Appendix 12.1 Flora Survey – Species List 2015, 2018 & 2019	
English Name	**Scientific Name**
Common bent	*Agrostis Capillaris*
Brown bent	*Agrostis vinealis*
Jointed rush	*Juncus acutiflora*
Yellow sedge	*Carex viridula*
Yorkshire fog	*Holcus lanatus*
Greater tussock sedge	Carex paniculata
Rye grass	Lolium multiflorum
Hard rush	Juncus inflexus
Bee orchid	Ophyrs apifera
Japanese knotweed	Fallopian japonica
Yellow wort	Blackstonia pertoliata
Sitka spruce	Picea sitchensis
Hornbeam	Carpinus betulus
False oat grass	Arrhenatherum elatius
Water mint	Menthe aquatica
White willow	Salax alba
Beach	Fagus sylvatica
Monterey cypress	Cupressus macrocarpa
Fodder beet	Beta vulgaris spp.
Agrimony	*Agrimonia eupatoria*
Field Horsetail	*Equisetum arvense*
Bittersweet	*Solanum dulcamara*
Selfheal	*Prunella vulgaris*
Black Nightshade	*Solanum nigrum*
Scarlet pimpernel	*Anagallis arvensis*
Lawn moss	*Caligeron cuspidatum*
Lady fern	*Athyrium filix-femina*
Soft Shield-fern	*Polystitchum setiferum*
Hart's-tongue Fern	*Asplenium scolopendrum*
Japanese rose	*Rosa rugosa*
Herb Robert	*Geranium robertianum*
Foxglove	*Digitalis purpurea*

Appendix 12.2

Winter and breeding bird surveys for a proposed Ringaskiddy Resource Recovery Centre at Ringaskiddy, Co. Cork.

Appendix 12.2 Winter and Breeding Birds Surveys

A1 Introduction

Dixon.Brosnan Environmental Consultants carried out an appraisal of the potential impacts of the proposed development of the Ringaskiddy Resource Recovery Centre at Ringaskiddy, County Cork on birds utilising the development site and the coastal areas adjacent to it. The information in this report was used to help determine the impacts on bird populations in **Chapter 12 (***Biodiversity***)** of the EIAR and also informed the conclusions of the NIS which specifically addresses impacts on designated Natura 2000 sites including the Cork Harbour SPA.

A2 Methodology

A2.1 Desktop Review

A desktop review was carried out to identify designated SPAs in the surrounding landscape and to assess information from other surveys in this general area. From the information provided in the desktop review and based on the information provided by previous reports, it was decided to carry out winter bird surveys and breeding bird surveys.

A2.1.1 Legislation

The Wild Birds Directive 2009/147/EC (as amended) identifies and classifies SPAs for rare or vulnerable species, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance as listed in Annex I of the Directive. The EU Birds Directive is one of the most important pieces of nature legislation that we have, and has created an extensive protection scheme for all of Europe's wild birds. More formally known as Council Directive 79/409/EEC on the conservation of wild birds, the Birds Directive was the very first piece of nature legislation of the European Union, and was adopted by Member States in 1979. The Birds Directive bans activities that directly threaten birds, such as the deliberate killing or capture of birds, the destruction of their nests and taking of their eggs, and associated activities such as trading in live or dead birds.

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, otherwise known as the 'Habitats Directive', was adopted in 1992. The directive is the means by which the European Union meets its obligations under the Bern Convention and highlights a legal obligation to protect over 500 wild plants and over 1000 wild animal species.

The Bonn Convention on Conservation of Migratory Species of Wild Animals 1979 aims to achieve effective management of migratory species across national or jurisdictional boundaries.

Nationally, other than a small number of 'excluded species' such as crows and pigeons, all breeding birds, their young, nests and eggs are protected under Articles 19 and 22 of the Wildlife Act of 1976. Under the provisions of the act it is inter alia an offence to destroy or interfere with bird's nests. In addition, it is an

offence under Section 40 of the Act to remove hedgerows and other vegetation during the bird breeding season for purposes other than agriculture or forestry (defined in Section 46 of the Wildlife (Amendment) Act of 2000 as running from the 1st of March to the 31st of October).

A2.2 Winter bird survey - Methodology

The winter bird surveys were undertaken on the following dates: 25th October 2014, 22nd November 2014, 22nd December, 2014, 21st January 2015, 19th February 2015 and 20th March 2015. The survey methodology was based on that used by the British Trust for Ornithology (BTO), Wetland Bird Survey (WeBS) and also that for the Irish Wetland Bird Survey (I-WeBS), as outlined in Gilbert et al. (1998). The winter bird survey and breeding bird survey were undertaken using Nicon ProStaff-7 10X42 binoculars and Safari 20-60 X 80 spotting scope. Ninety-minute counts were undertaken monthly at either high tide, mid tide and low tide. Survey vantage point locations for the winter bird counts are shown in **Figure 1**. It is noted that many of these birds were recorded overflying the channel and that the survey covered a radius of approximately 300m from each vantage point.



Figure 1. Vantage point count locations.

A2.3 Breeding bird surveys - methodology

Breeding bird surveys were undertaken on the 27th May 2015, 12th June 2015,19th June 2015 and the 13th of May 2019. The timing of the surveys reflects the abundance of residents and early migrants, which tend to be more easily detected on the first visit. The survey methodology utilised a scaled down version of the British Trust for Ornithology's (BTO) Common Bird Census (CBC) Technique (Bibby et al., 2000 & Gilbert et al., 1998), with aspects of species-specific survey methodologies employed where required (Gilbert et al., 1998). All bird locations, numbers, behaviour were recorded by annotating field maps and by taking notes.

The transects were designed to give good views of all fields, hedgerows, scrub, woodland, and coastal shorelines present in the study area. The transects were conducted in May and June during weather conditions favourable for bird activity. This included avoiding periods of persistent or heavy rain, high wind or fog, as birds tend to be less active and therefore less visible during such conditions. The survey visit commenced shortly after dawn and was completed before mid-day to coincide with the peak bird activity period.

