BALLYCOTTON HARBOUR PROPOSED DREDGING WORKS BIRD SURVEY REPORT



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1. Introduction

Byrne Looby are currently providing engineering consultancy services for Cork County Council in relation to the proposed dredging works at Ballycotton Harbour. The report details the results of a Bird Survey undertaken by EirEco Environmental Consultants at Ballycotton Harbour and the surrounding environment to determine the presence of nesting birds which could be subject to direct or indirect impact during the proposed dredging operations of the harbour. Ballycotton Harbour is immediately adjacent to the Ballycotton Island proposed Natural Heritage Area (001978) and is approximately 800m from the Ballycotton Bay Special Protection Area (004022). This assessment will inform the Appropriate Assessment Screening Report and Natura Impact Statement for the proposed works.

It is anticipated that dredging activities will be undertaken outside of the wintering period to avoid the potential disturbance of bad weather and the limitations of short daylight working hours. As a result, the proposed works should have a limited potential for impact on wintering waterbirds within the Ballycotton Bay SPA. There is a good body of data available from Irish Wetland Bird Survey counts (IWeBS) for Ballycotton Bay which should provide ample material to enable an assessment of the potential impacts of dredging activities on the SPA within the AA process. On this basis, the proposed survey has focused on the breeding birds in the immediate vicinity of Ballycotton Harbour and within the Ballycotton Island pNHA.

2. Methodology

Surveys were undertaken on the 7th June 2019 in accordance with standard seabird methodology (Walsh et al. 1995) using a single visit during the mid-incubation period (defined as late May to early June). The survey aimed to identify any nesting seabirds or other species at or in the immediate vicinity of Ballycotton Harbour and surrounding environment that would be potentially at risk directly or indirectly as a result of the proposed dredging works. The survey aimed to establish total number of apparently occupied sites (AOS) by observation from appropriate vantage points. This approach is suitable both for colonies on cliffs (visible from the cliff-top) and for small ground-nesting colonies which can be viewed well from a distance (i.e. without many nests likely to be hidden by tall vegetation or undulations in terrain). While the counting unit is the apparently occupied nest (AON), where actual nests are obscured by vegetation, but sitting birds are visible, these will be recorded as well as presenting the overall count of AONs.

The survey was undertaken between 0900 and 1600, during a period of mild weather with temperatures of approximately 20°C and winds of Force 2-3. Cloud cover was variable with occasional showers. Access to the Ballycotton Islands was undertaken by sea kayak which allowed for a circumnavigation to identify sea cliff nesting colonies. The survey was undertaken by two people for Health and Safety requirements.

3. Results

3.1 Designated Conservation Areas

Ballycotton Harbour is immediately adjacent to the Ballycotton Island proposed Natural Heritage Area (001978) and is approximately 800m from the Ballycotton Bay Special Protection Area (004022). Ballycotton Bay is also a Ramsar Convention site and part of the Ballycotton Bay SPA is a Wildfowl Sanctuary. Ballymacoda (Clonpriest and Pilmore) SAC (000077) lies approximately 10km to the northeast of the harbour.

Designated conservation areas in the vicinity of Ballycotton Harbour are detailed in Table 1 and shown in Figure 1.

Site Name	Status	Distance to site
Ballycotton Island	pNHA (Site Code 001978)	Adjacent (high water mark)
Ballycotton Bay	SPA (Site Code 004022)	800m west
Ballymacoda (Clonpriest and Pilmore)	SAC (Site Code 000077)	10km north east

Table 1. Designated Conservation Areas in the vicinity of Ballycotton Harbour.



Figure 1. Designated Conservation Areas in the vicinity of Ballycotton Harbour. (*Source: OSI GeoHive*).

