

# South West of England Regional Development Agency

Wave Hub

Appendix D to the Environmental Statement

June 2006



**Halcrow**



**South West of England**  
Regional Development Agency

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Development Agency**

Wave Hub Environmental Impact Assessment

Intertidal Bird Surveys

April 2006

**Halcrow Group Limited**

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Wave Hub Environmental Impact Assessment

Intertidal Bird Surveys

April 2006

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# **South West England Regional Development Agency**

## **Wave Hub Environmental Impact Assessment Intertidal Bird Surveys**

### **Contents Amendment Record**

This report has been issued and amended as follows:

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1	0	Draft for internal review	03/06	SC
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# 1 Introduction

## 1.1 *Background*

The South West Regional Development Agency (SWRDA) is proposing the Wave Hub project to provide the electrical infrastructure necessary to support and encourage developers of wave energy converter devices (WECs). The Wave Hub will facilitate WEC development through final demonstration and pre-commercialisation development stages by allowing developers to install and operate WECs at commercial-scale conditions over a number of years.

The Wave Hub will, in essence, consist of an offshore ‘socket’ into which the WECs will be connected. The hub will be located approximately 12 nautical miles north of St Ives, and will be connected to the national grid via a sub-sea cable. The cable will come ashore at Towan’s Beach, near Hayle, and pass under the adjacent Dunes to a new electricity substation which will form part of an existing Western Power Distribution substation site.

An environmental impact assessment is required for this project, the results of which will be presented in an Environmental Statement. The Scoping Report prepared by Halcrow Group Limited (February 2005) identified the need to assess the impacts on birds using the intertidal zone around the cable landing site. This report presents the results of survey work undertaken during 2005 and 2006 to assess the extent of bird use within this area. These results will be used to inform the environmental impact assessment.

## 2 Method

### 2.1 *Field Survey*

The objective of the survey was to establish use of the intertidal area at Towan's Beach, Hayle, by shorebirds. The area surveyed is shown on Figure 1.

Ten surveys were undertaken between February 2005 and January 2006. The survey methodology was designed to establish the species and number of birds using the intertidal area around the proposed landing site throughout the year. Monthly surveys were undertaken during the winter months and bi-monthly surveys during the summer (February-May, July, and September-January). Each survey comprised hourly instantaneous counts of birds through a half-tide cycle, from high tide to low tide. The survey area was divided into three sections, shown on Figure 1.

The species and number of birds using each of the three areas was recorded each hour during the half-tide cycle, and tabulated onto Excel spreadsheets in the office. Other features that might influence bird use, for example the presence of people and dogs, were also recorded as appropriate. Observations were made from the cliff and dune tops using 8x magnification binoculars and a 27x magnification telescope.

### 2.2 *Desk Study*

In addition, previous bird records from the area were obtained from a data search undertaken by the Environmental Records Centre for Cornwall and Isles of Scilly (ERCCIS) and from the 2004 Cornwall Bird Report published by the Cornwall Birdwatching and Preservation Society<sup>1</sup>.

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<sup>1</sup> Wilson K and Wilson I (Eds.) (2005) *Birds in Cornwall 2004* – Cornwall Birdwatching & Preservation Society

## **3 Results**

### **3.1 *Introduction***

The results, tabulated onto Excel spreadsheets, are presented in Appendix 1. A brief overview of each of the monthly surveys is presented below.

### **3.2 *February 2005***

The first survey was undertaken on 28<sup>th</sup> February 2005. Seven hourly counts were undertaken between 07:30 and 13:30. High tide was at 07:28 and low tide at 13:55. The weather during the survey was cold and mainly clear, with light winds.

The main beach areas were used by small numbers of gulls during the morning, with a peak of 63 black-headed gulls in area 2 at high tide. The small dune spit in area 1 was used by a small flock of roosting oystercatchers (26) and black-headed gulls at high tide; these had dispersed three hours after high water. A small group of wigeon (14) was present in the river channel in area 3 at low tide.