The transect was walked at a constant pace and all species of birds observed within and considered to be using the study area were recorded. Particular attention was paid ahead of the observer to ensure, where possible, that birds were recorded before they were flushed. Surveyors stopped periodically at certain locations to listen for calls and observe any behaviour.

All bird species encountered during the survey were mapped and coded using standard BTO 'Species Codes' and 'Categories of Breeding Evidence' e.g. singing male, agitated behaviour, carrying food, recently fledged downy young. No attempts were made to locate nests as bird behaviour is generally sufficient to determine probable or confirmed breeding. Survey visits commenced shortly after dawn and were completed before mid-day to coincide with the peak bird activity period. Visits were not made during adverse weather conditions and a route was chosen to ensure all parts of the proposed development area were effectively surveyed. The survey routes through and around the proposed development area are shown in **Figure 2**. The breeding bird surveys focused primarily on the proposed development area where there is the potential for permanent impacts due to the removal of nesting habitat.



Figure 2. Breeding bird survey- routes outlined in red.

A3 Designated sites.

Ireland is required under the terms of the EU Birds Directive (2009/147/EC) to designate Special Protection Areas (SPAs) for the protection of endangered species of wild birds. Sites that meet any of the following criteria may be selected as SPAs:

- A site regularly supporting 20,000 waterbirds or 10,000 pairs of seabirds;
- A site regularly supporting 1% or more of the all-Ireland population of an Annex I species;
- A site regularly supporting 1% or more of the biogeographical population of a migratory species;
- A site that is one of the 'n' most suitable sites in Ireland for an Annex I species or a migratory species (where 'n' is a variable which is related to the proportion of the total biogeographic population of a species held by Ireland).

In Ireland a programme to identify and designate these SPA sites has been in place since 1985. It is our typical mild and wet winters that make the wetlands of Ireland such an important resource for over three-quarters of a million of these waterbirds each year. Over 50 species of waterbird migrate here either on passage to more southerly resorts or to spend the entire winter here. They seek out the relatively undisturbed wetland areas for ice-free feeding conditions and for safe roosting opportunities. In some cases, significant proportions of the biogeographic populations of waterbird overwinter here (e.g. Light-bellied Brent Goose, Black-tailed Godwit, Whooper Swan, Greenland White-fronted Goose and Ringed Plover).

Ireland's SPA Network encompasses over 570,000 hectares of marine and terrestrial habitats. The marine areas include some of the productive intertidal zones of our bays and estuaries that provide vital food resources for several wintering wader species including Dunlin, Knot and Bar-tailed Godwit. Marine waters adjacent to the breeding seabird colonies and other important areas for sea ducks, divers and grebes are also included in the network.

The majority of the breeding seabirds and wintering waterbirds are considered to be regularly occurring migratory birds; over 60% of 25 Annex I listed species that now occur in Ireland on a regular basis belong to the breeding seabird and wintering waterbird groups. This has in part led to the situation that the majority (> 80%) of Ireland's SPAs are designated for these two bird groups (NPWS, Special Protection Areas (SPA)).

The closest Special Protection Area for birds is the Cork Harbour SPA (Site code 004030) which is located 0.5km south of the study area at its closest point. The closed proposed Natural Heritage Area is the Lough Beg pNHA (Site code 001066) which is located 0.3km south of the study area. Large areas of Cork Harbour have received formal designations, primarily on the basis of important bird populations. These areas are interrelated, with bird populations moving between different areas at different times.

Cork Harbour is a large, sheltered bay system, with several river estuaries, with the SPA spanning 2661.4 hectares. Large areas of Cork Harbour have received formal designations, primarily on the basis of important bird populations and

habitats. These areas are interrelated, with bird populations moving between different areas at different times.

A large proportion of Cork Harbour is of major ecological importance for the range of good intertidal mudflats which occur. These muds support a range of prey macro-invertebrate species, notably *Macoma balthica, Scrobicularia plana, Hydrobia ulvae, Nepthys hombergi, Nereis diversicolor* and *Corophium volutator*. Green algae species also occur on the flats, especially *Ulva spp*. Salt marshes are scattered through the site and these provide high tide roosts for the birds. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

Table 1 below lists the Special Conservation Interests for the Cork Harbour SPA. A site synopsis for the Cork Harbour SPA is attached as **Appendix 12.5** of the EIS.

Table 1. Cork Harbour SPA –Special Conservation Interest for Cork Harbour SPA and Qualifying Populations.

Species code	Species	Scientific name	Season	Conservation objective
A004	Little Grebe	*Tachybaptus ruficollis*	Wintering	Maintain
A005	Great Crested Grebe	*Podiceps cristatus*	Wintering	Maintain
A017	Cormorant	*Phalacrocorax carbo*	Wintering	Maintain
A028	Grey Heron	*Ardea cinerea*	Wintering	Maintain
A048	Shelduck	*Tadorna tadorna*	Wintering	Maintain
A050	Wigeon	*Anas penelope*	Wintering	Maintain
A052	Teal	*Anas crecca*	Wintering	Maintain
A054	Pintail	*Anas acuta*	Wintering	Maintain
A056	Shoveler	*Anas clypeata*	Wintering	Maintain
A069	Red-breasted Merganser	*Mergus serrator*	Wintering	Maintain
A130	Oystercatcher	*Haematopus ostralegus*	Wintering	Maintain
A140	Golden Plover	*Pluvialis apricaria*	Wintering	Maintain
A141	Grey Plover	*Pluvialis squatarola*	Wintering	Maintain
A142	Lapwing	*Vanellus vanellus*	Wintering	Maintain
A149	Dunlin	*Calidris alpina*	Wintering	Maintain
A156	Black-tailed Godwit	*Limosa limosa*	Wintering	Maintain
A157	Bar-tailed Godwit	*Limosa lapponica*	Wintering	Maintain
A160	Curlew	*Numenius arquata*	Wintering	Maintain
A162	Redshank	*Tringa totanus*	Wintering	Maintain
A179	Black-headed Gull	*Chroicocephalus ridibundus*	Wintering	Maintain
A182	Common Gull	*Larus canus*	Wintering	Maintain
A183	Lesser Black-backed Gull	*Larus fuscus*	Wintering	Maintain
A193	Common Tern	*Sterna hirundo*	Breeding	Maintain
A999	Wetland and Waterbirds			Maintain

