

INTRODUCTION

Open and uncultivated hill ground covers between one quarter and one third of Britain and forms by far the largest remaining extent of undeveloped habitat. This expanse of about seven million hectares contains areas which are the nearest condition to real wilderness that our island can show. Our mountains are small-scale and relatively insignificant compared with the great alpine ranges of the World, but they are a much-loved part of the landscape with an endless fascination for mountaineers and naturalists alike. Much of their interest lies in their variety, for no two hill districts are quite alike, and their extremes show striking contrasts. The jagged and precipitous gabbro peaks of the Black Cuillin in Skye could not be more different from the almost flat and tundra-like peat moors of Caithness; and the massive, snowy arctic-alpine tableland of the high Cairngorms contrasts with the peat-clad plateau of central Dartmoor, though both are granite. These differences add diversity to the bird life.

Roughly one quarter of Ireland, covering nearly two million hectares, consists of mountain and upland type habitats, again of widely varying character. Most of the high massifs lie around the periphery of the country, surrounding the large central plain which once contained large and undisturbed peat bogs.

The terms mountain, upland, moorland and hill are all variably and loosely applied to high ground in Britain and Ireland. For the sake of brevity I shall hereafter tend to use *upland* as a general omnibus category to cover all: but the word is not to be understood here in its more limited agricultural usage. Upland habitats are, broadly, the open and unenclosed heaths, grasslands, peat bogs and rocky terrain lying above the limits of cultivation. Land above a certain elevation is implied, but there are difficulties to delineating mountains and uplands by any particular altitudinal limits. The ecological character of the ground, in terms of controlling environment, vegetation and animal community (the ecosystem) is the definitive feature. And there are great variations in the lowest elevations at which distinctively upland ecosystems appear, because they depend on controlling gradients of climate giving marked differences

