

Report of Bird Counts at East Marsh and Eton Manor 2008

OLYMPIC PARK AND SITE WIDE INFRASTRUCTURE

LONDON 2012

OLYMPIC PARK WIND TURBINE
REP-EDW-TG-ZZZ-ZZZ-ZZZ-O-0001 (P02)



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1. Introduction

- 1.1 The ODA is proposing to erect a wind turbine at Eton Manor (referred to as Site B) and has conducted initial feasibility work in conjunction with London Borough of Hackney for a proposed second wind turbine, located on East Marsh (referred to as Site A). Each turbine will have a tower with blades that will be around 120m above ground at the highest point and around 40m above ground at the lowest point with a hub height of approximately 80m.
- 1.2 Wind turbines have the potential to have negative impacts on birds and current best practice involves thorough assessments of these impacts, which include habitat loss or damage, disturbance and collision (English Nature, RSPB, WWFUK, BWEA 2001). In order to undertake an objective assessment a baseline survey is necessary which includes observations of birds throughout the year including wintering, breeding and migratory birds. **This is a report of the baseline bird observation survey, and is not an assessment of any impacts.** A fully detailed environmental report setting out the effects of the wind turbine, including on ecology, would have to be submitted alongside any future planning application, and all relevant stakeholders consulted.
- 1.3 The Lee Valley is noted for both wintering and breeding birds. The Walthamstow Reservoirs (a Site of Special Scientific Interest and part of the Lee Valley Special Protection Area – designated under the European Birds Directive and the Lee Valley Ramsar Site – internationally recognised wetland) and adjoining areas are important wintering sites for waterfowl (including nationally important numbers of shoveler and tufted duck) and breeding sites for waterbirds (including great crested grebe, pochard, tufted duck, coot, yellow wagtail, sedge warbler and reed warbler). The reservoirs attract nationally important populations of wildfowl and support a major heronry, one of the largest in the UK. The heronry is given as a reason for designation in the citation for the Walthamstow Reservoirs SSSI. Local birdwatchers report that birds regularly move between the Walthamstow Reservoirs and the River Thames, passing by East Marsh (see figure 1).