Restore = Restore favourable conservation condition, Maintain = Restore favourable conservation condition

A4 Results

A4.1 Winter bird surveys

Four vantage point count locations were utilised for the winter bird survey 2014/15, as shown in **Figure 1**. These all overlooked the open estuarine habitat and the Cork Harbour West Channel between Ringaskiddy and Spike Island. The cobble beach and terrestrial habitats along the eastern boundary of the study area were also covered. Tides and weather conditions for each day are described in **Table 2.** Tide times at Ringaskiddy are based on the tidal tables for Cobh.

Table 2. Tide and survey conditions – winter bird survey

Date	Tides	Weather	Notes
25/10/2014	Low 13.12 High 19.08	Sea state 1. Mild bright day, with high cloud cover. Wind East 10kph. Cloud 7/8. 13^{0}C	-
22/11/2014	Low 11.18 High 17.11	Sea state 1. Dry bright warm day. Wind West, 2-8kph. Cloud 2/8. Temp 12^{0}C	High numbers of walkers and dogs. Disturbance level high on Saturdays.
22/12/2014	Low 11.45 High 17.35	Sea state 1. Pleasant day with some gusts to 20kph. Wind West Northwest 8-12kph. Cloud 4/8. Temp 8^{0}C.	-
21/01/2015	High 05.48 Low 12.17 High 18.07	Sea state 0-1. Very calm day. Wind South 1-2kph. Cloud 1/8. Temp 7^{0}C	-
19/02/2015	Low 12.01 High 17.51	Sea state 1. Mild breezy day, slight rain showers. Wind West, 4-8kph. Cloud 8/8. Temp 12^{0}C.	-
20/03/2015	Low 11.41 High 17.31	Sea state 0-1. Dry, bright and warm day. Wind North 0-1kph. Cloud 6/8. Temp 14^{0}C.	-

Summarised recordings from the winter bird surveys in 2014/15 are shown in **Table 3**. Complete results from this survey are included in **Appendix A.**

Table 3. Species recorded at Ringaskiddy, winter bird survey 2014/2015.

Species	High tide count (total)	Mid tide count (total)	Low tide count (total)
Oystercatcher	20	52	109
Blackheaded Gull		3	53
Herring Gull		4	17
Black Guillemot			3
Lesser Blackbacked gull	3	1	6
Cormorant	9	9	14
Common Gull	10	27	64
Redshank	2	4	11
Curlew		4	7
Mallard	3		
Glaucous Gull	1	1	5
Grey Heron	1	3	10
Hooded Crow	9	9	28
Wood Pigeon	23	3	12
Rook	234	31	10
Blackbird	2		8
Robin			2
Tree Sparrow	6		
Thrush		1	
Little Egret		4	7
Greater Blackbacked Gull	3	6	2
Greenshank		3	14
Mediterranean Gull			1
Teal			4
Great Crested Grebe		1	2
Brent Goose		69	107
Sanderling		2	
Goldfinch	1		2
Grey Wagtail	1	2	7
Meadow Pipit		1	2
Wren			1
Blue Tit		1	3
Turnstone			4
Knot			4
Great Northern Diver	2	1	1
Dunlin		225	
Jackdaw	7		
Starling		30	

A4.2 Breeding bird surveys

The breeding bird survey was undertaken on the beach front, adjoining roadside and in all of the accessible tracks within the development area, as shown in **Figure 2**. The breeding bird surveys focused primarily on the proposed development area where there is the potential for permanent impacts due to the removal of nesting habitat. The proposed development site is mostly composed of scrub, woodland and former agricultural fields. The site boundaries have a mixture of hedgerows and treelines.

The presence of hedgerow and scrub habitats can provide ideal habitat for a number of bird species. Birds use both hedgerows and scrub to nest or shelter in, birds feed on invertebrates found in in these habitats and feed on berries from hawthorn, blackthorn, elder and bramble; they also act as seed dispersers for these shrub species. The berries are particularly important as a source of winter food to both migratory species and resident species. Nearly two thirds of Ireland's bird species nest in hedges.

A well-managed, mature, hedgerow will have a three-dimensional structure that provides a range of habitats for invertebrates, birds and mammals. Old hedgerow trees are often the most valuable because their many branches, fissured bark and holes provide nesting and roosting spaces for birds such as tits and tree creepers, and even, on occasion, the increasingly scarce barn owl.

Hedgerows are chosen by a sizeable number of common bird species for nesting and roosting: 55 of the 110-bird species recorded regularly in Birdwatch Ireland's Countryside Bird Survey use them during the breeding season. These include the linnet and yellowhammer, two species which have declined in Ireland.

Scrub can provide ideal breeding habitat for many birds and like woodland habitats the bird species present depends on the location, size, plant species and structure of the scrub habitat. Scrub is widely considered to be an important habitat in biodiversity terms. It provides a vital sanctuary for wildlife, a carbon store, and a potential source of renewable fuel. It is a particularly important nesting habitat for Linnets and the rarer Lesser Whitethroat, which are predominantly found in gorse and hawthorn scrub. As well as creating breeding habitat for other species, it also provides food, shelter and wildlife corridors for a wide variety of other species year-round (BirdWatch Ireland, 2011).

