

BORD NA MONA
WINTER BIRD SURVEY, 2014-2015
CLONGAWNY, DRINAGH BOG GROUP

DRAFT REPORT Version 2

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Prepared for

Bord na Móna

by

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EXECUTIVE SUMMARY

- A baseline study of wintering birds associated with the Bord na Móna Clongawny and Drinagh Bog Group was carried out between October 2014 and March 2015.
- A large part of Clongawny Bog is still in active production or is classified as production related cutover. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.
- Drinagh Bog is part of the Lough Boora Parklands. The north-east section is zoned for biodiversity and contains a substantial wetland complex of habitats including open water. This area is developing into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the lakes, particularly along the eastern side. The western sector is mainly in commercial production and comprises bare peat. Much of the remainder is regenerating cutaway bog with pioneering wetland habitats and scrub. The site contains a block of conifer plantation.
- The study included a desk review and consultations with relevant agencies, namely National Parks & Wildlife Service (local management staff), BirdWatch Ireland and the Irish Peatland Conservation Council. Field methods employed were a combination of transect surveys, vantage point watches and focused surveys for wetland birds. Monthly vantage point watches achieved 36 hours of observations over the two bog sites.
- A small part of Drinagh Bog overlaps with the Lough Coura pNHA. There are a further 19 designated sites within a 15 km radius of Clongawny and Drinagh Bogs: 6 SPAs, 8 SACs, 1 NHA and 4 pNHAs.
- It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study. In a wider context, there is useful quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.
- Brief descriptions of the two bog sites are given, followed by details of target species recorded, the potential for other target species, other species of note recorded and an overview of the value of the site for wintering birds. A map showing locations of sampling transects and vantage points, plus flight lines of target species where relevant, is presented. Representative photographs are included.
- Target species recorded within or over the sites, and in the immediate surroundings, were as follows: Whooper Swan, Teal, Wigeon, Golden Plover, Lapwing, White-tailed Eagle, Hen Harrier, Merlin, Peregrine, Black-headed Gull and Kingfisher.

- One Red listed species, Meadow Pipit, was recorded within the sites. It is considered that both sites have potential for Woodcock (also Red listed).
- The following Amber listed species were recorded within the sites: Mute Swan, Little Grebe, Great Crested Grebe, Sparrowhawk, Kestrel, Snipe, Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest, Starling and Linnet.
- Whooper Swans (Annex I species) were recorded flying over or within Clongawny Bog on six dates during the winter though in small numbers (maximum 8). Whoopers were more regular at Drinagh Bog, with records on 13 dates through the winter though again mostly in small numbers (<10). A flock of 50+ birds was present on 12th November. There are several previous records of Whooper Swans at Drinagh Bog.
- Small numbers of Teal, Wigeon and Mallard occur on the lake in the eastern part of Clongawny Bog, with these duck species more regular at Drinagh Bog.
- An immature White-tailed Eagle flew over Clongawny Bog on 21st January 2015.
- Hen Harriers were recorded at Drinagh Bog on 11 dates through the winter, involving at least three individuals. There was no evidence of night roosting on site. This species would also be expected at Clongawny Bog though was not recorded.
- There were three sightings of Merlin (Annex I species) at Clongawny Bog possibly involving the same individual bird. Peregrine (Annex I species) was recorded at both bog sites, with two birds together in February.
- Golden Plover and Lapwing were recorded flying over the two bog sites through the winter, with records of both species landed within the two sites.
- Black-headed Gulls were present in both sites in February and March, with prospecting breeding birds at least at Clongawny.
- A Kingfisher (Annex I species) was present at the lake in Clongawny Bog in November.
- One Red listed species, Meadow Pipit, is widespread on the sites.
- Various Amber listed use the sites for feeding – these were Little Grebe, Great Crested Grebe (prospecting breeding bird at Clongawny), Sparrowhawk, Kestrel, Snipe, Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest and Linnet.
- Overall, Clongawny Bog has limited potential for supporting wintering birds of conservation importance due partly to the extent of the site in commercial production. Also, the lake in the eastern part of the site is still in an early development phase and appears to have low feeding potential for swans and other wildfowl. However, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, including Merlin, as well as Meadow Pipit and various Amber listed species including such as Little Grebe and Snipe. On the basis of the results of

the 2014/15 winter surveys, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Clongawny Bog.

- Drinagh Bog has habitats suitable for supporting a wide range of wintering birds. Of particular note is the developing wetland habitat and especially the substantial area of open water, which support a wetland bird community. While the Whooper Swan numbers recorded are well below the threshold for National Importance (i.e. 150), the swans occur fairly regularly within the site and the site appears to have potential to support higher numbers at times. The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harriers, with at least three individuals recorded. On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red and Amber listed species, it is recommended that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.

1.0 INTRODUCTION

1.1 Background to Project

Bord na Móna is considering using some of its bogs in the midlands for large scale 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 issued a request for a winter bird study (2014/15), including consultation, on the avian species and populations either using, or likely to use, the Clongawny, Drinagh group of bogs, in County Offaly.

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 following mapping was supplied for each bog group by Bord na Móna:

- Site Location Map (Discovery map base)
- Orthophoto View (from 2006)
- Land Use Map (prepared by BnaM)

A copy of *Birds on Cutaway Peatlands: Baseline Breeding Bird Population Survey* (2011) by Dr. Alex Copland, BirdWatch Ireland (carried out for Bord na Móna) was supplied for reference.

A contract to carry out the required work was awarded to BioSphere Environmental Services in October 2014.

2.0 SURVEY METHODS

2.1 Desk Review and Consultations

In addition to a perusal of the general ornithological literature on Ireland's birds, including the annual journal *Irish Birds*, the following key sources of information (written and/or electronic) were accessed for references to the study area:

Boland, H. & Crowe, O. (2012) *Irish Wetland Bird Survey: Waterbird Status and Distribution 2001/02 – 2008/09*. BirdWatch Ireland, Kilcoole, Co. Wicklow.

Crowe, O. (2005) *Ireland's Wetlands and their Waterbirds, Status and Distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow.

Fox, A.D., Norriss, D.W., Stroud, D.A. & Wilson, H.J. (1994). *Greenland White-fronted Geese in Ireland and Britain, 1982/83-1993/94. The first twelve years of international conservation monitoring*. Greenland White-fronted Goose Study and National Parks & Wildlife Service, Dublin.

Heery, S. (editor). *Birds in Central Ireland – Mid Shannon Bird Report*. 5 editions between 1996 and 2012. *BirdWatch Ireland*.

Hutchinson, C.D. (1979) *Ireland's Wetlands and their Birds*. Irish Wildbird Conservancy, Dublin.

Sheppard, R. (1993) *Ireland's Wetland Wealth*. Irish Wildbird Conservancy, Dublin.

www.birdwatchireland.ie - Distribution map and background information on I-WeBS sites in Ireland

www.npws.ie - Distribution maps and associated information for sites designated for conservation by NPWS (i.e. SPAs, SACs, NHAs, pNHAs)

Consultations, mostly by email and/or telephone, took place with the following:

NPWS

Ms Ciara Flynn, District Conservation Officer, North-East Region. Tel.: 045 534071; email: Ciara.Flynn@ahg.gov.ie

Mr Colm Malone, Conservation Ranger, Co. Offaly. Tel.: 057 9331470; email: Colm.Malone@ahg.gov.ie

BirdWatch Ireland

Dr Alex Copland, Senior Conservation Officer Crank House, Banagher, Co. Offaly
Tel.: 057 9151676; email: acopland@birdwatchireland.ie

Dr Olivia Crowe & Ms Helen Boland (I-WeBS co-ordinators)
email: ocrowe@birdwatchireland.ie; hboland@birdwatchireland.ie

Irish Peatland Conservation Council

Dr Catherine O'Connell, CEO, IPCC, Tel.: 045 860 133; email: bogs@ipcc.ie

Mr Tadhg O Corcora, Conservation Officer, IPCC, Tel.: 045 860 133; email: bogs@ipcc.ie

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 2014 and March 2015 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.
- All sites should be visited a minimum of three times during the winter period, or more frequently as appropriate, with the approach and methodology varying depending on the target species.
- 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. Alternative/additional methods such as aerial surveys, automated sensing techniques (radar) and tagging may be considered appropriate under certain site specific cases.
- Where identified as appropriate, Vantage Point surveys should be carried out for a minimum of 36hrs at each point per survey over the six months of winter.

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 site:

2.2.1 Number of site visits

For the Clongawny and Drinagh bog sites, the Vantage Point methodology was considered appropriate and hence monthly surveys were carried out commencing in late October.

2.2.2 Survey methods

Vantage Point watches and transect surveys were the main methods used at the Clongawny and Drinagh bog 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 general accordance with the methodology used for assessing impacts of wind farms on bird communities published by Scottish Natural Heritage (updated version, August 2013). 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 Clongawny and Drinagh bog sites, the full duration of 36 hours of observations over the site 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, 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 or Curlew
- Hen Harrier, Merlin and other birds of prey
- Any other Annex 1 species of EU Birds Directive
- Any other Red or Amber listed species as given in Colhoun & Cummins (2013)

2.3 Survey Limitations

Surveys following standard methods and within the recommended time frames were carried out at the Clongawny and Drinagh bog sites during the 2014/15 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).

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 Colhoun & Cummins 2013). 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 the site of a breeding pair of Peregrine (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

The following designated sites are located within a distance of approximately 15 km of the Clongawny/Drinagh study area. These comprise the following types of designations:

- Special Protection Areas - SPAs are designated under Council Directive 79/409/EEC on the conservation of wild birds (i.e. the Birds Directive).
- Special Areas of Conservation - SACs are designated under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e. the Habitats Directive).
- Natural Heritage Areas - NHAs are designated under the Wildlife Amendment Act 2000.
- proposed Natural Heritage Areas - pNHAs do not receive legal protection though the ecological value of pNHAs is recognised by Planning and Licencing Authorities.

Apart from SPAs, these sites do not necessarily have ornithological interests though many would support some birds of conservation interest. In the following list, a note is made on whether the site has known ornithological interest.

Middle Shannon Callows SPA (code 004096)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km).

The site is an SPA as it is of special importance for Whooper Swan, supporting a population of international importance. It also supports important populations of Mute Swan, Wigeon and Golden Plover. A small flock of Greenland White-fronted Geese continues to use the SPA.

Clongawny Bog is, at the closest, a distance of 3 km east from the Middle Shannon Callows SPA, while the distance between Drinagh Bog and the SPA is over 6 km.

River Little Brosna Callows SPA (code 004086)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an SPA as it is of international importance for wintering waterfowl. Of particular note is the Greenland White-fronted Goose population that is based along the Brosna. Also of international importance is the Black-tailed Godwit population. Species which occur in numbers of national importance include Whooper Swan, Wigeon, Teal, Pintail, Golden Plover and Lapwing.

Clongawny Bog is, at the closest, a distance of 5.5 km to the NE of the SPA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Dovegrove Callows SPA (code 004137)

Dovegrove Callows is an area of callowland beside the Little Brosna River c.2 km downstream from Birr in Co. Offaly.

The site is regularly used by a flock of Greenland White-fronted Geese (essentially the Little Brosna flock) as well as other waterfowl.

Clongawny Bog is, at the closest, a distance of 5 km to the north of the SPA, while the distance between Drinagh Bog and the SPA is approximately 8 km.

All Saints Bog SPA (code 04103)

This raised bog site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site in recent years.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog SPA.

Mongan Bog SPA (code 004017) and SAC (code 00580)

This raised bog site is located just east of Clonmacnoise in Co. Offaly. It is a fine example of a largely intact raised bog with an active core.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site since the early 1980s.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA and SAC.

Slieve Bloom Mountains SPA (code 04160)

This upland site comprises large areas of the Slieve Bloom Mountains. The SPA is selected for breeding Hen Harriers and also supports breeding Merlin.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 12 km and 14 km to the northwest of the SPA.

River Shannon Callows SAC (code 00216)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km). The site is similar in extent to the Middle Shannon Callows SPA though includes more of the marginal habitats.

The bird interests of the SAC are the same as listed for the SPA.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA.

Fin Lough SAC (code 0576)

This site is a shallow limestone lake surrounded by a complex of wetland habitats including alkaline fen. It is located approximately 7 km northeast of Shannonbridge in Co Offaly.

The lake is noted as an important roosting area for wintering duck.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 13 km and 12 km.

Redwood Bog SAC (code 02353)

Redwood Bog is a raised bog system that include both active bog and degraded bog. It is situated about 7 km southwest of Banagher.

The SAC is situated approximately 9 km west of Clongawny Bog and 13 km west-southwest

of Dringah Bog.

This site is noted as a haunt of Greenland White-fronted Geese.

All Saints Bog and Esker SAC (code 566)

This raised bog and esker ridge site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas. The esker ridge supports orchid rich calcareous grassland.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog and Esker SAC.

Moyclare Bog SAC (code 0581)

This is a small raised bog situated about 4 km west of Ferbane in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 7 km north-northeast of Clongawny Bog and 5 km north of Drinagh Bog. .

This site is not listed as being of ornithological interest.

Ferbane Bog SAC (code 0575)

Ferbane Bog is a relatively large raised bog situated about 10 km east of Shannonbridge in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 9 km northeast of Clongawny Bog and 6 km north of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ridge Road, SE of Rapemills SAC (code 0919)

This SAC site comprises esker ridges which support orchid rich calcareous grassland.

The SAC is situated approximately 4 km southwest of Clongawny Bog and 8 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

River Little Brosna Callows NHA (code 00564)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an NHA as it supports extensive areas of callow grasslands and also a raised bog at Cloghan Demesne. The site is also of international importance for wintering waterfowl and is a designated SPA.

Clongawny Bog is, at the closest, a distance of 5 km to the NE of the NHA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Lough Coura pNHA (code 00909)

This pNHA is located along part of the southwest boundary of Drinagh Bog and there is a very minor overlap. The site is an old infilled lake that contains wet grassland and fen vegetation.

This site is not listed as being of ornithological interest.

Banagher (Domestic Dwelling) occupied pNHA (code 00567)

This pNHA is bat site. It is located approximately 1 km north of Clongawny Bog and 3 km west of Drinagh Bog.

This site is not listed as being of ornithological interest.

Woodville Wood pNHA (code 00927)

This pNHA is located within approximately 4 km south of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ross and Glens Eskers pNHA (code 00920)

This pNHA is located within approximately 3.5 km southwest of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Grand Canal pNHA (code 02104)

The Grand Canal pNHA passes within 3.5 km north Clongawny and Drinagh Bogs.

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

3.2 Review of Past Data for Study Area

There have been three national surveys (with I-WeBS on-going) for wintering waterbirds as follows:

Irish Wetlands Enquiry

In the *Irish Wetlands Enquiry* (winters 1971-72 to 1974-75), which was the first national census of wetland birds, the **River Shannon** and the **Little Brosna River** are the only sites mentioned that are in the wider hinterland of Clongawny and Drinagh Bogs.

The River Shannon is listed as the section between Lough Ree and Lough Derg and is rated as a site of international importance for wild swans (Bewick's and Whoopers) and Black-tailed Godwit and of national importance for various species such as Mallard, Teal, Wigeon, Lapwing, Golden Plover and Curlew. Hutchinson (1979) writes the following:

“From Lough Ree south to Lough Derg the Shannon is surrounded by extensive bogs and poorly drained agricultural land as it traverses the central lowlands. ... The flood plain of the river is pasture flooded in winter and known as callow land..

The most numerous wildfowl are Wigeon and several thousands occur along the river between Athlone and Portumna. Several hundred Teal and wild swans, together with small numbers of White-fronted Geese, also winter along the river. However there is considerable movement of birds in this area in response to changes in water level and shooting pressure. As a result, certain areas may have no ducks at all on some occasions, but several hundred at other times...

Lapwing and Golden Plover congregate on the callows and fields behind the callows in very large numbers.”

Hutchinson notes that the important part of the Little Brosna for waterfowl comprises the callows extending from New Bridge, seven kilometres northwest of Birr, to the junction with Shannon at Meelick and includes Big Island and Friars Island on the Shannon. He writes

“As a wildfowl haunt it is extremely important, with Wigeon the most numerous species (up to 7,000) and in numbers of international importance. Large numbers of Teal (up to 2,200) and the biggest flock of Pintail on the Shannon system also occur. The callows are the feeding ground for several hundred White-fronted Geese, the second largest concentration in Ireland after the Wexford Slobs. Some of the largest numbers of Lapwing and Golden Plover in Ireland scatter over the callows and adjoining farmland, but the most important wader concentration is the flock of Black-tailed Godwits which peaks in late winter at up to 4,000 birds.”

Winter Wetlands Survey

A further national census of wetland birds, the *Winter Wetlands Survey*, took place over the three winters 1984-85 to 1986-87 (Sheppard 1993). Again, the **Shannon Callows** and the **Little Brosna Callows** were the only sites included within the wider hinterland of Clongawny and Drinagh Bogs.

The Shannon Callows, which was counted 4 times over 1 season, is listed as a site of International Importance for Whooper Swan (211) and Wigeon (8,725), and of National Importance for Mute Swan (253), Teal; (900), Golden Plover (4,500), Lapwing (12,864) and Black-tailed Godwit (600).

The Little Brosna was counted 31 times over 3 seasons, and is listed as a site of International Importance for Whooper Swan (201), White-fronted Geese (417), Wigeon (12,250) and Black-tailed Godwit (2,375). It was listed as of National Importance for Teal (3,000), Mallard (2,250), Pintail (275), Shoveler (250), Golden Plover (5,000), Lapwing (3,925) and Curlew (1,150). Sheppard writes:

“This phenomenal site recalls what once must have been commonplace throughout Europe, but is now almost gone – a highly productive floodplain, enriched by wildfowl manure in winter, and cropped for hay or grazed in winter.”

Irish Wetland Bird Survey (I-WeBS)

The *Irish Wetland Bird Survey* was initiated in 1994/95 and continues to the present. All major wetlands in the country are covered each winter by this scheme. Annual reports have been published and the first major review was carried out for the period 1994/95 to 1999/2000 (Crowe 2005), with a further review (species based rather than site based) for the period 2001/02 to 2008/09 carried out by Boland and Crowe (2012).

A total of 5 sites are listed which are within the hinterland of Clongawny and Drinagh Bog sites.

The **Shannon Callows** (similar unit as the SPA) is listed as a site of International Importance for Mute Swan (367), Whooper Swan (321), and Black-tailed Godwit (27 but high numbers in previous period). The populations of Wigeon (2,800), Golden Plover (2,429) and Lapwing (14,218) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Shannon callows regularly support internationally important numbers of Mute Swan, Whooper Swan and Black-tailed Godwit, and nationally important numbers of a further three species. This site also supports an increasing, and now significant concentration of Black-headed Gulls.*”

A summary of counts for the principal species along the Shannon Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 1. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

Table 1. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Shannon Callows I-WeBS site and Middle Shannon Callows SPA. Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	888	339	775	500	739	588
Whooper Swan	392	255	207	299	305	267
Wigeon	2378	900	4702	3676	2023	2825
Teal	302	270	573	835	285	491
Mallard	71	0	233	55	91	126
Golden Plover	956	1680	200	7610	1750	2810
Lapwing	247	2837	1397	7672	2149	3514

The **Little Brosna Callows** (similar unit as the SPA) is listed as a site of International Importance for Greenland White-fronted Geese (455), Golden Plover (10,393) and Black-tailed Godwit (3,050). The populations of Whooper Swan (111), Wigeon (7,555), Teal (1,966), Pintail (140), Shoveler (274) and Lapwing (6,191) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Little Brosna Callows are internationally important for Greenland White-fronted Goose, Golden Plover and Black-tailed Godwit, and nationally important for a further six species. It is among the top ten most important sites for most of these species. This site also supports significant concentration of Black-headed Gulls, and a high diversity of wetland bird species, particularly from an inland site.*”

A summary of counts for the principal species along the Brosna Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 2. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

The **Cloghan Wetlands** (grid ref. N100195) I-WeBS site comprises Cloghan Lake and Drinagh Bog. This site was subsequently re-named as Cloghanhill.

For the period 1996/97-2000/01 the site supported a nationally important population of Whooper Swans (mean peak of 130) (Crowe 2005). Since then, counts have been irregular with 190 Whooper Swans in winter 2008/09 and no swans present in winters 2009/10 and 2013/14 (there were no counts in the 3 winters 2010/11 to 2012/13).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 3. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 2. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Little Brosna Callows I-WeBS site (and SPA site). Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	129	118	75	129	70	98
Whooper Swan	184	190	110	147	120	142
White-fronted Goose	178	230	230	200	200	215
Wigeon	4454	1455	2375	2350	5700	2970
Teal	400	70	0	320	0	195
Mallard	32	50	11	20	30	28
Golden Plover	0	2045	0	2200	0	2123
Lapwing	0	1110	570	1150	800	908
Black-tailed Godwit	700	1000	0	0	0	1000

Table 3. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Cloghanhill I-WeBS site (i.e. Cloghan Lake & Drinagh Bog). Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Mute Swan	6	15	2
Whooper Swan	190	0	0
Greylag Goose	38	17	0
Wigeon	0	4	12
Teal	4	3	2
Mallard	27	86	85
Golden Plover	0	0	8
Lapwing	11	0	12
Snipe	12	10	5

Boora Lakes-Back Lakes (Finnamore Lakes) (grid ref. N180195) I-WeBS site comprises wetlands within the Lough Boora Parklands cutaway bogs. These are situated several kilometres to the east of Drinagh Bog.

Crowe (2005) notes that while the site does not regularly support any nationally important concentrations, it does occasionally support high, nationally important, numbers of several species, namely Little Grebe (54), Mallard (1037), Golden Plover (3,000) and Lapwing (2,200) (figures are peaks for period 1996/97-2000/01). Other species that have been recorded (with peak numbers) include: Whooper Swan (107), Greenland White-fronted Goose (14), Wigeon (100) and Teal (120).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 4. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 4. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Boora Lakes-Back Lakes (Finnamore Lakes) I-WeBS site. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Whooper Swan	117	5	0
Wigeon	109	0	0
Teal	121	22	25
Mallard	53	141	26
Golden Plover	2000	326	150
Lapwing	727	249	705
Snipe	29	3	5
Curlew	81	14	0

Turraun Nature Reserve (grid ref. N178236) comprises cutaway bog with a lake. Site is owned by Bord na Móna and is a non-statutory nature reserve. It is located just south of the Grand Canal and approximately 7 km to the northeast of Drinagh Bog.

For the period 1996/97-2000/01 the population of Whooper Swans (119) approached national importance (Crowe 2005). Since then, Whooper Swan counts have been irregular, as follows: one in winter 2007/08, 118 in winter 2008/09, no swans recorded in winter 2009/10, (no counts in winters 2010/11-2012/13), and no swans recorded in winter 2013/14.

Review of history and status of Brosna/Shannon population of Greenland White-fronted Geese

The Clongawny and Drinagh bog sites are in proximity to two populations of Greenland White-fronted Geese.

Ruttledge & Ogilvie (1979) carried out a major review of the status of the Greenland White-fronted Goose in Ireland and Britain. They identified the River Shannon, Athlone to Portumna (site no. 11) as of international importance. They included the Shannon Harbour to Banagher section as a subsite in the context of the overall population, with c.150 out of a total of 600 birds in the 1940s and early 1950s. By the 1970s, the overall flock size had declined to an estimated 200-250. Ruttledge & Ogilvie (1979) also identified the Little Brosna River (site no. 12) as of international importance. When first studied in some detail in the 1940s the population was about 400 birds. By the early 1950s a decline had set in as a result of disturbance from shooting. By the late 1970s numbers had fallen to about the 200 mark. They note: “*Although so close to the River Shannon the population is conservative and, given the opportunity confines itself to the Little Brosna callows. This haunt should be studied in conjunction with the River Shannon complex (site 11)*”.

A further main review of the status of Greenland White-fronted Goose in Ireland and Britain was carried out by Fox *et al.* (1994). Again the Little Brosna population (site no. 26) was rated as of international importance, with a mean flock size of 526 over the 6 winters 1988/89-1993/94. The range of this flock is given as the Little Brosna and the section of the Shannon from the confluence of the Brosna to Lough Derg (sites no. 12 and part of 11 of Ruttledge & Ogilvie). A total of 34 feeding sites were recognised.

Since the review by Fox *et al.* (1994), an annual census of Greenland White-fronted Geese in Ireland has continued to be carried out by National Parks and Wildlife Service as part of an International Census of the species. For winters 2011/12 to 2012/14, the following peak counts were recorded for the Little Brosna population:

220 in winter 2011/12 (Fox *et al.* 2012)

200 in winter 2012/13 (Fox *et al.* 2013)

135 in winter 2013/14 (Fox *et al.* 2014)

150 in winter 2013/14 (Fox *et al.* 2015)

The Greenland White-fronted Goose Site Inventory (Norriss unpublished) does not list any traditional goose feeding sites at Clongawny or Drinagh bogs (listed sites are along the rivers and at All Saints Bog).

Other Sources of Information

NPWS

Ciara Flynn of NPWS noted the following in e-mail dated 13/11/2014:

“Hen harrier have been recorded in winter over Drinagh, also peregrine. BWI have a lot of info on breeding waders and Black headed gull colonies from here also. The flooded BNM cutover at Drinagh is becoming a very important wildfowl site. GWFG and whoopers have been recorded from here also (as part of the surveys for the Cloghan Wind Farm)”

Irish Peatland Conservation Council

The IPCC does not have any information specific to Clongawny and Drinagh Bogs.

BirdWatch Ireland

BirdWatch Ireland has carried out various winter surveys for wetland birds at Drinagh Bog and at least in one winter at Clongawny Bog (Copland, A. BWI Winter Counts 2008/09). These counts indicated that Drinagh Bog has good potential to support wintering wetland birds but that the potential at Clongawny is limited. The surveys have been carried out in the context of the wider Boora region (A. Copland pers. comm.).

Local Bird Report

A small number of references are made to bird species at Drinagh bog in the Mid Shannon Bird Reports – these are noted in the species accounts in this report. There appears to be no mention of Clongawny Bog in the reports.

Cloghan Wind Farm EIS

The EIS (dated November 2012) prepared for the proposed Cloghan Wind Farm (Planning Authority Reg. Ref.: 12/293, An Bord Pleanála Ref No. PL 19.242354) included surveys for wintering birds in the area, including Drinagh Bog (see Chapter 6 of EIS). The following was noted (pages 86-90 of EIS):

43 Whooper Swans roosting at Drinagh in February 2012 – moved to daytime feeding sites to NE and NW of site, grassland sites at Derrycarney and Lea More and also to Coolreagh Bog to forage. Some remained at Drinagh. On 17th February 2012, 88

Whooper Swans grazing in fields.

On 2nd February 2012, very cold – at dawn a flock of 45 Greenland White-fronted Geese observed at Drinagh over 1 hour. At 8.30 hrs, left lake and flew in a flock over conifers towards Cloghan Wind Farm site and then flew in direction of Little Brosna Callows. Drinagh watched again in evening but no geese. Watches over two further mornings also negative for geese. EIS concluded that Greenland White-fronted Geese are rarely in area.

One Peregrine over Drinagh on 2nd February 2012 flying between 60 m and 120 m.

Golden Plover in fields to south.

Meenwaun Wind Farm EIS

The EIS (dated February 2015) prepared for the permitted Meenwaun Wind Farm (Offaly County Council Planning Authority Ref.: 1544; An Bord Pleanála Ref No. PL19.244903) included surveys for wintering birds in winters 2012/13 and 2014/15. The wind farm site is located immediately to the southwest of Clongawny Bog. Two Vantage Points were used for the winter surveys, one at Clongawny More and one at Derrinlough (along the N62). The following is a summary of the avifauna recorded (see Chapter 6 of EIS for details).

Whooper Swan

None recorded over site but 9 flew east to west to the south of the wind farm site on 27th December 2014, flying height c.20 m. Also, 5 at the small lake at Clooneen (probably refers to lake within Clongawny Bog) on 27th December 2014. Also, on 30th January 2015, signs of swan usage (feathers) on flooded cutaway bog to southwest of All Saints Bridge.

Hen Harrier

One (not sexed) seen at Clongawny More on 21st January 2015 flying west to east at 15.42 hrs.

Golden Plover

Sightings over industrial bog to northeast of wind farm site in October 2012 (2 birds) and 21st January 2015 (several parties, largest 41).

Woodcock

There were 3 winter sightings of Woodcock in vicinity of site.

The EIS states that there were no winter sightings of Greenland White-fronted Goose, Merlin or Peregrine.

Overall Appraisal of Available Information

It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study.

In a wider context, there is useful quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.

3.3 Clongawny Bog

3.3.1 Site description

Clongawny Bog is located approximately 3 km south-southwest of Cloghan village. It is bordered by the N62 road to the east and the R438 to the west. A local road runs west from Galros Cross Roads and skirts part of the southern boundary.

A large part of the bog is still in active production or is classified as production related cutover. The bog is primarily divided into several sections by the blocks of forestry located towards the centre of the site and by a railway that crosses the site in a NW-SE orientation. The forestry on the site is managed by Coillte with both commercial production of timber and biodiversity as the main management objectives. The site has a varied topography with some mineral mounds of glacial material and deeper basins.

The active production areas are dominated by bare peat and occur in the northern, southern and part of the western sections of the site. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub dominated by birch. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water (shallow lake) has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.

Clongawny Bog is largely within an agricultural landscape, with pasture grassland dominant. However, other Bord na Móna commercial bogs occur in the wider area, along with a scatter of remnant bogs (mostly cutover). Conifer plantations are also a feature of the area.

3.3.2 Survey locations

Transect 1 is a loop in the western sector of the site which is through regenerating cutaway bog, with wetland and scrub habitats.

Transect 2 is within the central area of the site and comprises a loop around a block of conifer plantation, passing scrub, regenerating bog habitats and bare peat.

Transect 3 is located in the eastern part of the site and passes alongside conifer plantation and regenerating bog habitats.

Vantage Point 1 is located alongside the rail track a little in from the N62. This looks over the lake and wetland as well as some conifer forest.

Vantage Point 2 is located near the junction of the railway tracks, with views over the southern part of the site (largely bare peat) and also further conifer forest and some native woodland.

Vantage Point 3 is located along the rail track in the western sector of the site. This gives views over the northern and central areas of the site.

Vantage Point 4 is located along the site boundary in the northeast. This gives views over the northern and central areas of the site.

(note that VP3 and VP4 give views over a similar area of site but that VP4 was used for much of the winter as it gave the better view)

3.3.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Clongawny Bog are compiled in Appendix 2.

Target species recorded

Whooper Swan

Whooper Swans were recorded flying over or within the site on six dates between 30th October 2014 and 13th January 2015. Numbers, however, were low with a maximum of 8 on 30th October. While there is a substantial lake on site, swans were recorded here on only three occasions. This reflects the oligotrophic character and low feeding potential of the lake and indeed the Bord na Móna Rehabilitation Plan (spring 2015) notes the following:

“This open water area is an acid oligotrophic lake and it is noticeable that there are no emergent reedbed communities in this lake compared to other recently created lakes. Algae were noted in the lake itself with very little emergent plant species.”

Records were as follows:

30 th October 2014	8 WS flew NE over eastern lake (0-30 m height)
24 th November 2014	1 flew NE of VP3 (0-30 m height), 3+ seen through trees
11 th December 2014	7 flew S over west side of site (30-80 m height)
16 th December 2014	4 flew towards Drinagh passing over NW corner of site (0-50 m height)
19 th December 2014	1 landed on lake & later seen flying west (30-80 m height)
3 rd January 2015	1 on lake; 4 flew in from Drinagh, landed NW of lake

From the above, it is probable that the records of Whooper Swans at Clongawny are generated by movements associated with the population which occurs at nearby Drinagh Bog. Generally, Clongawny Bog is not of significant importance for Whooper Swans.

Wildfowl species

The lake in the eastern part of the site attracted Mallard and Teal on a regular basis and **Wigeon** on one occasion (5 on 19th November).

The **Mallard** were mostly in small numbers (<10), with high counts of 37 on 16th December, 41 on 19th December and 30 on 15th February.

Teal were also mostly in small numbers (<15), with high counts of 52 on 12th December and 65+ on 19th December.

White-tailed Eagle

On 21st January 2015, an immature bird (probable second-third year) flew over the southeast sector of the site in a northeast direction at a height of less than 15 m. Mobbed by Hooded Crows.

Heery (2012) notes a number of records of White-tailed Eagle for the mid-Shannon region, with a radio tracked bird at Cloghan Castle on 19th November 2010.

Merlin

There were three sightings of Merlin within the site, as follows:

On 19th December 2014, a male bird flew in from Drinagh direction (height <5m) and landed close to VP4 where it remained for at least 5 minutes.

On 21st January 2015, a male bird flew southwards and landed c.400 m south of VP1, then flew westwards. Flying height less than 10 m.

On 25th February 2015, a Merlin flew northeast of VP2 in a north direction at a height of less

than 15 m.

From the series of records, it appears that there was probably one Merlin wintering in the Clongawny site area.

Peregrine

Peregrine was recorded on three dates through the winter, as follows:

On 30th October 2014, a male bird flew from west to east across site at a height of less than 20 m.

On 16th December 2014, a male was observed perched on a pylon to southeast of VP2.

On 2nd February 2015, one was observed at 10.33 hrs from VP2 flying west and then north over conifers (<20 m); at 10.48 hrs, two birds flew in from NNW and continued eastwards (20-50 m height).

Golden Plover

Golden Plover were recorded on six dates as follows:

On 30th October 2014, a flock of 11 flew east to west over site at height of 20-50 m.

On 16th December 2014, a flock of 22 flew in a southwest direction (40-60 m height) at 10.29 hrs; later in day (12.42 hrs) a flock of 21 (possibly same birds) flew into site from south, circled pond and left to south again (0-30 m height).

On 21st January 2015, a flock of 22 flew high (300+ m) over southwest edge of site.

On 23rd January 2015, a flock of 250+ flew northwards over west sector of site (50-100 m).

On 27th January 2015, a flock of 400+ W to NNW over edge of site (50-200 m).

On 25th February 2015, two birds flew up from lake in eastern sector at 12.44 hrs; possibly the same two seen again flying off lake at 13.27 hrs.

In addition, a flock estimated at 300+ seen 1-3 km north of site on 11th December 2104.

Lapwing

Lapwing were recorded in the surveys quite frequently through the winter. However, a lot of the records were off-site, including 135 NW of site on 19th November, 380 1-2 km to NE on 19th December, and 200+ c.3 km to NW on 13th January. Records on-site of over 40 birds were as follows:

On 30th October, a total of 45 birds were observed landed on the lake.

On 24th November, at 11.43 hrs a flock of 40+ circled over site (30-80m height) and flew eastwards; at 15.20 hrs a flock of 53 flew southwards over site (60-80 m height).

On 11th December, 100+ flew over the SW sector of the site (50-100 m height).

On 27th January, 200+ was observed over conifers in west sector of site and then landed (0-20 m).

On 2nd February, a flock of 42 landed in NW of site close to VP3.

On 25th February, a flock of 56 flew over pond (<40 m) and continued east.

A lone Lapwing at the lake on 15th February appeared territorial. At least one territorial pair in lake area in March.

Black-headed Gull

On 15th February 2015, one Black-headed Gull in breeding plumage was at the lake in eastern sector of the site.

On 7th March 2015, a group of 12 gulls, all in breeding plumage and showing some display behaviour, was at the lake, with numbers up to 20+ on 16th March.

Kingfisher

One was present on lake on 24th November 2014, seen feeding.

Potential for other target species

It is considered that the Clongawny bog site has significant potential to support foraging Hen Harrier during winter, especially as this species was regularly sighted at Drinagh Bog (and one bird was recorded at Clongawny More on 21st January 2015 during surveys for the Meenwaun Wind Farm).

Would also be expected to support Woodcock (3 birds had been recorded in winter during surveys for the Meenwaun Wind Farm).

Other species of note

Little Grebe – present on lake through winter – pair displaying in March.

Great Crested Grebe – one on lake in late February and early March. Considered a prospecting breeding bird.

Sparrowhawk – recorded on six dates between November and March. Probably resident on site (displaying pair in March).

Buzzard – one to two birds present through winter. Displaying pair in February, with three together on 16th February. Seen landed in conifer plantation.

Kestrel – single birds recorded on site in all months, with two on 11th December. Seen landed in conifer plantation, also preening on bare peat.

Ringed Plover – one at lake on 15th March – likely breeding location.

Snipe – mainly single birds recorded during transect walks – however a very high total of 116 flushed along transects on 1st December 2014.

Skylark – small numbers (<5) present in marginal bog habitats in October and March (latter territorial birds).

Robin – present through winter in marginal habitats. Most records of single birds.

Mistle Thrush – party of 12 central area of site in October. 1-2 seen on most other surveys. (breeds on site).

Goldcrest – present in scrub and woodland habitats.

Stonechat – pair holding territory in March.

Meadow Pipit – present in marginal habitats through winter in relatively low numbers, with peak of 18 on 28th October 2014. Pairs holding territory in March.

Linnet – small flocks of up to 10 birds in November and March.

General discussion

The 2014/15 survey showed that Clongawny Bog has relatively low potential for supporting

wintering bird species of conservation importance. While there is a significant lake on site, this supports low number of birds due probably to the scarcity of aquatic and marginal vegetation. However, Whooper Swan, Wigeon (1 record), Teal, Mallard, Little Grebe, Lapwing and Kingfisher (1 record) were recorded on the lake and the importance could increase in the future as it develops as a wetland. Breeding Black-headed Gulls (Red-listed) were present in March.

Whooper Swans, Golden Plover and Lapwing were recorded passing over the site. However, the numbers involved were relatively low and there was no spatial or temporal pattern in the movements. It is likely that these were birds moving locally, probably linked with Drinagh Bog rather than the large concentrations of the Shannon/Little Brosna systems.

Clongawny Bog provides good habitat for birds of prey, with Merlin, Sparrowhawk, Kestrel, Peregrine and Buzzard all recorded. There was also a single record of a White-tailed Eagle passing through the site and Hen Harrier would be expected.

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.

A high count of Snipe on 1st December may have reflected recent immigration. Other Amber listed species recorded on site included Skylark, Mistle Thrush, Stonechat and Linnet.

3.3.4 Evaluation and Rating of Clongawny Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Clongawny Bog in winter 2014/15:

EU Birds Directive Annex I listed species

- Whooper Swan
- White-tailed Eagle
- Merlin
- Peregrine
- Golden Plover

Red Listed species (after Colhoun & Cummins 2013)

- Wigeon
- Lapwing
- Black-headed Gull
- Meadow Pipit

Amber Listed species (after Colhoun & Cummins 2013)

- Little Grebe
- Great Crested Grebe
- Teal
- Sparrowhawk
- Kestrel
- Snipe
- Skylark

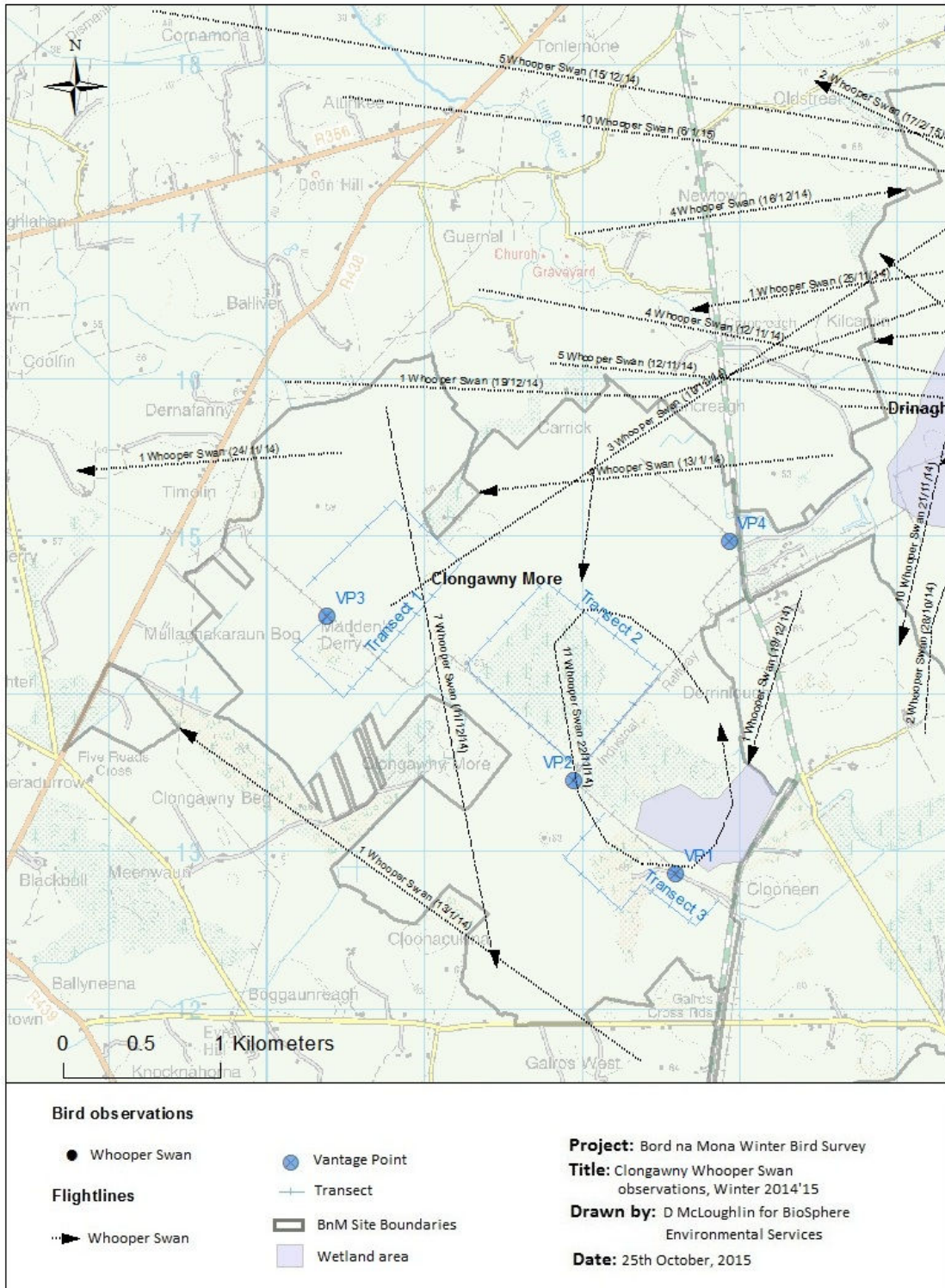
Mistle Thrush
Robin
Stonechat
Goldcrest
Starling
Linnet

Clongawny Bog has limited potential for supporting wintering birds of conservation importance due partly to the extent of the site in commercial production. Also, the lake in the eastern part of the site is still in an early development phase and appears to have low feeding potential for swans and other wildfowl.

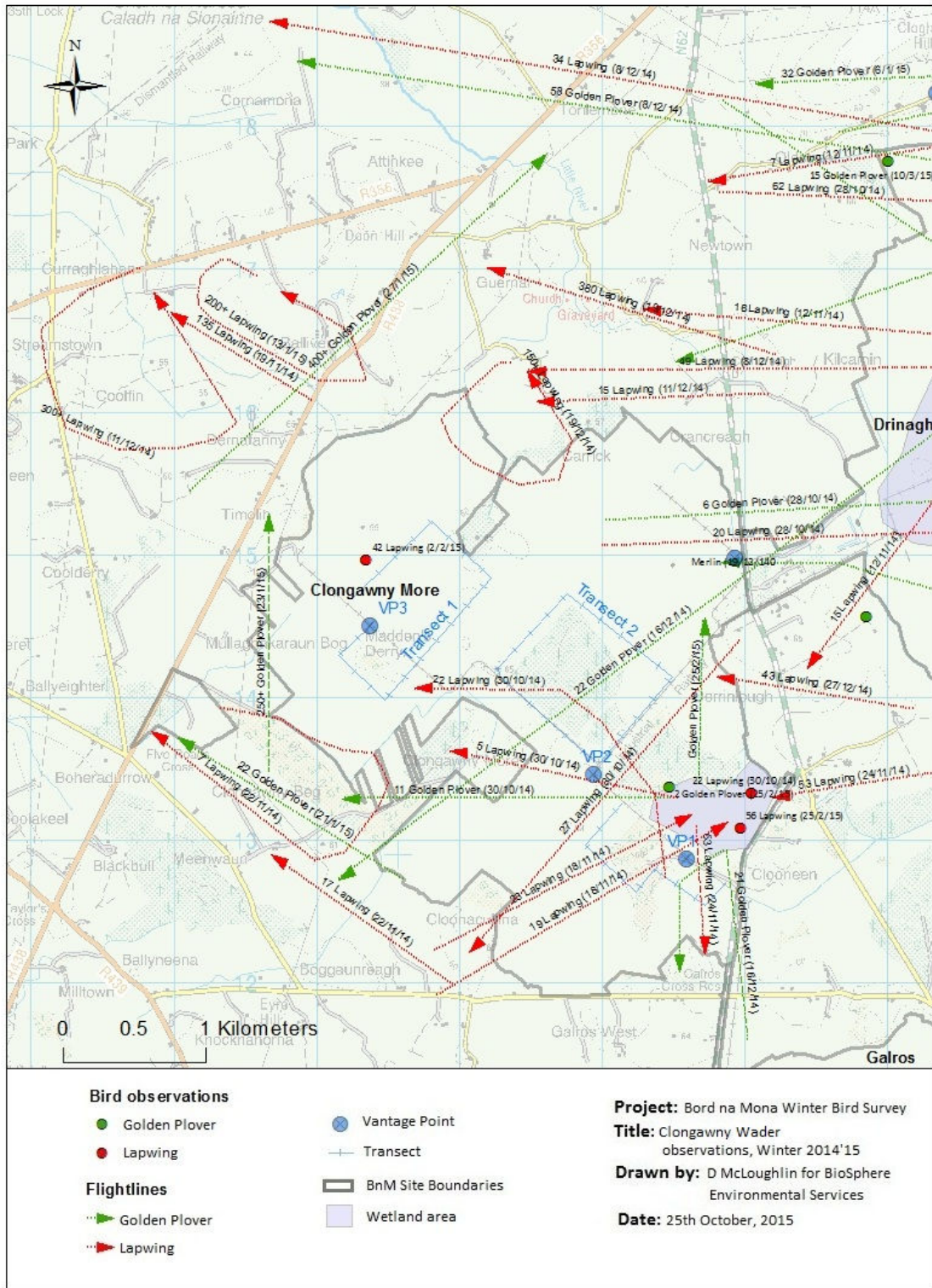
However, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, including Merlin, as well as Meadow Pipit and various Amber listed species such as Little Grebe, Snipe and Stonechat.