### **3.3 *March 2005***

This survey was undertaken on 31<sup>st</sup> March 2005. Seven hourly counts were undertaken between 08:30 and 14:30. High tide was at 08:20 and low tide at 14:22. The weather during the survey was sunny and mild, with light winds.

This survey was undertaken on an unseasonably warm weather during the Easter holidays, and there was regular human activity on the beach through most of the morning. It is likely that this was a contributory factor in the very low numbers of birds recorded, with no birds present in any of the areas for the first four hourly counts, and very low numbers of gulls in the remaining three hours of the half-tide cycle.

### **3.4 *April 2005***

This survey was undertaken on 28<sup>th</sup> April 2005. Seven hourly counts were undertaken between 08:30 and 14:30. High tide was at 08:23 and low tide at 14:30. The weather during the survey was cloudy with occasional drizzle and strong winds.

Low numbers of birds were recorded through the morning. The most notable observation was a flock of 18 sandwich terns roosting on the beach in area 2 an



hour after high tide. A single whimbrel was also recorded from area 2 one hour before low tide, although larger numbers (c.10) had previously been noted on the other side of the estuary.

### **3.5**

#### ***May 2005***

This survey was undertaken on 25<sup>th</sup> May 2005. Seven hourly counts were undertaken between 06:45 and 12:45. High tide was at 06:49 and low tide at 13:17. The weather during the survey was overcast with a moderate breeze.

Again, small numbers of gulls were recorded during the survey, with peak counts of 33 herring gulls and 6 great black-backed gulls in area 3.

### **3.6**

#### ***July 2005***

This survey was undertaken on 22<sup>nd</sup> July 2005. Seven hourly counts were undertaken between 06:30 and 12:30. High tide was at 06:29 and low tide at 12:51. The weather during the survey was sunny with a light onshore wind.

The survey took place on a warm summer day early in the school holidays, and by mid-morning large numbers of people were using the beach. Despite this, small numbers of gulls remained in the area. Higher numbers of birds were recorded at high tide than in previous surveys, with peak counts of 133 black-headed gulls, and 6 ringed plover in area 2, and 10 curlew in area 1.

### **3.7**

#### ***September 2005***

This survey was undertaken on 20<sup>th</sup> September 2005. Seven hourly counts were undertaken between 07:15 and 13:15. High tide was at 07:20 and low tide at 13:43. The weather during the survey was mild and cloudy, becoming sunny later, with a light wind.

At high tide area 2 contained a small number of roosting waders and gulls, including c.80 dunlin, 46 oystercatcher, 6 ringed plover and 21 sanderling. Numbers reduced as the tide receded, with only a small number of gulls present in area 3 by low tide. There was regular disturbance during the morning, including fishermen, walkers, and a quad bike.

### **3.8**

#### ***October 2005***

This survey was undertaken on 20<sup>th</sup> October 2005. Seven hourly counts were undertaken between 07:30 and 13:30. High tide was at 07:28 and low tide at 13:35. The weather during the survey was mainly sunny with a strengthening breeze.

Smaller numbers of waders were recorded roosting in area 2 at high tide than in September. Peak counts were 42 oystercatcher, 16 dunlin and 5 sanderling. A flock of 49 ringed plover was present at 09:30. Again, disturbance increased during the morning as the tide receded, with only small numbers of gulls present at high tide. An adult Mediterranean gull was briefly present in area 1 one hour after high tide.

### **3.9**

#### ***November 2005***

This survey was undertaken on 22<sup>nd</sup> November 2005. Seven hourly counts were undertaken between 08:20 and 14:20. High tide was at 08:43 and low tide at 15:15. The weather during the survey was cool, clear and still.

Low numbers of gulls were recorded during the morning. Smaller numbers of waders were recorded in the period after high tide, with peak counts of 4 dunlin, 14 sanderling and 38 ringed plover.

### **3.10**

#### ***December 2005***

This survey was undertaken on 21<sup>st</sup> December 2005. Seven hourly counts were undertaken between 08:15 and 14:15. High tide was at 08:22 and low tide at 14:21. The weather during the survey was partly cloudy and mild with a light wind.

