Wash Wader Ringing Group
2018/2019 Report

AIMS OF THE WASH WADER RINGING GROUP

The Group aims to monitor waders using the Wash, to provide a better understanding of their biology. This will allow decisions which may affect these waders to be taken in the light of factual information.

Work concentrates on eleven target species (Oystercatcher, Ringed Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank and Turnstone), studying:

- the patterns of migration and origin of each species and any known populations;
- the importance of the Wash as a whole;
- the importance of sub-areas of the Wash;
- the use of biometrics and other techniques to understand how birds use the Wash;
- long-term population dynamics.

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Honorary President
Clive Minton
7 Oct 1934–6 Nov 2019

Group Leader
Phil Ireland

Secretary
Jenny Wallace

Treasurer
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Wash Wader Ringing Group, Terrington St Clement.

Front Cover: Dr Clive Minton, Group founder and Honorary President who sadly passed away in 2019.

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Waders at the pits, Snettisham (Cathy Ryden)

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We are extremely grateful for the help and support that the Group receives from a large number of individuals and organisations, including:

- The many landowners, farmers and their staff around the Wash who allow us access to their land, foreshores and, through their co-operation, enable catches to be made.
- Natural England for arranging consent to make catches within the Wash Site of Special Scientific Interest.
- John Austen and the Ken Hill Estate for continued access to the Snettisham Coastal Park and for permission to make catches both on the adjacent beaches and on the Ken Hill Estate. We wish John a happy and fruitful retirement and look forward to working with his replacement, Nick Padwick, in the future.
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- Members of the public who have come across us in the field and have co-operated to help with our catching operations.
- All of the Group members who help on field trips, behind the scenes and those who have submitted colour-mark resightings.

MAP OF THE WASH

INTRODUCTION

This report covers the Group's activities in the years 2018 and 2019. As usual, fieldwork was carried out largely on whole weekend visits to the Wash over the winter months, with some one-night mist-netting catches and longer visits during the autumn passage period. The Group now seeks to maximise the value of its fieldwork using colour rings on a number of species, so that both survival and movement data can be collected without the need to recapture individual birds. At least one tide in each fieldwork session is now often devoted to resighting colour marks rather than catching. Catching success in both years was similar and typical of other recent years, with a total catch around the 3,000 mark. Cannon-netting accounted for about three quarters of the birds caught. In both years, Sanderling and Bar-tailed Godwit headed the species list for birds cannon-netted with Redshank and Dunlin topping the list for birds mist-netted. Support for the Group's fieldwork continues to be strong and limitations on accommodation and the need to have an adequate mix between experienced and inexperienced participants has, regrettably, made it necessary to turn down some would-be participants.

Phil Ireland

FIELDWORK

2018 Fieldwork

Our fieldwork in 2018 started on the first weekend of the year and followed the typical structure, with the setting of cannon nets after high tide on Friday evening, taking the catch on Saturday morning, mist-netting on Saturday evening and resighting on Sunday morning. On this occasion the result was a mixed catch of Oystercatchers and Bar-tailed Godwit on Saturday morning and a mist-net catch, which was unusual in that it included 13 Black-tailed Godwit and a Lapwing.

A new feature of our fieldwork programme in 2018 was additional weekends specifically for colour-mark resighting; occasionally combined with a single tide evening mist-netting session – when the weather allowed. The first of these was the last weekend in January, when a small team managed 54 sightings despite challenging weather.

Mid-February saw the next fieldwork session and, due to unsuitable tides, the only one where catching was scheduled until July. On this occasion cannon-netting on Snettisham beach failed, but a small mist-net catch at Terrington included an Oystercatcher ringed by the Group 30 years previously, making it older than many of the team! Sunday saw further resighting.

Resighting fieldwork in March followed a period of severe weather, dubbed 'the Beast from the East' by the press, so we walked the tideline to check for corpses. Thankfully, although some were found, there was nowhere near as much additional mortality as we saw in the last really severe spell in February 1991 when we collected hundreds of dead birds. There was still the opportunity for resighting, mainly of Curlew and Bar-tailed Godwit.

Our AGM and maintenance weekend was held in June. This was followed in mid-July by the first of the autumn passage fieldwork trips, although on this occasion recces found little other than Oystercatchers on Heacham beach. We made a catch of 101 Oystercatchers, although not before a microlight had disturbed the flock. Once again we saw the age to which these birds can live with one which was at least 26-years-old.

There were two main autumn passage fieldwork sessions in mid-August and mid-September. At the former, although nominally working as two teams, the recces and catching opportunities dictated the need for flexibility, with teams being combined and separated to make best use of the opportunities. Highlights included the Group's largest ever Bar-tailed Godwit catch (by 3 birds!) and the mist-netting of a Terek Sandpiper (the first ringed in Britain or Ireland). Overall, we cannon-netted 1,463 waders and mist-netted 418 - a total of 1,881 for the week.

The September autumn passage session started with early morning mist-netting, then cannon-netting until dark enough for mist-netting in the evenings later in the week. Once again flexibility by the teams was needed to make the most of our opportunities. The result was a number of fairly small cannon-net catches totalling 393 birds, whereas four mist-netting sessions accounted for 422 birds. One of the highlights of this fieldwork session was the presence of Clive Minton, the Group's founder, for what we now know would be his last visit to the Wash. On an evening off he regaled the team with memorable stories from the early years of the Group.

In late October strong onshore winds precluded cannon-netting on Saturday, so the team spread

out doing recces and resighting colour-marked birds. Similarly, evening mist-netting was off but, with a calmer forecast, nets were set on Snettisham ready for Sunday and we caught 151 Oystercatchers.

November fieldwork was also frustrated by weather and the time of tide relative to sunrise. Despite this, a valuable catch of 17 Grey Plover was taken on Sunday. Our final fieldwork in 2018 was at Christmas. But the weather again frustrated us and no nets were even set, there were some useful resighting sessions, a fun visit to birdwatch at Welney WWT (thankfully, from inside a nice, warm hide) and a good time was had by all!

2019 Fieldwork

The year's fieldwork followed our usual pattern, with cannon-netting mist-netting in January to March, an intensive period of fieldwork during autumn passage and then wintering waders.

January's catching attempt was thwarted by poor weather and birds not behaving as expected so, unusually for WWRG fieldwork, no birds were caught. It was, however, a number of resightings of flagged birds were made.

February's fieldwork was far more successful with catches on all three of the tides. A catch of 189 Oystercatchers on Saturday morning was followed by a mist-net catch of 108 birds (mainly Dunlin and Redshank) in the evening and a cannon-net catch of Sanderling and Turnstone on Sunday morning. A number of colour-mark observations were made (mainly Curlew) and the weekend was also notable for non-wader observations. A Harbour Porpoise was seen and a flock of 12 Bewick's Swans spotted flying past. Two of the swans were wearing WWT neck collars and we later heard that they had made it to Denmark by the following morning.

March saw a small team assemble for a very successful colour-mark resighting session, but the planned mist-netting had to be called off due to poor weather. No further fieldwork was then scheduled until July when we held our AGM.

There were two autumn passage periods of field work, the first at the start of August. Although nominally two teams, both teams travelled between the sides of the Wash. One of the difficulties was that weather conditions and tide heights meant that many species chose to stay on the saltmarsh rather than come over the sea wall to roost on fields. The largest catch was 372 on Snettisham beach, while two mist-net sessions provided 124 birds. Also remarkable was that the highest species total was for Black-tailed Godwit!

The second autumn passage fieldwork session was in late August/early September and once again there were limited catching opportunities. The Royal Estate provided some good options at the start of the week and, with both the Norfolk and Lincolnshire teams present and nets set on two fields, we made our biggest catch of the week (455 birds, mainly Bar-tailed Godwit). Apart from this, our largest cannon-net catch was 87. Mist-netting was possible on two evening tides at the end of the week and both teams caught respectable numbers.

Tide heights relative to sunrise and sunset and weather conditions restricted catching opportunities for the late September fieldwork. The only catching attempt was on the rising tide site on Heacham beach, for Oystercatchers, but the birds did not cooperate. Valuable colour-mark resightings were made on Saturday morning but Sunday was a wash-out.

October fieldwork proved equally frustrating, with unhelpful tide times, poor weather forecasts plus the change from British Summer time to Greenwich Mean Time. Morning mist-netting, which had been an option, was ruled out by the weather, as was the falling tide site on Saturday evening. Sunday morning, another rare occasion for morning mist-netting, also had to be abandoned due to wind.

Luck had to change some time and the November fieldwork was blessed with good weather. There were cannon-netting attempts on both morning tides and mist-netting on Saturday evening. In the event, the cannon-netting proved less successful with just three Turnstone on Sunday. However, the mist-netting exceeded expectations with 163 caught, including a Snipe and a Wigeon. Sadly, after the catch on Sunday morning we took the opportunity to make a short video to send to Australia for the memorial service for Clive Minton, who had recently died in a road traffic accident – see obituary page 15.

Our final fieldwork of the year was a trial mist-netting at a new location at Frieston. The catch was just 19 birds, although the two Redshank being the first to be flagged as part of a new Group scheme, but we learnt a lot about the site.

TOTALS

Totals of birds caught in 2018 and 2019 are given in Table 1, with details by catch in Tables 2 and 3 and totals of birds caught since 1959 in Table 4. In Tables 2 and 3 the top line records the catching site using a three character code. The first two characters identify the general area (see foot of Tables 2 and 3) and the third character identifies the exact location. The second line gives the day and month of the catch and the third line gives cannon nets fired or mist nets set (shown in brackets).

Phil Ireland

Table 1. Totals for 2018, 2019 and Grand Total since 1959.

	2018			2019			Grand Total
	Newly ringed	Retrap	Total	Newly ringed	Retrap	Total	1959-2019 (newly ringed)
Oystercatcher	583	101	684	302	65	367	40,521
Avocet	0	0	0	0	0	0	4
Stone-curlew	0	0	0	0	0	0	1
Little Ringed Plover	0	0	0	0	0	0	13
Ringed Plover	4	0	4	5	0	5	1,437
Golden Plover	0	0	0	0	0	0	380
Grey Plover	29	1	30	19	0	19	6,510
Lapwing	1	0	1	0	0	0	71
Knot	165	10	175	84	0	84	58,492
Sanderling	540	103	643	298	74	372	15,950
Little Stint	0	0	0	0	0	0	52
Pectoral Sandpiper	0	0	0	0	0	0	1
Curlew Sandpiper	0	0	0	0	0	0	322
Purple Sandpiper	0	0	0	0	0	0	43
Dunlin	304	10	314	447	13	460	140,615
Broad-billed Sandpiper	0	0	0	0	0	0	1
Ruff	0	0	0	1	0	1	124
Jack Snipe	0	0	0	0	0	0	2
Snipe	0	0	0	1	0	1	66
Black-tailed Godwit	40	0	40	296	4	300	2,217
Bar-tailed Godwit	483	79	562	369	81	450	9,803
Whimbrel	7	0	7	3	0	3	227
Curlew	72	10	82	43	8	51	6,163
Common Sandpiper	0	0	0	3	0	3	58
Green Sandpiper	0	0	0	0	0	0	7
Terek Sandpiper	1	0	1	0	0	0	1
Spotted Redshank	0	0	0	0	0	0	85
Greenshank	9	0	9	0	0	0	255
Wood Sandpiper	0	0	0	0	0	0	3
Redshank	611	12	623	292	8	300	18,505
Turnstone	23	0	23	40	3	43	7,500
TOTAL; Waders	**2,872**	**326**	**3,198**	**2,203**	**256**	**2,459**	**309,429**
Herring Gull	1	0	0	0	0	0	
Black-headed Gull	1	0	0	1	0	0	
Little Grebe	1	0	0	0	0	0	
Starling	0	0	0	4	0	0	
Wigeon	0	0	0	1	0	0	
TOTAL; Non Waders	**3**	**0**	**3**	**6**	**0**	**6**	
GRAND TOTALS	**2,875**	**326**	**3,201**	**2,209**	**256**	**2,465**	

Table 2. Catch totals for 2018

Site Code	HET	AFS	AFS	HET	SNX	HET	WMW	WTH	SNB	HEK	AFS	LVV	AFS	GEX	LVT	WTH	WTV	FMA
Date	06-01	06-01	17-02	14-07	12-08	12-08	12-08	13-08	14-08	15-08	15-08	16-08	16-08	08-09	09-09	09-09	10-09	10-09
Nets fired / (mist nets)	1	(16)	(17)	1		1	2	1	1	1	(27)	(9)	(13)	(13)	1	1	1	-
--- Newly Ringed ---																		
Oystercatcher	27	1	2	83	2	4	150	190				1						
Ringed Plover					2	1					1							
Grey Plover		5									1				4			
Lapwing		1																
Knot		1							155			1		3				
Sanderling					87	220												
Dunlin		57	36		8	2	1	5			41	55	40	4	2			
Black-tailed Godwit		13									1		4					
Bar-tailed Godwit	33	1							438			1						
Whimbrel											3		3					
Curlew		1							9	26		1					2	
Redshank		13	7		1						170	24	51	23		28		
Greenshank											3					4		
Terek Sandpiper											1							
Turnstone					3						10	1						
TOTAL RINGED	**60**	**93**	**45**	**83**	**103**	**227**	**151**	**195**	**602**	**26**	**231**	**84**	**98**	**30**	**6**	**32**	**2**	**0**

Site Code	HET	AFS	AFS	HET	SNX	HET	WMW	WTH	SNB	HEK	AFS	LVV	AFS	GEX	LVT	WTH	WTV	FMA
Date	06-01	06-01	17-02	14-07	12-08	12-08	12-08	13-08	14-08	15-08	15-08	16-08	16-08	08-09	09-09	09-09	10-09	10-09
Nets fired / (mist nets)	1	(16)	(17)	1		1	2	1	1	1	(27)	(9)	(13)	(13)	1	1	1	-
--- Retraps / Controls ---																		
Oystercatcher	9		1	18			15	29										
Ringed Plover																		
Grey Plover															1			
Knot									10									
Sanderling					2	26												
Dunlin		5	3								1	1						
Black-tailed Godwit																		
Bar-tailed Godwit	7		1						68			2						
Curlew									3	6								
Redshank		5									1			1				
Turnstone																		
TOTAL CONTROLS	**16**	**10**	**5**	**18**	**2**	**26**	**15**	**29**	**81**	**6**	**2**	**3**	**0**	**1**	**1**	**0**	**0**	**0**
WADER CATCH TOTAL	**76**	**103**	**50**	**101**	**105**	**253**	**166**	**224**	**683**	**32**	**233**	**87**	**98**	**31**	**7**	**32**	**2**	**0**

Table 2. Catch totals for 2018 (continued)

Site Code **Date** **Nets fired / (mist nets)**	FMD 12-09 2	LVF 12-09 2	AFS 12-09 (19)	HEW 13-09 1	HEW 13-09 1	AFS 13-09 (19)	LVU 14-09 (5)	SNX 28-10 1	SNX 25-11 1	**Total**
--- Newly Ringed ---										
Oystercatcher								122	1	**583**
Ringed Plover										**4**
Grey Plover							1	1	17	**29**
Lapwing										**1**
Knot			2			1	1		1	**165**
Sanderling				47	186					**540**
Dunlin			11		9	12	21			**304**
Black-tailed Godwit			4			18				**40**
Bar-tailed Godwit		2	2			3	3			**483**
Whimbrel			1							**7**
Curlew	18	13				2				**72**
Redshank			151			115	28			**611**
Greenshank						2				**9**
Terek Sandpiper										**1**
Turnstone			4		1	2	1	1		**23**
TOTAL RINGED	**18**	**15**	**175**	**47**	**196**	**155**	**55**	**124**	**19**	**2,872**

Site Code **Date** **Nets fired / (mist nets)**	FMD 12-09 2	LVF 12-09 2	AFS 12-09 (19)	HEW 13-09 1	HEW 13-09 1	AFS 13-09 (19)	LVU 14-09 (5)	SNX 28-10 1	SNX 25-11 1	**Total**
--- Retraps / Controls ---										
Oystercatcher								29		**101**
Ringed Plover										**0**
Grey Plover										**1**
Knot										**10**
Sanderling				2	73					**103**
Dunlin										**10**
Black-tailed Godwit										**0**
Bar-tailed Godwit							1			**79**
Curlew	1									**10**
Redshank			2			2	1			**12**
Turnstone										**0**
TOTAL CONTROLS	**1**	**0**	**2**	**2**	**73**	**2**	**2**	**29**	**0**	**326**
TOTAL WADERS	**19**	**15**	**177**	**49**	**269**	**157**	**57**	**153**	**19**	**3,198**

	SNX 12-08	GEX 08-09 (13)	FMA 10-09 -	**Total**
Herring Gull		1		**1**
Black-headed Gull	1			**1**
Little Grebe			1	**1**
NON-WADERS	**1**	**1**	**1**	**3**

Sanderling Heacham NN (Cathy Ryden)

Site codes used: AF = Terrington; FM = Friskney; GE = Gedney; HE = Heacham; LV = Leverton;
SN = Snettisham; WM = Wainfleet; WT = Wrangle. The third letter defines a sub-division of a site. See Wash Map p. 2.

