

A decorative collage on a teal background. It includes a white-outlined photo of a worker in a yellow safety vest on a wind turbine platform, a photo of a wind farm over a churning sea, and several white line-art icons of wind turbines arranged in a cluster.

Arklow Bank Wind Park 2

Environmental Impact Assessment Report

Volume III, Appendix 12.11: Offshore Ornithology Technical Report -
Onshore Cable Route and Landfall - Baseline Bird Survey



MacArthur
Green

Arklow Bank Wind Park 2

Technical Appendix 12.11 Offshore Ornithology

Onshore Cable Route and Landfall – Baseline Bird Survey

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Baseline Bird Survey On Behalf of Arup



Arklow Bank Wind Park 2 Onshore Cable Route and Landfall

September 2020

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GLOSSARY

Term	Meaning
Arklow Bank Wind Park 2 – Offshore Infrastructure	“The Proposed Development”, Arklow Bank Wind Park 2 Offshore Infrastructure: This includes all elements under the existing Maritime Area Consent.
Arklow Bank Wind Park 2 (ABWP2) (The Project)	<p>Arklow Bank Wind Park 2 (ABWP2) (The Project) is the onshore and offshore infrastructure. This EIAR is being prepared for the Offshore Infrastructure. Consents for the Onshore Grid Infrastructure (Planning Reference 310090) and Operations Maintenance Facility (Planning Reference 211316) has been granted on 26th May 2022 and 20th July 2022, respectively.</p> <ul style="list-style-type: none"> • Arklow Bank Wind Park 2 Offshore Infrastructure: This includes all elements to be consented in accordance with the Maritime Area Consent. This is the subject of this EIAR and will be referred to as ‘the Proposed Development’ in the EIAR. • Arklow Bank Wind Park 2 Onshore Grid Infrastructure: This relates to the onshore grid infrastructure for which planning permission has been granted. • Arklow Bank Wind Park 2 Operations and Maintenance Facility (OMF): This includes the onshore and nearshore infrastructure at the OMF, for which planning permission has been granted. • Arklow Bank Wind Park 2 EirGrid Upgrade Works: any non-contestable grid upgrade works, consent to be sought and works to be completed by EirGrid.
EirGrid	State-owned electric power transmission system operator (TSO) in Ireland and Transmission Asset Owner (TAO) for the Project’s transmission assets.
Landfall	The area in which the offshore export cables make landfall and is the transitional area between the offshore cabling and the onshore cabling.

ACRONYMS

Term	Meaning
AA	Appropriate Assessment
BWI	Bird Watch Ireland
cSAC	Candidate Special Area of Conservation
EIAR	Environmental Impact Statement
NHA	Natural Heritage Area
NIS	Natural Impact Statement
SPA	Special Protected Area
VP	Vantage Point
WWTP	Wastewater Treatment Plant

UNITS

Term	Meaning
Beaufort	Beaufort wind force scale
°C	Degrees Celcius
Douglas	International sea and swell scale
km	kilometres
m	metres

1 INTRODUCTION

1.1 Background

A baseline bird assessment of a coastal site between Arklow Pier and Johnstown North, Co. Wicklow was carried out by DixonBrosnan Environmental Consultants at the request of Arup. This survey will inform the Environmental Impact Assessment Reports (EIAR) and the Natura Impact Statements (NIS) for the proposed Arklow Bank Wind Park 2 (ABWP2) Offshore Infrastructure (the 'Proposed Development') and ABWP2 Onshore Grid Infrastructure.

The primary aim of the survey was to assess the bird species likely to occur in the area during the winter period. Potential breeding habitat for seabirds was also assessed.

1.2 Location

At the commencement of surveys, two sites were being actively considered as possible landfall sites and surveys were carried out at both sites. One of these potential landfall sites was at located at Arklow town. Vantage Point (VP) A was chosen to survey this location (Figure 12.11.1). The other potential site was located near Johnstown North approximately 4.5 km north of Arklow town. VP B and C were chosen to survey this site (Figure 12.11.1). Following an assessment of the constraints relating to both sites, it was determined that the proposed (southern) Arklow landfall would not be utilised. Notwithstanding, survey results for this site have been included below as they provide general information on bird usage within this overall geographical area.

The preferred landfall is located north of Arklow town at Johnstown North. The surrounding landscape is agricultural with a mixture of pasture and arable land. The coastline in this location is dominated by vegetated cliffs with sections of sand/gravel beach; however, the cliffs are not vertical and there are no significant sections of rocky cliff habitat or sea stacks with the potential to provide significant breeding habitat for sea birds.

There are no habitats such as exposed mudflats with the potential to provide high value feeding habitat for wintering birds within the survey area. In general, bird usage is dominated by gulls with some usage by piscivorous species such as red throated diver and cormorant.

1.3 Conservation Designations

The study area does not form part of any Natural Heritage Area (NHA), Special Protection Area (SPA), Special Area of Conservation (SAC) or candidate Special Area of Conservation (cSAC), Nature Reserve, or National Park. The Buckroneys-Brittias Dunes and Fen SAC is located approximately 200 m northeast of the study area.

