



**BTO Research Report No. 329**

**Breeding Wader Populations  
in the Severn & Avon Vales  
Natural Area in 2002**

**Authors**

**Andy Wilson and Mike Smart**

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The British Trust for Ornithology  
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British Trust for Ornithology

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## Summary

- A total of 72 sites were surveyed for breeding waders in the Severn and Avon Vales Natural Area in 2002.
- 247 pairs of grassland waders were located: 142 pairs of Lapwings, 61 pairs of Redshank, 34 pairs of Curlew, nine pairs of Oystercatchers and one pair of Snipe.
- Counts were compared with a previous survey. Wader population changes between 1982 and 2002 were in line with those elsewhere, as indicated by the national Breeding Waders of Wet Meadows surveys in those years.
- Comparison with a RSPB survey from 1995 indicate that the declines have not halted during the last seven years; Redshank in particular is rapidly decreasing in the Severn Vale, and away from the estuary is now found almost exclusively on artificial gravel pit-type sites.
- Densities of Lapwing and Redshank are only one-third of the average found on wet lowland grassland in England and Wales in 2002, Curlew densities in the Severn and Avon Vales were higher than the national average.
- Oystercatchers have colonised the Severn Vale within the last 10 years but remain scarce.
- The only site in the Severn or Avon Vales that attracts drumming Snipe annually is Ashleworth Ham.
- Efforts to stop and reverse these declines should initially concentrate on safe guarding existing wader populations, through conservation measures at near-natural sites such as the Great Hay Meadow, Coombe Hill, the Chelt/Leigh Meadows, Gooseham and Aysham, and Eckington Marshes. Particular attention should be devoted to the Carrant Catchment, hitherto neglected.
- Observations in 2002 indicate that Curlew young could be vulnerable to hay cutting well into July, delaying cutting would be beneficial to this species.
- Long-term strategies for wetland recreation in the Severn or Avon Vales should be strongly influenced by the habitat requirements of breeding waders. It should be noted that an element of arable land is important in providing nest sites for Lapwings.



## 1. INTRODUCTION

Land use changes in river floodplains have come under increasing scrutiny in Great Britain, and in lowland England in particular, in recent years. An increased prevalence in the flooding of built-up areas coupled with a loss of biodiversity along river flood plains have prompted debate about the way in which our floodplains are managed.

Loss of biodiversity on floodplain grassland has been widely reported and ties in with a general loss of biodiversity on farmland across the UK, widely attributed to increased agricultural intensification. Changes in grassland management have been especially pronounced since the mid 1970s, with drainage, re-seeding of permanent pasture, increased use of fertilisers, conversion to arable and changes in stocking regimes all known to have adverse effects on wildlife. Of the bird species found in these habitats, it is the waders that are widely perceived to have been most affected. Substantial proportions of the breeding populations of Lapwing *Vanellus vanellus*, Redshank *Tringa totanus*, and Snipe *Gallinago gallinago* in particular have traditionally been found on wet grassland sites; the reduction or loss of these grassland populations have therefore contributed to local extinctions across some parts of lowland England and Wales.

The changes in floodplain use and management of the Severn and Avon Valleys have reflected those witnessed across lowland Britain. The adverse effects on the Severn catchment's breeding wader populations have been pronounced. During a national survey of breeding waders on wet grasslands carried out by the British Trust for Ornithology (BTO) in 1982 (Smith 1983) it was found that most areas in the Severn Valley held very few breeding waders. A more extensive survey by the Royal Society for the Protection of Birds (RSPB) in 1995 revealed that wader numbers had dwindled still further (Quinn 1995).

A comprehensive appraisal of options for the re-creation of River Severn/Avon floodplain wetlands was carried out on behalf of the Environment Agency, English Nature and RSPB in 1999. This report (henceforth referred to as Ecoscope) gave detailed information on the history of drainage and land management within the Severn and Avon Vales Natural Area and identified 18 areas (Ecoscope Zones) for potential wetland recreation (Table 1.1). Sites were assessed for their suitability for re-creation of floodplain wetlands based on criteria such as constraining factors (e.g. housing, transport infrastructure, archaeological features, flood defence considerations), habitat requirements (e.g. soil type, water supply, existing habitat) and their suitability for target species groups.

**Table 1.1** Ecoscope Zones (from Ecoscope 1999)

<b>Ecoscope Zone</b>	<b>Grid reference</b>	<b>Overall suitability</b>
1. Severn: Worcester to Holt	SO836575-SO827632	Moderate
2. Teme & Severn confluence	SO8451	Moderate/High
3. Severn: Kempsey Upper & Lower Hams	SO849498-SO845485	Moderate
4. Severn: Clifton to Upton on Severn	SO846502- SO885410	Low
5. Birch Green	SO885445	Moderate
6. Severn: Upper & Lower Hams, Upton	SO8539	Moderate
7. Severn: Uckinghall to Tewkesbury	SO8638-SO8833	High/Moderate
8. Longdon Marsh	SO8235	High
9. Severn: Tewkesbury to Longford	SO8731-SO8321	High
10. Severn: Coombe Hill	SO8727	High/Moderate
11. Severn: Minsterworth Ham	SO8016	Moderate
12. Severn: Elmore Back to Longney	SO7716-SO7513	Moderate/Low
13. Severn: Walmore Common	SO7415	Moderate
14. Severn: Awre	SO7108	High
15. Wicksters Brook/The Moors, Slimbridge	SO7405 and SO7203	Moderate
16. Avon: Evesham to Birlingham	SP032448-SP940437	Moderate/Low
17. Avon: Eckington Bridge to Tewkesbury	SP923424-SO8933	Moderate
18. Avon: Bidford to Offenham	SP0951-SP0546	Moderate

A second national Breeding Waders of Wet Meadows was planned by BTO on behalf of the RSPB in 2001. It was thought worthwhile achieving an extensive survey of the Severn and Avon Vales again in 2001 in the light of the Ecoscope report. This survey was postponed in 2001 due to the Foot & Mouth outbreak but went ahead in the spring of 2002.

This report presents the findings of the 2002 wader survey in the Severn & Avon Vales (henceforth called BTO02). The results for each site are presented and comparative figures for areas surveyed in 1982 and 1995 (henceforth called BTO82 and RSPB95 respectively) are given to provide evidence of changes in wader numbers over the last 20 years. Maps of the distribution of 2002 and 1995 survey sites can be found in Appendices 4 and 5 respectively, along with a map of Ecoscope Zones in Appendix 6.

## 2. METHODS

### 2.1 Site Selection

The aim was to cover all suitable wet meadow sites within the Severn and Avon Vales in 2002. This was to be done by a combination of volunteer BTO surveyors and a professional surveyor. Priorities for coverage were the Ecoscope Zones and the sites for which previous survey data was available (BTO82 or RSPB95). Due to the complex nature of overlaying results from three sets of site boundaries (BTO82, RSPB95 and Ecoscope Zones), some sites were merged or split to ease survey coverage. Sites covered along the River Leadon were not included in the survey as these were not covered in the original BTO survey and only a single pair of breeding waders (Lapwings) was found in RSPB95. The Carrant catchment, not covered in previous surveys, was covered in BTO02, as were some recently created gravel pits. The final list of sites to be covered comprised over 70 areas of varying size, totalling around 120 square kilometres.

### 2.2 Field Surveys

The methodology followed that from previous surveys (Smith 1983) with three visits to each site between mid April and late June. This spread of visits ensures that at least one visit coincides with the peak activity of each species. The survey method is the “field by field approach”, whereby the observer walks across the site, aiming to walk within 100 metres of the whole area, mapping the locations of waders on large-scale maps. A set of survey instructions can be found in Appendix 12.

### 2.3 Analytical Methods

Wader numbers for each site were estimated using established protocols (O’Brien & Smith 1992; Gilbert *et al.* 1998) for each species (Table 2.1).

**Table 2.1** Methods for estimating number of pairs for each wader species

Species	Method
Oystercatcher	Half the maximum number of individuals recorded between mid April & late May
Lapwing	Half the maximum number of individuals recorded between mid April & late May
Redshank	The mean number of individuals recorded between mid April & late May
Curlew	Maximum number of pairs or territorial birds seen
Snipe	Number of drumming or chipping birds

In some cases (e.g. pairs of Redshanks at Saul Warth or Twynning Green) these protocols produced population estimates that were considered to be optimistic by the observers concerned but using these established methods does allow direct comparability with previous surveys.

Each of the site boundaries from the BTO82, RSPB95, BTO02 surveys and the Ecoscope study were digitised so that the data could be analysed using ArcView Geographic Information System (Environment Systems Research Institute 1996). This approach ensured that comparisons of wader counts between surveys referred only to those areas of each site that were covered in both surveys.



### 3. RESULTS

#### 3.1 Survey Coverage

Seventy-two sites were surveyed (Table 3.1), including all those likely to support breeding waders. The total area covered was 11,868 hectares, considerably more than in BTO82 and RSPB95 (6446 hectares in the Severn and Avon Vales). Most of the sites covered in BTO82 were re-surveyed, giving a sample of 27 sites covering 4653 hectares from which to make paired comparisons while 53 of the RSPB95 sites were covered, totalling 6295 hectares.

**Table 3.1** Pairs of breeding waders at 2002 survey sites

<b>BTO</b>									
<b>Site number</b>	<b>Site name</b>	<b>Grid-ref</b>	<b>Area (ha)</b>	<b>Oystercatcher</b>	<b>Lapwing</b>	<b>Snipe</b>	<b>Curlew</b>	<b>Redshank</b>	
2510	Frampton Marsh	SO745055	99	0	1	0	0	0	
2511	Elmore Back	SO770165	55	0	0	0	0	0	
2542	Corn Ham	SO798155	149	0	0	0	0	0	
2544	Port Ham	SO820190	75	0	0	0	0	0	
2547	Maisemore Ham	SO820206	105	0	0	0	0	0	
2548	Sandhurst-Maisemore Park	SO820225	41	0	1	0	0	0	
2549	Ashleworth and Hasfield Hams	SO830265	67	0	1	1	1	2	
2559	Parkend Bridge	SO782116	40	0	0	0	0	0	
3204	Ryalls Court Farm	SO850420	128	0	0	0	0	0	
3205	Severn Stoke Ham	SO854435	100	0	1	0	0	0	
3206	Clifton-Severn Stoke	SO843452	94	0	0	0	0	0	
3207	Clifton-Baynall	SO840465	123	0	0	0	0	0	
3209	Kempsey Lower Ham	SO845484	29	0	0	0	0	0	
3210	Clerkenleap-Kempsey	SO849501	36	0	0	0	0	0	
3215	Barbourne-Holt Fleet	SO842600	322	0	1	0	0	0	
3224	Teme (Bransford Bridge)	SO805535	18	0	0	0	0	0	
3251	Twyning Green-Strensham	SO915375	331	0	2	0	5	8	
3252	Eckington Marshes	SO911417	239	0	3	0	4	0	
3253	Gooseham and Aysham	SO925425	31	0	0	0	2	0	
3254	Pershore-Fladbury	SO975460	856	0	8	0	1	0	
9052	Confluence - Leigh Sinton	SO830530	346	0	1	0	0	0	
9631	Aylburton Warth	SO615000	76	0	11	0	0	3	
9632	New Grounds Slimbridge	SO725052	535	5	12	0	0	7	
9634	Sud Meadow	SO810185	40	0	0	0	0	0	
9636	Severn Ham	SO885325	69	0	0	0	1	1	
10001	Saul Warth	SO740077	80	0	8	0	0	13	
10263	Powick Meadows and Powick Hams	SO830524	477	0	1	0	1	0	
10264	Kempsey	SO847482	49	0	0	0	0	0	
10265	Hanley Castle	SO850430	63	0	0	0	0	0	
10266	Ashmoor Common	SO854464	41	0	0	0	0	0	
10267	Upton Hams	SO860390	216	0	0	0	2	0	
10268	Uckinghall Meadow	SO864379	119	0	0	0	0	0	
10269	Bushley Meadows	SO872350	178	0	0	0	1	0	
10270	Mythe Pool	SO880352	111	0	0	0	0	0	