On the basis of the results of the 2014/15 winter surveys, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Clongawny Bog.

Clongawny Map 1: Map showing transect and vantage point locations, with Whooper Swan records.



Clongawny Map 2: Map showing transect and vantage point locations, with wader observations.



Clongawny Map 3: Map showing transect and vantage point locations, with raptor records.

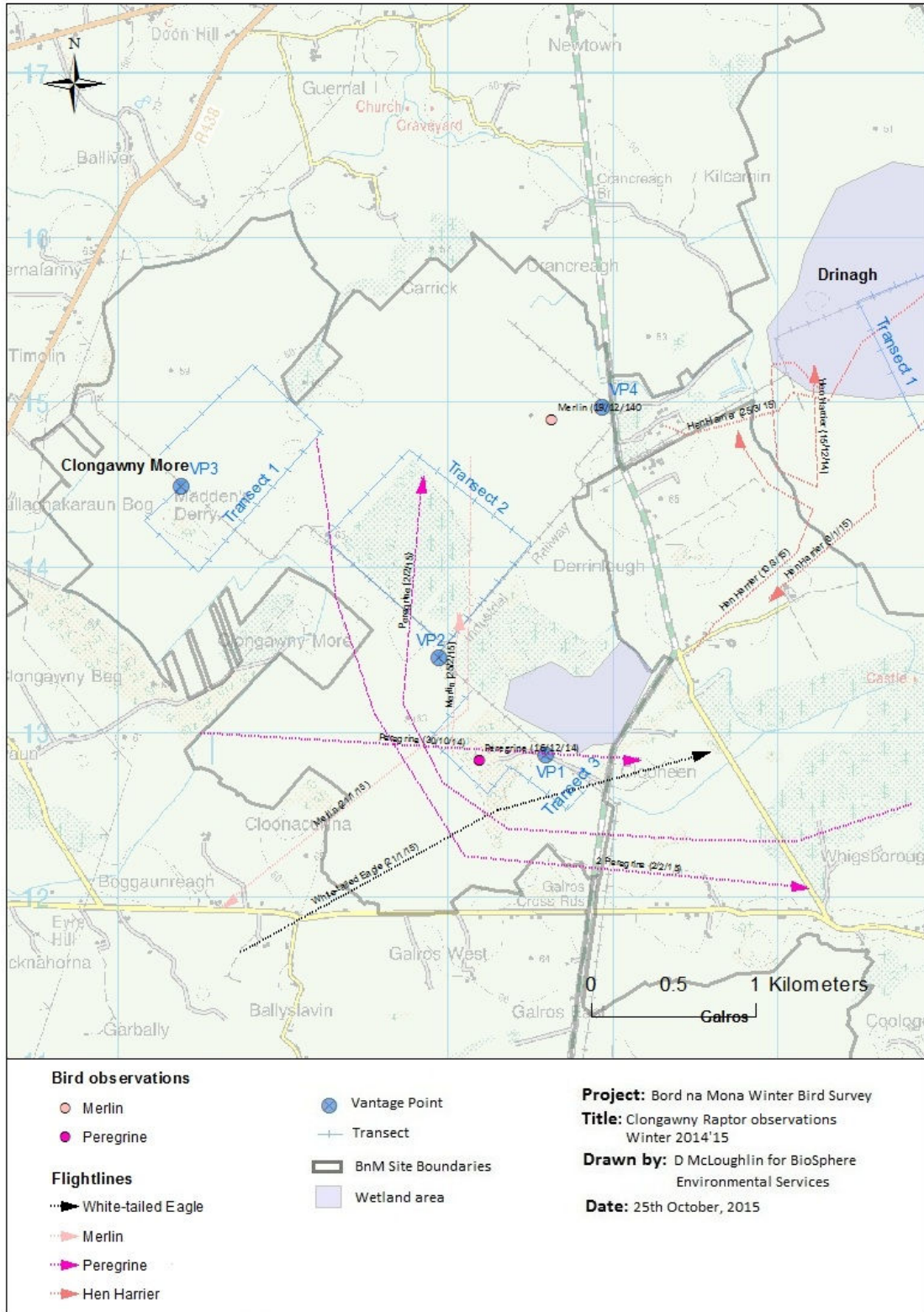




Plate 1. Clongawny Bog: view of shallow lake in eastern part of site. While useful habitat, the lake attracts relatively few wetland birds.



Plate 2. Clongawny Bog: view looking westwards (from VP4) across northern part of site, showing bare peat and regenerating cutaway.

3.4 Drinagh Bog

3.4.1 Site description

Drinagh Bog is located approximately 1.5 km to the southeast of Cloghan village. It is connected to Clongawny Bog (to the west) by a rail link and the two sites are separated by the N62 road. The R357 runs just a little north of the site. The Silver River skirts the eastern boundary.

Drinagh is divided into 4 main sections by the topography of the site and a railway on an embankment that crosses from the west to the east side of the site. The western section is separated from the eastern section by a ridge of high ground that partially divides the site (Mannin's Hill) and then by a block of conifer plantation that has been planted on the cutaway bog on this higher ground.

The north-east section is zoned for biodiversity and contains a substantial portion of open water. This area is developing into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the lakes, particularly along the eastern side. The water is shallow and there are frequent patches of emergent Common Reed and Bulrush developing. The lakes also contain linear islands or ridges of remnant peat vegetated with various communities, including developing Birch scrub. The south-east section of the site is a core trial area to manage cutaway bog specifically for breeding waders (a project by Bord na Móna in association with BirdWatch Ireland commenced in 2010). It essentially comprises a mosaic of emerging and open Birch scrub and a Soft Rush dominated pioneer community. The western sector is mainly in commercial production and comprises bare peat. However, there are substantial areas of regenerating cutaway, with wetland and scrub habitats.

Drinagh Bog is part of the Lough Boora Parklands and adjoins further Bord na Móna lands to the east. Agricultural land, mostly in pasture, is the main landuse to the north and south of Drinagh.

3.4.2 Survey locations

Transect 1 is a 2 km length alongside the rail track running southwards from the local road along the north boundary of the site. It passes through regenerating cutaway bog habitats and the main wetland area.

Transect 2 commences at the southwest corner of the mineral ridge in the southern part of the site and runs north to the main rail line which crosses the site from east to west. It skirts the line for 1 km (westwards) and continues on a 'square' shaped route southwards and then westwards back to the start. The habitats traversed are scrub, regenerating heath and poor fen, and bare peat.

Vantage Point 1 is located just off the local road which skirts the southeast side of Cloghan Hill. This elevated viewpoint looks over the eastern sector of the site, with focus on the lake and wetland habitats.

Vantage Point 2 is also located just off the local road which skirts the southeast side of Cloghan Hill. However, this is looking south over the north-western quadrant of the site.

Vantage Point 3 is located along the southwest edge of Mannin's Island and gives a view over the south-western sector of the site (mostly bare peat).

3.4.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Drinagh Bog are compiled in Appendix 2.

Target species recorded

Whooper Swan

Whooper Swans were recorded flying over or within the site on 13 dates between 28th October 2014 and 18th February 2015. The majority of records were from late October to December and mostly involved small numbers (<10) flying within and or across the site (see Appendix 3 and flightline drawings). There was no particular pattern of movements, with birds arriving to or departing from the site in all directions. The only significant flock was 50+ swans feeding in an area of wetland vegetation with open scrub just north of the central train line on 12th November 2014.

Overall, relatively low numbers of Whooper Swans frequented Drinagh Bog in winter 2014/15. The one record of a relatively large number (50+) falls into the pattern of previous records, which have shown that substantial flocks do occur on occasions, with 60 recorded on 7th December 2009 and a combined total of 190 Whoopers between Noggus Bog and Drinagh on 18th November 2008. Also, the EIS study for Cloghan Wind Farm recorded 43 Whooper Swans roosting at Drinagh in February 2012.

Wildfowl species

The wetland area of the site provides habitat for **Mallard** and **Teal** and to a lesser extent **Wigeon**. Maximum numbers were 99 Mallard on 19th January and 22 Teal on 23rd January. However, due to the cover provided by the developing wetland vegetation, these numbers are likely to under-estimate somewhat the populations for these species at Drinagh. On 27th December, a mixed flock of up to 60 Wigeon and Teal was recorded on the settling ponds in the central area of the site.

A record of four **Tufted Duck** on 25th March 2015 would have involved returning breeding birds. A single Tufted Duck had been recorded on the lake on 6th January 2015.

Hen Harrier

Hen Harriers were recorded on 11 dates through the winter, as follows:

On 28th October 2014, a male bird was observed hunting (<20m height) in the northernmost sector of the site.

On 8th December 2014, a ringtail was observed hunting over reeds (<10m) close to the northeast boundary.

On 15th December 2014, a ringtail was observed circling over bog (40-60 m) to the west of VP3.

On 19th December 2014, a ringtail was recorded hunting (<10m) over the northern boundary of the site (both on and off site).

On 23rd January 2015, a female bird was observed hunting (5-10 m) in western sector of site and continued SW out of site.

On 13th February 2015, a female bird was hunting (<10 m) over the northwest sector of the lake and continued in a SW direction. Later, a male bird was observed hunting (<20 m) along the easternmost margin of the site.

On 17th February 2015, a male bird was observed hunting (0-15 m) in the south and southeast sectors of the site.

On 18th February 2015, a female was observed hunting (0-10 m) over scrub along edge of lake in eastern side of the site.

On 10th March 2015, a ringtail flew in from SW over plantation and continued north out of site (0-20 m) (hunting over fields).

On 12th March 2015, a ringtail was observed hunting (0-10m) in southeast of site.

On 25th March 2015, a ringtail was observed several times hunting actively (<10 m) over scrub and wetland (flushed duck from reeds).

The series of records indicates that there was at least three individual Hen Harriers wintering in the area and using Drinagh Bog for hunting purposes. While there was no evidence of on-site night roosting, it is considered that there is potential for roosting in the eastern sector of the site. It is noted of course that there are extensive habitats in the wider area which would provide potential night roosts, including parts of the Lough Boora Parklands complex and the Shannon corridor.

Peregrine

Peregrine was recorded on several dates through the winter, as follows:

On 18th November 2014, a Peregrine was observed perched on a peat heap in the southwest sector of site – this later flew south and landed on edge of a pond where it preened for up to 24 minutes.

On 6th January 2015, one was observed to NE of site (off-site) hunting Starlings.

On 28th January 2015, one was observed flying (0-30 m) along northern boundary of site.

On 6th January 2015, one was observed to NE of site (off-site) hunting Starlings.

On 5th February 2015, a pair flew in to site from south, very low and landed on bare peat. Both birds preened and there was some interaction between the two. Both flew to nearby pond and landed at edge and continued preening.

Peregrine is likely to be an occasional visitor to site. One had been recorded over Drinagh Bog on 2nd February 2012 during the EIS study for the Cloghan Wind Farm.

Golden Plover

Golden Plover were recorded on six dates through the winter, as follows:

On 28th October 2014, flocks of 8 and 6 flew across the site, while a further 14 were noted in a field off-site to the west.

On 8th December 2014, a flock of 58 flew from the east over the north end of the site.

On 19th December 2014, a flock of 62 flew southwards over the eastern side of the site.

On 6th January 2015, a flock of 32 was observed to north of site (off-site).

On 28th January 2015, flocks of 52 and 11 flew over the site.

On 10th March 2015, a flock of 19 was recorded landed on open bog to the south of VP2. Also, flocks of 15 and 27 flew over the site.

The above series of records indicates that Golden Plover pass over the site on occasions though rarely land within the site.

Lapwing

Lapwing was recorded quite frequently through the winter. However, many of the records were of relatively small parties flying across the site. Records on-site of over 100 birds were as follows:

On 12th November, a flock of 115 was seen circling over the lake and 105 was later counted landed in the lake area.

On 21st November, an estimated total of 150 was landed at the lake.

On 19th November, 103 was recorded at the lake area.

On 6th January, a total of 202 flew up from the lake.

On 13th February, a total of 228 was counted at the lake.

Territorial birds were observed on site in March.

Black-headed Gull

On 12th March, a group of 7 gulls flew from the east of site in a southwest direction. On 24th March, a total of 38 gulls were present along transect no. 2 though there were no signs that the birds were holding territories.

Potential for other target species

It is considered that the Drinagh bog site has significant potential to support the following during winter:

Merlin (one seen arriving in Clongawny Bog from Drinagh direction on 19th December 2014)

Woodcock

Kingfisher (one had been recorded on 6th April 2010)

It is noted that there have been two records of Greenland White-fronted Goose at Drinagh Bog: two on 19th December 2011 were noted as being the first for the Boora wetlands (Heery 2012), while a flock of 45 was recorded at dawn on 2nd February 2012 during surveys for the Cloghan Wind Farm.

Other species of note

Mute Swan – pair on site from late January.

Greylag Goose (assumed feral) – present in small numbers, with peak of 9. Up to 75 were recorded on site in February 2009 and February 2011. Pair bred in 2011.

Little Grebe – present on lake through winter, with four on 24th March. A concentration of 28 birds had been recorded at Drinagh on 14th August 2008.

Sparrowhawk – single birds recorded several times during winter. Probably resident on site.

Buzzard – one to two birds present through winter, with six circling over site on 10th March and four on 19th March (3 of latter over conifer plantation).

Kestrel – single birds (male and female) recorded on site in all months.

Ringed Plover – at least one bird on 18th November, two on 25th March (latter returning breeding birds).

Snipe – recorded through the winter, mostly single birds but 7 on 27th December. (22 had been recorded on site on 22nd September 2009)

Skylark – small numbers (<10) present on site in October and March (latter territorial birds).

Robin – present through much of site. Most records of single birds.

Stonechat – At least one pair on site.

Meadow Pipit – sparsely distributed through winter period. Several loose flocks in autumn/early winter, with totals of 36 on 29th October and 48 on 13th November.

Goldcrest – present in scrub and woodland habitats

Starling – large flocks as follows: estimated 10,000+ going to roost in woodland/scrub along eastern boundary of site on 25th November; 2,000-5,000 on 27th December; 1,000+ on 19th January.

Linnet – small flocks of up to 15 birds occasional through winter.

General discussion

The 2014/15 survey showed that Drinagh Bog has good potential to support a range of waterbirds though none of the populations are of national importance. While Whooper Swan numbers were generally low (apart from one flock of 50+), previous records show that the site can support larger numbers at times though such records are only occasional. The swans at Drinagh are considered part of the (at times) large Boora Parklands population and higher numbers may occur at Drinagh when there is disturbance at other sites. It is noted that regular flightlines to, and/or from, Drinagh bog were not detected. Mallard and Teal were the main duck species recorded and the numbers of these recorded may be under-estimated due to the cover provided by the developing swamp vegetation at the shallow lake.

While there has been one past record of Greenland White-fronted Goose (2nd Feb 2012), it is considered that Drinagh has no significant potential to support this species (other than perhaps the occasional birds dropping in, as in 2012).

Golden Plover pass over the site fairly regularly though numbers were relatively low. On one occasion a flock was recorded on bare peat. Lapwing (Red listed species) was recorded regularly passing over the site and feeding and/or roosting within the site.

Drinagh Bog provides good habitat for birds of prey, with Hen Harrier regular through the winter, as well as Sparrowhawk, Buzzard and Kestrel. Peregrine was recorded several times, including birds perched within the site. Merlin would be expected on site, particularly as it was recorded on Clongawny Bog in winter 2014/15 and one was seen arriving there from the Drinagh direction.

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.

Other Amber listed species recorded on site included Little Grebe, Skylark, Stonechat and Linnet. Of note was the use of the site by large numbers of roosting Starlings.

3.4.4 Evaluation and Rating of Drinagh Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Drinagh Bog in winter 2014/15:

EU Birds Directive Annex I listed species

- Whooper Swan
- Hen Harrier
- Peregrine
- Golden Plover

Red Listed species (after Colhoun & Cummins 2013)

- Wigeon
- Tufted Duck
- Lapwing
- Black-headed Gull
- Meadow Pipit

Amber Listed species (after Colhoun & Cummins 2013)

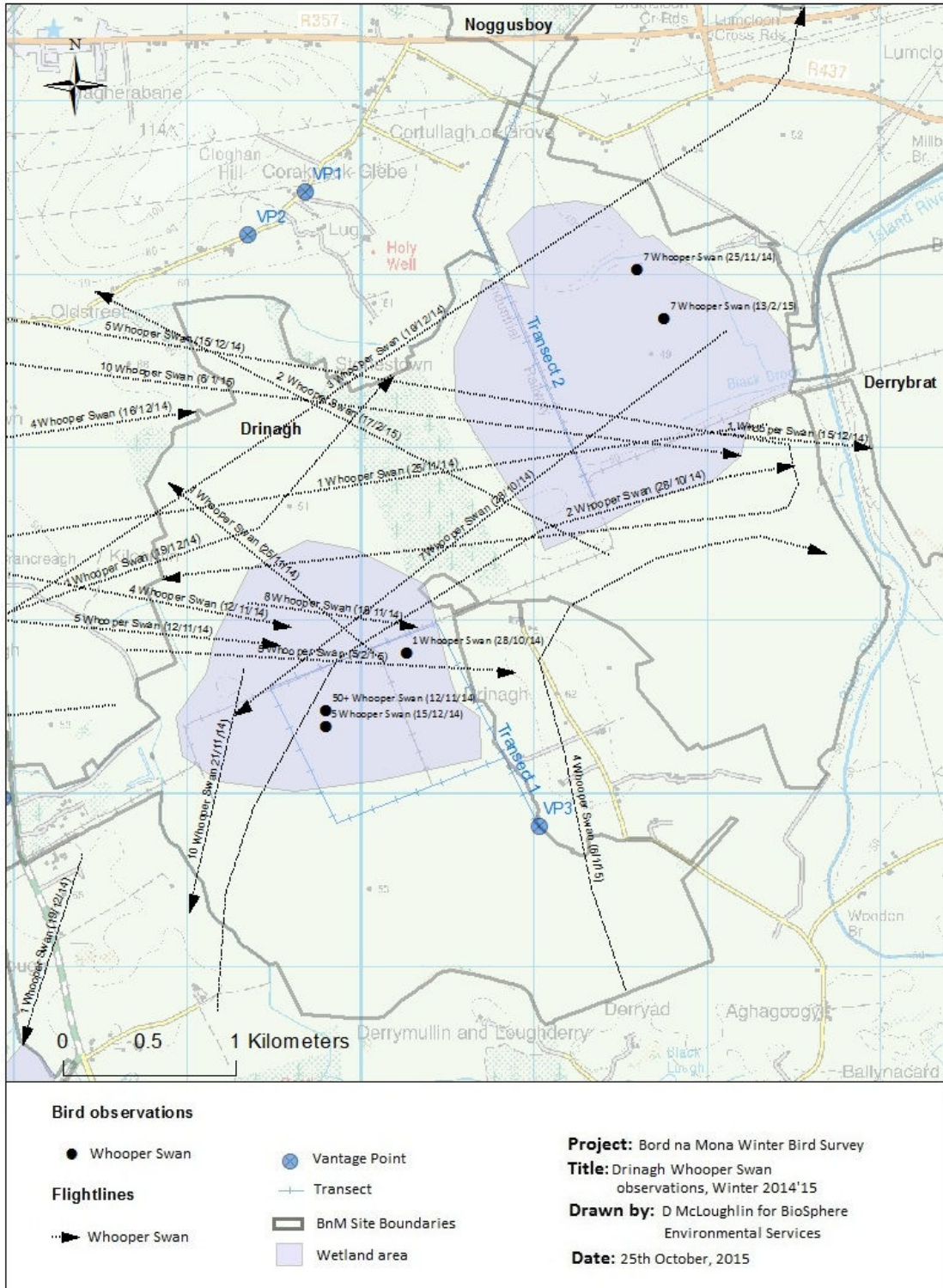
- Little Grebe
- Mute Swan
- Teal
- Sparrowhawk
- Kestrel
- Snipe
- Skylark
- Robin
- Stonechat
- Goldcrest
- Starling
- Linnet

Overall, the site has habitats suitable for supporting a wide range of wintering birds. Of particular note is the developing wetland habitat and especially the substantial area of open water, which support a wetland bird community. While the Whooper Swan numbers recorded are well below the threshold for National Importance (i.e. 150), the swans occur fairly regularly within the site and the site appears to have potential to support higher numbers at times.

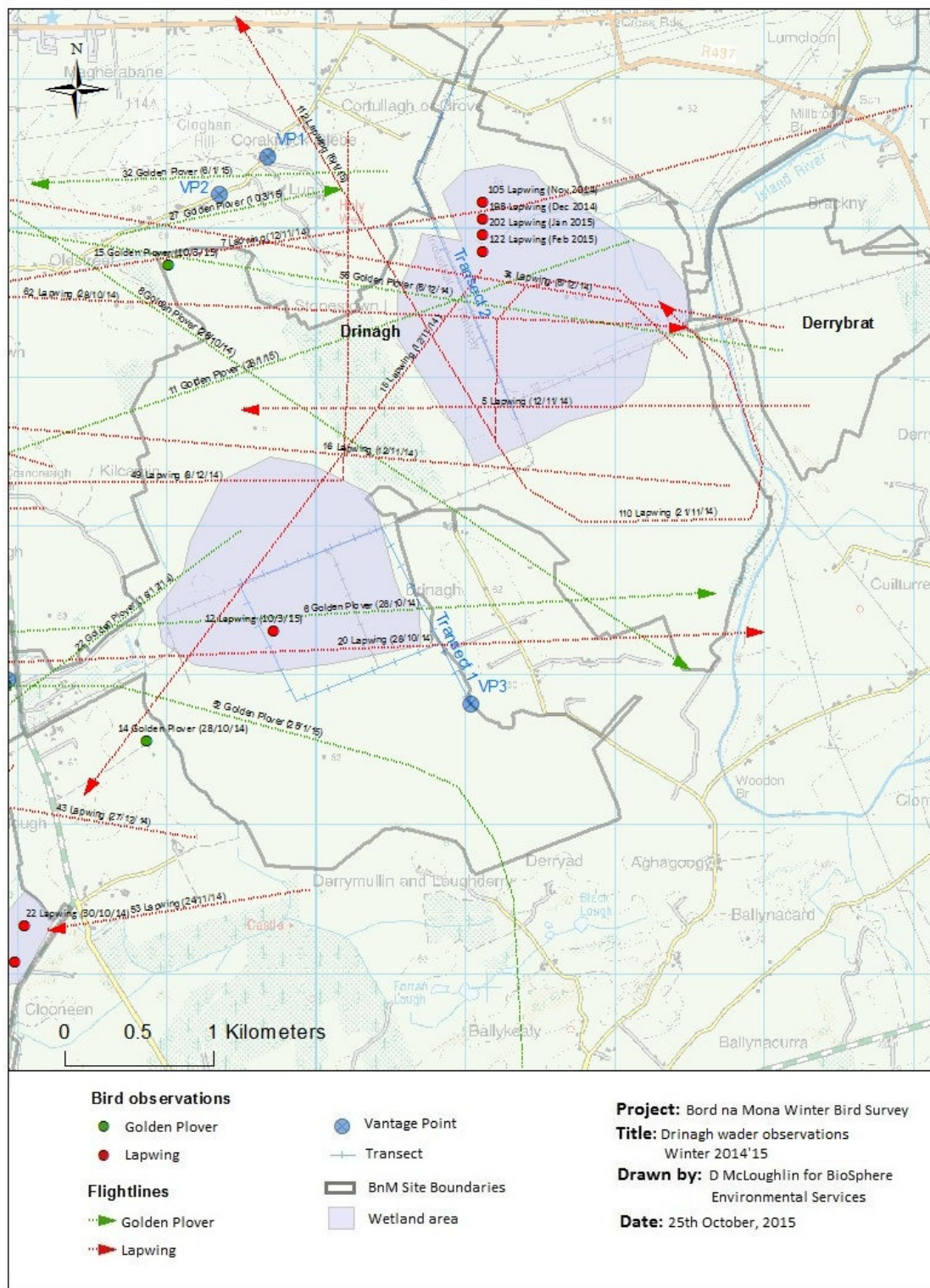
The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harriers, with at least three individuals recorded.

On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red and Amber listed species, it is recommended that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.

Drinagh Bog Map 1: Map showing transect and vantage point locations, with Whooper Swan records.



Drinagh Bog Map 2: Map showing transect and vantage point locations, with wader observations.



Drinagh Bog Map 3: Map showing transect and vantage point locations, with raptor observations.

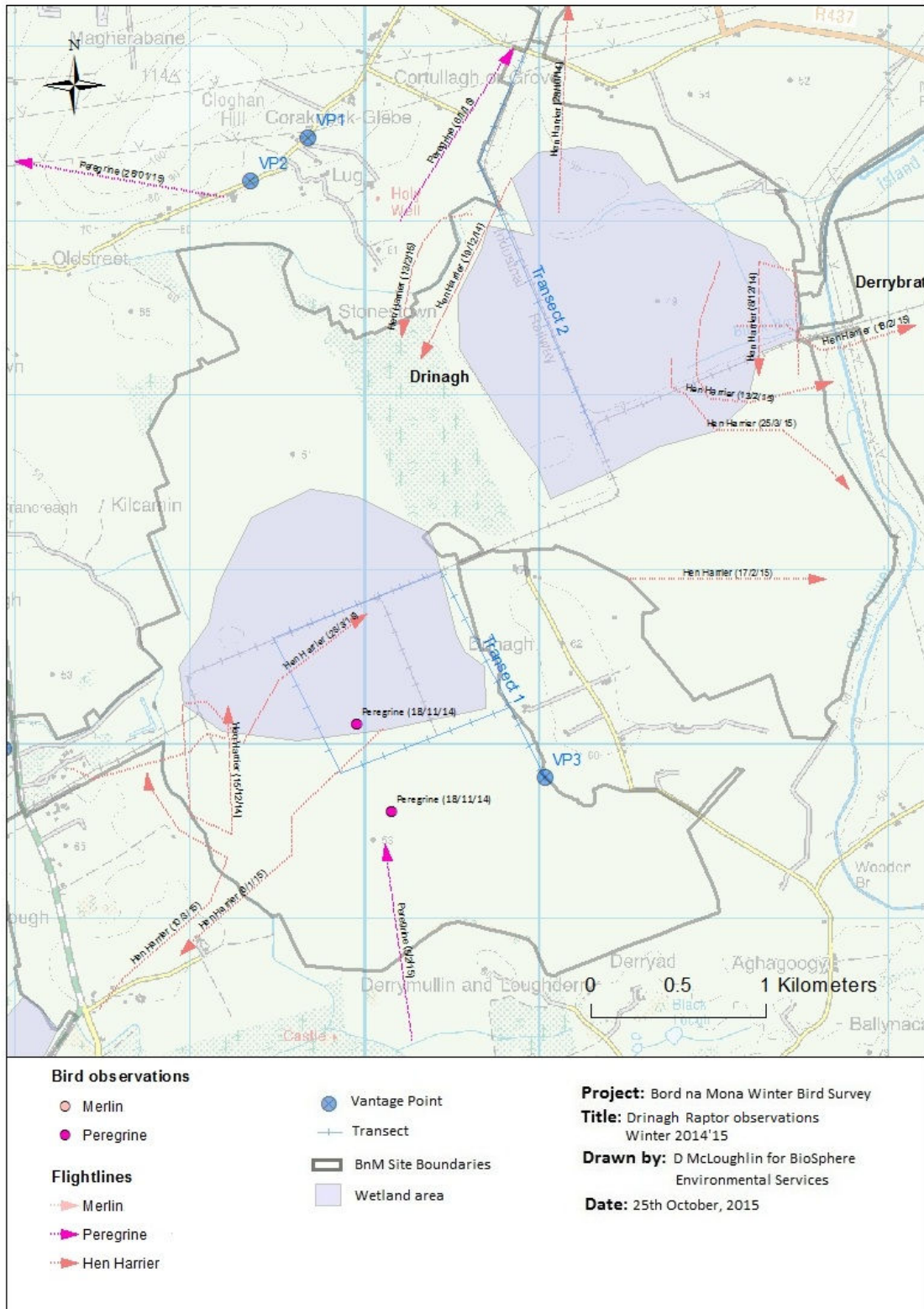




Plate 3. Drinagh Bog: view from VP1 over eastern part of site which is the biodiversity area.



Plate 4. Drinagh Bog: view from VP2 over northwestern part of site, showing bare peat and scrub habitats.



Plate 5. Drinagh Bog: view from VP3 over southern part site. This sector of site is largely still in commercial production.

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Website of Department of Arts, Heritage & the Gaeltacht: www.npws.ie

APPENDIX 1

Scientific Names of Bird Species

Grey Heron	<i>Ardea cinerea</i>
Whooper Swan	<i>Cygnus cygnus</i>
Mute Swan	<i>Cygnus olor</i>
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>
Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</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>
Golden Plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Snipe	<i>Gallinago gallinago</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>
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>

BORD NA MONA
WINTER BIRD SURVEY, 2015-2016
CLONGAWNY, DRINAGH BOG GROUP

FINAL REPORT

SEPTEMBER 2016

Prepared for

Bord na Móna

by

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Appendix 1. Scientific names of bird species

Appendix 2. Results for Vantage Point watches for Clongawny Bog & Drinagh Bog (separate file)

EXECUTIVE SUMMARY

- A baseline study of wintering birds associated with the Bord na Móna Clongawny and Drinagh Bog Group was carried out between September 2015 and March 2016. This followed a study carried out in the previous winter (October 2014 to March 2015).
- A large part of Clongawny Bog is still in active production or is classified as production related cutover. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.
- Drinagh Bog is part of the Lough Boora Parklands. The north-east section is zoned for biodiversity and contains a substantial wetland complex of habitats including open water. This area is developing into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the lakes, particularly along the eastern side. The western sector is mainly in commercial production and comprises bare peat. Much of the remainder is regenerating cutaway bog with pioneering wetland habitats and scrub. The site contains a block of conifer plantation.
- The study included a desk review and consultations with relevant agencies, namely National Parks & Wildlife Service (local management staff), BirdWatch Ireland and the Irish Peatland Conservation Council. Field methods employed were a combination of transect surveys, vantage point watches and focused surveys for wetland birds. Monthly vantage point watches achieved a minimum of 36 hours of observations over the two bog sites.
- A small part of Drinagh Bog overlaps with the Lough Coura pNHA. There are a further 19 designated sites within a 15 km radius of Clongawny and Drinagh Bogs: 6 SPAs, 8 SACs, 1 NHA and 4 pNHAs.
- It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study. In a wider context, there is quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.
- Brief descriptions of the two bog sites are given, followed by details of target species recorded, the potential for other target species, other species of note recorded and an overview of the value of the site for wintering birds. A map showing locations of sampling transects and vantage points, plus flight lines of target species where relevant, is presented. Representative photographs are included.
- Principal target species recorded within or over the sites, and in the immediate surroundings, were as follows: Whooper Swan, Teal, Wigeon, Little Egret, Golden Plover, Lapwing, Redshank, Hen Harrier, Merlin, Peregrine, Black-headed Gull and

Kingfisher.

- Meadow Pipit, a Red listed species, was recorded widely within the sites. Woodcock (also Red listed) was recorded at Clongawny and is considered likely to occur at Drinagh.
- The following Amber listed species were recorded within the sites: Mute Swan, Little Grebe, Great Crested Grebe, Sparrowhawk, Kestrel, Snipe, Jack Snipe, Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest, Starling and Linnet.
- Whooper Swans (Annex I species) were recorded flying over or within Clongawny Bog on three dates during the winter though in small numbers (maximum 8). Whoopers were more regular at Drinagh Bog, with records on six dates through the winter though again in small numbers (maximum of 11). There are previous records of larger numbers of Whooper Swans at Drinagh Bog.
- Small numbers of Teal, Wigeon and Mallard occur on the lake in the eastern part of Clongawny Bog, with these duck species more regular at Drinagh Bog though still in relatively low numbers.
- A Little Egret (Annex I species) flew over Drinagh Bog on 10th December 2015.
- Hen Harriers were recorded at Drinagh Bog on five dates through the winter, involving at least three individuals. There was no evidence of night roosting on site though there is potential habitat. There was one record of Hen Harrier at Clongawny Bog.
- There were two sightings of Merlin (Annex I species) at Clongawny Bog and two (one off-site) at Drinagh. Peregrine (Annex I species) was recorded at both bog sites.
- Golden Plover and Lapwing were recorded flying over the two bog sites through the winter, with records of both species landed within the two sites. Numbers, however, were relatively low and considerably less than the respective thresholds for national importance.
- Black-headed Gulls were present at the sites in February and March, involving prospecting breeding birds.
- A Kingfisher (Annex I species) was present at the lake in Clongawny Bog in September. This species would be expected also at Drinagh. .
- Meadow Pipit, a Red listed species, is widespread on the sites during winter though in fairly low numbers.
- Woodcock, a further Red listed species, was recorded at Clongawny Bog and would be expected at Drinagh.
- Various Amber listed use the sites for feeding – these were Little Grebe, Great Crested Grebe (prospecting breeding birds), Sparrowhawk, Kestrel, Snipe, Jack Snipe

(Clongawny only), Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest and Linnet.

- Overall, Clongawny Bog has limited potential for supporting wintering birds of conservation importance due partly to the extent of the site in commercial production. Also, the lake in the eastern part of the site is still in an early development phase and appears to have low feeding potential for swans and other wildfowl. However, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, including Merlin, as well as Meadow Pipit and various Amber listed species. From the results of the results of the winter surveys in 2014/15 and 2015/16, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Clongawny Bog.
- Drinagh Bog has habitats suitable for supporting a wide range of wintering birds. Of particular note is the developing wetland habitat and especially the substantial area of open water, which support a wetland bird community. While the Whooper Swan numbers recorded are well below the threshold for National Importance (i.e. 150), the swans occur fairly regularly within the site and the site has the potential to support higher numbers at times. The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harriers, with at least three individuals recorded. On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red and Amber listed species, it is recommended that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.

1.0 INTRODUCTION

1.1 Background to Project

Bord na Móna is considering using some of its bogs in the midlands for large scale 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 issued a request for a winter bird study (2015/16) on the avian species and populations either using, or likely to use, the Clongawny, Drinagh group of bogs, in County Offaly. This is a follow-up study to the winter bird survey completed at Clongawny and Drinagh bogs for the 2014/15 winter (report by BES, October 2015). Both the previous study and the present study will form the key baseline data in the assessment of the impact on birds of potential wind farm construction and operation.

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 following mapping was supplied for each bog group by Bord na Móna:

- Site Location Map (Discovery map base)
- Orthophoto View (from 2006)
- Land Use Map (prepared by BnaM)

A copy of *Birds on Cutaway Peatlands: Baseline Breeding Bird Population Survey* (2011) by Dr. Alex Copland, BirdWatch Ireland (carried out for Bord na Móna) was supplied for reference.

A contract to carry out the required work was awarded to BioSphere Environmental Services in September 2015.

2.0 SURVEY METHODS

2.1 Desk Review and Consultations

In addition to a perusal of the general ornithological literature on Ireland's birds, including the annual journal *Irish Birds*, the following key sources of information (written and/or electronic) were accessed for references to the study area:

Boland, H. & Crowe, O. (2012) *Irish Wetland Bird Survey: Waterbird Status and Distribution 2001/02 – 2008/09*. BirdWatch Ireland, Kilcoole, Co. Wicklow.

Crowe, O. (2005) *Ireland's Wetlands and their Waterbirds, Status and Distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow.

Fox, A.D., Norriss, D.W., Stroud, D.A. & Wilson, H.J. (1994). *Greenland White-fronted Geese in Ireland and Britain, 1982/83-1993/94. The first twelve years of international conservation monitoring*. Greenland White-fronted Goose Study and National Parks & Wildlife Service, Dublin.

Heery, S. (editor). *Birds in Central Ireland – Mid Shannon Bird Report*. 5 editions between 1996 and 2012. *BirdWatch Ireland*.

Hutchinson, C.D. (1979) *Ireland's Wetlands and their Birds*. Irish Wildbird Conservancy, Dublin.

Sheppard, R. (1993) *Ireland's Wetland Wealth*. Irish Wildbird Conservancy, Dublin.

www.birdwatchireland.ie - Distribution map and background information on I-WeBS sites in Ireland

www.npws.ie - Distribution maps and associated information for sites designated for conservation by NPWS (i.e. SPAs, SACs, NHAs, pNHAs)

Consultations, mostly by email and/or telephone, took place with the following:

NPWS

Ms Ciara Flynn, District Conservation Officer, North-East Region. Tel.: 045 534071;
email: Ciara.Flynn@ahg.gov.ie

[note: Ciara Flynn is no longer the DCO for the area – it is understood that a replacement has yet to be appointed]

Mr Colm Malone, Conservation Ranger, Co. Offaly. Tel.: 057 9331470;
email: Colm.Malone@ahg.gov.ie

BirdWatch Ireland

Dr Alex Copland, Senior Conservation Officer Crank House, Banagher, Co. Offaly
Tel.: 057 9151676; email: acopland@birdwatchireland.ie

Dr Olivia Crowe & Ms Helen Boland (I-WeBS co-ordinators)
email: ocrowe@birdwatchireland.ie; hboland@birdwatchireland.ie

Irish Peatland Conservation Council

Dr Catherine O'Connell, CEO, IPCC, Tel.: 045 860 133; email: bogs@ipcc.ie

Mr Tadhg O Corcora, Conservation Officer, IPCC, Tel.: 045 860 133; email: bogs@ipcc.ie

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 September 2015 and March 2016 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.
- All sites should be visited a minimum of three times during the winter period, or more frequently as appropriate, with the approach and methodology varying depending on the target species.
- 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. Alternative/additional methods such as aerial surveys, automated sensing techniques (radar) and tagging may be considered appropriate under certain site specific cases.
- Where identified as appropriate, Vantage Point surveys should be carried out for a minimum of 36hrs at each point per survey over the six months of winter.

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 site:

2.2.1 Number of site visits

For the Clongawny and Drinagh bog sites, the Vantage Point methodology was considered appropriate and hence monthly surveys were carried out commencing in September 2015 and continuing to March 2016.

2.2.2 Survey methods

Vantage Point watches and transect surveys were the main methods used at the Clongawny and Drinagh bog 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 general accordance with the methodology used for assessing impacts of wind farms on bird communities published by Scottish Natural Heritage (version May 2014). 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 Clongawny and Drinagh bog sites, the full duration of 36 hours of observations over the site 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, 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 or Curlew
- Hen Harrier, Merlin and other birds of prey
- Any other Annex 1 species of EU Birds Directive
- Any other Red or Amber listed species as given in Colhoun & Cummins (2013)

2.3 Survey Limitations

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

out at the Clongawny and Drinagh bog sites during the 2015/16 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 from the 2014/15 winter, the results of the present survey will provide a more robust assessment of the importance of the Clongawny Drinagh Bog Group 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 Colhoun & Cummins 2013). 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 the site of a breeding pair of Peregrine (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

The following designated sites are located within a distance of approximately 15 km of the Clongawny/Drinagh study area. These comprise the following types of designations:

- Special Protection Areas - SPAs are designated under Council Directive 79/409/EEC on the conservation of wild birds (i.e. the Birds Directive).
- Special Areas of Conservation - SACs are designated under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e. the Habitats Directive).
- Natural Heritage Areas - NHAs are designated under the Wildlife Amendment Act 2000.
- proposed Natural Heritage Areas - pNHAs do not receive legal protection though the ecological value of pNHAs is recognised by Planning and Licencing Authorities.

Apart from SPAs, these sites do not necessarily have ornithological interests though many would support some birds of conservation interest. In the following list, a note is made on whether the site has known ornithological interest.

Middle Shannon Callows SPA (code 004096)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km).

The site is an SPA as it is of special importance for Whooper Swan, supporting a population of international importance. It also supports important populations of Mute Swan, Wigeon and Golden Plover. A small flock of Greenland White-fronted Geese continues to use the SPA.

Clongawny Bog is, at the closest, a distance of 3 km east from the Middle Shannon Callows SPA, while the distance between Drinagh Bog and the SPA is over 6 km.

River Little Brosna Callows SPA (code 004086)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an SPA as it is of international importance for wintering waterfowl. Of particular note is the Greenland White-fronted Goose population that is based along the Brosna. Also of international importance is the Black-tailed Godwit population. Species which occur in numbers of national importance include Whooper Swan, Wigeon, Teal, Pintail, Golden Plover and Lapwing.

Clongawny Bog is, at the closest, a distance of 5.5 km to the NE of the SPA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Dovegrove Callows SPA (code 004137)

Dovegrove Callows is an area of callowland beside the Little Brosna River c.2 km downstream from Birr in Co. Offaly.

The site is regularly used by a flock of Greenland White-fronted Geese (essentially the Little Brosna flock) as well as other waterfowl.

Clongawny Bog is, at the closest, a distance of 5 km to the north of the SPA, while the distance between Drinagh Bog and the SPA is approximately 8 km.

All Saints Bog SPA (code 04103)

This raised bog site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site in recent years.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog SPA.

Mongan Bog SPA (code 004017) and SAC (code 00580)

This raised bog site is located just east of Clonmacnoise in Co. Offaly. It is a fine example of a largely intact raised bog with an active core.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site since the early 1980s.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA and SAC.

Slieve Bloom Mountains SPA (code 04160)

This upland site comprises large areas of the Slieve Bloom Mountains. The SPA is selected for breeding Hen Harriers and also supports breeding Merlin.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 12 km and 14 km to the northwest of the SPA.

River Shannon Callows SAC (code 00216)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km). The site is similar in extent to the Middle Shannon Callows SPA though includes more of the marginal habitats.

The bird interests of the SAC are the same as listed for the SPA.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA.

Fin Lough SAC (code 0576)

This site is a shallow limestone lake surrounded by a complex of wetland habitats including alkaline fen. It is located approximately 7 km northeast of Shannonbridge in Co Offaly.

The lake is noted as an important roosting area for wintering duck.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 13 km and 12 km.

Redwood Bog SAC (code 02353)

Redwood Bog is a raised bog system that include both active bog and degraded bog. It is situated about 7 km southwest of Banagher.

The SAC is situated approximately 9 km west of Clongawny Bog and 13 km west-southwest

of Drinagh Bog.

This site is noted as a haunt of Greenland White-fronted Geese.

All Saints Bog and Esker SAC (code 566)

This raised bog and esker ridge site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas. The esker ridge supports orchid rich calcareous grassland.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog and Esker SAC.

Moyclare Bog SAC (code 0581)

This is a small raised bog situated about 4 km west of Ferbane in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 7 km north-northeast of Clongawny Bog and 5 km north of Drinagh Bog. .

This site is not listed as being of ornithological interest.

Ferbane Bog SAC (code 0575)

Ferbane Bog is a relatively large raised bog situated about 10 km east of Shannonbridge in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 9 km northeast of Clongawny Bog and 6 km north of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ridge Road, SE of Rapemills SAC (code 0919)

This SAC site comprises esker ridges which support orchid rich calcareous grassland.

The SAC is situated approximately 4 km southwest of Clongawny Bog and 8 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

River Little Brosna Callows NHA (code 00564)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an NHA as it supports extensive areas of callow grasslands and also a raised bog at Cloghan Demesne. The site is also of international importance for wintering waterfowl and is a designated SPA.

Clongawny Bog is, at the closest, a distance of 5 km to the NE of the NHA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Lough Coura pNHA (code 00909)

This pNHA is located along part of the southwest boundary of Drinagh Bog and there is a very minor overlap. The site is an old infilled lake that contains wet grassland and fen vegetation.

This site is not listed as being of ornithological interest.

Banagher (Domestic Dwelling) occupied pNHA (code 00567)

This pNHA is bat site. It is located approximately 1 km north of Clongawny Bog and 3 km west of Drinagh Bog.

This site is not listed as being of ornithological interest.

Woodville Wood pNHA (code 00927)

This pNHA is located within approximately 4 km south of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ross and Glens Eskers pNHA (code 00920)

This pNHA is located within approximately 3.5 km southwest of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Grand Canal pNHA (code 02104)

The Grand Canal pNHA passes within 3.5 km north Clongawny and Drinagh Bogs.

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

3.2 Review of Past Data for Study Area

There have been three national surveys (with I-WeBS on-going) for wintering waterbirds as follows:

Irish Wetlands Enquiry

In the *Irish Wetlands Enquiry* (winters 1971-72 to 1974-75), which was the first national census of wetland birds, the **River Shannon** and the **Little Brosna River** are the only sites mentioned that are in the wider hinterland of Clongawny and Drinagh Bogs.

The River Shannon is listed as the section between Lough Ree and Lough Derg and is rated as a site of international importance for wild swans (Bewick's and Whoopers) and Black-tailed Godwit and of national importance for various species such as Mallard, Teal, Wigeon, Lapwing, Golden Plover and Curlew. Hutchinson (1979) writes the following:

“From Lough Ree south to Lough Derg the Shannon is surrounded by extensive bogs and poorly drained agricultural land as it traverses the central lowlands. ... The flood plain of the river is pasture flooded in winter and known as callow land..

The most numerous wildfowl are Wigeon and several thousands occur along the river between Athlone and Portumna. Several hundred Teal and wild swans, together with small numbers of White-fronted Geese, also winter along the river. However there is considerable movement of birds in this area in response to changes in water level and shooting pressure. As a result, certain areas may have no ducks at all on some occasions, but several hundred at other times...

Lapwing and Golden Plover congregate on the callows and fields behind the callows in very large numbers.”

Hutchinson notes that the important part of the Little Brosna for waterfowl comprises the callows extending from New Bridge, seven kilometres northwest of Birr, to the junction with Shannon at Meelick and includes Big Island and Friars Island on the Shannon. He writes

“As a wildfowl haunt it is extremely important, with Wigeon the most numerous species (up to 7,000) and in numbers of international importance. Large numbers of Teal (up to 2,200) and the biggest flock of Pintail on the Shannon system also occur. The callows are the feeding ground for several hundred White-fronted Geese, the second largest concentration in Ireland after the Wexford Slobs. Some of the largest numbers of Lapwing and Golden Plover in Ireland scatter over the callows and adjoining farmland, but the most important wader concentration is the flock of Black-tailed Godwits which peaks in late winter at up to 4,000 birds.”