1.4 Authors of Report

This report was prepared by Carl Dixon MSc. (Ecological Monitoring) and Sorchá Sheehy PhD (Ecology/O Ornithology). Surveys were carried out by Carl Dixon MSc (Ecology), Tara Challoner MSc (Ecology) and Ian McDermott MSc (Ecological Monitoring).

Carl Dixon MSc (Ecology) is a senior ecologist who has over 20 years' experience in ecological and water quality assessments with particular expertise in freshwater ecology. He also has experience

in mammal surveys, invasive species surveys and ecological supervision of large-scale projects. Projects in recent years include the Waste to Energy Facility Ringaskiddy, Shannon LNG Project, supervision of the Fermoy Flood Relief Scheme, Skibbereen Flood Relief Scheme, Upgrade of Mallow Wastewater Treatment Plant (WWTP) Scheme, Douglas Flood Relief Scheme, Great Island Gas Pipeline etc. He has carried out ecological surveys and prepared Appropriate Assessment (AA)/NIS reports for a range of projects.

Sorcha Sheehy PhD (ecology/ornithology) is an experienced ecological consultant with over ten years' experience. She has worked on Screening/NIS's for a range of small and large-scale projects with particular expertise in assessing impacts on birds. Recent projects include bird risk assessments for Dublin and Cork Airports, Waste to Energy Facility Ringaskiddy and Water Storage Schemes for Irish Water.

Tara Challoner MSc (Ecology) is an experienced ecologist and has worked on Screening/NIS's for a range of small and large-scale projects with expertise in surveying habitats and plants in particular, as well as bird and mammal surveys. She has carried out ecological surveys and prepared AA/NIS reports for a range of projects including quarries, industrial developments, pipelines, and landfill sites.

Ian McDermott MSc (Ecology) is an experienced ecologist with particular expertise in surveying for invasive species, mammal and bird surveys. He carries out ongoing water quality surveys for a range of projects including quarries, WWTPs etc. Likewise, he has carried out ecological surveys for a range of projects including industrial developments, pipelines, quarries, agricultural units etc.

1.5 Methodology

1.5.1 Winter bird surveys

Six monthly surveys were conducted between November 2019 and March 2020. On each visit, three counts were made of the coastal waters between Arklow town (VP - A), Johnstown North (VP - B) and at Johnstown South (VP - C). An aerial overview of the vantage point sites is shown in Figure 12.11.1 - Figure 12.11.4.

VP-A: This VP is located on a breakwater within Arklow town. The existing pier is located within the study area. There is a large pond (Arklow Pond) to the north of the VP. This pond, which supports large numbers of birds, is not visible from VP-A (it is located north of the running track visible on Figure 12.11.2). However, birds which use the adjacent amenity grassland in proximity to the pond, as well as birds travelling to the pond from the coast, were visible from the vantage point.

VP-B and VP-C: To ensure sufficient visual coverage of this area, two vantage points were considered necessary. Both are located on grassy promontories overlooking large sections of coastline.

At each point, a 180° scan using a 20x telescope and 8x binoculars was made of the inshore waters and all species of wildfowl, waders and gulls were recorded. All wildfowl, waders and gulls encountered in the water were recorded. Bird identification followed Mullaney *et al.*, (1999). Detailed descriptions of the winter vantage point counts are included in ANNEX A.