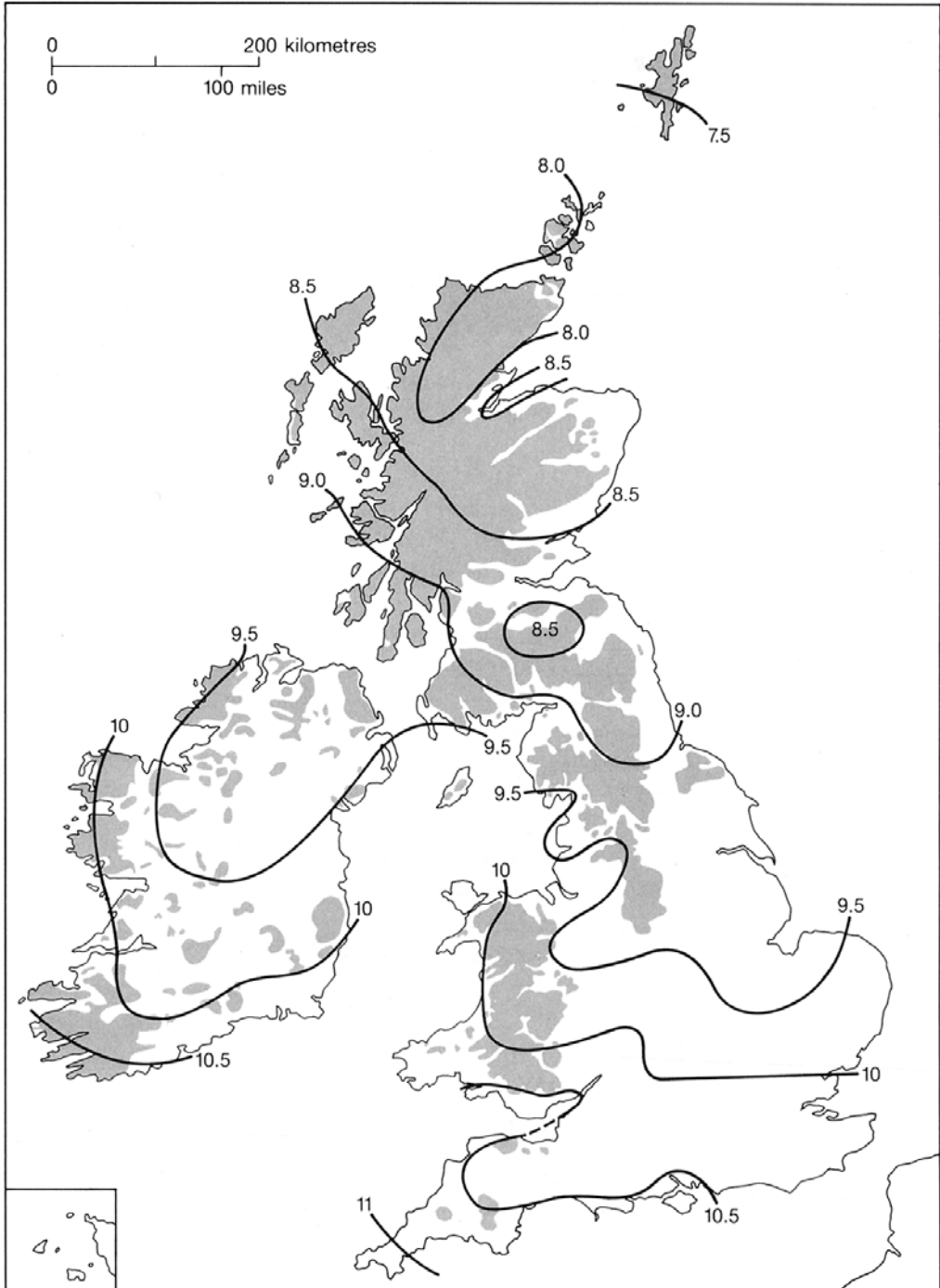


Fig. 1. Map of the distribution of upland habitats in Britain and Ireland (in black); and isotherms of mean annual temperature in °C, corrected to sea level (re-drawn from the *Climatological Atlas of the British Isles*, London, HMSO, 1952).

across Britain. Mean temperature at sea level at Lands End is 11 °C (52 °F), whereas in north Shetland it is only 7.2 °C (45 °F); and rainfall, which also has a profound effect on agricultural potential and practice, varies from an annual total of 500 mm in East Anglia to over 3000 mm in many western mountain ranges. The uplands contain other important habitats, such as woodlands, lakes and rivers, and in the north and west of Scotland, and western Ireland, they often run continuously down to the sea.

There are few kinds of wildlife whose distribution precisely characterises the uplands. Ling heather, *Calluna vulgaris*, is one of the most distinctive plants, but also covers large areas of heathland in the lowlands of southern and eastern England. The Red Grouse which feeds upon it perhaps best typifies the hill ground, but is often absent from the grassier uplands (Fig. 29). Few plants or animal species confined to hill ground occur in all the British or Irish uplands. Technical definitions can be made according to the detailed species composition of plant and animal communities, but which of these communities to include depends on subjective choice. In general, ground above the limits of enclosed farmland conveniently describes the scope of this book, while remembering that this is an arbitrary definition and that enclaves of similar ground often occur at lower levels within farmed areas. The list of 66 breeding bird species regarded as upland is similarly arbitrary, since some of them are widespread at lower levels and some depend at least partly on other main habitats within upland country, sometimes including farmland (Tables 1 & 2).

One of the characteristic features of mountains, including those of Britain and Ireland, is the tendency to a zoning of habitats with increasing altitude (Fig. 8). Originally, our mountains were mostly covered with a lower zone of forest, except where the ground was especially wet. This forest showed decrease in stature of the component trees in its upper parts, and eventually gave way to scrub and then to heath and grassland as increasing harshness of conditions suppressed the growth of woody plants. The upper forest edge (or tree line) varied in precise altitude, even on different parts of the same mountain, according to differences in shelter and exposure, but even more widely in different parts of the country. Its upper limit may conveniently be regarded as the approximate division between the lower, submontane (or subalpine) and the upper, montane (or alpine) zones. But Man long ago destroyed most of the original forests in these islands, and a true upper tree-line is visible in only a very few places today. Its position usually has to be inferred by the occurrence of scattered trees on cliff faces or by the character of other vegetation.