Winter Wetlands Survey

A further national census of wetland birds, the *Winter Wetlands Survey*, took place over the three winters 1984-85 to 1986-87 (Sheppard 1993). Again, the **Shannon Callows** and the **Little Brosna Callows** were the only sites included within the wider hinterland of Clongawny and Drinagh Bogs.

The Shannon Callows, which was counted 4 times over 1 season, is listed as a site of International Importance for Whooper Swan (211) and Wigeon (8,725), and of National Importance for Mute Swan (253), Teal; (900), Golden Plover (4,500), Lapwing (12,864) and Black-tailed Godwit (600).

The Little Brosna was counted 31 times over 3 seasons, and is listed as a site of International Importance for Whooper Swan (201), White-fronted Geese (417), Wigeon (12,250) and Black-tailed Godwit (2,375). It was listed as of National Importance for Teal (3,000), Mallard (2,250), Pintail (275), Shoveler (250), Golden Plover (5,000), Lapwing (3,925) and Curlew (1,150). Sheppard writes:

“This phenomenal site recalls what once must have been commonplace throughout Europe, but is now almost gone – a highly productive floodplain, enriched by wildfowl manure in winter, and cropped for hay or grazed in winter.”

Irish Wetland Bird Survey (I-WeBS)

The *Irish Wetland Bird Survey* was initiated in 1994/95 and continues to the present. All major wetlands in the country are covered each winter by this scheme. Annual reports have been published and the first major review was carried out for the period 1994/95 to 1999/2000 (Crowe 2005), with a further review (species based rather than site based) for the period 2001/02 to 2008/09 carried out by Boland and Crowe (2012).

A total of 5 sites are listed which are within the hinterland of Clongawny and Drinagh Bog sites.

The **Shannon Callows** (similar unit as the SPA) is listed as a site of International Importance for Mute Swan (367), Whooper Swan (321), and Black-tailed Godwit (27 but high numbers in previous period). The populations of Wigeon (2,800), Golden Plover (2,429) and Lapwing (14,218) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Shannon callows regularly support internationally important numbers of Mute Swan, Whooper Swan and Black-tailed Godwit, and nationally important numbers of a further three species. This site also supports an increasing, and now significant concentration of Black-headed Gulls.*”

A summary of counts for the principal species along the Shannon Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 1. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

Table 1. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Shannon Callows I-WeBS site and Middle Shannon Callows SPA. Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	888	339	775	500	739	588
Whooper Swan	392	255	207	299	305	267
Wigeon	2378	900	4702	3676	2023	2825
Teal	302	270	573	835	285	491
Mallard	71	0	233	55	91	126
Golden Plover	956	1680	200	7610	1750	2810
Lapwing	247	2837	1397	7672	2149	3514

The **Little Brosna Callows** (similar unit as the SPA) is listed as a site of International Importance for Greenland White-fronted Geese (455), Golden Plover (10,393) and Black-tailed Godwit (3,050). The populations of Whooper Swan (111), Wigeon (7,555), Teal (1,966), Pintail (140), Shoveler (274) and Lapwing (6,191) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Little Brosna Callows are internationally important for Greenland White-fronted Goose, Golden Plover and Black-tailed Godwit, and nationally important for a further six species. It is among the top ten most important sites for most of these species. This site also supports significant concentration of Black-headed Gulls, and a high diversity of wetland bird species, particularly from an inland site.*”

A summary of counts for the principal species along the Brosna Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 2. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

The **Cloghan Wetlands** (grid ref. N100195) I-WeBS site comprises Cloghan Lake and Drinagh Bog. This site was subsequently re-named as Cloghanhill.

For the period 1996/97-2000/01 the site supported a nationally important population of Whooper Swans (mean peak of 130) (Crowe 2005). Since then, counts have been irregular with 190 Whooper Swans in winter 2008/09 and no swans present in winters 2009/10 and 2013/14 (there were no counts in the 3 winters 2010/11 to 2012/13).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 3. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 2. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Little Brosna Callows I-WeBS site (and SPA site). Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	129	118	75	129	70	98
Whooper Swan	184	190	110	147	120	142
White-fronted Goose	178	230	230	200	200	215
Wigeon	4454	1455	2375	2350	5700	2970
Teal	400	70	0	320	0	195
Mallard	32	50	11	20	30	28
Golden Plover	0	2045	0	2200	0	2123
Lapwing	0	1110	570	1150	800	908
Black-tailed Godwit	700	1000	0	0	0	1000

Table 3. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Cloghanhill I-WeBS site (i.e. Cloghan Lake & Drinagh Bog). Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Mute Swan	6	15	2
Whooper Swan	190	0	0
Greylag Goose	38	17	0
Wigeon	0	4	12
Teal	4	3	2
Mallard	27	86	85
Golden Plover	0	0	8
Lapwing	11	0	12
Snipe	12	10	5

Boora Lakes-Back Lakes (Finnamore Lakes) (grid ref. N180195) I-WeBS site comprises wetlands within the Lough Boora Parklands cutaway bogs. These are situated several kilometres to the east of Drinagh Bog.

Crowe (2005) notes that while the site does not regularly support any nationally important concentrations, it does occasionally support high, nationally important, numbers of several species, namely Little Grebe (54), Mallard (1037), Golden Plover (3,000) and Lapwing (2,200) (figures are peaks for period 1996/97-2000/01). Other species that have been recorded (with peak numbers) include: Whooper Swan (107), Greenland White-fronted Goose (14), Wigeon (100) and Teal (120).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 4. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 4. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Boora Lakes-Back Lakes (Finnamore Lakes) I-WeBS site. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Whooper Swan	117	5	0
Wigeon	109	0	0
Teal	121	22	25
Mallard	53	141	26
Golden Plover	2000	326	150
Lapwing	727	249	705
Snipe	29	3	5
Curlew	81	14	0

Turraun Nature Reserve (grid ref. N178236) comprises cutaway bog with a lake. Site is owned by Bord na Móna and is a non-statutory nature reserve. It is located just south of the Grand Canal and approximately 7 km to the northeast of Drinagh Bog.

For the period 1996/97-2000/01 the population of Whooper Swans (119) approached national importance (Crowe 2005). Since then, Whooper Swan counts have been irregular, as follows: one in winter 2007/08, 118 in winter 2008/09, no swans recorded in winter 2009/10, (no counts in winters 2010/11-2012/13), and no swans recorded in winter 2013/14.

Review of history and status of Brosna/Shannon population of Greenland White-fronted Geese

The Clongawny and Drinagh bog sites are in proximity to two populations of Greenland White-fronted Geese.

Ruttledge & Ogilvie (1979) carried out a major review of the status of the Greenland White-fronted Goose in Ireland and Britain. They identified the River Shannon, Athlone to Portumna (site no. 11) as of international importance. They included the Shannon Harbour to Banagher section as a subsite in the context of the overall population, with c.150 out of a total of 600 birds in the 1940s and early 1950s. By the 1970s, the overall flock size had declined to an estimated 200-250. Ruttledge & Ogilvie (1979) also identified the Little Brosna River (site no. 12) as of international importance. When first studied in some detail in the 1940s the population was about 400 birds. By the early 1950s a decline had set in as a result of disturbance from shooting. By the late 1970s numbers had fallen to about the 200 mark. They note: “*Although so close to the River Shannon the population is conservative and, given the opportunity confines itself to the Little Brosna callows. This haunt should be studied in conjunction with the River Shannon complex (site 11)*”.

A further main review of the status of Greenland White-fronted Goose in Ireland and Britain was carried out by Fox *et al.* (1994). Again the Little Brosna population (site no. 26) was rated as of international importance, with a mean flock size of 526 over the 6 winters 1988/89-1993/94. The range of this flock is given as the Little Brosna and the section of the Shannon from the confluence of the Brosna to Lough Derg (sites no. 12 and part of 11 of Ruttledge & Ogilvie). A total of 34 feeding sites were recognised.

Since the review by Fox *et al.* (1994), an annual census of Greenland White-fronted Geese in Ireland has continued to be carried out by National Parks and Wildlife Service as part of an International Census of the species. For winters 2011/12 to 2012/14, the following peak counts were recorded for the Little Brosna population:

220 in winter 2011/12 (Fox *et al.* 2012)

200 in winter 2012/13 (Fox *et al.* 2013)

135 in winter 2013/14 (Fox *et al.* 2014)

150 in winter 2013/14 (Fox *et al.* 2015)

The Greenland White-fronted Goose Site Inventory (Norriss unpublished) does not list any traditional goose feeding sites at Clongawny or Drinagh bogs (listed sites are along the rivers and at All Saints Bog).

Other Sources of Information

NPWS

Ciara Flynn of NPWS noted the following in e-mail dated 13/11/2014:

“Hen harrier have been recorded in winter over Drinagh, also peregrine. BWI have a lot of info on breeding waders and Black headed gull colonies from here also. The flooded BNM cutover at Drinagh is becoming a very important wildfowl site. GWFG and whoopers have been recorded from here also (as part of the surveys for the Cloghan Wind Farm)”

Irish Peatland Conservation Council

The IPCC does not have any information specific to Clongawny and Drinagh Bogs.

BirdWatch Ireland

BirdWatch Ireland has carried out various winter surveys for wetland birds at Drinagh Bog and at least in one winter at Clongawny Bog (Copland, A. BWI Winter Counts 2008/09). These counts indicated that Drinagh Bog has good potential to support wintering wetland birds but that the potential at Clongawny is limited. The surveys have been carried out in the context of the wider Boora region (A. Copland pers. comm.).

Local Bird Report

A small number of references are made to bird species at Drinagh bog in the Mid Shannon Bird Reports – these are noted in the species accounts in this report. There appears to be no mention of Clongawny Bog in the reports.

Cloghan Wind Farm EIS

The EIS (dated November 2012) prepared for the proposed Cloghan Wind Farm (Planning Authority Reg. Ref.: 12/293, An Bord Pleanála Ref No. PL 19.242354) included surveys for wintering birds in the area, including Drinagh Bog (see Chapter 6 of EIS). The following was noted (pages 86-90 of EIS):

43 Whooper Swans roosting at Drinagh in February 2012 – moved to daytime feeding sites to NE and NW of site, grassland sites at Derrycarney and Lea More and also to Coolreagh Bog to forage. Some remained at Drinagh. On 17th February 2012, 88

Whooper Swans grazing in fields.

On 2nd February 2012, very cold – at dawn a flock of 45 Greenland White-fronted Geese observed at Drinagh over 1 hour. At 8.30 hrs, left lake and flew in a flock over conifers towards Cloghan Wind Farm site and then flew in direction of Little Brosna Callows. Drinagh watched again in evening but no geese. Watches over two further mornings also negative for geese. EIS concluded that Greenland White-fronted Geese are rarely in area.

One Peregrine over Drinagh on 2nd February 2012 flying between 60 m and 120 m.

Golden Plover in fields to south.

Meenwaun Wind Farm EIS

The EIS (dated February 2015) prepared for the permitted Meenwaun Wind Farm (Offaly County Council Planning Authority Ref.: 1544; An Bord Pleanála Ref No. PL19.244903) included surveys for wintering birds in winters 2012/13 and 2014/15. The wind farm site is located immediately to the southwest of Clongawny Bog. Two Vantage Points were used for the winter surveys, one at Clongawny More and one at Derrinlough (along the N62). The following is a summary of the avifauna recorded (see Chapter 6 of EIS for details).

Whooper Swan

None recorded over site but 9 flew east to west to the south of the wind farm site on 27th December 2014, flying height c.20 m. Also, 5 at the small lake at Clooneen (probably refers to lake within Clongawny Bog) on 27th December 2014. Also, on 30th January 2015, signs of swan usage (feathers) on flooded cutaway bog to southwest of All Saints Bridge.

Hen Harrier

One (not sexed) seen at Clongawny More on 21st January 2015 flying west to east at 15.42 hrs.

Golden Plover

Sightings over industrial bog to northeast of wind farm site in October 2012 (2 birds) and 21st January 2015 (several parties, largest 41).

Woodcock

There were 3 winter sightings of Woodcock in vicinity of site.

The EIS states that there were no winter sightings of Greenland White-fronted Goose, Merlin or Peregrine.

Overall Appraisal of Available Information

It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study.

In a wider context, there is useful quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.

3.3 Clongawny Bog

3.3.1 Site description

Clongawny Bog is located approximately 3 km south-southwest of Cloghan village. It is bordered by the N62 road to the east and the R438 to the west. A local road runs west from Galros Cross Roads and skirts part of the southern boundary.

A large part of the bog is still in active production or is classified as production related cutover. The bog is primarily divided into several sections by the blocks of forestry located towards the centre of the site and by a railway that crosses the site in a NW-SE orientation. The forestry on the site is managed by Coillte with both commercial production of timber and biodiversity as the main management objectives. The site has a varied topography with some mineral mounds of glacial material and deeper basins.

The active production areas are dominated by bare peat and occur in the northern, southern and part of the western sections of the site. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub dominated by birch. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water (shallow lake) has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.

Clongawny Bog is largely within an agricultural landscape, with pasture grassland dominant. However, other Bord na Móna commercial bogs occur in the wider area, along with a scatter of remnant bogs (mostly cutover). Conifer plantations are also a feature of the area.

3.3.2 Survey locations

Transect 1 is a loop in the western sector of the site which is through regenerating cutaway bog, with wetland and scrub habitats.

Transect 2 is within the central area of the site and comprises a loop around a block of conifer plantation, passing scrub, regenerating bog habitats and bare peat.

Transect 3 is located in the eastern part of the site and passes alongside conifer plantation and regenerating bog habitats.

Vantage Point 1 is located alongside the rail track a little in from the N62. This looks over the lake and wetland as well as some conifer forest.

Vantage Point 2 is located near the junction of the railway tracks, with views over the southern part of the site (largely bare peat) and also further conifer forest and some native woodland.

Vantage Point 3 is located along the rail track in the western sector of the site. This gives views over the western sector of the site.

Vantage Point 4 is located along the site boundary in the northeast. This gives views over the northern and central areas of the site.

3.3.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Clongawny Bog are compiled in Appendix 2.

Target species recorded

Whooper Swan

Whooper Swans were recorded flying over or within the site on three dates during the winter, as follows:

- 22nd October 2015 5 flew eastwards over site, quite low (c.20 m height)
- 20th November 2016 3 on lake in east of site; 5 flew eastwards over north end of site (c.30 m height)
- 5th February 2016 4 flew northwards over lake area (30-50 m height)

A fairly similar pattern of records as in the previous winter, with small numbers passing over site and occasionally landing on lake.

Teal

Flock of 28 on lake on 20th October – flew towards Drinagh (accompanied by 2 Wigeon). Six on lake on 20th November; four on 15th December (along with 22 Mallard); 12 on 5th February; 8 on 21st March.

As in previous winter, Teal utilise the lake through the winter though in relatively small numbers.

Hen Harrier

Ringtail (probable female) hunting over remnant bog in western sector of site on 16th January 2016.

While regularly recorded at Drinagh bog in winters 2014/15 and 2015/16, this is the only record from Clongawny during the present surveys.

Sparrowhawk

Two in central area of site on 22nd September. One west of lake on 23rd November. Two (pair) over conifer woodland on 24th February. One hunting on 20th March.

Sparrowhawk is considered to breed on site.

Buzzard

Four in loose group in central and western sectors of site on 21st September. One to two seen in all other months other than January. Displaying pair on 15th February.

Buzzard is considered to breed on site.

Kestrel

Single birds recorded on site in most surveys – usually hunting over cutaway bog and remnant bog habitats. Two together on 23rd October.

Kestrel is expected to breed locally.

Merlin

One Merlin (female) was observed perched on a peat pile in the north sector of the site on 12th December – present for at least 25 minutes and then lost sight off.

A male bird was recorded hunting over cutaway bog in western end of site on 15th February 2016.

Merlin had been recorded on site several times in the previous winter and is probably a

regular wintering bird in the wider area.

Peregrine

Peregrine was recorded on two dates through the winter, as follows:

One (female) observed plucking a large prey item (possibly Lapwing) on bare peat bank in northern part of site on 21st September 2015 – probable same bird seen later in day flying eastwards over lake (50-100 m height).

One (probable male) flew north high (>100 m) over site on 23rd November.

Golden Plover

Golden Plover was recorded on four dates during winter 2015/16, as follows:

On 21st September, a flock of 12 was roosting on lake with Lapwing.

On 23rd October, a flock of c.30 flew west across site at estimated height of 150 m.

On 12th December, a flock of c.120 in field to northwest of site.

On 15th February, flock of 16 resting on bare peat in northern sector of site.

As in winter 2014/15, were recorded passing over the site and roosting on peat. Numbers however were relatively low.

Lapwing

Lapwing was recorded on four dates during winter 2015/16, as follows:

On 21st September, a flock of c.120 was roosting on lake.

On 22nd October, a flock of up to 25 birds flew southwest over site at height of c.100 m.

On 23rd November, a flock of c.40 birds drifted low (<10 m) across lake and continued eastwards – these birds had probably been roosting at the lake.

In February, a flock of c.80 birds was at the lake on 15th and 12 birds flew northeast over site on 24th.

Three birds were at the lake on 20th March, with territorial behaviour observed.

Woodcock

Three Woodcock were flushed from edge of conifer woodland and scrub on 15th December, and two were flushed from same general area on 16th January.

Black-headed Gull

Three Black-headed Gulls in breeding plumage were at the lake in eastern sector of the site on 24th February and eight there on 20th March (latter showing territorial behaviour).

Black-headed Gull is a breeding species and was not recorded during main winter period.

Kingfisher

One perched at lake on 22nd September.

Potential for other target species

It is considered unlikely that Clongawny bog has significant potential to support other species of conservation importance.

Other species of note

Little Grebe – one or two birds observed on lake in several of the winter surveys – displaying behaviour from February onwards.

Great Crested Grebe – at least one bird on lake in February, pair in March. Considered prospecting breeding birds.

Snipe – recorded in small numbers (1-10) on most site visits. A total of 38 recorded along transects and at lake on 24th November.

Jack Snipe – one recorded near lake on 24th November.

Skylark – seven in September and total of nine along transects in October. Displaying birds (10+) on site in March.

Robin – present through winter in scrub and woodland habitats. Most records of single birds.

Mistle Thrush – party of 22 in western area of site on 22nd September. Small numbers (<3) on several other dates.

Goldcrest – present in scrub and woodland habitats.

Stonechat – recorded in September and October, and from January to March. Displaying pairs at three locations in March.

Starling – recorded on several survey dates, usually in small numbers (<10) but with a large flock of estimate 5,000+ birds passing over site in late afternoon on 16th January.

Meadow Pipit – present in marginal habitats through winter in relatively low numbers. Respective totals of 22, 15 and 18 along transects in October, January and March. Loose flock of c.40 birds on 22nd September. Breeding display by some birds in March.

Linnet – recorded in small numbers (up to 8) on several dates, with one large flock of 20+ on 22nd September (along with 50+ Chaffinches).

General discussion

The 2015/16 survey supports the conclusion of the 2014/15 winter survey that Clongawny Bog has relatively low potential for supporting wintering bird species of conservation importance.

As in the previous winter, the lake supported relatively low number of birds, including Whooper Swan, Teal, Mallard, Little Grebe, Golden Plover, Lapwing and Kingfisher. Prospecting Black-headed Gulls and Lapwing (both Red-listed) were present at the lake in March. Presently the lake has poorly developed aquatic and marginal vegetation.

Whooper Swan, Golden Plover and Lapwing were recorded passing over the site, with the latter species also roosting on bare peat. Again, as in the previous winter the numbers involved were relatively low and there was no spatial or temporal pattern in the movements. It is likely that these were birds moving locally, probably linked with Drinagh Bog and adjoining areas rather than the large concentrations of the Shannon/Little Brosna systems.

Clongawny Bog provides good habitat for birds of prey, with Hen Harrier, Merlin and Peregrine (all Annex I species), as well as Sparrowhawk, Kestrel, and Buzzard all recorded.

The site supports a range of other species of conservation interest. Woodcock (Red listed)

was recorded in mid winter, while Meadow Pipit occurs throughout much of the site (both Red listed on basis of breeding populations). Other Amber listed species recorded on site included Snipe, Jack Snipe, Skylark, Mistle Thrush, Stonechat and Linnet.

3.3.4 Evaluation and Rating of Clongawny Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Clongawny Bog in winters 2014/15 and 2015/16:

EU Birds Directive Annex I listed species

- Whooper Swan (both winters)
- White-tailed Eagle (2014/15 only)
- Hen Harrier (2015/16 only)
- Merlin (both winters)
- Peregrine (both winters)
- Golden Plover (both winters)
- Kingfisher (both winters)

Red Listed species (after Colhoun & Cummins 2013)

- Wigeon (both winters)
- Lapwing (both winters)
- Woodcock (2015/16 only)
- Black-headed Gull (both winters)
- Meadow Pipit (both winters)

Amber Listed species (after Colhoun & Cummins 2013)

- Little Grebe
- Great Crested Grebe
- Teal
- Sparrowhawk
- Kestrel
- Snipe
- Jack Snipe (2015/16 only)
- Skylark
- Mistle Thrush
- Robin
- Stonechat
- Goldcrest
- Starling
- Linnet

All Amber listed species recorded in both winters other than Jack Snipe

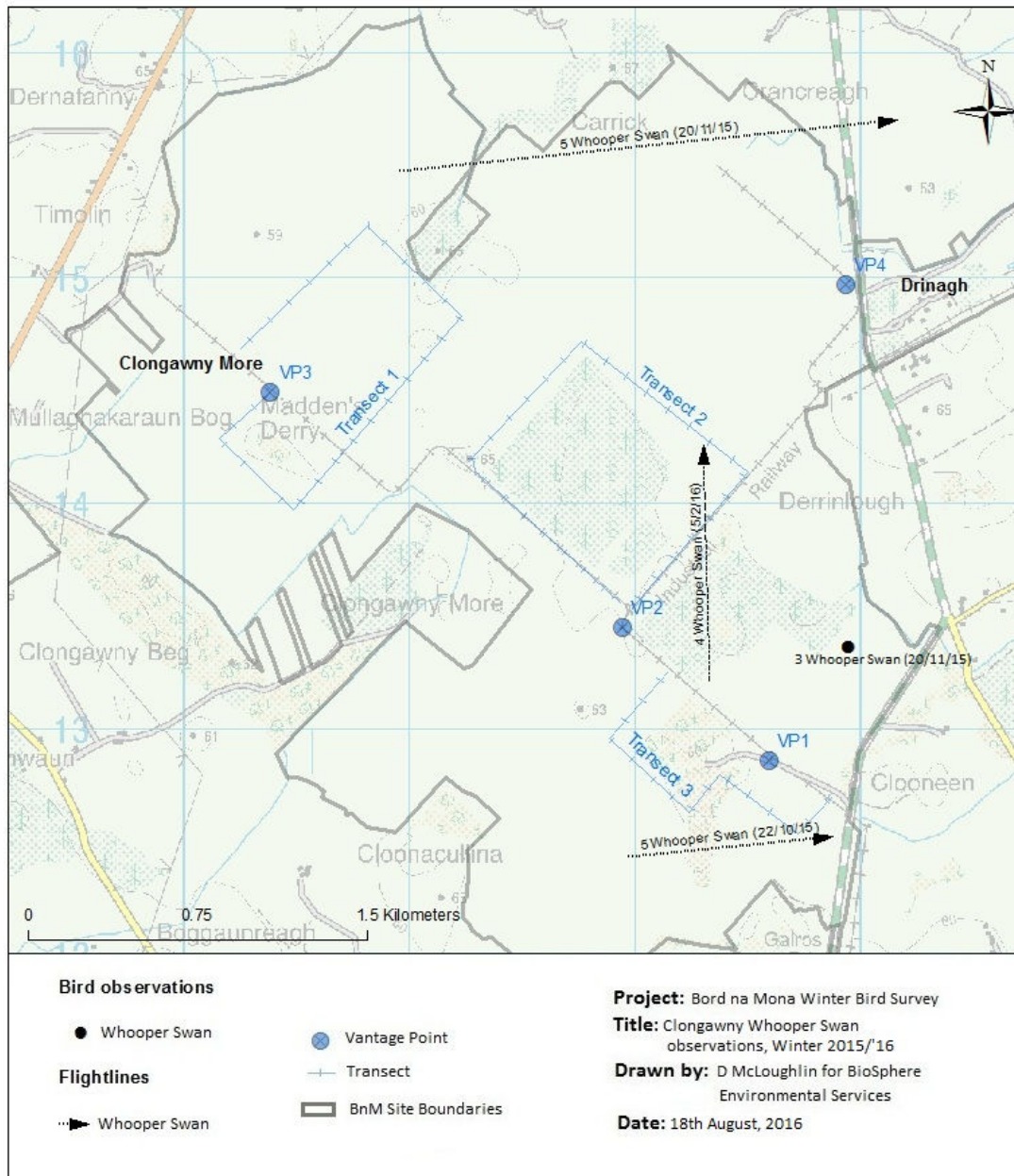
While a range of species of conservation importance was recorded on Clongawny Bog during

the surveys, the site has limited potential for supporting significant populations of wintering birds of conservation importance due partly to the extent of the site in commercial production. Also, the lake in the eastern part of the site is still in an early development phase and appears to have low feeding potential for swans and other wildfowl.

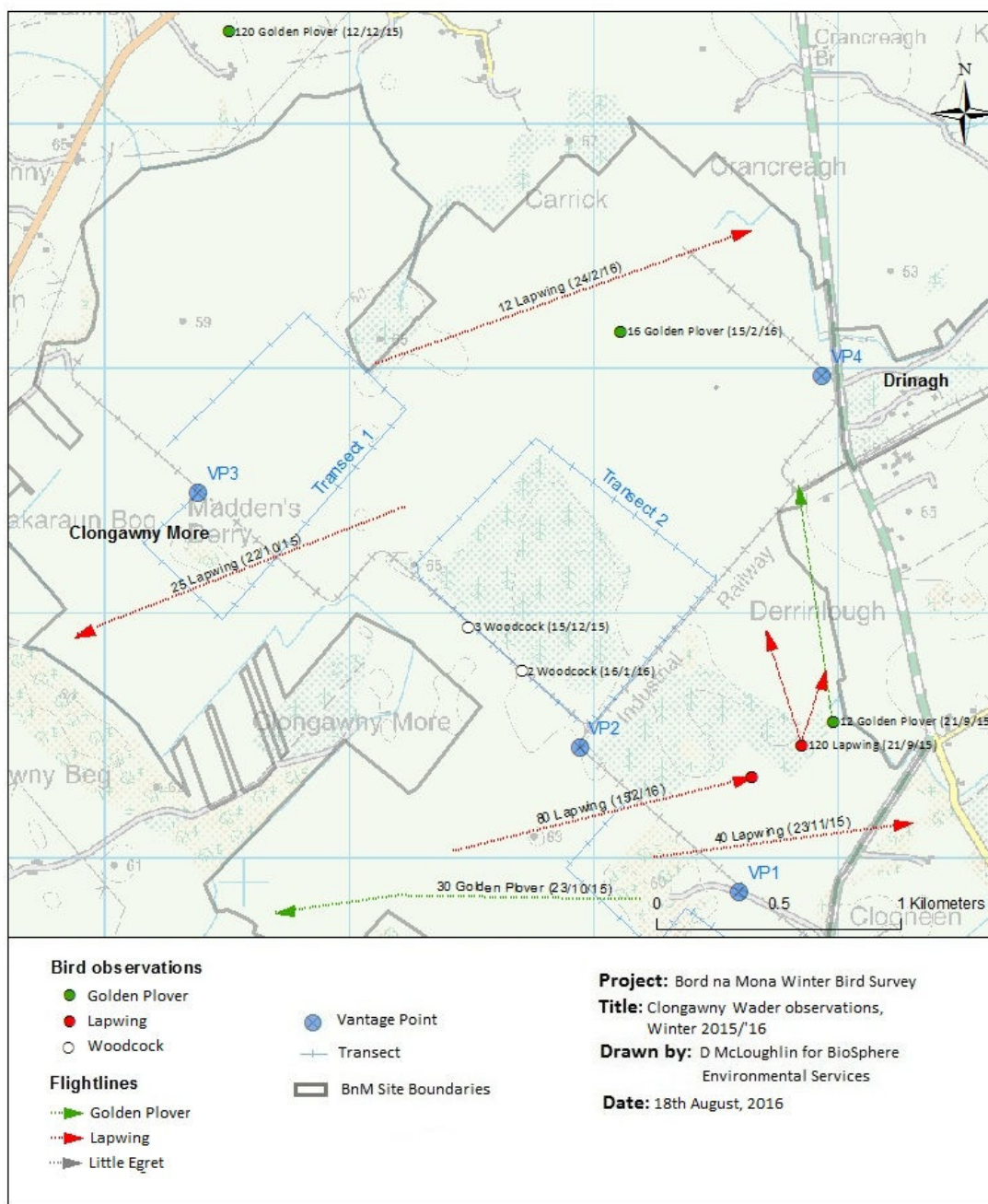
However, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, including Hen Harrier and Merlin, as well as habitat for Woodcock, Meadow Pipit and various Amber listed species such as Snipe and Stonechat.

On the basis of the results of the winter surveys in 2014/15 and 2015/16, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Clongawny Bog.

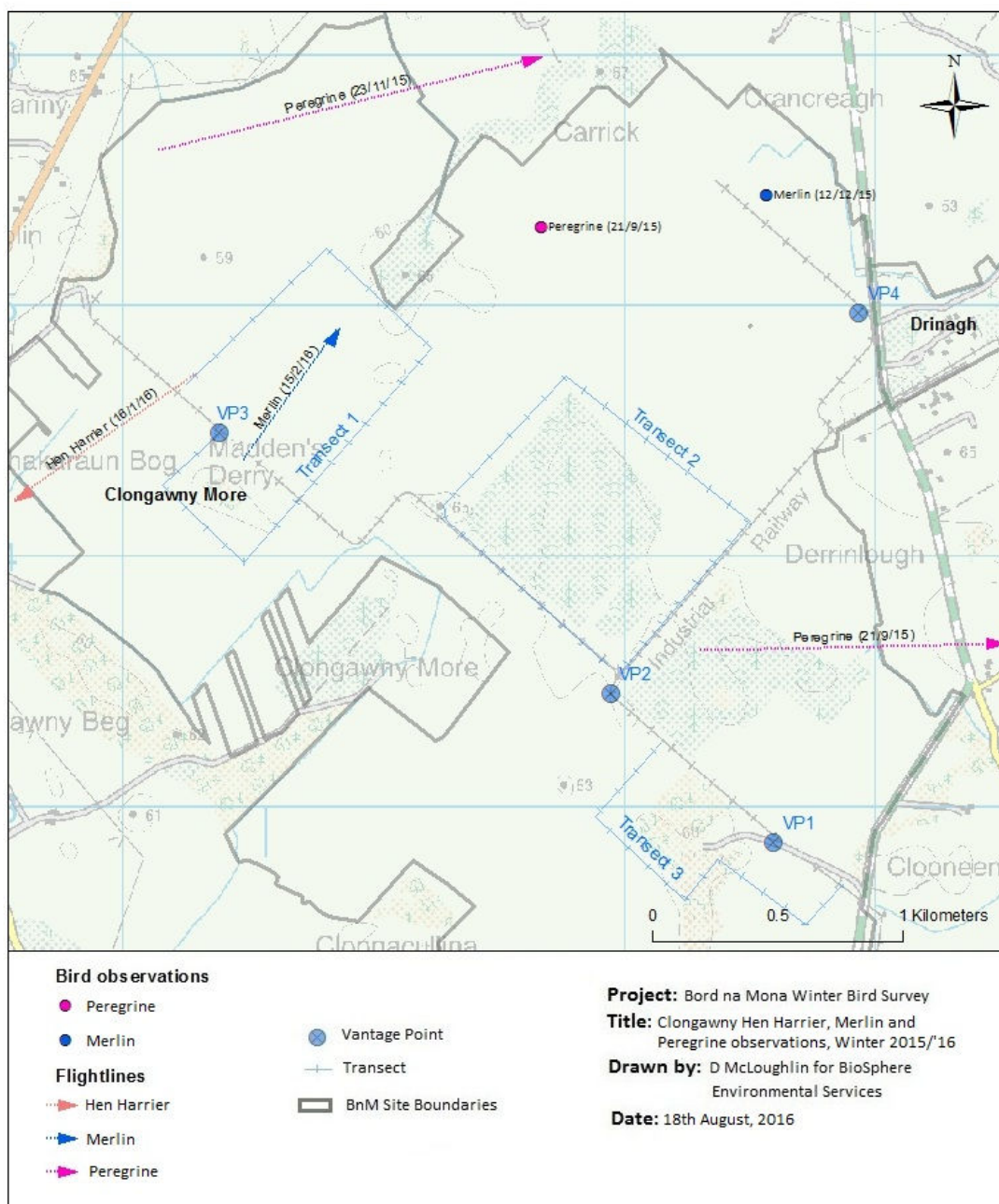
Clongawny Map 1: Map showing transect and vantage point locations, with Whooper Swan records.



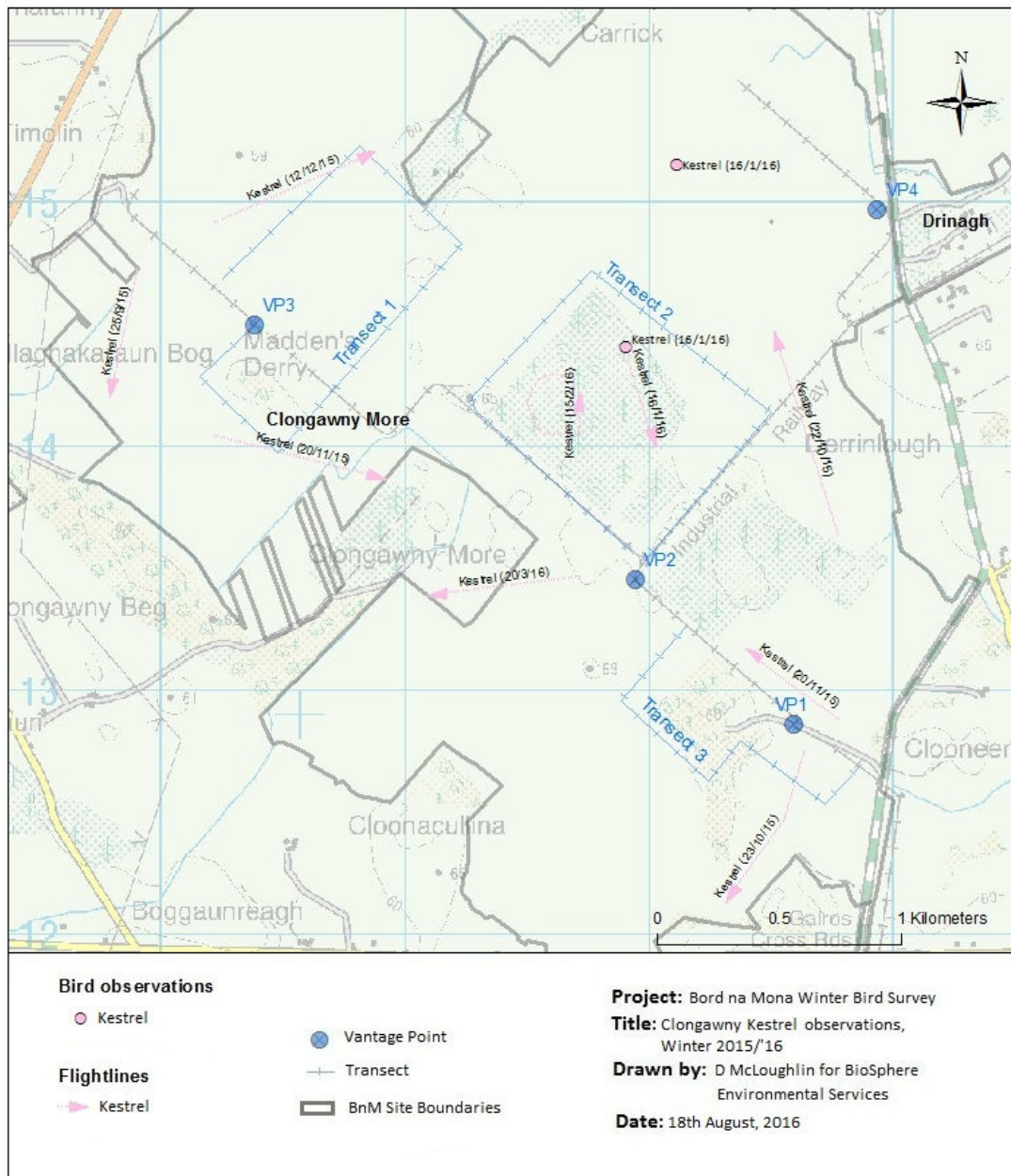
Clongawny Map 2: Map showing transect and vantage point locations, with Golden Plover, Lapwing and Woodcock observations.



Clongawny Map 3: Map showing transect and vantage point locations, with Hen Harrier, Peregrine and Merlin records.



Clongawny Map 4: Map showing transect and vantage point locations, with Kestrel records.



Clongawny Map 5: Map showing transect and vantage point locations, with Buzzard and Sparrowhawk records.

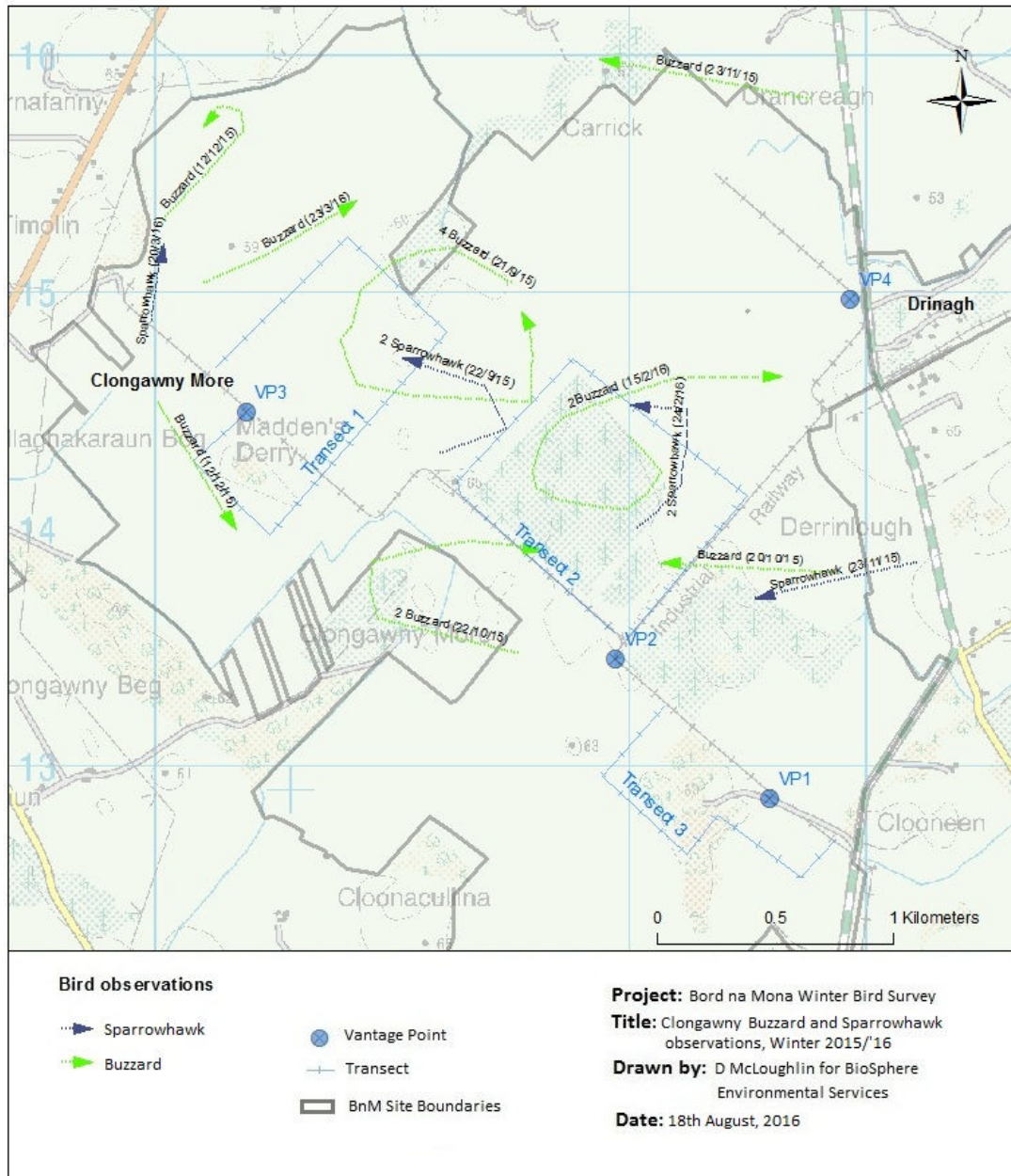




Plate 1. Clongawny Bog: view of shallow lake in eastern part of site. While useful habitat, the lake attracts relatively few wetland birds.



Plate 2. Clongawny Bog: much of site is bare or partial bare peat. Developing scrub is present in some areas. View is in western part of site looking near VP3.

3.4 Drinagh Bog

3.4.1 Site description

Drinagh Bog is located approximately 1.5 km to the southeast of Cloghan village. It is connected to Clongawny Bog (to the west) by a rail link and the two sites are separated by the N62 road. The R357 runs just a little north of the site. The Silver River skirts the eastern boundary.

Drinagh is divided into 4 main sections by the topography of the site and a railway on an embankment that crosses from the west to the east side of the site. The western section is separated from the eastern section by a ridge of high ground that partially divides the site (Mannin's Hill) and then by a block of conifer plantation that has been planted on the cutaway bog on this higher ground.

The north-east section is zoned for biodiversity and contains a substantial portion of open water. This area has developed into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the ponds and lakes, particularly along the eastern side of the track. The water is shallow and there are frequent patches of emergent Common Reed and Bulrush. The lakes also contain linear islands or ridges of remnant peat vegetated with various communities, including developing Birch scrub. The south-east section of the site is a core trial area to manage cutaway bog specifically for breeding waders (a project by Bord na Móna in association with BirdWatch Ireland commenced in 2010). It essentially comprises a mosaic of emerging and open Birch scrub and a Soft Rush dominated pioneer community. The western sector of the site is mainly in commercial production and comprises bare peat. However, there are substantial areas of regenerating cutaway, with wetland and scrub habitats.

Drinagh Bog is part of the Lough Boora Parklands and adjoins further Bord na Móna lands to the east. Agricultural land, mostly in pasture, is the main landuse to the north and south of Drinagh.

3.4.2 Survey locations

Transect 1 is a 2 km length alongside the rail track running southwards from the local road along the north boundary of the site. It passes through regenerating cutaway bog habitats and the main wetland area.

Transect 2 commences at the southwest corner of the mineral ridge in the southern part of the site and runs north to the main rail line which crosses the site from east to west. It skirts the line for 1 km (westwards) and continues on a 'square' shaped route southwards and then westwards back to the start. The habitats traversed are scrub, regenerating heath and poor fen, and bare peat.

Vantage Point 1 is located just off the local road which skirts the southeast side of Cloghan Hill. This elevated viewpoint looks over the eastern sector of the site, with focus on the lake and wetland habitats.

Vantage Point 2 is also located just off the local road which skirts the southeast side of Cloghan Hill. However, this is looking south over the north-western quadrant of the site.

Vantage Point 3 is located along the southwest edge of Mannin's Island and gives a view over the south-western sector of the site (mostly bare peat).

3.4.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Drinagh Bog are compiled in Appendix 2.

Target species recorded

Whooper Swan

Whooper Swans were scarce on site during the winter, with birds recorded on only six dates between October and early-December and with a maximum of 11. In addition, a small flock was present on flooded bog off-site in February. The records were as follows:

On 21st October, four were present on wetland towards north-eastern boundary of site.

On 22nd October, 11 swans were present in north-east sector, including seven seen flying in from north.

On 19th November, four flew in to site from the east but did not settle and flew northwards out of site.

On 20th November, a flock of five flew into southeast sector and landed on wetland. Later same day five were seen flying southwest over VP3 and out of site.

On 4th December, two flew up from northeast sector and flew west and then south, landing in southwest sector of site.

On 10th December, four were present feeding on wetland in northeast of site. Six later flew in from north and landed in western sector.

On 10th February, up to 21 Whoopers were present feeding on flooded bog to the northeast of the site (approximately 1 km from site).

Compared to other winters, the numbers of swans at Drinagh in winter 2015/16 were low. This is likely to be due to the concentration of large numbers of swans at nearby Noggusboy Bog for much of the winter, with birds feeding and roosting on site there. Counts from Noggusboy were as follows:

20 th November 2015	103 WS
11 th December 2015	223 WS
15 th January 2016	247 WS
4 th February 2016	131 WS

Wigeon

A flock of 33 Wigeon was present on the main lake in the northern sector of the site on 16th November. Five were recorded on both 4th December and on 21st January, with eight on 10th February.

Wigeon is a scarce winter visitor to Drinagh and in relatively small numbers.

Teal

Teal was recorded on site only in December, as follows: flock of 10 on 8th and total of 25 on 10th.

While some Teal may have gone un-noticed due to cover of swamp vegetation, the species was notably scarce in winter 2015/16 compared to the previous winter.

Mallard

Mallard was recorded on site on all site visits though was scarce in December and January. The highest number (55) was recorded on 16th November. By March, several breeding pairs were present.

Tufted Duck

Tufted Duck was recorded on the main lake in February (2) and March (18) – these were returning breeding birds.

Little Egret

One flew west to east across southern sector of site on 10th December.

Hen Harrier

Hen Harriers were recorded on five dates through the winter, as follows:

On 26th September, a female was observed hunting over reedbeds in the northeast sector of the site – this bird was tagged (red & green) and was subsequently found to be oldest known tagged bird in Ireland.

On 20th November, the tagged female was recorded hunting in the northeast sector of the site, with a male bird recorded hunting in the western sector of the site.

On 10th December, a male was observed hunting in the southern part of site (west of VP3).

On 18th January, a female bird (not the tagged individual) was observed hunting (<10 m) in the north east sector of the site.

On 24th March, a male bird was hunting (<10 m) over reedbeds in the northeast of the site.

The series of records indicates that there was at least three individual Hen Harriers wintering in the area and using Drinagh Bog for hunting purposes (as was the case in the previous winter). While there was no evidence of on-site night roosting, it is considered that there is potential for roosting in the eastern sector of the site.