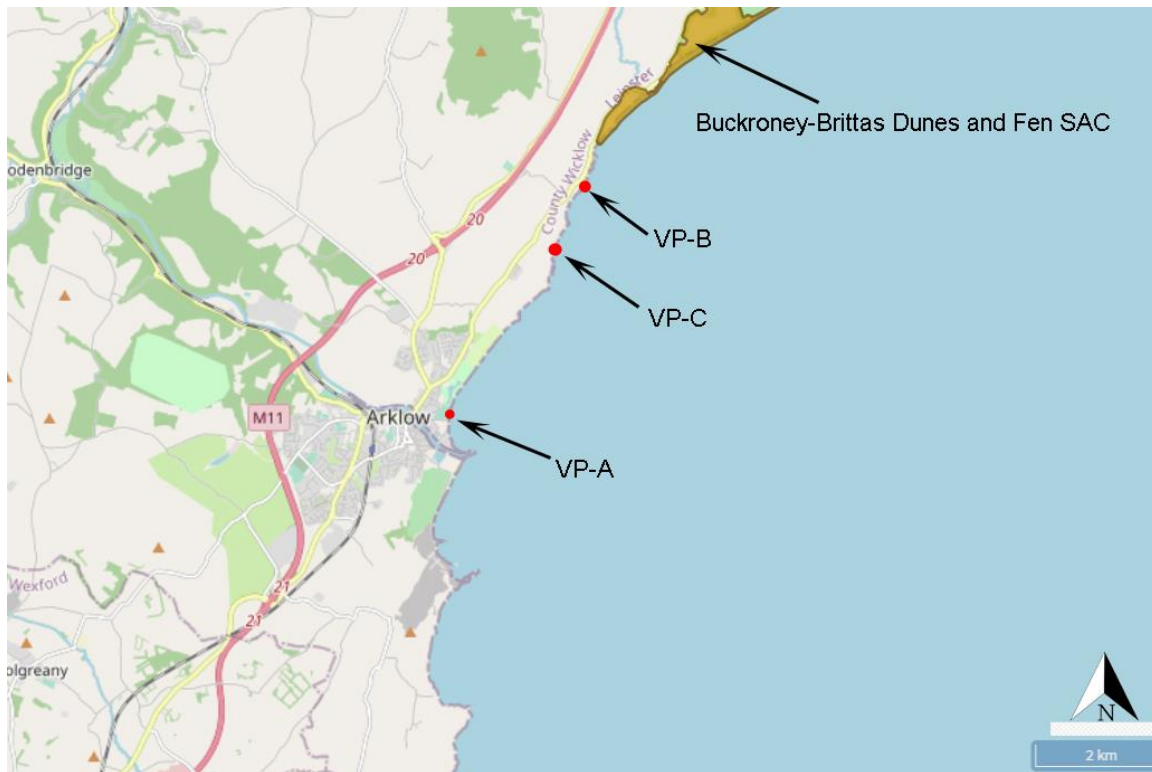


Figure 12.11.1: Vantage Point (VP) locations



Figure 12.11.2: Aerial view of Vantage Point A (VP-A)



Figure 12.11.3: Aerial View of Vantage Point B (VP-B)



Figure 12.11.4: Aerial View of Vantage Point C (VP-C)

1.5.2 Assessment of potential seabird breeding habitat

Although winter bird counts had determined that the potential for breeding bird colonies within the landfall was low, a separate assessment was carried out from the shore to look for suitable habitat or signs of breeding such as staining etc. This was done through a visual assessment of cliffs within 300 m northeast and southwest of VP-B and VP-C. No suitable nesting habitat was identified in the vicinity of VP-A and therefore this area was not included in the assessment.

The survey was undertaken on 21/07/2020 from the cliff tops. This afforded reasonably good views of the relatively low and vegetated cliffs. This survey confirmed that there is no suitable seabird breeding habitat at or in close proximity to the proposed landfall.

1.6 Weather

The weather during the winter surveys and summer survey is summarised below (Table 12.11.1). Full details on survey conditions during winter vantage point counts are included in ANNEX A.

Table 12.11.1: Weather conditions during counts.

Date	Type	Weather
05/11/2019	Winter bird count	Overcast, with gentle to fresh breeze, Temperature 10°C. Dry. Sea state smooth to moderate.
18/11/2019	Winter bird count	Light cloud. Light air. Temperature 7-9 °C. Dry. Sea state calm
16/12/2019	Winter bird count	Sunny with light breeze. Temperature 3-6 °C. Dry. Sea state smooth.
25/01/2020	Winter bird count	Cloudy with light to moderate breeze. Temperature 10°C. Dry. Sea state smooth to moderate
13/02/2020	Winter bird count	Scattered clouds with light breeze. Temperature 12-14°C. Dry. Sea moderate
27/03/2020	Winter bird count	Sunny with light breeze. Temperature 8°C. Sea state slight.
21/07/2020	Identification of potential seabird breeding habitat	Fine, with good visibility, little cloud and no wind

2 RESULTS

2.1 Winter bird surveys

Table 12.11.2 - Table 12.11.7 show monthly counts of wildfowl, waders and gulls along the coastal boundary of the site (Figure 12.11.1).

During both November surveys, the majority of birds were recorded at VP-A (64.1% and 94.8%) (Table 12.11.2 and Table 12.11.3). Bird numbers on the 05/11/19 were low at all vantage points at low tide (Table 12.11.2). The majority of gulls at VP-A were observed loafing on the water, with Black-headed Gull recorded foraging on amenity grassland adjacent to the Arklow Pond. Wading birds at VP-B displayed interchangeable behaviour between foraging and loafing. Common Guillemot were

seen foraging within coastal waters off VP-B and VP-C. Oystercatchers at VP-C displayed interchangeable behaviours i.e. loafing and foraging behaviour, and individuals noted in the small cove directly south of VP-C were predominately roosting. Red-throated Diver were observed foraging within coastal waters at VP-C.

Table 12.11.2: Vantage Point Counts 05/11/2019.