<b>BTO</b>				Oystercatcher	Lapwing	Snipe	Curlew	Redshank
<b>Site number</b>	<b>Site name</b>	<b>Grid-ref</b>	<b>Area (ha)</b>					
10271	Bow Farm/Ripple Lake	SO873364	109	0	3	0	0	0
10272	Longdon Marsh	SO820360	636	0	8	0	1	0
10273	Hasfield Ham & Ashleworth Meadows	SO840260	387	0	2	0	2	0
10274	Chaceley/Tirley	SO850295	368	0	1	0	2	0
10275	Lower Lode	SO879322	36	0	0	0	0	0
10276	Sandhurst - Brawn Farm	SO820243	79	0	0	0	0	0
10277	Sandhurst – Longford	SO825212	188	0	4	0	0	0
10278	Inchmore Bridge-Fletcher's Leap	SO860254	171	0	5	0	2	0
10279	Long Pool, Deerhurst	SO875272	87	0	0	0	0	0
10280	Apperleyhall Farm	SO860270	92	0	0	0	1	0
10281	Cobney Meadows-Vine Tree Farm	SO870268	192	0	2	0	2	0
10282	Minsterworth Ham	SO800174	341	0	0	0	0	0
10283	Elmore Back - Weir Green	SO783160	197	0	1	0	0	0
10284	Bridgemacote	SO760157	174	0	0	0	0	0
10285	Longney	SO759134	243	0	0	0	0	0
10287	Hayward	SO715085	151	0	0	0	0	0
10286	Walmore Common	SO740155	50	0	1	0	0	0
10289	Cambridge	SO747040	190	0	0	0	0	0
10290	Lower Lode	SO865305	123	0	0	0	1	0
10291	Avon, Pensham	SO934443	139	0	0	0	0	0
10292	Avon, Twyning	SO900355	105	0	1	0	1	0
10293	Avon, Bredons Hardwick	SO904352	302	1	1	0	3	2
10294	Avon, Bidford-Offenham	SP070493	484	0	13	0	0	2
10302	Bray's Farm Meadow	SO790360	72	0	0	0	0	0
10303	Brotheridge Green	SO825418	96	0	0	0	0	0
10304	Castlemorton Common	SO780390	116	0	0	0	0	0
10305	Coombegreen Common	SO775365	55	0	0	0	0	0
10306	Epney	SO775115	120	0	2	0	0	0
10307	Forthampton	SO885317	64	0	0	0	0	0
10308	Hollybed Common	SO770378	42	0	0	0	0	0
10310	Longdon Brook	SO860365	150	0	0	0	1	0
10312	River Swillgate	SO905290	185	0	0	0	0	0
10313	Woodfield Farm	SO950425	124	0	7	0	0	7
10367	Aylburton, New Grounds	SO635010	128	1	8	0	0	0
10369	Avon, Evesham-Fladbury	SP010470	154	0	0	0	0	0
<b>Wet Meadows Total</b>			<b>11498</b>	<b>7</b>	<b>110</b>	<b>1</b>	<b>34</b>	<b>45</b>
<i>Additional sites (not wet meadows)</i>								
	Grimley Gravel Pits	SO832597	c.55	1	3	0	0	1
	Clifton Gravel Pits	SO845445	c.50	0	1	0	0	0
	Kemerton Lake	SO958351	c.210	1	27	0	0	12
	Ryall House Farm Quarry	SO868402	c.55	0	1	0	0	3
<b>Total</b>			<b>11868</b>	<b>9</b>	<b>142</b>	<b>1</b>	<b>34</b>	<b>61</b>



### 3.2 Wader Numbers in 2002

In all, 196 pairs of breeding waders were estimated to be present on the sites surveyed in 2002, over half of which were Lapwings (142 pairs) with 61 pairs of Redshank, 34 pairs of Curlew *Numenius arquata*, nine pairs of Oystercatcher *Haematopus ostralegus* and, possibly, one pair of Snipe (Table 3.1).

Just over half of the wet meadow sites (i.e. excluding gravel pits) supported at least one pair of breeding waders (34 out of 68) but the great majority were concentrated on just a small numbers of sites, with 71% at the top 15 sites (Table 3.2). Of the wet meadow sites, the top 15 sites supported all the Oystercatchers and Redshank and most of the Curlew located in 2002, with Lapwing the only species found at some of the less important sites.

Of the 7929 hectares covered by the 18 Ecoscope Zones, 7109 hectares was surveyed for waders in BTO02, revealing a total of 59 pairs of Lapwing, 12 pairs of Redshank, 26 pairs of Curlew and singles pairs of Oystercatcher and Snipe. Most of the waders were concentrated in Ecoscope Zones 8, 9, 10, 17 and 18 – the mid Severn Vale around Tewkesbury and the lower reaches of the Avon (Appendix 3).

**Table 3.2** Top 15 wader sites in Severn and Avon Vales in 2002\*

		Oystercatcher	Lapwing	Snipe	Curlew	Redshank	All species	Density (pairs/km <sup>2</sup> )
Saul Warth	SO740077	0	8	0	0	13	21	26.3
Aylburton Warth	SO615000	0	11	0	0	3	14	18.4
Woodfield Farm	SO950425	0	7	0	0	7	14	11.3
Ashleworth and Hasfield Hams	SO830265	0	1	1	1	2	5	7.5
Aylburton, New Grounds	SO635010	1	8	0	0	0	9	7.0
Gooseham and Aysham	SO925425	0	0	0	2	0	2	6.5
Eckington Marshes	SO911417	0	3	0	4	0	7	6.0
Twynning Green-Strensham	SO915375	0	2	0	5	8	15	4.5
New Grounds Slimbridge	SO725052	5	12	0	0	7	24	4.5
Inchmore Bridge-Fletcher's Leap	SO860254	0	5	0	2	0	7	4.1
Avon, Bidford-Offenham	SP070493	0	13	0	0	2	15	3.1
Severn Ham	SO885325	0	0	0	1	1	2	2.9
Bow Farm/Ripple Lake	SO873364	0	3	0	0	0	3	2.8
Sandhurst-Maisemore Park	SO820225	0	1	0	0	0	1	2.4
Avon, Bredons Hardwick	SO904352	1	1	0	3	2	7	2.3

\*excludes gravel pit sites

### 3.3 Changes in Wader Numbers Between 1982 and 2002

Four out of the five wader species showed decreases between 1982 and 2002 with a decrease of 45% for Lapwing, 83% for Snipe (but note the very small numbers even in BTO82), 18% for Curlew and 32% for Redshank. Oystercatcher bucked the trend as it has, in fact, only colonised the Severn and Avon Vales in recent years; there were no breeding pairs in BTO82 but five pairs were located in BTO02 on sites covered in both surveys (Table 3.3). The population changes were in line with those detected nationally (Wilson *et al.* in prep), with the exception of Curlew, which decline by 18% in the Severn and Avon Vales - considerably less than the national decline of 40% (Table 3.3). A table showing wader populations in BTO82 and BTO02 can be found in Appendix 1. It should be noted that the counts from 1982 from many sites are considered to be underestimates as data was from single visits only for many sites and some were not visited until early June, by which time failed breeders would have departed. The estimates of population change between BTO82 and BTO02 are therefore considered to be conservative, with actual declines greater than those shown in Table 3.3.

**Table 3.3** Overall population changes between BTO82 and BTO02

	Oystercatcher	Lapwing	Snipe	Curlew	Redshank
Pairs BTO82	0	90	6	17	47
Pairs BTO02	5	49	1	14	32
% change	+100	-45	-83	-18	-32
National % change	+51	-40	-61	-40	-21
(confidence limits)	(+27 to +86)	(-52 to -25)	(-73 to -48)	(-53 to -27)	(-39 to -2)

### 3.4 Changes in Wader Numbers Between 1995 and 2002

Wader population changes on sites covered in RSPB95 and BTO02 are detailed in full in Appendix 2. These indicate modest reductions in the numbers of Lapwing and Curlew in the intervening seven years but a rather more substantial 31% reduction in Redshank numbers (Table 3.4). Population changes within each of the Ecoscope Zones covered in RSPB95 and BTO02 are given in Appendix 3. Such comparisons are not given for BTO82 and BTO02 as sample sizes within the Ecoscope Zones are very small. The changes shown in Table 3.4 indicate that reductions in breeding wader populations within the Ecoscope Zones have been marginally stronger than elsewhere, especially for Redshank of which only seven pairs were found in BTO02 compared with 24 pairs in RSPB95, a reduction of 71% (Table 3.4).

**Table 3.4** Overall population changes between RSPB95 and BTO02

	Oystercatcher	Lapwing	Snipe	Curlew	Redshank
<i>All sites</i>					
Pairs RSPB95	0	91	1	38	54
Pairs BTO02	6	74	1	33	37
% change	+100	-19	0	-14	-31
<i>Sites within Ecoscope Zones</i>					
Pairs RSPB95	0	32	1	24	24
Pairs BTO02	1	25	1	19	7
% change	+100	-22	0	-21	-71

### 3.5 Wader Population Densities

Densities of Lapwing, Redshank and Curlew were all significantly lower in BTO02 than in RSPB95 but some of this apparent reduction in density is due to the larger area covered in BTO02, which included many areas that may not be considered suitable for breeding waders (Table 3.5). Comparison with national figures for 2002 are more informative however, as they show that densities

of Lapwing and Redshank in the Severn and Avon Vales are only one-third the national average. Curlew densities on the other hand are 50% higher than the national average for lowland wet grassland but it should be noted that this species' distribution in lowland England is rather more restricted (Gibbons *et al.* 1993).

**Table 3.5** Population densities in RSPB95 and BTO02 compared with national averages

	<b>Oystercatcher</b>	<b>Lapwing</b>	<b>Snipe</b>	<b>Curlew</b>	<b>Redshank</b>
Pairs/km <sup>2</sup> RSPB95	0.04	1.6	0.01	0.6	0.9
Pairs/km <sup>2</sup> BTO02					
Severn Vale	0.06	1.0	0.01	0.31	0.4
National	0.7	2.9	0.4	0.2	1.2



## 4. INDIVIDUAL SITE ACCOUNTS

Since in most cases three visits were made to each wetland (and in some cases more than three), there was an opportunity to follow the seasonal changes in wader use of each site and the affects of management and farming practices. This section reports on individual wetlands, covering first the 18 Ecoscope Zones, then other zones. In each case detailed comparisons are presented with the RSPB95 survey and, where relevant, with the BTO82 survey. The figures given for numbers of breeding waders are those recorded by observers, rather than those calculated by the national formula used in Table 3.1; there may therefore occasionally be discrepancies between these two figures.