Woodland in terms of bird usage is affected by a number of factors such as location, age, tree composition, field and understory vegetation structure and size of the woodland, all of which influence the species present. These factors tend to be more favourable for biodiversity in old native woodlands where animals and plants have evolved to thrive under the conditions present therein and species richness tends to be high. Less biodiversity, especially plant and invertebrate diversity, means that there are fewer feeding opportunities for birds and fewer nesting and roosting sites. While most of our woodland bird species prefer native deciduous trees over conifers, others such as Goldcrest, have been shown to favour conifers (BirdWatch Ireland, 2011).

Grazing by cattle has ceased within the site over the last decade, along with the more recent halt in the production of arable crops. This has allowed scrub, woodland and a greater range of perennial herbaceous species to become established. However, the range of bird species recorded is not significantly different to that which occurs on farmed grassland habitats in the surrounding countryside. Areas with rough grass, especially those with unmanaged that have

grown without being cut or grazed for some time, and as a result has become tall, tussocky, and dominated by coarse species of grass with weedy patches and nettle beds, are more species rich and supported substantially more birds (Chamberlain et al.,2007). It is noted that areas of grassland within the site are still grazed to short swards by rabbit. However, the presence of seed producing weed species will provide food for some bird species.

The tracks through the site are generally open, and the most southerly section of track provides good vantage points over the entire site as it runs along an elevated section of the site. The British Trust for Ornithology (BTO) breeding bird codes are shown in **Table 4**. The breeding status of all species encountered during surveys were classified into four categories: Confirmed (Br), Probable (Pr), Possible (Po) and Non-breeder (N), based on BTO categories of breeding evidence. A full list of bird species recorded during the 2015 and 2019 surveys are provided in **Table 5 & 6**.

Table 4. British Trust for Ornithology breeding bird survey codes

Breeding status	Confirmed breeder (Br)	Probable breeder (Pr)	Possible breeder (Po)	Non-breeder (N)
Observed behaviours	Distraction-display or injury feigning (DD)	Pair in suitable nesting habitat (P)	Observed in suitable nesting habitat (H)	Flying Over (F)
	Used nest or eggshells found from current season (UN)	Permanent Territory (T)	Singing Male (S)	Migrant (M)
	Recently fledged young or downy young (FL)	Courtship and Display (D)		Summering non-breeder (U)
	Adults entering or leaving nest-site indicating occupied nest (ON)	Visiting probable nest site (N)		
	Adult carrying faecal sac or food for young (FF)	Agitated Behaviour (A)		
	Nest containing eggs (NE)	Brood patch of incubating bird (I)		
	Nest with young seen or heard (NY)	Nest Building or excavating nest-hole (B)		

Table 5. 2015 Breeding bird survey results

Bird species	Breeding status	Estimated No. of Pairs	No. Birds recorded per visit		
			27/05/2015	12/06/2015	19/06/2015
Blackbird	Br-FF	2	3	3	3
Blue Tit	Br-FL	3	4	4	12
Bullfinch	Pr- A	1	2	0	0
Chaffinch	Br-FL	2	0	6	3
Chiffchaff	Pr-D	2-3	3	0	7
Common Gull	N-F	0	0	0	14
Dunnock	Po- S	1	2	1	2
Goldcrest	Pr-D	1	1	0	0
Goldfinch	PR-N	1	2	0	0
Great tit	Br-DD	1	1	0	2
Greenfinch	Pr-P	1	1	2	2
Heron	N	0	0	0	1
Hooded Crow	N-F	0	0	0	3
Kestrel	Pr-FL	1	1	0	3
Long-tailed Tit	Pr-P	1	2	0	0
Oystercatcher	N	0	0	0	3
Robin	Br-UN	1	3	0	0
Rook	N-F	0	0	1	0
Sedge Warbler	Po-H	0-1	0	0	3
Skylark	Po-S	1-2	4	0	1
Song Thrush	Pr-N	1	1	0	1
Starling	N-F	0	39	17	0
Swallow	N-F	0	4	2	4
Common Tern	N-F	0	3	0	0
Tree Sparrow	Po-H	0-1	1	0	0
Common Whitethroat	Pr-A	1	1	0	1
Wood Pigeon	Pr-D	2-3	6	3	4
Wren	Br-ff	2	2	1	1

Table 6. 2019 Breeding bird survey results

Proposed Development Site			
Bird species	**Breeding status**	**Estimated no. of pairs within the site**	**No. Birds recorded per visit**
			13/05/2019
Wren	Po - S	8	13
Magpie	Br - FF	1	3
Dunnock	Po - S	2	5
Blackbird	Pr - A	1 - 3	6
Robin	Po - S	1 - 2	3
Great tit	Pr - P	1	2
Blue tit	Po - S	1	1
Goldfinch	Pr - P	1 - 2	3
Chaffinch	Pr - P	1 - 2	5
Bullfinch	Pr - P	2	4
Linnet	Pr - P	1	2
Herring Gull	N-F	0	5
Rook	N-F	0	9
Hooded Crow	Pr - A	0 - 1	2
Woodpigeon	Pr-D / N-F	0 - 3	27
Feral pigeon	N-F	0	5
Starling	Br – FL	6	15
Barn Swallow	N-F	0	2
House Martin	N-F	0	4
Chiffchaff	Po - S	2 - 3	6
Song thrush	Br - FF	1 - 2	3
Jackdaw	N-F	0	1
Blackcap	Pr - P	1	2
Siskin	Pr - P	1	2
Meadow pipit	Po - H	0 - 1	1
Common tern	N-F	0	2
Oystercatcher	Po - H	0	8
Cormorant	N-F	0	2

It is noted that not all of the species recorded during the 2015 breeding survey season were recorded during the 2019 breeding bird survey e.g. Skylark, Sedge Warbler, Common Whitethroat and Tree Sparrow were not recorded during 2019.