Species	Latin name	VPA (Tide: Low (E))	VPB (Tide: Low (F))	VPC (Tide: Low (F))
Common Gull	<i>Larus canus</i>	1		
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	15		
Great Black-backed Gull	<i>Larus marinus</i>			1
Lesser Black-backed Gull	<i>Larus fuscus</i>			
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>	1		
Herring Gull	<i>Larus argentatus</i>	2		
Red-throated Diver	<i>Gavia stellata</i>			1
Cormorant	<i>Phalacrocorax carbo</i>	1		1
Shag	<i>Phalacrocorax aristotelis</i>			
Common Guillemot	<i>Uria aalge</i>		2	1
Oystercatcher	<i>Haematopus ostralegus</i>		2	6
Greylag Goose	<i>Anser anser</i>	5		
Total number of birds		25	4	10
Percentage of birds in each area		64.1%	10.3%	25.6%

On the 18/11/2019 a large flock of Common Gull (577) and Black-headed Gull (64) were observed largely loafing and to a lesser extent foraging within a plume of water flowing from the mouth of the Avoca River at high tide (Table 12.11.3). Cormorant and Shag were seen foraging within the coastal waters at VP-B and VP-C. During both November surveys, the sea conditions were occasionally rough. The coastal defence system which runs along the shoreline as well as the adjoining park near VP-A was in constant use by walkers throughout the survey period, suggesting some level of habituation for the birds using the site.

Few birds were recorded at VP-B or VP-C during the November surveys. Small numbers of piscivorous bird species were recorded foraging within coastal waters i.e. Red-throated Diver, Cormorant, Common Guillemot and Shag. Oystercatcher, Shag, Cormorant and Herring Gull were also recorded loafing along the sea stacks and beaches.

Table 12.11.3: Vantage Point Counts 18/11/2019.

Species	Latin name	VPA (Tide: High (S))	VPB (Tide: Low (F))	VPC (Tide: Low (F))
Common Gull	<i>Larus canus</i>	577		
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	64		
Great Black-backed Gull	<i>Larus marinus</i>			
Lesser Black-backed Gull	<i>Larus fuscus</i>			
Mediterranean Gull	<i>Ichthyaeus melanocephalus</i>	3		
Herring Gull	<i>Larus argentatus</i>	6	2	5
Red-throated Diver	<i>Gavia stellata</i>			
Cormorant	<i>Phalacrocorax carbo</i>	3	5	3
Shag	<i>Phalacrocorax aristotelis</i>			1
Common Guillemot	<i>Uria aalge</i>			
Oystercatcher	<i>Haematopus ostralegus</i>		1	19
Greylag Goose	<i>Anser anser</i>			
Total number of birds		653	8	28
Percentage of birds in each area		94.8%	1.2%	4.1%

Total bird numbers at all three sub-sites were low in December (16/12/2019). The majority of birds were recorded at VP-A, with a total of 11 birds at high tide (Table 12.11.4). A total of three birds were recorded at VP-B and nine birds at VP-C. Small numbers of gulls were recorded loafing on the water at all three sub-sites. Red-throated Diver were recorded foraging on the coastal waters near VP-B and VP-C.

Table 12.11.4: Vantage Point Counts 16/12/2019.

Species	Latin name	VPA (Tide: High (E))	VPB (Tide: High (F))	VPC (Tide: Low (F))
Common Gull	<i>Larus canus</i>	2		
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	7		4
Great Black-backed Gull	<i>Larus marinus</i>			
Lesser Black-backed Gull	<i>Larus fuscus</i>			1
Mediterranean Gull	<i>Ichthyaeus melanocephalus</i>			
Herring Gull	<i>Larus argentatus</i>	2	2	
Red-throated Diver	<i>Gavia stellata</i>		1	1
Cormorant	<i>Phalacrocorax carbo</i>			

Species	Latin name	VPA (Tide: High (E))	VPB (Tide: High (F))	VPC (Tide: Low (F))
Shag	<i>Phalacrocorax aristotelis</i>			
Common Guillemot	<i>Uria aalge</i>			
Oystercatcher	<i>Haematopus ostralegus</i>			3
Greylag Goose	<i>Anser Anser</i>			
Total number of birds		11	3	9
Percentage of birds in each area		47.8%	13.0%	39.1%

A large number of Black-headed Gulls (98) were recorded at VP-A during the January site survey as well as smaller numbers of Common Gull (3) and Herring Gull (1) (Table 12.11.5). Large numbers of gulls were also seen overflying the site and many of these were following a fishing trawler as it entered the port at Arklow. Few birds were recorded at VP-B or VP-C with a total of six and five birds respectively. Red-throated Diver were recorded foraging in the coastal waters at both sites. Cormorant were recorded loafing on the coastal stack near VP-B and VP-C.

Table 12.11.5: Vantage Point Counts 25/01/2020.

