Kestrel	1	10.38	90	0	90	0	Presumed same individual
21/11/ 2022	3									No target species; good numbers of fieldfares & redwings in area – not really on bog though
25/11/ 2022	1	12	Golden plover	20	10.38	300	0	100	200	Flock wheelin & circling – flew north
		13	Buzzard	2	11.11	180	30	150	0	Probably pair - circling over woods
25/11/ 2022	3	14	Mute swan	2	15.45	75	30	45	0	Flew towards Cavemount – just cleared electric line
26/11/ 2022	1	15	Kestrel	1	09.28	120	60	60	0	Male hunting over old pits
		16	Kestrel	1	10.30	60	0	60	0	Along track –

*Bord na Móna Winter Bird Survey 2022/23: Ballybeg Bog*

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
										different bird from earlier (imm./ female type)
26/11/ 2022	2									No target species Flock of 500+ starling in fields to west – came onto bog and landed on bare peat for while
09/12/ 2022	2	17	Kestrel	1	10.10	120	30	90	0	Hunting along track
09/12/ 2022	1									No target species – large numbers (100s) of Fieldfares & Redwings – weather cold
12/12/ 2022	3	18	Whooper swan	9	10.14	140	40	100	0	Flock flying north over site – presumably from Cavemount
		19	Merlin	1	11.18	20	20	0	0	Male perched on track, got up and flew south
12/12/ 2022	2	20	Lapwing	28	14.45	180	80	100	0	Loose flock flying north
		21	Lapwing	50+	15.28	220	90	130	0	Further flock; Still lots of winter thrushes in area
19/12/ 2022	1	22	Lapwing	200+	09.56	300	0	100	200	Large flock circling
19/12/ 2022	3									No target species - quiet
18/01/ 2023	3	23	Buzzard	2	11.11	240	60	180	0	Pair – some display behaviour
18/01/ 2023	2	24	Whooper swan	4	16.32	180	0	180	0	Flying towards Cavemount
20/01/ 2023	1	25	Kestrel	1	09.24	120	0	120	0	Flying over track
		26	Buzzard	1	10.38	90	90	0	0	Hunting over trees
20/01/ 2023	2									No target species Sparrowhawk seen hunting on way to VP – female type
21/01/ 2023	1	27	Whooper swan	12	09.57	180	60	180	0	Flock rising and southwards
21/01/ 2023	3	28	Kestrel	1	15.15	120	60	60	0	Male hovering / hunting along track
05/02/ 2023	1	29	Peregrine	1	09.14	180	0	60	120	Circling high – large bird

*Bord na Móna Winter Bird Survey 2022/23: Ballybeg Bog*

Date	V P N o	Map Ref.	Species	N o.	Flight Time	Flight Durati on (s)	Band 1 (0- 25m)	Band 2 (25- 175m)	Band 3 (175+ m)	Comments
05/02/ 2023	2	30	Whooper swan	3	14.16	60	60	0	0	Had been on ponded wetland – got up and flew north
18/02/ 2023	3	31	Buzzard	1	10.06	90	0	90	0	Flying
18/02/ 2023	1	32	Sparrow hawk	2	14.35	240	0	100	140	Pair in display
		33	Little egret	1	15.22	120	120	0	0	Flying low – probably arose from old ponds
22/02/ 2023	3									No target species
22/02/ 2023	2	34	Kestrel	1	15.00	90	0	90	0	Flying – male
		35	Kestrel	1	15.24	120	90	30	0	Hunting – male as above
07/03/ 2023	1	36	Buzzard	1	12.12	180	60	120	0	Hunting
07/03/ 2023	2	37	Mute swan	3	15.50	120	120	0	0	Three imms.
16/03/ 2023	3									No target species 10+ sand martins
16/03/ 2023	1	38	Buzzard	2	14.32	180	0	180	0	Pair in display
27/03/ 2023	2									No target species 2 wheatears on track
27/03/ 2023	3									No target species

### APPENDIX 3

#### Scientific Names of Bird Species

Little Grebe	<i>Tachybaptus ruficollis</i>
Great Crested Grebe	<i>Podiceps cristatus</i>
Grey Heron	<i>Ardea cinerea</i>
Little Egret	<i>Egretta garzetta</i>
Whooper Swan	<i>Cygnus cygnus</i>
Mute Swan	<i>Cygnus olor</i>
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>
Greylag Goose	<i>Anser anser</i>
Teal	<i>Anas crecca</i>
Wigeon	<i>Anas penelope</i>
Mallard	<i>Anas platyrhynchos</i>
Tufted Duck	<i>Aythya fuligula</i>
Buzzard	<i>Buteo buteo</i>
Hen Harrier	<i>Circus cyaneus</i>
Sparrowhawk	<i>Accipiter nisus</i>
Kestrel	<i>Falco tinnunculus</i>
Merlin	<i>Falco columbarius</i>
Peregrine	<i>Falco peregrinus</i>
Red Grouse	<i>Lagopus lagopus</i>
Moorhen	<i>Gallinula chloropus</i>
Pheasant	<i>Phasianus colchicus</i>
Water Rail	<i>Rallus aquaticus</i>
Ringed Plover	<i>Charadrius hiaticula</i>
Golden Plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Jack Snipe	<i>Lymnocyptus minimus</i>
Snipe	<i>Gallinago gallinago</i>
Woodcock	<i>Scolopax rusticola</i>
Greenshank	<i>Tringa nebularia</i>
Curlew	<i>Numenius arquata</i>
Black-headed Gull	<i>Chroicocephalus ridibundus</i>
Lesser Black-backed Gull	<i>Larus fuscus</i>
Long-eared Owl	<i>Asio otus</i>
Kingfisher	<i>Alcedo atthis</i>
Woodpigeon	<i>Columba palumbus</i>
Skylark	<i>Alauda arvensis</i>
Meadow Pipit	<i>Anthus pratensis</i>
Pied Wagtail	<i>Motacilla alba</i>
Wren	<i>Troglodytes troglodytes</i>
Robin	<i>Erithacus rubecula</i>
Stonechat	<i>Saxicola torquata</i>
Blackbird	<i>Turdus merula</i>
Fieldfare	<i>Turdus pilaris</i>
Song Thrush	<i>Turdus philomelos</i>
Mistle Thrush	<i>Turdus viscivorus</i>
Goldcrest	<i>Regulus regulus</i>
Coal Tit	<i>Parus ater</i>
Blue Tit	<i>Parus caeruleus</i>

*Bord na Móna Winter Bird Survey 2022/23: Ballybeg Bog*

Great Tit	<i>Parus major</i>
Magpie	<i>Pica pica</i>
Hooded Crow	<i>Corvus corone</i>
Raven	<i>Corvus corax</i>
Starling	<i>Sturnus vulgaris</i>
Chaffinch	<i>Fringilla coelebs</i>
Goldfinch	<i>Carduelis carduelis</i>
Siskin	<i>Carduelis spinus</i>
Linnet	<i>Carduelis cannabina</i>
Lesser Redpoll	<i>Carduelis flammea</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Reed Bunting	<i>Emberiza schoeniclus</i>