Many of the lower hill ranges were once wooded right to their summits, and would still be so today, had it not been for Man. The grasslands and heaths which now occupy their place, and are the typical upland habitats, were largely created by human activity. Yet, since they are composed

Table 1. Miscellaneous data on the breeding birds of the British and Irish uplands

1	2	3	4	5	6	7	8	9	10
Species	Period on the uplands	Onset of laying	Clutch size	Incu- bation period (days)	Fledg- ing period (days)	Altitudinal range (m)	Population size (pairs)	Wintering area	Biogeographical type
Black-throated Diver	end March–April to August–early Sept	12 May	2 (1–2)	28–30	60–65	10–350	150 decreasing	GB coastal waters, occ. inland	Mid Arctic–Boreal (H)
Red-throated Diver	end March–April to August–early Sept	27 May	2 (1–2)	26–28	38–48	10–550	1200–1500	GB & Ireland coastal waters, occ. inland (especially eastern)	High Arctic–Boreal (H)
Mallard	*early March to August–September	18 April	8–12 (5–13)	27–28	50–60	SL–610	*70 000+	GB & Ireland, lowland inland waters & coasts	Subarctic–Temperate (H)
Teal	early March to August–September	30 April	8–11 (5–13)	21–23	25–30	SL–730	*3500–6000	GB & Ireland, lowland inland waters & coasts	Low Arctic–Temperate (H)
Wigeon	end March–April to August–September	7 May	8–10 (6–12)	24–26	40–45	10–600	300–500	GB & Ireland, lowland inland waters & estuaries	Low Arctic–Boreal (P)
Common Scoter	late April–May to early August	early June	6–8 (5–11)	27–31	45–50	50–230	160–190	GB & Ireland coastal waters	Low Arctic–Boreal (H)
Red-breasted Merganser	March–April to early June (♂)	25 May	8–10 (6–14)	31–32	60–65	SL–350	2000–3000	GB & Ireland coastal waters, occ. inland	Low Arctic–Boreal (H)
Goosander	August–Sept (♀) end February–March to late May (♂)	25 April	8–11 (4–13)	30–32	60–70	10–600	900–1300 increasing	GB lowland inland waters, occ. coastal areas	Subarctic–Boreal (H)
Greylag Goose	August–Sept (♀) All year	18 April	4–6 (3–12)	27–28	50–60	SL–300	*600–1000	GB & Ireland, lowland inland habitats and estuaries	Subarctic–Temperate (P)
Golden Eagle	All year	1 April	2 (1–3)	43–45	65–75	SL–915	430 decreasing	Breeding areas, juveniles move into uplands farther afield	Boreal–Subtropical (H)
Buzzard	All year	25 April	3 (2–5)	32–38	50–55	SL–600	*12 000–15 000	Breeding areas, juveniles move into other areas	Boreal–Tropical (H & S)
Red Kite	All year	7 April	2 (1–3)	31–32	50–60	100–400	40–50 increasing	Breeding areas, juveniles move into other areas	Temperate–Mediterranean (P)
Hen Harrier	*mid-March to mid-August	5 May	4–6 (3–7)	29–31	32–42	10–520	400–600 decreasing	GB & Ireland, lower hill ground, marginal land, lowland coastal areas	Subarctic–Temperate (H & S)