The main interest of the Ballycotton Islands pNHA lies in the colonies of seabird species that it holds: Cormorant (70 pairs, pre-1990), Herring Gull (60-80 pairs, pre-1990, 500 pairs in the 1970s), Great Blackbacked Gull (11-12 pairs, pre-1990), Lesser Black-backed Gull (1-2 pairs in 1989), Fulmar (1-2 pairs, pre-1990) and Shelduck (1-2 pairs, pre-1990). Several non-seabird species also breed on the islands including Rock Dove (15-16 pairs, pre-1990), Rock Pipit (10-15 pairs, pre-1990) and Chough (1 pair, pre- 1990).

Ballycotton Bay SPA is of importance for its wintering waterbirds and supports nationally important populations of eleven species, of which two, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive.

3.2 Habitats and Vegetation in the vicinity of Ballycotton Harbour

Ballycotton Harbour is located at the north eastern tip of the headland forming the southern side of Ballycotton Bay (Figure 2). A dog-legged pier wall extends along the western side while a breakwater extends from the mainland to form protection from the north and forms a narrow (c25m wide) entrance to the harbour. East of the pier exposed bedrock forms a reef (partially drying at low water) to connect to the smaller of the two islands which lies c300m offshore. This island is low lying with a maximum height of just under 7m ASL. The larger Ballycotton Island which supports the lighthouse is located just under 1km offshore and rises to a height of c35m ASL. The main vegetation of both islands consists of grassland, that on the larger island being dominated by Red Fescue (*Festuca rubra*), that on the smaller by Yorkshirefog (*Holcus lanatus*). The flora and vegetation of these islands appear to be fairly typical of such maritime

situations, with sea-spurrey (*Spergularia* spp.), Sea Campion (*Silene uniflora*) and Sea Mayweed (*Tripleurospermum maritimum*) accompanying the dominant grass species. Areas in the east and south of the main island which hold most of the breeding seabirds are rather sparsely vegetated. In consequence the flora of the smaller island shows greater diversity than that found on the mainisland.

The landward (southern) side of the harbour is comprised artificial retaining walls of various materials (concrete, natural stone and stone-filled gabion baskets) and vintages, with some exposed bedrock in the lower sections (Figure 3). There are parts which are heavily vegetated with a mixture of salt tolerant plants including fuchsia (*Fuchsia magellanica*), sycamore (*Acer pseudoplatanus*), hebe (*Hebe* sp.), elder (*Sambucus niger*) and ivy (*Hedera helix*). A stand of Japanese knotweed (*Reynoutria japonica*) occurs along the base of the wall along with three-cornered leek (*Allium triquetrum*) and monbretia (*Croccismia X croccosmiflora*) (Figure 4). Both Japanese knotweed and three-cornered leek are listed under Part 1 of the Third Schedule of SI 477 of 2011, The European Communities (Birds and Natural Habitats) Regulations 2011, as invasive plant species. Another non-native species not listed under SI 477; seaside daisy (*Erigeron glaucus*) is growing on the seaward side of the harbourpier.



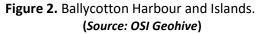




Figure 3. Artificial walls along the inner harbour.



Figure 4. Japanese Knotweed along the shoreline of the inner harbour.

3.3 Breeding Birds at Ballycotton Harbour and the surrounding environment

There were no breeding birds recorded within Ballycotton Harbour. The harbour pier and breakwater do no support cavities that would be used by species such as Black Guilemot. The retaining walls at the rear of the inner harbour does have cavities and a range of ledges which could provide nesting habitat for various species of seabird and passerines, though no evidence of nesting activity was recorded during the vantage point watches undertaken. It is possible however, that small numbers of secretive species such as Wren and Dunnock utilising dense vegetation for nesting went unobserved during thesurvey.

The Small Ballycotton Island is a low-lying island with a grass-dominated vegetation, and as stated above, is accessible from the mainland during periods of low water. The island supports at least one pair of Shelduck (which appear to be breeding) along with Oystercatcher (presumably breeding also). The low shoreline does not support any nesting seabirds, though it is possible a small number of breeding Herring Gull.