Species	Latin name	VPA (Tide: High (E))	VPB (Tide: High (F))	VPC (Tide: Low (F))
Common Gull	<i>Larus canus</i>	3		
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	98		1
Great Black-backed Gull	<i>Larus marinus</i>			
Lesser Black-backed Gull	<i>Larus fuscus</i>		1	1
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>			
Herring Gull	<i>Larus argentatus</i>	1	2	
Red-throated Diver	<i>Gavia stellata</i>	2	1	1
Cormorant	<i>Phalacrocorax carbo</i>	1	2	2
Shag	<i>Phalacrocorax aristotelis</i>			
Common Guillemot	<i>Uria aalge</i>			
Oystercatcher	<i>Haematopus ostralegus</i>			
Greylag Goose	<i>Anser anser</i>			
Total number of birds		105	6	5
Percentage of birds in each area		90.5%	5.2%	4.3%

The February site survey (13/02/20) was carried out during a falling tide with moderate bird numbers recorded at all three sub-sites (Table 12.11.6). At VP-A Greylag Geese, Little Grebe and

Black Headed Gulls were seen foraging on amenity grassland. At VP-B a mixed flock of Black headed Gull and occasional Herring Gull were recorded loafing on the water. Large numbers of gulls overflow the site en-route to a recently ploughed tillage field outside the survey area. At VP-C, gulls were recorded loafing in the coastal waters.

Table 12.11.6: Vantage Point Counts 13/02/2020.

Species	Latin name	VPA (Tide: High (E))	VPB (Tide: High (F))	VPC (Tide: Low (F))
Common Gull	<i>Larus canus</i>	22	30	12
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	10		3
Great Black-backed Gull	<i>Larus marinus</i>			
Lesser Black-backed Gull	<i>Larus fuscus</i>			2
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>			
Herring Gull	<i>Larus argentatus</i>	1	1	
Red-throated Diver	<i>Gavia stellata</i>		1	
Cormorant	<i>Phalacrocorax carbo</i>			
Shag	<i>Phalacrocorax aristotelis</i>			
Common Guillemot	<i>Uria aalge</i>			1
Oystercatcher	<i>Haematopus ostralegus</i>			
Greylag Goose	<i>Anser anser</i>			
Total number of birds		33	32	18
Percentage of birds in each area		39.8%	38.6%	21.6%

Very low bird numbers were recorded at all sub-sites during the March site survey (27/03/2020). At VP-A Common Gull and Black-headed Gull were recorded loafing on the water and foraging on nearby amenity grassland (Table 12.11.7). Common Gull and Cormorant were recorded roosting on the sea stack near VP-B and VP-C.

Table 12.11.7: Vantage Point Counts 27/03/2020.

Species	Latin name	VPA (Tide: High (E))	VPB (Tide: High (F))	VPC (Tide: Low (F))
Common Gull	<i>Larus canus</i>	4	2	
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	3		
Great Black-backed Gull	<i>Larus marinus</i>			
Lesser Black-backed Gull	<i>Larus fuscus</i>		3	1

Species	Latin name	VPA (Tide: High (E))	VPB (Tide: High (F))	VPC (Tide: Low (F))
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>			
Herring Gull	<i>Larus argentatus</i>			
Red-throated Diver	<i>Gavia stellate</i>			
Cormorant	<i>Phalacrocorax carbo</i>	1	2	1
Shag	<i>Phalacrocorax aristotelis</i>			
Common Guillemot	<i>Uria aalge</i>			
Oystercatcher	<i>Haematopus ostralegus</i>			1
Greylag Geese	<i>Anser Anser</i>			
Total number of birds		10	7	3
Percentage of birds in each area		50%	35%	15%

2.2 Breeding bird survey

The survey was undertaken on 21/07/2020 on the cliff tops 300 m northeast and 300 m southwest of cliffs adjacent to VP-B and VP-C. This afforded reasonably good views of the relatively low and vegetated cliffs.

Vegetated sea cliffs exhibit a complex pattern of vegetation reflecting the degree of maritime exposure, geology and geomorphology, biogeographical provenance and pattern of human management. Typically, on the most exposed cliffs there is a zonation from crevice and ledge communities of the steepest slopes beside the sea (*Crithmo-Armerietalia*, Géhu 1964) through closed maritime grasslands on upper cliff slopes, cliff tops and cliff ledges where there is a deeper accumulation of soils (*Silenion maritimae*, Malloch 1973).

Further inland and on more sheltered cliffs, these grade into a complex assemblage of maritime and para-maritime types of heath, calcareous grassland, acid grassland, therophyte, tall herb scrub and wind-pruned woodland vegetation, each enriched by floristic elements characteristic of coastal habitats. On soft coasts with much active movement, complex assemblages of maritime and non-maritime vegetation occur.

The soft cliffs at this location have a vegetated grassland cover for a distance of approximately 20 m inland until the vegetation meets agricultural land. This habitat is an important habitat in its own right and presents EU Annex I habitat- Vegetated sea cliffs of the Atlantic and Baltic Coasts (1230). The species recorded show a close affinity to a vegetative association described by BEC consultants as Group D. *Armeria maritima* - *Plantago maritima* maritime grassland (Barron et al., 2011).

Also present within the wider area are more severe rock cliffs, small rocky reefs and a sea stack which are potentially of more value for breeding birds. However, the cliffs are relatively low and

ledges and crevices are largely absent and therefore these habitats do not provide high value nesting sites for sea birds.