Table 3. Catch totals for 2019

Site Code	HET	AFS	HEW	WTH	HET	SNC	SNC	SNX	WME	WTH	WTH	AFT	SNC	WTV	HET
Date	23-02	23-02	24-02	01-08	02-08	02-08	03-08	03-08	04-08	05-08	05-08	05-08	06-08	31-08	31-08
Nets fired / (mist nets)	1	(16)	1	1	1	2	2	1	1	1	(9)	(21)	2	2	1
--- Newly Ringed ---															
Oystercatcher	163	4			62			5		59					
Ringed Plover								4							
Grey Plover		1													
Knot		1									3				
Sanderling			32					212							54
Dunlin		69	1					125			41	13			
Ruff															
Snipe															
Black-tailed Godwit		2				103	146						6		
Bar-tailed Godwit											1				
Whimbrel												1			
Curlew		4							1					4	
Common Sandpiper											3				
Redshank		21		22							9	53			
Turnstone			20					2							
TOTAL RINGED	**163**	**102**	**53**	**22**	**62**	**103**	**146**	**348**	**1**	**59**	**57**	**67**	**6**	**4**	**54**

Site Code	HET	AFS	HEW	WTH	HET	SNC	SNC	SNX	WME	WTH	WTH	AFT	SNC	WTV	HET
Date	23-02	23-02	24-02	01-08	02-08	02-08	03-08	03-08	04-08	05-08	05-08	05-08	06-08	31-08	31-08
Nets fired / (mist nets)	1	(16)	1	1	1	2	2	1	1	1	(9)	(21)	2	2	1
--- Retraps / Controls ---															
Oystercatcher	26	1			28					9					
Ringed Plover															
Grey Plover															
Knot															
Sanderling			34					22							18
Dunlin		2						2			2	1			
Black-tailed Godwit							3								
Bar-tailed Godwit															
Curlew															
Redshank		3		1											
Turnstone			2												
TOTAL CONTROLS	**26**	**6**	**36**	**1**	**28**	**0**	**3**	**24**	**0**	**9**	**2**	**1**	**0**	**0**	**18**
TOTAL WADERS	**189**	**108**	**89**	**23**	**90**	**103**	**149**	**372**	**1**	**68**	**59**	**68**	**6**	**4**	**72**

Table 4. Catch totals for 2019 (continued)

Site Code	SNC	SNC	SNC	AFS	FMT	WTH	AFT	WTH	AFS	HEW	FM	Total
Date	01-09	02-09	02-09	02-09	02-09	03-09	03-09	03-09	30-11	01-12	28-12	
Nets fired / (mist nets)	2	4	2	(16)	(10)	1	(11)	(20)				
--- Newly Ringed ---												
Oystercatcher								2	7			**302**
Ringed Plover					1							**5**
Grey Plover				1	2		2	5	8			**19**
Knot	16			3	28	15		9	4		5	**84**
Sanderling												**298**
Dunlin				8	25	21	4	10	126		4	**447**
Ruff								1				**1**
Snipe									1			**1**
Black-tailed Godwit	17	22										**296**
Bar-tailed Godwit	324	1		2	32			7	2			**369**
Whimbrel				1				1				**3**
Curlew	20	3	9						2			**43**
Common Sandpiper												**3**
Redshank				65	10	50	43	11	5		3	**292**
Turnstone				6	1		1	1		2	7	**40**
TOTAL RINGED	**377**	**26**	**9**	**86**	**99**	**86**	**50**	**47**	**155**	**2**	**19**	**2,203**

Site Code	SNC	SNC	SNC	AFS	FMT	WTH	AFT	WTH	AFS	HEW	FM	Total
Date	01-09	02-09	02-09	02-09	02-09	03-09	03-09	03-09	30-11	01-12	28-12	
Nets fired / (mist nets)	2	4	2	(16)	(10)	1	(11)	(20)				
--- Retraps / Controls ---												
Oystercatcher									1			**65**
Ringed Plover												**0**
Grey Plover												**0**
Knot												**0**
Sanderling												**74**
Dunlin					1			1	4			**13**
Black-tailed Godwit		1										**4**
Bar-tailed Godwit	73				6			2				**81**
Curlew	5		2		1							**8**
Redshank						1		1	2			**8**
Turnstone										1		**3**
TOTAL CONTROLS	**78**	**1**	**2**	**0**	**8**	**1**	**0**	**4**	**7**	**1**	**0**	**256**
TOTAL WADERS	**455**	**27**	**11**	**86**	**107**	**87**	**50**	**51**	**162**	**3**	**19**	**2,459**

	SNC	FMT	AFS	Total
	03-08	02-09	30-11	
	2	(10)		
Herring Gull				**0**
Black-headed Gull		1		**1**
Little Grebe				**0**
Starling	4			**4**
Wigeon			1	**1**
NON-WADERS	**4**	**1**	**1**	**6**

Keeping cages at Horseshoe lagoon (Chantal Macleod-Nolan)

Site codes used: AF = Terrington; FM = Friskney; HE = Heacham; SN = Snettisham; WM = Wainfleet; WT = Wrangle. The third letter defines a sub-division of a site. See Wash Map p. 2.

SCIENCE ON THE WASH

The primary aim of the Group is to collect the data we need to understand how the hundreds of thousands of birds that use the Wash are faring. As their fortunes ebb and flow we consider different species at different times, safe in the knowledge that the long-term efforts of the Group give us an unrivalled, and growing, databank that we can draw on to understand the changes that we see.

Currently, the fortunes of Curlew are very much on the ebb. It has recently been described as the 'highest priority for conservation action' in Britain. Sadly it is not just our Curlew that is in trouble; around the world, eight of the other 12 members of the Numeniini tribe are also listed as globally threatened (The name Numeniini derives from the Greek for "new moon", a reference to the drooping, crescent-shaped bill they all share). In 2009, the UK breeding Curlew population was estimated at around 66,000 pairs, just seven years later this had decreased to 58,500 pairs, and numbers have continued to decline. As somewhere between a fifth and a quarter of the world population breed in Britain (with a similar proportion spending the winter here), this is clearly an important one to address.

Data from the Group are helping in two ways, by following the movements of colour-ringed birds on the Wash (which you can read about on p.12) and by contributing to a national analysis of the survival of both breeding and wintering birds.

Thanks to the efforts of the Group, and others like it elsewhere in the country, we can calculate the survival rates of Curlew back to the 1970s. Adult survival rates are around 90% (i.e. about one bird in every ten adults dies each year), which is typical for a wader of this size; young birds fare less well though, with only 35% of those ringed as young chicks making it through to the next summer. Most of these losses probably occur when the birds are still in their downy plumage - the world is a hazardous place for a bird that can't yet fly! Survival, at least of birds wintering on the Wash, has increased over time due, in part, to the ban on hunting that was introduced in 1981. Curlew survival does take a hit, though, in cold winters; we recorded a significant tumble in them during winter 2009-10 for example. But it seems that survival is not the issue, rather the number of fledged chicks that are produced each year. Work going on elsewhere, in places like the Norfolk/Suffolk Brecks (to which Group members are contributing), will help us understand this important component of their life-cycle and help us devise ways of restoring populations of this iconic species.

Although our current focus is on the Curlew, we will continue to collect data on all the species that use the Wash, and even start new projects, such as a new one on Redshank on the Lincolnshire side of the Wash, so the information is available, when needed, to help safeguard the important populations of birds that visit us every year.

Rob Robinson

Turnstone (Rob Robinson)

COLOUR-MARK RESIGHTING

The group has expanded its efforts in re-encountering colour-marked waders on the Wash in recent years. Since January 2015 we have made over 4,000 sightings of birds previously captured by the Group and marked with colour rings or engraved leg flags. We are now developing insights into how bird populations use the Wash and are able to perform survival analyses that would not be possible with metal-ringing alone. Group members have expended hundreds of hours both during catching weekends and on weekends solely dedicated to re-encountering birds to establish a unique dataset for wader study. With plans to expand our current colour-marking program to incorporate Redshank and Knot, colour mark re-encounter fieldwork continues to develop within the Group. Below is a summary of each scheme the Group participates in and the re-encounters made by WWRG members. Re-encounters of birds marked by the Group away from the Wash are addressed in the main recoveries section (p.34).

Group schemes

Grey Plover

The Group marks Grey Plover with white flags bearing two alphanumeric characters on the left tibia and a plain scheme marker on the right tibia. Birds caught prior to 2016 have a white scheme marker, birds marked from 2016 onwards have an orange scheme marker. This project started in 2010 and the Group has marked over 150 birds. Re-encounters of these birds continue to be challenging and highly sought: however, it is worth bearing in mind that the small number of sightings remain more frequent than recaptures of metal-ringed birds. We received our first overseas sighting of a WWRG-flagged Grey Plover in 2019: a bird originally flagged in September 2014 on Terrington Marsh and re-encountered in February 2019 in north-west Spain.

Grey Plover (Guy Anderson)

Grey Plover	2018	2019
Encounters	9	9
Individuals seen	4	4

Curlew

The Group marks Curlew with white flags bearing two alphanumeric characters on the left tibia and a plain scheme marker on the right tibia. Birds caught prior to 2016 have a white scheme marker, birds marked from 2016 onwards have an orange scheme marker. Over 530 individual birds have now been marked since the project started in 2012.

Birds encountered away from the Wash are typically recorded on breeding grounds in Finland and Sweden, although we have a small number of records of breeding birds in the UK (Located in the Brecklands of Norfolk). We also have records of birds on passage to the Wash from the breeding grounds (including Helgoland in Germany and Denmark). We have records of individual birds wintering away from the Wash in Kent and Devon. Over 2,700 encounters have been made of Wash-marked Curlew, the majority in the past two years. Most records are made by Wash observers, but over 100 sightings have been reported by the public. We are able to identify key differences in how Curlew use the Wash during autumn passage and winter using this information. The group has achieved the goal of establishing long-term survival monitoring in an internationally important population of this Near Threatened wader.

Curlew	2018	2019
Encounters	1,084	802
Individuals seen	193	190

Bar-tailed Godwit

The Group marks Bar-tailed Godwit with white flags bearing two alphanumeric characters on the left tibia and a plain scheme marker on the right tibia. Birds caught prior to 2016 have a white scheme marker, birds marked from 2016 onwards have an orange scheme marker. We have marked over 530 individual birds since the project began in 2010. Birds are regularly encountered throughout the species' range on the East Atlantic Flyway, which includes Russia, northern Norway, The Netherlands, Spain and Western Africa. As for Curlew, the vast majority of over 1,400 encounters have been made by Wash Group observers on the eastern shore of the Wash. Bar-tailed Godwit appear to be less site-faithful during winter than Curlew, and consequently we have a greater number of birds which 're-appear' after being missed in the previous year. Year-on-year re-encounter rates are thus relatively low for Bar-tailed Godwit (around 60%), in contrast to re-encounter rates which closely resemble the annual survival rate for Turnstone and Curlew (over 90%).

Bar-tailed Godwit	2018	2019
Encounters	619	418
Individuals seen	232	162

Bar-tailed Godwit at Heacham (Cathy Ryden)

Turnstone

Turnstone (Guy Anderson)

The Group marks Turnstone with a black scheme-marker ring on the left tibia, two colour rings on the left tarsus and two colour rings on the right tarsus. Over 200 Turnstone have been marked since the project began over 15 years ago. During that time the main capture site for marked Turnstone has shifted from Port Sutton Bridge to Heacham North Beach. A hiatus in capture and marking for this location for five years (now resolved) has resulted in a decline in the number of individuals in the project. However, a successful catch of 21 birds in 2019 has reinvigorated the project, allowing year-on-year survival estimates to be made.

Turnstone	**2018**	**2019**
Encounters	42	155
Individuals seen	14	26

Other schemes that WWRG participates in

Black-tailed Godwit

The Group continues to participate in established long-term studies of the *islandica* subspecies of Black-tailed Godwit breeding in Iceland. Colour-marking of birds captured on passage through the Wash began over a quarter of a century ago in 1993 and the group continues to mark birds caught during fieldwork. The project uses four colour rings of a range of colours to identify individuals. Re-encounters of birds marked by researchers in Iceland, Britain, Ireland, France, Spain and Portugal are frequently made by the Group (see WWRG website for list of publications).

Black-tailed Godwit	2018	2019
Encounters	44	46
Individuals seen	35	33

Greenshank

The Group marks Greenshank with two colour rings on each tibia as part of Pete Potts' long-term study based in the Solent, Hampshire. The study aims to expand our knowledge of the distribution of Greenshank and the migratory patterns of these elegant birds, which are still poorly understood. As with Grey Plover, re-encounters of these birds are challenging and a focus for future fieldwork.

Greenshank	2018	2019
Encounters	0	1
Individuals seen	0	1

Colour-marking a Black-tailed Godwit (Guy Anderson) and a colour-marked Curlew (Cathy Ryden)

Notable sightings by WWRG of birds marked by other groups

Sightings on the Wash of birds marked by other groups are often interesting and add to our overall understanding on how birds move between breeding, passage and wintering locations. Just over 100 of these encounters were made in 2018 and 2019. Below are selected highlights.

Oystercatcher

5155505 ringed on 6 July 2014 in Norway as a nestling, re-sighted feeding at Snettisham on 13 October 2018 and previously sighted by the Group at Heacham Beach South in March 2015 and at Snettisham in September 2017.

FP85208 ringed at Welwick Saltmarsh (Yorkshire side of the Humber) on 4 March 2017 by Humber Ringing Group at three years old and re-encountered at Holme on 13 October 2018 - the first re-encounter of this bird.

11038 ringed at Houten, Netherlands, by the Utrecht Ringing Group on 9 May 2018 when at least three-years-old and seen on 12 October 2018 and 13 October 2019 at Snettisham. It has subsequently been re-encountered back in The Netherlands on multiple occasions from late February onwards.

5193928 ringed as a pullus on 19 June 2018 at Rogaland, south-west Norway and re-sighted on 26 January 2019 at Snettisham. This bird is typical of a further three individuals marked by the same project in the same location as pulli and re-encountered by us in winter.

Avocet

EL93874 gained fame after being ringed as a pullus at the Dunkirk colony (Norfolk) in 2013 and subsequently 'adopted' by a pair of Oystercatchers. It has been seen by us 16 times, with encounters made more straightforward by its association with large flocks of Oystercatchers.

Bar-tailed Godwit

NflagYY/RP ringed as an adult female on the island of Terschelling (Netherlands) in August 2015 and seen on the Wash in winter on seventeen separate occasions since 2016. This individual is also consistently seen in the Netherlands Institute for Sea Research study sites on the Waddensee (on both spring and autumn passage).

Black-tailed Godwit

BB/RGflag ringed as an adult male on 11 November 2011 at the Tagus Estuary, Portugal, and seen at Snettisham RSPB reserve on 13 July 2018. It has been seen multiple times in Portugal (wintering site), the Wash (autumn

passage), the Colne Estuary in Essex (spring passage) and west Iceland (breeding grounds).

DE56499 marked as an adult on 7 September 2017 on the Swale Estuary, Kent and seen at Snettisham RSPB reserve on 14 September 2018 and 4 August 2019. Also seen over 20 times at various UK locations demonstrating the use of multiple UK sites for passage and wintering locations in contrast to the previous Portuguese-wintering individual.

580451 ringed as a pullus in Iceland on 17 July 2007 and re-encountered over 100 times in Iceland and the UK, including on autumn passage at Frampton on 29 July 2018.