Sparrowhawk

One soaring just off-site near VP2 on 10th February. Pair soaring over southeast area of site on 24th March.

Sparrowhawk may breed on site.

Buzzard

Recorded in all months except October and November, with two together on several dates and three in February and March.

Buzzard is considered to breed possibly on site but at least in the local area.

Kestrel

Kestrel was recorded on site in all months between December and March. Most records were of single birds but two were recorded together on 10th February (off-site).

Kestrel is expected to breed locally.

Merlin

One was recorded just offsite (near VP2) on 8th December. One was observed flying eastwards across the northeast sector of the site on 21st March.

With Merlin records also from Clongawny Bog, the species is considered to be a scarce winter visitor to the area.

Peregrine

Peregrine was recorded on several dates through the winter, as follows:

On 19th November, one flew across site at a low height (<10 m).

On 4th December, one flew low (<15 m) over bog and hedge alongside bog close to VP2.

On 18th January, one was observed perched on open bog to southwest of VP2.

On the basis of the above records and those in the previous winter, Peregrine is considered to be an occasional visitor to Drinagh Bog.

Golden Plover

Golden Plover were recorded between September and January, as follows:

On 26th September, a flock of 58 circled to the southwest of VP3 and landed on bare peat towards the west edge of the site (near the factory).

On 20th October, there was constant activity in south sector of site (from VP3), with a minimum of 345 birds present. The flock was flying and landing on the bare peat. Smaller numbers were present on 21st October (inc. flock of 77+) and on 22nd October (inc. flock of 17).

In November, small numbers were recorded, with the largest flock of 24 on 19th. On same date, a flock estimated at 200+ birds was observed off-site flying westwards.

Few birds were recorded in December (max. number 8 on 4th).

In January, only one flock of 30 birds was recorded on 21st.

Golden Plover were not recorded on site in February or March.

As in winter 2014/15, the above series of records indicates that Golden Plover pass over the site and also land on the bare peat.

Lapwing

Lapwing was recorded quite frequently through the winter. However, many of the records were of relatively small parties flying across the site. Records on-site of over 100 birds were as follows:

On 26th September, an estimated 800-1,000 over wetland area of site in northeast – birds circling (up to 100 m) and landing during period of vantage point watch.

On 22nd October, a flock of 122 circled over site (up to 150 m) and landed.

On 16th November, a flock of 91 was seen circling over the east side of the site.

On 8th December, a total of 78 was recorded flying (50-200 m) E-W over central area of site.

On 18th January, an estimated 320 was present over the wetland area of the site – these were circling and landing.

On 11th February, 90+ were roosting on spit in wetland. Later, flock of 105 flew over site (120-180 m height).

Territorial birds (estimated 3-4 pairs) were present in wetland in March.

Black-tailed Godwit

A bird in summer plumage was present in wetland area in northeast on 21st March. This is considered a bird on migration.

Redshank

Up to 6 birds were present in wetland area on 21st March – some were showing breeding behaviour.

Black-headed Gull

On 21st March, three adult birds were present on spit in wetland area (west of railway track).

Potential for other target species

It is considered that the Drinagh bog site has significant potential to support the following during winter:

Woodcock

Kingfisher (one had been recorded on 6th April 2010)

It is noted that there have been two records of Greenland White-fronted Goose at Drinagh Bog: two on 19th December 2011 were noted as being the first for the Boora wetlands (Heery 2012), while a flock of 45 was recorded at dawn on 2nd February 2012 during surveys for the Cloghan Wind Farm.

Other species of note

Mute Swan – up to 3 in September and October but absent for main part of winter. Five birds in late March.

Great Crested Grebe – one in February, pair in March.

Little Grebe – present on lake through the winter, with peak of 14 on 26th September. At least six pairs displaying on 21st March.

Water Rail – heard in October, December and March (at least 3 birds in latter month).

Ringed Plover – one on 21st March (returning breeding bird).

Snipe – recorded through the winter, mostly single birds though 14 flushed in north-eastern wetland on 20th September.

Skylark – recorded on site in September (6) and October (2). Singing birds present in March.

Robin – present in scrub habitat through much of site. Most records of single birds.

Stonechat – 1-2 birds present throughout winter, with two displaying pairs in March.

Meadow Pipit – sparsely distributed on site through winter period. Flock of c.30 in September. Displaying birds present in late March.

Golderest – present in scrub and woodland habitats

Starling – large flocks as follows: estimated 3,000-5,000 going to roost in woodland/scrub towards southeast boundary of site on 4th December; c.3,000 in same area on 18th January and 2,000+ on 8th February.

Linnet – flock estimated at 60 birds flew over north end of site on 20th September. Small

numbers (<10) on three dates during winter.

General discussion

The 2015/16 survey supports the conclusion of the 2014/15 winter survey that Drinagh Bog has good potential to support a range of wintering bird species of conservation importance.

While Whooper Swan numbers were notably low in winter 2014/15, previous records show that the site can support larger numbers at times though such records are only occasional. The swans at Drinagh are considered part of the (at times) large Boora Parklands population and higher numbers may occur at Drinagh when there is disturbance at other sites. In particular, the lakes at the site provide good roost areas. It is noted that regular flightlines to and/or from Drinagh bog were not detected in either of the winter surveys.

Mallard and Teal were the main duck species recorded and the numbers of these may be under-estimated due to the cover provided by the developing swamp vegetation at the shallow lake. The occasional occurrence of Wigeon is also noted.

Golden Plover and Lapwing pass over the site fairly regularly and on occasions land in the wetland area and/or on bare peat. Numbers of both species were, however, relatively low.

Other wetland birds which occur include Little Grebe, Water Rail, Snipe, Moorhen and, on one occasion, Little Egret.

Drinagh Bog provides good habitat for birds of prey, with Hen Harrier regular through the winter, as well as Sparrowhawk, Buzzard and Kestrel. Peregrine was recorded several times, including birds perched within the site. Merlin is an occasional winter visitor.

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.

Other Amber listed species recorded on site included Skylark, Stonechat, Starling and Linnet.

3.4.4 Evaluation and Rating of Drinagh Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Drinagh Bog in winter 2014/15:

EU Birds Directive Annex I listed species

Whooper Swan (both winters)
Little Egret (2015/16 only)
Hen Harrier (both winters)
Merlin (2015/16 only)
Peregrine (both winters)
Golden Plover (both winters)

Red Listed species (after Colhoun & Cummins 2013)

Wigeon
Tufted Duck
Lapwing
Redshank (breeding birds)
Black-headed Gull (prospecting birds)
Meadow Pipit

Amber Listed species (after Colhoun & Cummins 2013)

Little Grebe
Great Crested Grebe
Mute Swan
Teal
Sparrowhawk
Kestrel
Water Rail (2015/16 only)
Snipe
Black-tailed Godwit (2015/16 only)
Skylark
Robin
Stonechat
Goldcrest
Starling
Linnet

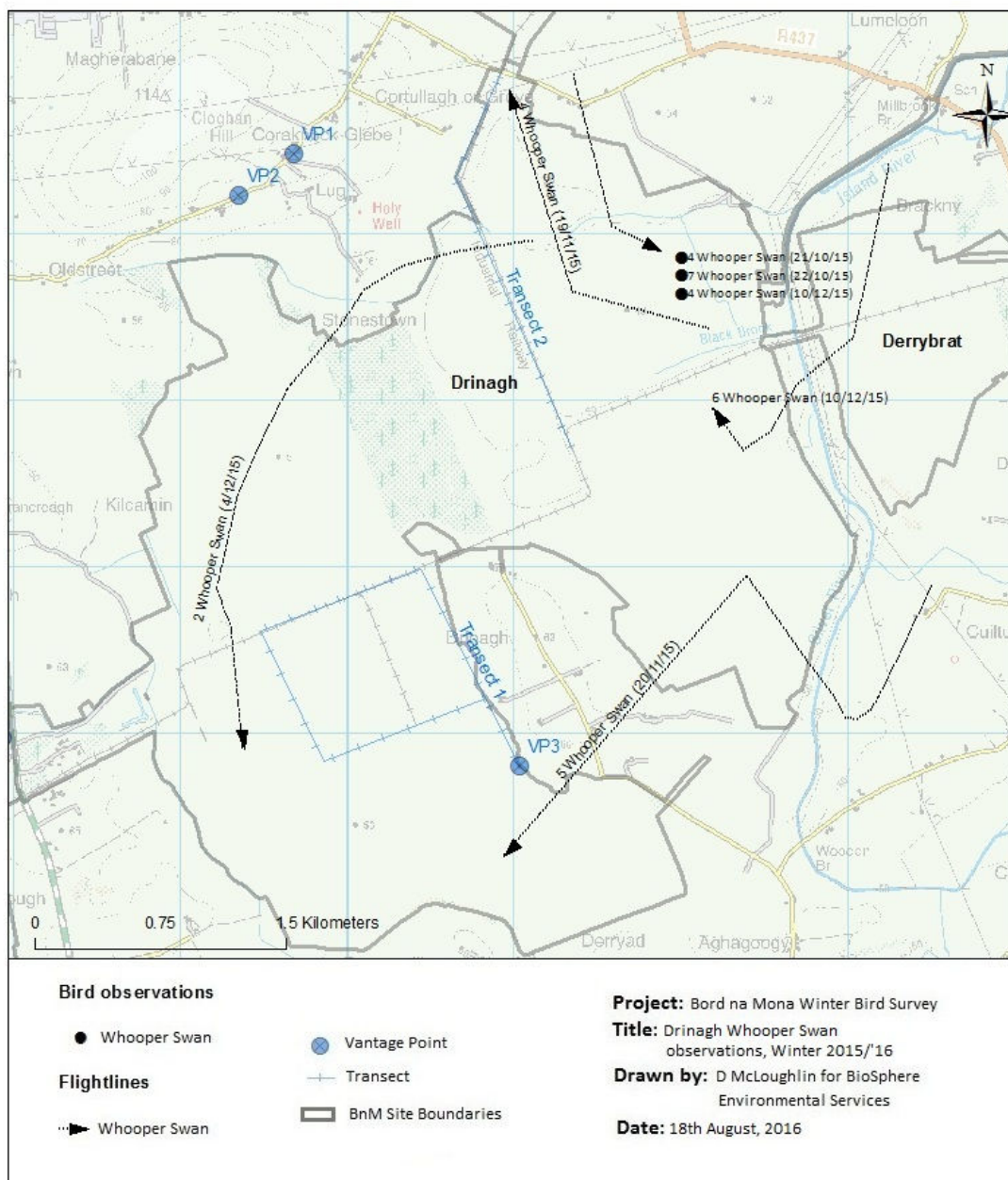
All Amber listed species recorded in both winters other than Water Rail and Black-tailed Godwit

Overall, the site has habitats suitable for supporting a wide range of wintering birds. Of particular note is the developing wetland habitat and especially the substantial area of open water, which support a wetland bird community. While the Whooper Swan numbers recorded are well below the threshold for National Importance (i.e. 150), the swans occur fairly regularly within the site and the site has potential to support higher numbers at times.

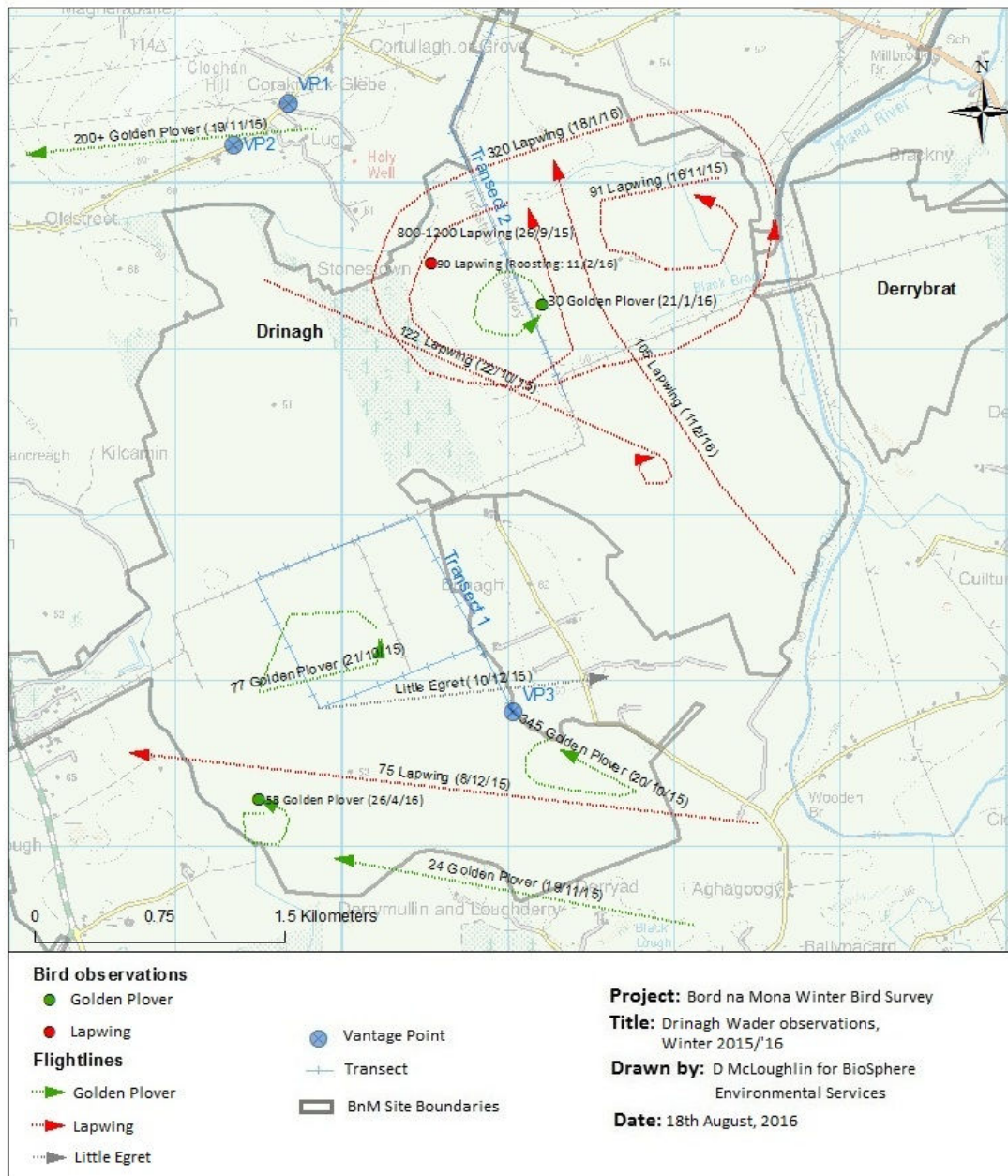
The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harriers, and generally the site provides good habitat for birds of prey.

On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red and Amber listed species, it is recommended that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.

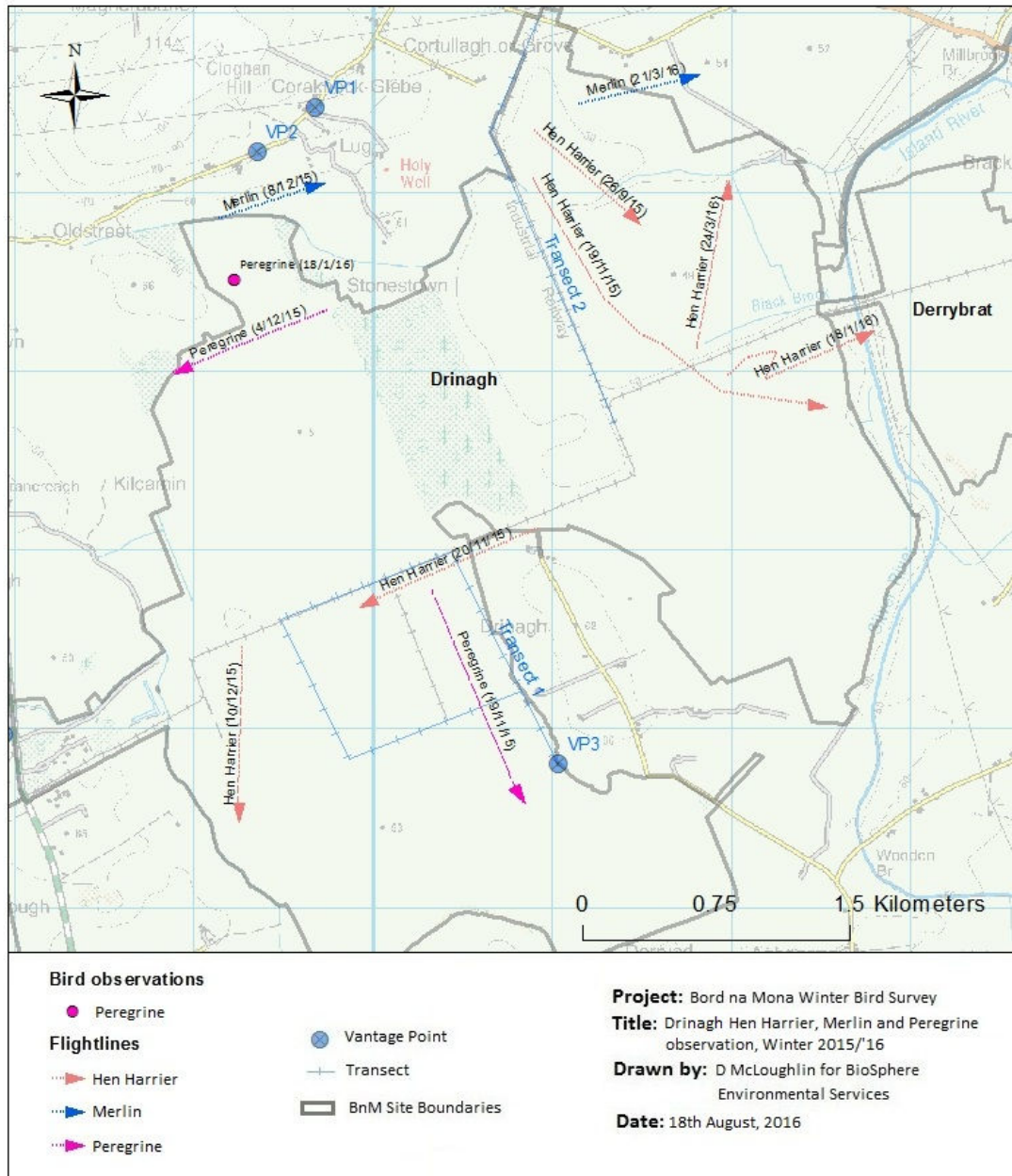
Drinagh Bog Map 1: Map showing transect and vantage point locations, with Whooper Swan records.



Drinagh Bog Map 2: Map showing transect and vantage point locations, with Golden Plover, Lapwing and Little Egret observations.



Drinagh Bog Map 3: Map showing transect and vantage point locations, with Hen Harrier, Peregrine and Merlin observations.



Drinagh Bog Map 4: Map showing transect and vantage point locations, with Buzzard, Sparrowhawk and Kestrel observations.

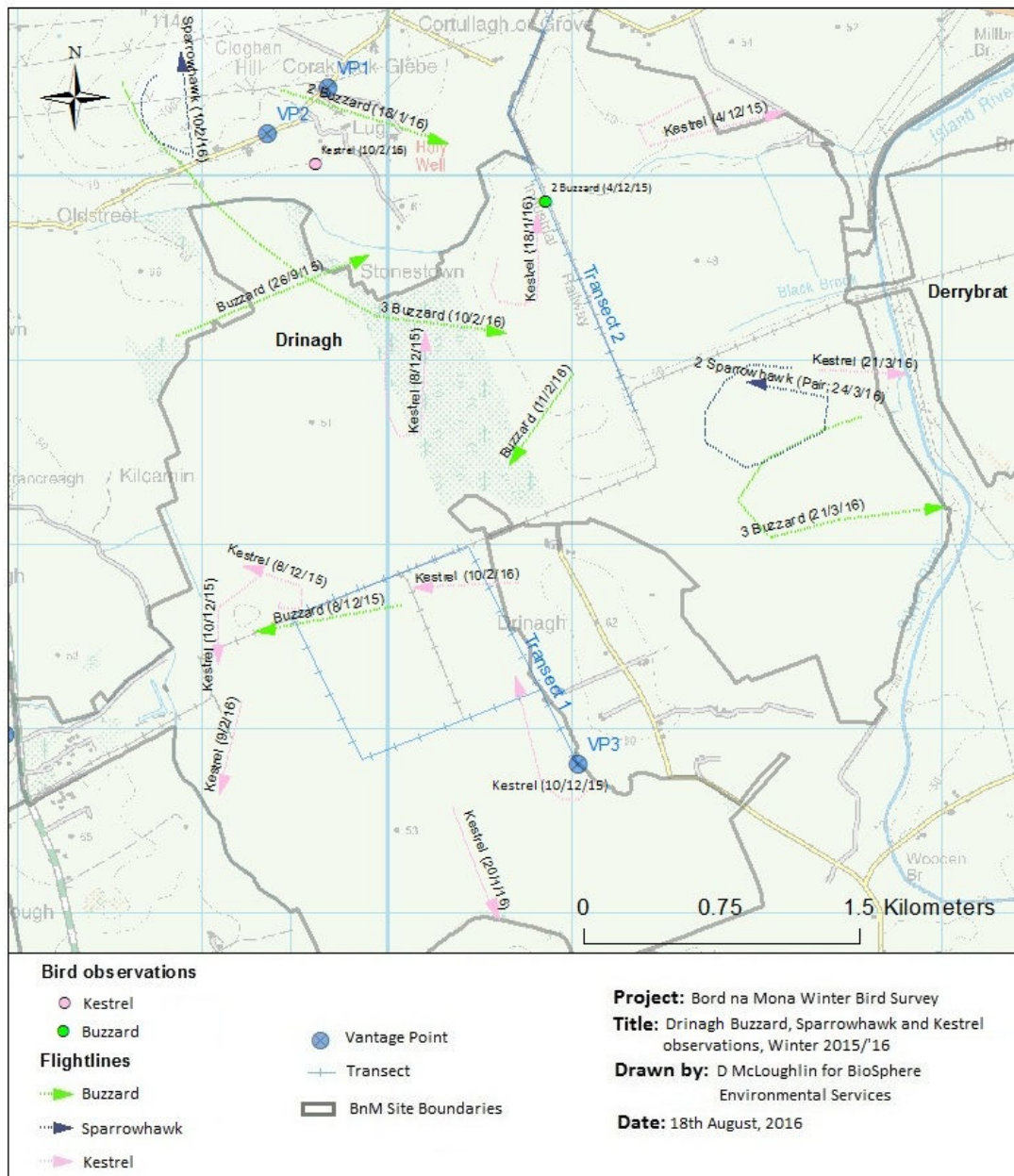




Plate 3. Drinagh Bog: view from VP1 over eastern part of site which is the biodiversity area.



Plate 4. Drinagh Bog: view of wetland in NE of site (looking eastwards from track).



Plate 5. Drinagh Bog: view from VP2 over northwestern part of site, showing bare peat and scrub habitats.



Plate 6. Drinagh Bog: view from VP3 over southern part site. This sector of site is largely still in commercial production.

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Website of Department of Arts, Heritage & the Gaeltacht: www.npws.ie

APPENDIX 1

Scientific Names of Bird Species

Grey Heron	<i>Ardea cinerea</i>
Whooper Swan	<i>Cygnus cygnus</i>
Mute Swan	<i>Cygnus olor</i>
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>
Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</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>
Golden Plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Snipe	<i>Gallinago gallinago</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>
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>

BORD NA MONA
WINTER BIRD SURVEY, 2016-2017
CLONGAWNY, DRINAGH BOG GROUP

DRAFT REPORT

NOVEMBER 2017

Prepared for

Bord na Móna

by

Biosphere Environmental Services
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APPENDICES

Appendix 1. Scientific names of bird species

Appendix 2. Results for Vantage Point watches for Clongawny Bog & Drinagh Bog (separate file)

EXECUTIVE SUMMARY

- A baseline study of wintering birds associated with the Bord na Móna Clongawny and Drinagh Bog Group was carried out between October 2016 and March 2017. This followed similar studies in the previous two winters (2014/15 & 2015/16).
- A large part of Clongawny Bog is still in active production or is classified as production related cutaway. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.
- Drinagh Bog is part of the Lough Boora Parklands. The north-east section is zoned for biodiversity and contains a substantial wetland complex of habitats including open water and reed beds. This area is developing into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the lakes. The western sector of the site is mainly in commercial production and comprises bare peat. Much of the remainder is regenerating cutaway bog with pioneering wetland habitats and scrub. The site contains a block of conifer plantation.
- The study included a desk review and consultations with relevant agencies, namely National Parks & Wildlife Service (local management staff), BirdWatch Ireland and the Irish Peatland Conservation Council. Field methods employed were a combination of transect surveys, vantage point watches and focused surveys for wetland birds. Monthly vantage point watches achieved a minimum of 36 hours of observations over each of the two bog sites.
- A small part of Drinagh Bog overlaps with the Lough Coura pNHA. There are a further 19 designated sites within a 15 km radius of Clongawny and Drinagh Bogs: 6 SPAs, 8 SACs, 1 NHA and 4 pNHAs.
- It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study. In a wider context, there is quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.
- Brief descriptions of the two bog sites are given, followed by details of target species recorded, the potential for other target species, other species of note recorded and an overview of the value of the site for wintering birds. A map showing locations of sampling transects and vantage points, plus flight lines of target species where relevant, is presented. Representative photographs are included.
- Principal target species recorded within or over the sites, and in the immediate surroundings, were as follows: Whooper Swan, Teal, Wigeon, Little Egret, Golden Plover, Lapwing, Sparrowhawk, Buzzard, Hen Harrier, Merlin, Peregrine and Kestrel.

- Meadow Pipit, a Red listed species, was recorded widely within the sites. Woodcock (also Red listed) was recorded at both sites.
- The following Amber listed species were recorded within the sites: Mute Swan, Little Grebe, Great Crested Grebe, Sparrowhawk, Kestrel, Water Rail, Snipe, Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest, Starling and Linnet.
- Whooper Swans (Annex I species) were recorded flying over or within Clongawny Bog on four dates during the winter though in small numbers (maximum 8). Whoopers were more regular at Drinagh Bog, with records on various dates and especially in October and November. The largest part was of 42.
- Small numbers of Teal, Wigeon and Mallard occur on the lake in the eastern part of Clongawny Bog, with these duck species more regular at Drinagh Bog though still in relatively low numbers.
- Little Egret (Annex 1 species) was recorded on both sites (single birds).
- Hen Harrier was recorded at Drinagh Bog on six dates through the winter, involving at least three individuals. There was no evidence of night roosting on site though there is potential habitat. There was no records of Hen Harrier at Clongawny Bog though one had been recorded in the previous winter.
- There were two sightings of Merlin (Annex I species) at Drinagh Bog (merlin had been recorded at Clongawny in previous winter). Peregrine (Annex I species) was recorded at both bog sites.
- Golden Plover (Annex I species) and Lapwing (Red-listed) were recorded flying over the two bog sites through the winter, with records of both species landed within Drinagh. Numbers were generally low and considerably less than the respective thresholds for national importance.
- Meadow Pipit, a Red listed species, is widespread on the sites during winter though mostly in fairly low numbers.
- Woodcock, a further Red listed species, was recorded at both sites.
- Various Amber listed use the sites for feeding – these were Little Grebe, Great Crested Grebe (prospecting breeding birds), Sparrowhawk, Kestrel, Snipe, Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest and Linnet.
- Overall, Clongawny Bog has limited potential for supporting wintering birds of conservation importance due partly to the extent of the site in commercial production. Also, the lake in the eastern part of the site appears to have low feeding potential for swans and other wildfowl. However, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, as well as Meadow Pipit and various Amber listed species. From the results of the results of the three winter surveys from 2014/15 to 2016/17, it is recommended that a rating of

Local Importance (higher value) is considered appropriate for wintering birds at Clongawny Bog.

- Drinagh Bog has habitats suitable for supporting a wide range of wintering birds. Of particular note is the substantial complex of wetland habitat in the northeast area of the site, which supports a wetland bird community. While the Whooper Swan numbers recorded are well below the threshold for National Importance (i.e. 150), the swans occur fairly regularly within the site and the site has the potential to support higher numbers at times. The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harriers. On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red and Amber listed species, it is considered that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.

1.0 INTRODUCTION

1.1 Background to Project

Bord na Móna is considering using some of its bogs in the midlands for large scale 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 issued a request for a winter bird study (2016/17) on the avian species and populations either using, or likely to use, the Clongawny / Drinagh group of bogs, in County Offaly. This is a follow-up study to the winter bird survey completed at Clongawny and Drinagh bogs for the 2014/15 winter (report by BES, October 2015) and 2015/16 winter (report by BES, August 2016). The previous studies and the present study will form the key baseline data in the assessment of the impact on birds of potential wind farm construction and operation.

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 following mapping was supplied for each bog group by Bord na Móna:

- Site Location Map (Discovery map base)
- Orthophoto View (from 2006)
- Land Use Map (prepared by BnaM)

A copy of *Birds on Cutaway Peatlands: Baseline Breeding Bird Population Survey* (2011) by Dr. Alex Copland, BirdWatch Ireland (carried out for Bord na Móna) was supplied for reference.

A contract to carry out the required work was awarded to BioSphere Environmental Services in September 2016.

2.0 SURVEY METHODS

2.1 Desk Review and Consultations

In addition to a perusal of the general ornithological literature on Ireland's birds, including the annual journal *Irish Birds*, the following key sources of information (written and/or electronic) were accessed for references to the study area:

Boland, H. & Crowe, O. (2012) *Irish Wetland Bird Survey: Waterbird Status and Distribution 2001/02 – 2008/09*. BirdWatch Ireland, Kilcoole, Co. Wicklow.

Crowe, O. (2005) *Ireland's Wetlands and their Waterbirds, Status and Distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow.

Fox, A.D., Norriss, D.W., Stroud, D.A. & Wilson, H.J. (1994). *Greenland White-fronted Geese in Ireland and Britain, 1982/83-1993/94. The first twelve years of international conservation monitoring*. Greenland White-fronted Goose Study and National Parks & Wildlife Service, Dublin.

Heery, S. (editor). *Birds in Central Ireland – Mid Shannon Bird Report*. 5 editions between 1996 and 2012. BirdWatch Ireland.

Hutchinson, C.D. (1979) *Ireland's Wetlands and their Birds*. Irish Wildbird Conservancy, Dublin.

Sheppard, R. (1993) *Ireland's Wetland Wealth*. Irish Wildbird Conservancy, Dublin.

www.birdwatchireland.ie - Distribution map and background information on I-WeBS sites in Ireland

www.npws.ie - Distribution maps and associated information for sites designated for conservation by NPWS (i.e. SPAs, SACs, NHAs, pNHAs)

Consultations, mostly by email and/or telephone, took place with the following:

NPWS

Mr Damian Clarke, District Conservation Officer, North-East Region. Tel.: 045 534071; email: Damian.Clarke@ahg.gov.ie

Mr Colm Malone, Conservation Ranger, Co. Offaly. Tel.: 057 9331470; email: Colm.Malone@ahg.gov.ie

BirdWatch Ireland

Dr Alex Copland, Senior Conservation Officer Crank House, Banagher, Co. Offaly
Tel.: 057 9151676; email: acopland@birdwatchireland.ie

Dr Olivia Crowe & Ms Helen Boland (I-WeBS co-ordinators)
email: ocrowe@birdwatchireland.ie; hboland@birdwatchireland.ie

Irish Peatland Conservation Council

Dr Catherine O'Connell, CEO, IPCC, Tel.: 045 860 133; email: bogs@ipcc.ie

Mr Tadhg O Corcora, Conservation Officer, IPCC, Tel.: 045 860 133; email: bogs@ipcc.ie

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, May 2014).

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 2016 and March 2017 (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 (version May 2014). 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 Clongawny and Drinagh bog sites, 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 height¹, 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 or Curlew
- Hen Harrier, Merlin and other birds of prey
- Any other Annex 1 species of EU Birds Directive
- Any other Red or Amber listed species as given in Colhoun & Cummins (2013)

2.3 Survey Limitations

Surveys following standard methods and within the recommended time frame were carried out at the Clongawny and Drinagh bog sites during the 2016/17 winter and hence there were no survey limitations.

¹ 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

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 from the 2014/15 winter, the results of the present survey will provide a more robust assessment of the importance of the Clongawny Drinagh Bog Group 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 Colhoun & Cummins 2013). 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 the site of a breeding pair of Peregrine (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

The following designated sites are located within a distance of approximately 15 km of the Clongawny/Drinagh study area. These comprise the following types of designations:

- Special Protection Areas - SPAs are designated under Council Directive 79/409/EEC on the conservation of wild birds (i.e. the Birds Directive).
- Special Areas of Conservation - SACs are designated under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e. the Habitats Directive).
- Natural Heritage Areas - NHAs are designated under the Wildlife Amendment Act 2000.
- proposed Natural Heritage Areas - pNHAs do not receive legal protection though the ecological value of pNHAs is recognised by Planning and Licencing Authorities.

Apart from SPAs, these sites do not necessarily have ornithological interests though many would support some birds of conservation interest. In the following list, a note is made on whether the site has known ornithological interest.

Middle Shannon Callows SPA (code 004096)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km).

The site is an SPA as it is of special importance for Whooper Swan, supporting a population of international importance. It also supports important populations of Mute Swan, Wigeon and Golden Plover. A small flock of Greenland White-fronted Geese continues to use the SPA.

Clongawny Bog is, at the closest, a distance of 3 km east from the Middle Shannon Callows SPA, while the distance between Drinagh Bog and the SPA is over 6 km.

River Little Brosna Callows SPA (code 004086)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an SPA as it is of international importance for wintering waterfowl. Of particular note is the Greenland White-fronted Goose population that is based along the Brosna. Also of international importance is the Black-tailed Godwit population. Species which occur in numbers of national importance include Whooper Swan, Wigeon, Teal, Pintail, Golden Plover and Lapwing.

Clongawny Bog is, at the closest, a distance of 5.5 km to the NE of the SPA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Dovegrove Callows SPA (code 004137)

Dovegrove Callows is an area of callowland beside the Little Brosna River c.2 km downstream from Birr in Co. Offaly.

The site is regularly used by a flock of Greenland White-fronted Geese (essentially the Little Brosna flock) as well as other waterfowl.

Clongawny Bog is, at the closest, a distance of 5 km to the north of the SPA, while the distance between Drinagh Bog and the SPA is approximately 8 km.

All Saints Bog SPA (code 04103)

This raised bog site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site in recent years.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog SPA.

Mongan Bog SPA (code 004017) and SAC (code 00580)

This raised bog site is located just east of Clonmacnoise in Co. Offaly. It is a fine example of a largely intact raised bog with an active core.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site since the early 1980s.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA and SAC.

Slieve Bloom Mountains SPA (code 04160)

This upland site comprises large areas of the Slieve Bloom Mountains. The SPA is selected for breeding Hen Harriers and also supports breeding Merlin.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 12 km and 14 km to the northwest of the SPA.

River Shannon Callows SAC (code 00216)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km). The site is similar in extent to the Middle Shannon Callows SPA though includes more of the marginal habitats.

The bird interests of the SAC are the same as listed for the SPA.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA.

Fin Lough SAC (code 0576)

This site is a shallow limestone lake surrounded by a complex of wetland habitats including alkaline fen. It is located approximately 7 km northeast of Shannonbridge in Co Offaly.

The lake is noted as an important roosting area for wintering duck.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 13 km and 12 km.

Redwood Bog SAC (code 02353)

Redwood Bog is a raised bog system that include both active bog and degraded bog. It is situated about 7 km southwest of Banagher.

The SAC is situated approximately 9 km west of Clongawny Bog and 13 km west-southwest

of Drinagh Bog.

This site is noted as a haunt of Greenland White-fronted Geese.

All Saints Bog and Esker SAC (code 566)

This raised bog and esker ridge site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas. The esker ridge supports orchid rich calcareous grassland.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog and Esker SAC.

Moyclare Bog SAC (code 0581)

This is a small raised bog situated about 4 km west of Ferbane in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 7 km north-northeast of Clongawny Bog and 5 km north of Drinagh Bog. .

This site is not listed as being of ornithological interest.

Ferbane Bog SAC (code 0575)

Ferbane Bog is a relatively large raised bog situated about 10 km east of Shannonbridge in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 9 km northeast of Clongawny Bog and 6 km north of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ridge Road, SE of Rapemills SAC (code 0919)

This SAC site comprises esker ridges which support orchid rich calcareous grassland.

The SAC is situated approximately 4 km southwest of Clongawny Bog and 8 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

River Little Brosna Callows NHA (code 00564)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an NHA as it supports extensive areas of callow grasslands and also a raised bog at Cloghan Demesne. The site is also of international importance for wintering waterfowl and is a designated SPA.

Clongawny Bog is, at the closest, a distance of 5 km to the NE of the NHA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Lough Coura pNHA (code 00909)

This pNHA is located along part of the southwest boundary of Drinagh Bog and there is a very minor overlap. The site is an old infilled lake that contains wet grassland and fen vegetation.

This site is not listed as being of ornithological interest.

Banagher (Domestic Dwelling) occupied pNHA (code 00567)

This pNHA is bat site. It is located approximately 1 km north of Clongawny Bog and 3 km west of Drinagh Bog.

This site is not listed as being of ornithological interest.

Woodville Wood pNHA (code 00927)

This pNHA is located within approximately 4 km south of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ross and Glens Eskers pNHA (code 00920)

This pNHA is located within approximately 3.5 km southwest of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Grand Canal pNHA (code 02104)

The Grand Canal pNHA passes within 3.5 km north Clongawny and Drinagh Bogs.

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

3.2 Review of Past Data for Study Area

There have been three national surveys (with I-WeBS on-going) for wintering waterbirds as follows:

Irish Wetlands Enquiry

In the *Irish Wetlands Enquiry* (winters 1971-72 to 1974-75), which was the first national census of wetland birds, the **River Shannon** and the **Little Brosna River** are the only sites mentioned that are in the wider hinterland of Clongawny and Drinagh Bogs.

The River Shannon is listed as the section between Lough Ree and Lough Derg and is rated as a site of international importance for wild swans (Bewick's and Whoopers) and Black-tailed Godwit and of national importance for various species such as Mallard, Teal, Wigeon, Lapwing, Golden Plover and Curlew. Hutchinson (1979) writes the following:

“From Lough Ree south to Lough Derg the Shannon is surrounded by extensive bogs and poorly drained agricultural land as it traverses the central lowlands. ... The flood plain of the river is pasture flooded in winter and known as callow land..

The most numerous wildfowl are Wigeon and several thousands occur along the river between Athlone and Portumna. Several hundred Teal and wild swans, together with small numbers of White-fronted Geese, also winter along the river. However there is considerable movement of birds in this area in response to changes in water level and shooting pressure. As a result, certain areas may have no ducks at all on some occasions, but several hundred at other times...

Lapwing and Golden Plover congregate on the callows and fields behind the callows in very large numbers.”

Hutchinson notes that the important part of the Little Brosna for waterfowl comprises the callows extending from New Bridge, seven kilometres northwest of Birr, to the junction with Shannon at Meelick and includes Big Island and Friars Island on the Shannon. He writes

“As a wildfowl haunt it is extremely important, with Wigeon the most numerous species (up to 7,000) and in numbers of international importance. Large numbers of Teal (up to 2,200) and the biggest flock of Pintail on the Shannon system also occur. The callows are the feeding ground for several hundred White-fronted Geese, the second largest concentration in Ireland after the Wexford Slobs. Some of the largest numbers of Lapwing and Golden Plover in Ireland scatter over the callows and adjoining farmland, but the most important wader concentration is the flock of Black-tailed Godwits which peaks in late winter at up to 4,000 birds.”

Winter Wetlands Survey

A further national census of wetland birds, the *Winter Wetlands Survey*, took place over the three winters 1984-85 to 1986-87 (Sheppard 1993). Again, the **Shannon Callows** and the **Little Brosna Callows** were the only sites included within the wider hinterland of Clongawny and Drinagh Bogs.

The Shannon Callows, which was counted 4 times over 1 season, is listed as a site of International Importance for Whooper Swan (211) and Wigeon (8,725), and of National Importance for Mute Swan (253), Teal; (900), Golden Plover (4,500), Lapwing (12,864) and Black-tailed Godwit (600).

The Little Brosna was counted 31 times over 3 seasons, and is listed as a site of International Importance for Whooper Swan (201), White-fronted Geese (417), Wigeon (12,250) and Black-tailed Godwit (2,375). It was listed as of National Importance for Teal (3,000), Mallard (2,250), Pintail (275), Shoveler (250), Golden Plover (5,000), Lapwing (3,925) and Curlew (1,150). Sheppard writes:

“This phenomenal site recalls what once must have been commonplace throughout Europe, but is now almost gone – a highly productive floodplain, enriched by wildfowl manure in winter, and cropped for hay or grazed in winter.”

Irish Wetland Bird Survey (I-WeBS)

The *Irish Wetland Bird Survey* was initiated in 1994/95 and continues to the present. All major wetlands in the country are covered each winter by this scheme. Annual reports have been published and the first major review was carried out for the period 1994/95 to 1999/2000 (Crowe 2005), with a further review (species based rather than site based) for the period 2001/02 to 2008/09 carried out by Boland and Crowe (2012).

A total of 5 sites are listed which are within the hinterland of Clongawny and Drinagh Bog sites.

The **Shannon Callows** (similar unit as the SPA) is listed as a site of International Importance for Mute Swan (367), Whooper Swan (321), and Black-tailed Godwit (27 but high numbers in previous period). The populations of Wigeon (2,800), Golden Plover (2,429) and Lapwing (14,218) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Shannon callows regularly support internationally important numbers of Mute Swan, Whooper Swan and Black-tailed Godwit, and nationally important numbers of a further three species. This site also supports an increasing, and now significant concentration of Black-headed Gulls.*”

A summary of counts for the principal species along the Shannon Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 1. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

Table 1. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Shannon Callows I-WeBS site and Middle Shannon Callows SPA. Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	888	339	775	500	739	588
Whooper Swan	392	255	207	299	305	267
Wigeon	2378	900	4702	3676	2023	2825
Teal	302	270	573	835	285	491
Mallard	71	0	233	55	91	126
Golden Plover	956	1680	200	7610	1750	2810
Lapwing	247	2837	1397	7672	2149	3514

The **Little Brosna Callows** (similar unit as the SPA) is listed as a site of International Importance for Greenland White-fronted Geese (455), Golden Plover (10,393) and Black-tailed Godwit (3,050). The populations of Whooper Swan (111), Wigeon (7,555), Teal (1,966), Pintail (140), Shoveler (274) and Lapwing (6,191) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Little Brosna Callows are internationally important for Greenland White-fronted Goose, Golden Plover and Black-tailed Godwit, and nationally important for a further six species. It is among the top ten most important sites for most of these species. This site also supports significant concentration of Black-headed Gulls, and a high diversity of wetland bird species, particularly from an inland site.*”

A summary of counts for the principal species along the Brosna Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 2. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

The **Cloghan Wetlands** (grid ref. N100195) I-WeBS site comprises Cloghan Lake and Drinagh Bog. This site was subsequently re-named as Cloghanhill.

For the period 1996/97-2000/01 the site supported a nationally important population of Whooper Swans (mean peak of 130) (Crowe 2005). Since then, counts have been irregular with 190 Whooper Swans in winter 2008/09 and no swans present in winters 2009/10 and 2013/14 (there were no counts in the 3 winters 2010/11 to 2012/13).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 3. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 2. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Little Brosna Callows I-WeBS site (and SPA site). Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	129	118	75	129	70	98
Whooper Swan	184	190	110	147	120	142
White-fronted Goose	178	230	230	200	200	215
Wigeon	4454	1455	2375	2350	5700	2970
Teal	400	70	0	320	0	195
Mallard	32	50	11	20	30	28
Golden Plover	0	2045	0	2200	0	2123
Lapwing	0	1110	570	1150	800	908
Black-tailed Godwit	700	1000	0	0	0	1000

Table 3. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Cloghanhill I-WeBS site (i.e. Cloghan Lake & Drinagh Bog). Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Mute Swan	6	15	2
Whooper Swan	190	0	0
Greylag Goose	38	17	0
Wigeon	0	4	12
Teal	4	3	2
Mallard	27	86	85
Golden Plover	0	0	8
Lapwing	11	0	12
Snipe	12	10	5

Boora Lakes-Back Lakes (Finnamore Lakes) (grid ref. N180195) I-WeBS site comprises wetlands within the Lough Boora Parklands cutaway bogs. These are situated several kilometres to the east of Drinagh Bog.

Crowe (2005) notes that while the site does not regularly support any nationally important concentrations, it does occasionally support high, nationally important, numbers of several species, namely Little Grebe (54), Mallard (1037), Golden Plover (3,000) and Lapwing (2,200) (figures are peaks for period 1996/97-2000/01). Other species that have been recorded (with peak numbers) include: Whooper Swan (107), Greenland White-fronted Goose (14), Wigeon (100) and Teal (120).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 4. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 4. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Boora Lakes-Back Lakes (Finnamore Lakes) I-WeBS site. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Whooper Swan	117	5	0
Wigeon	109	0	0
Teal	121	22	25
Mallard	53	141	26
Golden Plover	2000	326	150
Lapwing	727	249	705
Snipe	29	3	5
Curlew	81	14	0

Turraun Nature Reserve (grid ref. N178236) comprises cutaway bog with a lake. Site is owned by Bord na Móna and is a non-statutory nature reserve. It is located just south of the Grand Canal and approximately 7 km to the northeast of Drinagh Bog.

For the period 1996/97-2000/01 the population of Whooper Swans (119) approached national importance (Crowe 2005). Since then, Whooper Swan counts have been irregular, as follows: one in winter 2007/08, 118 in winter 2008/09, no swans recorded in winter 2009/10, (no counts in winters 2010/11-2012/13), and no swans recorded in winter 2013/14.

Review of history and status of Brosna/Shannon population of Greenland White-fronted Geese

The Clongawny and Drinagh bog sites are in proximity to two populations of Greenland White-fronted Geese.