A4.3 Common Tern-Breeding surveys

No breeding terns occur within or in immediate proximity to the study area. A breeding population of Common Tern are known to occur near the entrance to the Port of Cork, approximately 750m west of the study area. This colony was identified by the Port of Cork Environmental Impact Statement (Port of Cork/RPS, 2014), which recorded 45-50 breeding pairs on concrete structures (mooring dolphins) adjacent to the entrance to the Port of Cork. This common tern breeding colony was resurveyed as part of this current assessment as they are the most significant breeding bird colony in the surrounding landscape. Counts of terns were undertaken from a vantage point to the west of the mooring dolphins adjacent to the entrance to the Port of Cork. Counts were undertaken of (i) all of the birds present in the area both sitting, perching and flying, and (ii) only the birds sitting on nests/eggs. An average of the number of birds sitting on nests/eggs was used to derive the number of pairs present. Results are shown in **Table 7.** Approximately 50-55 breeding pairs were recorded (mean 53 breeding pairs).

Table 7. Common Tern Survey

Date	Total birds counted	No. birds sitting on nests/eggs
27/05/15	93	51
12/06/15	97	55
19/06/15	89	53
Overall average	**93**	**53**

A4.4 Seals and cetaceans

A total of four harbour seals were observed during the winter bird surveys. The seals were recorded moving through the channel between Ringaskiddy and Spike Island.

A5 Discussion of results

A5.1Birds considered of conservation value.

Certain bird species are listed by BirdWatch Ireland as Birds of Conservation Concern in Ireland (BOCCI). These are bird species suffering declines in population size. BirdWatch Ireland and the Royal Society for the Protection of Birds have identified and classified these species by the rate of decline into Red and Amber lists. Red List bird species are of high conservation concern and the Amber List species are of medium conservation. Green listed species are regularly occurring bird species whose conservation status is currently considered favourable. Birds species listed in Annex I of the Birds Directive (2009/147/EC) are considered a conservation priority.

A5.2 Breeding Bird Survey 2015 & Winter bird Survey 2014/2015

Thirty bird species were recorded during surveys in 2014/2015 that have received some form of conservation designation as shown in **Table 8.** Birds species listed in Annex I of the Birds Directive are considered a conservation priority. Five species (Mediterranean Gull, Dunlin, Little Egret, Great Northern Diver and Common Tern) are listed on Annex 1 of the Birds Directive. Six red listed species were recorded namely Herring Gull, Curlew, Redshank, Black-Headed Gull, Dunlin and Knot. Seventeen species are Amber listed. Twenty-four bird species are listed under the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), to which Ireland is a signatory.

Table 8. Conservation status for species recorded during the 2014/2015 breeding and winter bird survey.

Species		Birds Directive Annex					Red List	Amber List	AEWA
		I	II(I)	II(II)	III(I)	III(II)			
Cepphus grylle	Black Guillemot							X	X
Haematopus ostralegus	Oystercatcher							X	X
Columba palumbus	Woodpigeon		II(I)		III(I)				
Larus canus	Common Gull							X	X
Larus melanocephalus	Mediterranean Gull	I						X	X
Larus argentatus	Herring Gull						X		X
Larus fuscus	Lesser black-backed Gull							X	X
Larus marinus	Great black-backed Gull							X	X
Phalacrocorax carbo	Cormorant							X	X
Numenius arquata	Curlew			II(II)			X		X
Tringa totanus	Redshank						X		X
Larus ridibundus	Black-headed Gull						X		X
Calidris alpina schinzii	Dunlin	I					X		X
Anas platyrhynchos	Mallard		II(I)		III(I)				X
Ardea cinerea	Grey Heron								X
Passer montanus	Tree Sparrow							X	
Egretta garzetta	Little Egret	I							X
Tringa nebularia	Greenshank							X	X
Anas crecca	Teal		II(I)			III(II)		X	X
Podiceps cristatus	Great-crested Grebe							X	X
Branta bernicla	Brent Goose							X	X
Calidris alba	Sanderling								X
Arenaria interpres	Ruddy Turnstone								X
Calidris canutus	Knot						X		X
Gavia immer	Great Northern Diver	I							X
Sturnus vulgaris	Starling							X	
Hirundo rustica	Swallow							X	
Alauda arvensis	Skylark		II(II)					X	
Sterna hirundo	Common Tern	I						X	X
Falco tinnunculus	Kestrel							X	

EU habitats and birds directive annexation descriptions		
Symbol	**Meaning**	**Brief definition**
I	Annex I bird species	Endangered species
II(I)	Annex II, section I bird species	Species may be legally hunted in all EU member states
II(II)	Annex II, section II bird species	Species may be legally hunted in named EU member states
III(I)	Annex III, section I bird species	Species may be deliberately killed or captured, nests disturbed or eggs taken, and traded live or dead in all EU member states
III(II)	Annex III, section II bird species	Species may be deliberately killed or captured, nests disturbed or eggs taken, and traded live or dead in named EU member states

A5.3 Breeding Bird Survey 2019

A total of 28 species were recorded within the proposed development site in 2019, as shown in **Table 6**. The conservation status for bird species recorded is shown in **Table 9** below. Only a single Annex I species was recorded i.e. Common Tern. The species was recorded flying over the site. As can be seen from **Table 9**, two species classified as high conservation concern (BoCCI) were recorded during the breeding bird survey, one of which, Meadow pipit, was recorded as a possible breeder. Meadow pipits generally nest on the ground within well concealed vegetation with a preference for grass tussocks, heather and grass, rushes or in low gorse with grass growing through. Occasionally they will be found in cover on steep banks or rock faces (Ferguson-lees *et al*, 2011). The other red listed species Herring Gull was recorded overflying the site. Eight amber listed species were recorded during the breeding bird survey.