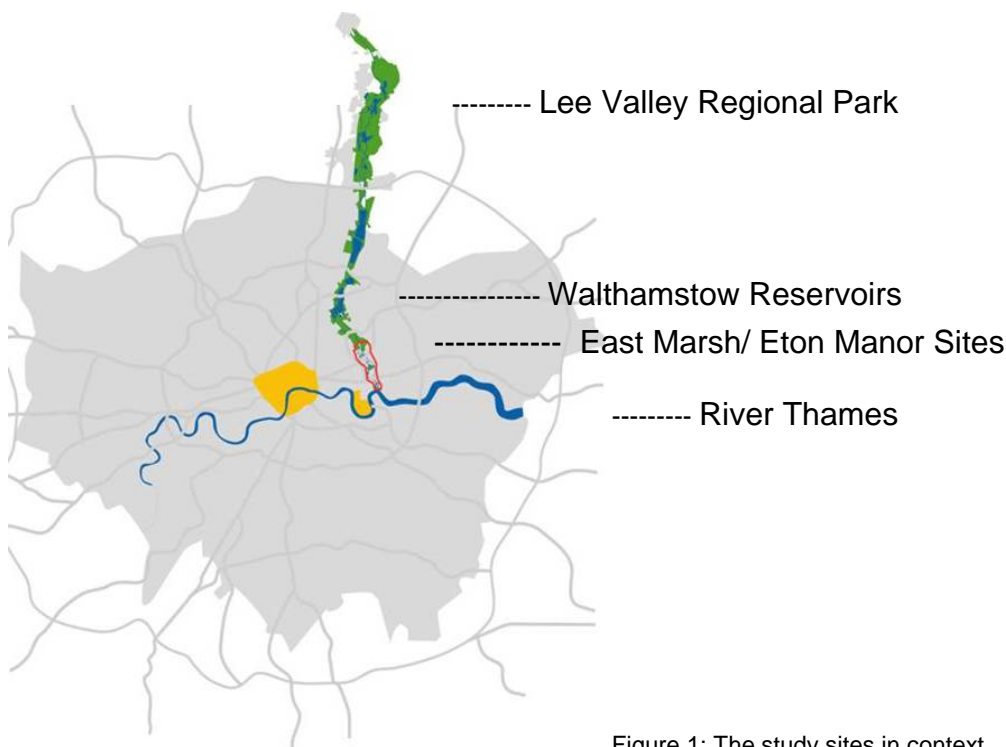


Figure 1: The study sites in context

2. Methodology

- 2.1 Guidance for observing birds for the purposes of assessing impacts of wind turbines has been prepared by Scottish Natural Heritage (2005). Using this guidance and following consultation with Natural England and the RSPB (Alison Giacomelli) and a reconnaissance visit, methodology was developed to ensure that birds were observed for a minimum of 36 hours for each of two seasons (wintering and breeding).
- 2.2 For this study, two skilled observers (David Darrell Lambert) and (Simon Buckell or Paul Hawkins) made simultaneous observations using binoculars from two vantage points at both Site A and Site B (see figure 2). Counts were made for three 2 hour periods beginning at dawn, again at midday and finally at dusk for one day each month during the whole of 2008. This ensured that there was a total of 72 hours observation at each VP covering all seasons.
- 2.3 All birds were identified to species where possible (some records were of small, large or mixed groups of gulls) and the height of the flight line of each bird assigned to one of three categories as follows:

Low:	Below 30m
Mid-height:	Between 30m and 130m
High:	Above 130m

Birds flying at mid-height would be at an elevation where the blades of the proposed turbines would be rotating.



Figure 2: Vantage points at the two study sites

3. Results

- 3.1 The full results of the year-long studies of both sites are presented as appendices to this report. The data is represented as two spreadsheets which show counts for both sites presented for each species for dawn midday and dusk for each of 12 visits – one for each month of the year.
- 3.2 A total of 72 species were recorded at both sites (see Table 1). Of these, one species, Harris hawk, was an escaped captive bird. Eight species are listed on Schedule 1 of the Wildlife and Countryside Act (WCA) namely: Brambling, fieldfare, hobby, kingfisher, marsh harrier, peregrine, red kite and redwing. Birds listed on Schedule 1 of the WCA are protected by special penalties. There are also five species included in Annex 1 of the European Birds Directive in the list, namely: Common tern, kingfisher, marsh harrier, peregrine and red kite. Birds listed in Annex 1 are rare or vulnerable in the European context. There are also three non-specific categories, namely ‘small gulls’ flocks of unidentified small gulls probably black-headed gulls and/or common gulls; large gulls flocks of unidentified large gulls probably herring gulls and/or lesser black-backed gulls and ‘mixed gulls’ which includes flocks of unidentified gulls of all sizes.

Table 1: List of species recorded at East Marsh and Eton Manor 2008

Species	JNCC Conservation Listing ¹	Wildlife & Countryside Act	Annex 1 Birds Directive	Olympic Park BAP species	Status in Lower Lea Valley ²
Blackbird	Green				Breeding
Black-headed Gull	Amber				Wintering and migrant
Brambling	Green	Schedule 1			Migrant
Buzzard	Green				Migrant
Canada Goose	Introduced				Breeding
Carrion Crow	Green				Breeding
Caspian Gull					Wintering
Chaffinch	Green				Breeding
Collared Dove	Green				Breeding
Common Gull	Amber				Wintering
Common Shelduck	Amber				Breeding
Common Swift	Green				Breeding
Common Tern	Green		Annex 1		Breeding
Dunnock	Amber				Breeding
European Swallow	Amber				Migrant
Feral Pigeon	Green				Breeding
Fieldfare	Amber	Schedule 1			Wintering
Gadwall	Amber				Breeding
Goldfinch	Green				Breeding
Great Black-backed Gull	Green				Wintering and migrant
Great Cormorant	Amber				Breeding & wintering
Great Spotted Woodpecker	Green				Breeding
Great Tit	Green				Breeding
Green Woodpecker	Amber				Breeding
Greenfinch	Green				Breeding
Grey Heron	Green			+	Breeding & wintering
Grey Wagtail	Amber				Breeding & wintering
Greylag	Amber				Breeding