The larger island has a moderate seabird colony on its steeper eastern and southern (seaward) side. The species diversity is limited to Gulls (Great black-backed, Herring and Lesser black-backed), Fulmar and Cormorant. Chough, listed under Annex I of the EU Birds Directive, were recorded as breeding in the past (pre-1990's) though they do not appear to have bred there over the last decade. Both Rock Dove and Rock Pipit breed on the island also.

The Ballycotton Bay SPA is of importance for its wintering waterbirds and supports nationally important populations of eleven species, of which two, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. A summary of the Irish Wetland Bird Survey (IWeBS) data for the period 2006 to 2016 is presented in Appendix 1. The site is also of special conservation interest for Teal, Ringed Plover, Grey Plover, Lapwing, Black-tailed Godwit, Curlew, Turnstone, Common Gull and Lesser Black-backed Gull. The site is likely to support small numbers of breeding Ringed Plover and Oystercatcher on areas of shingle, with Mallard and Teal in the salt marsh fringes of the sheltered inlets.

4. Potential Impacts on Dredging on Breeding and Wintering Birds

The dredging will be confined to within the harbour and the immediate vicinity of the harbour mouth. There are no breeding birds recorded from within the vicinity of the harbour, with the possible exception of secretive passerine species such as Dunnock and Wren in the vegetation on the landward side of the harbour. The proposed dredging would not have any direct or indirect on any of the breeding birds on the Ballycotton Islands, not on any species that may nest within the Ballycotton Bay SPA. The works are not expected to result in any significant disturbance greater than normal activities associated with the marine traffic activity at the harbour. While some silt is expected to be generated as a result of the dredging activity, which may result

in reduced water clarity at a local level, this would not be expected to interfere with the foraging success of any seabirds breeding on the Ballycotton Islands, which are likely to forage over a considerable distance from the islands, and primarily within the open ocean environment, though the gull species will scavenge in the vicinity of the harbour when fishing vessels are off-loading theircatch.

5. Conclusions

There were no breeding birds recorded within Ballycotton Harbour, though small numbers of secretive species such as Wren and Dunnock may utilise the dense vegetation at the landward side of the harbour for nesting went unobserved during the survey. The smaller Ballycotton Island appears to support at least one pair of breeding Shelduck and Oystercatcher, and may support a small number of breeding Herring Gull. The larger island supports a moderate seabird colony on its steeper eastern and southern (seaward) side consisting of various gulls, Fulmar and Cormorant.

The extent of proposed dredging at Ballycotton Harbour will be confined to within the harbour and the immediate vicinity of the harbour mouth. The proposed dredging would not have any direct or indirect on any of the breeding birds on the Ballycotton Islands, not on any species that may nest within the Ballycotton Bay SPA. The works are expected to result in any significant disturbance greater than normal activities associated with the marine traffic activity at the harbour.

6. References

National Parks and Wildlife Service (2009). Ballycotton Islands proposed Natural Heritage Area (001978) Site Synopsis.

National Parks and Wildlife Service (2015). Ballycotton Bay Special Protection Area (004022) Site Synopsis.

Appendix III Subtidal benthic survey results

Sample ID	BCTN 1	BCTN 2	BCTN 3	BCTN 4
Easting (ITM)	599863.186	599925.993	599908.049	599818.698
Northing (ITM)	563976.638	563981.498	564039.445	564096.644
Date	28/05/2019	28/05/2019	28/05/2019	28/05/2019
Location	Ballycotton Harbour	Ballycotton Harbour	Ballycotton Harbour	Ballycotton Harbour
Time	19.09	19.25	19.59	20.18
Depth (m)	5.5	5.0	3.0	2.5
Field description	Muddy sand	Muddy sand	Sandy Mud	Mud
Folk: 1954	Muddy sand	Muddy sand	Sandy Mud	Mud
Layering (cm)	Yes, 5cm	Yes, 5cm	None evident	None evident
Smell	Yes, Anoxic	Yes, Anoxic	Yes, Anoxic	Yes, Anoxic
Colour	Grey/Brown	Grey/Brown	Grey/Black	Black
Weather	Calm/Fair	Calm/Fair	Calm/Fair	Calm/Fair
Sea state	F 1-2	F 1-2	F 1-2	F 1-2
Boat anchored	No	No	No	No
Company name	MERC Consultants	MERC Consultants	MERC Consultants	MERC Consultants
Sampler type	Day grab	Day grab	Day grab	Day grab
Sieve Size	1mm	1mm	1mm	1mm