### 4.1 Ecoscope Zones

#### 4.1.1 Severn: Worcester to Holt

Ecoscope (1999) gave a combined overall suitability rating of “medium” to this zone, with the rating for breeding waders also “medium”.

The area, above Worcester, was not covered in RSPB95. In BTO02 it was covered as Barbourne to Holt Fleet.

In BTO02 the only waders recorded were two Lapwings near Grimley on the first visit, and it seems likely that these birds came from the nearby Grimley Gravel Pits where this species certainly nested successfully. A pair of Lapwings with one large, nearly flying, chick was seen outside the strict limits of the site as late as 17 June, in a potato field at Holt Prairie; this was presumably a pair that had re-nested after losing a first clutch.

The main wader interest is at Grimley Gravel Pits, a new site slightly to the west of the zone. The older pits north of Grimley have now been more or less worked out, and are of more interest for nesting ducks and Coot *Fulica atra*. The newer pits to the south are currently being excavated and have a wealth of breeding waders, including Oystercatcher, Little Ringed Plover *Charadrius dubius*, Lapwing and Redshank, not to mention Common Terns *Sterna hirundo*. The pools also appear to attract roosting Curlew (see section 4.3.1 below).

The river valley and floodplain here is rather narrow, and much disturbed by people walking and exercising their dogs, especially in the vicinity of Northwick Meadows, a botanical SSSI on the east bank in the outskirts of Worcester. On the west bank north of Grimley, most of the floodplain is under arable cultivation, mostly cereals, and one pair of Yellow Wagtails *Motacilla flava* certainly nested in the arable area, while another may have done so at Holt Prairie. A heronry is situated in a wood in the floodplain near Grimley.

#### 4.1.2 Teme & Severn Confluence

Ecoscope (1999) gave a combined overall suitability rating of “medium” to this zone, with the rating for breeding waders also “medium”.

The eastern part, bisected by the Worcester southern by-pass, was covered in RSPB95 under the name Powick Meadows, and in BTO02 as Powick Meadows and Powick Hams.

In 1995, one pair of Curlew and one of Redshank were holding territory but were not considered to have bred successfully. In 2002, there were no Redshank, but a Lapwing was holding territory on arable land north of the by-pass in late April and may have bred there; a Curlew was holding territory in the large hay meadows immediately south of the by-pass in late April, but was not found on later visits in May and June.

These meadows still apparently hold suitable habitat for nesting Curlew, despite the proximity of the by-pass. Many of the other meadows are much smaller with extensive hedges, so of little interest to waders, but may be of botanical interest.

The western section of the site, not covered in RSPB95, produced no observations of waders in 2002, when it was covered as two sites: Teme (Bransford Bridge) and Teme (Confluence - Leigh Sinton).

#### **4.1.3 Severn: Kempsey Upper and Lower Hams**

Ecoscope (1999) gave a combined overall suitability rating of “medium” to this zone, with the rating for breeding waders also “medium”.

The two hams were covered separately in RSPB95. In BTO02, the same area was covered as three sites: Kempsey, Kempsey Lower Ham and Clerkenleap-Kempsey.

In 1995 Kempsey Lower Ham held one pair of Redshanks, but there was no sign of them in 2002. It did however hold a small population of Corn Buntings *Miliaria calandra*, like many of the other surviving Severn hams, and attracts Sedge Warblers *Acrocephalus schoenobaenus*, and Reed Buntings *Emberiza schoeniculus*. No waders were recorded on any other sectors of this site in 2002.

The 2002 Kempsey site is above the floodplain and of little potential for breeding waders, being almost entirely intensively cultivated for onions and other market garden produce - though conceivably Lapwings might colonize it. Clerkenleap-Kempsey (Kempsey Upper Ham) is in the floodplain, and has some wet areas attracting species such as Sedge Warbler, but also extensive arable areas and “improved” grassland. Kempsey Lower Ham is still a genuine though very small Severn ham, but is sprayed and much frequented by joggers and dog-walkers.

#### **4.1.4 Severn: Clifton to Upton on Severn**

Ecoscope (1999) gave a combined overall suitability rating of “medium” to this zone, with the rating for breeding waders also “high”.

It was covered in RSPB95 as four sites: Clifton Meadows, Rhydd Meadows, Northfield Meadows and Ryall’s Court Farm. In BTO02 it split into five sites: Clifton-Severn Stoke, Clifton-Baynall, Severn Stoke Ham, Hanley Castle and Ryall’s Court Farm. In addition, the new gravel pits at Clifton (see 4.3.2 below) constituted a new site.

In BTO82, this zone held good numbers of waders, 20 pairs of Lapwing, 10 of Redshank and 13 of Curlew. By 1995 these figures had decreased to no Lapwings, one Redshank and four Curlews, though there was a single breeding Snipe (the only one in the Severn and Avon Vales). The only breeding wader in 2002 was a single Lapwing on maize stubble on the first April visit, which may have nested though it was not recorded on subsequent visits. Curlews were occasionally seen, usually flying past, but were not territorial and may have been either migrants or birds from nearby sites like Upton Ham.

A heronry is situated in a wood on the right bank at the northern tip of the Severn Stoke Ham site.

In 2002 it was difficult to conceive that the area had held such large numbers of waders only 20 years ago, as most of the former meadows, apart from parts of Clifton Meadows and Ryall’s Court Farm, had been converted to arable crops, mainly cereals and potatoes. Furthermore, Ryall’s Court is an organic farm raising cattle on the “zero grazing” system, by which grass is cut early and brought to the barns where the cattle are kept. Fish Meadow, the lowest and wettest part of the Ryall’s Court Farm site, is close to Upton on Severn, is used for flying model aeroplanes, and is the site of the Upton Jazz Festival, for which marquees were being erected in June.

A further change is under way round Clifton Meadows, once a very wet low-lying area with a number of natural springs. Much of the area is being excavated for gravel, lowering the water table, so that the former Snipe breeding area has now dried out; while the excavation is in progress, however, the site is suitable for Little Ringed Plover, nesting Tufted Duck *Aythya fuligula* and a Sand Martin *Riparia riparia* colony.

#### **4.1.5 Birch Green**

Ecoscope (1999) gave a combined overall suitability rating of “medium/high” to this zone, with the rating for breeding waders “medium”. It should be noted that the Ecoscope maps refer only to the southern part of the zone, while the text clearly refers to a larger area including the Ashmoor Common SSSI.

In RSPB95 a larger area, embracing arable land on either side of the SSSI was covered, and five pairs of Lapwings were found on this arable land. In BTO02, both the Ashmoor Common SSSI, still natural and very wet, and the arable land immediately to the south, were included, but not the arable to east and west.

No breeding waders were found on the site, nor on the arable to east and west, which was being ploughed in late April; it is possible that Lapwing may have re-nested there. A Snipe was present on the first late April visit. In view of the proximity to Clifton Meadows where the only 1995 breeding Snipe was found, this site is worthy of further monitoring.

A Wheatear *Oenanthe oenanthe* was on arable land on 23 April.

The SSSI retains its botanical interest with magnificent displays of orchids.

#### **4.1.6 Severn: Upper and Lower Hams, Upton**

Ecoscope (1999) gave a combined overall suitability rating of “medium/high” to this zone, with the rating for breeding waders “high”.

Identical areas were covered by RSPB95 and BTO02.

In RSPB95 the site held three pairs of Redshank and one of Curlew, all on the Upper Ham, north of the disused railway embankment. In BTO02, one pair of Curlew was holding territory on the Upper Ham and another on the Lower Ham. They were heard displaying until 15 June, but, worryingly, could not be found on the third visit on 25 June, when haymaking had begun on the Upper Ham. Two Redshanks were recorded on the first visit in mid-April, but none were found on subsequent visits; another observer strongly suspected breeding when he saw two agitated Redshanks, apparently with young nearby, on 10 June. It is possible that these birds had nested on Upton Ham, or that the parents had brought newly-fledged young from Ryall Gravel Pits, only a few hundred yards away just across the river.

Other ornithological interest included a good number of singing and undoubtedly breeding Corn Buntings (together with Reed Buntings and Yellowhammers *Emberiza citrinella*). An adult male Redstart *Phoenicurus phoenicurus*, a species typical of old willow stands along the Severn, was seen in a garden alongside the Upper Ham on 25 June; was this a very early return migrant, or a bird nesting in some of the stands of old willows?

The Upper Ham at Upton is one of the most attractive and best conserved of the genuine Severn Hams; part of it is an SSSI mainly for botanical reasons, and no spraying is carried out there. Being located immediately on the edge of Upton-on-Severn, however, it is much used for walking, jogging and dog exercising; those carrying out these activities did seem to be scrupulous in keeping to marked footpaths, but the constant disturbance must affect nesting waders. Haymaking had begun by 25 June,

which is early for Curlew with young, though it is more likely that the 2002 nesting Curlew were disturbed by dogs and joggers.

The western section of the site is mostly made up of fields with hedges and is altogether less suitable for waders. None were found in 1995 or 2002.

#### **4.1.7 Severn: Uckinghall to Tewkesbury**

Ecoscope (1999) gave a combined overall suitability rating of “medium/low” to this zone, with the rating for breeding waders “medium”.

In RSPB95 it was covered as three east bank sites: Uckinghall Meadows, Bow Farm, and Mythe Pool, plus parts of Bushley Meadows and Longdon Brook on the west bank. The same breakdown was for once used in BTO02. Of these five sites, four are in Worcestershire, while Mythe Pool is in Gloucestershire.

In 1995 one pair each of Redshank and Curlew were found at Uckinghall Meadows, six Lapwing, two Redshank and one Curlew at Bow Farm, with two Lapwing and one Curlew at Mythe Pool. One pair of Curlew was found on Longdon Brook. No waders were found at Bushley Meadows. It was noted that Bow Farm had one of the highest densities of Lapwing anywhere in the Severn Vale, nesting on marshy ground and set-aside.

In 2002, no breeding waders were found at Uckinghall (though there were some recently arrived Lapwings on the third visit in late May). At Bow Farm, there were three pairs of Lapwings displaying over stubble on 16 April (not at all in the same area as in 1995), but these birds almost certainly lost their young as the fields were ploughed shortly afterwards and planted with lupins; they did not appear to re-nest. The central part of the Bow Farm site is an impenetrable wet osier and willow bed, part of which is maintained for winter shooting and was cleaned out by a bulldozer in the course of spring 2002; this area and the wet meadows alongside appear to have potential for nesting waders and indeed Snipe were recorded there on the first visit in mid-April, though none were seen or heard drumming in a late evening visit in mid-May. A pair of Curlew was at Longdon Brook again, in exactly the same place immediately south of the motorway bridge where the brook enters the Severn. Mythe Pool and Bushley Meadows produced no breeding waders.

Other ornithological interest including Yellow Wagtails, certainly breeding in a cereal field at Uckinghall Meadows and almost certainly in a greenfield site at Longdon Brook; a Nightingale *Luscinia megarhynchos* singing at Bow Farm on 14 May, and the only Whinchat *Saxicola rubetra* seen during the whole survey at Bushley Meadows on 8 May.

One of the reasons for the decrease in breeding waders at Uckinghall (apart from encroaching arable – cereals and potatoes) may be the unusually large number of sheep grazing, after their transfer in the course of the spring from Bredon’s Hardwick (see 4.1.17). Bow Farm has certainly decreased in importance for breeding waders since 1995. Both the western section of Bow Farm and the southern section of Uckinghall Meadows will undergo major changes in the immediate future, as they are to be exploited for gravel. The lack of waders at Mythe Pool is surprising, as the surviving hay meadows look suitable for Redshank and Curlew. Some of the birds formerly recorded at these sites may have moved to the nearby Ryall Gravel Pits (see section 4.3.3).