Given the limited height of the cliffs which are largely vegetated and lack of crevices etc the potential for breeding seabirds is minimal. A small sea stack is used by Cormorant close to VP-C, however it is considered of low value as a potential site for seabirds breeding. No evidence of breeding bird activity was recorded during the survey. A single Cormorant was observed and two Herring Gulls flew south past the cliffs. No other bird activity was observed along the coastline. See Figure 12.11.5 - Figure 12.11.7 for sea cliff views.



Figure 12.11.5: View of cliffs



Figure 12.11.6: View of cliffs



Figure 12.11.7: View of cliffs

3 STATUS OF BIRDS OF CONSERVATION CONCERN

BirdWatch Ireland (BWI) have compiled a list identifying bird species of high, medium and low conservation priority in Ireland, based on several criteria (Colhoun and Cummins, 2013). There are 37 species currently included on the Red List, which signifies species of high conservation concern (Colhoun and Cummins, 2013). Rare and vulnerable bird species are also listed on Annex I of the E.U. Birds Directive (79/409/EEC).

Two red-listed species, Black-headed Gull and Herring Gull were recorded during the site surveys.

Several small flocks of Black-headed Gull were recorded near VP-A. The internationally important threshold for this species has been set at 20,000 birds (Crowe 2005) and all flocks recorded within the survey area were significantly below this threshold (peak=98 T VP-A 25/01/20). Black-headed Gull are red-listed as there has been a greater than 70% decline in the Irish breeding population in the last 25 years (Colhoun and Cummins, 2013).

Herring Gull were occasionally recorded in small numbers at VP-A, VP-B and VP-C. The internationally important threshold for this species has been set at 10,200 birds (Crowe, 2005). All sightings of Herring Gull were significantly below this threshold, with peak numbers of six recorded at VP-A on the 18th of November 2019. Herring Gull are red-listed as there has been a greater than 90% decline in the Irish breeding population in the last 25 years (Colhoun and Cummins, 2013).

One species, Red-throated Diver, recorded during the winter surveys is listed on Annex I of the EU Birds Directive (79/409/EEC). Red-throated Divers were regularly recorded in low numbers on the coastal waters off VP-B and VP-C. The numbers recorded did not exceed the nationally important threshold of 20 birds set for both of these species (Crowe, 2005).

A total of ten species of wildfowl, waders and gulls recorded during the winter surveys are on the BWI Amber list (Table 12.11.8). Amber-listed species are those which have undergone less severe declines, or are rare breeding species, or have a localised distribution or an unfavourable European conservation status (Colhoun and Cummins, 2013).

Table 12.11.8: Amber-listed species recorded during winter surveys (after Colhoun and Cummins, 2013).

Species	Moderate decline in Irish Breeding Population or range	Rare breeding species	> 50 % of breeding/wintering population found in fewer than 10 sites	Unfavourable conservation status in Europe
Red-throated Diver		X		X
Cormorant	X		X (breeding)	
Common Gull	X			X
Common Guillemot			X (breeding)	
Great Black-backed Gull	X			
Lesser Black-backed Gull	X		X (breeding)	
Mediterranean Gull		X		
Shag			X (breeding)	
Oystercatcher			X (wintering)	
Greylag Goose			X (wintering)	

4 CONCLUSION

Overall, the proposed landfall is not considered of high value for seabirds and lacks the large areas of mudflat habitat which provide high quality feeding habitat for wading birds in winter. Bird usage is dominated by gulls and small numbers of piscivorous bird species such as Common Guillemot, Red-throated Diver and Cormorant. Red-throated Diver is listed on Annex I of the Birds Directive and two Red Listed gull species, namely Black-headed Gull and Herring Gull, were recorded during the site surveys. However, disturbance will be temporary and there are large areas of comparable habitat in the surrounding landscape. A more detailed assessment of bird usage in the terrestrial environment was included in the Onshore Grid Infrastructure EIAR and AA Screening reports.

5 REFERENCES

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ANNEX A. VANTAGE POINT SURVEY DETAILS

Arklow Winter Bird Survey – Field Notes November 2019		Weather	VPA	VPB	VPC	Weather	VPA	VPB	VPC
		Wind (Beaufort)	Fresh Breeze	Light Breeze	Gentle Breeze	Cloud	Overcast	Overcast	Overcast
		Sea (Douglas)	Moderate	Smooth	Smooth	Temperature	10°C	10°C	10°C
Date: 05/11/2019	Tide: Low 11.39 (0.45 m)	Rain	Dry	Dry	Dry	Visibility	Ok	Ok	Ok
Vantage Points	Start time	Bird Behaviour			Notes				
VPA	11:40	Some foraging by Gull species as they traverse the site. Majority of Gulls noted loafing on water top. Small number of Black-headed Gull noted foraging within amenity grassland within adjoining park. Greylag Geese foraging on amenity grassland within adjoining park. Cormorant foraging within coastal waters.			Large swell on occasions with sea spray over rock armour. Coastal defence system i.e. bund and rock armour used as public walkway. Experiences a constant level of usage. Park adjoins survey area. Constant use by members of the general public. Large number of Gulls and some habituation to disturbance from general public. Otter (<i>Lutra lutra</i>) spraint noted next to VP location.				
VPB	14:45	Waders displaying a mix of interchangeable behaviours i.e. loafing and foraging behaviour. Common Guillemot foraging. Presumably same bird that was recorded in VPC.			Tide in flood during survey. Member of public walking on Ennereilly Beach prior to survey commencement. Followed by two people and a dog shortly after survey commencement. Remained for survey duration.				
VPC	13:20	Oystercatchers displaying a mix of interchangeable behaviours i.e. loafing and foraging behaviour. Individuals noted in small cove directly south of VP were predominately roosting. Red-throated Diver and Common Guillemot foraging within coastal waters. Cormorant and Great Black-backed Gull loafing on coastal stack in front of VP.			Tide in flood during survey. Single Grey Seal (<i>Halichoerus grypus</i>) noted commuting through survey area.				