Table 1. Station locations and Environmental data

Table 2. Sediment classification and % Organic matter

Sample ID	BCTN 1	BCTN 2	BCTN 3	BCTN 4
>8 mm	0	0	0	0
4-8 mm	0	0	0	0
2-4 mm	0.08	0.06	0.11	0.04
1-2 mm	0.21	0.87	0.11	0.05
500-999 μm	3.29	5.37	0.27	0.39
250-499 μm	15.32	14.52	2.22	0.66
125-249 μm	24.88	32.69	5.84	0.56
63-125 μm	18.74	18.17	5.15	0.87
< 63 µm	37.49	28.32	86.29	97.43
% Organic Matter (by LOI)	1.44	1.59	0.63	5.57
Folk Ward classification	Muddy Sand	Muddy Sand	Sandy Mud	Mud

Table 3. Fauna.

	Species	Notes	BCTN 1	BCTN 2	BCTN 3	BCTN 4
D0422	Dynamena pumila					
D0433	Sertularia					Р
D0491	Campanulariidae					
D0662	Actiniaria		1			
D0759	Edwardsiidae					1
G0001	Nemertea		2			
G0034	Tubulanus polymorphus		21	26		
P0025	Polynoidae		2	1		
P0092	Pholoe baltica		3	3		
P0104	Sigalion mathildae					

P0145	Phyllodoce mucosa		1			
P0176	Paranaitis kosteriensis			1		
P0176	Glycera alba			1		
P0250	Glycera tridactyla		4	7		
P0203 P0271	Goniada maculata		3	/		
				3		
P0318	Podarkeopsis		1	3		
P0498	Nephtys cirrosa					12
P0499	Nephtys hombergii			1	8	13
P0672	Scoloplos armiger			5		
P0776	Pygospio elegans					
P0783	Scolelepis (Scolelepis) squamata					
P0791	Spio martinensis	-				
	Spio symphyta	?	1			
P0794	Spiophanes bombyx			2		
P0804	Magelona alleni		3	2		
P0805	Magelona filiformis		2	6		
P0807	Magelona mirabilis					
	Magelona johnstoni			1		
P0810	Chaetopteridae			1	2	
P0823	Aphelochaeta			1		
P0906	Capitella	Species complex				
P0919	Mediomastus fragilis		91	293		1
P0920	Notomastus		3	1		
P0964	Euclymene oerstedii			1		
P0971	Praxillella affinis		1			
P1093	Galathowenia oculata		1	1		
P1124	Melinna palmata		3	1		
P1195	Lanice conchilega		1	5		
P1235	Polycirrus		11	9		
P1490	Tubificoides benedii			2		
R2412	Ostracoda					
S0131	Perioculodes longimanus			1		
S0427	Ampelisca brevicornis		5	8		
S0451	Bathyporeia					
S0452	Bathyporeia elegans					
S0454	Bathyporeia guilliamsoniana					
S0456	Bathyporeia pelagica					
S0464	Gammaridae					
S0871	Lekanesphaera rugicauda					
S1142	Tanaopsis graciloides		2			
S1142	Cumopsis goodsir					
S1203	Iphinoe trispinosa		1	6		
S1380	Crangonidae			1		
\$1385 \$1385	Crangon crangon			-		1
\$1569 \$1569	Portunidae			1		<u>+</u>
W1028	Cylichna cylindracea		5	1		
VV 1020				1		
	Philine quadripartita		1	1		
W1569	Nucula nitidosa		1		_	
W1829	Lucinoma borealis		1			