Peregrine	All year	8 April	3-4 (2-5)	29-32	38-46	SL - 975	*1000+ (c.650 upland) increasing 550-650 decreasing	Breeding areas, some pairs and juveniles move to lower or more southerly ground GB & Ireland lowlands & coasts, occ. move- ment to mainland Europe Lower hill ground, & juveniles move widely into lowlands	Low Arctic-Tropical (C)
Merlin	*March to August -September	10 May	4-5 (3-6)	26-28	26-32	SL - 600	*50 000- 80 000	Breeding areas, strongly sedentary Breeding areas, descending lower in severe weather	Subarctic-Boreal (H)
Kestrel	All year	1 May	4-6 (3-7)	27-29	27-32	SL - 600	300 000 decreasing 10 000	Breeding areas, strongly sedentary	Boreal-Tropical (OW)
Red Grouse	All year	20 April	6-10 (4-12)	20-24	30-35	SL - 820	decreasing	Breeding areas, strongly sedentary	Low Arctic-Boreal (H)
Ptarmigan	All year	15 May	5-8 (3-10)	21-23	28-33	350 - 1265	10 000	Breeding areas, descending lower in severe weather	High Arctic-Alpine (H)
Black Grouse	All year	28 April	6-11 (4-12)	25-27	35-40	SL - 500	10 000- 30 000	Breeding areas, strongly sedentary	Boreal-Temperate (P)
Oystercatcher	early March to end July	1 May	2-3 (1-4)	24-27	28-32	SL - 490	decreasing *40 000- 50 000	Coastal GB, Ireland, France, Iberia	Subarctic- Temperate (C) disjunct
Lapwing	mid-February to June-early July	7 April	4 (3-5)	26-29	35-40	SL - 610	*215 000 decreasing	GB, Ireland, France, Iberia	Boreal-Temperate (P)
Golden Plover	*mid February to early July	20 April	4 (3-4)	28-32	25-33	10 - 1040	28 000 decreasing *8 600	Mainly GB & Ireland, fewer in W Europe	Low Arctic-Boreal (P)
Ringed Plover	end March to late July-August	12 May	4 (3-4)	23-25	23-26	SL - 430	500+ increasing	Coastal GB, Ireland, France, Iberia N. Africa & Middle East	High Arctic- Temperate (H)
Dotterel	late April to mid August	27 May	3 (2-3)	24-28	25-30	600-1200	40 000 decreasing *45 000- 50 000	GB, Ireland, NW Europe	Mid Arctic-Alpine (P) disjunct
Snipe	late March to end August	1 May	4 (3-4)	18-20	19-20	SL - 800	500 increasing	Coast of Africa, especially the west	Low Arctic-Tropical (H & S) disjunct
Curlew	February-March to late June-July	27 April	4 (3-4)	28-30	32-40	SL - 650	50 000	Western GB & Ireland, some to coast of France & Iberia	Boreal-Temperate (P)
Whimbrel	late April-early May to late July	20 May	4 (3-4)	27-28	30-38	SL - 300	500 increasing	Coast of Africa, especially the west	Low Arctic-Boreal (H)
Wood Sandpiper	early May to July	late May	4	22-23	c. 30	120 - 560	3-12	Africa, S of Sahara	Low Arctic-Boreal (P)
Common Sandpiper	mid-April to August	12 May	4 (3-4)	21-22	26-28	SL - 930	22 000- 25 000	Africa, S of Sahara	Subarctic- Temperate (P)
Redshank	mid-March to end June-July	end April	4 (3-4)	23-24	25-35	SL - 730	*34 000- 37 000	Mainly coastal GB & Ireland, some NW Europe	Subarctic- Temperate (P)
Greenshank	end March-early April to late June-July	4 May	4 (3-4)	23-26	25-31	30 - 685	1545 decreasing	Ireland & western GB, Africa, Middle East	Subarctic- Boreal (P)
Dunlin	early April to late June-July	4 May	4 (3-4)	21-23	19-21	SL - 1070	9000- 10 000 decreasing	North-west and Tropical West Africa	Mid Arctic-Boreal (H)

Table 1. (continued)