Low numbers of birds were recorded at high tide, but a large flock of small waders was present on the beach two hours after high tide, including an estimated 580 dunlin. These had dispersed an hour later, possibly due to disturbance from dog walkers, with smaller numbers returning in the following hour.

### **3.11**

#### ***January 2006***

This survey was undertaken on 18<sup>th</sup> January 2006. The first count was undertaken at 07:55 (first light), with six hourly counts undertaken between 08:20 and 13:20. High tide was at 07:21 and low tide at 13:48. The weather during the survey was overcast and mild with a fresh breeze.

Smaller numbers of birds were present than the previous winter surveys. No small waders were recorded, although 66 oystercatcher were present in area 2 at high tide. Larger numbers of herring gulls were recorded than in previous surveys, with a peak count of c.140 four hours after high tide.

Large numbers of seabirds were noted feeding offshore in St Ives Bay during the morning, including gannets, kittiwakes, guillemots and razorbills. It seems likely that these birds had moved inshore to avoid poor conditions further out at sea.

### 3.12

#### *Desk Study*

The desk study indicates that very little information is available for the survey area, although the nearby Hayle Estuary is well watched by birdwatchers. The SSSI citation identifies the particular importance of the estuary for wintering birds, with more than 90 species and numbers in excess of 18,000 birds recorded in recent years. These species include all of those identified in the surveys.

The records supplied by ERCCIS are of limited value in this context as most are identified to species, year and 1km square only. No information on the exact date, location or number of birds is supplied. Again, all of the species recorded in the surveys have also been identified within the search area.

The 2004 Cornwall Bird Report has been analysed for records that might be relevant to the scheme. No information was identified for the intertidal area covered by the survey. However, the report includes the results of the Wetland Bird Survey (WeBS) for the nearby Hayle Estuary, and these provide a useful context in which to set the survey results.

A summary of the relevant WeBS data is presented in Table 1.

**Table 1 – WeBS results for the Hayle Estuary in 2004, for species recorded during the intertidal surveys**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Black-headed gull	410	493	179	40	1	18	188	306	308	167	812	333
Cormorant	7	8	2	5		2	6	4	10	19	4	4
Curlew	550	100	84	6	-	114	131	226	155	300	58	231
Dunlin	600	195	220	2	130	-	64	520	200	71	120	130
Golden Plover	-	-	-	-	-	-	-	-	-	359	35	200
Great black-backed gull	121	173	105	76	33	41	45	42	40	29	62	37
Grey heron	8	5	2	1	3	3	7	7	6	10	4	3
Herring gull	514	420	210	882	405	430	365	2822	710	482	680	705
lesser BB gull	693	1034	850	342	4	20	4	130	30	36	34	29
Little Egret	12	16	9	13	4	3	21	17	14	22	20	3
Mediterranean gull	3	2	4	4	-	3	4	8		2	2	9
Oystercatcher	23	30	21	15	11	7	37	60	50	49	40	30
Ringed plover	35	-	1	4	16	-	15	350	5	25	15	4
Shag	-	-	-	-	-	-	-	-	-	-	-	-
Sanderling	2	-	-	-	90	-	39	65	20	7	-	-

## 4 Discussion and Preliminary Assessment of Impacts

### 4.1 *Discussion*

The surveys indicate that the area proposed for cable landing is not of particular importance for birds. The easterly part of Towan's beach (area 2) maintains exposed sand at high tide, and this is used by some roosting birds. Similarly, the small sand-spit in area 1 is occasionally used by roosting birds. Area 3 is entirely covered at high tide, and becomes exposed approximately 2 hours afterwards.

Virtually all of the survey area is dominated by sandy substrates, and consequently there are limited opportunities for feeding waders and other birds. The Hayle Estuary, which lies very close to this site, provides an abundance of suitable feeding sites. It is therefore not surprising that few birds are present once the tide recedes. The beach is also subject to regular human disturbance by dog walkers during the winter months and holidaymakers during the summer.