	Herring Gull loafing on water.	
Note	Vantage points B and C split into 54 minute survey durations. VPA survey duration is 90 minutes. Birds re-locating within a survey site were not counted twice, however there may be some overlap been both VPB and VPC survey sites due to their close proximity.	

Arklow Winter Bird Survey – Field Notes November 2019			Weather	VPA	VPB	VPC	Weather	VPA	VPB	VPC	
			Wind (Beaufort)	Light Air	Light Air	Light Air	Cloud	Lightly Cloudy	Lightly Cloudy	Lightly Cloudy	
			Sea (Douglas)	Calm (Glassy)	Calm (Glassy)	Calm (Glassy)	Temperature	9°C	7°C	8°C	
Date: 18/11/2019		Tide: High 12.47 (1.89 m)		Rain	Dry	Dry	Dry	Visibility	Good	Good	Good
Vantage Points	Start time	Bird Behaviour			Notes						
VPA	13:00	Majority of Gulls noted loafing on water top, concentrated within plume of water emulating from the mouth of the harbour entrance. Some interspersed foraging behaviour noted. Cormorant foraging within coastal waters.			Coastal defence system i.e. bund and rock armour used as public walkway. Experiences a constant level of usage. Park adjoins survey area. Constant use by members of the general public. Large number of Gulls some habituation to disturbance from general public. Otter (<i>Lutra lutra</i>) spraint noted next to VP location. Single Grey Seal (<i>Halichoerus grypus</i>) noted commuting through survey area. 13:25 boat enters harbour, no significant disturbance of birds noted.						
VPB	11:00	Cormorant foraging within coastal waters. Oystercatcher loafing briefly within small cove before flying south.			Shoreline exposure that of low tide conditions, with tide noted to be in flood during survey. Dog walker on Ennereilly Beach for approximately 75% of the survey period.						
VPC	12:00	Cormorant and Shag loafing on coastal stack in front of VP. Single Cormorant foraging within coastal waters. Waders displaying a mix of interchangeable behaviours i.e. loafing and foraging behaviour.			High tide conditions, with tide in flood during survey.						
Note	Vantage points B and C split into 54 minute survey durations. VPA survey duration is 90 minutes. Birds re-locating within a survey site were not counted twice, however there may be some overlap been both VPB and VPC survey sites due to their close proximity.										

Arklow Winter Bird Survey – Field Notes December 2019			Weather	VPA	VPB	VPC	Weather	VPA	VPB	VPC	
			Wind (Beaufort)	Light Breeze	Light Breeze	Light Breeze	Cloud	Sunny	Sunny	Scattered Clouds	
			Sea (Douglas)	Smooth	Smooth	Slight	Temperature	6°C	4°C	3°C	
Date: 16/12/2019		Tide: High 11.26 (1.43 m)		Rain	Dry	Dry	Dry	Visibility	Good	Good	Good
Vantage Points	Start time	Bird Behaviour			Notes						
VPA	11:20	Majority of Gulls noted loafing on water top, some foraging within adjoining park.			Coastal defence system i.e. bund and rock armour used as public walkway. Experiences a constant level of usage. Adjoining park included in survey area. Constant use by members of the general public. Large number of Gulls some habituation to disturbance from general public. Otter (<i>Lutra lutra</i>) spraint noted next to VP location.						
VPB	10:25	Red-throated Diver foraging within coastal waters. Herring Gull loafing on stack to south of site.			Low tide conditions, with tide in flood during survey. Swimmer on Ennereilly Beach for approximately ten minutes of the survey period. Single Grey Seal (<i>Halichoerus grypus</i>) recorded commuting through survey area.						
VPC	09:30	Cormorant and Shag loafing on coastal stack in front of VP. Single Cormorant foraging within coastal waters. Oystercatcher displaying a mix of interchangeable behaviours i.e. loafing and foraging behaviour on beach to south of VP. Gulls loafing on water top. Red-throated Diver foraging within coastal waters.			Mid tide with tide in flood. Single female Grey Seal (<i>Halichoerus grypus</i>) noted commuting through survey area. Two Harbour porpoise (<i>Phocoena phocoena</i>) noted commuting through site with some foraging behaviour noted.						
Note	Vantage points B and C split into 45 minute survey durations. VPA survey duration is 90 minutes. Birds re-locating within a survey site were not counted twice, however there may be some overlap been both VPB and VPC survey sites due to their close proximity.										