W1902	Tellimya ferruginosa			2		
W1906	Kurtiella bidentata		6	2		
W2006	Phaxas pellucidus		1	1		
W2012	Macomangulus tenuis					
W2019	Fabulina fabula					
W2041	Donax vittatus					
W2059	Abra alba		2	16	32	10
W2061	Abra nitida				28	7
	Chamelea striatula			1		
W2144	Муа	Juveniles		1		
W2157	Corbula gibba				1	
Y00125	Hypophorella expansa					
ZA0003	Phoronis		1			
ZB0164	Amphipholis squamata			1		
ZB0223	Echinocardium cordatum			2		
ZB0292	Leptosynapta bergensis			1		
ZG0455	Gobiidae	? Gobius niger			1	

Appendix IV Intertidal benthic survey results

Sample ID	BCTN1	BCTN2	BCTN3
Easting (ITM)	598617	598713	598753
Northing (ITM)	564634	564920	565542
Date	14/06/2019	14/06/2019	14/06/2019
Location	Ballycotton Bay	Ballycotton Bay	Ballycotton Bay
Time	10:00:00	10:15:00	10:40:00
LW Time	10:10:00	10:10:00	10:10:00
LW Height	0.6	0.6	0.6
Field description	Rippled sand with frequent	Rippled sand with frequent	Rippled sand with
	worm casts	worm casts	frequent worm casts
Folk: 1954	Fine Sand	Fine Sand	Medium Sand
Layering (cm)	None evident	None evident	None evident
Smell	None	None	None
Colour	Grey	Grey	Grey
Weather	Fair	Fair	Clear/Sunny
Sea state	F 1	F 1	F1
Company name	MERC Consultants	MERC Consultants	MERC Consultants
Sampler type	20cm core (5 reps/station)	20cm core (5 reps/station)	20cm core (5 reps/station)
Sieve Size	1mm	1mm	1mm

Table 1. Station locations and Environmental data

Table 2. Sediment classification and % Organic matter

	BCTN 1 INT	BCTN 2 INT	BCTN 3 INT
>8 mm	0	0	3.67
4-8 mm	0.07	0	4.59
2-4 mm	0.03	0	6.88
1-2 mm	0.10	0.07	6.04
500-999 μm	0.57	0.31	7.62
250-499 μm	0.84	0.95	18.59
125-249 μm	71.80	75.82	43.88
63-125 μm	25.11	21.51	7.64
< 63 µm	1.48	1.34	1.11
% Organic Matter (by LOI)	0.88	0.67	4.28
Folk Ward classification	Fine Sand	Fine Sand	Medium Sand

Table 3. Fauna and number of individuals

		BCTN	BCTN	BCTN	BCTN	BCTN	BTCN	BTCN	BTCN	BTCN	BTCN	BTCN	BCTN	BCTN	BCTN	BCTN
		1A	1B	1C	1D	1E	2A	2B	2C	2D	2E	3A	3B	3C	3D	3E
D0422	Dynamena pumila				Р											
D0491	Campanulariidae				Р											
P0104	Sigalion mathildae					1										
P0498	Nephtys cirrosa			2		2	2	1		1		2	2			
P0499	Nephtys hombergii		2		1	1									1	1
P0776	Pygospio elegans															1
P0783	Scolelepis (Scolelepis) squamata							1								
P0791	Spio martinensis											1				
P0794	Spiophanes bombyx								1							
P0807	Magelona mirabilis				1											
P1195	Lanice conchilega	3														
R2412	Ostracoda												1			
S0131	Perioculodes longimanus															
S0451	Bathyporeia												1			
S0452	Bathyporeia elegans				1											
S0454	Bathyporeia guilliamsoniana					1										
S0456	Bathyporeia pelagica	1					1					1				
S0464	Gammaridae									1						
S0871	Lekanesphaera rugicauda											1				
S1188	Cumopsis goodsir									1						
S1385	Crangon crangon				1							6	4	1	1	
W2012	Macomangulus tenuis	2		2	1	1	1	1	1		1	2	2	1		
W2019	Fabulina fabula				1	1			1							
W2041	Donax vittatus					1				1						
Y00125	Hypophorella expansa				Р											