#### **4.1.8 Longdon Marsh**

Ecoscope (1999) gave a combined overall suitability rating of “high” to this zone, with the rating for breeding waders also “high”. Longdon Marsh is one of two zones out of the 18 with this double high mark. This is one of the reasons why in the last couple of years the Worcestershire Wildlife Trust has acquired part of the site in the southern sector as a reserve, with plans to raise water levels.



RSPB95 covered only the northern sector of the zone (north of Marsh Lane). BTO02 covered the whole zone. In both cases the name used was “Longdon Marsh”.

In 1995 one (or perhaps two) pairs of Curlews and five of Lapwing were found, and the report commented that only five sites in the Severn held more than five pairs of Lapwings in 1995, making Longdon Marsh a significant site for the species. In 2002 a single pair of Curlews held territory in almost exactly the same spot as in 1995; they were present in a large sprayed hay meadow in mid-April and mid-May, but could not be found in late June, by which time most of the meadow had been cut. Lapwings at Longdon in 2002 nested in two phases; four pairs nested on stubble in the southern sector (where the WWT reserve is situated) and succeeded at their first attempt and young were seen and ringed on 28 April. Away from the WWT current reserve, another four pairs were nesting in set-aside immediately north of Marsh Lane in mid-April, but these birds seem to have lost their nests when the fields were sprayed and ploughed, and two nests with eggs (presumably recently re-laid) were seen and two more suspected on 22 May; one of the birds in this sector had a large chick on 24 June, but on this late date there was also a pair nearby with at least three tiny chicks, just hatched. In addition, on another set-aside field further north of Marsh Lane, there were at least two and perhaps more pairs in mid-May and late June, together with some incoming Lapwings, obviously not local breeders from their flocking behaviour. Thus in all there were an absolute minimum of 11 pairs of breeding Lapwing in the Longdon Marsh area as a whole.

At least two singing Redstarts were recorded in old willows north of Marsh Lane, and appear to have bred.

There is little natural wet meadowland in Longdon Marsh; much of the surface has been transformed into arable, and the remaining hay meadows have been resown and are heavily sprayed. Nevertheless it is clear that such areas can provide suitable nesting sites for Lapwings, all of which nested on stubble fields. It appears that early hay cutting prevented the nesting Curlews from raising their young successfully.

#### **4.1.9 Severn: Tewkesbury to Longford**

Ecoscope (1999) gave a combined overall suitability rating of “high” to this zone, with the rating for breeding waders also “high”. It is the second zone to achieve this double top marking.

This is a very large site, covering the Severn from south of Tewkesbury (but excluding the Severn Ham at Tewkesbury as well as Lower Lode – see below under 4.2.1.1 and 4.2.1.2) to the northern suburbs of Gloucester, and is split by Ecoscope into two sections, one mainly on the west bank (section 9a) going from Tewkesbury to Ashleworth Quay, and the other (section 9b) from Ashleworth Quay to Longford, mainly on the east bank. This division is maintained below, and serves to show that the northern 9a section has considerably more potential than the southern 9b sector.

##### **4.1.9a Tewkesbury to Ashleworth Quay**

In RSPB95 this area was covered as three sites called (from north to south): Chaceley Meadows, Chaceley Stock; and Ashleworth & Hasfield Ham, the latter including the Gloucestershire Wildlife Trust Ashleworth Ham reserve, itself part of the Ashleworth and Hasfield SSSI. In BTO02 the area was split into four: Chaceley to Lower Lode (= Chaceley Meadows); Tirley-Chaceley (= Chaceley Stock); Ashleworth & Hasfield Hams were divided into two and a larger area covered than in 1995.

In 1995, Chaceley Meadows held three pairs of Curlew, the highest figure for any individual site in the Severn Vale. Chaceley Stock, with six pairs of Lapwing, one of Redshank and two of Curlew, was considered one of the most important sites for breeding waders in the Severn Vale because of the number of breeding Lapwing. Finally, Ashleworth and Hasfield held four pairs of Lapwings (all nesting on spring-sown crops) and one of Curlew; this represented a marked decrease on BTO82

(when there were seven pairs of Lapwing, two of Snipe, two of Curlew and three of Redshank), ascribed to loss of control over water levels, leaving former pastures dry.

In 2002, Chaceley-Lower Lode held a single pair of Curlews, while Tirley-Chaceley had one pair of Lapwings and two of Curlew. The extended Ashleworth/Hasfield sites (intensively observed throughout the spring and summer) held three or four pairs of Lapwing, one drumming Snipe, two or three pairs of Curlew and no breeding Redshank. Three of the Ashleworth Lapwing pairs were again on arable or set-aside (though in the extended area not covered in 1995 rather than the same area as in that year), and one on the GWT reserve; three of them produced young. Three pairs of Curlew were holding territory, but all had left the area by 26 June, and no alarm calls of Curlew were heard; it is thought that none bred successfully. Particularly in the early part of the season, when water levels on the GWT reserve were still quite high and the grass had not yet grown very high, Curlews seemed to congregate on the reserve in the evening to roost, giving display calls even though they were flocking; these birds are thought to include birds not nesting in the immediate area. The drumming Snipe (on the GWT reserve at Ashleworth) was the only one recorded in the whole of the Severn and Avon Vales; a drumming Snipe had previously been recorded at the same site in spring 2001 and in both years it was only recorded drumming very late in the evening and on into the night. One pair of Redshank displayed for two days in May, but was otherwise absent and did not breed.

The decrease in breeding waders noted between 1982 and 1995 has therefore continued, and little information about breeding success is available. While Curlew numbers have declined only slightly, larger declines have been noted in the other species. L.A. Brown (pers. comm.) notes that at Ashleworth/Hasfield numbers of Lapwing have been falling for the last six years and that 2001 and 2002 were particularly poor, Redshank were practically absent in 2002, and Snipe disappeared about 10 years ago, although it is possible that they have been overlooked.

The Ashleworth/Hasfield site is the main stronghold in the Severn Vale of Redstarts breeding in old willows with at least half a dozen breeding pairs.

It should be noted that, while there are public rights of way across much of the area, the level of disturbance is much lower than at sites like Upton or Kempsey Hams.

#### **4.1.9b Ashleworth Quay to Longford**

In RSPB95 this area was covered as two sites, called (from north to south) Sandhurst Hill and Gardiner's Farm; the sector round Longford alongside Broadboard and Wooton Brooks was not covered. In BTO02 the area was divided into three two sites, called respectively Sandhurst-Brawn Farm, Sandhurst-Maisemore Park and Sandhurst-Longford, the latter including Broadboard and Wooton Brooks.

In the 1995 survey, no waders were found at either site, though it was noted that the fields by the river in the northern site might be suitable for Curlew, while Lapwings could potentially breed in the spring-sown crops in the southern part. In 2002, the northern sector again held no breeding waders, but Lapwings were found in the central and southern sectors. At Sandhurst-Maisemore Park there was a single pair of Lapwings on arable land. At Sandhurst-Longford there were three pairs during the first visit in late April, and three pairs in a quite different area in the second and third visits in early April May and early June. The whole area therefore held at least six and perhaps as many as seven pairs.

Yellow Wagtails are regularly recorded, apparently breeding, in cereal crops in the Longford area.

#### **4.1.10 Severn: Coombe Hill**

Ecoscope (1999) gave a combined overall suitability rating of "medium" to this zone, with the rating for breeding waders also "medium".

In RSPB95, it was covered as five sites. Three were on either side of the Coombe Hill Canal: Coombe Hill Canal North; Wick Farm, Lower Apperley (both north of the Coombe Hill Canal) and Coombe Hill Canal South; while the remaining two were along the River Chelt and Leigh Brook: River Chelt: The Leigh and Prior's Norton. In BTO02, Coombe Hill Canal North was called Apperleyhall Farm, Wick Farm was called Long Pool, Deerhurst, while Coombe Hill South became Cobney Meadows-Vine Tree Farm; the two sites along the Chelt and Leigh were amalgamated into a single site called Inchmore Bridge-Fletcher's Leap.

Major habitat changes have occurred along the Coombe Hill Canal. The original Coombe Hill SSSI (north of the canal) was considerably reduced in size in early 1995, following ploughing up of the original hay meadows and planting of cash crops, to include only the two wet areas and the ditch between, habitat of a rare sedge. In 2001, much of this area was acquired by the Gloucestershire Wildlife Trust, as a nature reserve with the intention of restoring wetland habitat, with breeding waders particularly in mind. These restoration measures had barely begun by the time of the 2002 survey.

In 1995, the three Coombe Hill Canal sites held four pairs of Lapwing and three of Curlew; Snipe were observed but not considered to have nested. The two sites by the Chelt and Leigh Brook produced one pair of Redshank and four of Curlew, and Prior's Norton was considered to be "an important site for waders and especially Curlew.... the single pair of Redshank is also significant".

In 2002, the two sites north of Coombe Hill Canal held two pairs of breeding Curlews, one of which was almost certainly successful, but no Lapwings; Snipe were recorded early on at the Long Pool (which holds the major concentration in the central Severn area of wintering Common and Jack Snipe) but no drumming was heard despite a late night visit. The site south of the canal had two pairs of breeding Curlew (in almost exactly the same field locations as in 1995!), and given that haymaking did not take place until well into July, they may well both have been successful. There were also two pairs of Lapwings on a meadow site, which to judge from their behaviour in early May definitely had young.

Along the River Chelt and Leigh Brook, Lapwings were already displaying on one set-aside field in March and early April and may already have succeeded in raising young by the time of the first formal visit on 28 April. Two further pairs of Lapwings bred on another set-aside field, though they may not have succeeded in bringing off young. There were at least two pairs of breeding Curlew, perhaps more, and they were definitely successful, as one downy young was seen, still only half fledged, with wing feathers still in pin and about 10 days to go to fledging – this as late as 10 July. According to farm workers haymaking in a different field on 22 July, young just capable of flying had been seen on 19 July. Throughout July, the nesting Curlew were under constant threat from Lesser Black-backed Gull *Larus fuscus* which on their way back from feeding grounds on rubbish tips and landfill sites inland (notably at Throckmorton, near Pershore in Worcs) to their roost on the Severn estuary, would often circle low over hayfields where Curlew had young, clearly in search of young birds. This caused absolute panic among the adults who sat on the ground giving agitated cries. They could not mob the gulls that were much bigger than they were themselves, and attempts to do so nearly proved suicidal.

In the Coombe Hill area there are good numbers of singing Redstarts in the old willows, at least six pairs, with another one at least along the Chelt.

Most attention in recent years seems to have been devoted to the area north of Coombe Hill Canal. The areas south of the Canal and along the Chelt have good wader breeding populations (especially of Curlew and Lapwing), which benefit from the custom of late hay-cutting and the lack of local disturbance. Furthermore the hay meadow flora is some of the richest in the Severn Vale area. It would be possible to divert water from the Chelt, the only flowing stream in the area, whereas surrounding areas dry out very quickly in summer as they have no water sources. It is suggested that the Chelt/Leigh Brook area merits greater attention.

#### **4.1.11 Severn: Minsterworth Ham**

Ecoscope (1999) gave a combined overall suitability rating of “medium” to this zone, with the rating for breeding waders also “medium”.