Arklow Winter Bird Survey – Field Notes January 2020			Weather	VPA	VPB	VPC	Weather	VPA	VPB	VPC	
			Wind (Beaufort)	Moderate	Light Breeze	Light Breeze	Cloud	Cloudy	Cloudy	Cloudy	
			Sea (Douglas)	Moderate	Smooth	Slight	Temperature	10°C	10°C	10°C	
Date: 25/01/2020		Tide: High 8.44 (1.38 m)		Rain	Dry	Dry	Dry	Visibility	Fair	Good	Good
Vantage Points	Start time	Bird Behaviour			Notes						
VPA	13:25	Gulls attracted to pond in park. Generally observed overflying Trawler followed by large numbers of gulls, which inflates figures.			Coastal defence system i.e. bund and rock armour used as public walkway. Experiences a constant level of usage. Constant use by members of the general public. Large number of Gulls some habituation to disturbance from general public. Pond not visible from vantage point.						
VPB	10:25	Red-throated Diver foraging within coastal waters. Cormorant roosting on stack.			Most birds overflying. Red-throated Diver feeding offshore.						
VPC	14:00	Cormorant loafing on coastal stack in front of VP. Small flock off common gull observed on several occasions overflying. Red-throated Diver foraging within coastal waters.			Grey Seal (<i>Halichoerus grypus</i>) noted commuting through survey area. Some breakers on shore, moderately rough conditions.						
Note	Vantage points B and C split into 45 minute survey durations. VPA survey duration is 90 minutes. Birds re-locating within a survey site were not counted twice, however there may be some overlap been both VPB and VPC survey sites due to their close proximity.										

Arklow Winter Bird Survey – Field Notes February 2020			Weather	VPA	VPB	VPC	Weather	VPA	VPB	VPC	
			Wind (Beaufort)	Light Breeze	Light Breeze	Light Breeze	Cloud	Cloudy	Sunny	Scattered Clouds	
			Sea (Douglas)	Moderate	Moderate	Moderate	Temperature	12°C	14°C	13°C	
Date: 13/02/2020		Tide: High 11.40(1.42 m)		Rain	Dry	Dry	Dry	Visibility	Good	Good	Good
Vantage Points	Start time	Bird Behaviour			Notes						
VPA	11:20	Majority of Gulls noted loafing on water or overflying.			Coastal defence system i.e. bund and rock armour used as public walkway. Experiences a constant level of usage. Adjoining park included in survey area. Constant use by members of the general public. Large number of Gulls some habituation to disturbance from general public. Greylag Geese, Little Grebe and Black Headed Gulls using pond on the edge of survey area.						
VPB	12:30	Flock of mixed gulls. Red-throated Diver foraging.			Flock of Black-headed Gull and occasional herring gull on water. Large numbers of gulls flying towards recently ploughed tillage field outside the survey area.						
VPC	13.41				Flock of Black headed gull and occasional herring gull on water.						
Note	Vantage points B and C split into 45-minute survey durations. VPA survey duration is 90 minutes. Birds re-locating within a survey site were not counted twice, however there may be some overlap been both VPB and VPC survey sites due to their close proximity.										

Arklow Winter Bird Survey – Field Notes March 2020			Weather	VPA	VPB	VPC	Weather	VPA	VPB	VPC	
			Wind (Beaufort)	Light Breeze	Light Breeze	Light Breeze	Cloud	Sunny	Sunny	Sunny	
			Sea (Douglas)	Slight	Slight	Slight	Temperature	8°C	8°C	8°C	
Date: 27/03/2020		Tide: High 10.14 (1.25 m)		Rain	Dry	Dry	Dry	Visibility	Good	Good	Good
Vantage Points	Start time	Bird Behaviour			Notes						
VPA	1:10	Majority of Gulls noted loafing on water top, some foraging within adjoining park. Also using pier.			Coastal defence system i.e. bund and rock armour used as public walkway. Experiences a constant level of usage. Adjoining park included in survey area. Constant use by members of the general public. Large number of gulls with some habituation to disturbance from general public. Otter (<i>Lutra lutra</i>) spraint noted.						
VPB	11:00	Two cormorant roosting on sea stack Common gull roosting			Bird activity low.						
VPC	12:00	Gulls noted but generally overflying Cormorant foraging offshore.			Generally low levels of bird activity. Sparrowhawk overflying.						
Note	Vantage points B and C split into 45-minute survey durations. VPA survey duration is 90 minutes. Birds re-locating within a survey site were not counted twice, however there may be some overlap been both VPB and VPC survey sites due to their close proximity.										