Knot

SV59602 originally ringed by the group as a 'fully grown' bird in a winter catch of over 2,000 Knot on 11 February 2012 at Snettisham. It was recaptured and flagged at Skogarnes, Iceland, on 24 May 2017 and has been re-encountered at the same location in May 2018 and again at Snettisham on 10 February 2019.

SR99103 ringed at Altcar, Merseyside, on 30 March 2018 by a team led by WWRG member Richard du Feu and seen at Snettisham on 16 August 2019. It has been seen many times in the north-west and is one of a few birds marked during this project using the Wash in autumn.

7503576 ringed at Marnes, Porsanger, Norway as an adult on 24 May 2016 and seen at Snettisham on 10 September 2018. It is one of Knot migrating to the Canadian/Greenlandic breeding grounds via Norway.

Sanderling

NT91826 ringed in Hampshire by the Farlington RG on 18 September 2013 and re-encountered at Snettisham on 12 September 2018. Multiple observations over the non-breeding period have been made of this bird at several UK sites which include the Wash, Hampshire, the Isle of Wight, Merseyside and Tiree.

Redshank

DK12078 ringed as an adult on 10 December 2018 at Welwick Saltmarsh on the northern bank of the Humber Estuary by the Humber Wader RG and re-encountered at Snettisham Pitts on 30 September 2019. It is representative of an increasing number of birds marked on the Humber that we have seen on the Wash in recent years.

Rob Pell

A colour-marked Sanderling in a flock at Heacham (Cathy Ryden)

CLIVE MINTON – OUR FIRST GROUP LEADER AND HONORARY PRESIDENT

Dr Clive Dudley Thomas Minton AM
7 October 1934 – 6 November 2019

Clive Minton started the Wash Wader Ringing Group in 1959 (with rocket nets, progressing to cannon nets in 1973) and moved to Australia in 1978. He gave us 19 years of bird research in Britain, on the Wash, Morecambe Bay, the Solway and Cornwall for waders and around Staffordshire and the Midlands for other species, and 41 years in Australia, together with other world-wide input. Clive's Australian work is well documented elsewhere, but here I am recording his UK years and the development of wader-catching techniques now used effectively for the conservation of these globe-roaming species. Not for nothing was Clive known as 'The Father of Wader Studies' (the title of Roger Standen's wonderfully evocative ebook, written in 2015 from recollections and conversations with Clive and his friends and family, available at https://www.vwsg.org.com/PDFs/Mintontales.pdf).

Born in Bramhall, Cheshire, and then moving to the Wirral and later Staffordshire, Clive had access to open countryside from early childhood and the seeds of his ornithological career were sown very early. In 1947, at the age of 13, he gained a minor scholarship to Oundle School, where the active Natural History Society encouraged his interest and he started ringing. Clive told me that when one of the biology masters, who had a ringing permit, realised he was a nest-finder and egg-collector he handed over a string of small rings with the instruction to 'go and catch something and ring it' – difficult to believe in view of the current structured time-serving route to ringing permits. Of course, Clive's boundless enthusiasm meant that the school became one of the largest ringing groups in Europe in the 1950s. I found a record in the school archives recording a Great Tit that Clive ringed on 23 July 1952, that was later recaught by Chris Reynolds, who became my ringing trainer. Oundle School proved to be useful later, with a connection to Peter Scott and when visiting farmers to get permission to use their fields for catches. Permissions and goodwill set up by Clive are still of great value to WWRG.

Clive discovered waders when on holiday in Northumberland in 1951. When he saw a wader he didn't recognise, he cycled past it and dropped his coat over it but was unsure what it was. He took it to Eric Ennion at Monks' House (then being established as a Bird Observatory) who identified the young Sanderling newly arrived from Greenland. More than 60 years later, when accepting the Eisenmann medal in New York (2012), Clive noted that day as a key influence at the start of his wader studies.

Oundle School also fostered engineering. Although Clive went up to Queens' College, Cambridge in 1953 to study Natural Sciences, he chose metallurgy for his PhD and went on to spend a further three years in Cambridge, now with his wife Pat, whom he had met at Monks' House. I went up to Newnham College in October 1960 so overlapped Clive's seven years there by one academic year but as far as I recall we did not meet there. By that time Clive had discovered the vast variety and numbers of waders on the Wash, having started to catch them in 1955. With fellow-ringers he headed a team based in summer at a semi-derelict cottage on Wisbech Sewage Farm, lent to the Cambridge Bird Club (CBC). This old-fashioned sewage farm was managed in a bird-friendly way so that there were 'mature' fields of perfect wader-depth invertebrate-rich 'water' available for the autumn wader migration. It was a mega hot-spot for birders and twitchers and rarities were regularly found. On the first occasion a

Clive started a study on Mute Swans in Staffordshire in 1960, which is still running (Minton family)

clap-net was set on the sloping bank of a tank it was 'fired' over five small waders, one of which was a White-rumped Sandpiper. Thus are enthusiasms fostered. By the following year mist nets were available (having been trialled at Monk's House) and were tried experimentally on the Wash coast, across creeks behind the sea wall at Terrington and Holbeach at dusk and dawn, and overnight on Wisbech tanks.

At some time in the mid 1950s Clive joined one of Peter Scott's rocket-netting sessions targeting White-fronted Geese. Clive realised the potential of these big nets to catch the large flocks of waders he had seen loafing in fields newly cleared of crops just inside the sea wall on the Wash. In summer 1959 a team of top wildfowl researchers (Hugh Boyd, Geoffrey Matthews, Malcolm Ogilvie) brought two huge rocket nets, with all their heavy hardware, from Slimbridge to the Wash where, with Cambridge ringers from CBC, the Wash Wader Ringing Group came into being. Previously individual ringers had brought their own rings and equipment, but it was clear that the possibility of big catches meant that is was sensible to form a group and keep all the data together.

For mist-netting individual rings remained in use into the early 1970s and I have several spectacular records on my books to prove it, including a Lincolnshire Knot recovered in Thule, north-west Greenland.

Terrington, close to the Wisbech base, was chosen for the first catching attempt, the field was rough plough after peas. The nets were of the same mesh and thread sizes as current large mesh cannon nets, but 20 by 60 yards and propelled by six rockets. Both net and launching ramps were very heavy. The net was on a big drum and needed two people to carry it with a rod through the hub of the drum for ease of rolling out. The rocket fuel was military cordite which was in very short supply. The fuel-filled rockets were electrically detonated as canons are now, but flew with the net when it fired and lifted the leading edge up and then down in a curved trajectory without relying on the rear net edge as a brake. Because of the fuel scarcity, it was imperative to make a large first catch, so opportunities were turned down but, on the afternoon of 18 August 1958, the nets (probably a clap-net pair) were fired and the catch was 1,132 waders of nine different species including three Dunlin recoveries and, unusually for those times, seven Black-tailed Godwits as well as two Bar-tailed. The Wildfowl Trust keeping cages (for geese) erected nearby were made of hessian with thin bamboos in fabric channels to help them stay upright. They were fine, if a bit cumbersome, and the bamboos fell out when they were carried. Inevitably, for a first catch of this size using this size of mesh, the extraction took around two hours. It immediately became apparent that, unlike geese, where smaller numbers of the bigger birds could be taken out quickly and safely, the waders were flapping under the net for too long. Instinctively the team stripped off all excess clothing to drop over the birds and quieten them. It was an early lesson.

Top: Wisbech, Mike Watson, Daphne Watson, Clive Minton and Richard Wilson, 1969.

Bottom: Clive's visit to the Wash in August 2018, joined by Mike Watson, Steve Dodd and Daphne Watson, taken 49 years after the previous photo (Cathy Ryden).

This was the only rocket catch in 1958, but the principle had been established and the team and nets came again the next summer and for a further three years, finishing in 1963 when the Wildfowl Trust understandably felt that they should conserve the last stocks of cordite for goose projects. 'Covering material' for quietening the birds under the fired nets was scavenged from many sources; spare sheets, clothing from jumble sales, and, significantly, well-worn discarded hop sacks made of coarse hessian that were usefully dark, lightweight, long and narrow and could be opened out to a useful size. We still have some.

I first met Clive when I joined the team in Summer 1961 for weekend mist-netting at Wisbech. As an inexperienced birder and almost-new ringer I could not have been greeted with a better welcome. The warmth of his expansive and all-embracing personality drew me in immediately. Lots of passerines from a net in the cottage garden, plus my first waders (including an albino Dunlin confusingly dubbed 'Snowy Plover ') opened my eyes to the wider possibilities of ringing. I loved the frisson of danger (falling in? bacteriological?), wading deep in the smelly aged-sewage water. The companionship, and the expertise of the team, were enticing. Like so many others, in only a few moments with Clive's magic I was drawn in to a new world and a life-time obsession.

On the way home from this trip we stopped beside a fen drain near Whittlesey and caught some Mute Swans. I didn't realise it at the time but in 1960 Clive had started a study on Mute Swans in Staffordshire that continues to this day and may be the longest-running bird study anywhere in the world. It is important to note that my first experiences on meeting Clive are not unique but the norm. Everyone who knew him can tell a similar tale of influence and infectious enthusiasm from which often a lifetime of bird study, mainly via ringing, volunteer or professional, has ensued. Clive had a great gift of conveying to his team not only information but the love of it and the desire to pursue it.

Cannon nets were first used on the Wash in 1966. They were originally developed in the USA to catch Turkeys (previously impossible to catch) for introduction to other States. They (or the designs?) were imported by the then Ministry of Agriculture to catch Oystercatchers for a study of their influence on the cockle industry in south Wales. Clive got the Min. of Ag. team to come to the Wash with eight small nets. Each net was about a third of the size of a standard cannon net

Setting decoys on Wolferton Marsh in the early days - photo courtesy of Tony Tilford

and must have looked pretty small in a Wash field. To add to the problems the barrel was an integral part of the electrical circuit so, although this worked on the dry Wales fields with loafing Oystercatchers, it caused failures and misfires on salt-laden Wash sites. However, there were two successful catches yielding a total of 746 Dunlin - easily enough experience to show that this was potentially the best way forward. Clive's enthusiasm, persistence and background made him ideally suited for the job of organising the making of the kits, in company with Geoff Anderson, who was a Wash member and had his own small engineering business in the Midlands. Prototypes were made and there are good stories of their early trials and mishaps elsewhere. The initial cost was £200 and Clive wrote to all members of WWRG asking for a contribution of ten shillings (50p). Even at the time just one small brown note did not sound very much, and 53 members sent one.

So by July 1967 Clive had two 26 x 12 yard nets, each firing four 7lb projectiles attached to the net by rope and propelled by Koffman helicopter starter cartridges that had their original propellant removed and replaced by coarse black powder labelled 'Colonel Hawker's Punt Gun Powder' – which we continued to use until fairly recently. The cartridges were closed with cardboard wads sealed by candle wax carefully dripped into place from a tilted lighted candle. That caused a raised eyebrow the first time you did it but Clive, of course, was reassuring and you got more relaxed about it. The powder is really quite hard to ignite, though later use of plasticine instead of molten wax was more relaxing. Tweaks and refinements went on and Clive encouraged everyone to contribute thoughts and ideas.

1967 was a great year as we explored how to catch with cannon-nets and developed a

Clive and the team helping local ringers with a catch at Brean Down, Somerset, February 1978 Top – lift complete, Bottom – ringing – Clive on right in both pictures (Norman Clark)

scientific strategy to try to ensure that we caught representative samples of a range of species.

Other ringers wanted to use the technique. SCAN was formed for North Wales and bought two nets. The Dutch were interested (after 1964/5 work with rockets). WWRG was poised to send expertise and equipment around the globe. By 1968 we had worked out how to catch safely into the edge of the tide and started to catch Sanderling. Clive's enthusiasm led us to catch on Morecambe Bay - a catch on Piel Island on 21 December was a master class of planning and organisation that probably only Clive could have persuaded us to do. I was 23 weeks pregnant with my first son. It was bitterly cold. We walked out from Walney Island with two net sets to find an enormous Knot flock packed in tight together. We made a large catch and were delighted when the Piel pub, which was closed for the winter, opened to serve us flat beer, rather soft crisps and, joy of joys, hot water for cup-a-soups.

Earlier that same month, we had explored another option Clive had identified - Wigeon loafing on the bank of Blithfield reservoir. An easy drive from Clive's house in Shenstone it meant we could enjoy Pat and Clive's hospitality at their home instead of sleeping in a barn. We caught 144 birds - another demonstration of the versatility of the new technique.

In the mid-1970s there was a proposal to build a barrage in the Wash to create a fresh-water reservoir. Clive chaired a liaison committee using huge amounts of Wash data and bringing together all parties interested in the environmental impact of the proposed scheme. In the end there was a change in prediction for future water requirements and the project was abandoned. However, we all felt that our fieldwork was paying off in terms of hard statistics on the value of the Wash as a wildfowl and wader refuge. We gained recognition as an integral and essential part of the future management of the area. It was typical of Clive that he ensured that the hard work of every individual in the Group was recognised as part of this work. One legacy of the feasibility study for the barrage was that two bunds were built in the Wash and Clive soon had us out there catching the Oystercatchers that started to use the new roosting site provided on the easily accessible Inner Bund.

A further example of Clive's enthusiasm and energy is his contribution to the wader literature, writing papers and encouraging others to do so. His name appears on 13 'peer-reviewed' papers in journals, all using WWRG data, between 1972 and 1980. This prolific paper production continued throughout his life with many articles and papers, particularly on his work in Australia and Delaware Bay.

Delaware Bay – May 2015 (Joanna Burger)

As interest in waders and the number of regional wader groups grew in the UK, Clive saw the advantages of coordinating wader work as well as exchanging knowledge and information. He held a meeting at his home in 1970 and the Wader Study Group was born. Clive was the founding father and first Chairman of this group, which now has a worldwide membership and is still going strong as the International Wader Study Group in its 50th year!

Clive fitting a satellite tag to a Grey Plover with Katherine Leung – Broome, NW Australia, 2014

It seems barely possible that beside all this wader organisation, fieldwork and paperwork Clive had an important job. Joining IMI from Cambridge as a researcher on titanium in 1960 he rapidly progressed to management. In 1978 he was appointed to senior management with Opella, a subsidiary in Hereford, and was then offered the opportunity to head up IMI's new Australian operation in conjunction with ICI. Originally Clive's absence was planned for two years and WWRG continued in the light of this knowledge with Phil Ireland taking on Group organisation, communication and equipment maintenance. Clive found new accommodation for the Group and we moved from Snettisham to West Newton on the Sandringham Estate. Thus Wash Week 1978 ended with a 70-strong banquet staged on the scrubby grass in front of the West Newton cottages, prepared by Tony Williams and my husband Mike. It was, I think, the largest group we have ever fed at one time and a fitting send-off for Clive. The practice of writing trip reports after our fieldwork began with Clive's departure, as he was always eager to hear what we were doing.

Clive didn't introduce cannons to Australia, as they were already in use for work on Magpie Geese. However, he very quickly launched the Victoria Wader Ringing Group with studies in New South Wales and beyond. The initial (and continuing) pace of Clive's influence in Australia is worth a sentence or two. Professionally he 'turned an ailing business into a very profitable one, before leaving the group in 1983'. Wader-wise he had made his first Antipodean cannon net in 1978, finishing the net, and leading a catch of eight birds at Werribee in December. In 1980 the Australian Wader Study Group was formed with the aim of censusing all Australian waders, coastal and inland and encouraging banding activities. Aerial counts were set up and underpinned the discovery of the northwest (Western Australia) 'wintering' wader flocks in Roebuck Bay and along 80 Mile Beach. Clive set up and led the first expedition to the area with a rather unexpected first catch of 778 birds in Roebuck Bay on 30 August 1981. Many of the group have journeyed to Australia to join Clive and his team on the wonderful Northwest Expeditions that continue and have demonstrated the patterns of the East Asian-Australasian Flyway.

Discovery of the incredibly large wader 'wintering' areas in northwest Australia gave massive impetus to Clive's work. It was with little surprise therefore that we heard he planned to stay in Australia. Twenty years of Wader Studies on the Wash was the end of an era, but Clive's influence has continued on the Wash, in Australia and around the world, particularly in Delaware Bay in the States, where several members of the group met him for the first time. On the Wash in September 2018 newer members were very pleased to finally meet the 'legend' and to be entertained by his stories of the early years, on what turned out to be his last visit to the Wash. Clive inspired many people to become dedicated 'waderologists' (both professionally and as volunteers) and his influence will continue to shape wader work around the world long after his untimely death. We will all miss his presence.