In RSPB95, the site was covered in two sections, Minsterworth and Corn Ham; and Lower Parting. In BTO02, the area was split into two sites, Corn Ham and Minsterworth Ham.

In 1995 no breeding waders were found, and none were recorded in 2002 either. Although only a single visit was made in 2002, the observer was familiar with the site, and land owners and managers agreed that there were no breeding waders.

Yellow Wagtails, apparently breeding, were found in cereal crops just outside the Minsterworth Ham area.

Much of the habitat is agriculturally “improved” grassland, with some arable, mainly cereals and maize. The whole area is subject to regular flooding in winter. It is very secluded, with little or no disturbance, and as such has potential for restoration, even though current breeding populations of waders are non-existent; the species most likely to benefit would be Lapwing or Redshank, as breeding Curlew are rarely recorded south of Gloucester.

#### **4.1.12 Severn: Elmore Back to Longney**

Ecoscope (1999) gave a combined overall suitability rating of “medium/low” to this zone, with the rating for breeding waders “medium”.

RSPB95 covered a small part of the zone (though the most important area for waders as Elmore Back. BTO02 covered the whole of the zone as four sites: Longney, Bridgemacote, Elmore Back and Elmore Back-Weir Green.

In 1995 no breeding waders were found on Elmore Back. In 2002, when a much larger area covered, two pairs of Lapwing were found at Elmore Back-Weir Green, and four more just outside the boundary of the official site at Elmore Back.

A male Yellow Wagtail was also at Elmore Back.

#### **4.1.13 Severn: Walmore Common**

Ecoscope (1999) gave a combined overall suitability rating of “medium/high” to this zone, with the rating for breeding waders “high”.

RSPB95 and BTO02 both covered the zone as a single unit. The area is an SSSI and a Ramsar site, on the basis of its wintering Bewick’s Swan numbers.

In 1982 there were three pairs of Lapwing, two of Snipe, one of Curlew and three of Redshank. In 1995 a particularly dry year at Walmore, the only nesting waders were only two pairs of Lapwing; Snipe were recorded but there was no evidence of attempted breeding. In 2002, there was a single pair of Lapwings, which was successful as two well-grown chicks were seen on 11 June. They were on the wetter western sector of the site.

The site breaks down into two parts: the western sector (the “Common”) is still fairly wet and the main use is rough grazing, while the eastern sector supports a dairy farm.

#### **4.1.14 Severn: Awre**

Ecoscope (1999) gave a combined overall suitability rating of “medium” to this zone, with the rating for breeding waders also “medium?”.

The same area was covered by RSPB95 under the name of Upper Dumball, and by BTO02 of Hayward.

Neither in 1995 nor in 2002 were any breeding waders found. The 1995 report comments that this is not surprising since the land was generally too intensively farmed to be of value to waders and the ground too dry. This comment was echoed by the 2002 observer, who noted that the site was not damp, had been heavily intensified and did not seem at all suitable for nesting waders. The only unmanaged areas are contained in a thin strip on the estuary side of the sea wall.

#### **4.1.15 Wicksters Brook/The Moors, Slimbridge**

Ecoscope (1999) gave a combined overall suitability rating of “medium” to this zone, with the rating for breeding waders “high”.

Curiously, this area was not covered in RSPB95, when coverage of the Slimbridge area was restricted to the areas between the canal and the river. BTO02 covered the area in two parts, Frampton Marshes and Cambridge. One pair of Lapwings was found on Frampton Marshes, and no breeding waders on Cambridge.

#### **4.1.16 Avon: Evesham to Birlingham**

Ecoscope (1999) gave a combined overall suitability rating of “medium/low” to this zone, with the rating for breeding waders “medium”.

RSPB95 covered parts of this very large zone in four sectors: Pensham Fields; Wyre Mill; Wick, R. Avon; and Lench Ditch. BTO02 covered the whole zone in three sectors: Avon, Pensham; Pershore-Fladbury; and Avon, Evesham-Fladbury.

In 1995 Pensham Fields, Wyre Mill and Wick all held no waders and the comment was made that the land was farmed too intensively to be of any value to breeding waders; however it was noted that Curlew might breed occasionally at Wick. At Lench Ditch too, no waders were recorded, but it was noted that several of the fields looked suitable for Curlew, and that fields between the river and the sewage works at Lower Moor could be suitable for Redshank if hedges were removed.

In 2002, no waders were recorded once again round Pensham. Between Pershore and Fladbury, however, one pair of Curlew certainly attempted to nest between Wick and Lower Moor, and a farmer reported that he had seen young Curlews the previous year.

There was however in 2002 a complete change from 1995 in the Lapwing situation between Pershore and Fladbury, mainly on the north bank of the Avon between Lower Moor and Fladbury. On the first visit in late April, about two pairs were present on an arable field which was just being reploughed and drilled; they appeared to have lost eggs or young and only displayed in a desultory fashion; a local observer who knows the area well estimated at this time that not more than two or three pairs were nesting in the whole area (R. Prudden, pers. comm). On the second visit in mid-May however, the birds had clearly re-nested on the arable areas, and on 26 May seven pairs were incubating, while one pair had chicks. On 15 June, one bird appeared still to be incubating, while some 10 pairs were caring for their young on reploughed arable with some vegetation and at least 13 chicks seen. As late as 25 June, there were still three pairs tending young, some still tiny, on an onion field.

No waders were found in the stretch between Fladbury and Evesham, even though the habitat looked suitable for Curlew, and cutting was not carried out until very late.

There is a good surviving population of Corn Buntings on the higher ground at Lower Moor, and another was singing just above Fladbury. A Hobby *Falco subbuteo* was seen at Lower Moor.

Between Lower Moor and the Avon, some restoration has been carried out, but spring/early summer was fairly dry and the pools there dried out, with no breeding waders recorded. Some wetland re-creation has also been conducted in the Avon floodplain just above Fladbury.

#### **4.1.17 Avon: Eckington Bridge to Tewkesbury**

Ecoscope (1999) gave a combined overall suitability rating of “medium/high” to this zone, with the rating for breeding waders “high”. The Ecoscope boundaries between the previous site and this site leave out a stretch of the Avon between Birlingham and Eckington, which has become of great importance for breeding waders in the last few years since the Worcestershire Wildlife Trust carried out a major restoration project near Birlingham at its new Gwen Finch Reserve. This site is described under 4.2.2.1 below.

RSPB95 covered nearly all of this zone in five sites, from north to south Gooseham and Aysham; Eckington Marshes; Upper Meadow and Summer Leasow; Bredon’s Hardwick (East); and Bredon’s Hardwick (West): Twyning Meadow. This omits one or two small but important areas, notably the sludge pits at Strensham, Rectory Farm Meadows on the east bank of the Avon below Strensham, and the fields between Fleet Lane and the motorway north of Bredon’s Hardwick. BTO02 covered the whole area, also in five sites, but with slightly different boundaries: Gooseham and Aysham; Eckington Marshes; Twyning Green-Strensham (including Rectory Meadows); Avon, Bredon’s Hardwick; and Avon, Twyning. The county boundary snakes back and forth through this area, parts of which are in Worcestershire and parts in Gloucestershire.

Upham Meadow and Summer Leasow is an ornithological SSSI, while Rectory Meadows is a botanical SSSI.

In 1995 Gooseham and Aysham held two pairs of Redshank and one of Curlew, the latter considered to have failed. Eckington Marshes held three pairs of Lapwings on tussocky unimproved pasture and two pairs of Curlew on silage and semi-improved pasture. Upper Meadow and Summer Leasow (a name favoured by local farmers and landowners, though most people refer to this Lammas meadow as the Twyning Great Hay Meadow) held four pairs of Lapwings nesting on unimproved pasture to the west, with nine pairs of Redshank and three pairs of Curlew on the hay meadow proper; the report commented that it was the second most important site for breeding waders in the Severn Vale (after the New Grounds at Slimbridge), probably because of its huge size. Also in 1995, Bredon’s Hardwick East held 12 pairs of Lapwing, seven of Redshank one of Curlew, one of Oystercatcher and one of Little Ringed Plover, and as such was one of the most important sites for breeding waders in the Severn Vale, probably ranking third. The Lapwing nested predominantly on spring-sown crops, while the Redshank nested mainly around the gravel pit with no public access. Finally, Bredon’s Hardwick West held 11 pairs of Lapwing and two of Redshank.

Although the numbers of breeding waders was generally lower in 2002, there is no doubt that this stretch of the Avon is one of the best, if not the best, of the surviving areas for breeding waders in the whole of the Severn Vale away from the estuary, largely because the original hay meadows are maintained in something close to their original state.

In 2002 Gooseham and Eysham held two or three pairs of nesting Curlews, which may have nested successfully since they were still present on 22 June when haymaking had only just begun; there were no breeding Redshanks, but those formerly found here may simply have moved a few hundred yards upstream to the Gwen Finch reserve. Eckington Marshes had two pairs of Curlew (as in 1995), still

present and agitated on 28 June, and three pairs of Lapwings on maize stubble; one very recently fledged young Lapwing was only just able to fly on 28 June.

The Twynning Green-Strensham stretch in 2002 probably held five pairs of Curlew (all on the Great Hay Meadow, where counting different pairs was very difficult); there were three pairs of Redshanks, two on the Great Hay Meadow and one on Rectory Meadows, all nesting on greenfield sites in the hay meadows - nowadays an extremely rare occurrence in the Severn Vale; at least one was definitely successful as newly fledged young were seen on 23 June, and another pair was still extremely agitated in the area of uncut grass on 4 July. As for Lapwings, none were found on the higher pasture and arable as in 1995, but two pairs on greenfield sites at Rectory Meadows appear to have been successful. The farmer at Rectory Meadows indicated that a pair of Oystercatchers had nested successfully on his land in 2001.

Bredon's Hardwick East held a single pair of Oystercatchers on the non-access gravel pit; they successfully produced three young seen fully fledged on 13 July. Little Ringed Plover occurred from 20 June, but definitely did not breed and were undoubtedly incoming migrants from elsewhere. No Lapwings at all were found, and only a single pair of Redshank around the gravel pit – a marked decrease for these two species. Two pairs of Curlew attempted to nest, but almost were not successful. At Bredon's Hardwick West, three pairs of Lapwing and two of Curlew were found.

No nesting waders were found on Strensham Pits.

In addition to the breeding waders, a pair of greenfield Yellow Wagtails nested on the Great Hay Meadow, and at least two other pairs appear to have nested in cereal crops on higher ground above the Hay Meadow. Several pairs of Corn Buntings were regularly found singing on the Hay Meadow. Some of the old willows looked suitable for Redstarts but none were found. Several Nightingales were recorded singing around Strensham Pits, the first two on 24 April. An immature Little Gull *Larus minutus*, obviously a passage migrant, put in a brief appearance at Bredon's Hardwick on 22 July. This stretch of the Avon was traditionally the stronghold of the Marsh Warbler *Acrocephalus palustris*, and for this reason much of the riverbank is notified as an SSSI; sadly this species has undergone a catastrophic decline and has disappeared from the area for some years; none were recorded in 2002.

A number of comments on management of this important site are called for.