Harris Hawk					Escape
Herring Gull	Amber				Breeding & wintering
Hobby	Green	Schedule 1			Migrant
House Martin	Amber				Breeding
Jay	Green				Breeding
Kestrel	Amber				Breeding
Kingfisher	Amber	Schedule 1	Annex 1	+	Breeding
Lesser Black-backed Gull	Amber				Breeding & wintering
Lesser Redpoll	Amber				Migrant
Linnet	Red			+	Breeding
Long-tailed Tit	Green				Breeding
Magpie	Green				Breeding
Mallard	Green				Breeding
Marsh Harrier	Amber	Schedule 1	Annex 1		Migrant
Meadow Pipit	Amber				Migrant
Mistle Thrush	Amber				Breeding
Mute Swan	Amber				Breeding
Peregrine	Amber	Schedule 1	Annex 1		Breeding
Pied Wagtail	Green				Breeding & wintering
Red Kite	Amber	Schedule 1	Annex 1		Migrant
Redwing	Amber	Schedule 1			Wintering
Reed Bunting	Red			+	Breeding
Ring-billed Gull					Migrant
Robin	Green				Breeding
Sand Martin	Amber			+	Breeding
Siskin	Green				Wintering and migrant
Skylark	Red				Migrant
Song Thrush	Red			+	Breeding
Sparrowhawk	Green				Breeding
Starling	Red			+	Breeding
Stock Dove	Amber				Breeding
Teal	Amber				Wintering and migrant
Whitethroat	Green				Migrant
Willow Warbler	Amber				Migrant
Wood Pigeon	Green				Breeding & wintering
Wren	Green				Breeding
Yellow-legged Gull	Amber				Wintering and migrant
Yellow Wagtail	Amber				Migrant

3.3 Tables 2 and 3 indicate the maximum numbers of birds counted both sites at turbine height and in total (for comparison) for those species which were recorded flying at turbine height.

Table 2. Birds recorded at turbine height (Mid-level) at Site A (East Marsh)

Species	Max. Count	Dates	Max. Count Mid- level	Dates	Schedule 1	Annex 1	Olympic Park BAP Species
Blackbird	3	Nov	3	Nov			
Black-headed Gull	208	Mar	41	Nov			
Buzzard	1	Aug	1	Aug			
Carrion Crow	35	Mar	3	Dec			
Chaffinch	14	Oct	17	Oct			
Common Gull	90	Mar	9	Jan			
Common Shelduck	2	Various	2	Apr. Jun			
Common Swift	405	Jul	61	May			
European Swallow	30	Sep	30	Sep			
Feral Pigeon	77	Apr	7	May			
Fieldfare	22	Feb	12	Nov	+		
Goldfinch	26	Nov	3	Oct			
Great Black-backed Gull	5	Dec	5	Dec			
Great Cormorant	41	Apr	26	Oct			
Great Spotted Woodpecker	2	Various	2	Sep, Oct			
Greenfinch	19	Feb	11	Jan			
Grey Heron	7	Jun	6	Jun			+
Grey Wagtail	3	Jan	2	Oct			
Herring Gull	210	Feb	210	Feb			
House Martin	4	May	1	Jun			
Kestrel	5	Mar	2	Jun			
Large Gulls	605	Feb	205	Jan			
Lesser Black-backed Gull	140	May	30	Feb			
Linnet	6	Mar, Oct	6	Oct			+
Magpie	11	Feb	4	Feb			
Mallard	26	Mar	10	Nov			
Meadow Pipit	39	Oct	39	Oct			
Mistle Thrush	17	Jul	5	Oct			
Mixed Gulls	1455	Mar	500	Jan			
Peregrine	1	Various	1	Various	+	+	
Pied Wagtail	8	Oct	8	Oct			
Redwing	159	Mar	1	Jan	+		
Reed Bunting	2	Oct	2	Oct			+
Sand Martin	8	May	3	Jun			+
Siskin	10	Jan	8	Sep			
Skylark	1	Nov	1	Nov			
Small Gull	213	Jan	213	Jan			
Sparrowhawk	4	Jan	4	Jan			
Starling	82	Nov	55	Nov			+
Stock Dove	10	Mar	2	Jan. Feb			
Wood Pigeon	160	Nov	55	Nov			
Yellow Wagtail	3	Sep	3	Sep			