Daphne Watson

Medals and Honours

Although only one honour in this list pre-dates Clive's emigration to Australia it is worth detailing them here because his whole life of wader studies is based on the early days of Wash and other UK experience, especially the development of cannon-netting. Its popularisation as a wader-catching tool underpins almost all his subsequent studies.

1975 Bernard Tucker medal from the British Trust for Ornithology. "For outstanding service to the BTO's scientific work or investigations".

1989 Fellow of Royal Australian Ornithologist's Union.

2000 John Hobbs Medal from Birdlife Australia for "outstanding contributions to ornithology as an amateur scientist".

2001 Member of the Order of Australia (written as AM) "for services to ornithology, particularly in the study of migratory wading birds in Australia".

2003 Australian Natural History Medallion awarded by the Field Naturalists' Club of Victoria "to the person judged to have made the most meritorious contribution to the understanding of Australian Natural History".

2012 Eisenmann Medal awarded by the Linnaean Society of New York "in recognition of the recipient's ornithological excellence and encouragement of amateur efforts in ornithology and birding".

Clive with the team at our Terrington base in a break from sorting bird bags in August 2018 (Cathy Ryden)

JOHN MICHAEL MCMEEKING

1 March 1929 – 12 February 2019

John McMeeking was a stalwart on the Wash in the 1970s and into the 1980s, leading teams and providing help and support. He died a few days before his 90th birthday after being diagnosed with cancer in December 2018.

John began his (amateur) ornithological career at school, he chaired the Oxford Ornithological Society and became influential in the Trent Valley Bird Watchers. He was heavily involved in the BTO Sand Martin enquiry and masterminded Canada Goose ringing in Nottinghamshire. He founded the monitoring programme in Treswell Wood in Nottinghamshire, now nearly 50 years old, and helped develop the national CES. He was a BTO county representative for 20 years and was chair of both the BTO and Ringing Committee. He was a driving force behind the annual Ringers' Conferences which were so important for the development of ringers and the ringing scheme. John received the BTO's Tucker medal for services to ornithology in 1990.

Although John was never a cannon-net licence holder, his organisational skills were rapidly recognised by Clive Minton. As a result, with his characteristic quiet diplomacy and encouraging leadership, John managed Wash teams over several years. He also led many all-night, one-night mist-netting sessions when a team from the Midlands drove to the Wash, mist-netted the high tide and then drove home again. Everyone recognised the large white Peugeot estate, and those of us who travelled with him knew that when his knee started to rock backwards and forwards we had to make conversation to keep him awake on the long drive home! Although no longer active with the group, John remained a WWRG member until his death.

John leaves a very great ornithological legacy. But even greater is his continuing indirect contribution. John was seen by others, particularly in the ringing world, not only as a master but also as a friend, helper, teacher, and guide. John had a gift for recognising potential in others, indeed Clive asked him to identify future leaders for the group. He also encouraged that potential to be realised to the benefit of individuals and the causes they served. Through his extensive contacts he opened pathways for people. He was non-judgemental in dealing with others and worked with ringers from schoolchildren to pensioners, treating all with

equal respect and, in turn being treated by them all as the friend and colleague that he was. His hand will be seen in many more works done by people inspired and encouraged by him – including many WWRG members. In turn they will be leading others along John's trail.

Effective conservation is based on knowledge. John enjoyed ringing but his motivation was to add to the vital fund of knowledge of the natural world in a scientific manner.

Outside the BTO John was also chair of the Nottinghamshire Wildlife Trust and received the aptly named Treswell Award from the Trust in 2001 for his exceptional contribution. In 2003, this was followed by The Christopher Cadbury Medal in recognition of his outstanding contribution to both nature conservation and The Wildlife Trusts. He also received an MBE for services to nature conservation. Sandwiched between all of this was a busy professional career as Managing Director of a Nottingham lace company, and as a director of a number of other businesses. John certainly both worked hard and played hard.

To conclude it is hard to better some words written by Ian Newton: "John has been an amazing citizen of ornithology, and will be greatly missed. I remember him back in the 70s, on the stage at Swanwick, a tall upright man, with a massive presence, speaking or chairing sessions with great wit and clarity. He has done so much for our subject, for the BTO, and for being such an inspirational character for so many."

Chris du Feu & Ian Bainbridge

WHAT CAN A FEW CELLS TELL US ABOUT PREHISTORIC WADER POPULATION SIZES?

A new collaboration with the University of Cambridge

WWRG takes a scientific approach to ringing, from the long-term metal mark-recapture studies that we conduct on Oystercatchers to the more-recent use of colour rings to study the survival and ecology of Curlew, Grey Plover and Bar-tailed Godwit. This scientific focus, and the range of research interests of members, has allowed the group to forge strong collaborations with other projects, organisations and researchers. One such collaboration is that with Professors Rhys Green and Bill Amos of the University of Cambridge on their project to estimate the population history of bird populations from DNA collected using buccal swabs.

What is a buccal swab?

A buccal swab is a way to collect cells from inside the mouth, often for the later extraction of genetic components such as DNA. It involves taking a small swab, similar to a cotton bud with an elongated handle and rubbing this against the inside of the mouth where cells are collected on the tip of the swab. Buccal swabs are a far less invasive way of collecting genetic material from birds in comparison to other methods such as contour feather or blood sampling.

How do you take a buccal swab?

It is best to take buccal swabs from large species like Curlew in teams of two. Just as when we are colour-ringing, one person can be holding the bird whilst the other undertakes the procedure. This keeps the bird under control and safe and minimises any stress. Once we make a Curlew catch, we separate the birds for swabbing after processing. Whilst one team member collects a bird, the second can prepare the swabbing kit and complete the labels: recording date, site, species and ring number (1). Once the bird is under control and calm, the swab can be removed from its container, ensuring that the tip is not contaminated by touching any other surface (2). Using one hand, the bill can be safely opened and held with a fingertip, whilst the swab is carefully inserted under the tongue and rotated against the buccal membrane with light pressure, which collects cells on its cotton tip (3). The swab can then be returned to its sterile container and the bird released (4). Once back at our base, each swab is taken from its container, placed into a small tube of buffer solution and the stem cut. The swabs are then ready for storage and postage to the University of Cambridge for processing.

Lizzie Grayshon and Amelia Bennet-Margrave taking a buccal swab from a Curlew caught in Lincolnshire 12 September 2018 (Ryan Burrell)

Why are we buccal swabbing?

In the UK, we are very fortunate to have long-term data for many of our bird species, though even these only reach back a few decades. Recent developments in DNA sequencing and analysis of genetic variation between individuals has enabled estimation of how populations have changed over tens of thousands of years. Genetic data can be used to build trees, rather like family trees, with the rate of branching being an indicator of success. Using this principle and complicated mathematics, it is possible to gain an idea of how big the population size is now relative to past populations. The Cambridge University team plan to calculate average population histories for groups of birds from major habitat types, including wetlands. This will provide a better understanding of the links between bird populations and significant prehistoric habitat change. For example, it is hoped that we will discover more about what may have happened to Curlew in the period between the end of the last glaciation and conversion of land for farming and grazing in the last few thousand years.

WWRG is always keen to support other projects where we can, but it is especially useful when that work can support our existing projects. WWRG member Rob Pell, with the support of other members, has been working to investigate differences in foraging locations and survival of Curlew shown by our colour-mark re-sighting efforts. This has thrown up some interesting initial insights, particularly in the differences between sexes. However, we are unable to sex about 10% of our birds from biometrics alone. As part of their procedure, the team at Cambridge University can provide us with a definitive sex from each bird's DNA. This information will fill our unknowns and, over time, will allow us to check how well published measurements for sexing Curlew work for individuals caught on the Wash.

In 2018/2019 WWRG members swabbed 67 Curlew, including one Finnish control. These swabs now await processing by the team at Cambridge University. Samples are stored and run in large batches to improve the cost-effectiveness of the laboratory methods. This work will run over several years, but we very much look forward to receiving data on the sexes of our birds and the future findings of the wider Cambridge University project.

Ryan Burrell, Rhys Green & Bill Amos

Setting the hide for a field Curlew catch (Chantal Macleod-Nolan)

WWRG FIELDWORK IN ICELAND

Staging of Knot in spring and autumn 2019

The Wash Wader Ringing Group has been involved in many wader projects around the world. In particular, many group members have been involved in the study of Red Knot (ssp *rufa)* in Delaware Bay on the east coast of the US, a major migration staging post for this subspecies. In 2019, the group had the opportunity to be involved in studying one of the major staging posts for ssp *islandica*.

Almost all Knot occurring in Britain and Ireland are of the race *islandica* which breed in northern Greenland and high arctic Canada. After breeding, many Knot fly to west Iceland where they stage to feed up between mid-July and mid-August before continuing on migration, whilst others fly directly to the UK, Ireland and continental Europe. In the UK, Knot are mainly concentrated in large estuaries including the Wash, the Ribble, the Dee and Morecambe Bay. Many thousands also congregate to moult in the Wadden Sea, moving westwards in October and November to the UK, Ireland and France, where they spend the winter months feeding on the mudflats. Over 60% of *islandica* Knot winter in large estuaries in Britain and Ireland (Davidson & Wilson 1992).

A large proportion of Knot move eastwards in the second half of March, returning to the Wadden Sea to moult into their breeding plumage whilst a smaller number remain to moult on British estuaries including the Wash and Morecambe Bay (Davidson & Wilson 1992). In early May, Knot begin their migration to the west coast of Iceland and to northern Norway, where they complete their body moult and feed up before departing for the breeding grounds. The birds stay for two to three weeks and arrive on the breeding grounds at the end of May and into early June.

In recent years, Knot have been colour-marked at various sites along the flyway, including The Netherlands, Iceland, Norway and the UK (particularly in north-west England). Colour-marking enables multiple sightings of individual birds which provide year-on-year information on their whereabouts. Colour-marking and re-sighting have been co-ordinated to maximise the information gained about the migration routes and strategies of the birds. There are several dedicated individuals searching for colour-marked Knot around the UK and beyond, with thousands of sightings recorded.

Despite the high numbers of Knot present on the Wash, it is a challenge to read the colour-marks as the birds rarely come close enough to shore and because the percentage of birds with colour-marks is very low as no birds have, as yet, been colour-marked on the Wash. The best chance is on a spring tide when thousands of Knot roost on the pits at Snettisham. However, the birds are so tightly packed that it can be difficult to read the colour-marks.

Scanning the high tide roost for colour-marks at Skogarnes (Bernard Siddle)

Spring field work 2019

The first trip to Iceland, in mid-May, came about as a result of an email conversation between members of WWRG and Jim Wilson, relating to sightings of Knot on the Wash of birds that had been ringed in Iceland. Jim has made several visits to Iceland to colour-mark Knot and to search for marked birds. However, in May 2019, his team were planning a visit to Norway rather than returning to Iceland, so it was agreed that a small team from WWRG would make a trip to Iceland to search for colour-marked Knot. Jim was extremely helpful in the planning stages, providing us with maps of the areas, tide tables and advice on where and when to visit the sites, but there were still many challenges of working a new site. We were mainly looking for high tide roosts but, as with the Wash, we began to get a feel for the re-sighting possibilities on the incoming and outgoing tides. The areas covered were in south-west Iceland, between Reykjavík and the Snæfellsnes Peninsula.

In eight days of field work in May 2019 we recorded 102 sightings of 84 individual Knot (Table 1). Most of these birds had been colour-marked in south-west Iceland or in The Netherlands. The histories of the birds indicate that they are mainly following recognised movements, spending autumn and early winter in the Wadden Sea before moving in a westerly direction to estuaries in Britain and Ireland (examples of which are given below).

Table 1. Knot sightings in south-west Iceland 14–21 May 2019

Country where colour-marked	Number of colour-marked birds seen
SW Iceland	46
NW Iceland	1
Norway	1
The Netherlands	27
NW England	9
Total	**84**

South-west Iceland

The birds were found mainly in the same roosts as the original colour-marking site in 2014 or 2017. Many of these birds have only been seen in Iceland (some in several years) demonstrating a high level of site fidelity.

98M: Colour-marked in Iceland on 22 May 2017, this bird was seen in the Wadden Sea in August, September and October in both 2017 and 2018, moving to the Stour estuary in the UK for the winter, having been seen there between November and March in both years.

20P: Colour-marked in Iceland on 24 May 2017, this bird was subsequently seen at Snettisham in October 2018 and in Dundalk Bay, Ireland in March 2019.

Knot 03C at Skogarnes on 19 May 2019 where it was ringed on 20 May 2017 (Carole Davis)

The Netherlands

N8YRGN: Colour-marked in The Netherlands on 23 March 2015, this bird was seen in the Wadden Sea in September/October in 2015, 2016 and 2017 and also in March/April in both 2015 and 2016. The bird was then seen on 3 February 2019 on Merseyside.

Norway

Although Knot mainly follow the same migration route from year to year, previous studies have shown that a small number of birds switch from staging in Norway to staging in Iceland on spring migration (Wilson *et al.* 2011). KLX (below), seen by the team in Iceland in 2019, demonstrates this switch.

KLX: Colour-marked in Porsangerfjord in northern Norway on 19 May 2008, this bird was again seen in Porsanger in mid-May in both 2010 and 2012. However, KLX was seen in south-west Iceland in mid-May in both 2018 and 2019 and therefore appears to have altered its spring migration route at some point between 2012 and 2018.

North-west England

ALE: Colour-marked on Merseyside on 30 March 2018 and seen on numerous occasions between July and December 2018 in Merseyside.

This bird then moved to Dublin Bay, Ireland, where it was seen in both February and March, before moving back to Merseyside in April 2019.

North-west Iceland

XXY: Colour-marked in north-west Iceland in May 2014 and seen again at the same site in May 2018. However, this bird seems to have changed its spring migration staging site to south-west Iceland in 2019. Sightings were also made in the Wadden Sea in October 2015 and September/October 2016.

Autumn Fieldwork 2019

Jim invited the WWRG team to return to Iceland in early autumn to study Knot on their autumn staging sites, particularly to look for birds that had been colour-marked in northern Norway in spring. As northern Norway is not used as a staging site in autumn, Knot could be using the Icelandic staging sites. Also, no studies of the autumn migration of Knot in Iceland had been undertaken since 1972! Two weeks of field work in late July/early August resulted in the sighting of 50 colour-marked birds from a much smaller population of Knot than in spring. It is highly probable that some Knot were flying straight from the breeding sites to the moulting sites without stopping in Iceland. It is also likely that the return migration was spread over a longer time period than in spring.

One striking difference shown in Table 2 is that, whereas the Knot seen in May 2019 had mainly been colour-marked in south-west Iceland and The Netherlands, very few birds marked in south-west Iceland were seen during the July/August trip. Secondly, there were almost as many birds marked in Norway seen as birds marked in Iceland.

Table 2. Comparison of Knot encountered in south-west Iceland, May and July/August 2019

Country where colour-marked	Sightings May	Sightings July/Aug
SW Iceland	46	5
NE Iceland	0	1
NW Iceland	1	4
Norway	1	8
The Netherlands	27	15
NW England	9	15
NE England	0	2
Total	**84**	**50**

South-west Iceland

The histories of these two birds suggests that they have been travelling around together since 2017.

01K and 61K: Colour-marked together on 22 May 2017 at Straumfjordur in south-west Iceland, re-sighted together at Lambastadir, south-west Iceland in May 2018 and seen together on 4 August 2019 at Straumfjordur. 61K was also seen on several occasions between August and October 2017 in the Wadden Sea whereas 01K was re-sighted at Dundalk Bay, Ireland on 13 March 2019.

North-west England

XX: Colour-marked on 3 March 2018, this Knot was seen at 9am on 29 July 2019 in south-west Iceland and, just two days later, on the morning of 31 July 2019, back near the colour-marking site on Merseyside.

K5: Colour-marked on 22 September 2017, this bird remained on Merseyside until at least 25 March 2018, before flying to north-west Iceland where it was sighted on 22 May. It was then seen on Humberside on 18 August 2018 before returning to Merseyside where it remained until at least 6 April 2019.