The most important concentration of birds recorded during the surveys was an estimated 580 dunlin present at a single count in December. Counts for the nearby Hayle Estuary in 2004 were 130 in December and 600 in January. The December count seems to be unusually low, as numbers in the county generally build during the winter. The 2002 December count was 450, and it therefore seems likely that the survey count represents the majority of the Hayle Estuary wintering population. However, there is no evidence to suggest that dunlin or other species are using the beach in significant numbers on a regular basis. The small groups of waders roosting on the beach between September and December appeared to have been attracted by a small pool that had formed on the beach due to a shift in the sands. This pool had disappeared in January, and this was reflected by a reduction in the numbers of birds.

Small numbers of herring, great black-backed and lesser black-backed gulls use the beach for 'loafing' throughout the year. These species are generally tolerant of human activity and are less prone to disturbance. Apart from at high tide, there are very large areas of beach available in both directions, and disturbed birds can therefore readily find alternative sites.

In general, therefore, it is not envisaged that the proposed works will cause a significant impact on birds using the area. The only circumstances where significant disturbance might be envisaged are if work was undertaken on an early morning high tide during the winter. Even in this circumstance, the diversity and numbers of birds present are unlikely to be of value in anything greater than a local context.

#### 4.2

##### ***Preliminary Assessment of Impacts***

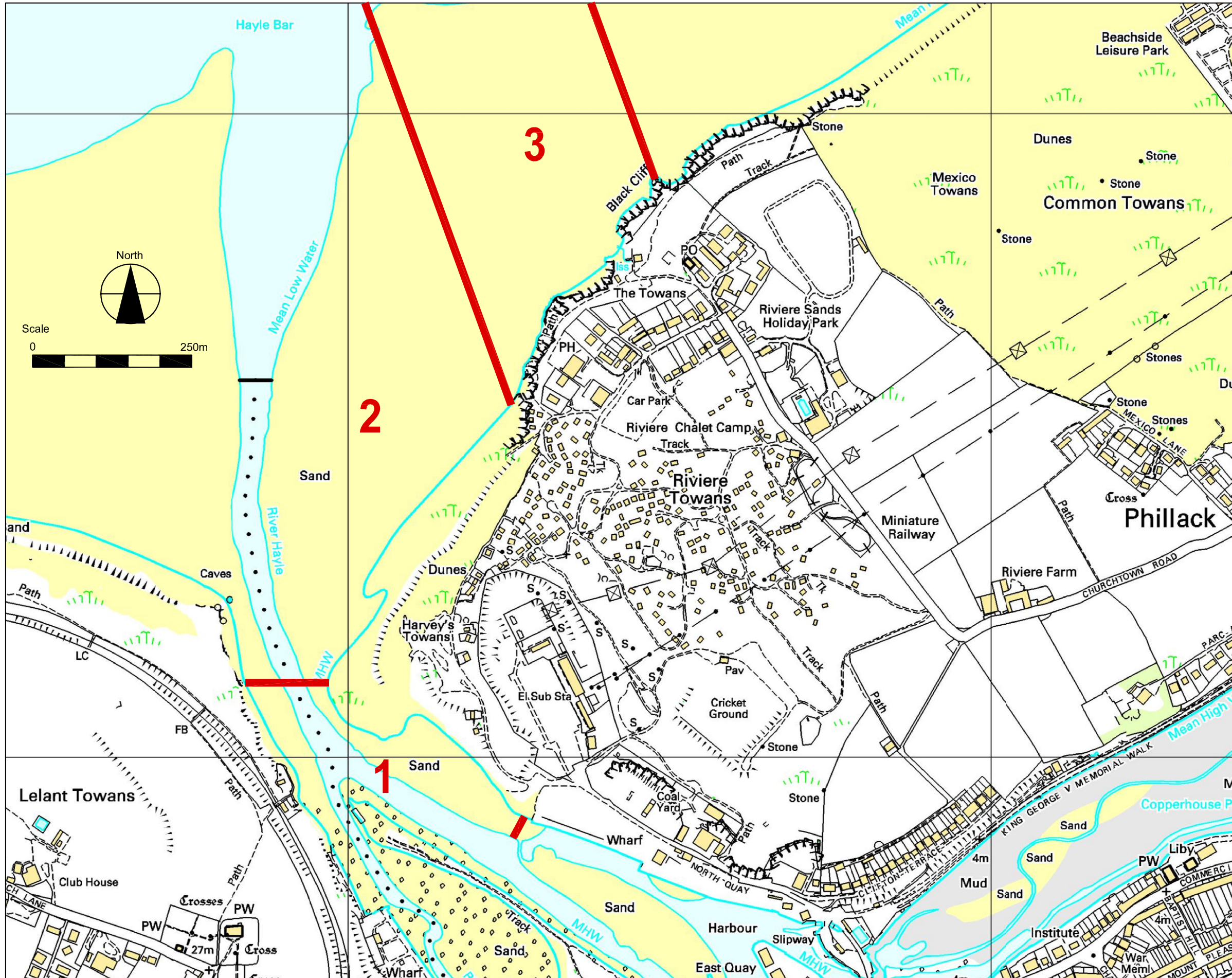
The proposed programme of works are for directional drilling of the cable under the dunes, and trenching / ploughing of the cable from partway down the beach into the sub-tidal zone. It is expected that this work will be undertaken during the summer. The drilling is unlikely to cause disturbance to birds, and ploughing will not be undertaken at high tide. This, combined with the time of year, means that there will not be any significant impacts on birds in this area. Once installation is complete, no impacts on birds can be foreseen.