On the "Lammas Meadow" at Upham Meadow and Summer Leasow the age-old practice is maintained of authorizing certain persons to cut hay in strips up to 2 August even though they are not landowners and have no rights after 2 August. Those concerned are proud to uphold this tradition. This does not, however, mean that the site retains its botanical interest, since spraying is allowed to control docks, and the flora is as a result highly impoverished; the SSSI was indeed notified "primarily for its breeding waders and over-wintering populations" (English Nature citation). But hay-making is permitted from 15 June, since farmers consider that, if left any longer, the hay would be unbaleable; in 2002, some hay had been cut on 19 June, more on 23 June, and by 4 July, 75% of the area north of the motorway had been mown. As a result it is likely that none of the Curlews succeeded in producing young. Redshank and Yellow Wagtail were lucky in choosing nest sites in the areas cut last. Experience in 2002 at other sites, strongly supported by the views of the farming community, indicates that young Curlew rarely fledge before 15 July and 25 July is a safer date.

At Bredon's Hardwick East, considered in 1995 to be the third most important site for breeding waders in the Severn and Avon Vales, there was a dramatic decrease in breeding waders. There are three small former gravel pits, now appearing simply as shallow pools, in the area; while one is used for fishing and another for water recreation including windsurfing, the third is maintained free of access and is a de facto nature reserve with three islands. This is the area where the Redshank and some of the Lapwing nested in 1995. It is surrounded by grassland, part of which is intensively farmed for sheep with high stocking densities, part of which has cattle grazing and hay fields in which

Curlew traditionally nest. Numbers of breeding waders had decreased on the former gravel pit in 2002, though it still attracted breeding Great Crested Grebes *Podiceps cristatus*, Canada Geese *Branta canadensis*, Mallard *Anser platyrhynchos*, a pair of Common Terns, Ruddy Ducks *Oxyura jamaicensis*; however, there have for some years been breeding Lesser Black-backed Gulls on the islands and edges of the gravel pit, and even, since 2001, a pair of Great Black-backed Gulls *Larus marinus*! Were the gulls the reason for the decrease by scaring the adult birds or predated on the young? Or was it some subtler habitat change, perhaps in the surrounding area?

In any case a further major habitat change in land use took place in the course of the 2002 survey. Almost all the low-lying land used for sheep raising was ploughed up and planted with potatoes. This meant that the sheep had to be accommodated elsewhere, and some were undoubtedly put out to graze on formerly quiet fields where Curlew nest, both in the immediate vicinity and at other places all along the Severn Vale.

#### **4.1.18 Avon: Bidford to Offenham**

Ecoscope (1999) gave a combined overall suitability rating of “medium/low” to this zone, with the rating for breeding waders “medium”.

This extremely large zone was not covered by RSPB95. The whole site was included in BTO02 as Avon, Bidford-Offenham. Most of the site is in Worcestershire, but the northern part is in Warwickshire.

All the breeding waders were concentrated in two areas: the restored gravel pits at Abbots Salford and on arable land on the right bank of the Avon just below Bidford. Abbots Salford Pools held one pair of Little Ringed Plover, one pair of Redshank, perhaps 10 pairs of Lapwings; the Lapwings were still agitated as though they had young on 14 June, and as late as 28 June there was one very recently-fledged bird, only just able to fly, together with a flock of 45 obvious incoming migrants. Near Bidford there were two to three pairs of Lapwings, apparently nesting on stubble and still very agitated on 14 June. Some of these Lapwings had presumably produced replacement clutches after losing a first clutch, like the birds at Longdon Marsh and Lower Moor.

Other birds of note at Abbots Salford were Gadwall *Anas strepera* with young, Tufted and Ruddy Ducks apparently nesting, and a pair of Yellow Wagtails carrying food on a cereal crop on 14 June. Plus a Wheatear on Worcester Meadows on 3 May.

## **4.2 Wet Meadow Sites Not Listed by Ecoscope**

The 18 sites identified by Ecoscope (1999) as having potential for wetland recreation were covered under 4.1. The present section presents the results of the 2002 survey for sites not listed by Ecoscope (1999). These are grouped together below as sites in the valley of the Severn, sites in the Avon valley, sites near the Severn estuary and sites in the Malvern foothills.

### **4.2.1 Severn Vale sites**

#### **4.2.1.1 Severn Ham, Tewkesbury**

The Severn Ham at Tewkesbury is a genuine Severn ham, i.e. a riverside hay meadow flooded in winter, situated in the gap between zones 4.1.7 and 4.1.9. The reason it was omitted by Ecoscope (1999) is probably that it is located on the very edge of the town of Tewkesbury, and is subject to heavy disturbance from people walking on the footpaths and exercising their dogs; the same of course could be said for Upton Ham, which however is of greater importance botanically. Nevertheless, it is an SSSI – “one of the last remaining traditionally managed ham meadows overlying the alluvium of the Severn Vale”, according to



the English Nature citation which lays stress on the richness of grass species, but also mentions nesting Lapwing, Redshank and Curlew.

RSPB95 recorded three pairs of breeding Redshank and one of Curlew. In 2002 there were one pair each of Redshank and Curlew. Furthermore the Severn Ham held singing Corn Buntings.

#### **4.2.1.2 Lower Lode**

This site is on the right bank of the Severn, immediately across the river from the Severn Ham, hence also in the gap between zones 4.1.7 and 4.1.9.

Covered in RSPB95 as “Opposite Severn Ham/Lower Lode”, the site held one pair of Curlew. In 2002 no waders were found and the site was considered unsuitable with intensive arable and ryegrass.

#### **4.2.1.3 Maisemore Ham, Port Ham and Sud Meadow**

Maisemore Ham and Port Ham occupy the island in the Severn opposite Gloucester between the Upper Parting and Lower Parting, while Sud Meadow is on the left bank of the river immediately below Lower Parting. They must all once have been real Severn hams (as their names suggest), flooding in winter and cropped for hay in summer. Parts of them still regularly flood in winter, but have nowadays been transformed into arable land or suburban areas of Gloucestershire including a power station and the Gloucester Landfill Site, hence their absence from the Ecoscope (1999) zones.

All three areas were covered in RSPB95, but held no breeding waders. The same situation occurred in BTO02.

#### **4.2.1.4 Parkend Bridge-Southfield Farm**

This area, immediately to the west of the Gloucester-Sharpness canal, was covered by RSPB95, when no breeding waders were found, though it was noted that one field would be ideal for restoring to wet grassland. No breeding waders were found by BTO02.

### **4.2.2 Avon Vale sites**

#### **4.2.2.1 Woodfield Farm**

As noted above, there is a gap in the Wetland Restoration Zones identified by Ecoscope (1999) between zone 16 Avon: Evesham to Birlingham and zone 17 Avon Eckington Bridge to Tewkesbury. This site is located in this gap. It was covered by RSPB95 under the same name. In 1995 two pairs of Lapwing were found nesting on set-aside, despite the large amount of spring-sown crops in the area. The report commented that this was probably because the land is intensively farmed and sprayed with pesticides.

Since 1995, the Worcestershire Wildlife Trust has established a major new reserve, the Gwen Finch Reserve on the banks of the Avon between Nafford and Birlingham, creating an area of reeds and pools on an area of abandoned arable land. The situation in 2002 was therefore quite different. The new reserve created wetland conditions ideal for breeding waders, with two pairs of Lapwings and three of Redshank nesting on what was effectively a recreated “greenfield” site. A Snipe was found on the first visit in late April, and it would certainly be worth listening for drumming birds here, particularly in the late evening.

In addition to these birds, the arable land around the reserve, intensively cultivated for market garden crops, notably colibri, held nesting Lapwings in an area quite different from that occupied in 1995. On 15 May about three pairs were displaying over this arable land, part of which was being rolled and drilled, and one nest with four eggs was found; this nest must have been destroyed by the rolling and drilling operations. On the very late date of 20 June, two nests, still with eggs, were found, presumably replacements for the ones lost earlier. Here is yet another demonstration that Lapwings will re-nest on arable, sometimes very late into the season if they lose their first clutch.

Other species of interest included a Hobby flying over.

#### **4.2.2.2 Carrant Catchment (including Kemerton Lake)**

The Carrant Brook flows into the Avon just north of Tewkesbury, forming the boundary between Worcestershire and Gloucestershire. It was not covered by RSPB95. In BTO02 however, the whole of the catchment between Beckford and the railway line near Ashchurch was covered. The total number of breeding waders found in the catchment in Worcestershire was one pair of Oystercatcher, two of Little Ringed Plover, 27 of Lapwings, and three of Redshank. Most of the land is arable or stubble, but the area includes Kemerton Lake, former gravel pits now restored and managed as a de facto nature reserve. Of the nesting waders, five pairs of Lapwing and all the Oystercatcher, Little Ringed Plover and Redshank were on Kemerton Lake.

The presence of so many breeding waders, hitherto overlooked is clearly a major find, worthy of greater attention in future. At Kemerton Lake, considerable attention is paid to control of predators, including Mink *Mustela vison* and Crows *Corvus corone*, but also Jackdaws *Corvus monedula* regarded as a major predator since they often hunt in flocks.

#### **4.2.2.3 River Swillgate**

No waders were found in 1995 on this site between Stoke Orchard and Tewkesbury, when it was commented that the cultivation practices (intensive autumn-sown cereals or silage) made it unattractive to waders. Nor were any found in 2002 (though the single visit was late in the season), when cultivation practices were similar. There was however a Yellow Wagtail in a bean field, apparently nesting.

### **4.2.3 Malvern Foothills**

A number of sites away from the river, in the general area of the Malvern foothills, were covered by RSPB95 and BTO02. Some were wet commons, others cultivated agricultural land. In general they could not really be called wet meadows, and held few or no breeding waders.

#### **4.2.3.1 Bray's Farm Meadow**

This area of rolling farmland just to the west of Longdon Marsh (se 4.1.8) held no breeding waders in 1995, when it was commented that while Curlew might have nested in the hay fields, they were probably too small for nesting waders. Nor in 2002 were any nesting waders found in the smallish fields and thick hedges.

#### **4.2.3.2 Brotheridge Green**

This site is also in rolling farmland west of Hanley Castle. No waders were found in 1995, when the topography of the landscape was considered generally unsuitable. Similarly in 2002, no waders were found in the small fields with hedges and extensive arable.

#### **4.2.3.3 Castlemorton Common**

Castlemorton Common is a wet grassland area on acid soils in the foothills of the Malverns and is designated as an SSSI. It once held breeding Curlews (Les Brown, pers. comm.), and the RSPB95 report noted that Lapwings breed in areas where the gorse has been cleared, most recently in 1992. No breeding waders were found in 1995, and the report commented that the extensive recreational use limits the attractiveness to waders. In 2002 also, no waders were found, though the site did boast the only singing Meadow Pipit *Anthus pratensis* found in the whole survey.

#### **4.2.3.4 Forthampton**

This site is in an area of higher farmland some way above the Severn floodplain, west of Tewkesbury. No breeding waders were found by RSPB95, where it was considered a possible site for breeding Lapwing. No waders were found in 2002 either, and it was thought that the habitat was unsuitable for waders with gradually sloping farmland, including trees, copses and hedges.

#### **4.2.3.5 Hollybed Common**

This is another area of gorse at the foot of the Malverns, close to Castlemorton. No waders were found in either 1995 or 2002, and while Lapwings might nest, the pressure of recreational use makes it unattractive to waders.