Scanning the high-tide roost of 12,000 Knot at Hitarnes (Bernard Siddle)

Norway

The eight Knot were all colour-marked at Porsangerfjord in May 2019. Spring staging sites in northern Norway are rarely used by Knot on autumn migration and many are thought to fly non-stop from the breeding grounds to the autumn moulting sites on the North Sea coasts (Jim Wilson pers. comm.). The results of the autumn sightings in 2019 show that some Knot that pass through Norway in spring use Iceland as a staging post in autumn.

AT: Colour-marked at Porsangerfjord on 21 May 2019, this Knot was seen by the team at Hitarnes, south-west Iceland on 30 and 31 July 2019 and then seen again by one of the team on the Wash on 16 August 2019.

North-east Iceland

YEA: Colour-marked on 24 May 2011 in north-east Iceland, this bird was seen at Holme, Norfolk on 6 October 2013 by four members of WWRG. The bird was seen by the team at Hitarnes in south-west Iceland on both 30 and 31 July 2019.

North-west Iceland

The four Knot colour-marked in north-west Iceland indicate that many Knot which use north-west Iceland on spring migration use south-west Iceland on the return journey.

15 and 17: Colour-marked together in north-west Iceland on 25 May 2014, the two birds were seen together on 31 July 2019 at Hitarnes in south-west Iceland. It is fascinating that these two birds were seen feeding together five years after they were colour-marked in the same catch.

Future work

These two trips provided an exciting opportunity for WWRG members to contribute to the study and knowledge of *islandica* Knot. Two members of WWRG were planning to join the team in Iceland in 2020 with the aim to advance the knowledge and understanding of the timings of Knot staging in Iceland, but this trip had to be cancelled due to Covid-19. The team would have visited south-west Iceland in the first half of May and north-west Iceland in the second half of May both to colour-mark a further sample of birds and to look for colour-marked birds.

With thanks to Bernard Siddle and Jim Wilson for providing helpful comments on this article.

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Carole Davis

View across the mudflats at Akrar Bay (Bernard Siddle)

MOTH TRAPPING

As this is the first time that our moth-trapping activities have been reported in this report, I have summarised the catches for the time period 2014–2019. During that time we have operated 17 moth trapping nights (on 11 dates) at our base in Terrington St Clement. One trap night refers to an individual trap, with up to three traps being used on the same night.

We have identified 87 species of macro moths and 21 micros. The number of individual moths is 899 macros and 89 micros. There was also one trap night on the coast on Terrington Marsh, where there was a catch of five species of macro (eight individuals) and of two species of micro (two individuals). A further 36 species (macros and micros combined) were identified by a PhD student staying at the base. The difference between macros and micros is largely a question of size. And micros are harder to identify!

Here I list the species of macro for which we have caught > 30 individuals and for micros > 10, or either moth type which were caught on > 50% of the dates when traps were set.

Species	Number of individuals	Number of trapping dates when caught (max=11)
Macros		
Common Rustic agg.	219	6
Dusky Sallow	43	4
Large Yellow Underwing	144	9
Lesser Broad-bordered Yellow Underwing	47	5
Lesser Yellow Underwing	41	6
Ruby Tiger	48	4
Setaceous Hebrew Character	32	7
Micros		
Agapeta hamana	14	2
Mother of Pearl	15	4
Ringed China-mark moth	13	2

All species of moth have a limited adult flight season and depending on the geographical location may have one or two generations a year. The length of flight season varies between species, e.g. Ruby Tiger has two generations mid-April to June and mid-July to early September; Scarce Silver Lines flies from late June to July (approximately). As most of the catches were during autumn passage, the most commonly caught species reflect those in flight in August or September.

Common species

Three of the most common moth species we trapped were 'yellow underwings' - this refers to the bright colour of the hind wings. The cryptic forewings are designed for camouflage. The Large Yellow Underwing, is one of the most widespread moths in Britain and can be found in any habitat, but is most numerous in open, grassy locations. The larvae feed on grasses and many herbaceous plants. This species, which is both resident and immigrant, has increased in abundance and its flight season has lengthened since the 1970s. The Lesser Yellow Underwing is almost as numerous and has a longer flight season in the south than in the north of Britain (Randle *et al*. 2019).

Species of note

Great Brocade (pictured right) and Star-wort are both Notable B species (recorded in only 31-100 10 km squares in Britain). Star-wort is very much a coastal species of southern Britain (Randle *et al.* 2019) occurring on coastal salt marshes and in open woodland. The larvae feed on the flowers, and sometimes the leaves, of Sea Aster and Goldenrod in those habitats respectively. Adults feed on Honeysuckle, campions and non-native plants e.g. Red Valerian (Waring & Townsend 2017).

Great Brocade (Lys Muirhead)

Great Brocade is an immigrant moth over much of Britain. It is known to be resident in the central and western Scottish Highlands, using boggy areas on scrubby moorland and in woods (Randle *et al*. 2019). The larvae feed on Bog-myrtle. However, at least in 2010, it is suggested that Great Brocade may have bred in the Brecks (Norfolk Moths website – www.norfolkmoths.co.uk).

The China-mark moths are unusual amongst the Lepidoptera in that their larvae are aquatic. So for the Ringed China-mark this stage of the life cycle would probably have been completed in one of the many ditches nearby.

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Acknowledgements

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Lys Muirhead

Example of moth trap set up (Lys Muirhead)

SUMMARY OF RECOVERIES RECEIVED

The following tables summarise the total number of recoveries generated by the Group. The tables include all recoveries from 1909 to 2019 that had been reported to the BTO by the end of April 2020. In each case the number before the '/' is birds that were ringed on the Wash and found in the county or country and the number after the '/' is birds ringed elsewhere and found on the Wash. Movements between the Wash and counties in the UK exclude movements within Norfolk and Lincolnshire.

The summaries of movements are produced from data supplied by the BTO Ringing Scheme. The Scheme is funded by a partnership of the British Trust for Ornithology, the Joint Nature Conservation Committee (on behalf of: Department of Agriculture, Environment and Rural Affairs, Northern Ireland, Natural England, Natural Resources Wales and Scottish Natural Heritage), The National Parks and Wildlife Service (Ireland) and the ringers themselves. Note that there are some small changes in numbers compared to previous reports due to corrections to the database.

Rob Robinson

Table 1. Movements of wader species between the Wash and other countries.

	Oyster - catcher	L-Ringed Plover	Ringed Plover	Golden Plover	Grey Plover	Lapwing	Knot	Sander - ling	Little Stint	Curlew S'piper	Purple S'piper	Dunlin
Algeria	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Arctic Ocean	- / -	- / -	- / -	- / -	- / -	- / -	2 / -	- / -	- / -	- / -	- / -	2 / -
Austria	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Baltic Sea	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	10 / 2
Belgium	6 / 2	1 / 1	- / -	- / -	- / -	- / -	2 / -	- / -	- / -	- / -	- / -	3 / 6
Benin	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Canada	- / -	- / -	- / -	- / -	- / -	- / -	9 / 3	- / -	- / -	- / -	- / -	- / -
Channel Islands	2 / -	- / -	2 / -	- / -	- / -	- / -	- / -	2 / 1	- / -	- / -	- / -	4 / 8
Denmark	25 / 1	- / -	1 / -	1 / -	12 / -	1 / 10	30 / -	1 / 1	- / -	- / -	- / -	55 / 59
Eng Channel	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	1 / -	- / -	- / -	- / -	1 / -
Estonia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Faroe Islands	34 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Finland	2 / -	- / -	- / 1	- / -	1 / -	- / 2	- / -	1 / -	- / -	- / -	- / -	88 / 116
France	167 / -	- / -	39 / -	1 / -	16 / 2	9 / -	49 / 9	18 / -	- / -	- / -	- / -	107 / 45
Gabon	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -
Germany	20 / 3	- / -	1 / 4	- / -	3 / 2	- / 3	66 / 51	2 / -	- / -	- / -	- / -	63 / 93
Ghana	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	2 / -	- / -	- / -	- / -	- / -
Greece	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Greenland	1 / -	- / -	- / 1	- / -	- / -	- / -	73 / -	- / 2	- / -	- / -	- / -	- / 2
Guinea	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Guinea Bissau	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	1 / 2
Hungary	- / -	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -	- / -
Iceland	9 / -	- / -	- / -	- / 1	- / -	- / -	113 / 47	7 / 6	- / -	- / -	- / -	7 / 5
Italy	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	1 / 1	- / -	1 / -	- / -	1 / -
Lesser Antilles	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -
Liberia	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -
Lithuania	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -	- / -	1 / -
Mali	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Mauritania	- / -	- / -	- / -	- / -	- / -	- / -	3 / -	3 / 7	- / -	- / -	- / -	12 / 16
Morocco	2 / -	- / -	1 / -	- / -	3 / -	1 / -	1 / -	12 / -	- / -	- / -	- / -	22 / 15
North Atlantic	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -
North Sea	2 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / -
Norway	846 / 146	- / -	3 / 12	1 / -	- / -	- / 1	46 / 115	1 / 12	- / 7	- / 9	- / -	9 / 336
Poland	- / -	- / -	- / 1	- / -	1 / 1	- / 1	2 / 8	1 / 1	- / -	1 / 1	- / -	47 / 77
Portugal	- / -	- / -	- / 1	- / -	2 / -	- / -	1 / 1	7 / -	- / -	- / -	- / -	63 / 22
Rep. of Ireland	2 / -	- / -	23 / -	- / -	- / -	- / -	4 / -	- / -	- / -	- / -	- / -	20 / 23
Rep. South Africa	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1	2 / 1	- / -	- / -	- / -	- / -
Russian Fed	8 / -	- / -	1 / -	- / -	3 / -	3 / -	1 / -	2 / -	- / -	1 / -	- / -	8 / 38
Senegal	- / -	- / -	1 / -	- / -	- / -	- / -	4 / -	3 / 1	- / -	- / -	- / -	- / -
Slovakia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1
Spain	1 / -	1 / -	3 / -	- / -	2 / -	3 / -	2 / -	5 / 1	- / -	- / -	- / -	44 / 17
Svalbard	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1
Sweden	9 / 1	- / -	- / 1	- / -	- / -	- / 2	1 / 6	- / -	- / -	1 / 1	- / 1	262 / 374
Switzerland	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -
The Gambia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
The Netherlands	221 / 24	- / -	9 / 3	2 / 3	1 / 1	1 / 7	92 / 29	3 / 2	- / -	- / -	- / -	31 / 18
Tunisia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	1 / -	- / -	- / -
Ukraine	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / -	- / -	- / -
W Sahara	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Total	**1,357 / 177**	**2 / 1**	**86 / 24**	**5 / 4**	**44 / 6**	**18 / 28**	**508 / 271**	**78 / 37**	**- / 7**	**7 / 12**	**- / 1**	**865 / 1,276**

Setting nets at Terrington (Rob Robinson)

Table 1 continued. Movements of wader species between the Wash and other countries.

	Ruff	Snipe	Black-t Godwit	Bar-t Godwit	Whimbrel	Curlew	Spotted R'shank	Red-shank	Green-shank	Wood S'piper	Common S'piper	Turnstone
Algeria	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Arctic Ocean	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Austria	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Baltic Sea	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1
Belgium	- / -	- / -	- / -	- / -	- / -	- / 6	- / -	2 / -	- / -	- / -	- / -	1 / -
Benin	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Canada	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 4
Channel Islands	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Denmark	- / -	1 / -	1 / -	3 / -	- / -	8 / 1	- / -	2 / 1	1 / -	- / -	- / -	2 / -
Eng Channel	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Estonia	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Faroe Islands	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Finland	- / -	- / -	- / -	2 / -	- / -	54 / 46	- / -	1 / -	- / -	- / -	- / -	5 / 7
France	3 / -	9 / -	25 / 4	4 / 1	3 / -	8 / -	- / -	51 / -	2 / -	2 / -	4 / -	7 / 1
Gabon	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Germany	1 / -	- / 1	1 / -	15 / 12	- / -	9 / 4	- / -	- / 2	- / -	- / -	- / -	2 / 1
Ghana	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / -
Greece	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Greenland	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / -
Guinea	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Guinea Bissau	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / -
Hungary	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Iceland	- / -	- / -	35 / 27	- / -	- / -	- / -	- / -	40 / 10	- / -	- / -	- / -	6 / 1
Italy	5 / -	1 / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -
Lesser Antilles	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Liberia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Lithuania	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Mali	2 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Mauritania	- / -	- / -	- / -	3 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Morocco	1 / -	1 / -	1 / -	- / -	- / -	- / -	2 / -	2 / -	- / -	- / -	- / -	3 / -
North Atlantic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
North Sea	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	1 / -	- / -	- / -	- / -	- / -
Norway	- / -	- / -	- / 1	4 / 19	- / -	3 / 2	- / 5	- / -	2 / -	- / -	1 / -	2 / 14
Poland	- / -	- / -	- / -	- / 2	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1
Portugal	- / -	4 / -	2 / 1	- / -	- / -	- / -	- / -	2 / -	- / -	- / -	1 / -	1 / -
Rep. of Ireland	- / -	3 / -	7 / 3	2 / 1	- / -	2 / -	- / -	1 / -	- / -	- / -	- / -	- / -
Rep. South Africa	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Russian Fed	1 / -	- / -	- / -	14 / 1	- / -	7 / -	- / -	- / -	- / -	- / -	- / -	1 / -
Senegal	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Slovakia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Spain	2 / -	5 / -	2 / 3	1 / 1	- / -	- / -	- / -	3 / -	- / -	- / -	1 / -	1 / -
Svalbard	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Sweden	- / -	- / 1	- / -	1 / -	- / -	17 / 13	- / -	- / -	- / -	- / -	- / -	- / 2
Switzerland	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
The Gambia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
The Netherlands	1 / 3	- / 2	12 / -	13 / 7	- / -	5 / 5	- / 2	8 / 4	2 / 1	- / -	- / -	4 / 1
Tunisia	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Ukraine	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
W Sahara	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	**19 / 3**	**24 / 4**	**86 / 39**	**66 / 44**	**3 / -**	**114 / 77**	**3 / 7**	**115 / 17**	**8 / 1**	**2 / -**	**7 / -**	**51 / 33**

Table 2. Movements of wader species between the Wash and elsewhere in the UK.