Rutledge & Ogilvie (1979) carried out a major review of the status of the Greenland White-fronted Goose in Ireland and Britain. They identified the River Shannon, Athlone to Portumna (site no. 11) as of international importance. They included the Shannon Harbour to Banagher section as a subsite in the context of the overall population, with c.150 out of a total of 600 birds in the 1940s and early 1950s. By the 1970s, the overall flock size had declined to an estimated 200-250. Rutledge & Ogilvie (1979) also identified the Little Brosna River (site no. 12) as of international importance. When first studied in some detail in the 1940s the population was about 400 birds. By the early 1950s a decline had set in as a result of disturbance from shooting. By the late 1970s numbers had fallen to about the 200 mark. They note: “*Although so close to the River Shannon the population is conservative and, given the opportunity confines itself to the Little Brosna callows. This haunt should be studied in conjunction with the River Shannon complex (site 11)*”.

A further main review of the status of Greenland White-fronted Goose in Ireland and Britain was carried out by Fox *et al.* (1994). Again the Little Brosna population (site no. 26) was rated as of international importance, with a mean flock size of 526 over the 6 winters 1988/89-1993/94. The range of this flock is given as the Little Brosna and the section of the Shannon from the confluence of the Brosna to Lough Derg (sites no. 12 and part of 11 of Rutledge & Ogilvie). A total of 34 feeding sites were recognised.

Since the review by Fox *et al.* (1994), an annual census of Greenland White-fronted Geese in Ireland has continued to be carried out by National Parks and Wildlife Service as part of an International Census of the species. For winters 2011/12 to 2012/14, the following peak counts were recorded for the Little Brosna population:

220 in winter 2011/12 (Fox *et al.* 2012)

200 in winter 2012/13 (Fox *et al.* 2013)

135 in winter 2013/14 (Fox *et al.* 2014)

150 in winter 2013/14 (Fox *et al.* 2015)

The Greenland White-fronted Goose Site Inventory (Norriss unpublished) does not list any traditional goose feeding sites at Clongawny or Drinagh bogs (listed sites are along the rivers and at All Saints Bog).

Other Sources of Information

NPWS

Ciara Flynn of NPWS noted the following in e-mail dated 13/11/2014:

“Hen harrier have been recorded in winter over Drinagh, also peregrine. BWI have a lot of info on breeding waders and Black headed gull colonies from here also. The flooded BNM cutover at Drinagh is becoming a very important wildfowl site. GWFG and whoopers have been recorded from here also (as part of the surveys for the Cloghan Wind Farm)”

Irish Peatland Conservation Council

The IPCC does not have any information specific to Clongawny and Drinagh Bogs.

BirdWatch Ireland

BirdWatch Ireland has carried out various winter surveys for wetland birds at Drinagh Bog and at least in one winter at Clongawny Bog (Copland, A. BWI Winter Counts 2008/09). These counts indicated that Drinagh Bog has good potential to support wintering wetland birds but that the potential at Clongawny is limited. The surveys have been carried out in the context of the wider Boora region (A. Copland pers. comm.).

Local Bird Report

A small number of references are made to bird species at Drinagh bog in the Mid Shannon Bird Reports – these are noted in the species accounts in this report. There appears to be no mention of Clongawny Bog in the reports.

Cloghan Wind Farm EIS

The EIS (dated November 2012) prepared for the proposed Cloghan Wind Farm (Planning Authority Reg. Ref.: 12/293, An Bord Pleanála Ref No. PL 19.242354) included surveys for wintering birds in the area, including Drinagh Bog (see Chapter 6 of EIS). The following was noted (pages 86-90 of EIS):

43 Whooper Swans roosting at Drinagh in February 2012 – moved to daytime feeding sites to NE and NW of site, grassland sites at Derrycarney and Lea More and also to Coolreagh Bog to forage. Some remained at Drinagh. On 17th February 2012, 88

Whooper Swans grazing in fields.

On 2nd February 2012, very cold – at dawn a flock of 45 Greenland White-fronted Geese observed at Drinagh over 1 hour. At 8.30 hrs, left lake and flew in a flock over conifers towards Cloghan Wind Farm site and then flew in direction of Little Brosna Callows. Drinagh watched again in evening but no geese. Watches over two further mornings also negative for geese. EIS concluded that Greenland White-fronted Geese are rarely in area.

One Peregrine over Drinagh on 2nd February 2012 flying between 60 m and 120 m.

Golden Plover in fields to south.

Meenwaun Wind Farm EIS

The EIS (dated February 2015) prepared for the permitted Meenwaun Wind Farm (Offaly County Council Planning Authority Ref.: 1544; An Bord Pleanála Ref No. PL19.244903) included surveys for wintering birds in winters 2012/13 and 2014/15. The wind farm site is located immediately to the southwest of Clongawny Bog. Two Vantage Points were used for the winter surveys, one at Clongawny More and one at Derrinlough (along the N62). The following is a summary of the avifauna recorded (see Chapter 6 of EIS for details).

Whooper Swan

None recorded over site but 9 flew east to west to the south of the wind farm site on 27th December 2014, flying height c.20 m. Also, 5 at the small lake at Clooneen (probably refers to lake within Clongawny Bog) on 27th December 2014. Also, on 30th January 2015, signs of swan usage (feathers) on flooded cutaway bog to southwest of All Saints Bridge.

Hen Harrier

One (not sexed) seen at Clongawny More on 21st January 2015 flying west to east at 15.42 hrs.

Golden Plover

Sightings over industrial bog to northeast of wind farm site in October 2012 (2 birds) and 21st January 2015 (several parties, largest 41).

Woodcock

There were 3 winter sightings of Woodcock in vicinity of site.

The EIS states that there were no winter sightings of Greenland White-fronted Goose, Merlin or Peregrine.

Overall Appraisal of Available Information

It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study.

In a wider context, there is useful quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.

3.3 Clongawny Bog

3.3.1 Site description

Clongawny Bog is located approximately 3 km south-southwest of Cloghan village. It is bordered by the N62 road to the east and the R438 to the west. A local road runs west from Galros Cross Roads and skirts part of the southern boundary.

A large part of the bog is still in active production or is classified as production related cutover. The bog is primarily divided into several sections by the blocks of forestry located towards the centre of the site and by a railway that crosses the site in a NW-SE orientation. The forestry on the site is managed by Coillte with both commercial production of timber and biodiversity as the main management objectives. The site has a varied topography with some mineral mounds of glacial material and deeper basins.

The active production areas are dominated by bare peat and occur in the northern, southern and part of the western sections of the site. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub dominated by birch. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water (shallow lake) has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.

Clongawny Bog is largely within an agricultural landscape, with pasture grassland dominant. However, other Bord na Móna commercial bogs occur in the wider area, along with a scatter of remnant bogs (mostly cutover). Conifer plantations are also a feature of the area.

3.3.2 Survey locations

Transect 1 is a loop in the western sector of the site which is through regenerating cutaway bog, with wetland and scrub habitats.

Transect 2 is within the central area of the site and comprises a loop around a block of conifer plantation, passing scrub, regenerating bog habitats and bare peat.

Transect 3 is located in the eastern part of the site and passes alongside conifer plantation and regenerating bog habitats.

Vantage Point 1 is located alongside the rail track a little in from the N62. This looks over the lake and wetland as well as some conifer forest.

Vantage Point 2 is located near the junction of the railway tracks, with views over the southern part of the site (largely bare peat) and also further conifer forest and some native woodland.

Vantage Point 3 is located at the west end of the rail track in the western sector of the site. This gives views over the western sector of the site.

Vantage Point 4 is located along the site boundary in the northeast. This gives views over the northern and central areas of the site.

3.3.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Clongawny Bog are compiled in Appendix 2. Transect data are presented in tabular form for site survey date.

Target species recorded

Whooper Swan

Whooper Swans were recorded flying over or within the site on four dates during the winter, as follows:

18th October 2016 3 on lake in east of site, later flew north at low height (<25 m)
12th November 2016 8 on lake.
20th December, 2016, 4 flew north-northeast over site.
10th February 2016 2 on lake.

A fairly similar pattern of records as in the previous winters, with small numbers using lake (probably roosting/resting) and/or passing over the site.

Little Egret

One at lake on 12th November.

Teal

14 on lake on 18th October (along with 30+ mallard); 28 on lake on 12th November (along with 45 mallard). Small numbers in December (<10 teal, 15 mallard). 13 on lake on 11th January (along with 40+ mallard). Six on 9th March (along with 8 mallard).

As in previous winter, Teal utilise the lake through the winter though in relatively small numbers.

Sparrowhawk

One hunting over scrub on 18th November. Pair in display behaviour over central area of site on 18th February. Singles hunting on 21st February and 11th March.

Sparrowhawk is considered to breed on site.

Buzzard

Five in loose group over central area of site on 19th October. Three on 12th November. Singles seen regularly through remainder of winter, displaying birds in February and March (buzzard breeds on site).

Peregrine

One (probable female) on bare peat in northern sector, with a kill (pigeon spp.) on 21st January. Present for over 40 minutes but not seen leaving site.

Kestrel

Single birds recorded on site in most surveys (apart from in March) – usually hunting over cutaway bog and remnant bog habitats.

Kestrel is expected to breed locally.

Golden Plover

Golden Plover was recorded on three dates during winter 2015/16, as follows:

On 17th October, a flock of 300+ flew northwards over site at estimated height of 100 m, may

have landed in field north of site (similar number seen later in day).

On 12th November, a flock of c.600 in grassland field c.1 km north of site.

On 9th February, flock of 40 flew west across site at height of less than 100 m (possibly had been roosting on bare peat).

On 18th February, flock of 26 flew eastwards across site at height of greater than 100 m.

Surveys indicate that a substantial flock was in the area in the early part of the winter though scarce within site.

Lapwing

Lapwing was recorded on four dates during winter 2015/16, as follows:

On 17th October, a flock of c.80 (along with Golden Plover) flew northwards over site at estimated height of 100 m. On 20th October, 26 roosting at lake.

On 14th November, a flock of c.200 roosting on lake.

On 14th December, a flock of c.800 flew westwards across site at between 50 and 100 m height.

On 10th February, a flock of c.100 was at lake and then flew towards Drinagh (over road), at height of less than 50 m.

Two birds were at the lake on 28th March, with territorial behaviour observed.

Woodcock

Two flushed from edge of track at conifer plantation in centre of site on 18th November.

Black-headed Gull

36 Black-headed Gulls in breeding plumage were at the lake in eastern sector of the site on 28th March – some holding territories.

Black-headed Gull is a breeding species and was not recorded during main winter period.

Potential for other target species

Merlin and Hen Harrier have been recorded in previous winters and can be expected at times. It is considered unlikely that Clongawny bog has significant potential to support other species of conservation importance.

Other species of note

Little Grebe – four birds in October, one in November, three in February and March (latter displaying).

Great Crested Grebe – one pair on 28th March.

Greylag Goose – 3 flew east across site on 11th March (towards Drinagh).

Snipe – recorded in small numbers (<10) on all site visits. Peak of 16 on 14th November.

Long-eared Owl – one calling from conifer wood north of lake on 27th January.

Skylark – present in October and November. Displaying birds on site in February (5) and

March (12+).

Robin – present through winter in scrub and woodland habitats. Most records of single birds.

Mistle Thrush – occasional on site through winter. Flock of 14 on 12th November.

Goldcrest – present in scrub and woodland habitats (mostly single or pairs).

Stonechat – recorded throughout winter, with five together on 19th October. Territorial birds (2 locations) in February and March.

Starling – large flocks recorded passing over site on several survey dates, with estimates of >8,000 on evening of 19th November (moving west) and >5,000 on evening of 11th January. Otherwise regular on site in small numbers (<100).

Meadow Pipit – present on site through winter though mostly in relatively low numbers. Respective totals of 23, 8 and 19 along transects in November, January and March. Large group (loose flock) of 60+ on 12th November may have included migratory birds. Territorial behaviour recorded from February onwards.

Linnet – recorded in small numbers (up to 10) on five dates, with larger flocks of 20 and 40+ in November.

SITE: CLONGAWNY – TRANSECT SURVEYS, 2016-17

Species	November	January	March	BoCCI Status
Mallard	9	4	6	G
Teal	4	5	0	A
Pheasant	3	0	2	G
Grey Heron	2	1	2	G
Sparrowhawk	0	0	2	A
Buzzard	3	1	2	G
Kestrel	1	0	0	A
Moorhen	2	0	0	G
Lapwing	12	20+	0	R
Snipe	14	6	9	A
Woodcock	0	2	0	R
Woodpigeon	40+	8	7	G
Magpie	12	2	4	G
Jay	3	1+	2	G
Jackdaw	60+	10+	22	G
Hooded Crow	7	5	4	G
Raven	0	3	2	G
Goldcrest	2+	1+	7	A
Blue Tit	0	0	2	G
Great Tit	3	1	1	G
Coal Tit	7	2	8	G
Skylark	3	0	12+	A
Long-tailed Tit	9	0	0	G
Starling	100+	16	6	A
Wren	26	14	15	G
Blackbird	9	7	12	G
Fieldfare	40+	0	0	G
Song Thrush	3	2	7	G
Redwing	100+	20+	0	G
Mistle Thrush	14	3	2	A
Robin	11	4	5	A
Stonechat	3	2	3	A
Meadow Pipit	23	8	19	R
Pied Wagtail	5	0	2	G
Chaffinch	30+	5	12	G
Goldfinch	8	3	0	G
Linnet	20+	8	2	A
Lesser Redpoll	80+	20+	8	G
Bullfinch	0	0	2	G
Reed Bunting	12	5	8	G

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

General discussion

The 2016/17 survey supports the conclusions of the 2014/15 and 2015/16 winter surveys that Clongawny Bog has relatively low potential for supporting wintering bird species of conservation importance.

As in the previous winters, the lake in the eastern sector of site supported a range of wetland birds though in relatively low number, including Little Egret, Whooper Swan, Teal, Mallard, Little Grebe and Lapwing. Prospecting Black-headed Gulls and Lapwing (both Red-listed) were present at the lake in March. Presently the lake has poorly developed aquatic and marginal vegetation.

There was a substantial flock of Golden Plover using fields to north of site in the early part of the winter and on two occasions this species was recorded flying over the site. Lapwing was also recorded passing over site. It is expected that the Golden Plover and Lapwing were birds moving locally, probably linked with Drinagh Bog and adjoining areas rather than the large wintering concentrations of the Shannon/Little Brosna systems.

Woodcock (Red listed) was recorded on site in November and is probably a regular winter visitor. Meadow Pipit occurs throughout much of the site during winter, with territorial birds observed from February onwards.

Clongawny Bog provides good habitat for birds of prey, with Peregrine observed resting on bare peat (with a kill), and Sparrowhawk, Kestrel and Buzzard all recorded regularly (both merlin and hen harrier had been recorded in previous winters).

The site supported a range of other species of conservation interest (Amber-listed species), including Snipe, Skylark, Mistle Thrush, Stonechat and Linnet.

3.3.4 Evaluation and Rating of Clongawny Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Clongawny Bog in winters 2014/15, 2015/16 and 2016/17:

EU Birds Directive Annex I listed species

- Little Egret (2016/17 only)
- Whooper Swan (all winters)
- White-tailed Eagle (2014/15 only)
- Hen Harrier (2015/16 only)
- Merlin (2014/15 & 2015/16)
- Peregrine (all winters)
- Golden Plover (all winters)
- Kingfisher (2014/15 & 2015/16)

Red Listed species (after Colhoun & Cummins 2013)

- Wigeon (2014/15 & 2015/16)
- Lapwing (all winters)
- Woodcock (2015/16 & 2016/17)
- Black-headed Gull (all winters)

Meadow Pipit (all winters)

Amber Listed species (after Colhoun & Cummins 2013)

Little Grebe

Great Crested Grebe

Teal

Sparrowhawk

Kestrel

Snipe

Jack Snipe (2015/16 only)

Skylark

Mistle Thrush

Robin

Stonechat

Goldcrest

Starling

Linnet

All Amber listed species recorded in the three winters other than Jack Snipe

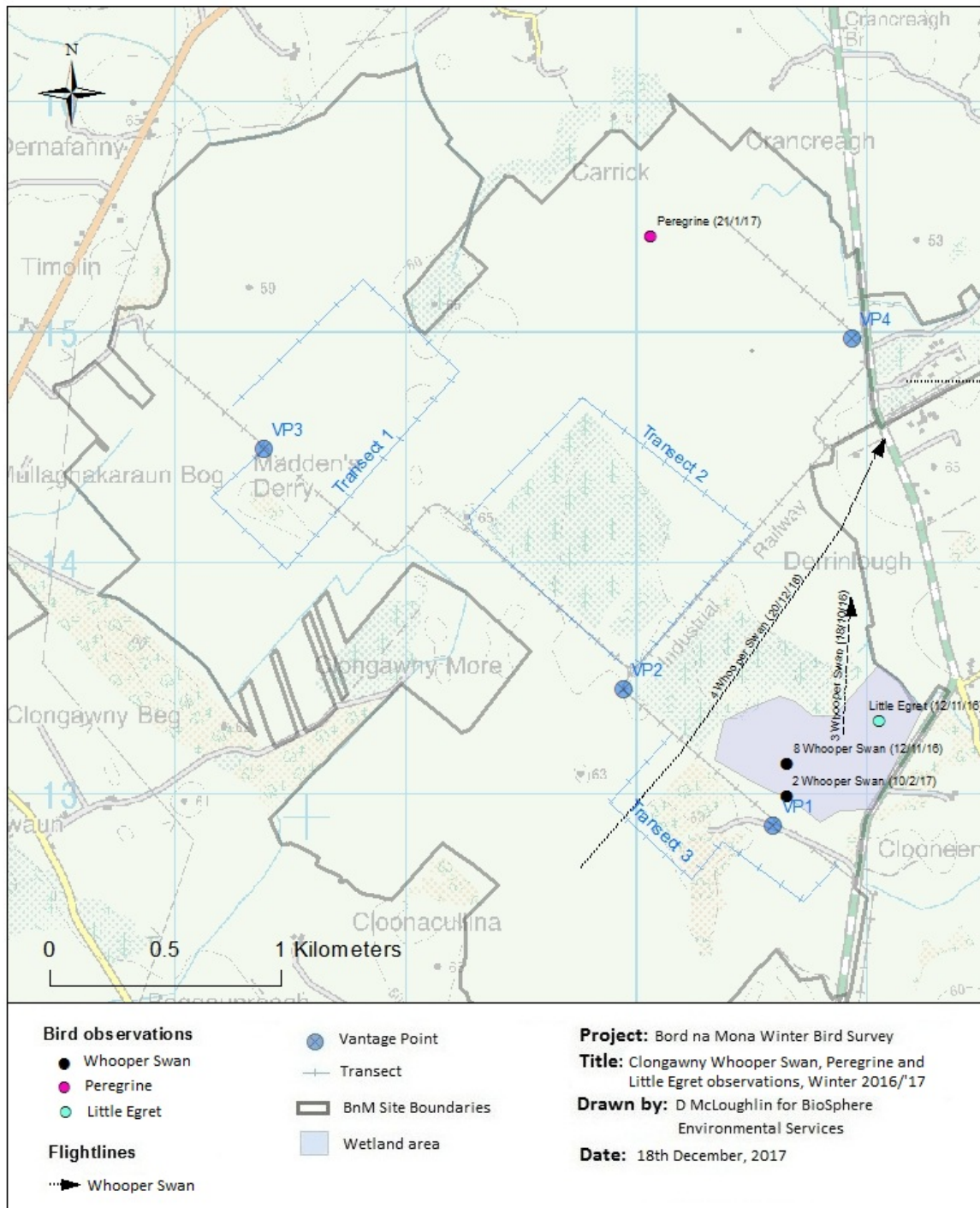
While a range of species of conservation importance was recorded on Clongawny Bog during the three winter surveys, the site has limited potential for supporting significant populations of wintering birds. This reflects, in part, the extent of the site still in commercial production and also the limited development of permanent wetland habitat.

It is noted that the lake in the eastern part of the site is still in an early development phase and appears to have low feeding potential for swans and other waterbirds. It does, however, provide a useful roost or rest area for wetland birds.

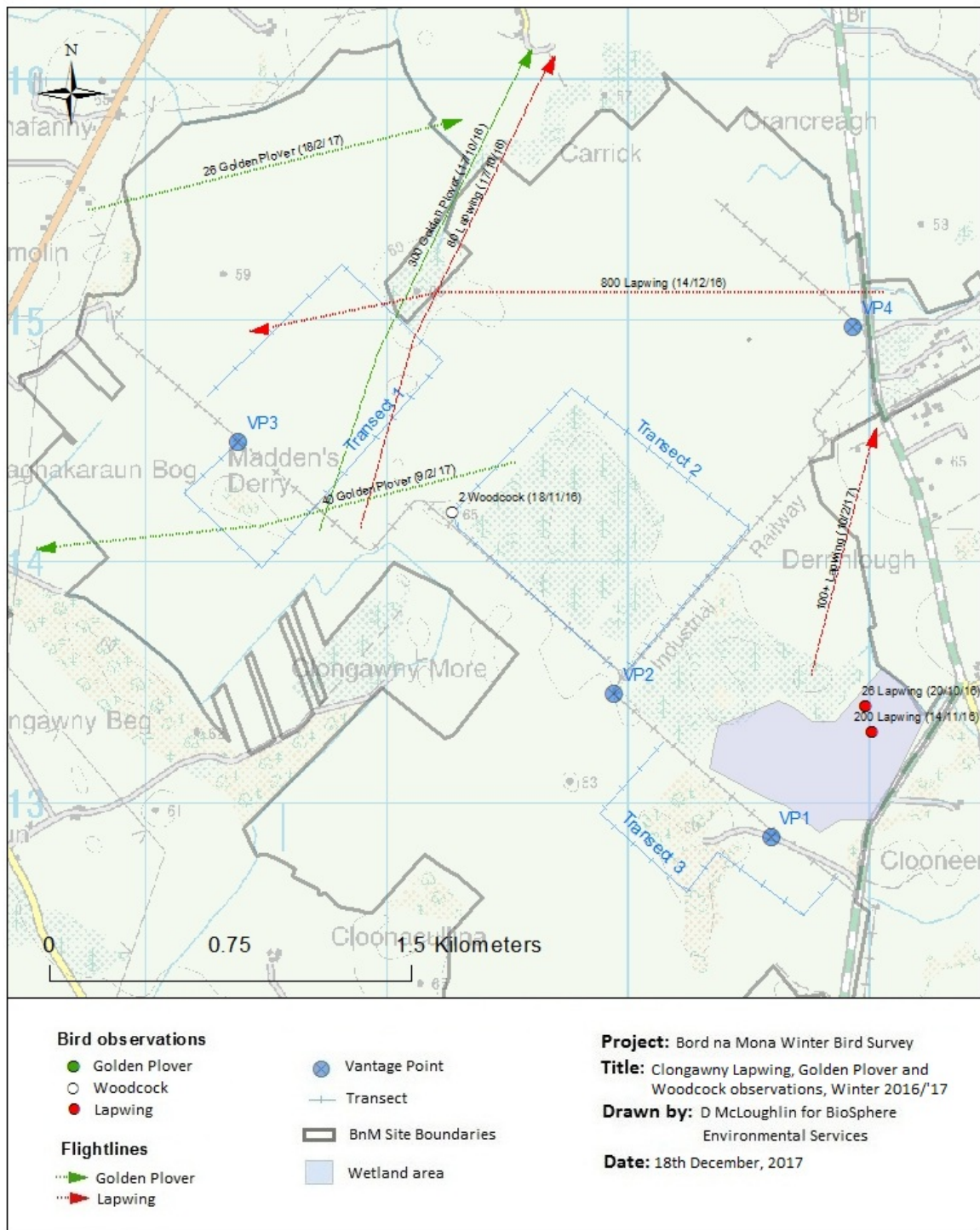
Also, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, including Merlin, as well as habitat for Woodcock, Meadow Pipit and various Amber-listed species such as Snipe and Stonechat.

On the basis of the results of the winter surveys in 2014/15, 2015/16 and 2016/17, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Clongawny Bog.

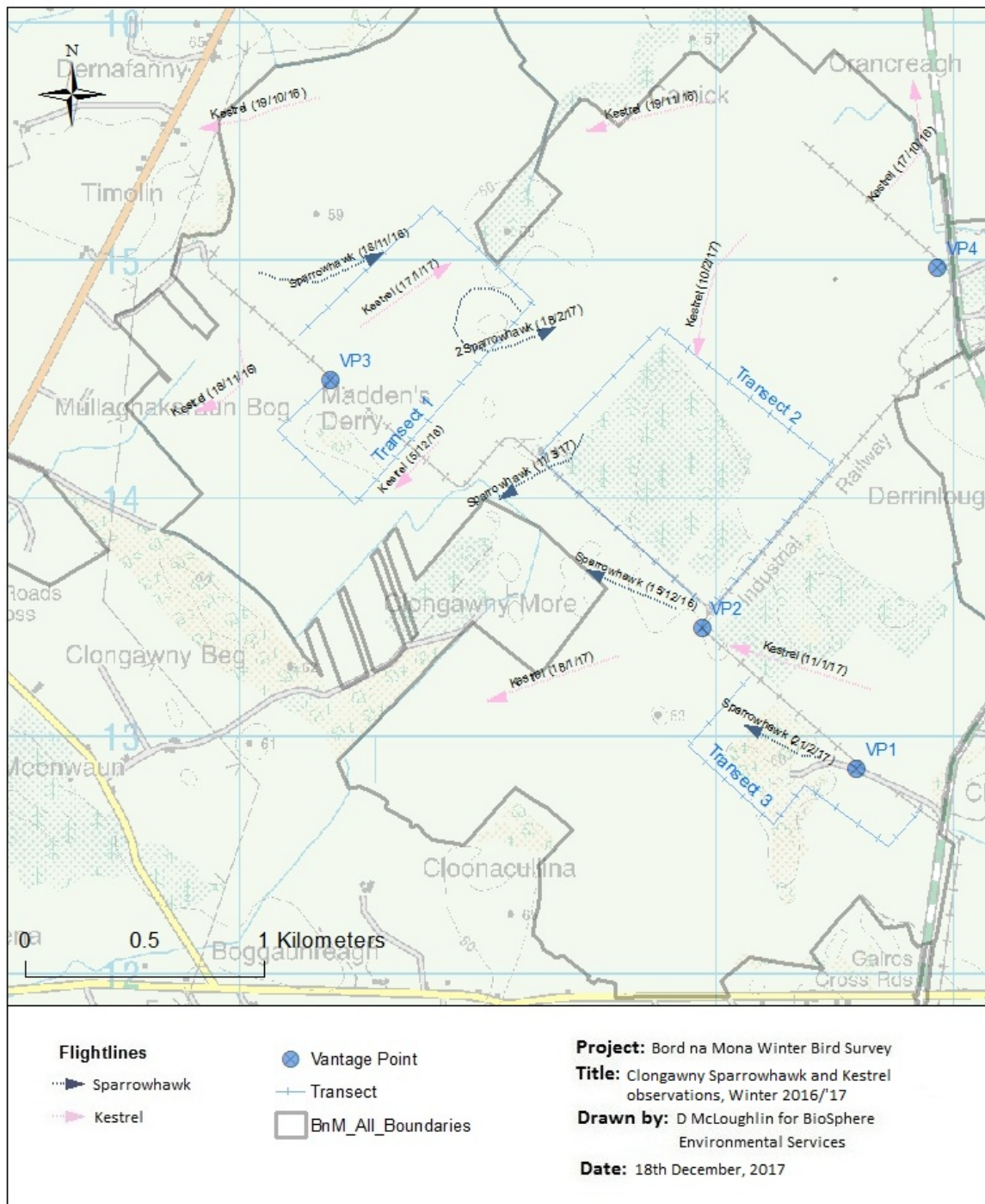
Clongawny Bog Map 1: Map showing transect and vantage point locations, with Whooper Swan records, Little Egret and Peregrine.



Clongawny Bog Map 2: Map showing transect and vantage point locations, with Golden Plover, Lapwing and Woodcock observations.



Clongawny Bog Map 3: Map showing transect and vantage point locations, with Sparrowhawk and Kestrel records.



Clongawny Bog Map 4: Map showing transect and vantage point locations, with Buzzard records.

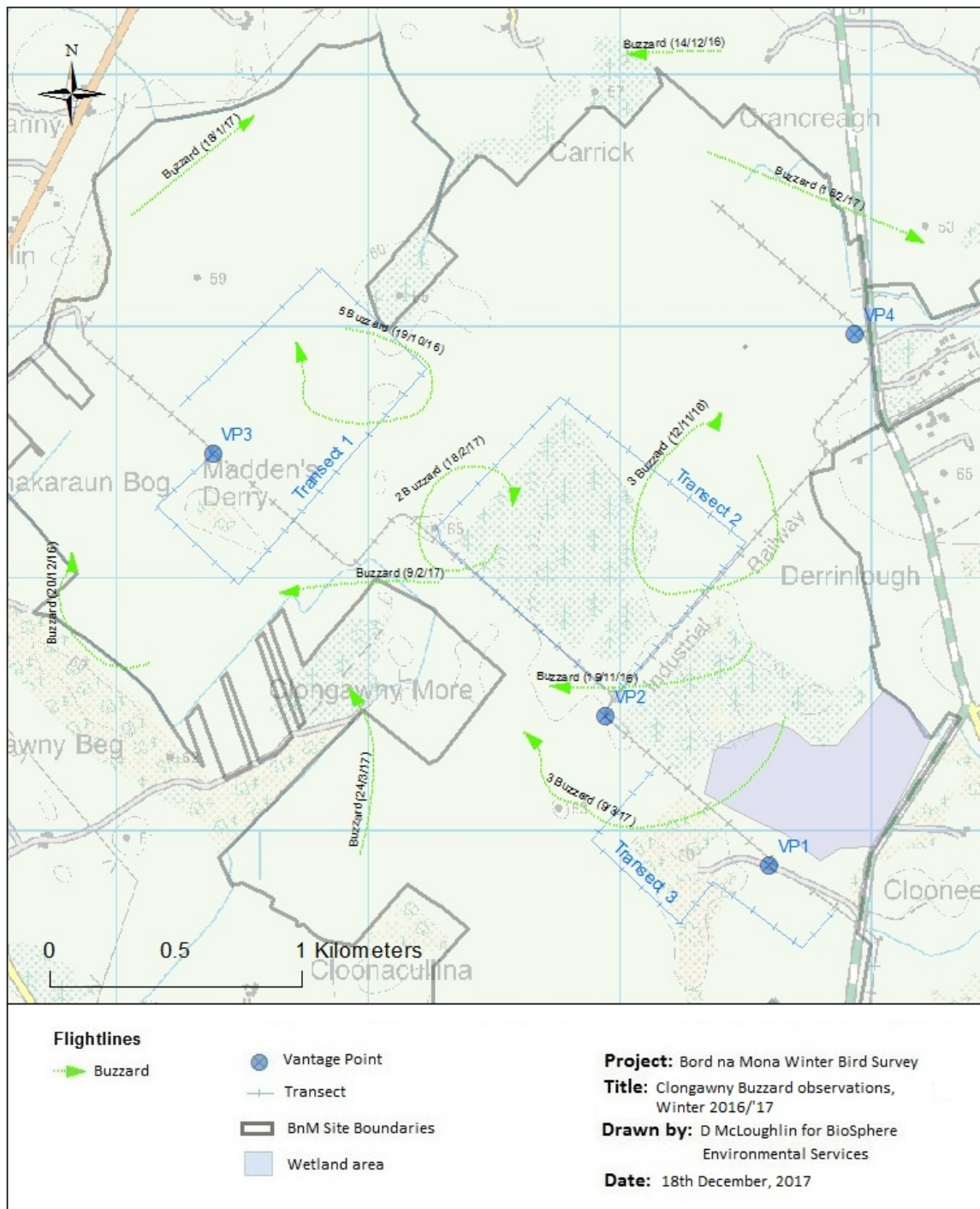




Plate 1. Clongawny Bog: view of shallow lake in eastern part of site. While useful habitat, the lake attracts relatively few wetland birds.



Plate 2. Clongawny Bog: much of site is bare or partial bare peat. Developing scrub is present in some areas. View is in western part of site looking near VP3.

3.4 Drinagh Bog

3.4.1 Site description

Drinagh Bog is located approximately 1.5 km to the southeast of Cloghan village. It is connected to Clongawny Bog (to the west) by a rail link and the two sites are separated by the N62 road. The R357 runs just a little north of the site. The Silver River skirts the eastern boundary.

Drinagh is divided into 4 main sections by the topography of the site and a railway line on an embankment that crosses from the west to the east side of the site. The western section is separated from the eastern section by a ridge of high ground that partially divides the site (Mannin's Hill) and then by a block of conifer plantation that has been planted on the cutaway bog on this higher ground.

The north-east section is zoned for biodiversity and contains a substantial portion of open water. This area has developed into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the ponds and lakes, particularly along the eastern side of the track. The water is shallow and there are frequent patches of emergent Common Reed and Bulrush. The lakes also contain linear islands or ridges of remnant peat vegetated with various communities, including developing Birch scrub. The south-east section of the site is a core trial area to manage cutaway bog specifically for breeding waders (a project by Bord na Móna in association with BirdWatch Ireland commenced in 2010). It essentially comprises a mosaic of emerging and open Birch scrub and a Soft Rush dominated pioneer community. The western sector of the site is mainly in commercial production and comprises bare peat. However, there are substantial areas of regenerating cutaway, with wetland and scrub habitats.

Drinagh Bog is part of the Lough Boora Parklands and adjoins further Bord na Móna lands to the east. Agricultural land, mostly in pasture, is the main landuse to the north and south of Drinagh.

3.4.2 Survey locations

Transect 1 is a 2 km length alongside the rail track running southwards from the local road along the north boundary of the site. It passes through regenerating cutaway bog habitats and the main wetland area.

Transect 2 commences at the southwest corner of the mineral ridge in the southern part of the site and runs north to the main rail line which crosses the site from east to west. It skirts the line for 1 km (westwards) and continues on a 'square' shaped route southwards and then westwards back to the start. The habitats traversed are scrub, regenerating heath and poor fen, and bare peat.

Vantage Point 1 is located just off the local road which skirts the southeast side of Cloghan Hill. This elevated viewpoint looks over the eastern sector of the site, with focus on the lake and wetland habitats.

Vantage Point 2 is also located just off the local road which skirts the southeast side of Cloghan Hill. However, this is looking south over the north-western quadrant of the site.

Vantage Point 3 is located along the southwest edge of Mannin's Island and gives a view over the south-western sector of the site (mostly bare peat).

Vantage Point 4 is located on the rail embankment running east to west in the eastern sector

of the site. It gives a view over the wetland and scrub habitats in the southeast sector of the site.

3.4.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Drinagh Bog are compiled in Appendix 2.

Target species recorded

Whooper Swan

Whooper Swans were recorded on site mostly in the early part of the winter, with the first arrivals (35) on 19th October and 42 flying across the site on 21st October. Up to 33 were feeding on site in early November but not more than ten together were recorded during December. Very scarce from January to March, with 17 on 10th January and 14 on 10th February the highest counts. The records were as follows:

October: parties of 15 and nine flew west across site on 19th, 11 flew southwest over south end of site on 19th, six flew southwest over site on 20th, four flew east on 20th, 42 flew eastwards across site on 21st, seven flew into site from north on 21st.

November: seven flew east on 7th, three flew north, three flew southeast and two flew west on 10th.

December: eight flew east on 5th, eight flew northeast on 6th, parties of nine, six and five flew over site on 8th.

January: nine flew north out of site on 10th.

February: two flew into northeast corner of site on 9th, three flew southwards on 10th.

March: seven flew over southwest sector of site on 9th.

As in winter 2015/16, the numbers of swans at Drinagh in winter 2016/17 were low. Most records were of small parties passing over the site or feeding in the northeast sector.

Wigeon

Flocks were recorded on the main lake in the north-eastern sector of the site as follows: nine on 7th November, 22 on 8th December, and five on 10th February.

Wigeon is a scarce winter visitor to Drinagh and in relatively small numbers. The pattern of occurrence in winter 2016/17 was similar to that in the previous winter.

Teal

Teal was recorded on site in small numbers throughout the winter, with the largest flock of c.60 birds on 8th December.

Mallard

Mallard was recorded on site on all site visits though were scarce in January and February. The highest number (c.60) was recorded on 20th October. By March, breeding pairs were present.

Tufted Duck

Tufted Duck was recorded on the main lake in small numbers (<10) from October to February. Numbers increased to 16 in March, with territorial behaviour observed.

Little Egret

Singles flew into site from the east on 7th November and 9th February.

Little Egret is an occasional visitor to Drinagh, with one also recorded in winter 2015/16.

Hen Harrier

Hen Harriers were recorded on seven dates through the winter, as follows:

On 21st October, a female was observed hunting over scrub in north of site (11.24 hrs). A second bird, a male, was observed later (13.15 hrs) in day.

On 10th November, a ringtail flying from scrub.

On 11th November, a probable female flew north over wetland.

On 6th December, a ringtail was observed hunting to the north of the site.

On 8th December, probable same ringtail observed circling and possibly sky dancing over the south of the site.

On 11th January, a male bird was observed hunting edge of scrub to the northeast of the factory.

On 9th March, a male bird was circling to north of VP3 hunting (<10 m) over reedbeds in the northeast of the site.

The series of records indicates that there was at least three individual Hen Harriers wintering in the area and using Drinagh Bog for hunting purposes (as was the case in the previous winters). While there was no evidence of on-site night roosting, it is considered that there is potential for roosting in the eastern sector of the site.

Sparrowhawk

Single birds on 18th and 19th October, 5th December, 8th February, 9th and 10th and 14th March.

Pair over southeast area of site on 11th February and three together on 14th March.

Sparrowhawk breeds on site.

Buzzard

Recorded regularly within and around site in all months, with two together on several dates and up to four in March.

Buzzard is considered to breed possibly on site but at least in the local area.

Kestrel

Kestrel was recorded on site in all months during the winter. All records were of single birds. The majority of records involved hunting birds.

Kestrel is expected to breed locally.

Merlin

One observed from VP3 flying northwards on 10th November. One (female) observed to the south of VP3 on 8th February.

Merlin is considered a scarce winter visitor to the area, with records also in winter 2015/16.

Peregrine

Peregrine was recorded on four dates through the winter, as follows:

On 19th October, one over southeast sector.

On 21st October, one hunting over scrub to south of VP2.

On 10th November, one flew westwards at north end of site

On 10th January, one was observed flying southwards just south of VP3 and later in day one flew NW over wetland.

On the basis of the above records and those in the previous winters, Peregrine is considered to be an occasional visitor to Drinagh Bog.

Golden Plover

Golden Plover were recorded as follows:

On 18th October, 37 flew in from north and landed on site, 24 flew in from northwest and then back out.

On 20th October, 42 circled to south of VP3.

On 21st October, flock of 1,000+ circled high over site and landed in several groups. Later in day 170 recorded circling over south end of site.

On 9th November, 12 flew north over site

On 10th November, flock of 64 was over site.

On 19th November, 40+ flew northeast over site.

On 8th December, 80 circled over site.

On 10th January, flock of 90 on site.

On 9th March, flock of 160 flew in from north and circled over northwest sector.

On 10th March, flock of 55 over northwest sector.

As in previous winters, the above series of records indicates that Golden Plover pass over the site and also land within the site. The flock of over 1,000 was the largest recorded on site since winter 2014/15.

Lapwing

Lapwing was recorded quite frequently through the winter. However, many of the records were of relatively small parties flying across the site. Records on-site of over 50 birds were as follows (most over wetland in north east sector)

October: on 21st, a flock of 120 circled.

November: flock of 200 on 7th, flocks of 55 and 100 on 10th.

December: flocks of 280 and 700 on 6th and 8th respectively.

January: flocks of 94 and 200 on 10th and 11th respectively.

February: 100 on 8th, flocks of 280 and 340 on 9th, 120 on 10th, 50+ on 11th.

Territorial birds (estimated 2 pairs) were present in wetland in March.

Woodcock

Two were flushed from along track near VP4 on 8th November.

Potential for other target species

It is considered that the Drinagh bog site has significant potential to support Kingfisher during winter (one had been recorded on 6th April 2010)

It is noted that there have been two records of Greenland White-fronted Goose at Drinagh Bog: two on 19th December 2011 were noted as being the first for the Boora wetlands (Heery 2012), while a flock of 45 was recorded at dawn on 2nd February 2012 during surveys for the Cloghan Wind Farm.

Other species of note

Mute Swan – present throughout the winter in numbers from six to eight birds. Pair on nest in east of site in late March.

Greylag Goose – present on several occasions through winter, with peak of 19 on 9th March (including a territorial pair).

Tufted Duck – present on ponds in northeast sector in small numbers (up to 6) through the winter, with at least ten birds in late March.

Great Crested Grebe – two pairs in late March (breeds on site).

Little Grebe – present on ponds in northeast of site in small numbers (<10) through the main winter period. At least six pairs displaying on 27th March.

Water Rail – heard in all months apart from October, with peak of at least 4 calling birds in February.

Snipe – recorded through the winter, mostly single or small numbers (<5) of birds. Peak of 22 flushed from wetland management plot on 11th February.

Redshank – three on 27th March were returning breeding birds.

Skylark – recorded on site in October (3) and November (4). Singing birds present in March.

Robin – present in scrub habitat through much of site. Most records of single birds.

Mistle Thrush – flock of 14 passed northwards over eastern sector on 20th October. Otherwise present in small numbers (up to 4) on several occasions.

Stonechat – present on site throughout winter (up to 5 birds), with three displaying pairs in March.

Meadow Pipit – sparsely distributed on site through winter period. Loose flock of 40+ in November. Displaying birds present in March.

Goldcrest – present in scrub and woodland habitats

Starling – regular on site through winter in flocks in the hundreds. Exceptional large flocks as follows: estimated 10,000-20,000 circling over eastern sector at 16.50 hrs on 7th November, 10,000+ circling over site at 16.48 hrs on 9th November (may have settled along east edge of conifer plantation).

Linnet – small flocks (<20) on four dates during winter. Estimated c.100 linnets in large (500+) mixed finch flock along northeast margin of site on 11th November.

SITE: DRINAGH – TRANSECT SURVEYS, 2016-17

Species	Date 17/11/16	Date 24/1/17	Date 16/3/17	BoCCI Status
Mute Swan	4	7	6	A
Whooper Swan	21	7		A
Mallard	33	10	14	G
Wigeon	5	4	6	R
Tufted Duck		2	6	R
Teal	4	3		A
Great Crested Grebe			4	A
Greylag Goose			4	G
Shelduck			2	A
Golden Plover			39	G
Redshank			2	R
Curlew		1		R
Pheasant			3	G
Grey Heron	1	1	1	G
Sparrowhawk			1	A
Buzzard	1	6		G
Kestrel		1		A
Moorhen		1	5	G
Little Grebe	4	3	4	G
Lapwing	33	8	10	R
Snipe		1	1	A
Woodcock				R
Woodpigeon	9	5	2	G
Magpie				G
Jay			2	G
Jackdaw	6	2	4	G
Hooded Crow	3	22	2	G
Raven	2	1	2	G
Siskin			6	G
Goldcrest		2		A
Blue Tit	2	5	1	G
Great Tit	2		4	G
Coal Tit	1			G
Skylark	2		5	A
Long-tailed Tit	8	5	6	G
Starling			10	A
Wren	9	6	17	G
Blackbird	6	6	1	G
Fieldfare	38			G
Song Thrush	2	1	3	G
Redwing	5			G
Mistle Thrush	1	1	1	A
Robin	1	4	11	A
Stonechat	2	1	3	A
Meadow Pipit	9	7	18	R
Pied Wagtail	2		4	G
Chaffinch	9	3	14	G

Dunnock	1		3	G
Goldfinch	2		11	G
Linnet	5			A
Lesser Redpoll	9		5	G
Bullfinch	2			G
Reed Bunting	7	6	8	G

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

General discussion

The 2016/17 survey supports the conclusions of the 2014/15 and 2015/16 winter surveys that Drinagh Bog has good potential to support a range of wintering bird species of conservation importance.

As in winter 2015/16, Whooper Swan numbers on site were low throughout the winter with most activity in October and November. The swans at Drinagh are considered part of the (at times) large Boora Parklands population and higher numbers may occur at Drinagh when there is disturbance at other sites. In particular, the lakes at the site provide good roost areas. It is noted that regular flightlines to and/or from Drinagh bog were not detected in any of the winter surveys.

Mallard and Teal are the main duck species which occur on site in winter though numbers are only at a local level of importance (numbers of duck may be under-estimated somewhat due to the cover provided by the swamp vegetation). The occasional occurrence of Wigeon (Red-listed) is a feature of the site.

Golden Plover and Lapwing pass over the site fairly regularly and at times land in the wetland area and/or on bare peat. A high count of 1,000 Golden Plover was made in October though most records were less than 100 birds. A flock of up to 700 Lapwing was present in December. Other wetland birds which occur include Mute Swan, Greylag Goose, Little Grebe, Tufted Duck Water Rail, Snipe, Moorhen and, on one occasion, Little Egret. Woodcock (Red-listed) was recorded on site in November – this species is expected to be a regular winter visitor in small numbers.

Drinagh Bog provides excellent habitat for birds of prey. Hen Harrier is regular through the winter, with several individual birds using the site. Merlin and Peregrine are occasional winter visitors. Sparrowhawk is regular on site with territorial birds present from February onwards. Buzzard and Kestrel are the most frequently encountered birds of prey at Drinagh, with up to four Buzzards present in March (breeds locally).

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.

Other Amber listed species recorded on site included Skylark, Mistle Thrush, Stonechat, Starling and Linnet. Large concentrations of pre-roosting Starlings were recorded in November.