### **4.2.4 Severn Estuary sites**

As in 1995, the sites with the largest number of breeding waders in 2002 were sites near the estuary, notably the New Grounds at Slimbridge, where careful management for waders is practised by very experienced professional managers, but in 2002 also across the estuary on the western bank where concentration in the Aylburton area proved surprisingly high. It is however, important to compare like with like. These estuarine sites have a completely different “feel” to them from the damp grassland and hay meadows of the riverside sites in the floodplain above Gloucester. The breakdown of nesting species is indeed different, for Curlews are only very rarely found breeding alongside the estuary.

Making direct comparisons between the estuarine sites and the floodplain grasslands, based simply on numbers of nesting waders, undervalues the floodplain grasslands and their special ecological values, and Ecoscope (1999) rightly omitted the estuarine sites from its list of 18 priority areas for restoration. This in no way devalues the major estuary sites but considers them as a separate entity.

#### **4.2.4.1 Aylburton Warth**

RSPB95 covered Aylburton Warth, and also the stretch to the south between Plusterwine and Pillhouse Rocks. In 1995 Aylburton Warth held four pairs of Lapwings, six of Redshank and one of Curlew, while between Plusterwine and Pillhouse there was a single pair of Lapwing and two of Redshank. In 2002, quite extraordinary numbers of breeding waders were found at Aylburton Warth, including a pair of Oystercatcher, 26 or more pairs of Lapwings and four of Redshank. The Plusterwine-Pillhouse area was not covered in 2002.

#### **4.2.4.2 New Grounds, Slimbridge**

In 1995, the New Grounds held 23 pairs of Lapwing and 15 of Redshank. Most of the Lapwings were found on the saltmarsh area of the Dumbles, subject to flooding by the very highest tides, though rarely flooded in the wader breeding season. Most of the Redshanks and

some Lapwings were in the fields and pools of the Hundred-Acre field behind the seawall, where water levels are manipulated to favour breeding waders.

In 2002, there were five pairs of Oystercatchers about 12 of Lapwing and two of Redshank. In 2002, a special study was made of the wader populations in the Hundred Acre and Saul Warth, with a view to investigating the poor breeding success of nesting waders and the impact of predators (Banks *et al.* 2002).

#### **4.2.4.3 Saul Warth**

In 1995, Saul Warth, an area of wet grassland alongside the estuary, immediately north of the New Grounds, held five pairs of Lapwings and five of Redshank, In 2002 there was a pair of Oystercatchers, eight of Lapwing and six of Redshank. The study by Banks *et al.* (2002) also refers to Saul Warth.

### **4.3 Gravel Pits**

As noted in previous sections, gravel pits in the floodplain of the Severn and Avon often provide excellent nesting habitat for waders. Some new colonizers such as Oystercatcher nest almost exclusively in these sites, while other species, notably Redshank, have the bulk of their local breeding population in such sites. Some of these former gravel pits are now worked out, and have become de facto wetland reserves (eg. Bredon's Hardwick gravel pits in zone 4.1.17; Abbots Salford Pools in zone 4.1.18; Kemerton Lake 4.2.2.2). Others are still being excavated, and are even more attractive to breeding waders. Three of these sites are described below, and it should be noted that there are further plans for gravel extraction in the floodplain, notably in zone 4.1.7.

#### **4.3.1 Grimley Gravel Pits**

Grimley, just north of Worcester and on the right bank of the Severn, close to zone 4.1.1, includes two areas of gravel pits. The one, north of the village, was excavated some years ago and is now of greater interest for swans, ducks and rails than for waders.

The other area south of the village is however under active excavation and provides nesting habitat for a number of waders. This area was not covered in 1995. In 2002, one pair of Oystercatcher attempted to nest but failed. Up to three pairs of Little Ringed Plover nested. Five pairs of Lapwings nested; chicks were seen from late May onwards, and there were still large non-flying chicks on 17 and 27 June. One pair of Redshanks nested, breeding success unknown. Curlews occasionally occur in the evenings, though they do not nest here, and are apparently coming in to roost from surrounding nesting grounds as at Ashleworth/Hasfield (R. Blackmore, pers. comm.).

In addition to waders the southern Grimley pits have nesting Gadwall and Tufted Ducks. Common Terns were present through the summer, and there is a large Sand Martin colony.

#### **4.3.2 Clifton Gravel Pits**

These new pits, currently being excavated, are in the Severn Valley between Worcester and Tewkesbury, alongside zone 4.1.4, and have certainly contributed to lowering the water table in surrounding farmland, once prime wader-nesting habitat. They were not covered in 1995, but in 2002 held one or perhaps two pairs of nesting Little Ringed Plover.

Other species noted included nesting Tufted Ducks, a Hobby, and a large Sand Martin colony.

### **4.3.3 Ryall House Farm Quarry**

This large area of pits on the left bank of the Severn between Upton and Tewkesbury, just opposite Upton Ham (zone 4.1.6) and immediately north of Uckinghall (zone 4.1.7) is currently being excavated. It was not covered in 1995, but in 2002 held one or two pairs of Little Ringed Plover, five of Lapwing and two of Redshank (A. Warr pers. comm). Lapwing also nested on adjacent stubble, where a medium sized chick was seen on 31 May.



## **5. DISCUSSION OF SPECIES RESULTS**

### **5.1 Oystercatcher**

This species is a recent colonist of many areas of lowland Britain and bred in Gloucestershire for the first time in 1990 (Quinn 1995). A total of nine pairs were located in BTO02, mainly on the lower Severn (Appendix 7): five at New Grounds, Slimbridge and one at Aylburton New Grounds. However, single pairs at Bredon's Hardwick, and Grimley Gravel Pits, together with a report of breeding at Rectory Meadows in 2001, demonstrate a move upriver. This represents a colonisation since the 1982 survey and substantial increase since 1995.

### **5.2 Little Ringed Plover**

This species was unsurprisingly recorded only at present or former gravel pits, one pair at Abbots Salford (Avon, Offenham to Bidford), three at Grimley Gravel Pits, one or two at Clifton Gravel Pits, and three at Ryall House Farm Quarry.

### **5.3 Lapwing**

The Lapwing was one of the fastest declining farmland birds in England and Wales during the 1980s and 1990s with a 49% decrease between 1987 and 1998 (Wilson *et al.* 2001). Although 110 pairs were found on the wet meadow sites in BTO02, none at all were found on 39 of the sites. Overall declines were of 49% between BTO82 and BTO02 and 19% decrease between RSPB95 and BTO02 (Table 3.3.1). The most important sites for this species are on the lower Severn, with relatively low densities scattered along the entire length of the Severn and Avon Vales (Appendix 8). Almost all breeding sites in the upper Severn and in the Avon Vale were on arable fields; practically the only "greenfield" nesting Lapwings were at Coombe Hill and Rectory Meadows. The importance of arable fields as nest sites for this species is well known (Galbraith 1988; Shrubbs 1990; Wilson *et al.* 2001). Some nested early on stubble, usually maize stubble; most probably lost their eggs when this was ploughed, but re-laid and successfully brought off chicks at the new Worcestershire Wildlife Trust reserve at Longdon Brook, at Woodfield Farm and most spectacularly at Lower Moor. Interestingly, the largest numbers re-nested late on arable fields sown with market garden crops like onions or colibri, and appeared to be successful, but with chicks well into June. One new area, not previously covered in wader surveys, the Carrant catchment, held good numbers of breeding Lapwings and is worth attention in future.

Because of changes in the crops planted on individual fields, actual sites varied considerably between RSPB95 and BTO02; Lapwings were often nesting in the same general area, but moved from one field to another in line with the crops planted. This makes it difficult to compare habitats used.

### **5.4 Snipe**

Snipe have been almost lost as breeding birds from the Severn and Avon Vales. Although present at several sites during April, these sightings related to migrants and late departing wintering birds. There was only one record during May in BTO02, of a single at Ashleworth Ham, where a bird drummed regularly in late April and through May, but only after dusk, as it had done in 2001. It may be that this nocturnal habit caused Snipe to be overlooked, and it would be of interest to listen for them after dusk at suitable sites such as Coombe Hill, Gwen Finch Reserve and Ashmoor Common. This species was already very scarce in the area in 1982 and there was only one record of a drumming bird in 1995 (Quinn 1995). At present, the Snipe does not retain an established breeding population in the Severn and Avon Vales.

## **5.5 Curlew**

In all, 34 pairs of Curlew were located in BTO02, representing modest declines in numbers from BTO82 (18%) and RSPB95 (14%). Most of the Curlew are concentrated in the lower Avon and mid Severn around Tewkesbury (Appendix 9). Their preferred habitat is large traditional hay meadows, which do not need to be very wet. In Worcestershire, some pairs may have survived in smaller catchments (not covered in 2002), which have escaped drainage and desiccation (J. Day pers. comm.). Although there has not been a large reduction in breeding numbers, in almost all cases, they probably failed because of early hay cutting. The Curlew has a long incubation and rearing period, and chicks are normally found well into July. Any hay cutting before 15 July, or better 25 July, is likely to affect nesting success. They may also have been affected by dog-walkers at sites where there is public access such as Upton Ham and Kempsey Lower Ham.

There are few detailed accounts of the breeding biology of the Curlew in lowland Britain, though the situation in the Severn and Avon Vales seems similar to that described for Scotland by Nethersole-Thompson (1986). The Curlews arrive on the breeding grounds in late February or March and seem to spend March and April establishing territories, with long flights over large areas, making it difficult to discover exactly where the nesting area is sited. Pairs from the surrounding area may congregate to roost in favoured spots such as Grimley and Ashleworth. Incubation cannot begin before late April, since the grass has not grown enough to hide the sitting bird, which is after all the largest wader. For this reason, raising of young continues until well into July. At this stage, the young birds seem to be a prey to marauding gulls, especially Lesser Black-backed.

## **5.6 Redshank**

This is now a very localised breeding bird in the Severn and Avon Vales and was found at only nine of the 68 wet meadow sites surveyed in 2002 (birds were also found at three of the four additional sites). These were concentrated on the lower reaches of the Severn at Saul Warth (13 pairs), Slimbridge (six pairs), and Aylburton Warth (three pairs) and in the lower Avon Vale (Appendix 10). Overall reductions were of 32% between BTO82 and BTO02 and 31% between RSPB95 and BTO02. Declines were more marked within the Ecoscope Zones where losses were 71% between RSPB95 and BTO02 (Table 3.4).

Practically the only sites where “greenfield” nesting Redshank were found were the Avon at Twyning (Great Hay Meadow and Rectory Meadows), and the re-created Greenfield at Gwen Finch. Elsewhere in the Severn and Avon Vales, the Redshank has become almost exclusively a breeding bird of present and former gravel pits.



## **6. SITE MANAGEMENT RECOMMENDATIONS**

The situation is somewhat different between Gloucestershire and Worcestershire. Gloucestershire still maintains good remnants of natural wet meadow and floodplain sites. Worcestershire, on the other hand has much more arable land and more extensive gravel pits workings. The emphasis on wetland conservation is therefore likely to be different in the two counties; in Gloucestershire the main task is to safeguard existing sites, in Worcestershire to restore degraded areas.

### **6.1 Existing Sites Still in Near Natural Conditions**

While many wet meadow habitats have undergone major changes over the years, a few retain near-natural characteristics, and the highest priority should be devoted to the latter.

Foremost among these is Upham Meadow and Summer Leasow (the Great Hay Meadow), which is not only of huge extent for a Severn Ham, but has no public rights of way so that the disturbance there is minimal. The ornithological interest of the site is however severely compromised by the early hay cutting from 15 June. It is recommended that there should be a delay hay cutting here until late July, preferably after 25 July. Spraying also compromises the botanical interest of the site, and every effort should be made here to eliminate use of spray to control docks.