Yellow legged Gull	1	Various	1	Feb, Nov			
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3.4 For Site A (East Marsh) Table 2 shows how flocks of several hundred gulls are flying through the site at mid height, particularly in winter. Many other species fly through in smaller numbers. Species of conservation concern that fly through at mid- height include fieldfare (on Schedule 1 of the WCA) – 12 birds flew through at mid-height in November and peregrine falcon (on Schedule 1 of the WCA and on Annex 1 of the Bird Directive). Redwing is another Schedule 1 species that occurs in small numbers at this height (1 bird in January). The local area is important for cormorants and grey heron. Both species have been recorded flying through at mid-height, peaking at 26 great cormorant on October and 6 grey heron in June.

Table 3. Birds recorded at turbine height (Mid-level) at Site B (Eton Manor)

Species	Max. Count	Dates	Max. Count Mid- level	Dates	Schedule 1	Annex 1	Olympic Park BAP Species
Black-headed Gull	110	Jan	96	Dec			
Carrion Crow	21	Mar	10	Mar			
Chaffinch	12	Dec	4	Dec			
Common Gull	51	Feb	18	Feb			
Common Shelduck	2	Apr	2	Apr			
Common Swift	50	Jun	40	Jul			
European Swallow	3	May	3	May			
Feral Pigeon	9	Aug	7	Aug			
Goldfinch	42	Nov	1	May, Aug			
Great Black-backed Gull	23	Feb	5	Feb			
Great Cormorant	16	Mar	16	Mar			
Great Spotted Woodpecker	1	Several	1	Jan, Apr			
Greenfinch	9	Aug	1	Various			
Grey Heron	3	Jun	1	Various			+
Herring Gull	465	Feb	227	Mar			
Kestrel	4	Sep	2	Oct			
Large Gulls	20	Jan	11	Jan			
Lesser Black-backed Gull	96	Jan	76	Jan			
Linnet	12	Jan	1	Jan			+
Magpie	21	Jan	4	Jan			
Mallard	7	Feb	4	Mar			
Meadow Pipit	19	Dec	1	Jan			
Mixed Gulls	295	Jan	295	Jan			
Peregrine	1	Various	1	Various	+	+	

Pied Wagtail	4	Feb	4	Feb			
Redwing	6	Jan	2	Jan	+		
Starling	158	Nov	150	Oct			+
Stock Dove	7	Sep	3	Aug			
Wood Pigeon	23	Sep	23	Sep			
Yellow Wagtail	2	Aug	1	Apr			
Yellow legged Gull	4	Jan	1	Jan			

3.5 For Site B (Eton Manor) Table 3 shows how large numbers (hundreds) of gulls are flying through the site at mid height particularly in winter, although the overall numbers flying across this area are lower than those seen at East Marsh. Many other species fly through in smaller numbers. Species of conservation concern that fly through at mid- height include redwing (on Schedule 1 of the WCA) – 2 birds flew through at mid-height in Jan and peregrine falcon (on Schedule 1 of the WCA and on Annex 1 of the Bird Directive). There were several records of individuals flying through at mid-level. The local area is important for cormorants and grey heron. Both species have been recorded flying through at mid-height, peaking at 16 great cormorant on March and 1 grey heron in June.

3.6 Tables 4 and 5 present the total numbers of birds observed and total numbers of birds flying at mid-level (turbine height) at each site during each observation session.

3.7 Table 4 shows these totals for Site A (East Marsh). The table shows how large numbers of birds fly through this site at turbine height (peaking in winter at 732) and falling to much lower numbers in spring and summer. There are also clear differences between dawn, noon and dusk. More birds (mainly gulls) fly south at dawn than return by this route at dusk. Bird activity in the area is relatively quiet at noon.