Table 9 Conservation status for species recorded during the 2019 breeding bird survey		Status in Ireland (The Migration Atlas: Movements of the Birds of Britain and Ireland (Wernham *et al.* (2002))	Birds Directive Annex			BOCCI		Status during surveys
Species			**I**	**II**	**III**	**Red List**	**Amber List**	
Sturnusvulgaris	Starling	Resident, augmented by winter visitors					X	Br
Erithacus rubecula	Robin	Resident					X	Po
Larus argentatus	Herring Gull	Resident, augmented by winter visitors				X		N
Turdus merula	Blackbird	Resident, augmented by winter visitors						Pr
Prunella modularis	Dunnock	Resident						Po
Carduelis carduelis	Goldfinch	Resident - some extra influx in winter						Pr
Troglodytes troglodytes	Wren	Resident						Po
Pyrrhula pyrrhula	Bullfinch	Resident						Pr
Phylloscopus collybita	Chiffchaff	Summer visitor						Po
Corvus frugilegus	Rook	Resident						N
Pica pica	Magpie	Resident						Br
Columba palumbus	Woodpigeon	Resident		X	X			Pr
Carduelis cannabina	Linnet	Resident, augmented by winter visitors					X	Pr
Fringilla coelebs	Chaffinch	Resident, augmented by winter visitors						Pr
Corvus cornix	Hooded Crow	Resident						Pr
Parus caeruleus	Blue Tit	Resident						Po
Hirundo rustica	Barn Swallow	Summer visitor					X	N
Parus major	Great Tit	Resident						Pr
Columba livia f. domestica	Feral Pigeon	Resident						N
Corvus monedula	Jackdaw	Resident						N
Anthus pratensis	Meadow Pipit	Resident				X		Po
Phalacrocorax carbo	Cormorant	Resident, some immigration during the winter					X	N
Delichon urbica	House Martin	Summer visitor					X	N
Turdus philomelo	Song Thrush	Resident						Br
Sylvia atricapilla	Blackcap	Summer visitor and winter visitor, origins of breeding and wintering birds differ						Pr
Sterna hirundo	Common Tern	Summer visitor	X				X	N
Carduelis spinus	Siskin	Resident, augmented by winter visitors						Pr
Haematopus ostralegus	Oystercatcher	Resident, augmented by winter visitors					X	Po - H

Symbol	**Description**
I	**Annex 1**: species and sub-species are particularly threatened. Member States must designate Special Protection Areas (SPAs) for their survival and all migratory bird species.
II	**Annex 2**: bird species can be hunted. However, the hunting periods are limited and hunting is forbidden when birds are at their most vulnerable: during their return migration to nesting areas, reproduction and the raising of their chicks.
III	**Annex 3**: overall, activities that directly threaten birds, such as their deliberate killing, capture or trade, or the destruction of their nests, are banned. With certain restrictions, Member States can allow some of these activities for species listed here.

A5.2 Results in relation to designated sites

Only the one Special Protection Area (Cork Harbour SPA Site Code 004030) is located within 5km of the proposed Ringaskiddy Resource Recovery Centre. This SPA is shown in **Figure 3.** The qualifying interests for Cork Harbour SPA are shown in **Table 1** together with the conservation objectives for each species.



Figure 3. Cork Harbour SPA in relation to the study area (red circle).

2015 Breeding bird Survey & 2014/2015 Winter bird Survey

A total of thirteen species listed as qualifying interests for the Cork Harbour SPA were recorded, namely, Cormorant, Oystercatcher, Dunlin, Curlew, Redshank, Greenshank, Great Crested Grebe, Grey Heron, Teal, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. Common Tern was recorded during the breeding bird survey overflying the channel. This species does not breed in proximity to the site.

2019 Breeding bird Survey

Of the species recorded three are listed as qualifying species of Cork Harbour SPA i.e. Cormorant, Oystercatcher and Common Tern. Common Tern is the only species listed as Special Conservation Interests for the Cork Harbour SPA as a breeding species. However, it is noted that Common Tern was not recorded breeding within the site. A breeding population of Common Tern are known to occur near the entrance to the Port of Cork, approximately 750m west of the study area. Overall, no species listed as qualifying interest for the Cork Harbour SPA were recorded breeding or potentially breeding within or in close proximity the proposed development site.

A6 Summary

- A total of 1,354 birds from 38 species were recorded from 6 site visits during the winter bird survey. A total of 28 different bird species on three site visits during the breeding bird survey in 2015. A total of 28 different bird species was also recorded during the May 2019 breeding bird survey.

- Five Annex I bird species were recorded (Mediterranean Gull, Dunlin, Little Egret, Great Northern Diver and Common Tern) and six Red Listed species were recorded, namely Black-headed Gull, Herring Gull, Redshank, Curlew, Knot and Dunlin) during the 2014/2015 winter bird survey.

- A total of thirteen species listed as qualifying interests for the Cork Harbour SPA were recorded, namely, Cormorant, Oystercatcher, Dunlin, Curlew, Redshank, Greenshank, Great Crested Grebe, Grey Heron, Teal, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern.

- An important breeding colony of Common Tern is located approximately 750m from the development site on concrete structures adjacent to the Port of Cork entrance.

- None of the wintering birds recorded by vantage point counts in proximity to the proposed development site were recorded in high numbers and numbers were low in-comparison to the figures which would be considered nationally significant (i.e. 1% or more of the all-Ireland population of an Annex I species or 1% or more of the bio-geographical population of a migratory species)

A7 Conclusions

A7.1 Conclusions- 2015 Breeding bird surveys

Six breeding species (Blackbird, Blue Tit, Chaffinch, Great Tit, Robin, Wren) were recorded within the proposed development area. Nine species (Bullfinch, Chiffchaff, Goldcrest, Goldfinch, Greenfinch, Kestrel, Song Thrush, Common Whitethroat, Wood pigeon) were identified as possible breeders. The mix of species recording during the surveys are considered typical of this type of landscape. Eight of the recorded species are Amber listed; of these species five are terrestrial species (Skylark, Kestrel, Starling, Swallow and Tree Sparrow). The remaining three species (Common Tern, Oystercatcher and Common Gull) are associated with marine habitats and do not breed within the study area. No rare or uncommon species were noted as breeders or potential breeders.