3.4.4 Evaluation and Rating of Drinagh Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Drinagh Bog in winter 2016/17:

EU Birds Directive Annex I listed species

Whooper Swan (all winters)
Little Egret (also in 2015/16)
Hen Harrier (all winters)
Merlin (also in 2015/16)
Peregrine (all winters)
Golden Plover (all winters)

Red Listed species (after Colhoun & Cummins 2013)

Wigeon
Tufted Duck
Lapwing
Redshank (breeding birds)
Meadow Pipit

Amber Listed species (after Colhoun & Cummins 2013)

Little Grebe
Great Crested Grebe
Mute Swan
Teal
Sparrowhawk
Kestrel
Water Rail
Snipe
Black-tailed Godwit (2015/16 only)
Skylark
Robin
Stonechat
Goldcrest
Starling
Linnet

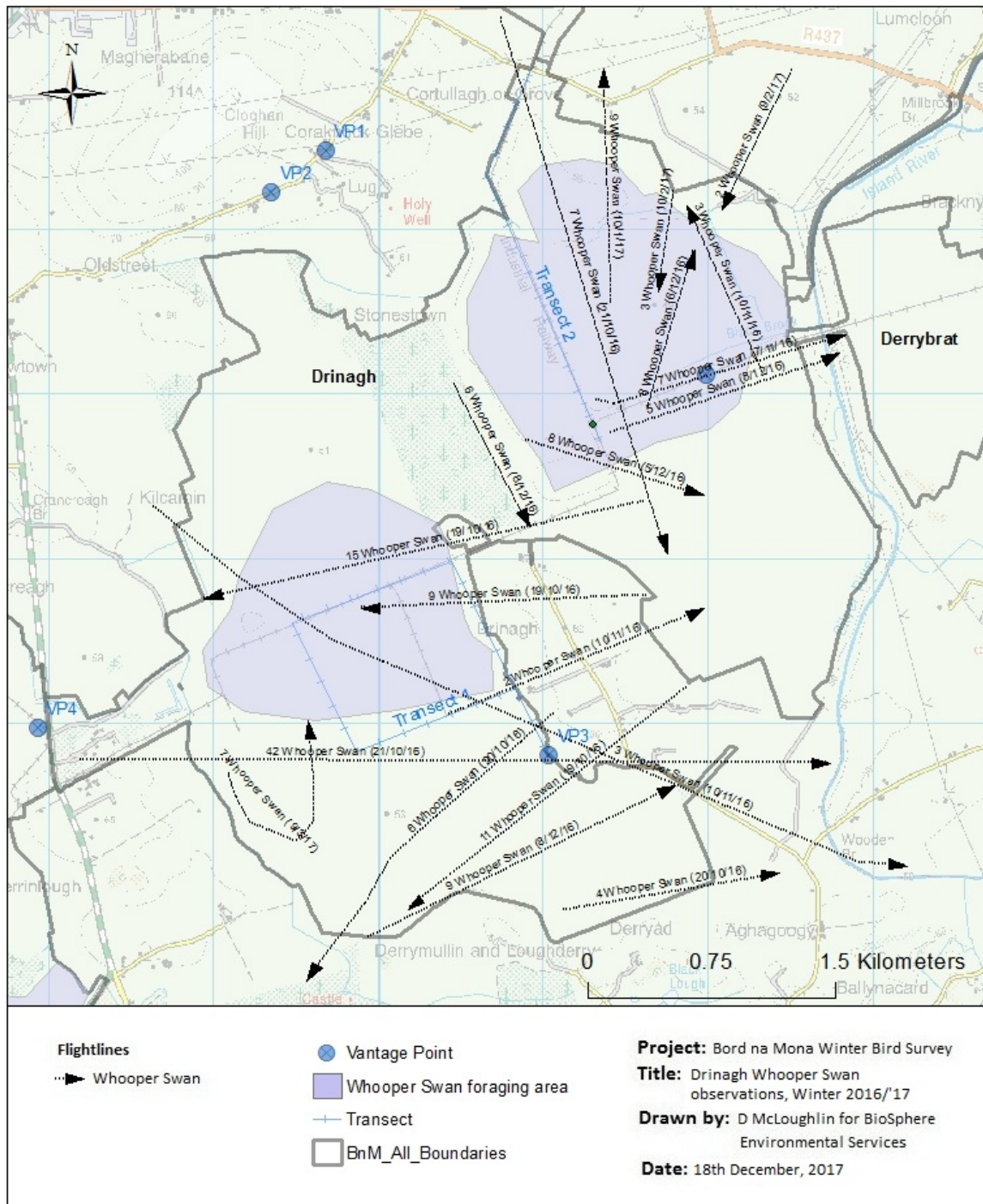
Amber listed species were recorded in all three winters, other than Black-tailed Godwit.

Drinagh Bog has habitats suitable for supporting a wide range of wintering birds. Of particular note is the wetland habitat in the north-east sector, and especially the substantial area of open water, which support a wetland bird community. While the Whooper Swan numbers recorded are well below the threshold for National Importance (i.e. 150), the swans occur fairly regularly within the site and the site has potential to support higher numbers at times.

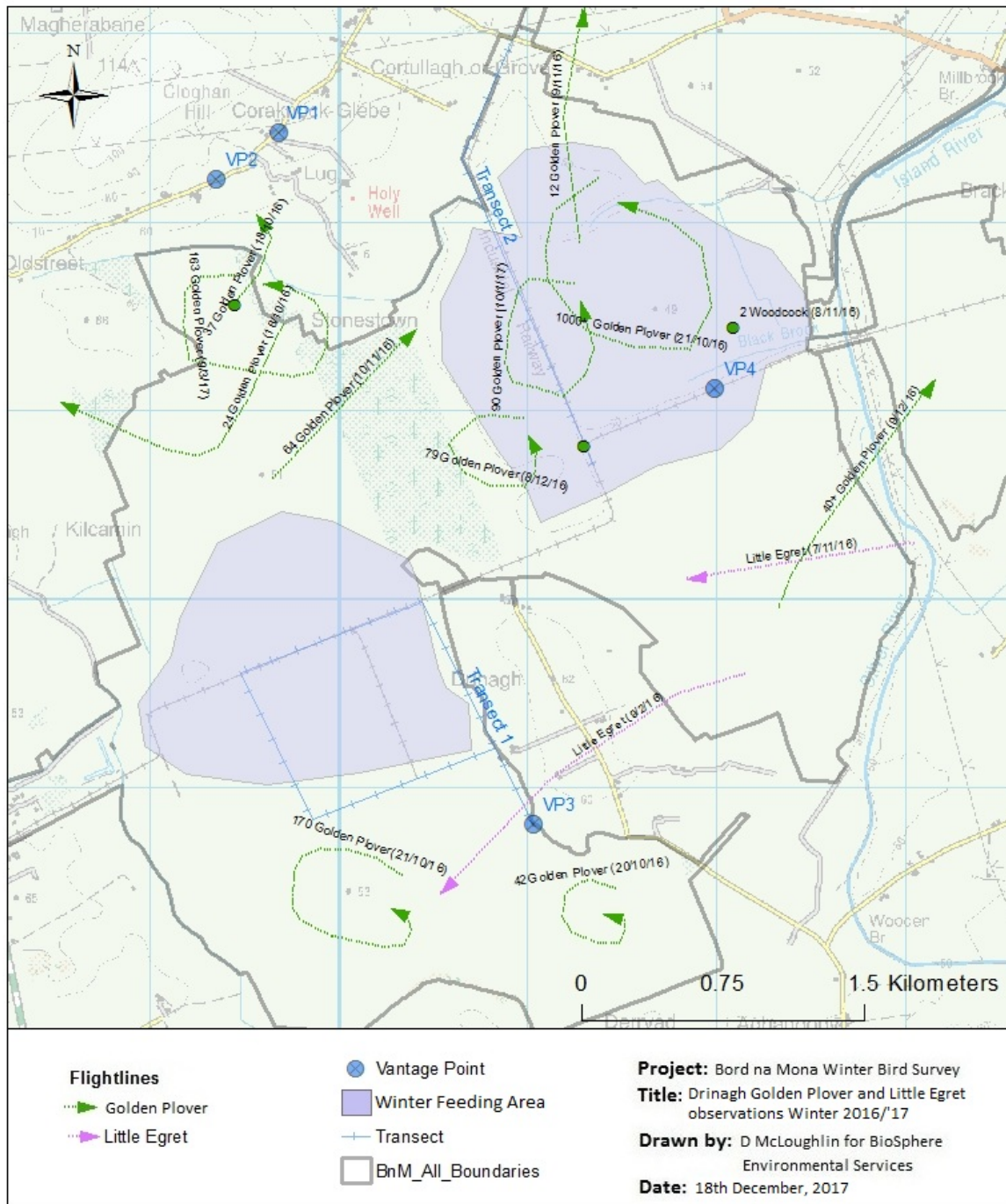
The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harriers, and generally the site provides good habitat for birds of prey (with Merlin on occasions).

On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red and Amber listed species, it is recommended that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.

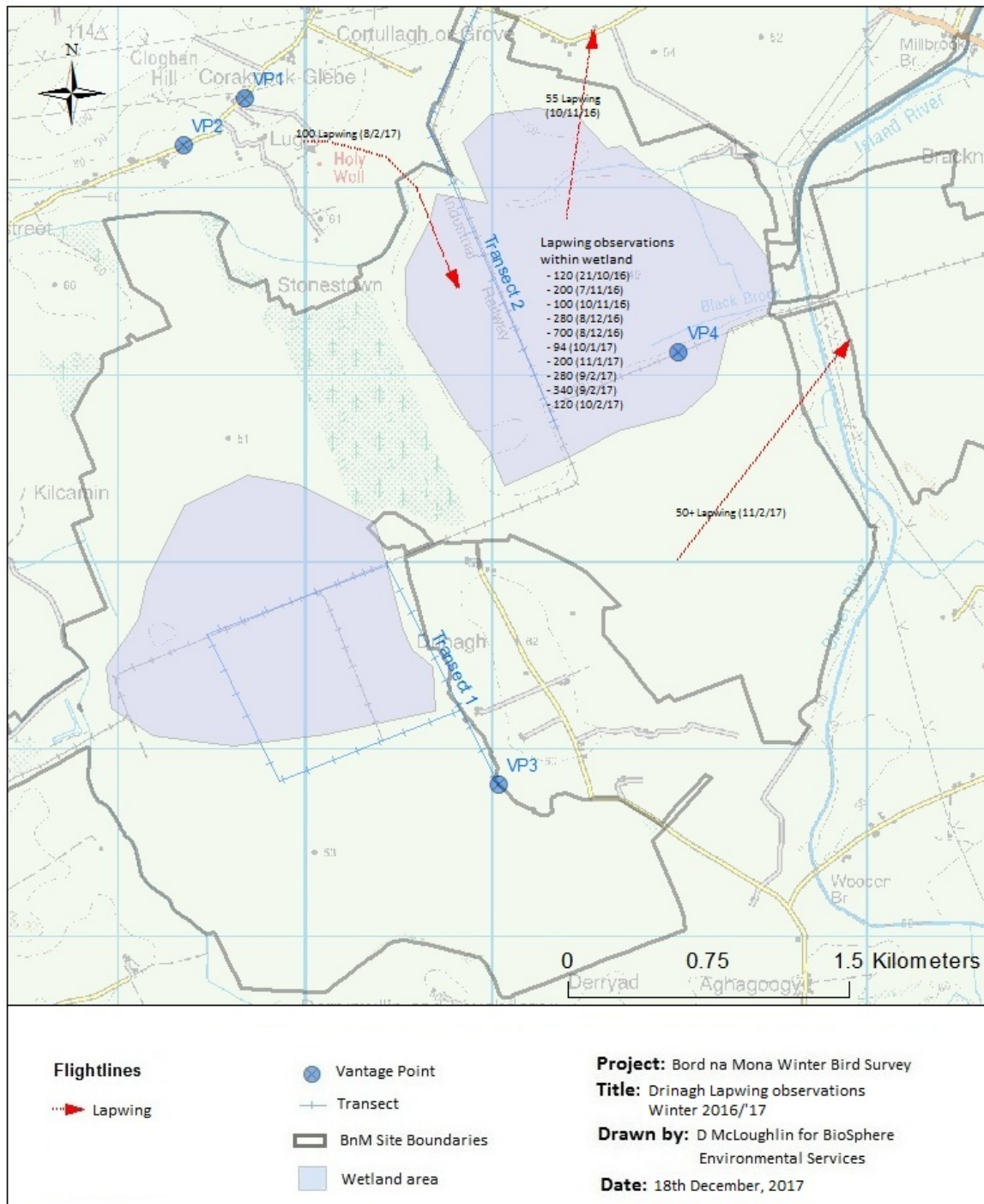
Drinagh Bog Map 1: Map showing transect and vantage point locations, with Whooper Swan records.



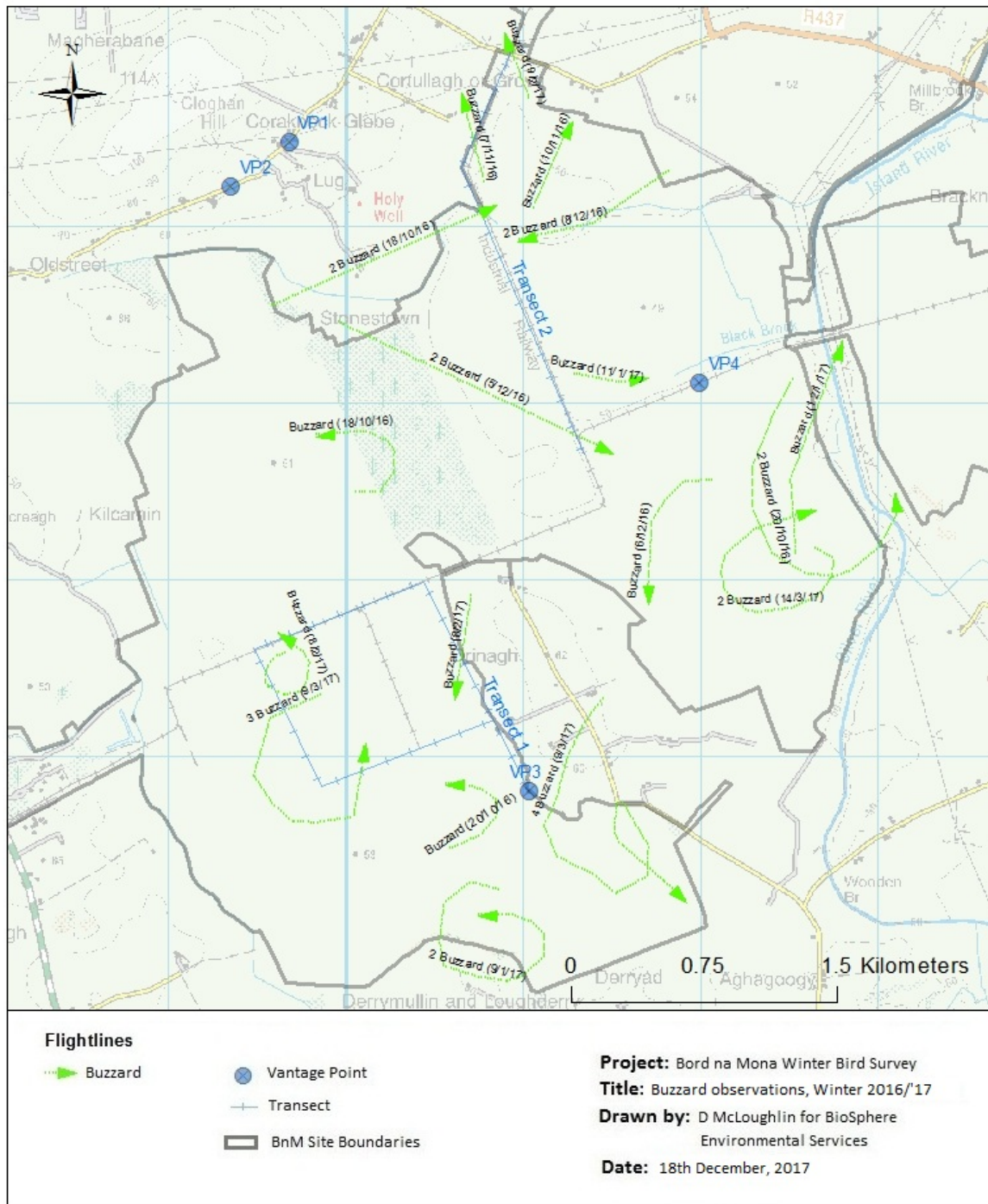
Drinagh Bog Map 2: Map showing transect and vantage point locations, with Golden Plover and Little Egret observations.



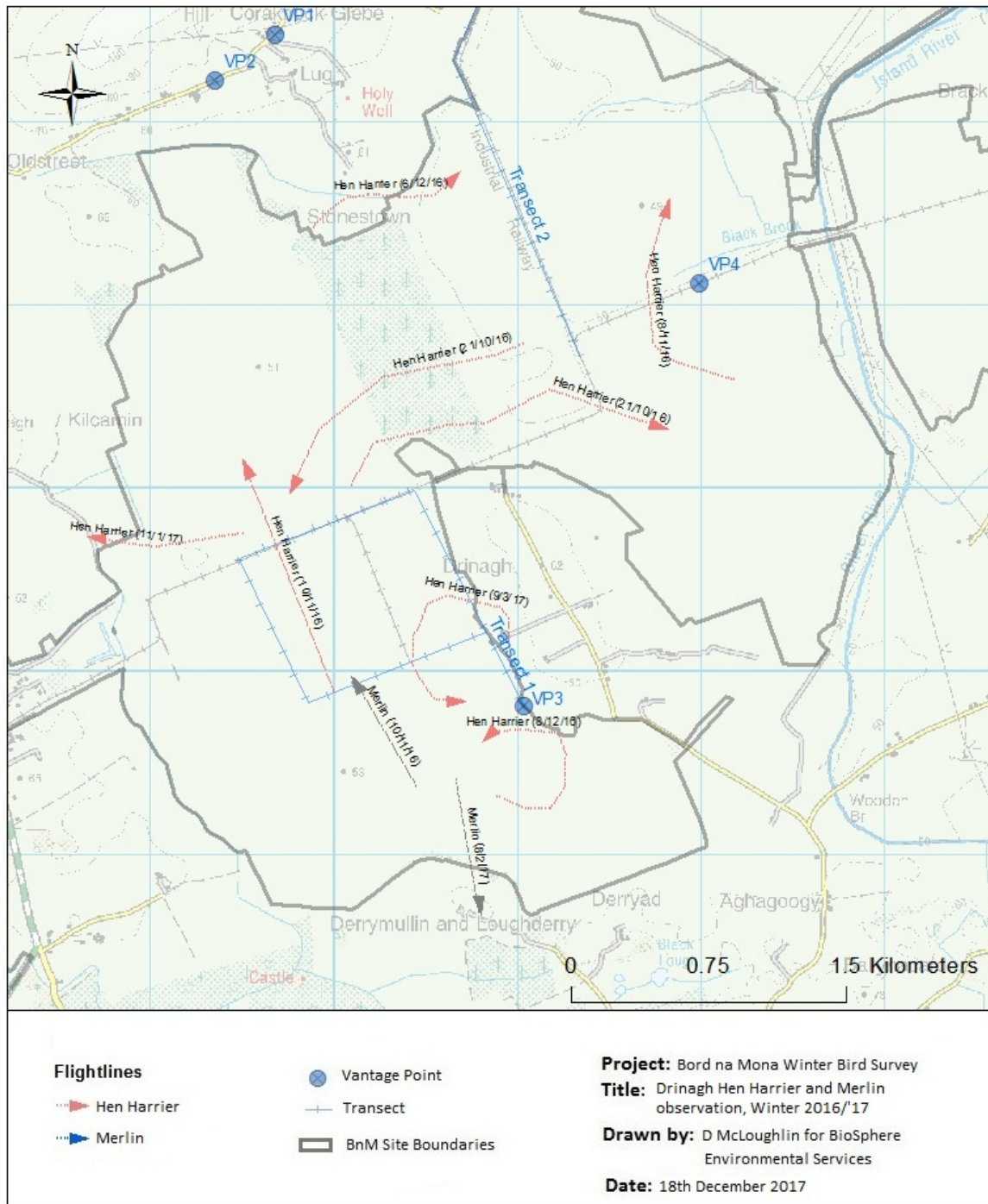
Drinagh Bog Map 3: Map showing transect and vantage point locations, with Lapwing observations.



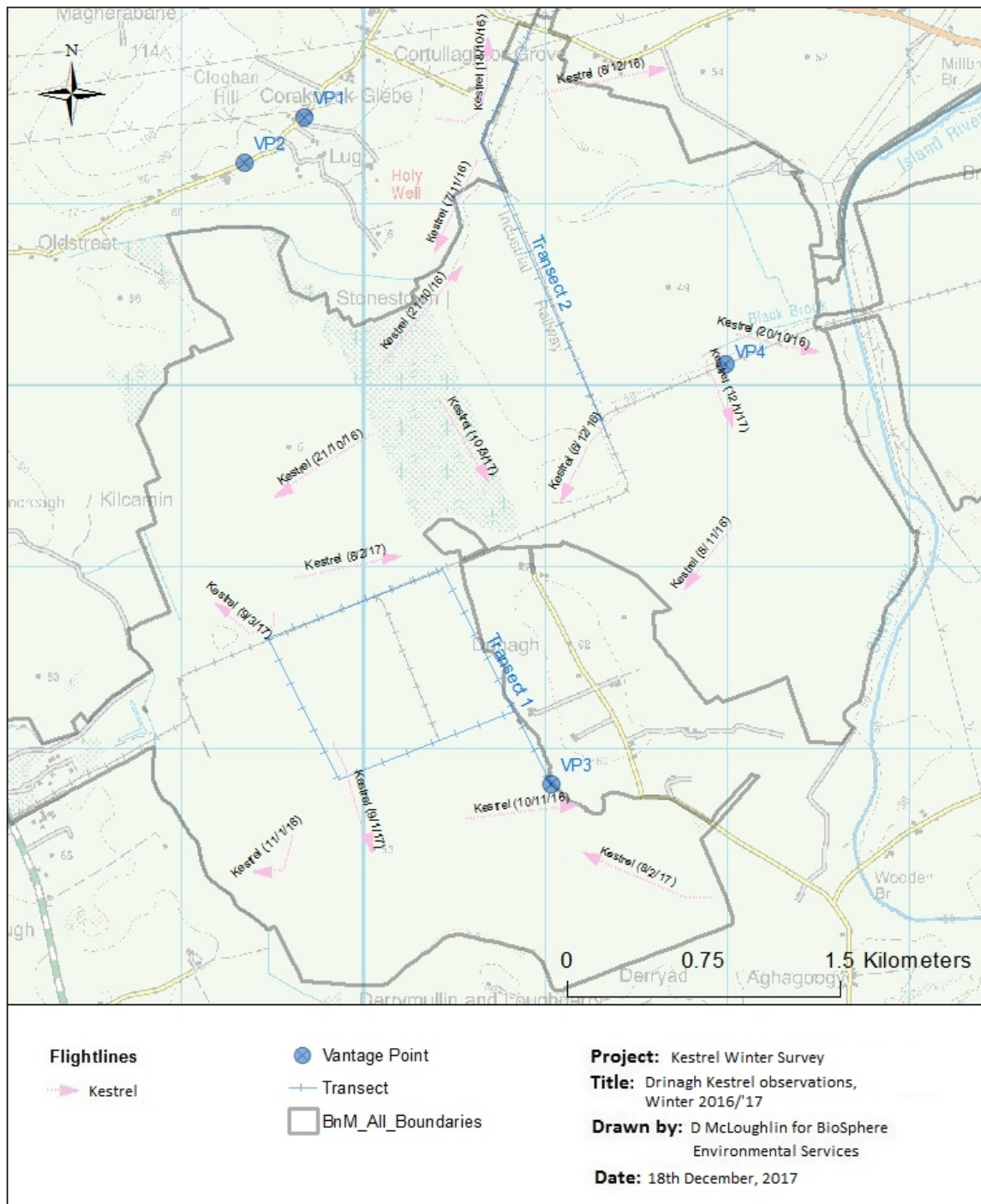
Drinagh Bog Map 4: Map showing transect and vantage point locations, with Buzzard observations.



Drinagh Bog Map 5: Map showing transect and vantage point locations, with Hen Harrier and Merlin observations.



Drinagh Bog Map 6: Map showing transect and vantage point locations, with Kestrel observations.



Drinagh Bog Map 7: Map showing transect and vantage point locations, with Sparrowhawk and Peregrine observations.

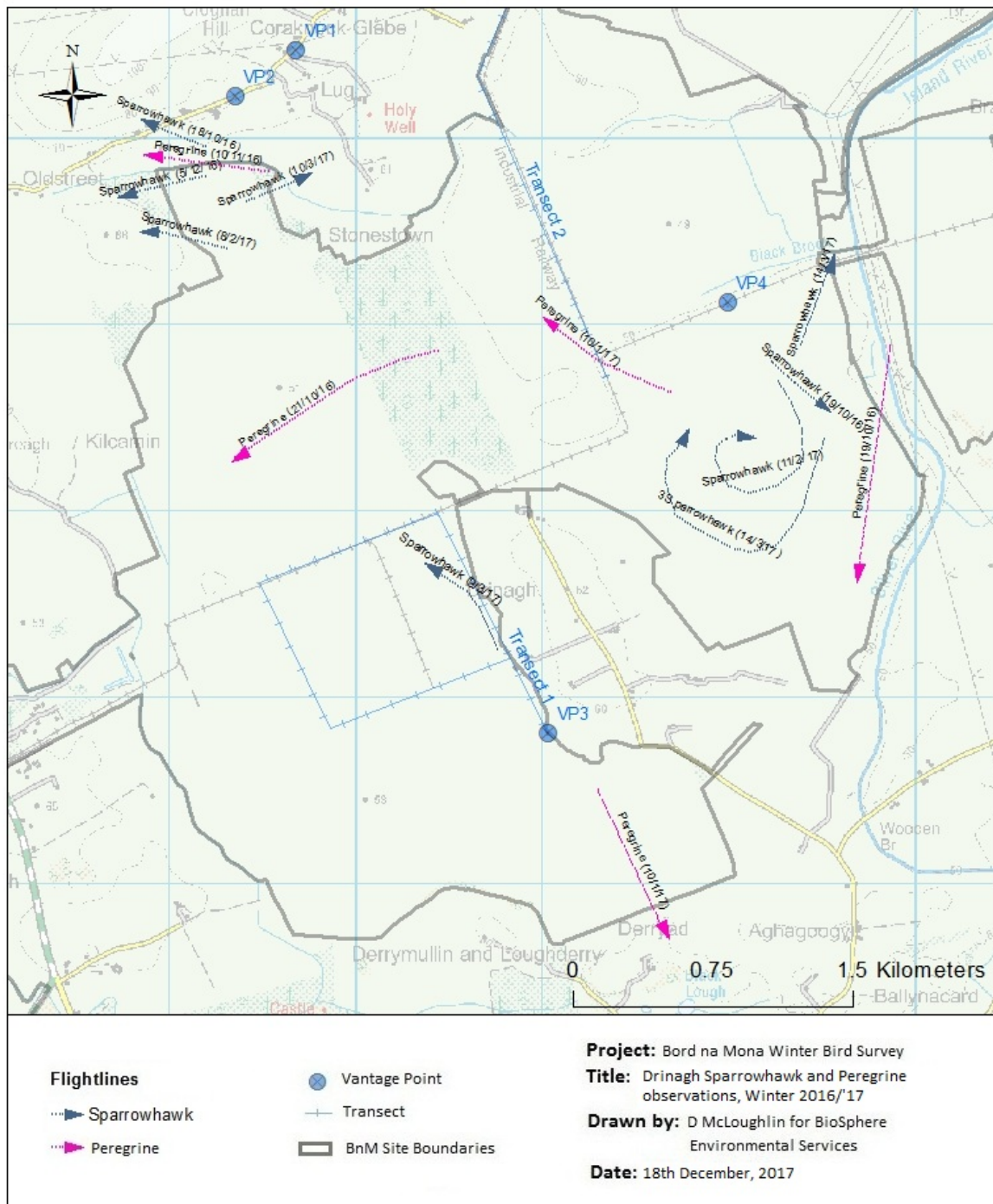




Plate 3. Drinagh Bog: view of wetland in NE of site (looking eastwards from rail track).



Plate 4. Drinagh Bog: view from VP4 over wetland and scrub habitat in SE sector of site (looking southwards from rail track).



Plate 5. Drinagh Bog: view from VP2 over northwestern part of site, showing bare peat and scrub habitats.



Plate 6. Drinagh Bog: view from VP3 over southern part site. This sector of site is largely still in commercial production.

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APPENDIX 1

Scientific Names of Bird Species

Grey Heron	<i>Ardea cinerea</i>
Whooper Swan	<i>Cygnus cygnus</i>
Mute Swan	<i>Cygnus olor</i>
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>
Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</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>
Golden Plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Snipe	<i>Gallinago gallinago</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>
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>
Bull finch	<i>Pyrrhula pyrrhula</i>
Reed Bunting	<i>Emberiza schoeniclus</i>

BORD NA MONA
WINTER BIRD SURVEY, 2017-2018
CLONGAWNY, DRINAGH BOG GROUP

DRAFT REPORT

AUGUST 2018

Prepared for

Bord na Móna

by

Biosphere Environmental Services
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APPENDICES

Appendix 1. Scientific names of bird species

Appendix 2. Results for Vantage Point watches for Clongawny Bog & Drinagh Bog (separate file)

EXECUTIVE SUMMARY

- A baseline study of wintering birds associated with the Bord na Móna Clongawny and Drinagh Bog Group was carried out between October 2017 and March 2018. This followed similar studies in the previous three winters (2014/15, 2015/16 & 2016/17).
- A large part of Clongawny Bog is still in active production or is classified as production related cutaway. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.
- Drinagh Bog is part of the Lough Boora Parklands. The north-east section is zoned for biodiversity and contains a substantial wetland complex of habitats including open water and reed beds. This area is developing into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the lakes. The western sector of the site is mainly in commercial production and comprises bare peat. Much of the remainder is regenerating cutaway bog with pioneering wetland habitats and scrub. The site contains a block of conifer plantation.
- The study included a desk review and consultations with relevant agencies, namely National Parks & Wildlife Service (local management staff), BirdWatch Ireland and the Irish Peatland Conservation Council. Field methods employed were a combination of transect surveys, vantage point watches and focused surveys for wetland birds. Monthly vantage point watches achieved a minimum of 36 hours of observations over each of the two bog sites.
- A small part of Drinagh Bog overlaps with the Lough Coura pNHA. There are a further 19 designated sites within a 15 km radius of Clongawny and Drinagh Bogs: 6 SPAs, 8 SACs, 1 NHA and 4 pNHAs.
- It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study. In a wider context, there is quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.
- Brief descriptions of the two bog sites are given, followed by details of target species recorded, the potential for other target species, other species of note recorded and an overview of the value of the site for wintering birds. A map showing locations of sampling transects and vantage points, plus flight lines of target species where relevant, is presented. Representative photographs are included.
- Principal target species recorded within or over the sites, and in the immediate surroundings, were as follows: Whooper Swan, Little Egret, Golden Plover, Lapwing, Sparrowhawk, Buzzard, Hen Harrier, Merlin, Peregrine and Kestrel.

- Meadow Pipit, a Red listed species, was recorded widely within the sites. Woodcock (also Red listed) was recorded at both sites.
- The following Amber listed species were recorded within the sites: Mute Swan, Little Grebe, Great Crested Grebe, Sparrowhawk, Kestrel, Water Rail, Snipe, Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest, Starling and Linnet.
- Whooper Swans (Annex I species) were recorded flying over or within Clongawny Bog on three dates during the winter though in small numbers (maximum 12). Whoopers occurred in large numbers (max. 217) at Drinagh Bog during November and December – these birds commuted between Drinagh and feeding fields to the east.
- Small numbers of Teal and Mallard occur on the lake in the eastern part of Clongawny Bog, with these duck species, along with Tufted Duck, more regular at Drinagh Bog though still in relatively low numbers.
- Little Egret (Annex 1 species) was recorded on both sites (single birds).
- Hen Harrier was recorded at Drinagh Bog on four dates through the winter, involving at least three individuals. There was no evidence of night roosting on site though there is potential habitat. There was one record of Hen Harrier at Clongawny Bog.
- There were two sightings of Merlin (Annex I species) at Drinagh Bog and two at Clongawny. Peregrine (Annex I species) was recorded at both bog sites.
- Golden Plover (Annex I species) and Lapwing (Red-listed) were recorded flying over the two bog sites through the winter, though numbers were generally low and considerably less than the respective thresholds for national importance.
- Meadow Pipit, a Red-listed species, is widespread on the sites during winter though mostly in fairly low numbers. Highest numbers were recorded in October and November. Woodcock, a further Red-listed species, was recorded at both sites.
- Various Amber-listed use the sites for feeding – these were Little Grebe, Great Crested Grebe (prospecting breeding birds), Sparrowhawk, Kestrel, Snipe, Skylark, Mistle Thrush, Robin, Stonechat, Goldcrest and Linnet.
- Overall, Clongawny Bog has limited potential for supporting wintering birds of conservation importance due partly to the extent of the site in commercial production. Also, the lake in the eastern part of the site appears to have low feeding potential for swans and other wildfowl. However, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, as well as Meadow Pipit and various Amber listed species. From the results of the 2017/18 survey, and considering the three winter surveys from 2014/15 to 2016/17, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Clongawny Bog.

- Drinagh Bog has habitats suitable for supporting a wide range of wintering birds. Of particular note is the substantial complex of wetland habitat in the northeast area of the site, which supports a wetland bird community. While the Whooper Swan numbers recorded exceeded the threshold for National Importance (i.e. 150) in winter 2017/18, the swans typically occur in considerably lower numbers. The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harrier, as well as Merlin. On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red- and Amber-listed species, it is considered that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.

1.0 INTRODUCTION

1.1 Background to Project

Bord na Móna is considering using some of its bogs in the midlands for large scale 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 issued a request for a winter bird study (2017/18) on the avian species and populations either using, or likely to use, the Clongawny / Drinagh group of bogs, in County Offaly. This is a follow-up study to the winter bird survey completed at Clongawny and Drinagh bogs for the 2014/15 winter (report by BES, October 2015), 2015/16 winter (report by BES, August 2016) and 2016/17 winter (report by BES, November 2017). The previous studies and the present study will form the key baseline data in the assessment of the impact on birds of potential wind farm construction and operation.

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 following mapping was supplied for each bog group by Bord na Móna:

- Site Location Map (Discovery map base)
- Orthophoto View (from 2006)
- Land Use Map (prepared by BnaM)

A copy of *Birds on Cutaway Peatlands: Baseline Breeding Bird Population Survey* (2011) by Dr. Alex Copland, BirdWatch Ireland (carried out for Bord na Móna) was supplied for reference.

A contract to carry out the required work was awarded to BioSphere Environmental Services in September 2017.

2.0 SURVEY METHODS

2.1 Desk Review and Consultations

In addition to a perusal of the general ornithological literature on Ireland's birds, including the annual journal *Irish Birds*, the following key sources of information (written and/or electronic) were accessed for references to the study area:

Boland, H. & Crowe, O. (2012) *Irish Wetland Bird Survey: Waterbird Status and Distribution 2001/02 – 2008/09*. BirdWatch Ireland, Kilcoole, Co. Wicklow.

Crowe, O. (2005) *Ireland's Wetlands and their Waterbirds, Status and Distribution*. BirdWatch Ireland, Newcastle, Co. Wicklow.

Fox, A.D., Norriss, D.W., Stroud, D.A. & Wilson, H.J. (1994). *Greenland White-fronted Geese in Ireland and Britain, 1982/83-1993/94. The first twelve years of international conservation monitoring*. Greenland White-fronted Goose Study and National Parks & Wildlife Service, Dublin.

Heery, S. (editor). *Birds in Central Ireland – Mid Shannon Bird Report*. 5 editions between 1996 and 2012. BirdWatch Ireland.

Hutchinson, C.D. (1979) *Ireland's Wetlands and their Birds*. Irish Wildbird Conservancy, Dublin.

Sheppard, R. (1993) *Ireland's Wetland Wealth*. Irish Wildbird Conservancy, Dublin.

www.birdwatchireland.ie - Distribution map and background information on I-WeBS sites in Ireland

www.npws.ie - Distribution maps and associated information for sites designated for conservation by NPWS (i.e. SPAs, SACs, NHAs, pNHAs)

Consultations, mostly by email and/or telephone, took place with the following:

NPWS

Mr Damian Clarke, District Conservation Officer, North-East Region. Tel.: 045 534071; email: Damian.Clarke@ahg.gov.ie

Mr Colm Malone, Conservation Ranger, Co. Offaly. Tel.: 057 9331470; email: Colm.Malone@ahg.gov.ie

BirdWatch Ireland

Dr Alex Copland, Senior Conservation Officer Crank House, Banagher, Co. Offaly
Tel.: 057 9151676; email: acopland@birdwatchireland.ie

Dr Olivia Crowe & Ms Helen Boland (I-WeBS co-ordinators)
email: ocrowe@birdwatchireland.ie; hboland@birdwatchireland.ie

Irish Peatland Conservation Council

Dr Catherine O'Connell, CEO, IPCC, Tel.: 045 860 133; email: bogs@ipcc.ie

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, May 2014).

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 the sites between October 2017 and March 2018 (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 (version May 2014). 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 Clongawny and Drinagh bog sites, 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 height¹, 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 or Curlew
- Hen Harrier, Merlin and other birds of prey
- Any other Annex 1 species of EU Birds Directive
- Any other Red or Amber listed species as given in Colhoun & Cummins (2013)

¹ 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

2.2.4 Swan and goose surveys in wider area

As part of the 2017/18 winter survey, specific search was made in outlying areas for flocks of Whooper Swans and/or other wetland species of importance such as Greenland White-fronted Goose. The search area extended to approximately 5 km from Drinagh bog and bog sites covered included Noggusboy, Derries, Derrybrat, Boora complex and Turraun. Apart from the bog sites, observations were made on large fields in the area viewable from public roads which could provide grazing potential for swans.

In each month, a specific day was dedicated to this search, though more frequent observations were made at some of the sites whilst travelling to and from Drinagh and Clongawny bogs.

2.3 Survey Limitations

Surveys following standard methods and within the recommended time frame were carried out at the Clongawny and Drinagh bog sites during the 2017/18 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 from three previous winters, the results of the present survey will provide a more robust assessment of the importance of the Clongawny Drinagh Bog Group 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 Colhoun & Cummins 2013). 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 the site of a breeding pair of Peregrine (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

The following designated sites are located within a distance of approximately 15 km of the Clongawny/Drinagh study area. These comprise the following types of designations:

- Special Protection Areas - SPAs are designated under Council Directive 79/409/EEC on the conservation of wild birds (i.e. the Birds Directive).
- Special Areas of Conservation - SACs are designated under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (i.e. the Habitats Directive).
- Natural Heritage Areas - NHAs are designated under the Wildlife Amendment Act 2000.
- proposed Natural Heritage Areas - pNHAs do not receive legal protection though the ecological value of pNHAs is recognised by Planning and Licencing Authorities.

Apart from SPAs, these sites do not necessarily have ornithological interests though many would support some birds of conservation interest. In the following list, a note is made on whether the site has known ornithological interest.

Middle Shannon Callows SPA (code 004096)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km).

The site is an SPA as it is of special importance for Whooper Swan, supporting a population of international importance. It also supports important populations of Mute Swan, Wigeon and Golden Plover. A small flock of Greenland White-fronted Geese continues to use the SPA.

Clongawny Bog is, at the closest, a distance of 3 km east from the Middle Shannon Callows SPA, while the distance between Drinagh Bog and the SPA is over 6 km.

River Little Brosna Callows SPA (code 004086)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an SPA as it is of international importance for wintering waterfowl. Of particular note is the Greenland White-fronted Goose population that is based along the Brosna. Also of international importance is the Black-tailed Godwit population. Species which occur in numbers of national importance include Whooper Swan, Wigeon, Teal, Pintail, Golden Plover and Lapwing.

Clongawny Bog is, at the closest, a distance of 5.5 km to the NE of the SPA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Dovegrove Callows SPA (code 004137)

Dovegrove Callows is an area of callowland beside the Little Brosna River c.2 km downstream from Birr in Co. Offaly.

The site is regularly used by a flock of Greenland White-fronted Geese (essentially the Little Brosna flock) as well as other waterfowl.

Clongawny Bog is, at the closest, a distance of 5 km to the north of the SPA, while the distance between Drinagh Bog and the SPA is approximately 8 km.

All Saints Bog SPA (code 04103)

This raised bog site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site in recent years.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog SPA.

Mongan Bog SPA (code 004017) and SAC (code 00580)

This raised bog site is located just east of Clonmacnoise in Co. Offaly. It is a fine example of a largely intact raised bog with an active core.

The SPA is selected for Greenland White-fronted Goose. However, it appears that geese have not been recorded on site since the early 1980s.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA and SAC.

Slieve Bloom Mountains SPA (code 04160)

This upland site comprises large areas of the Slieve Bloom Mountains. The SPA is selected for breeding Hen Harriers and also supports breeding Merlin.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 12 km and 14 km to the northwest of the SPA.

River Shannon Callows SAC (code 00216)

This large site comprises a long stretch of the Shannon from Athlone town to Portumna (c.50 km). The site is similar in extent to the Middle Shannon Callows SPA though includes more of the marginal habitats.

The bird interests of the SAC are the same as listed for the SPA.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 15 km and 13 km from Mongan Bog SPA.

Fin Lough SAC (code 0576)

This site is a shallow limestone lake surrounded by a complex of wetland habitats including alkaline fen. It is located approximately 7 km northeast of Shannonbridge in Co Offaly.

The lake is noted as an important roosting area for wintering duck.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 13 km and 12 km.

Redwood Bog SAC (code 02353)

Redwood Bog is a raised bog system that include both active bog and degraded bog. It is situated about 7 km southwest of Banagher.

The SAC is situated approximately 9 km west of Clongawny Bog and 13 km west-southwest

of Drinagh Bog.

This site is noted as a haunt of Greenland White-fronted Geese.

All Saints Bog and Esker SAC (code 566)

This raised bog and esker ridge site is located approximately 5 km northwest of Birr in Co. Offaly. It is a fine example of a largely intact raised bog system with an active core as well as degraded bog areas. The esker ridge supports orchid rich calcareous grassland.

Clongawny and Drinagh Bogs are, at the closest, respective distances of 3.5 km and 7 km from All Saints Bog and Esker SAC.

Moyclare Bog SAC (code 0581)

This is a small raised bog situated about 4 km west of Ferbane in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 7 km north-northeast of Clongawny Bog and 5 km north of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ferbane Bog SAC (code 0575)

Ferbane Bog is a relatively large raised bog situated about 10 km east of Shannonbridge in Co. Offaly. It comprises active bog and degraded bog.

The SAC is situated approximately 9 km northeast of Clongawny Bog and 6 km north of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ridge Road, SE of Rapemills SAC (code 0919)

This SAC site comprises esker ridges which support orchid rich calcareous grassland.

The SAC is situated approximately 4 km southwest of Clongawny Bog and 8 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

River Little Brosna Callows NHA (code 00564)

This site extends from the confluence with the River Shannon to just beyond New Bridge on the R438 road.

The site is an NHA as it supports extensive areas of callow grasslands and also a raised bog at Cloghan Demesne. The site is also of international importance for wintering waterfowl and is a designated SPA.

Clongawny Bog is, at the closest, a distance of 5 km to the NE of the NHA, while the distance between Drinagh Bog and the SPA is approximately 9 km.

Lough Coura pNHA (code 00909)

This pNHA is located along part of the southwest boundary of Drinagh Bog and there is a very minor overlap. The site is an old infilled lake that contains wet grassland and fen vegetation.

This site is not listed as being of ornithological interest.

Banagher (Domestic Dwelling) occupied pNHA (code 00567)

This pNHA is bat site. It is located approximately 1 km north of Clongawny Bog and 3 km west of Drinagh Bog.

This site is not listed as being of ornithological interest.

Woodville Wood pNHA (code 00927)

This pNHA is located within approximately 4 km south of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Ross and Glens Eskers pNHA (code 00920)

This pNHA is located within approximately 3.5 km southwest of Clongawny Bog and 7 km southwest of Drinagh Bog.

This site is not listed as being of ornithological interest.

Grand Canal pNHA (code 02104)

The Grand Canal pNHA passes within 3.5 km north Clongawny and Drinagh Bogs.

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

3.2 Review of Past Data for Study Area

There have been three national surveys (with I-WeBS on-going) for wintering waterbirds as follows:

Irish Wetlands Enquiry

In the *Irish Wetlands Enquiry* (winters 1971-72 to 1974-75), which was the first national census of wetland birds, the **River Shannon** and the **Little Brosna River** are the only sites mentioned that are in the wider hinterland of Clongawny and Drinagh Bogs.

The River Shannon is listed as the section between Lough Ree and Lough Derg and is rated as a site of international importance for wild swans (Bewick's and Whoopers) and Black-tailed Godwit and of national importance for various species such as Mallard, Teal, Wigeon, Lapwing, Golden Plover and Curlew. Hutchinson (1979) writes the following:

“From Lough Ree south to Lough Derg the Shannon is surrounded by extensive bogs and poorly drained agricultural land as it traverses the central lowlands. ... The flood plain of the river is pasture flooded in winter and known as callow land..

The most numerous wildfowl are Wigeon and several thousands occur along the river between Athlone and Portumna. Several hundred Teal and wild swans, together with small numbers of White-fronted Geese, also winter along the river. However there is considerable movement of birds in this area in response to changes in water level and shooting pressure. As a result, certain areas may have no ducks at all on some occasions, but several hundred at other times...

Lapwing and Golden Plover congregate on the callows and fields behind the callows in very large numbers.”

Hutchinson notes that the important part of the Little Brosna for waterfowl comprises the callows extending from New Bridge, seven kilometres northwest of Birr, to the junction with Shannon at Meelick and includes Big Island and Friars Island on the Shannon. He writes

“As a wildfowl haunt it is extremely important, with Wigeon the most numerous species (up to 7,000) and in numbers of international importance. Large numbers of Teal (up to 2,200) and the biggest flock of Pintail on the Shannon system also occur. The callows are the feeding ground for several hundred White-fronted Geese, the second largest concentration in Ireland after the Wexford Slobs. Some of the largest numbers of Lapwing and Golden Plover in Ireland scatter over the callows and adjoining farmland, but the most important wader concentration is the flock of Black-tailed Godwits which peaks in late winter at up to 4,000 birds.”

Winter Wetlands Survey

A further national census of wetland birds, the *Winter Wetlands Survey*, took place over the three winters 1984-85 to 1986-87 (Sheppard 1993). Again, the **Shannon Callows** and the **Little Brosna Callows** were the only sites included within the wider hinterland of Clongawny and Drinagh Bogs.

The Shannon Callows, which was counted 4 times over 1 season, is listed as a site of International Importance for Whooper Swan (211) and Wigeon (8,725), and of National Importance for Mute Swan (253), Teal; (900), Golden Plover (4,500), Lapwing (12,864) and Black-tailed Godwit (600).