Appendix V I-WeBS Data

Table 1A: Ballycotton Bay

	1%	1%											
Species	National	International	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Mean
Mute Swan	90	100								1			0
Canada Goose			12	14		14	10	9					2
Barnacle Goose	160	810							1				0
Light-bellied Brent Goose	350	400	162	69		251	214	48	105	86	112	126	95
Feral/hybrid Goose											3	2	1
Shelduck	100	2500	43	52	1*	34	39	16	25	34	23	57	31
Wigeon	560	14000	501	432	177*	225	204	327	233	333	345	225	293
Gadwall	20	1200	1										0
Teal	360	5000	417	553	250*	585	551	340	416	614	457	577	481
Mallard	280	53000	95	84	117*	91	72	88	34	74	56	54	61
Pintail	20	600									1		0
Shoveler	20	650		2									0
Eider	55	9800	1										0
Red-throated Diver	20	3000	2			6		10					2
Great Northern Diver	20	50	1	1		2	5	2	2	1	2	5	2
Little Grebe	20	4700	1										0
Great Crested Grebe	30	6300	3	2	4*	1	1	4	3	16	2	12	7
Cormorant	110	1200	16	13	14*	17	12	13	13	10	17	10	13
Shag												1	0
Little Egret	20	1100	13	14	14*	11	15	15	11	18	33	12	18
Grey Heron	25	5000	12	8	12*	11	9	15	7	14	16	9	12
Water Rail					1*				2	3	1	2	2
Moorhen			4	2	1*	4	6	4	3	3	1	1	2
Oystercatcher	610	8200	211	196	275*	307	348	236	188	195	227	321	233

Ringed Plover	120	540	112	100	128*	55	71	61	103	102	138	106	102
American Golden Plover					1*								0
Golden Plover	920	9300	5100	41	1*	141	1740	3250	2880	2650	891	1106	2155
Grey Plover	30	2000	55	50	3*	76	53	31	33	22	34	39	32
Lapwing	850	72300	1104	960	305*	704	744	675	693	614	596	351	586
Knot	160	5300	43	3		1		16	39	78	4	12	30
Sanderling	85	2000	63	131	1*	44	71	76	92	108	96	101	95
Little Stint								3					1
Pectoral Sandpiper					1*								0
Curlew Sandpiper			6		4*	1							0
Dunlin	460	13300	132	160	154*	195	264	143	425	114	238	327	249
Buff-breasted Sandpiper			1										0
Ruff			10	1	1*	1			1			2	1
Jack Snipe				2		1	2	3	2	1	2	2	2
Snipe			33	57	14*	17	23	45	35	23	31	31	33
Black-tailed Godwit	200	1100	230	62	76*	173	177	152	207	235	135	270	200
Bar-tailed Godwit	170	1500	31	53	29*	32	42	46	72	45	43	60	53
Whimbrel			1		1*	1				1		1	0
Curlew	350	7600	414	288	153*	476	406	370	404	394	379	389	387
Green Sandpiper							1						0
Greenshank	20	3300	9	14	15*	10	11	11	15	15	14	11	13
Redshank	240	2400	83	88	106*	87	94	86	103	126	92	95	100
Turnstone	95	1400	78	89	53*	80	77	63	71	63	73	53	65
Unidentified wader sp.							1						0
Mediterranean Gull				1	1*	3	14			1	1	1	1
Black-headed Gull			1620	1823	668*	440	571	377	814	1015	560	736	700
Common Gull			496	1204	153*	375	210	531	258	168	192	83	246
Lesser Black-backed Gull			6697	2250	223*	1035	3037	1277	2210	773	761	425	1089
Herring Gull			365	432	324*	193	239	396	181	136	191	120	205
Iceland Gull											1		0

Glaucous Gull			1			2						0
Great Black-backed Gull		150	400	381*	118	172	264	425	165	137	206	239
Sandwich Tern		1	13	19*	96	128		2	4	1		1
Kingfisher		2							1	1		0