## 5

# Conclusion

The survey work undertaken during 2005 and 2006 has established that the intertidal area at Townan's Beach, Hayle, is used by a limited number of birds throughout the year. The proposed work to install a cable for the proposed wave hub scheme across the beach has the potential to cause a limited amount of disturbance to any birds that are present. However, the timing of the works and number and diversity of birds present suggests that the impacts of the works will not be significant. No impacts are envisaged once the wave hub is operational.

**Figure 1 – Survey Areas**



# South West Wave Hub Project

## Wave Hub Bird Survey

### Intertidal Bird Survey

#### Legend

- 2** Survey Area Number
- Survey Area Boundary



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## **Appendix 1 – Survey Results**

## Wave Hub Cable Landing Site - Intertidal bird survey - February 2005

Date: 28/02/2005 Weather: Cold, clear with some cloud later. Winds light NE.  
 High Tide: 07:28 / 6.4m Low Tide: 13:55 / 1.1m Observer: Ross Bower

	07:30				08:30				09:30				10:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull		54	63		12	4			11			Area 2 disturbed by dogs				
Carrion Crow										2						
Great black-backed gull			8			5				2				4		
Herring gull					9				3	4	4		2	14	2	
Lesser black-backed gull										1				1		
Little Egret													1			
Oystercatcher		26		Roosting	26			Roosting	14			Roosting				
Redshank																
Wigeon																

	11:30				12:30				13:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull			1	Area 1 dist	3				1			
Carrion Crow										3		
Great black-backed gull	1					4				2		
Herring gull			5			2	3		1	4	3	
Lesser black-backed gull			1							1		
Little Egret									1			feeding
Oystercatcher												
Redshank									1			Asleep
Wigeon									14			Wigeon in river channel

## Wave Hub Cable Landing Site - Intertidal bird survey - March 2005

Date: 31/03/2005 Weather: Sunny, mild, light winds  
 High Tide: 08:20 / 6.1m Low Tide: 14:22 / 1.2m Observer: Ross Bower

	08:30				09:30				10:30				11:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Great black-backed gull Herring gull				No birds present. Fisherman in area 1 c.10 sandwich tern, 1 kittiwake, 1 guillemot offshore				No birds present. Dogwalkers in area 2 Offshore in Bay to east of area 3: Herring Gull c.150, Auk sp 5+, Shag c.5, Black-t diver 2				No birds present. c.10 people on beach in area 2				No birds present c.50 people on beach in areas 2 & 3 3 rock pipits around coastguard hut exhibiting territorial behaviour

	12:30				13:30				14:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Great black-backed gull Herring gull		2				1		3 11		1		2 8
	c.25 people area 2											

Survey was undertaken on a warm day in easter holidays. There were many beach users and this accounts for the low number of birds