A7.2 Conclusions 2014/2015 Winter bird surveys

A total of 38 bird species were recorded during the 2014/2015 winter bird surveys. Some species that are considered of high conservation value (Annex I of the Birds Directive, qualifying species for the Cork Harbour SPA and Red List species) were noted in this general area. It is noted that the survey covered a radius of approximately 300m from each vantage point. Many of these birds were recorded overflying the channel, and the site itself and the shoreline adjoining the site, did not support high numbers of these species. The coastal area adjoining the site consists primarily of rock and shingle, and therefore does not support the high

numbers of wintering waders that are characteristic of high value mudflats with high densities of macro-invertebrates.

A7.3 Conclusions- 2019 Breeding bird surveys

A total of 28 species were recorded within the proposed development site. Three species were definitely breeding within the site (starling, song thrush and magpie) a further 10 species are probably breeding, 7 are possibly breeding, while the remaining 8 species are non-breeding.

The study area provides breeding and foraging habitat that supports a diverse bird population. However, most of the species recorded during the surveys are generally considered to be common and widespread. The most important habitats within the study area, that provide resources for local populations of breeding species, are less intensively managed. These include scrub, hedgerows, treelines and woodland.

No significant populations of breeding birds have been recorded onsite and most the species recorded are common and widespread within the county although a small number of Red and Amber listed species were recorded. However, these were recorded in low numbers.

The habitats to be affected are generally considered of local value and are not uncommon in the wider landscape. The nature conservation value of the breeding bird assemblage onsite is considered to be of 'local' value.

A8 References

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Ringaskiddy Port Redevelopment EIS (Port of Cork/RPS, 2014)

A9 Appendix A

Winter Survey Results - 25/10/2014

Date	Time	Tide	Harbour seal	Oystercatcher	Blackheaded gull	herring gull	Black guillemot	Lesser Blackbacked gull	Cormorant	Common gull	Red shank	Curlew
25/10/2014	13.00-14.30	low		15		4		1	3	22	2	3
25/10/2014	14.30-16.00	mid		13					1	4	1	3
25/10/2014	16.00-17.30	high		2					1			

Winter Survey Results - 25/10/2014 (continued)

Date	Time	Tide	Mallard	Glaucous gull	Heron	Hooded Crow	Wood pigeon	Rook	Blackbird	Robin	Tree sparrow	Thrush
25/10/2014	13.00-14.30	low			2	3		2				
25/10/2014	14.30-16.00	mid			1	3		15				1
25/10/2014	16.00-17.30	high				2	14	175			6	

Winter Survey Results - 25/10/2014 (continued)

Date	Time	Tide	Little Egret	Greater Blackbacked Gull	Greenshank	Mediterranean Gull	Teal	Great Crested Grebe	Brent Goose	Sanderling	Goldfinch	Grey Wagtail
25/10/2014	13.00 - 14.30	low	1	1	1	1						
25/10/2014	14.30 - 16.00	mid	1	3								
25/10/2014	16.00 - 17.30	high		1								

Winter Survey Results - 25/10/2014 (continued)

Date	Time	Tide	Meadow Pipit	Wren	Blue Tit	Turnstone	Knot	Great Northern Diver	Dunlin	Jackdaw	Starling
25/10/2014	13.00-14.30	low									
25/10/2014	14.30-16.00	mid									
25/10/2014	16.00-17.30	high									

Winter Survey Results - 22/11/2014

Date	Time	Tide	Harbour seal	Oystercatcher	Blackheaded gull	herring gull	Black guillemot	Lesser Blackbacked gull	Cormorant	Common gull	Red shank	Curlew
22/11/2014	13.00-14.30	low		4			3	2	8	6	2	
22/11/2014	14.30-15.30	mid						1	3	2		
22/11/2014	15.30-16.30	high							4	3		
19/02/2015	13.00-14.30	low		11	4	1				4		

Winter Survey Results - 22/11/2014 (continued)

Date	Time	Tide	Mallard	Glaucous gull	Heron	Hooded Crow	Wood pigeon	Rook	Blackbird	Robin	Tree sparrow	Thrush
22/11/2014	13.00-14.30	low			1							
22/11/2014	14.30-15.30	mid				1	2	1				
22/11/2014	15.30-16.30	high	3				7	5				

Winter Survey Results - 22/11/2014 (continued)

Date	Time	Tide	Little Egret	Greater Blackbacked Gull	Greenshank	Mediterranean Gull	Teal	Great Crested Grebe	Brent Goose	Sanderling	Goldfinch	Grey Wagtail
22/11/2014	13.00-14.30	low			8		4	1				
22/11/2014	14.30-15.30	mid										
22/11/2014	15.30-16.30	high										

Winter Survey Results - 22/11/2014 (continued)

Date	Time	Tide	Meadow Pipit	Wren	Blue Tit	Turnstone	Knot	Great Northern Diver	Dunlin	Jackdaw	Starling
22/11/2014	13.00-14.30	low									
22/11/2014	14.30-15.30	mid									
22/11/2014	15.30-16.30	high									

Winter Survey Results - 22/12/2014

Date	Time	Tide	Harbour seal	Oystercatcher	Blackheaded gull	herring gull	Black guillemot	Lesser Blackbacked gull	Cormorant	Common gull	Red shank	Curlew
22/12/2014	10.30-12.00	low	1	14		9		2		9		1
22/12/2014	12.00-13.30	mid		12	3	4				13		1
22/12/2014	13.30-15.00	high	1	18						2	1	

Winter Survey Results - 22/12/2014 (continued)