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Species	Period on the uplands	Onset of laying	Clutch size	Incubation period (days)	Fledging period (days)	Altitudinal range (m)	Population size (pairs)	Wintering area	Biogeographical type
Purple Sandpiper	early May to end July–August	early June	4 (3–4)	21–22	c. 21	800–1200	1–4	Coastal GB, Ireland & NW Europe	High Arctic–Subarctic (H)
Temminck's Stint	mid–late May to August	mid June	4 (3–4)	19–22	17–18	100–320	<6	Mediterranean, Middle East & Tropical Africa	Low Arctic–Subarctic (P)
Ruff	end April–May to July	end May	4 (3–4)	20–24	25–28	120?	*10–12	W coastal Europe & Africa	Low Arctic–Temperate (P)
Red-necked Phalarope	mid–May to late August	early June	4	17–21	20	SL–125	19	Arabian Sea	Low Arctic–Subarctic (H)
Arctic Skua	late April to mid August	25 May	1–2	25–28	25–30	10–380	decreasing 3400	Open sea: North & South Atlantic	High Arctic–Subarctic (H)
Great Skua	early April to mid August–September	18 May	1–2	27–31	40–51	10–380	7900	Open sea: North & South Atlantic	Antarctic–N Atlantic disjunct
Great Black-backed Gull	end March to late July	5 May	3	27–29	42–56	SL–500	*25 000	Local movement S within GB & Ireland, a few to France & Iberia	Northern Atlantic (H)
Lesser Black-backed Gull	late March to July–August	1 May	3	25–27	35–40	SL–560	*85 000	Coastal France, Iberia, W Mediterranean, NW Africa	Low Arctic–West European (P)
Herring Gull	early March to end July–August	1 May	3	25–27	35–40	SL–560	*<300 000	Local movement S, mostly remaining in GB & Ireland	Low Arctic–Mediterranean (H)
Common Gull	March–April to July	10 May	3	23–25	35	SL–870	*50 000	Local movement S & SW, tending to reach Ireland & Irish Sea	Low Arctic–Boreal (H)
Black-headed Gull	mid March to July	1 May	3	22–24	35	SL–870	*150–300 000	Wide but variable movements within GB & Ireland, a few to Europe	Subarctic–Temperate (P)
Stock Dove	mid March to end July–early August	20 April	2	16–18	20–30	10–460	*100 000	Local movements to adjoining lowlands in GB & Ireland	Boreal–Temperate (P)
Cuckoo	late April to July–August	20 May	9–12	12–13	19–23	SL–600	*17 500–35 000	Central & South Africa, Saudi Arabia	Boreal–Tropical (OW)
Short-eared Owl	*early March to August	25 April	4–7 (3–14)	25–27	24–27	SL–550	*1000	Movement to lowlands & coasts of GB, and some to adjoining Europe	Low Arctic–Temperate (H & S)

Snowy Owl	All year	mid May– early June	5 (1–7)	30–33	43–50	150	0–1	Movement around Shetland Isles	High–Low Arctic (H)
Nightjar	late May to August	mid June	2	17–18	16–18	10–370	* <2100 decrease since 1940	Africa	Boreal– Mediterranean (P)
Skylark	late February to September	7 May	4 (3–5)	11–12	18–20	SL–900	*2 000 000+	Local movements to adjoining lowlands in GB & Ireland	Boreal– Mediterranean (P)
Shore Lark	end April to September	end May	2–4	10–11	16–18	1000?	0–1	East coast of Britain, NE and central Europe	Mid Arctic– Temperate (H)
Raven	All year	5 March	4–6 (3–7)	20–21	35–42	SL–750	*4000– 5000 decreasing	Breeding areas, sedentary, juveniles disperse to other areas	Mid Arctic–Tropical (H)
Carrion & Hooded Crow	All year	20 April	3–5 (3–6)	18–21	30–35	SL–550	*1 000 000	Breeding areas, sedentary, juveniles disperse to other areas	Subarctic– Temperate (P)
Jackdaw	All year	25 April	4–6	17–18	30–35	SL–370	*500 000+	Winter flocks in lowlands adjoining upland breeding areas	Boreal– Mediterranean (P)
Chough	All year	28 April	4–5 (3–6)	17–18	30–35	SL–450	*900–1000	Sedentary, local move- ments adjoining breeding areas	Alpine– Mediterranean (P)
Wren	All year	7 May	4–6 (3–7)	14–15	16–17	10–900	*3– 5 000 000	Some movement to lower ground within or beyond the uplands	Subarctic– Temperate (H)
Dipper	All year	25 March	4–5 (3–6)	15–17	20–24	10–750	*c.30 000 local decrease	Breeding areas, strongly sedentary	Boreal– Temperate (P)
Ring Ouzel	late March to late September	18 April	4 (3–5)	12–15	14–16	50–915	8000– 16 000 ?decreasing	Mediterranean – NW Africa	Subarctic–Alpine (P)
Wheatear	late March to end August	12 May	4–7 (2–8)	12–14	14–16	SL–1220	*80 000 decreasing	Tropical Africa	Mid Arctic– Temperate (H)
Stonechat	All year, or late March to August	1 April	4–6 (2–7)	13–14	12–15	SL–500	*30– 60 000	From breeding areas to southern & coastal Britain, and W Europe	Boreal–Tropical (OW) disjunct
Whinchat	late April to early September	12 May	4–7	12–14	12–14	10–450	*20– 40 000	Tropical Africa	Boreal–Temperate (P)
Meadow Pipit	late March to mid July–early September	7 May	4–5 (3–5)	12–14	13	SL–1220	*3 000 000	General movement to lowlands & southwards in GB & Ireland	Subarctic Temperate (P)
Pied Wagtail	end February to late September	20 April	5–6 (3–7)	13–14	15–16	10–600	*500 000	Southwards movement to lowlands GB & Ireland, France, Iberia, N Africa	Low Arctic–Tropical (P)