The Little Brosna was counted 31 times over 3 seasons, and is listed as a site of International Importance for Whooper Swan (201), White-fronted Geese (417), Wigeon (12,250) and Black-tailed Godwit (2,375). It was listed as of National Importance for Teal (3,000), Mallard (2,250), Pintail (275), Shoveler (250), Golden Plover (5,000), Lapwing (3,925) and Curlew (1,150). Sheppard writes:

“This phenomenal site recalls what once must have been commonplace throughout Europe, but is now almost gone – a highly productive floodplain, enriched by wildfowl manure in winter, and cropped for hay or grazed in winter.”

Irish Wetland Bird Survey (I-WeBS)

The *Irish Wetland Bird Survey* was initiated in 1994/95 and continues to the present. All major wetlands in the country are covered each winter by this scheme. Annual reports have been published and the first major review was carried out for the period 1994/95 to 1999/2000 (Crowe 2005), with a further review (species based rather than site based) for the period 2001/02 to 2008/09 carried out by Boland and Crowe (2012).

A total of 5 sites are listed which are within the hinterland of Clongawny and Drinagh Bog sites.

The **Shannon Callows** (similar unit as the SPA) is listed as a site of International Importance for Mute Swan (367), Whooper Swan (321), and Black-tailed Godwit (27 but high numbers in previous period). The populations of Wigeon (2,800), Golden Plover (2,429 and Lapwing (14,218) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Shannon callows regularly support internationally important numbers of Mute Swan, Whooper Swan and Black-tailed Godwit, and nationally important numbers of a further three species. This site also supports an increasing, and now significant concentration of Black-headed Gulls.*”

A summary of counts for the principal species along the Shannon Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 1. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

Table 1. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Shannon Callows I-WeBS site and Middle Shannon Callows SPA. Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	888	339	775	500	739	588
Whooper Swan	392	255	207	299	305	267
Wigeon	2378	900	4702	3676	2023	2825
Teal	302	270	573	835	285	491
Mallard	71	0	233	55	91	126
Golden Plover	956	1680	200	7610	1750	2810
Lapwing	247	2837	1397	7672	2149	3514

The **Little Brosna Callows** (similar unit as the SPA) is listed as a site of International Importance for Greenland White-fronted Geese (455), Golden Plover (10,393) and Black-tailed Godwit (3,050). The populations of Whooper Swan (111), Wigeon (7,555), Teal (1,966), Pintail (140), Shoveler (274) and Lapwing (6,191) are listed as of National Importance. (figures refer to the mean peak for the period 1996/97-2000/01).

Crowe writes: “*The Little Brosna Callows are internationally important for Greenland White-fronted Goose, Golden Plover and Black-tailed Godwit, and nationally important for a further six species. It is among the top ten most important sites for most of these species. This site also supports significant concentration of Black-headed Gulls, and a high diversity of wetland bird species, particularly from an inland site.*”

A summary of counts for the principal species along the Brosna Callows for the most recent 5-year period (2008/09-2012/13) is given in Table 2. Note that these counts are from aerial surveys, which is the preferred method for coverage of large sites.

The **Cloghan Wetlands** (grid ref. N100195) I-WeBS site comprises Cloghan Lake and Drinagh Bog. This site was subsequently re-named as Cloghanhill.

For the period 1996/97-2000/01 the site supported a nationally important population of Whooper Swans (mean peak of 130) (Crowe 2005). Since then, counts have been irregular with 190 Whooper Swans in winter 2008/09 and no swans present in winters 2009/10 and 2013/14 (there were no counts in the 3 winters 2010/11 to 2012/13).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 3. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 2. Peak counts for principal species over 5 winters 2008/09 to 2012/13 for Little Brosna Callows I-WeBS site (and SPA site). Mean of 5 year period is also given. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	10/11	11/12	12/13	Mean
Mute Swan	129	118	75	129	70	98
Whooper Swan	184	190	110	147	120	142
White-fronted Goose	178	230	230	200	200	215
Wigeon	4454	1455	2375	2350	5700	2970
Teal	400	70	0	320	0	195
Mallard	32	50	11	20	30	28
Golden Plover	0	2045	0	2200	0	2123
Lapwing	0	1110	570	1150	800	908
Black-tailed Godwit	700	1000	0	0	0	1000

Table 3. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Cloghanhill I-WeBS site (i.e. Cloghan Lake & Drinagh Bog). Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Mute Swan	6	15	2
Whooper Swan	190	0	0
Greylag Goose	38	17	0
Wigeon	0	4	12
Teal	4	3	2
Mallard	27	86	85
Golden Plover	0	0	8
Lapwing	11	0	12
Snipe	12	10	5

Boora Lakes-Back Lakes (Finnamore Lakes) (grid ref. N180195) I-WeBS site comprises wetlands within the Lough Boora Parklands cutaway bogs. These are situated several kilometres to the east of Drinagh Bog.

Crowe (2005) notes that while the site does not regularly support any nationally important concentrations, it does occasionally support high, nationally important, numbers of several species, namely Little Grebe (54), Mallard (1037), Golden Plover (3,000) and Lapwing (2,200) (figures are peaks for period 1996/97-2000/01). Other species that have been recorded (with peak numbers) include: Whooper Swan (107), Greenland White-fronted Goose (14), Wigeon (100) and Teal (120).

A summary of counts for the principal species for winters 2008/09, 2009/10 and 2013/14 is given in Table 4. Note that there were no counts in the three winters 2010/11 to 2012/13 and the count for winter 2009/10 is listed as approximate.

Table 4. Counts for principal species in winters 2008/09, 2009/10 & 2013/14 for Boora Lakes-Back Lakes (Finnamore Lakes) I-WeBS site. Note that zero counts may indicate birds were feeding elsewhere on day of survey (source: I-WeBS)

Species	08/09	09/10	13/14
Whooper Swan	117	5	0
Wigeon	109	0	0
Teal	121	22	25
Mallard	53	141	26
Golden Plover	2000	326	150
Lapwing	727	249	705
Snipe	29	3	5
Curlew	81	14	0

Turraun Nature Reserve (grid ref. N178236) comprises cutaway bog with a lake. Site is owned by Bord na Móna and is a non-statutory nature reserve. It is located just south of the Grand Canal and approximately 7 km to the northeast of Drinagh Bog.

For the period 1996/97-2000/01 the population of Whooper Swans (119) approached national importance (Crowe 2005). Since then, Whooper Swan counts have been irregular, as follows: one in winter 2007/08, 118 in winter 2008/09, no swans recorded in winter 2009/10, (no counts in winters 2010/11-2012/13), and no swans recorded in winter 2013/14.

Review of history and status of Brosna/Shannon population of Greenland White-fronted Geese

The Clongawny and Drinagh bog sites are in proximity to two populations of Greenland White-fronted Geese.

Rutledge & Ogilvie (1979) carried out a major review of the status of the Greenland White-fronted Goose in Ireland and Britain. They identified the River Shannon, Athlone to Portumna (site no. 11) as of international importance. They included the Shannon Harbour to Banagher section as a subsite in the context of the overall population, with c.150 out of a total of 600 birds in the 1940s and early 1950s. By the 1970s, the overall flock size had declined to an estimated 200-250. Rutledge & Ogilvie (1979) also identified the Little Brosna River (site no. 12) as of international importance. When first studied in some detail in the 1940s the population was about 400 birds. By the early 1950s a decline had set in as a result of disturbance from shooting. By the late 1970s numbers had fallen to about the 200 mark. They note: “*Although so close to the River Shannon the population is conservative and, given the opportunity confines itself to the Little Brosna callows. This haunt should be studied in conjunction with the River Shannon complex (site 11)*”.

A further main review of the status of Greenland White-fronted Goose in Ireland and Britain was carried out by Fox *et al.* (1994). Again the Little Brosna population (site no. 26) was rated as of international importance, with a mean flock size of 526 over the 6 winters 1988/89-1993/94. The range of this flock is given as the Little Brosna and the section of the Shannon from the confluence of the Brosna to Lough Derg (sites no. 12 and part of 11 of Rutledge & Ogilvie). A total of 34 feeding sites were recognised.

Since the review by Fox *et al.* (1994), an annual census of Greenland White-fronted Geese in Ireland has continued to be carried out by National Parks and Wildlife Service as part of an International Census of the species. For winters 2011/12 to 2012/14, the following peak counts were recorded for the Little Brosna population:

220 in winter 2011/12 (Fox *et al.* 2012)

200 in winter 2012/13 (Fox *et al.* 2013)

135 in winter 2013/14 (Fox *et al.* 2014)

150 in winter 2013/14 (Fox *et al.* 2015)

The Greenland White-fronted Goose Site Inventory (Norriss unpublished) does not list any traditional goose feeding sites at Clongawny or Drinagh bogs (listed sites are along the rivers and at All Saints Bog).

Other Sources of Information

NPWS

Ciara Flynn of NPWS noted the following in e-mail dated 13/11/2014:

“Hen harrier have been recorded in winter over Drinagh, also peregrine. BWI have a lot of info on breeding waders and Black headed gull colonies from here also. The flooded BNM cutover at Drinagh is becoming a very important wildfowl site. GWFG and whoopers have been recorded from here also (as part of the surveys for the Cloghan Wind Farm)”

Irish Peatland Conservation Council

The IPCC does not have any information specific to Clongawny and Drinagh Bogs.

BirdWatch Ireland

BirdWatch Ireland has carried out various winter surveys for wetland birds at Drinagh Bog and at least in one winter at Clongawny Bog (Copland, A. BWI Winter Counts 2008/09). These counts indicated that Drinagh Bog has good potential to support wintering wetland birds but that the potential at Clongawny is limited. The surveys have been carried out in the context of the wider Boora region (A. Copland pers. comm.).

Local Bird Report

A small number of references are made to bird species at Drinagh bog in the Mid Shannon Bird Reports – these are noted in the species accounts in this report. There appears to be no mention of Clongawny Bog in the reports.

Cloghan Wind Farm EIS

The EIS (dated November 2012) prepared for the proposed Cloghan Wind Farm (Planning Authority Reg. Ref.: 12/293, An Bord Pleanála Ref No. PL 19.242354) included surveys for wintering birds in the area, including Drinagh Bog (see Chapter 6 of EIS). The following was noted (pages 86-90 of EIS):

43 Whooper Swans roosting at Drinagh in February 2012 – moved to daytime feeding sites to NE and NW of site, grassland sites at Derrycarney and Lea More and also to Coolreagh Bog to forage. Some remained at Drinagh. On 17th February 2012, 88

Whooper Swans grazing in fields.

On 2nd February 2012, very cold – at dawn a flock of 45 Greenland White-fronted Geese observed at Drinagh over 1 hour. At 8.30 hrs, left lake and flew in a flock over conifers towards Cloghan Wind Farm site and then flew in direction of Little Brosna Callows. Drinagh watched again in evening but no geese. Watches over two further mornings also negative for geese. EIS concluded that Greenland White-fronted Geese are rarely in area.

One Peregrine over Drinagh on 2nd February 2012 flying between 60 m and 120 m.

Golden Plover in fields to south.

Meenwaun Wind Farm EIS

The EIS (dated February 2015) prepared for the permitted Meenwaun Wind Farm (Offaly County Council Planning Authority Ref.: 1544; An Bord Pleanála Ref No. PL19.244903) included surveys for wintering birds in winters 2012/13 and 2014/15. The wind farm site is located immediately to the southwest of Clongawny Bog. Two Vantage Points were used for the winter surveys, one at Clongawny More and one at Derrinlough (along the N62). The following is a summary of the avifauna recorded (see Chapter 6 of EIS for details).

Whooper Swan

None recorded over site but 9 flew east to west to the south of the wind farm site on 27th December 2014, flying height c.20 m. Also, 5 at the small lake at Clooneen (probably refers to lake within Clongawny Bog) on 27th December 2014. Also, on 30th January 2015, signs of swan usage (feathers) on flooded cutaway bog to southwest of All Saints Bridge.

Hen Harrier

One (not sexed) seen at Clongawny More on 21st January 2015 flying west to east at 15.42 hrs.

Golden Plover

Sightings over industrial bog to northeast of wind farm site in October 2012 (2 birds) and 21st January 2015 (several parties, largest 41).

Woodcock

There were 3 winter sightings of Woodcock in vicinity of site.

The EIS states that there were no winter sightings of Greenland White-fronted Goose, Merlin or Peregrine.

Overall Appraisal of Available Information

It appears that there is little past information on birds specific to the Clongawny Bog cutaway site. However, there are various sources of information on the wintering birds of Drinagh Bog, which is useful in adding to the results of the present study.

In a wider context, there is useful quantitative information on the River Shannon and Little Brosna systems dating back to the 1970s and to such sites as the Turraun Nature Reserve and Cloghan Lake.

3.3 Clongawny Bog

3.3.1 Site description

Clongawny Bog is located approximately 3 km south-southwest of Cloghan village. It is bordered by the N62 road to the east and the R438 to the west. A local road runs west from Galros Cross Roads and skirts part of the southern boundary.

A large part of the bog is still in active production or is classified as production related cutover. The bog is primarily divided into several sections by the blocks of forestry located towards the centre of the site and by a railway that crosses the site in a NW-SE orientation. The forestry on the site is managed by Coillte with both commercial production of timber and biodiversity as the main management objectives. The site has a varied topography with some mineral mounds of glacial material and deeper basins.

The active production areas are dominated by bare peat and occur in the northern, southern and part of the western sections of the site. The regenerating cutaway bog areas are vegetated by a mosaic of pioneering wetland vegetation types and scrub dominated by birch. Several patches of native woodland occur on mineral knolls. A substantial area of permanent open water (shallow lake) has developed in the easternmost part of the site alongside the N62. Some remnant raised bog and cutover strips occur along parts of the margins of the site.

Clongawny Bog is largely within an agricultural landscape, with pasture grassland dominant. However, other Bord na Móna commercial bogs occur in the wider area, along with a scatter of remnant bogs (mostly cutover). Conifer plantations are also a feature of the area.

3.3.2 Survey locations

Transect 1 is a loop in the western sector of the site which is through regenerating cutaway bog, with wetland and scrub habitats.

Transect 2 is within the central area of the site and comprises a loop around a block of conifer plantation, passing scrub, regenerating bog habitats and bare peat.

Transect 3 is located in the eastern part of the site and passes alongside conifer plantation and regenerating bog habitats.

Vantage Point 1 is located alongside the rail track a little in from the N62. This looks over the lake and wetland as well as some conifer forest.

Vantage Point 2 is located near the junction of the railway tracks, with views over the southern part of the site (largely bare peat) and also further conifer forest and some native woodland.

Vantage Point 3 is located at the west end of the rail track in the western sector of the site. This gives views over the western sector of the site.

Vantage Point 4 is located along the site boundary in the northeast. This gives views over the northern and central areas of the site.

3.3.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Clongawny Bog are compiled in Appendix 2. Transect data are presented in tabular form for site survey date.

Target species recorded

Whooper Swan

Whooper Swans were recorded flying over or within the site on three dates during the winter, as follows:

12th November 2017 - two on lake.

26th November, 2017 - six flew north just east of site.

22nd January, 2018 - party of 12 flew NE across site.

A fairly similar pattern of records as in the previous winters, with small numbers using lake (probably roosting/resting) and/or passing over the site.

Little Egret

One at lake on 22nd December.

Teal

Following recorded on lake: six on 18th October; 14 on 25th October; three on 12th November; up to 12 in December (<10 teal, 15 mallard); five on 19th January; pair on 20th February.

As in previous winters, Teal utilise the lake through the winter though in relatively small numbers.

Hen Harrier

A male hunting across cutaway in west of site on 25th October, continued south out of site.

Sparrowhawk

Singles as follows: 13th & 16th October, 26th November, 15th & 22nd January, 14th February, 12th March. Pairs (possibly two pairs involved) in display behaviour over central and north-western sectors of site on 26th January, 14th February and 13th March.

Sparrowhawk breeds on site.

Buzzard

Three together on 12th October. Probable pairs on 19th & 26th January, 14th February, 13th & 26th March. Singles seen regularly through much of winter – 16th October, 12th & 19th December, 15th January, 14th & 15th February, 13th March.

Buzzard breeds on site.

Peregrine

One (male) observed in pursuit of Lapwing at lake on 25th October. Two high over site drifting southwest on 26th January (probable pair).

Merlin

A male bird was observed perched on a peat mound in northeast of site on 19th December – remained for c.40 min then flew southwest through scrub. One seen hunting over remnant bog in west of site on 20th February.

Kestrel

Single birds recorded on site as follows: 12th & 13th October, 13th November, 18th & 19th December, 15th February, 12th March. Records mostly referred to birds hunting over regenerating cutaway bog.

Kestrel is expected to breed locally.

Golden Plover

Golden Plover was recorded on five dates during winter 2017/18, as follows:

On 13th October, a flock of c.160 flew north over site

On 25th October, a flock of 16 resting on bare peat within site. Also, 200+ in field to north of site (c.1 km).

On 13th November, a flock of 20+ flew over site.

On 15th January, c.30 resting on bare peat. Also, c.120 in field to north of site (as on 25th October).

On 12th March, flock of c.200 flew eastwards across site.

As in previous winters, relatively scarce within site though a flock appears to winter locally.

Lapwing

Lapwing was recorded during winter 2017/18, as follows:

On 13th October, 14 were roosting at the lake, with 32 there on 25th October.

On 17th November, a flock of c.160 flew north along eastern margin of site.

On 18th December, a party of c.20 observed resting on bare peat within site.

On 15th January, 16 at the lake, with a flock of c.40 flying low over site on 26th January.

Territorial birds were at the lake from 12th March onwards.

Woodcock

Singles flushed from along tracks on 22nd December and 19th January.

Black-headed Gull

Territorial Black-headed Gulls in breeding plumage were at the lake in eastern sector of the site from 12th March onwards, with c.20 counted on 26th March.

Black-headed Gull is a breeding species at Clongawny and was not recorded during main winter period.

Potential for other target species

It is considered unlikely that Clongawny bog has significant potential to support other species of conservation importance.

Other species of note

Little Grebe – present on lake in all months other than December, with peak of six in October. Displaying pair in March.

Great Crested Grebe – one bird on 13th March.

Snipe – generally recorded in small numbers (<10) on site visits, with high count of 27 flushed from margin of lake on 13th November.

Redshank – one at lake on 13th March.

Long-eared Owl – two calling from conifer wood north of lake in February.

Skylark – present in October (7), November (2) and December (3). Displaying birds on site in late March (9).

Robin – present through winter in scrub and woodland habitats. Most records of single birds.

Mistle Thrush – occasional on site through winter. Flock of 17 flew across site on 12th October.

Goldcrest – present in scrub and woodland habitats (mostly single or pairs).

Stonechat – recorded in October (4), November (1), and March (2 pairs). Breeds on site.

Starling – flock of 5,000+ passed across site northwards in late afternoon of 13th November; flock estimated at least 8,000 birds passed northeast on 17th November. Estimate of at least 3,000 passed east across site on 12th December. Otherwise regular on site in small numbers (<100).

Meadow Pipit – present on site through winter though mostly in relatively low numbers. Respective totals of 32, 14 and 11 along transects in November, January and March. One flock of c.40 birds on 25th October. Territorial behaviour recorded from March onwards.

Linnet – recorded in small numbers (up to 16) on seven dates, with larger flock of 50+ on 25th October.

SITE: CLONGAWNY – TRANSECT SURVEYS, 2017-18

Species	November	January	March	BoCCI Status
Mallard	4	9	0	G
Teal	3	4	0	A
Pheasant	1	2	1	G
Grey Heron	5	2	0	G
Sparrowhawk	0	0	1	A
Buzzard	2	1	1	G
Kestrel	0	0	1	A
Moorhen	3	1	0	G
Lapwing	0	12	0	R
Snipe	2	3	1	A
Woodcock	0	1	0	R
Woodpigeon	20+	14	7	G
Magpie	5	4	2	G
Jay	1	0	1	G
Jackdaw	20	20+	6	G
Hooded Crow	9	5	3	G
Raven	2	0	0	G
Goldcrest	1	0	2	A
Blue Tit	2	0	0	G
Great Tit	0	2	2	G
Coal Tit	12	5	4	G
Skylark	2	0	9	A
Long-tailed Tit	0	5	0	G
Starling	60+	0	5	A
Wren	18	11	9	G
Blackbird	15	4	5	G
Fieldfare	20+	50+	0	G
Song Thrush	5	1	2	G
Redwing	100+	30+	0	G
Mistle Thrush	5	1	2	A
Robin	13	7	2	A
Stonechat	1	0	3	A
Meadow Pipit	32	14	11	R
Pied Wagtail	2	1	3	G
Chaffinch	20+	13	7	G
Goldfinch	0	6	0	G
Linnet	8	3	5	A
Lesser Redpoll	30+	14	6	G
Bullfinch	3	0	2	G
Crossbill	6	0	0	G
Reed Bunting	7	2	4	G

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

General discussion

The 2017/18 survey supports the conclusions of the 2014/15, 2015/16 and 2016/17 winter surveys that Clongawny Bog has relatively low potential for supporting wintering bird species of conservation importance.

As in the previous winters, the lake in the eastern sector of site supported a range of wetland birds though in relatively low number, including Little Egret, Whooper Swan, Teal, Mallard, Little Grebe and Lapwing. Prospecting Black-headed Gulls and Lapwing (both Red-listed) were present at the lake in March. Presently, the lake has poorly developed aquatic and marginal vegetation.

Flocks of Golden Plover and Lapwing were recorded flying over the site and at times resting on bare peat within the site. Numbers, however, of both species were relatively low. As in previous winters, it is expected that the Golden Plover and Lapwing were birds moving locally, probably linked with Drinagh Bog and adjoining areas rather than the large wintering concentrations of the Shannon/Little Brosna systems.

Woodcock (Red listed) was recorded on site in December and January and is probably a regular winter visitor. Meadow Pipit occurs throughout much of the site during winter, with territorial birds observed from March onwards.

Clongawny Bog provides good habitat for birds of prey, with Hen Harrier, Merlin and Peregrine all observed hunting within the site, with Merlin also seen perched on a peat mound. Sparrowhawk, Kestrel and Buzzard were all recorded regularly within the site.

The site supported a range of other species of conservation interest (Amber-listed species), including Snipe, Skylark, Mistle Thrush, Stonechat, Starling and Linnet.

3.3.4 Evaluation and Rating of Clongawny Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Clongawny Bog in winters 2014/15, 2015/16, 2016/17 and 2017/18:

EU Birds Directive Annex I listed species

- Little Egret (2016/17 & 2017/18 winters)
- Whooper Swan (all winters)
- White-tailed Eagle (2014/15 only)
- Hen Harrier (2015/16 & 2017/18 winters)
- Merlin (2014/15, 2015/16 & 2017/18 winters)
- Peregrine (all winters)
- Golden Plover (all winters)
- Kingfisher (2014/15 & 2015/16)

Red Listed species (after Colhoun & Cummins 2013)

- Wigeon (2014/15 & 2015/16)
- Golden Plover (all winters)
- Lapwing (all winters)

Woodcock (2015/1, 2016/17 & 2017/18 winters)

Redshank (2017/18 winter only)

Black-headed Gull (all winters)

Meadow Pipit (all winters)

Amber Listed species (after Colhoun & Cummins 2013)

Little Grebe

Great Crested Grebe

Teal

Sparrowhawk

Kestrel

Snipe

Jack Snipe (2015/16 only)

Skylark

Mistle Thrush

Robin

Stonechat

Goldcrest

Starling

Linnet

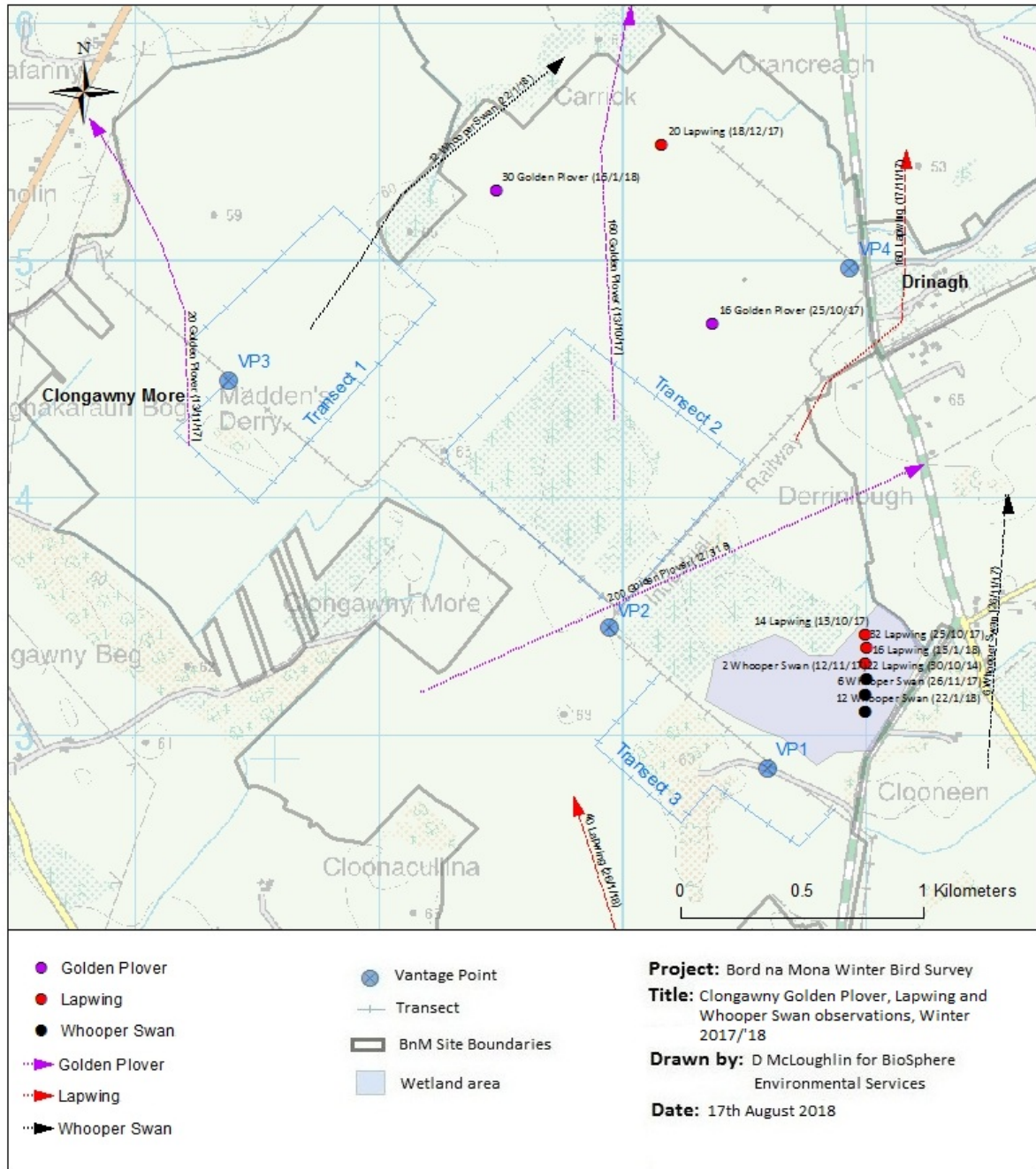
All Amber listed species recorded in the four winters other than Jack Snipe

While a range of species of conservation importance was recorded on Clongawny Bog during the four winter surveys, the site has limited potential for supporting significant populations of wintering birds. This reflects, in part, the extent of the site still in commercial production and also the limited development of permanent wetland habitat.

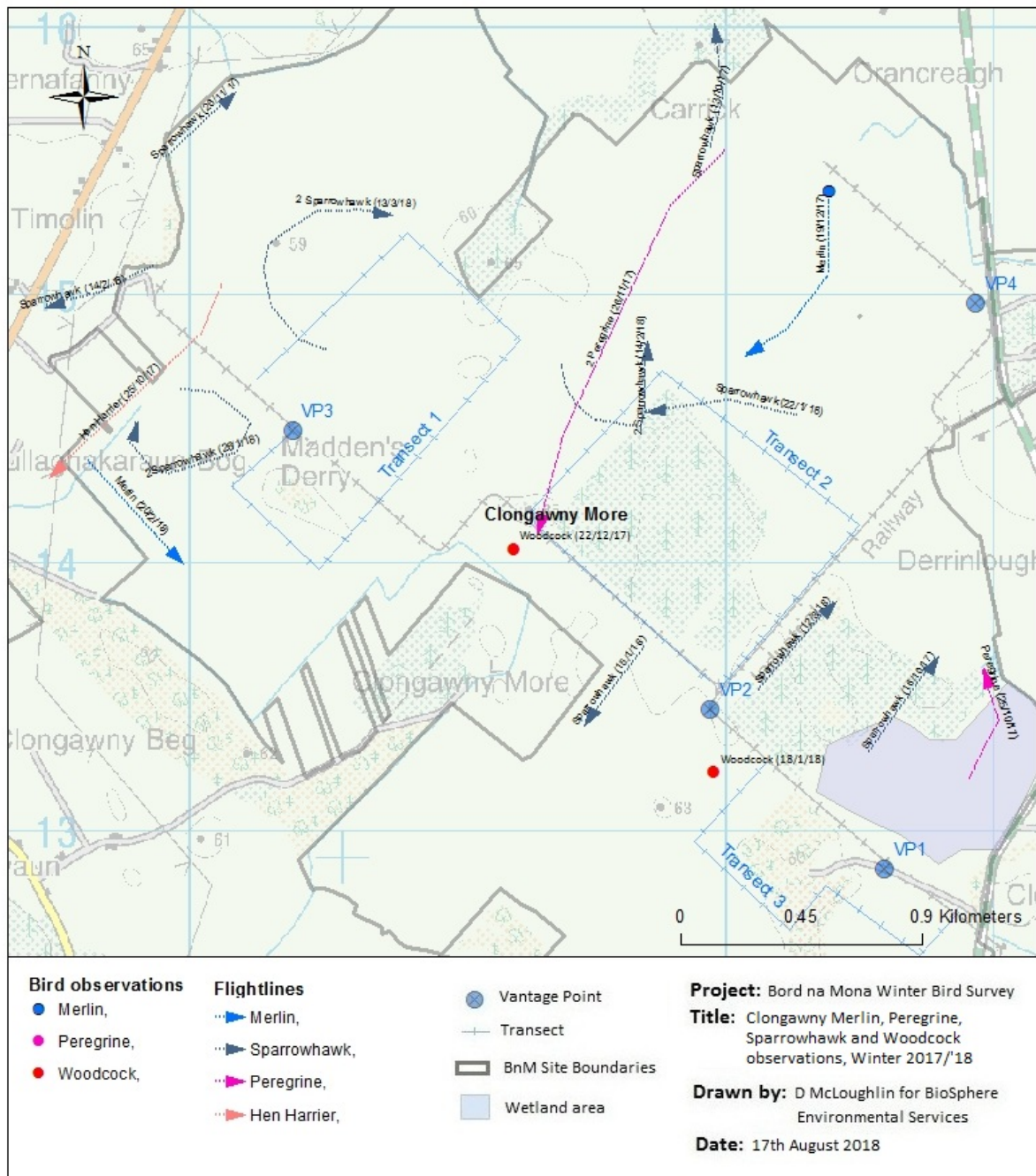
It is noted that the lake in the eastern part of the site is still in an early development phase and appears to have low feeding potential for swans and other waterbirds. It does, however, provide a useful roost or rest area for wetland birds.

Also, there are extensive areas of regenerating cutaway bog which provide useful habitat for hunting birds of prey, including Hen Harrier and Merlin, as well as habitat for Woodcock, Meadow Pipit and various Amber-listed species such as Snipe and Stonechat.

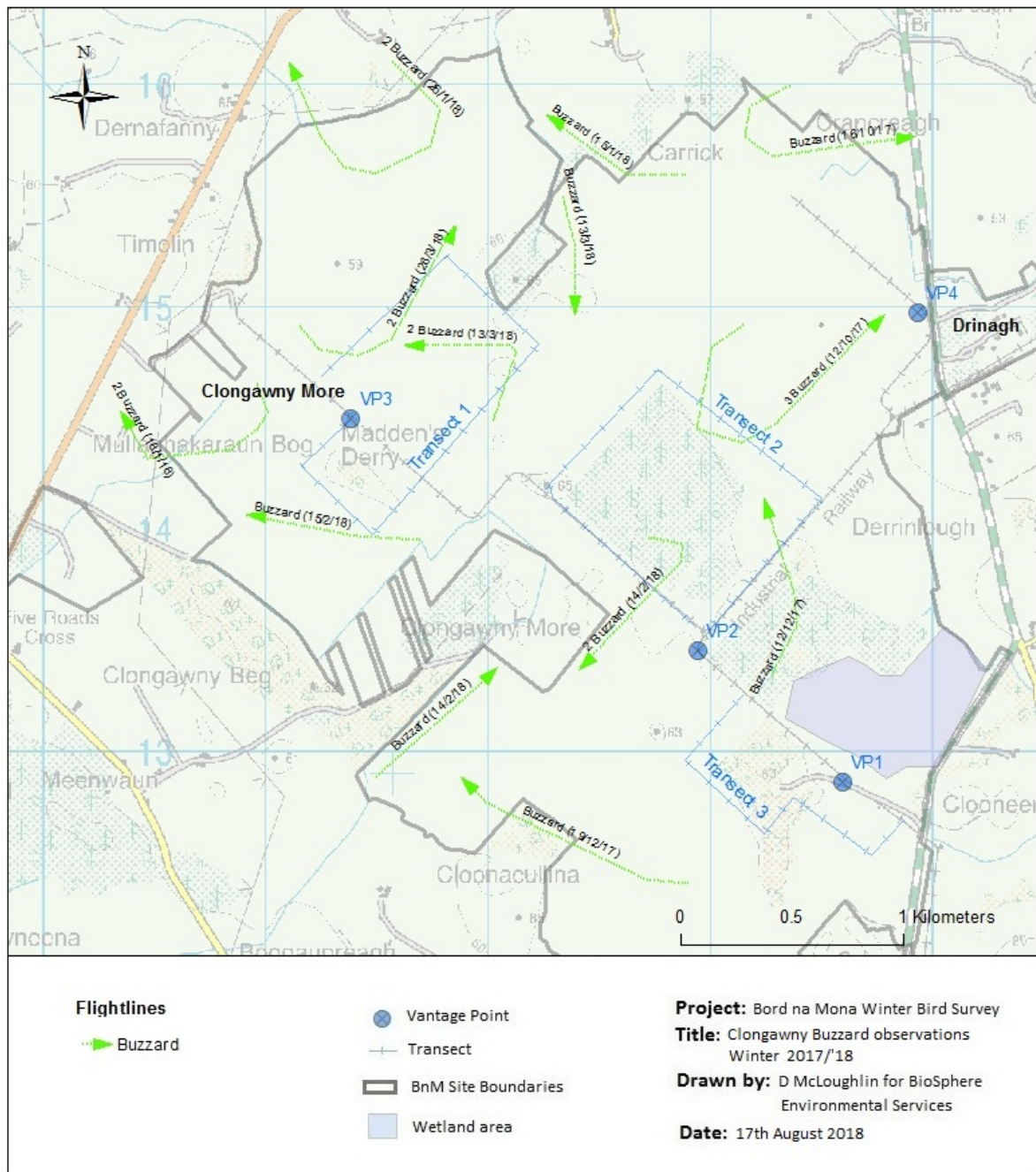
On the basis of the results of the winter surveys in 2014/15, 2015/16, 2016/17 and now 2017/18, it is recommended that a rating of **Local Importance (higher value)** is considered appropriate for wintering birds at Clongawny Bog.



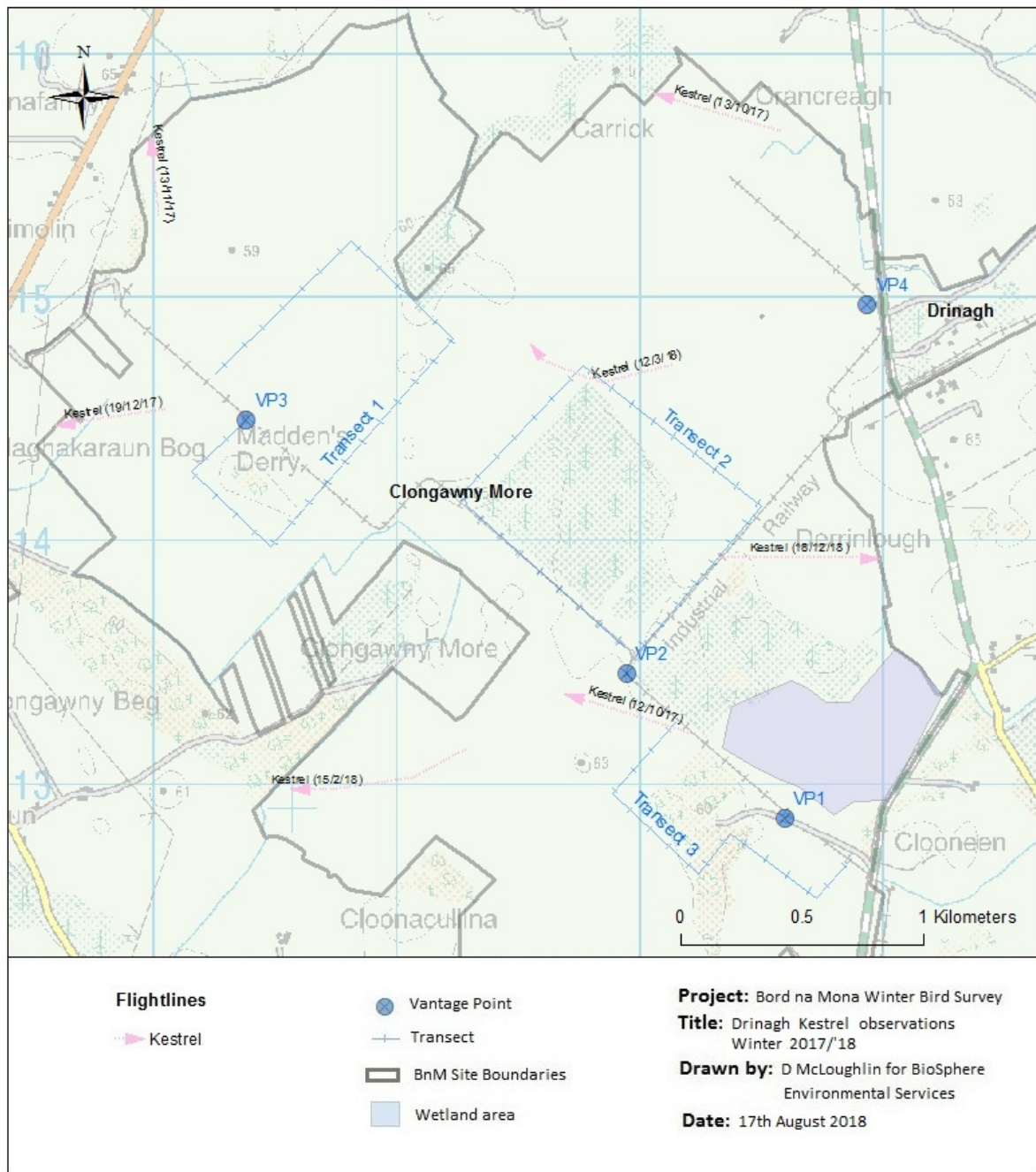
Clongawny Bog Map 1: Map showing transect and vantage point locations, with Whooper Swan, Golden Plover and Lapwing records.



Clongawny Bog Map 2: Map showing transect and vantage point locations, with Hen Harrier, Sparrowhawk, Merlin, Peregrine and Woodcock observations.



Clongawny Bog Map 3: Map showing transect and vantage point locations, with Buzzard records.



Clongawny Bog Map 4: Map showing transect and vantage point locations, with Kestrel records.



Plate 1. Clongawny Bog: view of shallow lake in eastern part of site. While useful habitat, the lake attracts relatively few wetland birds.



Plate 2. Clongawny Bog: much of site is bare or partial bare peat. Developing scrub is present in some areas. View is in western part of site looking near VP3.

3.4 Drinagh Bog

3.4.1 Site description

Drinagh Bog is located approximately 1.5 km to the southeast of Cloghan village. It is connected to Clongawny Bog (to the west) by a rail link and the two sites are separated by the N62 road. The R357 runs just a little north of the site. The Silver River skirts the eastern boundary.

Drinagh is divided into 4 main sections by the topography of the site and a railway line on an embankment that crosses from the west to the east side of the site. The western section is separated from the eastern section by a ridge of high ground that partially divides the site (Mannin's Hill) and then by a block of conifer plantation that has been planted on the cutaway bog on this higher ground.

The north-east section is zoned for biodiversity and contains a substantial portion of open water. This area has developed into a wetland complex and there is a diverse mosaic of wetland habitats developing around the margins of the ponds and lakes, particularly along the eastern side of the track. The water is shallow and there are frequent patches of emergent Common Reed and Bulrush. The lakes also contain linear islands or ridges of remnant peat vegetated with various communities, including developing Birch scrub. The south-east section of the site is a core trial area to manage cutaway bog specifically for breeding waders (a project by Bord na Móna in association with BirdWatch Ireland commenced in 2010). It essentially comprises a mosaic of emerging and open Birch scrub and a Soft Rush dominated pioneer community. The western sector of the site is mainly in commercial production and comprises bare peat. However, there are substantial areas of regenerating cutaway, with wetland and scrub habitats.

Drinagh Bog is part of the Lough Boora Parklands and adjoins further Bord na Móna lands to the east. Agricultural land, mostly in pasture, is the main landuse to the north and south of Drinagh.

3.4.2 Survey locations

Transect 1 is a 2 km length alongside the rail track running southwards from the local road along the north boundary of the site. It passes through regenerating cutaway bog habitats and the main wetland area.

Transect 2 commences at the southwest corner of the mineral ridge in the southern part of the site and runs north to the main rail line which crosses the site from east to west. It skirts the line for 1 km (westwards) and continues on a 'square' shaped route southwards and then westwards back to the start. The habitats traversed are scrub, regenerating heath and poor fen, and bare peat.

Vantage Point 1 is located just off the local road which skirts the southeast side of Cloghan Hill. This elevated viewpoint looks over the eastern sector of the site, with focus on the lake and wetland habitats.

Vantage Point 2 is also located just off the local road which skirts the southeast side of Cloghan Hill. However, this is looking south over the north-western quadrant of the site.

Vantage Point 3 is located along the southwest edge of Mannin's Island and gives a view over the south-western sector of the site (mostly bare peat).

Vantage Point 4 is located on the rail embankment running east to west in the eastern sector

of the site. It gives a view over the wetland and scrub habitats in the southeast sector of the site.

Vantage Point 5 is located along a track in the extreme of the site (just off-site). It gives a view over the wetland and scrub habitats in the northeast sector of the site. (this VP had not been used in previous surveys.)

Vantage Point 6 is located just off the rail embankment running east from the main works area in the western sector of the site. It gives a view over the wetland and scrub habitats in the central western part of the site. (this VP had not been used in previous surveys.)

3.4.3 Results and Discussion

Scientific names of bird species are given in Appendix 1. Data for the Vantage Point watches for Drinagh Bog are compiled in Appendix 2.

Target species recorded

Whooper Swan

The first Whooper Swans (no. 4) were recorded on site on 9th October, with small numbers in remainder of October and early November. On 14th November, a large flock (119) flew into site from south and settled overnight on ponds. On 16th November, a total of 146 Whoopers were feeding in wetland in northeast of site but none there on 23rd November. Substantial flock recorded again in December, with 217 arriving into wetland from east-southeast on 12th. Still present following morning with lots of movement and most birds leaving towards east. Located feeding in arable fields close to Silver River (N13126 15574). The large flock not located in area in January or thereafter, with only small numbers recorded at Drinagh in January and February. The records were as follows:

October: parties of 4 (same birds) in western sector on 9th, seven flew north on 20th, three feeding on ponds in northeast on 23rd.

November: eight flew into site on 7th, four feeding on ponds on 13th, four flew up from ponds on 14th but remained on site. Later on 14th (16.02 hrs) flock of 119 flew in waves from southeast end of site and landed on ponds where they settled for night. Flock still present at 07.04 hrs in fog on morning of 15th, with lots of calling at 08.09 hrs and then quiet (presumed left site). Six in western sector on 15th. General census in early afternoon on 16th resulted in total of 146 swans feeding on wetland in northeast.

December: 23 on 9th flew northeast towards wetland, 217 flew into site from east at 11.40 hrs on 12th and landed on ponds in north-east. 11 later flew southwest from ponds and then parties of 17 and 29 flew out of site in a southeast direction. 224 counted feeding/resting on ponds on morning of 13th, with 30 later seen flying east over south of site. Also on 13th, 22 flew north over site and 18 flew into site from southeast. All birds (227 total) later left site in an easterly direction. On 14th, following recorded: 11 flew west across south end of site, six flew east across western sector, 19 flew west across southwest sector, two flew west over northwest tip.

January: on 10th, total of 16 flew into site from north (Noggusboy?). On 12th, 26 flew into site from northeast and landed on wetland. On 23rd a flock of 12 flew out of site in southwest direction.

February: on 1st, local movements in west sector of site, with total of 16 birds. Nine flew out of site northwards on 26th February.

March: no swans recorded.

Compared to the 2015/16 and 2106/17 winters, substantial numbers of swans were recorded using Drinagh in November and December. The birds were feeding actively in arable fields to the east of the site and at times crossing into Drinagh to feed and to roost overnight. Otherwise, there were various records of small numbers either passing over the site or feeding in the northeast sector.

Little Egret

One flew westwards out of site (south of VP 1) on 13th December. One flew east across south end of site on 8th January.

Little Egret is an occasional visitor to Drinagh, with birds also recorded in winter 2015/16 (one record) and 2016/17 (two records).

Hen Harrier

Hen Harriers were recorded on four dates through the winter, as follows:

On 9th October, an immature male bird at northwest corner of site flew eastwards – another different male seen hunting in eastern sector of site 21 minutes later.

On 5th February, a female flew north from conifer plantation and continued out of site.

On 26th February, a male was observed hunting in the central area of the site.

On 6th March, a male bird was hunting over wetland in northeast sector.

Five records involving a minimum of three individual birds. As in previous winters, survey shows that Hen Harriers winter in the area and use Drinagh Bog for hunting purposes. While there was no evidence of on-site night roosting, it is considered that there is potential for roosting in the eastern sector of the site.

Sparrowhawk

Single birds on 20th October, 4th November, 8th January, 23rd January, 2nd February.