Date	Time	Tide	Mallard	Glaucous gull	Heron	Hooded Crow	Wood pigeon	Rook	Blackbird	Robin	Tree sparrow	Thrush
22/12/2014	10.30-12.00	low			1	2	12	3	1			
22/12/2014	12.00-13.30	mid		1	1	2		14				
22/12/2014	13.30-15.00	high		1		3		45				

Winter Survey Results - 22/12/2014 (continued)

Date	Time	Tide	Little Egret	Greater Blackbacked Gull	Greenshank	Mediterranean Gull	Teal	Great Crested Grebe	Brent Goose	Sanderling	Goldfinch	Grey Wagtail
22/12/2014	10.30-12.00	low	1	1					34			
22/12/2014	12.00-13.30	mid	1	3					33	2		
22/12/2014	13.30-15.00	high		2								

Winter Survey Results - 22/12/2014 (continued)

Date	Time	Tide	Meadow Pipet	Wren	Blue Tit	Turnstone	Knot	Great Northern Diver	Dunlin	Jackdaw	Starling
22/12/2014	10.30-12.00	low									
22/12/2014	12.00-13.30	mid									
22/12/2014	13.30-15.00	high									

Winter Survey Results - 21/01/2015

Date	Time	Tide	Harbour seal	Oystercatcher	Blackheaded gull	herring gull	Black guillemot	Lesser Blackbacked gull	Cormorant	Common gull	Red shank	Curlew
21/01/2015	11.00-12.30	low		24	27			1	3	8	3	1
21/01/2015	12.30-14.00	low		28	22					3	1	1
21/01/2015	14.00-15.30	mid	1	14					3			

Winter Survey Results - 21/01/2015 (continued)

Date	Time	Tide	Mallard	Glaucous gull	Heron	Hooded Crow	Wood pigeon	Rook	Blackbird	Robin	Tree sparrow	Thrush
21/01/2015	11.00-12.30	low		3	2	12		3	4			
21/01/2015	12.30-14.00	low			1	3			3	2		
21/01/2015	14.00-15.30	mid				1	1					

Winter Survey Results - 21/01/2015 (continued)

Date	Time	Tide	Little Egret	Greater Blackbacked Gull	Greenshank	Mediterranean Gull	Teal	Great Crested Grebe	Brent Goose	Sanderling	Goldfinch	Grey Wagtail
21/01/2015	11.00-12.30	low			1			1	26		2	4
21/01/2015	12.30-14.00	low			1				19			3
21/01/2015	14.00-15.30	mid			1				11			2

Winter Survey Results - 21/01/2015 (continued)

Date	Time	Tide	Meadow Pipit	Wren	Blue Tit	Turnstone	Knot	Great Northern Diver	Dunlin	Jackdaw	Starling
21/01/2015	11.00-12.30	low	2	1	3						
21/01/2015	12.30-14.00	low				1	4				
21/01/2015	14.00-15.30	mid									

Winter Survey Results - 19/02/2015 (continued)

Date	Time	Tide	Harbour seal	Oystercatcher	Blackheaded gull	herring gull	Black guillemot	Lesser Blackbacked gull	Cormorant	Common gull	Red shank	Curlew
19/02/2015	13.00-14.30	low		11	4	1				4		
19/02/2015	14.30-16.00	mid		7					1	4		
19/02/2015	16.00-17.30	high	1					2	3	3		

Winter Survey Results - 19/02/2015 (continued)

Date	Time	Tide	Mallard	Glaucous gull	Heron	Hooded Crow	Wood pigeon	Rook	Blackbird	Robin	Tree sparrow	Thrush
19/02/2015	13.00-14.30	low			1	2						
19/02/2015	14.30-16.00	mid			1			1				
19/02/2015	16.00-17.30	high				1		3	2			

Winter Survey Results - 19/02/2015 (continued)

Date	Time	Tide	Little Egret	Greater Blackbacked Gull	Greenshank	Mediterranean Gull	Teal	Great Crested Grebe	Brent Goose	Sanderling	Goldfinch	Grey Wagtail
19/02/2015	13.00-14.30	low	1		2				8			
19/02/2015	14.30-16.00	mid	1					1	4			
19/02/2015	16.00-17.30	high									1	1

Winter Survey Results - 19/02/2015 (continued)

Date	Time	Tide	Meadow Pipit	Wren	Blue Tit	Turnstone	Knot	Great Northern Diver	Dunlin	Jackdaw	Starling
19/02/2015	13.00-14.30	low						1			
19/02/2015	14.30-16.00	mid	1		1			1	225		
19/02/2015	16.00-17.30	high						1		7	

Winter Survey Results - 20/03/2015

Date	Time	Tide	Harbour seal	Oystercatcher	Blackheaded gull	Herring gull	Black guillemot	Lesser Blackbacked gull	Cormorant	Common gull	Red shank	Curlew
20/03/2015	11.30-13.00	low		13		3				12	3	1
20/03/2015	13.00-14.30	mid		6					1	4	3	
20/03/2015	14.30-16.00	high						1	1	2	1	

Winter Survey Results - 20/03/2015 (continued)

Date	Time	Tide	Mallard	Glaucous gull	Heron	Hooded Crow	Wood pigeon	Rook	Blackbird	Robin	Tree sparrow	Thrush
20/03/2015	11.30-13.00	low		2	2	6		2				
20/03/2015	13.00-14.30	mid				2						
20/03/2015	14.30-16.00	high			1	3	2	6				

Winter Survey Results - 20/03/2015 (continued)

Date	Time	Tide	Little Egret	Greater Blackbacked Gull	Greenshank	Mediterranean Gull	Teal	Great Crested Grebe	Brent Goose	Sanderling	Goldfinch	Grey Wagtail
20/03/2015	11.30-13.00	low	4		1				20			
20/03/2015	13.00-14.30	mid	1		2				21			
20/03/2015	14.30-16.00	high										