Table 1. (continued)

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Species	Period on the uplands	Onset of laying	Clutch size	Incubation period (days)	Fledging period (days)	Altitudinal range (m)	Population size (pairs)	Wintering area	Biogeographical type
Grey Wagtail	mid March to early September	20 April	4-6 (3-7)	13-14	15-16	10-670	*25-50 000	Southwards movement to lowlands GB & Ireland, France, Iberia, N Africa	Boreal-Temperate (P)
Twite	end April-May to August-September	late May	5-6 (4-7)	12-13	15	SL-500	20-40 000	Moves to coasts, of Scotland, NW & E England, W Ireland	Boreal-Temperate (P) disjunct
Lapland Bunting	end April to August	end May	5 (4-6)	13-14	12-15	c.915	0-16	Coastal areas of GB & Ireland especially in the east	High Arctic-Subarctic (H)
Snow Bunting	All year?	4 June	5-6 (4-7)	12-15	12-14	800-1200	6-80 increased since 1960	Scottish breeders may remain in the uplands	High Arctic-Subarctic (H)

- Species**
- Period on the uplands**
Differences in weather can cause this to vary from year to year. Movements may also vary between regions. Those species marked * sometimes winter on lower moors or around the edges of upland massifs, and some of those which are generally sedentary show some degree of movement to lower ground, especially during hard winters.
- Onset of laying**
This aims to give an average date by which at least 10% of the total breeding population has begun to lay. There can be variations between years according to weather, between regions for widespread species, and according to altitude.
- Clutch size**
Normal; range in brackets
- Incubation period and**
- Fledging period**
Variation and duration tend to increase with size of species, and according to external factors, especially weather, food supply and disturbance.
- Altitudinal range**
This is based on the normal range for regular breeding and omits some isolated extreme records. Those species breeding on sea cliffs are given as sea level (SL) though in practice they nest above the zone of heavy wave action.
- Population size**
The most recent figures available are given. Those species marked * have a distribution substantially wider than the uplands, but the size of their upland populations is not known. Includes Ireland.
- Wintering area**
As far as possible, this indicates the movement of the population in Britain and Ireland, but for some species only the generalised winter distribution is known for a much larger European population.
- Biogeographical type**
This refers to World breeding distribution and is assessed from sources named on p. 00.
H, Holarctic
P, Palaearctic
OW, Widespread in the Old World
S, Southern Hemisphere
C, Cosmopolitan

Table 2. Distribution of upland birds within Britain

	Dartmoor & Exmoor	South & Mid Wales	North Wales	Peak District	North York Moors	Mid-Pennines & Bowland Fells	Northern Pennines	Lake District	Cheviot	East Southern Uplands	West Southern Uplands	Argyll (inc Bute - south & mid Ebuades)	West Grampians	East Grampians & Cairngorms	West Inverness & Skye	Ross & Cromarty	Sutherland & Caithness	Outer Hebrides	Orkney	Shetland
Black-throated Diver																				
Red-throated Diver																				
Mallard																				
Teal																				
Wigeon																				
Common Scoter																				
Red-breasted Merganser																				
Goosander																				
Greylag Goose																				
Golden Eagle																				
Buzzard																				
Red Kite																				
Hen Harrier																				
Peregrine																				
Merlin																				
Kestrel																				
Red Grouse																				
Parmigan																				
Black Grouse																				
Oystercatcher																				
Lapwing																				
Ringed Plover																				
Golden Plover																				
Dotterel																				
Snipe																				
Curlew																				
Whimbrel																				