Table 4: Site A (East Marsh) Total birds observed during each session

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dawn	Mid-level	732	29	346	8	8	15	41	54	102	230	540	265
	All	2111	1935	2276	321	277	115	122	318	363	383	1111	1309
Midday	Mid-level	31	25	21	11	75	28	30	21	28	13	126	110
	All	139	300	456	246	256	269	171	112	58	58	185	279
Dusk	Mid-level	139	334	212	9	12	37	19	25	50	43	118	102
	All	628	816	947	130	75	369	492	96	77	154	224	275

3.8 Table 5 shows totals for Site B (Eton Manor). The table shows how large numbers of birds fly through this site at turbine height (peaking in winter at 496) and falling to much lower numbers in spring and summer. There are also clear differences between dawn, noon and dusk. More birds (mainly gulls) fly south at dawn than return by this route at dusk. Bird activity in the area is relatively quiet at noon. Overall, numbers of birds recorded at Eton Manor are lower than at East Marsh.

Table 5: Site B (Eton Manor) Total birds observed during each session

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dawn	Mid-level	496	167	252	3	35	10	47	25	73	88	214	169
	All	1041	947	816	57	73	55	104	108	188	188	493	667
Midday	Mid-level	20	33	11	7	14	10	13	5	68	169	62	112
	All	369	92	52	37	110	106	101	57	204	348	357	615
Dusk	Mid-level	68	75	77	17	0	5	4	18	73	19	47	25
	All	176	242	209	36	17	28	55	53	132	116	69	86

3.9 Birds of conservation concern listed on Schedule 1 of the Wildlife and Countryside Act (WCA) and birds in Annex 1 of the Birds Directive are considered in Table 6. Other species of local importance (with significant populations in the Lee Valley) are great cormorant and grey heron and these are also included.

Table 6: Birds of Conservation Concern

	Site A Max	Site B Max	Schedule 1 WCA	Annex 1 Birds Dir.	Olympic Park BAP	Remarks
Brambling	2	0	+			Occurs in small numbers seen occasionally. Usually flies at low level
Common Tern	1	0		+		Rare visitor
Fieldfare	22	3	+			Winter visitor – tends to stay close to the ground
Great Cormorant	41	16				Significant numbers regularly fly across both sites at mid-level. Greater numbers at East Marsh
Grey Heron	7	3			+	Feeds along the Lower Lea Valley watercourses
Hobby	0	1	+			Rare visitor
Kingfisher	1	0	+	+	+	Usually fly at low level and tends to stay close to the river
Marsh harrier	1	1	+	+		Small numbers and occasional visitor .
Peregrine	1	1	+			Small numbers of resident birds.
Red Kite	1	0	+	+		Rare visitor .
Redwing	159	6	+			Spend most of their time on the ground. Only 2 birds observed at mid-height

3.10 Figure 3 shows the prevailing direction of flight for the larger flocks, which move in a southerly direction across the site at dawn, apparently following the valley of the River Lea towards the Thames. Smaller numbers of birds move in the opposite (northerly direction) at dusk.(see paragraph 4.4 below)