# Wave Hub Cable Landing Site - Intertidal bird survey - April 2005

Date: 28/04/2005 Weather: Cloudy, occasional drizzle / showers, strong SW wind  
 High Tide: 08:23 / 6.4m Low Tide: 14:30 / 0.8m Observer: Ross Bower

	08:30				09:30				10:30				11:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Carrion crow																
Great black-backed gull			3				3								2	
Herring gull			10				4						9		2	
lesser BB gull															8	
Oystercatcher		7													1	
sandwich tern			5				18									4
whimbrel							2									
	c.10 whimbrel on other side of estuary								Dogwalkers in area 1 4 gannets feeding close offshore							

	12:30				13:30				14:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Carrion crow												
Great black-backed gull												1
Herring gull		1										1
lesser BB gull												5
Oystercatcher												
sandwich tern												
whimbrel							1					



## Wave Hub Cable Landing Site - Intertidal bird survey - July 2005

Date: 22/07/2005 Weather: Sunny, light onshore wind, 2/8 cloud, good visibility (some sea mist offshore)  
 High Tide: 06:29 / 6.9m Low Tide: 12:51 / 0.7m Observer: Richard Knott

	06:30				07:30				08:30				09:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull		133				72				21			1	20		1
Carrion Crow		4							1					1		
Curlew	10	2		flushed on arrival, flew up inlet												
Dunlin		11				5				10						
Great black-backed gull		4				5				10	1			19		
Herring gull		26				21			3	41				26		2
Ringed plover		6				6								6		
Sandwich tern						2										
		1 person			no birds	2 people				3 people	fulmar flying along cliff			9 people	5 people	
		32 oystercatcher on beach other s			2 sandwich tern offshore											
		4 sandwich tern flew up channel														

	10:30				11:30				12:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull		1	21	1			2	3			1	
Carrion Crow			4		2							1
Curlew												
Dunlin												
Great black-backed gull			8	2						2		
Herring gull	1	13	10		2	4	5			3	9	
Ringed plover												
Sandwich tern												
	9 people	~50 people	50+ people		30 people	50-100 people	100-150 people		no birds	50-100 people	100-150 people	
						sparrowhawk along cliff			30+ people			

Survey was undertaken on a hot, sunny day at start of summer hols. From c. 1030 there were many beach users and this may account for the low number of birds

# Wave Hub Cable Landing Site - Intertidal bird survey - September 2005

Date: 20/09/2005 Weather: Partly cloudy, becoming sunny later. Mild, with light winds  
 High Tide: 07:20 / 7.4m Low Tide: 13:43 / 0.3m Observer: Ross Bower

	07:15				08:15				09:15				10:15			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull		3	4		8	10			1	10						1
Carrion crow																
Cormorant																
Dunlin			c.80		1	c.70				c.20					3	
Great black-backed gull					10	1			2							
Herring gull	1				3	6			1	8			1			
lesser BB gull			19			41			1	51						
Oystercatcher	7		46		35	2										
Ringed plover			6			4				14					2	
Sanderling			21			19				c.10					17	
sandwich tern						4										
Turnstone						1										
	2 fisherman area 2				3 fisherman area 2				1 walker area 2				3 people area 3 Quad bike on beach area 2			

	11:15				12:15				13:15			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull				1								1
Carrion crow												
Cormorant					1							
Dunlin												
Great black-backed gull			2								1	
Herring gull	1	2	34		1	1	30		1		7	
lesser BB gull			34				52				10	
Oystercatcher												
Ringed plover												
Sanderling												
sandwich tern			5									
Turnstone												
	c.20 people on beach area 2				c.25 people on beach area 3							

# Wave Hub Cable Landing Site - Intertidal bird survey - October 2005

Date: 20/10/2005 Weather: Mainly sunny with strengthening SW breeze  
 High Tide: 07:28 / 7.1m Low Tide: 13:35 / 0.7m Observer: Ross Bower