	Oyster -catcher	L-Ringed Plover	Ringed Plover	Grey Plover	Lapwing	Knot	Sanderling	Curlew S'piper	Dunlin
Aberdeenshire	10 / 3	- / -	- / -	- / -	- / -	- / 2	- / -	- / -	1 / 13
Anglesey	2 / 2	- / -	4 / -	- / -	- / -	3 / -	- / -	- / -	80 / 40
Angus	2 / 3	- / -	- / -	1 / -	- / -	3 / 5	1 / -	- / -	- / 2
Antrim	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2
Argyll	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Ayrshire	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -
Bedfordshire	- / -	- / -	- / 1	- / -	- / -	- / -	- / -	- / -	- / -
Belfast	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 8
Buckingham	- / 1	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Cambridge	9 / 3	1 / -	3 / -	- / 1	- / -	- / 7	- / -	4 / -	24 / -
Carmarthen	- / 7	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Ceredigion	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 8
Cheshire	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	4 / 5
Conwy	5 / 3	- / -	2 / 3	- / -	- / -	- / 1	- / -	- / -	18 / 24
Cornwall	- / 1	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	5 / 6
Cumbria	3 / 2	- / -	11 / -	- / -	- / -	41 / 42	6 / 3	- / -	50 / 70
Derby	2 / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Devon	28 / 9	- / -	5 / -	- / -	- / -	- / 2	- / -	- / -	10 / 10
Dorset	2 / 9	- / -	2 / 1	- / -	- / -	- / 2	- / 7	- / -	11 / 15
Down	- / -	- / -	3 / -	- / -	- / -	2 / -	- / -	- / -	4 / 1
D'fries & G'way	3 / 2	- / -	- / -	- / -	- / -	4 / 11	7 / 1	- / -	11 / 26
Durham	9 / 2	- / -	3 / -	2 / -	- / -	46 / 17	11 / 2	- / -	27 / 39
East Sussex	2 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1
Essex	9 / 5	- / -	5 / -	3 / -	- / -	3 / 5	5 / -	- / -	5 / 9
Fife	4 / -	- / -	5 / -	- / -	- / -	20 / 18	- / -	- / -	4 / 9
Flint	- / 5	- / -	1 / -	- / -	- / -	5 / 8	9 / 3	- / -	9 / 29
Glamorgan	7 / 9	- / -	2 / -	- / -	- / -	3 / 2	- / -	- / -	18 / 4
Gloucester	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	3 / 11
G London	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1
G Manchester	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Gwent	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 25
Gwynedd	5 / 6	- / -	- / -	- / -	- / -	2 / 2	- / -	- / -	26 / 13
Hampshire	3 / 1	- / -	1 / -	2 / 1	- / -	2 / 1	3 / 4	- / -	18 / 22
Hereford	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Hertford	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Highland	12 / 1	- / -	2 / 1	- / -	- / -	23 / 49	- / -	- / -	11 / 18
Isle of Man	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2
Kent	10 / 1	- / -	- / -	- / -	- / -	1 / 2	15 / 4	- / -	5 / 43
Lancashire	6 / 3	- / -	8 / -	- / -	- / -	44 / 50	9 / 3	- / -	18 / 18
Leicester	1 / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / 2
Lincoln	3 / -	- / 1	4 / -	1 / -	- / -	7 / -	- / -	- / -	3 / 9
Londonderry	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1
Lothian	2 / 1	- / -	1 / -	- / -	- / -	5 / 2	- / -	- / -	4 / 2
Merseyside	3 / -	- / -	2 / -	- / -	- / -	25 / 34	10 / 6	- / -	42 / 26
Moray	4 / 1	- / -	- / -	- / -	- / -	4 / 6	- / -	- / -	1 / 11
Northampton	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -
Northumberland	9 / -	- / -	6 / -	- / -	- / -	- / -	- / -	- / -	- / 6
Nottingham	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Orkney	8 / 1	- / -	- / -	- / -	- / -	- / 2	2 / -	- / -	5 / -
Pembroke	1 / 1	- / -	- / -	2 / -	- / -	- / -	- / -	- / -	6 / 6
Perth & Kinross	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Powys	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Scottish Borders	- / 1	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Shetland	34 / 19	- / -	- / -	- / -	- / -	1 / 1	- / 2	- / -	1 / 3
Shropshire	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Somerset	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	66 / 14
Stafford	- / -	- / -	- / 1	- / -	- / -	- / -	- / -	- / -	- / -
Strathclyde	- / -	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	2 / 4
Suffolk	40 / 12	- / -	5 / 1	1 / -	- / -	13 / 1	- / -	- / -	19 / 39
Surrey	- / -	- / 1	- / -	- / -	- / -	- / -	- / 1	- / -	- / -
Tyne and Wear	2 / -	- / -	2 / -	- / -	- / -	- / -	2 / -	- / -	1 / 1
Upper Forth	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1
Warwick	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	2 / -
West Midlands	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
West Sussex	1 / -	- / -	- / -	- / -	- / -	3 / -	- / -	- / -	- / 1
Western Isles	1 / -	- / -	1 / -	- / -	- / -	1 / 1	1 / -	- / -	4 / 12
Worcester	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Yorkshire	36 / 14	- / -	12 / 4	1 / 3	- / 1	25 / 17	18 / 1	- / -	21 / 63
Total	**281 / 128**	**3 / 2**	**92 / 13**	**13 / 5**	**1 / 1**	**289 / 292**	**99 / 38**	**4 / -**	561 / 675

Table 2 continued. Movements of wader species between the Wash and elsewhere in the UK.

	Ruff	Snipe	Black-t Godwit	Bar-t Godwit	Whimbrel	Curlew	Redshank	Green-shank	Wood S'piper	Common S'piper	Turnstone
Aberdeenshire	- / -	- / -	- / -	- / -	- / -	- / -	2 / 10	- / 2	- / -	- / -	- / -
Anglesey	- / -	1 / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Angus	- / -	- / -	4 / 3	- / -	- / -	- / -	4 / 7	- / -	- / -	- / -	- / -
Antrim	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Argyll	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Ayrshire	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Bedfordshire	- / -	- / -	- / -	- / -	- / -	- / -	2 / -	- / -	- / -	- / -	- / -
Belfast	- / -	- / -	4 / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Buckingham	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Cambridge	- / -	1 / -	17 / -	- / -	- / -	3 / 1	11 / -	- / -	1 / -	1 / -	- / -
Carmarthen	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Ceredigion	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Cheshire	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Conwy	- / -	- / -	- / -	- / -	- / -	3 / -	2 / 4	- / -	- / -	- / -	- / 1
Cornwall	- / -	1 / -	- / -	- / -	1 / -	3 / -	1 / -	- / -	- / -	- / -	- / -
Cumbria	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -	- / -	- / -	2 / -
Derby	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Devon	- / -	1 / -	3 / 6	- / 1	- / -	1 / -	- / -	- / -	- / -	- / -	- / -
Dorset	- / -	- / -	- / -	- / 2	- / -	- / 1	2 / -	- / -	- / -	- / -	- / -
Down	- / -	- / -	2 / 1	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Dumfries & Galloway	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1	- / -	- / -	- / -	- / -
Durham	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3	- / -	- / -	- / -	- / -
East Sussex	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -	- / -
Essex	- / -	- / -	11 / -	- / -	- / -	- / -	8 / -	- / -	- / -	- / 1	1 / -
Fife	- / -	- / -	1 / 1	- / -	- / -	- / -	1 / 4	- / -	- / -	- / -	- / -
Flint	1 / -	- / -	2 / -	- / -	- / -	- / -	1 / 2	- / -	- / -	- / -	- / -
Glamorgan	- / -	- / -	- / -	- / -	- / -	- / -	4 / 5	- / -	- / -	- / -	- / -
Gloucester	- / -	- / -	- / -	- / -	- / -	- / 1	1 / 1	- / -	- / -	- / -	- / 1
Greater London	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / -
Greater Manchester	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Gwent	- / -	- / -	- / -	- / -	- / -	2 / -	1 / -	- / -	- / -	- / -	- / -
Gwynedd	- / -	- / -	- / -	- / 2	- / -	- / 1	10 / 2	- / -	- / -	- / -	- / -
Hampshire	- / -	- / -	6 / 5	- / -	- / -	- / -	8 / 2	- / -	- / -	- / -	- / -
Hereford	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Hertford	- / -	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -
Highland	- / -	- / -	- / -	- / 7	- / -	- / -	7 / 18	- / -	- / -	- / -	- / -
Isle of Man	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Kent	1 / -	- / -	6 / 21	1 / 2	- / -	3 / 1	3 / 2	- / -	- / -	- / -	1 / -
Lancashire	- / -	- / -	7 / -	2 / -	- / -	1 / -	2 / 1	- / -	- / -	- / -	- / -
Leicester	- / -	- / -	2 / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Lincoln	- / -	- / -	22 / -	1 / -	- / -	- / -	5 / -	- / -	- / -	- / -	- / -
Londonderry	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Lothian	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1	- / -	- / -	- / -	- / -
Merseyside	- / -	- / -	3 / -	2 / -	- / -	- / -	3 / 1	- / -	- / -	- / -	- / 1
Moray	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2	- / -	- / -	- / -	- / -
Northampton	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Northumberland	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1	- / -	- / -	- / -	- / -
Nottingham	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1	- / -	- / -	- / -	- / -
Orkney	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1
Pembroke	- / -	- / -	- / -	- / -	- / -	- / 1	2 / -	- / -	- / -	- / -	- / -
Perth & Kinross	- / -	- / -	- / -	- / -	- / -	- / -	4 / -	- / -	- / -	- / -	- / -
Powys	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Scottish Borders	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Shetland	- / -	- / -	- / -	- / -	- / 2	- / 1	- / -	- / -	- / -	- / -	1 / -
Shropshire	- / -	- / -	- / -	- / -	- / -	- / 2	- / -	- / -	- / -	- / -	- / -
Somerset	- / -	- / -	- / -	- / -	- / -	- / -	2 / -	- / -	- / -	- / -	- / -
Stafford	- / -	1 / -	1 / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Strathclyde	- / -	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -
Suffolk	- / -	- / -	29 / 6	3 / -	- / -	- / -	14 / 8	- / -	- / -	- / -	1 / -
Surrey	- / -	- / -	- / -	- / -	- / -	- / -	2 / -	- / -	- / -	- / -	- / -
Tyne and Wear	- / -	- / -	- / -	- / -	- / -	- / -	3 / -	- / -	- / -	- / -	- / -
Upper Forth	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Warwick	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
West Midlands	- / -	- / -	- / -	- / -	- / -	- / -	- / 1	- / -	- / -	- / -	- / -
West Sussex	- / -	- / -	3 / 1	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Western Isles	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3	- / -	- / -	- / -	- / 1
Worcester	- / -	- / -	- / -	- / -	- / -	- / -	1 / -	- / -	- / -	- / -	- / -
Yorkshire	- / -	1 / -	1 / 10	2 / 5	- / -	- / 5	8 / 18	- / -	- / -	- / -	2 / 2
Total	**2 / -**	**6 / -**	**126 / 54**	**11 / 21**	**1 / 2**	**17 / 14**	**136 / 100**	**- / 2**	**1 / -**	**1 / 1**	**11 / 7**

NOTABLE RECOVERIES

One of the highlights of any wader catch is finding a bird with a ring from a foreign ringing scheme. It is always a real thrill to hold a bird that has been ringed in another country and to have visible evidence of the movements of birds. The Wash Wader Ringing Group is notified by the BTO of recoveries of birds caught by the Group which have also been caught or seen elsewhere, either in the UK or abroad. These recoveries include birds ringed by WWRG and recovered elsewhere as well as those ringed elsewhere and recovered by WWRG.

This report highlights some of the more interesting recoveries of the target species for the Group: Oystercatcher, Grey Plover, Ringed Plover, Curlew, Bar-tailed Godwit, Black-tailed Godwit, Turnstone, Knot, Sanderling, Dunlin and Redshank. There are also a few interesting recoveries of Lesser Black-backed and Herring Gull which were ringed by WWRG on the Outer Trial Bank until 2015. Recoveries may be the result of intentional capture by another ringer or ringing group, field observations or from the finding of dead birds. This article is based on recoveries notified to the Group in 2018 and 2019, including some for which there has been a significant delay in reporting.

Recovery maps are included showing recoveries outside Britain and Northern Ireland reported to the BTO between 1909 and 2019. The maps show ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots). Base maps used are courtesy of Natural Earth (www.naturalearthdata.com). Similar maps showing foreign locations of birds ringed or recovered throughout Britain and Ireland are available on the BTO website (www.bto.org/ringing-report) in the Recovery Summaries by Species section.

The following abbreviations are used for foreign ringing schemes:

DEH Germany, Hiddensee
ISR Iceland. Reykjavik
NLA The Netherlands, Arnhem
NOS Norway, Stavanger
SVS Sweden, Stockholm Museum
DKC Denmark, Copenhagen

In this report, records of birds ringed or recovered outside the UK provide the location (as written on the BTO ringing recovery report) including the country and co-ordinates. Records of birds ringed or recovered elsewhere in the UK, away from the Wash, provide the location including county and co-ordinates. Locations for Wash sites can be found on the map of the Wash on page 2.

OYSTERCATCHER

The highest number of Oystercatcher recoveries outside the UK are from Norway, predominantly in southern areas of Rogaland and Møre og Romsdal. These recoveries reflect the known breeding areas for Oystercatchers that winter on the Wash (Wernham *et al.* 2002).

Two of the Oystercatchers ringed on the Wash and subsequently caught in Rogaland in May/June 2018 were colour-marked by ringers in Norway. This should increase the chance of these birds being seen again through field observations.

FP99765	Adult	06/12/09	Snettisham, Norfolk			
= NOS 5199195	Caught by ringer	18/06/18	Klepp, Rogaland, **Norway**	58 40N 05 34E	720 km	NNE
FH52566	Third-year	02/08/15	Friskney, Lincolnshire			
	Caught by ringer	26/05/18	Ha, Rogaland, **Norway**	58 37N 05 39E	710 km	NNE

The most northerly Oystercatcher recoveries were from Troms in Norway, a distance from the Wash of approximately 2,000 km. Sadly, both records were of dead birds.

FA55861	Adult	15/08/95	Wrangle Tofts, Lincolnshire			
	Dead (road casualty)	28/07/19	Tromso, Troms, **Norway**	69 35N 18 01E	2,063 km	NNE
FP08571	Second-year	23/07/01	Holbeach St Matthew, Lincolnshire			
	Dead (not fresh)	01/07/18	Grytøya, Troms, **Norway**	68 55N 16 31E	1,984 km	NNE

Five recoveries of Oystercatchers from northern France were all reports of dead birds in autumn which had been hunted. One of these Oystercatchers set a new BTO longevity record for a wader (Robinson *et al*. 2019). This bird was ringed as an adult in 1976 when it would already have been at least three years old. It was therefore more than 44 years old when it was shot in 2017. This bird is at least four years older than the previous record holder, an Oystercatcher ringed as a nestling in June 1970 at Friskney and caught by a ringer in July 2010 at Wrangle, less than a kilometre away. Of course, this previous record holder could still be alive!

FV27597	Adult	30/07/76	Friskney, Lincolnshire			
	Freshly dead (hunted)	04/09/17	Saint-pol-sur-Mer, Nord, **France**	51 01N 02 19E	265 km	SSE

Many recoveries of Oystercatcher also come from The Netherlands, another area with breeding birds that winter on the Wash (Wernham *et al.* 2002). One was caught at an artificial nest box. Around 1990, 75% of the Oystercatcher population in The Netherlands breed inland. These populations have decreased drastically in recent years but small numbers have begun to breed in urban areas which appear to be more successful (Ens *et al.* 2019).

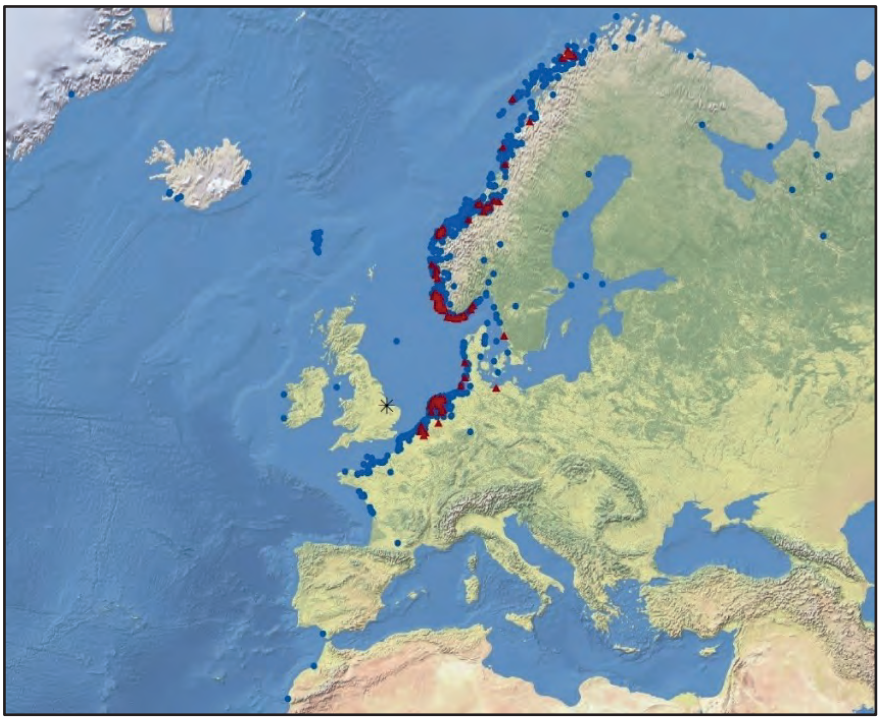
FA69863	Second-year	25/04/98	Terrington Bund, Norfolk			
	Caught by ringer	28/06/19	Friesland, **The Netherlands**	53 07N 05 31E	352 km	E

Recoveries from Denmark are fewer with just one record in 2018/2019. This bird, recovered in March, may have been on spring migration to Norway.

FA46511	Adult	21/08/93	Holbeach St Matthew, Lincolnshire			
	Caught by ringer	13/03/18	Skagen, **Denmark**	57 43N 10 37E	857 km	NE

Approximately half of the WWRG Oystercatcher recoveries are from within the UK. Many UK recoveries are field observations, with single birds often being encountered many times, such as this bird which has been seen at the same site in Norfolk for four consecutive years.