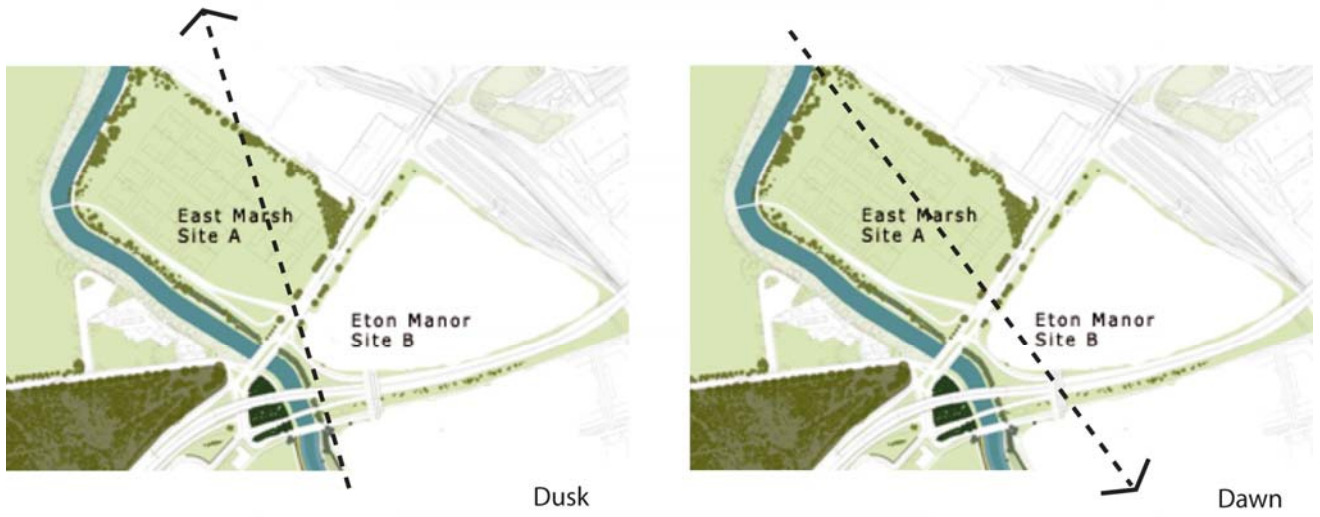


Figure 3: Prevailing directions of flight of flocks crossing the site at dusk and dawn

4. Conclusions

- 4.1. Both site A and site B are crossed by large numbers of birds. For example in a two hour period around dawn in January 2008 Site A at East Marsh was crossed by 2111 birds. Numbers at Site B at Eton Manor were also high (1041 birds during the same period). Most of these birds are gulls.
- 4.2. There are birds that cross both sites at mid-level. In January 2008 at East Marsh 732 birds crossed the site at this height. Numbers at Site B at Eton Manor were lower but still significant. Maximum mid-level count was 496 birds, again in January 2008.
- 4.3. There are strong seasonal variations in the numbers of birds crossing the sites. Numbers peak in winter with the large flocks of wintering gull already referred to. In summer numbers fall to 100 birds or less in any 2 hour period.
- 4.4. There are strong diurnal variations. Larger numbers of birds are observed at both sites at dawn than at dusk. At dawn most birds are flying south from their roosts on the Walthamstow Reservoirs. It is presumed that many of these birds feed on the tidal Thames. Although some birds fly north across the study sites at dusk others by-pass the sites, flying direct from wherever they are spending the day straight to their habitual night-time roosts.
- 4.5. Birds of conservation concern have been recorded. These include raptors (hobby, peregrine, red kite and marsh harrier), water birds (common tern, grey heron, kingfisher and great cormorant), wintering thrushes (redwing and fieldfare) and brambling (a small land bird). Of these the wintering thrushes, brambling and kingfisher all tend to be close to the ground when in the area. The other species, apart from grey heron and great cormorant occur in very small numbers. Flocks of great cormorant regularly cross the sites at mid-level. Individual grey heron also regularly cross the sites.

References

English Nature, RSPB, WWF-UK, BWEA. 2001. Wind farm development and nature conservation: *A guidance document for nature conservation organisations and developers when consulting over wind farm proposals in England*. WWF UK, Goldalming.

Scottish Natural Heritage 2005. Guidance: Survey methods for use in assessing the impacts of onshore windfarms on bird communities.

Footnotes

1. www.jncc.gov.uk/page-2905#bl Joint Nature Conservation Committee: Red list species - high conservation concern.
2. London Bird Report 2006, London Natural History Society. <http://www.lnhs.org.uk/Publications.htm>