Table IB: Ballymacoda

	1%	1%											
Species	National	International	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Mean
Mute Swan	90	100		7*	5*	16	17		23	22*	4	9*	7
Whooper Swan	150	340					3				4	1*	1
Greenland White- fronted Goose	100	190									2		0
Greylag Goose	35	980				2				1*			0
Light-bellied Brent Goose	350	400		4*		755	347		177	2*	315	59*	123
Shelduck	100	2500			6*	70	7		94		44	4*	34
Wigeon	560	14000		141*	82*	622	405		471	81*	783	148*	314
Teal	360	5000		215*	107*	549	411		524	166*	436	282*	240
Mallard	280	53000		51*	95*	68	105		164	30*	171	44*	84
Pintail	20	600				1			2		33		9
Shoveler	20	650				2	11		1		1		0
Scaup	25	3100					1				2		0
Eider	55	9800				2							0
Red-breasted Merganser	25	860				6	3						0
Red-throated Diver	20	3000									8		2
Great Northern Diver	20	50					2		1		2	6*	1
Little Grebe	20	4700		2*		6	2		4	2*	8	2*	3
Great Crested Grebe	30	6300				6	7		4		6	2*	2
Cormorant	110	1200		15*	24*	24	34		21	18*	36	31*	14

Shag					17	44			1	1*	0
Little Egret	20	1100	18*	30*	32	23	42	36*	44	21*	22
Grey Heron	25	5000	6*	18*	13	7	15	5*	11	6*	6
Water Rail				1*					1	1*	0
Moorhen				11*		9	1		1		0
Oystercatcher	610	8200	522*	396*	466	436	475	436*	535	284*	252
Ringed Plover	120	540	86*	103*	127	325	204	152*	207	157*	103
American Golden Plover				1*							0
Golden Plover	920	9300		98*	8561	3200	8400	1*	9250	4200*	4412
Grey Plover	30	2000	51*	52*	375	61	257	56*	249	50*	126
Lapwing	850	72300	11*	4*	1465	747	1239	53*	585	174*	456
Knot	160	5300	21*	44*	313	79	101	29*	166	30*	67
Sanderling	85	2000	84*	114*	194	195	185	49*	117	182*	76
Little Stint				12*							0
Curlew Sandpiper				3*	9				1		0
Dunlin	460	13300	88*	868*	958	369	1089	213*	2277	433*	842
Buff-breasted			1*	2*							0
Sandpiper			1	2							0
Ruff					3	2				2*	0
Snipe			3*	2*	87	34	22	3*	33	11*	14
Black-tailed Godwit	200	1100	572*	398*	1404	629	1068	135*	1040	434*	527
Bar-tailed Godwit	170	1500	30*	44*	627	598	547	50*	472	158*	255
Whimbrel			2*	3*	3	1	2	1*	1		1
Curlew	350	7600	145*	393*	508	367	485	457*	553	516*	260
Common Sandpiper					2		2		1		1
Spotted Redshank					1				1		0
Greenshank	20	3300	8*	21*	11	14	10	14*	16	8*	6
Redshank	240	2400	168*	258*	188	344	284	252*	191	248*	119
Turnstone	95	1400	25*	73*	182	148	174	2*	83	87*	64

Mediterranean Gull		1*	5						0
Black-headed Gull	115*	286*	880	1920	1105	665*	780	504*	471
Common Gull	326*	170*	275	1280	344	387*	330	144*	168
Lesser Black-backed	15*	367*	2100	3570	4960	351*	749	483*	1427
Gull	12	507	2100	5570	4900	221	749	405	1427
Herring Gull	48*	136*	88	250	109	64*	198	95*	77
Iceland Gull			1		2				0
Glaucous Gull					1				0
Great Black-backed	72*	163*	268	382	315	127*	174	98*	122
Gull	12	105	200	562	515	127	1/4	50	122
Sandwich Tern	31*	19*	155	2	450	3*	46	3*	124
Common Tern			3		20			1*	5
Kingfisher									