FP62287	Second-year	23/07/05	Ken Hill, Heacham, Norfolk			
	Ring read in field	19/03/16	Salthouse, Norfolk	52 56N 01 04E	42 km	E
	Ring read in field	21/03/17	Salthouse, Norfolk			
	Ring read in field	21/03/18	Salthouse, Norfolk			
	Ring read in field	03/03/19	Salthouse, Norfolk			



Oystercatcher recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

RINGED PLOVER

There were no recoveries involving WWRG Ringed Plover reported to the BTO in 2018/2019. The most recent recovery of a WWRG Ringed Plover was in September 2014 when a bird ringed in The Netherlands was caught five days later at Snettisham.

GREY PLOVER

Three recoveries of Grey Plover were notified to the Group in 2018/2019, all of dead birds. Two of these birds were found close to their ringing sites following episodes of prolonged cold weather. The Gedney bird was found with 20 dead Redshank as a result of the cold spell labelled the 'Beast from the East' in February 2018.

DB61395	Adult	12/10/03	Heacham, Norfolk			
	Freshly dead	01/02/19	Heacham, Norfolk			LOCAL
DE42586	First-year	21/09/16	Gedney Drove End, Lincolnshire			
	Dead (not fresh)	04/03/18	Gedney Drove End, Lincolnshire			LOCAL

The third recovery was of a ring only from Portugal, 41 years after the bird was ringed in 1977.

DR45083	Second-year	16/08/77	Friskney, Lincolnshire			
	Ring only	16/11/18	Setúbal, **Portugal**	38 04N 08 48W	1,803 km	SSW

Grey Plover recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

Grey Plover catch November 2018 (Guy Anderson)

KNOT

Although Knot of the *islandica* race generally use Iceland as a staging site on spring migration, some stage in northern Norway. Four recoveries of Wash birds provide evidence of this migration route, including two birds ringed in February 2012 during one of the largest ever Knot catches on the Wash. These two birds were then caught together in Norway in May 2019 and colour-marked.

SX69875	Adult	11/02/12	Snettisham, Norfolk			
	Caught by ringer	21/05/19	Porsanger, **Norway**	70 24N 25 31E	2,332 km	NE
SX69890	Adult	11/02/12	Snettisham, Norfolk			
	Caught by ringer	21/05/19	Porsanger, **Norway**	70 24N 25 31E	2,332 km	NE

A third Knot, ringed on the Lincolnshire side of the Wash, was caught in the same catch in Porsanger.

ST32213	First-year	20/09/16	Friskney, Lincolnshire			
	Caught by ringer	21/05/19	Porsanger, **Norway**	70 24N 25 31E	2,324 km	NE

There are two recoveries of Knot using the more usual Iceland migration route, caught together at Snettisham in August 2018.

ISR	Adult	25/05/06	Alftanes, **Iceland**	64 04N 22 01W		
753453	Caught by ringer	14/08/18	Snettisham, Norfolk		1,797 km	SE
ISR	Adult	20/05/17	Skogarnes, **Iceland**	64 46N 22 34W		
786779	Caught by ringer	14/08/18	Snettisham, Norfolk		1,863 km	SE

Many WWRG Knot are ringed or recovered in The Netherlands as the Wadden Sea is a major moulting site for Knot both in autumn and spring for birds which winter on the Wash. There were four such recoveries in The Netherlands in 2018/2019, three in autumn and one in spring.

SX70732	Second-year	03/02/06	Wolferton Marsh, Norfolk			
	Caught by ringer	04/04/19	Vlieland, **The Netherlands**	53 16N 05 07E	318 km	E
ST31022	Adult	26/07/13	Leverton Outgate, Lincolnshire			
	Caught by ringer	03/10/19	Griend, **The Netherlands**	53 15N 05 15E	343 km	E

Knot recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

SR19110	First-year	03/10/15	Gedney Drove End, Lincolnshire			
=NLA Z093172	Caught by ringer	03/08/19	Vlieland, **The Netherlands**	53 16N 05 07E	334 km	E
NLA	Unknown	13/09/02	Schiermonnikoog, **The Netherlands**	53 28N 06 13E		
Z005876	Caught by ringer	20/08/16	Snettisham, Norfolk		391 km	W

There were two records of Knot from northern France of birds that had been shot.

SX36997	First-year	27/12/00	Terrington Marsh, Norfolk			
	Dead (hunted)	17/08/19	Pas-de-Calais, **France**	50 55N 01 57E	238 km	SSE
ST31260	Adult	14/08/14	Wrangle Tofts, Lincolnshire			
	Dead (hunted)	30/11/19	Mont-Saint-Michel, **France**	48 37N 01 30W	503 km	SSW

SANDERLING

Foreign recoveries of Sanderling include one bird ringed on the Wash in July 2017 and caught the following winter in Guinea Bissau. This bird has the distance record by far for this report.

BT60175	Adult	26/07/17	Heacham, Norfolk			
	Caught by ringer	17/02/18	Bijagós, **Guinea Bissau**	11 10N 15 52W	4,864 km	SSW

Recoveries involving Iceland and Norway are of birds staging on migration on their way to and from north-east Greenland.

NT75829	Adult	24/07/05	Heacham, Norfolk			
	Caught by ringer	22/05/16	Sandgerdi, **Iceland**	64 01N 22 41W	1,818 km	NW
NOS	First-year	19/08/12	Klepp, Rogaland, **Norway**	58 45N 05 28E		
8M60789	Caught by ringer	26/07/17	Heacham, Norfolk		723 km	SSW
ISR	Adult	24/05/17	Sandgerdi, **Iceland**	64 01N 22 41W		
8109764	Caught by ringer	13/09/18	Heacham, Norfolk		1,818 km	SE

Many Sanderling recoveries are of birds found locally, generally dead birds on the tideline. There are also several exchanges with other UK ringing groups. One bird was caught three times by WWRG before being found dead on the tideline.

BT40384	Adult	16/09/12	Snettisham, Norfolk			
	Caught by ringer	21/09/16	Snettisham, Norfolk			
=BT33122	Caught by ringer	12/08/18	Snettisham, Norfolk			
	Dead	22/03/19	Wells-next-the-Sea, Norfolk	52 58N 00 49E	27 km	ENE

Sanderling recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

DUNLIN

Many Dunlin caught on the Wash have been ringed or recovered in Sweden, Finland and Norway, all important breeding areas for Dunlin of the *alpina* race (Wernham *et al.* 2002). These four adult birds, caught in southern Sweden from mid-July through to early August, were probably migrating from breeding areas in Russia and northern Fennoscandia.

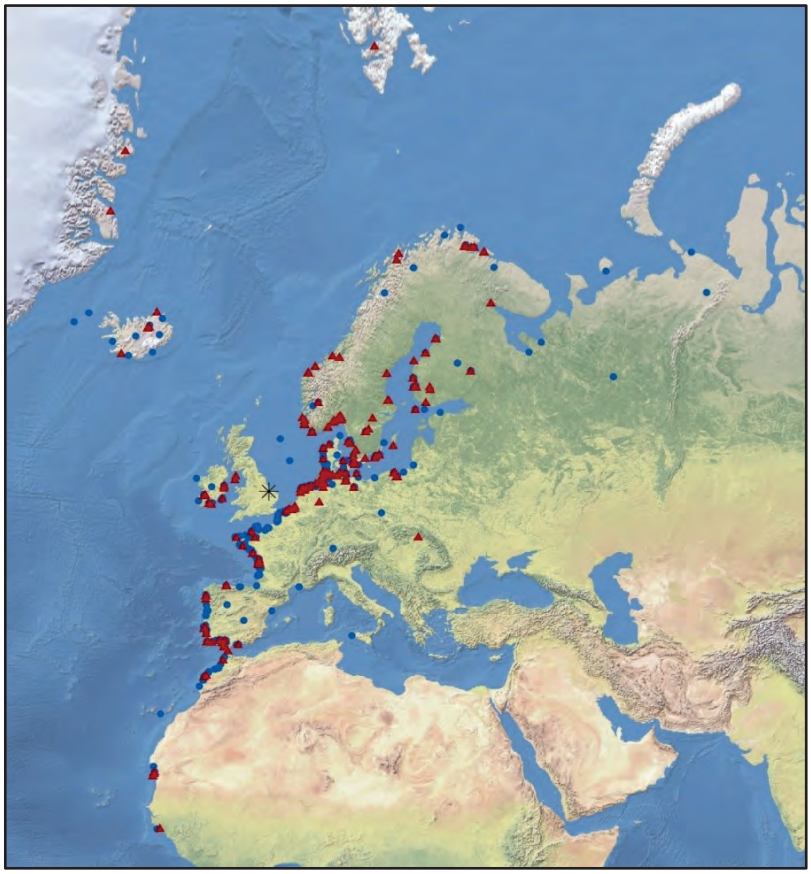
BT40574	Adult	02/03/13	Terrington Marsh, Norfolk			
	Caught by ringer	22/07/19	Ottenby, Öland, **Sweden**	56 12N 16 23E	1,104 km	ENE
BT52201	Adult	03/10/15	Gedney Drove End, Lincolnshire			
	Caught by ringer	11/07/18	Ottenby, Öland, **Sweden**	56 12N 16 23E	1,110 km	ENE
SVS	Adult	19/07/16	Ottenby, Öland, **Sweden**	56 12N 16 23E		
3597004	Caught by ringer	06/01/18	Terrington Marsh, Norfolk		1,104 km	WSW
SVS	Second-year	07/08/18	Ottenby, Öland, **Sweden**	56 12N 16 23E		
3565399	Caught by ringer	23/02/19	Terrington Marsh, Norfolk		1,104 km	WSW

Two first-year birds, caught in southern Norway in late August, reflect the later timing of autumn migration compared with adult birds.

NOS	First-year	27/08/17	Klepp, Rogaland, **Norway**	58 45N 05 30E		
8N66630	Caught by ringer	19/11/17	Terrington Marsh, Norfolk		736 km	SSW
NOS	First-year	29/08/17	Klepp, Rogaland, **Norway**	58 45N 05 28E		
8N66991	Caught by ringer	22/09/17	Terrington Marsh, Norfolk		735 km	SSW

One bird ringed in autumn on the Wash was caught in southern Sweden the following May on its return journey north.

BT60518	Adult	26/08/17	Terrington, Norfolk			
	Caught by ringer	27/05/18	Ottenby, Öland, **Sweden**	56 12N 16 23E	1,103 km	ENE



Dunlin recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

This Dunlin, wintering on the Wash, was seen with chicks in Finland and therefore confirmed as breeding.

BT60752	Adult	02/12/17	Gedney Drove End, Lincolnshire			
	Caught by ringer	11/07/18	Enontekio, Lappi, **Finland**	68 58N 21 19E	2,112 km	NNE

Two Dunlin, caught on the Iberian Peninsula in August, are probably birds of the *schinzii* race on the way to their wintering grounds in West Africa from their main breeding grounds in Iceland and south-east Greenland.

NT87958	Adult	03/08/07	Snettisham, Norfolk			
	Caught by ringer	05/08/13	Huelva, **Spain**	37 16N 06 55W	1,826 km	SSW
D29792	First-year	05/09/07	Setúbal, **Portugal**	38 04N 08 46W		
	Caught by ringer	16/08/18	Leverton Outgate, Lincolnshire		1,796 km	NNE

BLACK-TAILED GODWIT

There were only two foreign recoveries of Black-tailed Godwit in 2018/2019, one from Ireland and one from Iceland (also seen in 2014).

EP70267	Adult	22/08/05	Holbeach St Matthew, Lincolnshire			
	Dead (not fresh)	19/04/19	Galway, **Ireland**	53 09N 08 23W	568 km	W
EL09456	Adult	02/03/13	Terrington Marsh, Norfolk			
	Ring read in field	09/07/14	Eyjafjarðarsýsla, **Iceland**	66 09N 18 55W	1,828 km	NW
	Ring read in field	30/04/18	Eyjafjarðarsýsla, **Iceland**			

Three UK recoveries were exchanges with Northern Ireland.

EN91439	Adult	09/09/02	Holbeach St Matthew, Lincolnshire			
	Colour-mark sighting	08/11/18	Belfast Lough, Down	54 37N 05 52W	438 km	WNW
EL09039	Adult	13/08/10	Holbeach St Matthew, Lincolnshire			
	Colour-mark sighting	03/05/18	Belfast Lough, Down	54 37N 05 52W	437 km	WNW
DE19745	First-year	07/11/10	Strangford Lough, Down	54 30N 05 38W		
	Caught by ringer	03/08/19	Snettisham, Norfolk		441 km	ESE

The longevity record for Black-tailed Godwit is 23 years and 3 months. This sighting from WWT Welney is the oldest bird reported in 2018/2019 at 19 years and 4 months between the ringing date and this recovery.

ES28205	Adult	08/08/98	Terrington, Norfolk			
	Colour-mark sighting	18/12/17	Welney WWT, Norfolk	52 31N 00 16E	30 km	S

Black-tailed Godwit recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

BAR-TAILED GODWIT

The Wash is an important site for Bar-tailed Godwit which breed from northern Scandinavia eastwards across western Siberia to the Taimyr peninsula. Bar-tailed Godwit arrive back on the Wash in August to moult and the majority of the population remains on the Wash for the winter (Wernham *et al.* 2002).

Considering the number of Bar-tailed Godwit ringed on the Wash, particularly in autumn, few recoveries are received. All the foreign recoveries of Bar-tailed Godwit in 2018/2019 were from Norway.

DD73715	Adult	14/01/12	Terrington Marsh, Norfolk			
	Colour-mark sighting	16/05/17	Porsanger, Finnmark, **Norway**	70 13N 24 55E	2,312 km	NE
DE42165	Adult	05/08/15	Snettisham, Norfolk			
	Colour-mark sighting	16/05/17	Porsanger, Finnmark**, Norway**	70 13N 24 55E	2,303 km	NE
NOS	First-year	30/08/13	Klepp, Rogaland, **Norway**	58 45N 05 28E		
K03531	Caught by ringer	14/08/18	Snettisham, Norfolk		729 km	SSW

UK recoveries away from the Wash include one caught on Welwick Marsh on the Humber estuary.

EX65176	Adult	14/08/18	Snettisham, Norfolk			
	Caught by ringer	26/11/19	Welwick Marsh, Yorkshire	53 38N 00 02E	93 km	NNW

It is possible that this bird uses the Wash for moulting before moving to Lancashire to winter, having been seen in Lancashire in two consecutive winters and also re-sighted on the Wash in September 2018 and September/October 2019.

DE42151	Adult	05/08/15	Snettisham, Norfolk			
	Colour-mark sighting	13/02/16	Knott End on Sea, Lancashire	53 55N 03 00W	258 km	WNW
	Colour-mark sighting	21/11/17	Knott End on Sea, Lancashire			

Bar-tailed Godwit recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

CURLEW

Most of our foreign recoveries of Curlew are from Finland, a major breeding area for this species. One such recovery was a successful breeding bird, seen with fledglings in four consecutive years near Oulu. The bird was seen with one fledgling in June 2016, three in July 2017 and July 2018 and two in July 2019.

FP32856	Adult	23/08/05	Holbeach St Matthew, Lincolnshire			
	Ring read in field	24/06/16	Oulu, **Finland**	64 19N 27 52E	2,037 km	NE
	Ring read in field	19/07/17	Oulu, **Finland**			
	Ring read in field	20/04/18	Oulu, **Finland**			
	Ring read in field	24/07/18	Oulu, **Finland**			
	Ring read in field	22/04/19	Oulu, **Finland**			
	Ring read in field	21/07/19	Oulu, **Finland**			

Two recoveries of Curlew were from northern Sweden, both identified by colour marks. Colour-mark sightings now contribute significantly to recoveries of several species, particularly Curlew. The second of these Curlew illustrates the value of colour-marks in building up life histories of individual birds.