Pairs on 26th February and 20th March.

Sparrowhawk breeds on site.

Buzzard

Recorded regularly within and around site in all months, with two together on several dates and up to four in March.

October: two singles on 9th, one on 19th, one on 23rd.

November: singles on 7th & 15th.

December: one on 9th, two on 13th, one offsite on 14th.

January: one offsite on 8th, one on 9th & 10th.

February: two on 1st, one on 5th, one on 9th.

March: two singles on 6th, two soaring on 15th, three soaring on 24th

Buzzard is regular within and around the site through the winter and is considered to breed possibly on site but at least in the local area.

Kestrel

Kestrel was recorded on site in all months during the winter.

October: two singles on 9th, plus two together; one on 10th, three on 23rd.

November: singles on 14th & 15th.

December: one on 5th, two on 12th, one on 12th, four on 14th.

January: two on 8th, one on 9th, one on 10th, one on 16th.

February: one on 1st, one on 5th.

March: one on 5th, one on 15th, one on 24th

Regular on site throughout winter, including sightings of several birds together. The majority of records involved hunting birds.

Kestrel is expected to breed locally.

Merlin

On 5th February, a female bird flew in from east hunting low. Landed in tree 150 m west of VP3 for 40 sec and then flew over bog hunting. Landed on open bog beside drain for 10 sec and then flew along drain.

On 20th March, a male bird observed perched on side of railway embankment for c.20 min, then flew south into scrub.

Merlin is considered a scarce winter visitor to the area, with records also in winters 2015/16 and 2016/17. The late winter records would suggest that there is a breeding territory locally.

Peregrine

Peregrine was recorded on six dates through the winter, as follows:

On 23rd October, one observed perched on peat pile southwest of VP3.

On 14th November, one hunting starlings at 16.42 hrs.

On 9th December, one flew in from west and continued across site.

On 14th December, one flew in from west and landed on open bog.

On 2nd February, one flew west just to the south of the VP2.

On 26th February, one flew northwest across west sector of site.

Peregrine is a scarce though fairly regular visitor, using the bog at times to perch and in one case hunt starlings. Pattern of occurrence is similar to previous two winters.

Golden Plover

Golden Plover were recorded as follows:

On 10th October, separate parties of 90, 59, and 71 (latter may have included some of earlier birds).

On 20th October, a party of c.60 birds flew south across site.

On 23rd October, parties of 10 and 19.

On 13th November, 28 across site in a southeast direction.

On 22nd November, c.30 flew east across south end of site.

On 12th February, c.120 circled over northeast sector and drifted eastwards.

Relatively few records and small numbers were recorded on site in winter 2017/18 compared to previous winters and with most records in October and November. However, there is a pattern of usage of the site by this species.

Lapwing

Lapwing was recorded through the winter, with birds regularly roosting at the wetland in the northeast and commuting to fields outside of the site. A movement of birds across the site took place on 6th March.

October: on 10th a flock of 105 flew up from the wetland in northeast and circled, 40 flew east on 20th, on 23rd flock of 18 flew southwest.

November: on 7th flock of 60 in northeast, on 14th a flock of 92 over wetland in northeast, on 15th flock of 65 in same area.

December: eight birds on 12th.

January: flock of 44 in field offsite on 8th, on 9th c.40 flew into site, on 10th 22 landed in southwest. On 23rd 28 flew northwest.

February: on 9th a flock of 60 flew off site to field. 80 flew north over western margin of site on 26th.

March: on 6th flocks of 27, 90, 63, 206 and 60 passed over site. On 15th, a flock of 12 passed east.

Territorial birds (estimated 2 pairs) were present in wetland from mid-March onwards.

Woodcock

One flushed from along track near conifers on 22nd November. One along edge of track in north sector on 16th January.

Potential for other target species

It is considered that the Drinagh bog site has significant potential to support Kingfisher during winter (one had been recorded on 6th April 2010)

It is noted that there have been two records of Greenland White-fronted Goose at Drinagh Bog: two on 19th December 2011 were noted as being the first for the Boora wetlands (Heery 2012), while a flock of 45 was recorded at dawn on 2nd February 2012 during surveys for the Cloghan Wind Farm.

Other species of note

Mute Swan – present throughout the winter in numbers up to 12 birds. Two territorial pairs in March (one on nest).

Greylag Goose – regular flock of over 30 birds present in November and December associating with the Whooper Swans. Peak of 46 on 16th November. Scarce from January to March (<6), with territorial pair in February and March.

Teal – recorded mostly in northeast wetland with occasional birds elsewhere on site. Numbers mostly low, with peak of c.30 on 24th November.

Mallard - recorded on site on all site visits through the winter. As with Teal, most records were from the wetland sector in the northeast with occasional small parties elsewhere. The highest number (c.80) was recorded on 24th November. By March, breeding pairs were present.

Tufted Duck – recorded on the main lake in small numbers (<10) from October to February. Numbers increased to 14 in March, with territorial behaviour observed.

Great Crested Grebe – three birds in March (inc. one pair).

Little Grebe – present on ponds in northeast of site in small numbers (<10) through the main winter period. At least eight territorial pairs displaying on 20th March.

Water Rail – heard in all months apart from November and December, with peak of at least 3 calling birds in March.

Snipe – recorded through the winter, mostly single birds. Peak of 17 flushed from wetland management plot on 12th February.

Redshank – two present in wetland area in March.

Skylark – recorded on site in October (6) and November (4). Singing birds present in late March.

Robin – present in scrub habitat through much of site. Most records of single birds.

Mistle Thrush – present in small numbers (up to 6) on several occasions through winter. Flock of 26 passed south over eastern sector on 7th November.

Stonechat – present on site throughout winter (up to 4 birds), with a displaying pair in March.

Meadow Pipit – frequent in October and then lower numbers through main winter period. Loose flock of 60+ on 19th October. Territorial birds present in March.

Goldcrest – present in scrub and woodland habitats. Most records were of single birds or pairs.

Starling – large flock estimated at 8,000-10,000 flew in from west over south end of site at 16.39 hrs on 14th November – landed in reeds in northeast sector. Similar occurrence in this sector on 24th November involving an estimated 5,000+ birds. Flock of c.2,000 birds flew south over western margin of site on 6th December. c.2,000 on 11th December, 700+ flew across southwest sector of site at 08.28 hrs on 12th December.

Linnet – substantial flocks (up to 40) on two dates during winter. Otherwise small parties on several dates. Most records were of feeding birds from along the tracks.

SITE: DRINAGH – TRANSECT SURVEYS, 2017-18

Species	Date 11/11/17	Date 25/1/18	Date 21/3/18	BoCCI Status
Mute Swan	5	4	7	A
Whooper Swan	3	2	0	A
Greylag Goose	0	2	3	G
Teal	6	11	0	A
Mallard	21	26	7	G
Tufted Duck	4	5	6	R
Pheasant	2	0	1	G
Grey Heron	7	3	2	G
Little Grebe	4	2	5	A
Great Crested Grebe	0	0	2	A
Sparrowhawk	0	0	0	A
Buzzard	0	1	1	G
Kestrel	0	0	0	A
Lapwing	45	0	3	R
Redshank	0	0	2	R
Snipe	5	2	7	A
Moorhen	4	2	2	G
Water Rail	0	1	1	A
Woodpigeon	25	10	8	G
Magpie	2	1	2	G
Jay	0	0	1	G
Jackdaw	16	12	3	G
Hooded Crow	7	4	5	G
Raven	3	0	0	G
Siskin	0	5	0	G
Goldcrest	2	0	1	A
Blue Tit	2	2	4	G
Great Tit	1	1	3	G
Coal Tit	5	7	3	G
Skylark	2	0	7	A
Long-tailed Tit	0	12	0	G
Starling	5	20	2	A
Wren	12	4	15	G
Blackbird	9	7	5	G
Fieldfare	0	40	0	G
Song Thrush	5	0	2	G
Redwing	8	50	0	G
Mistle Thrush	4	3	2	A
Robin	4	2	5	A
Stonechat	3	2	4	A
Meadow Pipit	23	6	25	R
Pied Wagtail	3	1	2	G
Chaffinch	14	6	13	G
Dunnock	0	0	2	G
Goldfinch	12	0	6	G
Linnet	40	4	2	A
Lesser Redpoll	20	10	8	G

Bullfinch	1	1	0	G
Crossbill	5	0	0	G
Reed Bunting	6	2	9	G

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

General discussion

The 2017/18 survey supports the conclusions of the previous three winter surveys that Drinagh Bog has good potential to support a range of wintering bird species of conservation importance.

High numbers of Whooper Swan on site were a feature for several weeks in the early part of the winter, with numbers exceeding the threshold for national importance (i.e. 150). However the flock had moved on by January and not more than 26 birds were recorded on site for the remainder of the winter. The swans at Drinagh are considered part of the (at times) large Boora Parklands population. It appears that the high number of birds may have been attracted to Drinagh by suitable feeding fields to the east of the site.

Mallard and Teal are the main duck species which occur on site in winter though numbers are only at a local level of importance (numbers of duck may be under-estimated somewhat due to the cover provided by the swamp vegetation).

Golden Plover and Lapwing pass over the site fairly regularly and at times land in the wetland area and/or on bare peat. However, numbers of these two species were relatively low (at local importance level). Other wetland birds which occur include Mute Swan, Greylag Goose, Little Grebe, Tufted Duck, Water Rail, Snipe, Moorhen and Little Egret. Woodcock (Red-listed) was recorded on site in November and January – this species is expected to be a regular winter visitor in small numbers.

Drinagh Bog provides excellent habitat for birds of prey. As in previous winters, Hen Harrier was recorded through the winter, with at least three individual birds using the site. Merlin is an occasional winter visitor at Drinagh, with records in March suggesting a local breeding territory. Peregrine may be seen at any stage through the winter and was observed hunting starlings. Sparrowhawk is regular on site with territorial birds present from February onwards. Buzzard and Kestrel are the most frequently encountered birds of prey at Drinagh, with up to four Buzzards present in March (breeds locally).

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.

Other Amber-listed species recorded on site included Skylark, Mistle Thrush, Stonechat, Starling and Linnet. Large concentrations of pre-roosting Starlings were recorded in November.

3.4.4 Evaluation and Rating of Drinagh Bog for Wintering Birds

There follows a summary of the conservation status of species recorded on Drinagh Bog in winter 2017/18 (with reference made to previous winters):

EU Birds Directive Annex I listed species

Whooper Swan (all winters)
Little Egret (also in 2015/16, 2016/17)
Hen Harrier (all winters)
Merlin (also in 2015/16, 2016/17)
Peregrine (all winters)
Golden Plover (all winters)

Red Listed species (after Colhoun & Cummins 2013)

Tufted Duck
Lapwing
Redshank (breeding birds)
Woodcock
Meadow Pipit

Amber Listed species (after Colhoun & Cummins 2013)

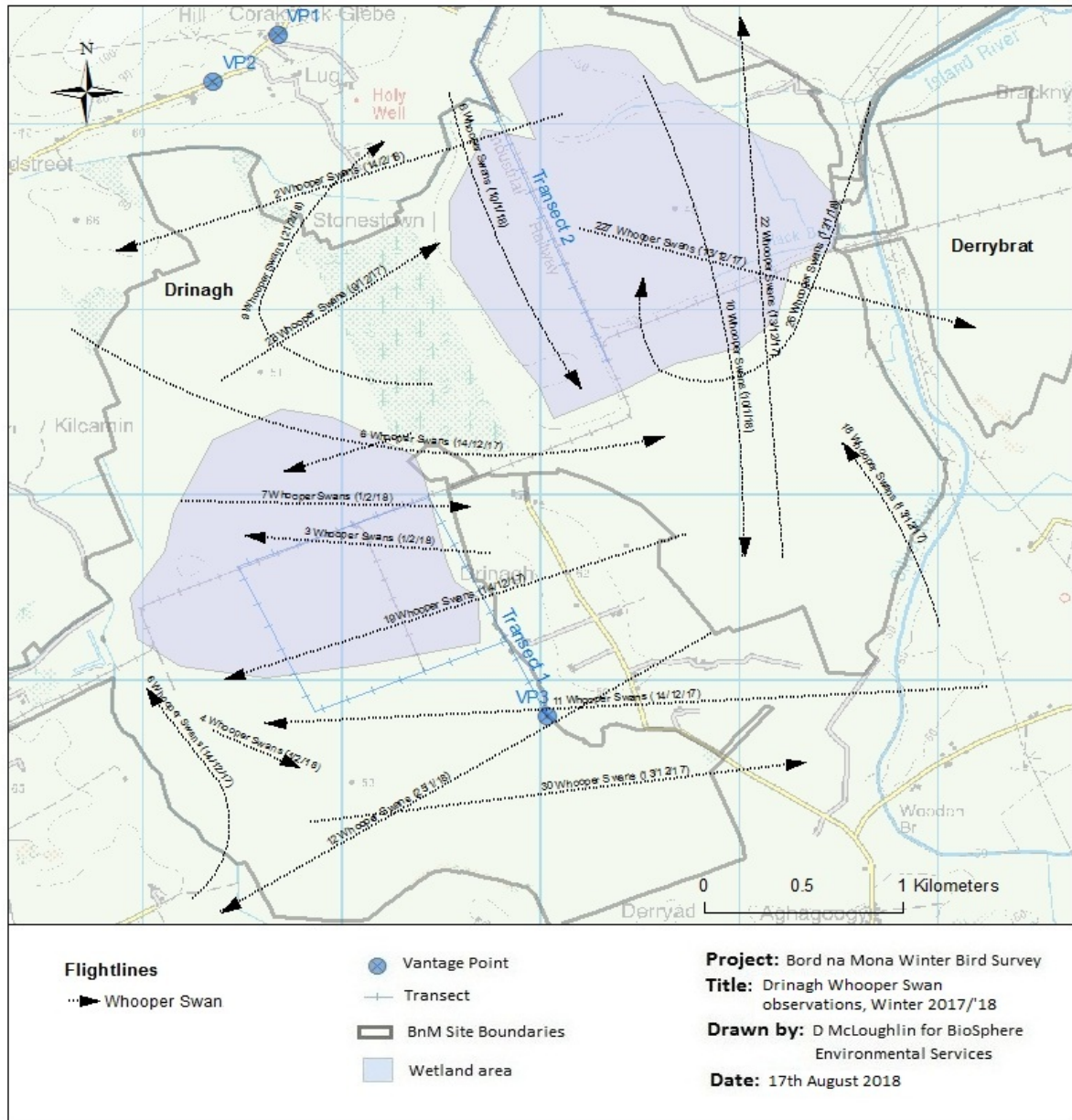
Little Grebe
Great Crested Grebe
Mute Swan
Teal
Sparrowhawk
Kestrel
Water Rail
Snipe
Black-tailed Godwit (2015/16 only)
Skylark
Robin
Stonechat
Goldcrest
Starling
Linnet

Amber listed species were recorded in all four winters, other than Black-tailed Godwit.

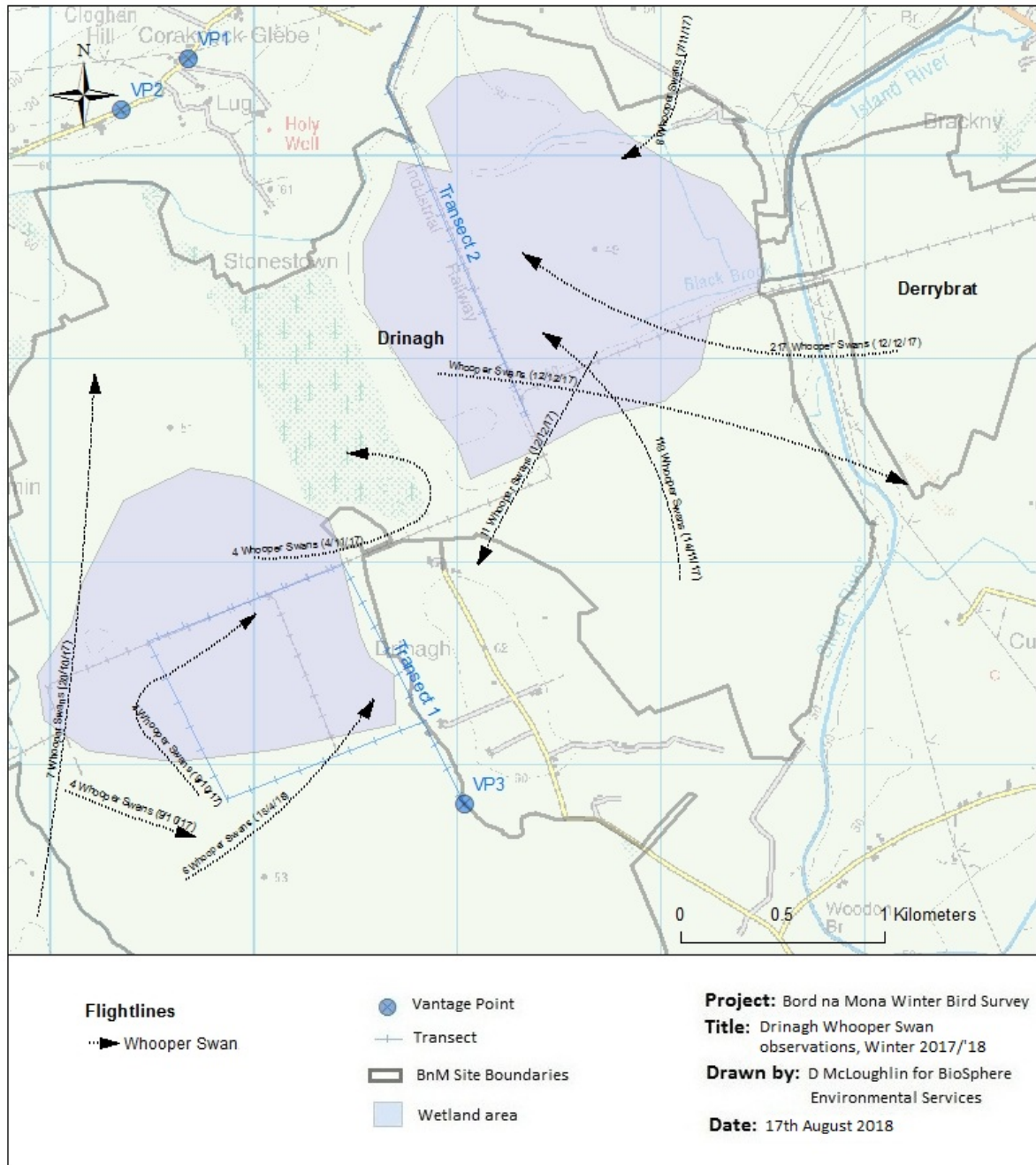
Drinagh Bog has habitats suitable for supporting a wide range of wintering birds. Of particular note is the wetland habitat in the north-east sector, and especially the substantial area of open water, which support a wetland bird community. While the Whooper Swan numbers recorded in winter 2017/18 exceeded the threshold for National Importance, numbers in the previous three winters were considerably lower.

The combination of wetland, bog and scrub habitats is particularly suitable for wintering Hen Harriers, and generally the site provides good habitat for birds of prey (with Merlin on occasions).

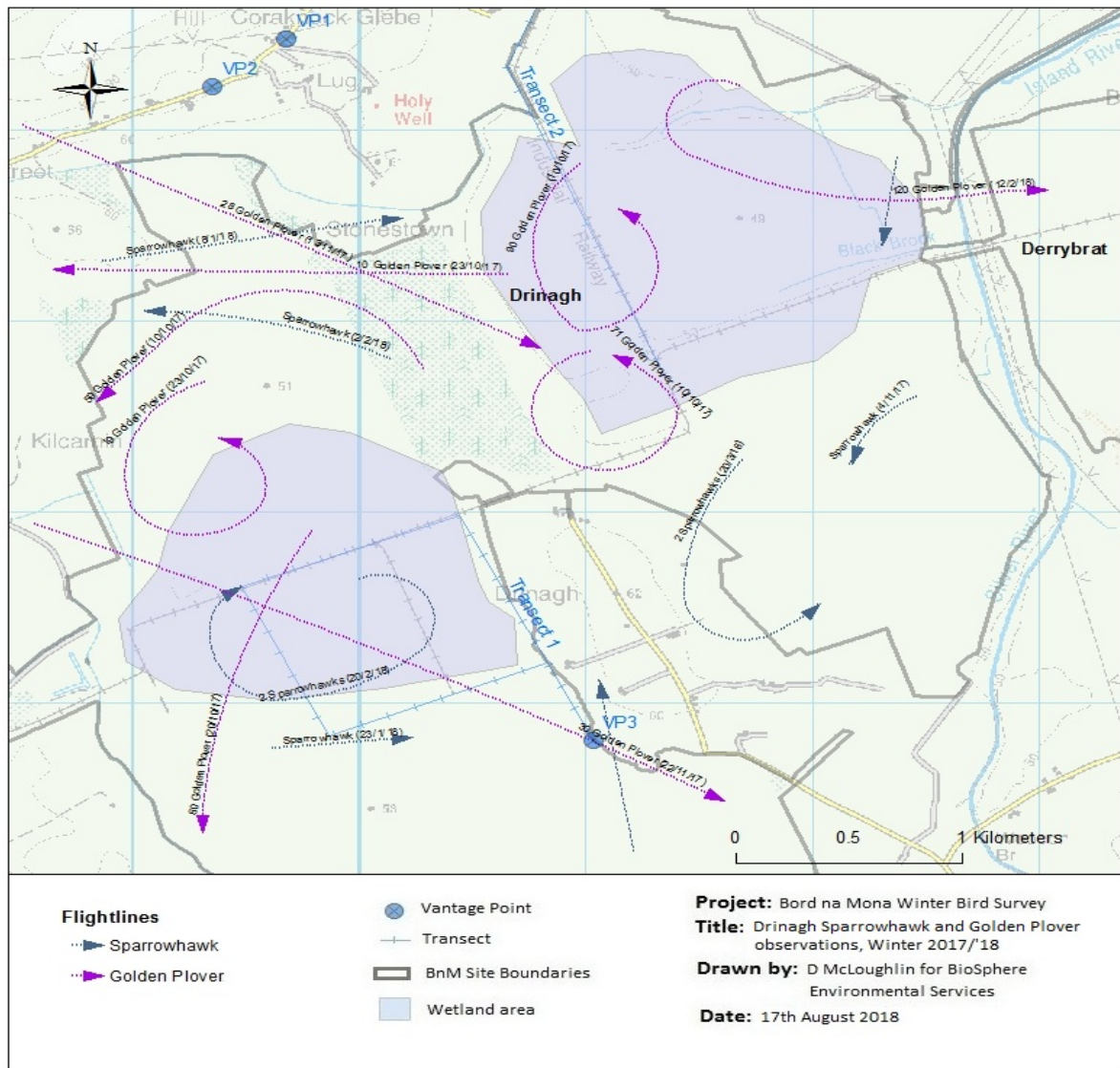
On the basis of Whooper Swan and Hen Harrier, but also considering general wetland birds and a range of Red and Amber listed species, it is recommended that a rating of **County Importance** is considered appropriate for winter birds at Drinagh Bog.



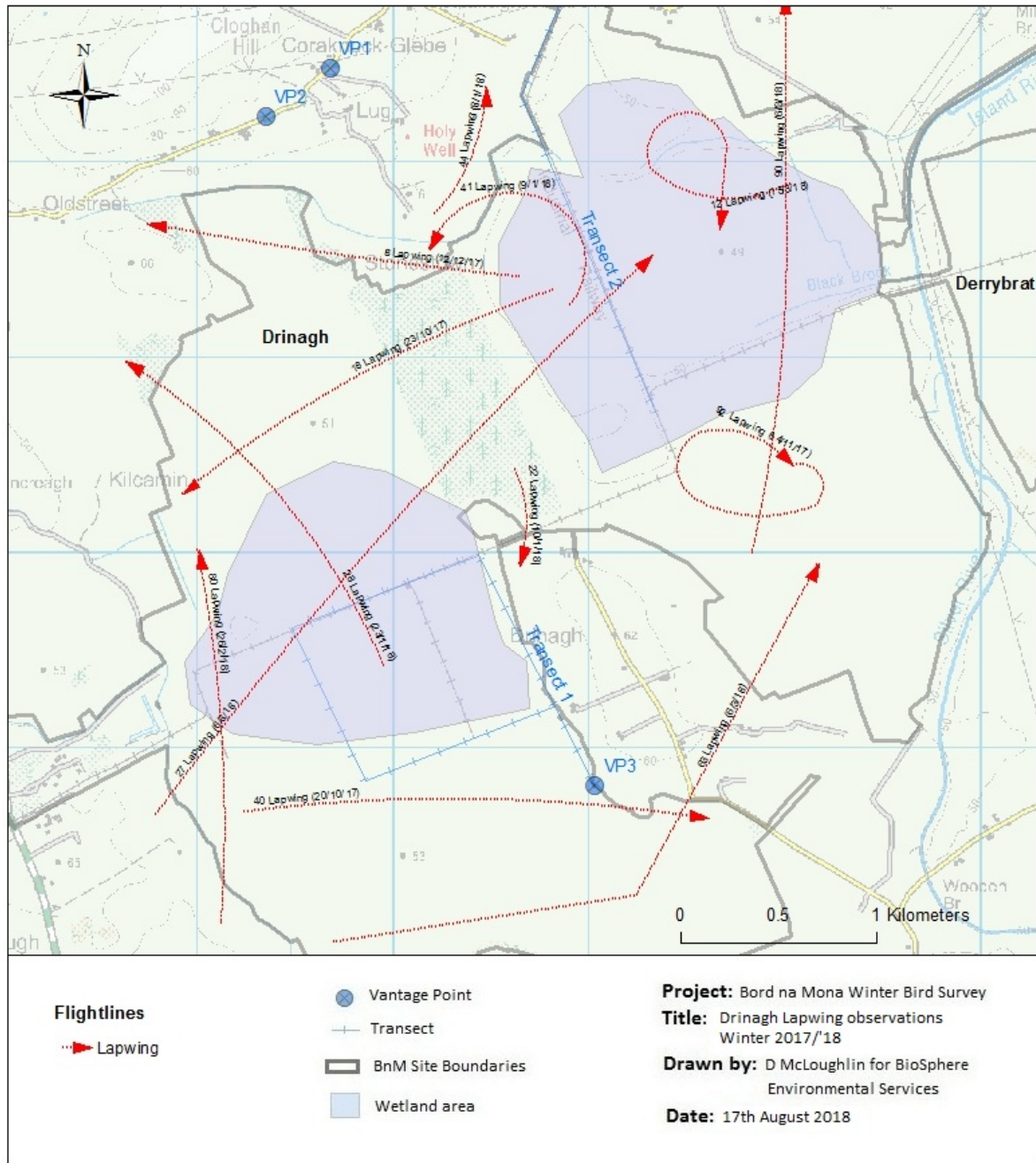
Drinagh Bog Map 1: Map showing transect and vantage point locations, with Whooper Swan records (map 1).



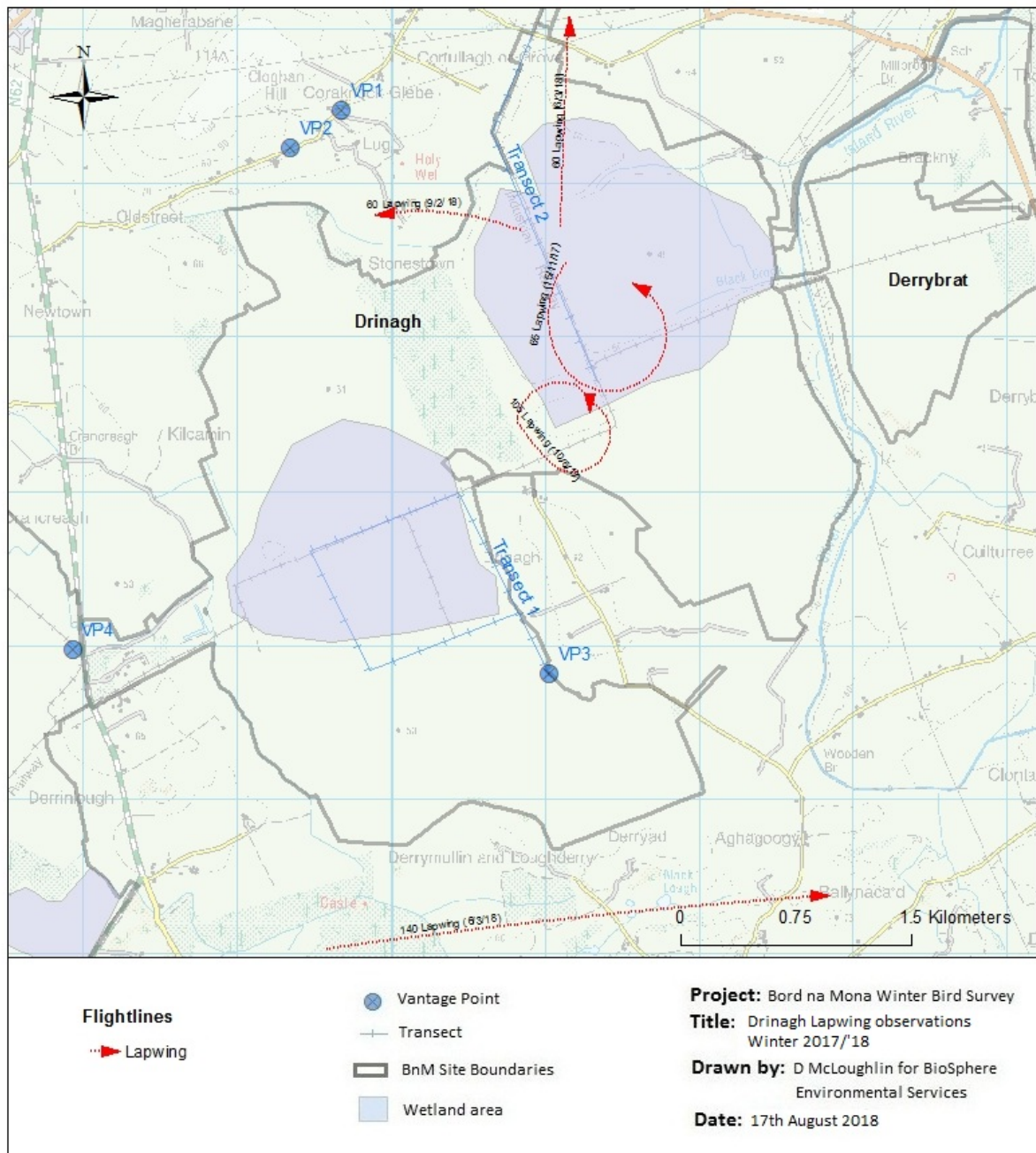
Drinagh Bog Map 2: Map showing transect and vantage point locations, with Whooper Swan observations (map 2).



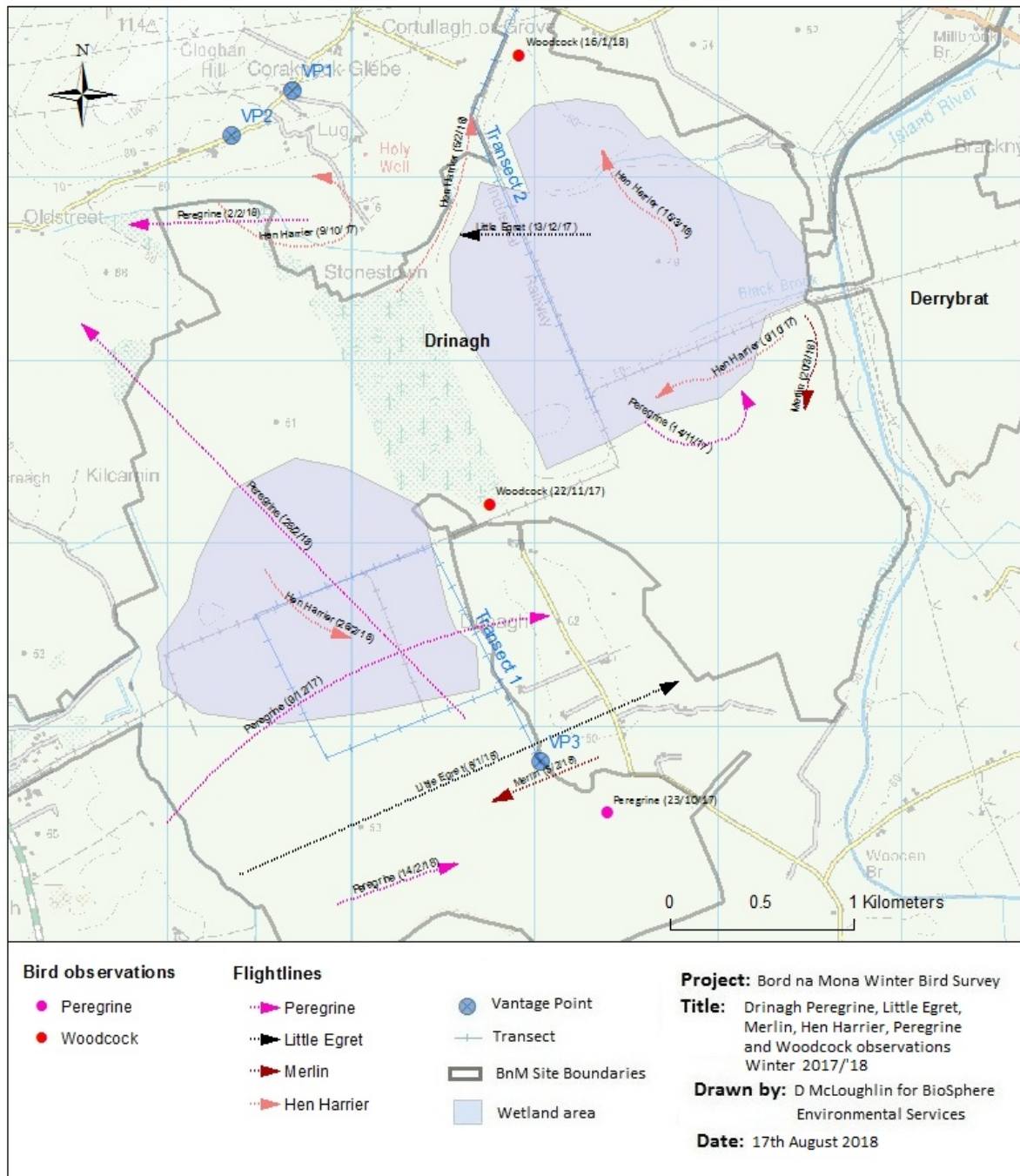
Drinagh Bog Map 3: Map showing transect and vantage point locations, with Golden Plover and Sparrowhawk observations.



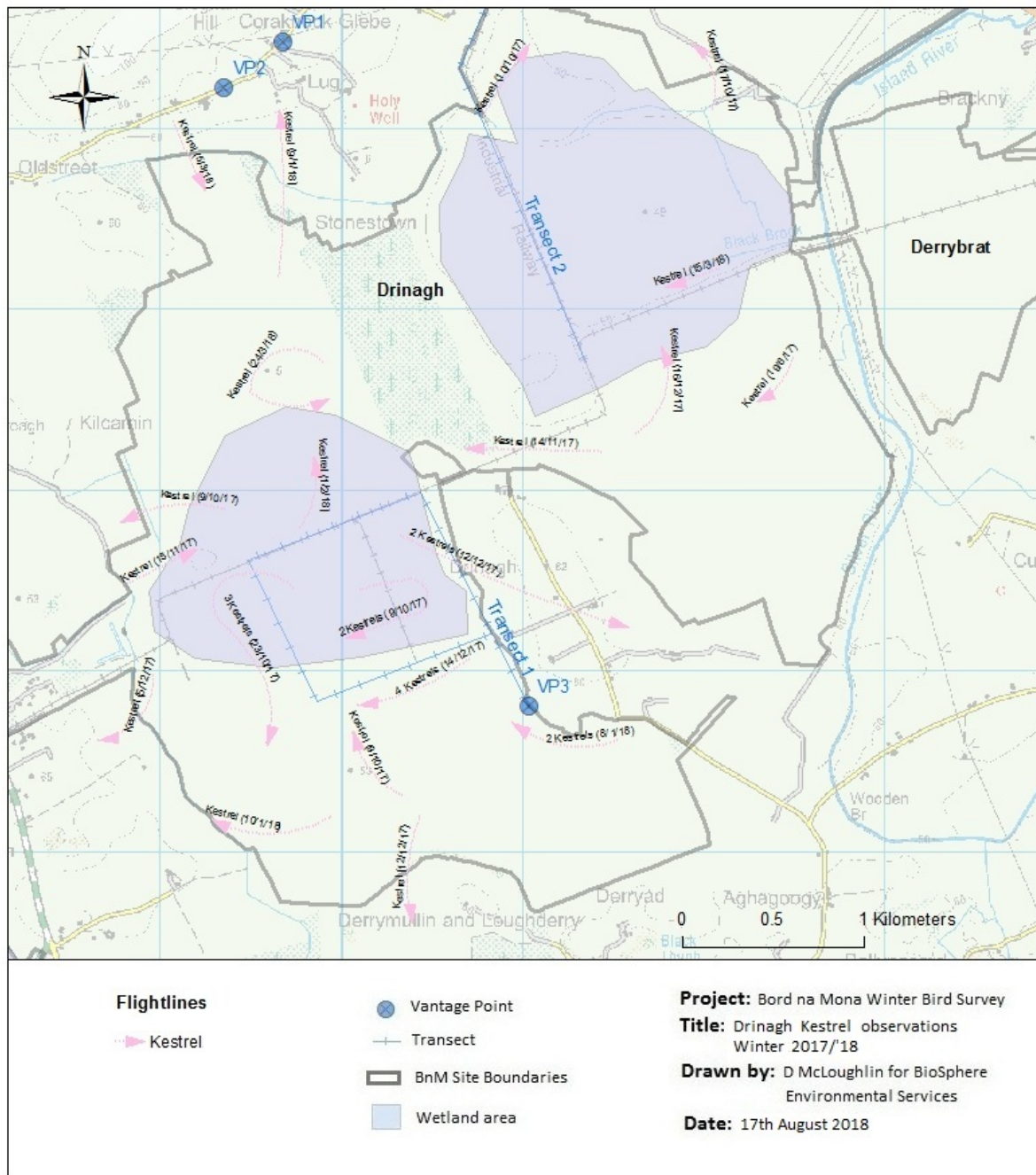
Drinagh Bog Map 4: Map showing transect and vantage point locations, with Lapwing observations (map 1).



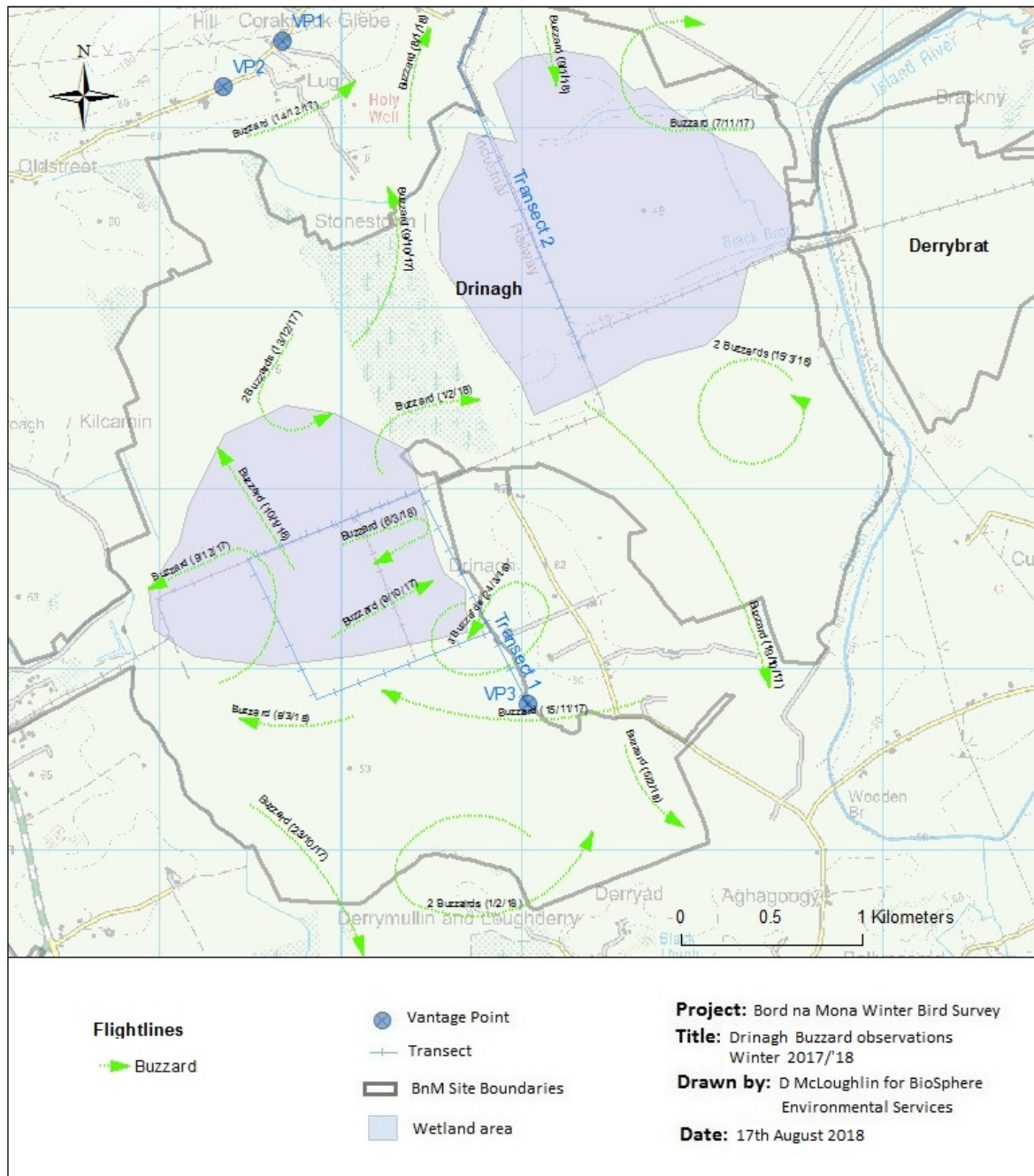
Drinagh Bog Map 5: Map showing transect and vantage point locations, with Lapwing observations (map 2).



Drinagh Bog Map 6: Map showing transect and vantage point locations, with Little Egret, Hen Harrier, Peregrine, Merlin, and Woodcock observations.



Drinagh Bog Map 7: Map showing transect and vantage point locations, with Kestrel observations.



Drinagh Bog Map 8: Map showing transect and vantage point locations, with Buzzard observations.



Plate 3. Drinagh Bog: view of wetland in NE of site (looking eastwards from rail track).



Plate 4. Drinagh Bog: view from VP4 over wetland and scrub habitat in SE sector of site (looking southwards from rail track).



Plate 5. Drinagh Bog: view from VP2 over northwestern part of site, showing bare peat and scrub habitats.



Plate 6. Drinagh Bog: view from VP3 over southern part site. This sector of site is largely still in commercial production.

3.5 Swan and Goose Surveys in Wider Study Area

As part of the 2017/18 winter survey, specific search was made in outlying areas for flocks of Whooper Swans and/or other wetland species of importance such as Greenland White-fronted Goose. The search area extended to approximately 5 km from Drinagh bog and bog sites covered were:

Noggusboy – immediately north of Drinagh

Derrybrat – immediately east of Drinagh

Boora complex – large complex >1 km east of the Drinagh

Derries – cutaway bog c.5 km northeast of Drinagh

Turraun – cutaway bog complex c.8 km northeast of Drinagh

In addition, a grassland site along the River Brosna at Derrynagun (grid ref. N195265) was checked as swans had been recorded here in previous winters (though it is >10 km to NE of Drinagh).

Apart from the bog sites, observations were made on large fields in the area viewable from public roads which could provide grazing potential for swans.

Dates of surveys were as follows:

- 26th October
- 23rd November
- 15th December
- 24th January
- 22nd February
- 16th March

Results and discussion

The following are numbers of Whooper Swans recorded on each survey. There were no sightings of wild goose species in any of the surveys.

	Oct	Nov	Dec	Jan	Feb	Mar
Drinagh	5	9	40+	0	7	6
Noggusboy	14	0	16	0	11	9
Boora	0	0	9	6	3	13
Turraun	0	2	7	3	1	0
Brosna River	0	0	18	52	0	0
Totals	19	11	90	61	22	28

The survey shows that relatively low numbers of swans frequented the various sites in the vicinity of Drinagh bog in winter 2017/18. While a large flock (up to 217) was present in the Drinagh area from at least 14th November to 13th December 2017, these birds seemed to have

confined themselves to a suite of feeding fields to the east of Drinagh and to Drinagh bog itself (latter mainly for roosting purposes). It is presumed that the flock moved out of the study area after mid December.

The pattern of site usage is fairly typical of Whooper Swan, with intense usage of some sites for certain periods in any one winter. For instance, in winter 2015/16 Noggusboy bog was used by a flock of up to 247 swans from November to February. Similarly, Drinagh Bog had been used by a flock of 190 whoopers in winter 2008/09, while none were recorded there in winter 2009/10.

It can be concluded that usage of the cutaway bog sites in the Drinagh area by significant numbers of Whooper Swans is irregular and that no particular site consistently attracts birds. This probably reflects the feeding potential of the cutaway bog and grassland/arable sites, which varies between winters (and even within winters) according to water levels, recent landuse and other factors.

This survey, as well as surveys in the previous three winters at Drinagh Bog, shows that wild geese (namely Greenland white-fronted goose) are rare in the wider area of Drinagh Bog – historical data show that while there are regular populations of Greenland White-fronted Geese along the Shannon and Little Brosna rivers, there are no historic records from the bog sites within at least a 5 km radius of Drinagh.

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APPENDIX 1

Scientific Names of Bird Species

Grey Heron	<i>Ardea cinerea</i>
Whooper Swan	<i>Cygnus cygnus</i>
Mute Swan	<i>Cygnus olor</i>
Greenland White-fronted Goose	<i>Anser albifrons flavirostris</i>
Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</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>
Golden Plover	<i>Pluvialis apricaria</i>
Lapwing	<i>Vanellus vanellus</i>
Snipe	<i>Gallinago gallinago</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>
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>
Bull finch	<i>Pyrrhula pyrrhula</i>
Reed Bunting	<i>Emberiza schoeniclus</i>