	07:30				08:30				09:30				10:30			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull			17		19	24			12	1			2			
Carrion crow			1													2
Curlew													1			
Dunlin			11			7				16						
Golden Plover			1			1										
Great black-backed gull			1		9				2	5						
Grey heron									1							
Herring gull					4	1										3
lesser BB gull						39			2	6						
Little Egret	1															
Mediterranean gull					1			Adult								
Oystercatcher	4	41			15	42										
Pied Wagtail		1														
Ringed plover						1				49				15		
Sanderling			5			5				4						
sandwich tern										4						
									2 people and dogs area 2				3 people and dogs area 2			

	11:30				12:30				13:30				
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	
Black-headed gull							57	1				10	2
Carrion crow													
Curlew	1												
Dunlin													
Golden Plover													
Great black-backed gull							5					1	
Grey heron	1												
Herring gull	2				1	5				4		1	
lesser BB gull						14				7			
Little Egret													
Mediterranean gull													
Oystercatcher													
Pied Wagtail													
Ringed plover													
Sanderling													
sandwich tern													
	8 people, dogs and noisy remote control car area 3, no birds in areas 2 & 3				Gulls in area 2 were on boundary between areas 2 and 3				Gulls in area 2 were on boundary between areas 2 and 3				



# Wave Hub Cable Landing Site - Intertidal bird survey - November 2005

Date: 22/11/2005 Weather: Cool, clear, still  
 High Tide: 08:43 / 5.8m Low Tide: 15:15 / 2.5m Observer: Ross Bower

	08:20				09:20				10:20				11:20				
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	
Black-headed gull		1	4			3				1	4	5			1	4	3
Carrion crow																	
Curlew																	
Dunlin							4										
Golden Plover																	
Great black-backed gull						2				2							1
Grey heron																	
Herring gull						2				1				1			11
lesser BB gull																	1
Little Egret																	
Mediterranean gull																	
Oystercatcher							1										
Pied Wagtail																	
Ringed plover							38				30						
Shag						1											
Sanderling											10						
sandwich tern																	
	1 person & dog area 2				2 people & dog area 2				2 people & dog area 2				1 red-throated diver and 3 black-throated diver in bay to east of area 3				

	12:20				13:20				14:20			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull			7	20			7				25	3
Carrion crow												
Curlew												
Dunlin												
Golden Plover												
Great black-backed gull			4				2				6	
Grey heron												
Herring gull		1		11			12	1			14	15
lesser BB gull			1				1					
Little Egret												
Mediterranean gull												
Oystercatcher												
Pied Wagtail												
Ringed plover												
Shag												
Sanderling							7				14	
sandwich tern												
	3 people and 4 dogs on beach in area 3											

# Wave Hub Cable Landing Site - Intertidal bird survey - December 2005

Date: 21/12/2005 Weather: Partly cloudy, mild, light wind  
 High Tide: 08:22 / 6.1m Low Tide: 14:21 / 2.0m Observer: Ross Bower

	08:15				09:15				10:15				11:15			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull							2			2	3				1	
Carrion crow																
Cormorant		1														
Curlew																
Dunlin											c.580					
Golden Plover																
Great black-backed gull	3									1						
Grey heron	1				2				1							
Herring gull						1				1				1		
lesser BB gull																
Little Egret													1			
Mediterranean gull																
Oystercatcher	1															
Pied Wagtail																
Ringed plover							10				12	2				
Shag																
Dunlin							4				5	3				
sandwich tern																
									Large flock of waders (mainly dunlin) on boundary between 2&3. Dog walker on beach in area 2.				Dog walkers in all 3 areas.			

	12:15				13:15				14:15			
	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes	Area 1	Area 2	Area 3	Notes
Black-headed gull	1	5	1		1	6					2	
Carrion crow												
Cormorant												
Curlew												
Dunlin			75								53	
Golden Plover												
Great black-backed gull			6				7					
Grey heron												
Herring gull		1	4			6	10				22	
lesser BB gull											1	
Little Egret	1				1							
Mediterranean gull												
Oystercatcher												
Pied Wagtail												
Ringed plover			11								29	
Shag												
Sanderling							2				3	
sandwich tern												
					Motorbike on beach in Area 2							