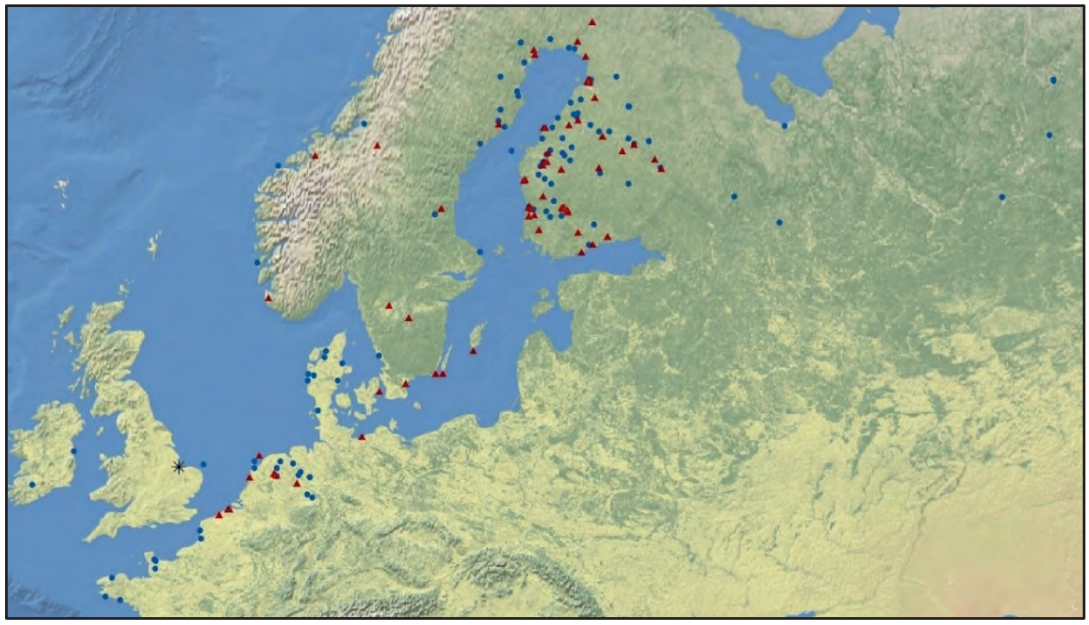
FH81461	Adult	20/08/16	Snettisham, Norfolk			
	Colour-mark sighting	24/04/17	Västerbotten, **Sweden**	64 43N 21 01E	1,763km	NE

Surprisingly, in the last two winters this bird has been seen on several occasions by the WWRG re-sighting team around Heacham, indicating that it now winters on the Wash.

FH30917	Adult	12/08/14	Ken Hill, Heacham, Norfolk			
	Colour-mark sighting	12/09/15	Snettisham, Norfolk			LOCAL
	Colour-mark sighting	04/05/16	Norrbotten, **Sweden**	65 58N 21 13E	1,858 km	NE
	Colour-mark sighting	18/09/16	Snettisham, Norfolk			
	Colour-mark sighting	26/11/17	Pegwell Bay, Kent	51 18N 01 22E	187 km	SSE
	Colour-mark sighting	08/05/18	Norrbotten, **Sweden**			
	Colour-mark sighting	15/06/18	Norrbotten, **Sweden**			

Less common are recoveries from Germany where Curlew also breed, the only recovery in 2018/2019 was a freshly dead bird in mid-April 2018.

FH81158	Adult	02/09/15	Terrington Marsh, Norfolk			
	Freshly dead	15/04/18	Gütersloh, Detmold, **Germany**	51 46N 08 26E	565 km	ESE



Curlew recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

Amongst the UK recoveries was one from Conwy in Wales caught by SCAN Ringing Group. Some members of SCAN are also WWRG members, so it is likely that some ringers would have been present at both catches and that the same person may even have processed this bird on both occasions.

FH94270	Adult	19/09/16	Friskney New Marsh, Lincolnshire			
	Caught by ringer	14/10/18	Llanfairfechan, Conwy	53 14N 04 00W	282 km	W

This Curlew has been sighted on several occasions by the WWRG re-sighting team in autumn 2017 and 2018. A combination of all these records indicates that this bird passes through the Wash *en route* to its wintering site in Cornwall. In 2018, the bird was seen at Snettisham on 14 October and then in Cornwall on 22 October.

FH81485	Adult	20/09/16	Snettisham, Norfolk			
	Colour-mark sighting	26/12/16	Tresillian River, Cornwall	50 15N 05 00W	475 km	SW
	Colour-mark sighting	22/10/18	Tresillian River, Cornwall			
	Colour-mark sighting	04/03/19	Tresillian River, Cornwall			

REDSHANK

The British and Irish breeding populations of Redshank largely remain in winter and are joined by large numbers of Redshank from the Icelandic breeding population (Wernham *et al* 2002). Two Redshank ringed on the Wash were recovered on their breeding grounds in Iceland.

DK57507	Adult	21/07/01	Terrington Marsh, Norfolk			
	Caught by ringer	31/05/17	Arnes, **Iceland**	63 49N 20 52W	1,728 km	NW
DD98478	First-year	18/10/09	Terrington Marsh, Norfolk			
	Ring read in field	23/06/16	Rangárvallasýsla, **Iceland**	63 58N 20 28W	1,725 km	NW

A more unusual recovery was this Redshank ringed in Denmark, the first ringed there to be recovered on the Wash.

DKC	First-year	28/08/13	Viborg, **Denmark**	56 42N 08 13E		
7145109	Caught by ringer	13/09/18	Terrington Marsh, Norfolk		668 km	SW

Redshank recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

There were several exchanges of Redshank with Wales, including a first-year bird caught less than six weeks after ringing.

DT09338	First-year	15/09/16	Gedney Drove End, Lincolnshire			
	Caught by ringer	29/10/16	Borth, Ceredigion	52 31N 04 03W	288 km	W

There were several local recoveries of dead Redshank in March/April 2018, following the spell of cold weather known as the 'Beast from the East' which began on 22 February 2018 and, along with 'Storm Emma', lasted through to early March 2018. The following birds were found together in a group of 20 dead Redshank. Dead Wash-ringed Redshank were also found in South Wales and Essex.

DT09297	Adult	15/09/16	Gedney Drove End, Lincolnshire	
	Dead	04/03/18	Gedney Drove End, Lincolnshire	LOCAL
DE42634	First-year	21/09/16	Gedney Drove End, Lincolnshire	
	Dead	04/03/18	Gedney Drove End, Lincolnshire	LOCAL
DE42688	Adult	25/08/17	Friskney, Lincolnshire	
	Dead	04/03/18	Gedney Drove End, Lincolnshire	LOCAL

TURNSTONE

There have been very few recoveries of WWRG Turnstone in recent years. The last foreign recovery was in Iceland in 2009 and the last UK recovery (away from the Wash) in Orkney in 2015. The only recovery of a non-WWRG Turnstone on the Wash in 2018/2019 was also from Orkney. As with the previous record, the weight of the Turnstone in Orkney, on spring migration, was almost 50% greater than its weight in Norfolk in winter indicating that it was feeding up in preparation for its onward migration to Greenland or north-east Canada. Colour marks were added to this bird by WWRG in February 2019 and it was seen again at Heacham by the WWRG re-sighting team on several occasions in autumn and winter 2019.

SR12394	Adult	12/05/18	Sanday, Orkney	59 17N 02 25W		
	Caught by ringer	24/02/19	Heacham, Norfolk		732 km	SSE

This bird has also been seen by a member of WWRG at Brancaster Staithe on 23 December 2019 in a flock of 13 Turnstone. Having been colour-marked at the time of ringing, this bird is easily identifiable and seems to have moved along the Norfolk coast for its winter home.

SR46715	Adult	20/03/10	Terrington Marsh, Norfolk			
	Colour-mark sighting	27/01/12	Brancaster Staithe, Norfolk	52 57N 00 39E	29 km	NE
	Colour-mark sighting	16/09/12	Burnham Overy Staithe, Norfolk	52 57N 00 44E	34 km	ENE
	Colour-mark sighting	18/02/17	Brancaster Staithe, Norfolk			
	Colour-mark sighting	10/10/18	Brancaster Staithe, Norfolk			

Turnstone recoveries, ringing locations of birds ringed abroad and recovered on the Wash (red triangles) and recovery locations of birds ringed on the Wash and recovered abroad (blue dots).

LESSER BLACK-BACKED GULL

WWRG continues to receive recoveries of Lesser Black-backed Gull and Herring Gull from the birds ringed as nestlings in the colony on the Outer Trial Bank (Inner Westmark Knock) until 2015, mainly dead birds found locally.

There were two further sightings of a Lesser Black-backed Gull cited in the WWRG 2016/2017 Report. This bird was ringed in 2005 and caught in 2016 in Germany when wing tags were added. This has resulted in several sightings of this bird, the most recent of which were in spring and summer 2018 in the Czech Republic. This bird may now breed in the Brandenburg area and moves a short distance south-west in the autumn, although it hasn't been reported in winter and might travel much further.

GC16560	Nestling	26/06/05	Inner Westmark Knock, Terrington, Norfolk			
= DEH	Caught by ringer	02/05/16	Brandenburg, **Germany**	51 42N 14 07E	953 km	E
EA202021			Colour-marks added - Wing tags on both wings			
	Wing-tag sighting	06/06/16	Brandenburg, **Germany**			
	Wing-tag sighting	12/07/16	Dresden, **Germany**	51 16N 13 13E	905 km	ESE
	Wing-tag sighting	31/05/17	Brandenburg, **Germany**			
	Wing-tag sighting	21/10/17	Leipzig, **Germany**	51 04N 12 15E	846 km	ESE
	Wing-tag sighting	26/03/18	Ústecký, **Czech Republic**	50 28N 13 25E	946 km	ESE
	Wing-tag sighting	06/07/18	Ústecký, **Czech Republic**			

The only other foreign recovery of a Lesser Black-backed Gull was from Spain in 2009!

GC52712	Nestling	01/07/07	Inner Westmark Knock, Terrington, Norfolk			
	Ring read in field	07/03/09	Toledo, **Spain**	39 57N 04 37W	1,479 km	SSW

The following Lesser Black-backed Gull was ringed in Gloucestershire and found dead in the Inner Westmark Knock colony.

FP24233	Adult	08/05/00	Gloucester, Gloucestershire	51 50N 02 16W		
	Dead	23/07/01	Inner Westmark Knock, Terrington, Norfolk		203 km	ENE

This recovery near Peterborough was found dead at the site of a wind turbine during routine monitoring.

GC79289	Nestling	22/06/08	Inner Westmark Knock, Terrington, Norfolk			
	Dead (at wind turbine)	24/04/19	Thorney, Peterborough	52 39N 00 02W	28 km	SW

Approaching the 'Outer Bund' – Inner Westmark Knock - for gull ringing (Jacquie Clark)

HERRING GULL

Almost all recoveries of Herring Gull were of dead birds found locally, one by members of the WWRG re-sighting team on Snettisham beach. This bird was ringed as a first-year bird at King's Lynn RSPCA so presumably had been injured.

GV72407	First-year	12/08/18	King's Lynn, Norfolk		
	Dead	29/09/19	Snettisham, Norfolk		LOCAL

There was only one Herring Gull recovery away from the Wash.

GR72017	Nestling	06/07/13	Inner Westmark Knock, Terrington, Norfolk		
	Injured	23/04/18	Hartlepool, Co. Durham	54 42N 01 15W	230 km NNW

Carole Davis, maps Ryan Burrell

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Bar-tailed Godwit flock at Snettisham (Cathy Ryden)

LONGEVITY RECORDS

The longevity of a bird is the elapsed time (given here in years and months) between the date of ringing of the bird and the date of its latest sighting or recovery. This represents a minimum age, especially for birds ringed as adults which may be several years old at the time of ringing.

Table 1 lists all known longevity records for wader species ringed in Britain and Ireland and for wader species ringed by WWRG since 1959 for which there is sufficient data. The overall longevity records for birds in Britain and Ireland have been extracted from the online ringing reports (https://app.bto.org/ring/countyrec/results2018/longevity.htm).

Some of the species ringed by WWRG have had few recoveries and so no significant longevity has been noted. Where a bird ringed on the Wash holds the BTO record, the details appear in *blue italics*.

Table 1. Longevity records

Species	Ringed in Britain and Ireland			Ringed by WWRG		
Oystercatcher	*FV27597*	*41yr*	*1m*	*FV27597*	*41yr*	*1m*
Ringed Plover	NV68817	21yr	11m	BV85945	19yr	8m
Golden Plover	2072773	12yr	0m	DN77939	6yr	5m
Grey Plover	*DR33258*	*25yr*	*1m*	*DR33258*	*25yr*	*1m*
Lapwing	DS30355	21yr	1m			
Knot	CE25745	27yr	3m	CK68568	24yr	0m
Sanderling	*BB52147*	*17yr*	*7m*	*BB52147*	*17yr*	*7m*
Little Stint	KR8--	3yr	11m			
Curlew Sandpiper	BV70618	14yr	10m			
Purple Sandpiper	NV03868	15yr	2m	BV89291	11yr	11m
Dunlin	NS64038	19yr	3m	NR32469	18yr	11m
Ruff	CC91720	9yr	0m	CE33211	6yr	7m
Snipe	XC34292	16yr	0m			
Black-tailed Godwit (previously recaptured by WWRG)	EF90838	23yr	3m	EP85146	23yr	1m
Bar-tailed Godwit	*DS66917*	*33yr*	*11m*	*DS66917*	*33yr*	*11m*
Whimbrel	EK92102	24yr	1m			
Curlew	FV67501	32yr	7m	FA10051	29yr	11m
Common Sandpiper	NV54164	15yr	1m			
Spotted Redshank	*DR28508*	*7yr*	*5m*	*DR28508*	*7yr*	*5m*
Greenshank	DR70162	16yr	0m	DR96000	5yr	11m
Redshank	DR74213	20yr	1m	P10010 DN20546	17yr 0m 17yr 0m	
Turnstone	XS56243	20yr	0m	CC88754	19yr	2m

Table 2. Details of WWRG longevity records

		Ringing information			Finding information		
Species	**Ring no**	**Age**	**Place**	**Date**	**Circs**	**Place**	**Date**
Oystercatcher	*FV27597*	*Adult*	*Friskney*	*30/07/76*	*Shot*	*France*	*04/09/17*
Ringed Plover	BV85945	Adult	Heacham	31/08/80	Controlled	Snettisham	20/05/00
Golden Plover	DN77939	Adult	Terrington	24/07/97	Shot	Sutton Bridge	14/12/03
Grey Plover	*DR33258*	*2nd Summer*	*Terrington*	*13/07/79*	*Controlled*	*Terrington*	*31/08/04*
Knot	CK68568	Adult	N. Wootton	27/08/68	Controlled	Friskney	01/09/92
Sanderling	*BB52147*	*Adult*	*Snettisham*	*18/07/70*	*Controlled*	*Heacham*	*21/02/88*
Purple Sandpiper	BV89291	Adult	Heacham	16/04/88	Controlled	Hunstanton	08/04/00
Dunlin	NR32469	Adult	Benington	21/08/90	Controlled	Butterwick	24/07/09
Ruff	CE33211	1st Winter	Wolferton	22/08/78	Controlled	Senegal	20/02/85
Black-tailed Godwit	EP85146	1st Winter	Holbeach	30/08/96	Colour-ring sighting	Snettisham	03/10/19
Bar-tailed Godwit	*DS66917*	*Adult*	*Wolferton*	*22/08/74*	*Controlled*	*Terrington*	*04/08/08*
Curlew	FA10051	Adult	Leverton	18/09/85	Controlled	Friskney	01/09/15
Spotted Redshank	*DR28508*	*2nd Summer*	*Terrington*	*27/07/75*	*Dead*	*Morocco*	*12/01/83*
Greenshank	DR96000	Adult	Wolferton	22/08/82	Controlled	Denmark	10/08/88
Redshank	DN20546	Adult	Terrington	11/08/87	Controlled	Terrington	29/08/04
Turnstone	CC88754	Adult	Terrington	28/08/72	Controlled	Heacham	22/11/91

Carole Davis

Setting mist nets on Terrington Marsh (Rob Robinson)

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Guy Anderson
Martin Anstee
Graham Appleton
Mike Archer
Francis Argyle
Sean Ashton
Adham Ashton-Butt
Phil & Sharon Atkinson
Graham Austin
Michael Babcock
Ian & Carole Bainbridge
Dawn Balmer
Steve Barton
Ruth Bell
Paul Bellamy
Phil Belman
Sophie Bennett
Elke Berg
Ray Bishop
Selena & Dave Bone
Katharine Bowgen
Nick Branson
David & Wendy Brooks
Dave Brothers
Birgitta Buche
Roger & Rebecca Buisson
Ryan Burrell
Jan Butchers
Andy Camp
Phil Cannings
Lucy Capstick
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Nigel & Jacquie Clark
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Zoe Crighton
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