Table IC: Blackwater Estuary

	1%	1%											
Species	National	International	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Mean
Mute Swan	90	100	2	1	4*	3	6	5	4	5			3
Light-bellied Brent Goose	350	400	147	187		295	557	227	74	234	101	196	166
Brent Goose (Black										1			0
Brant)										1			0
Shelduck	100	2500	108	79	8*	132	156	198	120	94	97	68	115
Wigeon	560	14000	440	390	351*	311	420	404	521	472	1006	711	623
Gadwall	20	1200					2						0
Teal	360	5000	247	319	110*	335	369	451	274	290	349	315	336
Mallard	280	53000	131	176	214*	123	93	90	65	143	117	36	90
Feral/hybrid Mallard											12	10	4
type											12	10	4
Pintail	20	600	5			2		1		2	1	1	1
Shoveler	20	650		2		2	1				1	1	0
Tufted Duck	270	8900				1							0
Goldeneye	40	11400	1	1									0
Red-breasted	25	860	4	2		3	2	3					1
Merganser	25	800	4	3		5	Z	5					1
Great Northern Diver	20	50	1	1			2	3	1	2		2	2
Little Grebe	20	4700	1	1			1		2				0
Great Crested Grebe	30	6300	10	5	1*	6	8	11	10	9	11	7	10
Slavonian Grebe									1				0
Cormorant	110	1200	100	56	70*	62	47	67	118	60	69	49	73
Shag						1	41	34	3	7		2	9
Little Egret	20	1100	69	41	39*	17	19	40	36	54	49	33	42
Grey Heron	25	5000	33	21	25*	16	12	38	42	17	26	10	27
Moorhen			3	2		4	3	2	1	1	3		1

Oystercatcher	610	8200	246	452	388*	434	524	546	342	427	445	240	400
Ringed Plover	120	540	17	18	2*		40		4		1		1
American Golden Plover											1		0
Golden Plover	920	9300	1150	281	14*	29	22		33	214		180	85
Grey Plover	30	2000	11	6	6*	3	6	6	4	1	5	2	4
Lapwing	850	72300	1894	793	178*	1490	665	893	198	389	222	529	446
Knot	160	5300	19	10		44	8	14	3	47	7	4	15
Sanderling	85	2000					27						0
Little Stint											1		0
Curlew Sandpiper						1							0
Dunlin	460	13300	477	247	439*	596	231	266	91	252	303	49	192
Jack Snipe										1	1		0
Snipe			35	10	5*	7	16	4	4	7	10	12	7
Black-tailed Godwit	200	1100	1285	509	407*	378	525	815	634	5150	568	1147	1663
Bar-tailed Godwit	170	1500	36	73	8*	58	44	38	8	8	134	9	39
Whimbrel				1		2	1	1	1	1	2	1	1
Curlew	350	7600	413	435	891*	466	605	1072	598	701	517	565	691
Common Sandpiper			1						1	2	2		1
Green Sandpiper			2			1					1		0
Spotted Redshank			1		1*	1							0
Greenshank	20	3300	29	29	33*	24	24	64	33	24	18	34	35
Redshank	240	2400	368	431	583*	338	435	331	288	265	266	320	294
Turnstone	95	1400	38	58	25*	63	61	8	15	16	28	29	19
Mediterranean Gull			1	1			1		1	2			1
Black-headed Gull			5216	4355	350*	836	762	817	705	530	594	571	643
Common Gull			515	557	167*	712	461	239	244	150	374	201	242
Lesser Black-backed Gull			4603	6510	566*	2931	198	321	209	224	224	146	225
Herring Gull			372	306	250*	208	76	159	122	150	175	132	148

Yellow-legged Gull		1	1									0
Iceland Gull			1				1				1	0
Glaucous Gull		1					2					0
Great Black-backed Gull		315	175	465*	182	118	195	261	77	158	85	155
Sandwich Tern		3	29	7*	17	46	117	108	20	9	3	51
Arctic Tern					2							0
Kingfisher		1	1	1*	1	1	1	1	1	1	1	1