Appendices

Site A – East Marsh: Records of all counts 2008

Site B – Eton Manor: Records of all counts 2008

Site A (East Marsh) L:<30m; M:30m-150m; H: >150m

		12 Jan			2 Feb			1 Mar			20 Apr			4 May			14 Jun			12 Jul			23 Aug			13 Sep			4 Oct			1 Nov			13 Dec						
		D	M	D	D	M	D	D	M	D	D	M	D	D	M	D	D	M	D	D	M	D	D	M	D	D	M	D	D	M	D	D	M	D							
Blackbird	L M															1					1												1 3								
Black-headed Gull	H L M		1	40	3	2	1	2	127	208	164		5		1	11	1	13	12	2	2	6	1	29	52	2	8	15	1	1	4	5	4	65	7	64	6	61	68	52	
Brambling	L																																								
Buzzard	M																																								
Canada Goose	L M						2					4	5	2									1																		
Carrion Crow	H L M		34	15	31	3	7	34	18	8	35	29	11	10	16	21	3	6	5	11	2	10	2	1		4	2		1	4	2	4	3	6	7	4	2		3		
Caspian Gull	L																																								
Chaffinch	L M	3	1		6	1			2				1								2	1					4	1		14	3	2	6	2				1			
Collared Dove	L																																								
Common Gull	H L M		4	53	21	20	24	1	47	90	23	13	1																												
Common Shelduck	H L M							1																																	
Common Swift	H L M																																								
Common Tern	H L																																								
European Swallow	L M																																								
Feral Pigeon	H L M		15	1	2	6	3	3	6	1	3	77	6	5	10	1	4	18	2	2	8	4	1	1	1	4	1	1	2	2	1	4	1	4	2	2	1	1	2		
Fieldfare	L M	4		4			22	1	2	10																															
Gadwall	L	2					12																																		
Goldfinch	L M		1	1	2																																				
Great Black-backed Gull	H L M																																								
Great Cormorant	H L M	16	7	7	17	2	12	6	14	9	41	4	10	17	6	5	18	4	11	11	10	9	11	3	6	6	4	5	4	4	2	3	26	2	8	4	10	6	2		
Great Spotted Woodpecker	L M																																								
Green Woodpecker	L	1																																							
Greenfinch	L M	5	1	1	12	1	19	5	3	7	7	8	9	7	2																										
Grey Heron	L M																																								
Grey Wagtail	H L M	1	1	3																																					
Greylag	L																																								
Harris Hawk	L																																								
Herring Gull	H L M	1	1		17	7	5	10	4	135	94	7	1	50	1	5	11	5	4	2	1	2	1	2	2	172	1	35	10	26	1	57	1	58	8	8	80				
House Martin	H L M																																								
Jay	L M	2		1																																					
Kestrel	H L M																																								
Kingfisher	L																																								
Large gull sp	H L M	15		37	605		71	15																																	
Lesser Black-backed Gull	H L M		8	2	47	6	3	10	7	25	93	5	29	140	3	18	12	12	29	9	5	9	1	1	1	10	3	57	1	16	3	7	3	13	10	40	3	2			
Lesser Redpoll	L M																																								
Linnet	L M	2																																							
Long-tailed Tit	L	6	3																																						
Magpie	H L M	6	3		11		1	1																																	
Mallard	H L M	11	3		20			26		5	1	1	4	3	7	8	2			1		8	12		15	1	5	2	2	12	11	17	20	10	5			4			
Marsh Harrier	H																																								
Meadow Pipit	H L M																																								
Mistle Thrush	L M	15	3	8				2	2	7	1	2	3	2	1	2	2		8	2	10	17	10		14																
Mixed gulls	H L M	500			1090		160	15	1455	30																															
Mute Swan	L																																								
Peregrine	L M																																								
Pied Wagtail	L M	1		5			4	4	4	2																															
Red Kite	L																																								
Redwing	L M	15	4	28	7	2	30	19		159																															
Reed Bunting	L M																																								
Ring-billed Gull	L																																								
Sand Martin	L M																																								
Siskin	L M	10																																							
Skylark	L M																																								
Small gull sp	H L	8																																							
Song Thrush	H L M																																								
Sparrowhawk	H L M																																								
Starling	H L M																																								
Stock Dove	H L M																																								
Teal	L	3																																							
Willow Warbler	L																																								
Wood Pigeon	H L M	2	38	4	43	22	6	94	91	18	93	20	65	24	8	20	5	12	11	56	11	9	2	7	2	8	8	10	5	17	2	11									