Almost as valuable as the Great Hay Meadow are some of the meadows to the south of Coombe Hill Canal, and those along the River Chelt and Leigh Brook. Though much smaller than the Great Hay Meadow, they still have healthy populations of nesting waders, are very little disturbed, and are of high botanical value. Measures such as Countryside Stewardship are urgently required to ensure that these conditions are maintained.

Two other areas in Worcestershire, which still have good wader populations, though their botanical value is low as a result of spraying, are Gooseham and Aysham, and Eckington Marshes. Measures such as Countryside Stewardship should be given priority here.

Three other traditional Severn Hams – Upton, the Severn Ham at Tewkesbury, and Kempsey Lower Ham - are located close to centres of human population, and thus suffer great disturbance from recreational activities. The Upper Ham at Upton is very rich botanically, as recognised by its SSSI designation, but here too, hay cutting begins too early for the waders. The hay cutting date and spraying situation on the Severn Ham (curiously neglected by Ecoscope) needs investigation. Efforts should be made to see whether disturbance could be reduced or limited, perhaps by provision of educational materials and signboards. Even on the Hundred-Acre at Slimbridge, it seems that disturbance is a significant factor.

The Carrant catchment, curiously neglected in the past, proves to have good populations of nesting waders, notably Lapwing and deserves greater attention in the future.

### **6.2 Restoration of Wet Meadows**

The Worcestershire Wildlife Trust's work at Gwen Finch Reserve (Woodfield Farm) shows what can be done with tired arable riverside fields, given effort and money. Similar operations are planned at Longdon Marsh and at the Gloucestershire Wildlife Trust's new Coombe Hill Meadows reserve. Work in hand by the Severn and Avon Wetland Management Partnership at Lower Moor and Minsterworth Ham also look promising.

### **6.3 Predator Control**

Work at the New Grounds, Slimbridge and at Kemerton Lake suggests that the reason for poor productivity is high predation by, among other predators, Mink, Crows and Jackdaws. Predator control may be considered on areas that are to be managed for waders.



## 7. CONCLUSIONS

The survey of breeding waders in the Severn and Avon Vales in 2002 indicates that the decline in numbers noted between 1982 and 1995 (Quinn 1995, Ecoscope 1999) may be continuing. While there have been localised increases in Lapwing and Curlew numbers since 1995, the overall trend is still down. Declines in Redshank numbers are especially marked and this species has now been lost from many sites with concentrations of breeding pairs now only in the lower Severn and lower Avon Vales. Snipe remains a rare and sporadic breeding species in the area, following decline that was much in evidence by the time of the first BTO survey in 1982. The only species to show an increase in numbers in recent years is the Oystercatcher, which has colonised the Severn and Avon Vales within the last decade, although breeding numbers are still very small.

As in previous surveys, the most important sites for breeding waders are on the lower Severn (where the sites are mainly estuarine and rather different from the floodplain meadows above Gloucester) and the lower Avon. The 2002 survey indicates that many areas now hold no breeding waders, the Severn Vale between Worcester and Tewkesbury is particularly impoverished.

The causes of these declines have been well documented elsewhere (Quinn 1995, Ecoscope 1999, O'Brien & Smith 1992) with drainage, reseeded grassland, a switch from hay production to silage, and increased grazing levels all considered to have contributed. As suggested in Quinn 1995, conservation efforts should first be targeted at securing and managing those sites on which waders are still found as recolonisation of other areas would be very difficult if these populations were lost. Broadly, it has been suggested that management should concentrate on maintaining a high water table throughout the period April to June, controlling grazing pressure, and encouraging the late cutting of hay. Quinn suggested that hay should not be cut before late June but observations in 2002 suggest that Curlew may be vulnerable to agricultural operations well into July.

Any restoration plan of Severn Vale wetlands must focus heavily on the needs of breeding waders as these birds are declining rapidly throughout the lowlands of England and Wales and the small Severn Vale population is of considerable regional importance as decline are most marked in the west (Wilson *et al.* in prep.). The areas outlined in the Ecoscope report (Ecoscope 1999) as being of potential for wetland recreation should not be the sole focus, as these areas exclude some important breeding wader sites, which would act as vital source populations should more suitable habitat become available. Finally, the importance of arable land for nesting Lapwings, especially spring sown arable crops, should be considered if grassland reversion is planned. A mosaic of spring-sown crops and invertebrate rich grassland has been shown to provide the best breeding conditions for this species (Galbraith 1988, Shrubbs 1990, Wilson *et al.* 2001).



## **Acknowledgements**

The national Breeding Waders of Wet Meadows Survey carried out in 2002 was funded by the RSPB, English Nature and DEFRA. The additional surveys in the Severn and Avon Vales were funded by the Environment Agency and English Nature.

We would like to thank Mike Smart and Harry Green for organising the volunteer fieldwork in Gloucestershire and Worcestershire respectively and the many BTO volunteers who contributed to the 2002 survey. Many landowners granted our surveyors access permission to carry out the surveys, for which we are most grateful. Cathy Beeching and Brian Smith (Environment Agency); Peter Holmes (English Nature); Rowena Langston and Frank Lucas (RSPB) and Nick Carter, Nigel Clark, Su Gough and Juliet Vickery (BTO) all gave invaluable help, assistance and encouragement in setting up this survey.



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## APPENDICES

**Appendix 1.** Comparison of wader numbers on sites covered in BTO82 and BTO02

BTO82 site code	BTO02 site code	Area (ha)	Oystercatcher BTO82	Oystercatcher BTO02	Lapwing BTO82	Lapwing BTO02	Snipe BTO82	Snipe BTO02	Curlew BTO82	Curlew BTO02	Redshank BTO82	Redshank BTO02
2510	2510	99	0	0	4	1	0	0	0	0	0	0
2511	2511	56	0	0	2	0	0	0	0	0	0	0
2542	2542	149	0	0	0	0	0	0	1	0	0	0
2544	2544	75	0	0	0	0	0	0	0	0	0	0
2547	2547	105	0	0	0	0	0	0	0	0	0	0
2548	2548	41	0	0	0	1	0	0	1	0	0	0
2549	2549	67	0	0	7	1	2	1	2	1	4	2
2559	2559	40	0	0	1	0	0	0	0	0	0	0
3204	3204	128	0	0	0	0	0	0	3	0	0	0
3205	3205	100	0	0	4	1	0	0	0	0	0	0
3206	3206	94	0	0	9	0	0	0	1	0	3	0
3207	3207	123	0	0	15	0	2	0	4	0	9	0
3208	10266	41	0	0	4	0	0	0	1	0	0	0
3209	3209	30	0	0	0	0	0	0	0	0	0	0
3210	3210	36	0	0	0	0	0	0	0	0	0	0
3224	3224	17	0	0	4	0	1	0	1	0	0	0
3251	3251	851	0	0	4	2	1	0	1	5	10	7
3252	3252	423	0	0	0	3	0	0	0	2	0	0
3253	3253	31	0	0	0	0	0	0	0	2	1	0
3254	3254	856	0	0	2	8	0	0	0	1	1	0
9631	9631	76	0	0	12	11	0	0	0	0	4	3
9632	9632	536	0	5	14	12	0	0	0	0	3	6
9634	9634	40	0	0	0	0	0	0	0	0	0	0
9636	9636	69	0	0	0	0	0	0	2	1	5	1
2513	10001	80	0	0	5	8	0	0	0	0	6	13
3201	10270	111	0	0	3	0	0	0	0	0	1	0
2551	10274	368	0	0	0	1	0	0	0	2	0	0
2542	10282	11	0	0	0	0	0	0	0	0	0	0
3254	10369	17	0	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>4653</b>	<b>0</b>	<b>5</b>	<b>90</b>	<b>49</b>	<b>6</b>	<b>1</b>	<b>17</b>	<b>14</b>	<b>47</b>	<b>32</b>

**Appendix 2.** Comparison of wader numbers on sites covered in RSPB95 and BTO02

RSPB95 site code	BTO02 site code	Area (ha)	Oystercatcher RSPB95	Oystercatcher BTO02	Lapwing RSPB95	Lapwing BTO02	Snipe RSPB95	Snipe BTO02	Curlew RSPB95	Curlew BTO02	Redshank RSPB95	Redshank BTO02
1.1	3251	334	0	0	0	0	0	0	3	5	10	4
1.10	3204	127	0	0	0	0	0	0	0	0	0	0
1.11	3205	48	0	0	0	1	0	0	1	0	0	0
1.11	10265	60	0	0	0	0	0	0	0	0	1	0
1.12	10270	94	0	0	2	0	0	0	1	0	0	0
1.13	10269	13	0	0	0	0	0	0	1	1	0	0
1.13	10310	148	0	0	0	0	0	0	1	1	0	0
1.14	10293	239	0	1	12	1	0	0	1	2	7	2
1.16	3253	31	0	0	0	0	0	0	1	2	2	0
1.18	9632	283	0	4	23	12	0	0	0	0	14	6
1.19	9632	5	0	0	0	0	0	0	0	0	1	0
1.19	10001	78	0	0	5	8	0	0	0	0	5	13
1.2	2549	60	0	0	0	1	0	1	0	1	0	2
1.2	10273	77	0	0	5	0	0	0	1	0	0	0
1.20	10304	114	0	0	0	0	0	0	0	0	0	0
1.22	10281	172	0	0	0	2	0	0	2	2	0	0
1.23	10292	86	0	0	11	0	0	0	0	1	2	0
1.3	10267	174	0	0	4	0	0	0	0	2	0	0
1.4	9636	67	0	0	0	0	0	0	1	1	3	1
1.6	10280	86	0	0	0	0	0	0	0	1	0	0
1.8	3207	112	0	0	0	0	1	0	2	0	0	0
1.9	3206	67	0	0	0	0	0	0	0	0	0	0
1.9	3207	10	0	0	0	0	0	0	1	0	0	0
2.1	3252	201	0	0	6	3	0	0	4	4	0	0
2.10	10278	71	0	0	0	0	0	0	3	2	1	0
2.12	10282	73	0	0	0	0	0	0	0	0	0	0
2.13	2542	149	0	0	0	0	0	0	0	0	0	0
2.13	10282	197	0	0	0	0	0	0	0	0	0	0
2.19	9631	52	0	0	3	11	0	0	0	0	4	3
2.19	10367	126	0	1	1	8	0	0	1	0	0	0
2.2	10291	98	0	0	0	0	0	0	0	0	0	0
2.27	10275	26	0	0	0	0	0	0	1	0	0	0
2.27	10290	13	0	0	0	0	0	0	0	0	0	0
2.28	10268	81	0	0	0	0	0	0	1	0	1	0
2.29	10290	93	0	0	0	0	0	0	3	1	0	0
2.3	3254	51	0	0	0	0	0	0	0	0	0	0
2.30	10274	326	0	0	6	1	0	0	2	2	1	0
2.31	2548	14	0	0	0	0	0	0	0	0	0	0
2.32	2511	46	0	0	0	0	0	0	0	0	0	0
2.32	10283	28	0	0	0	0	0	0	0	0	0	0
2.32	10284	11	0	0	0	0	0	0	0	0	0	0
2.4	3254	85	0	0	0	0	0	0	0	0	0	0

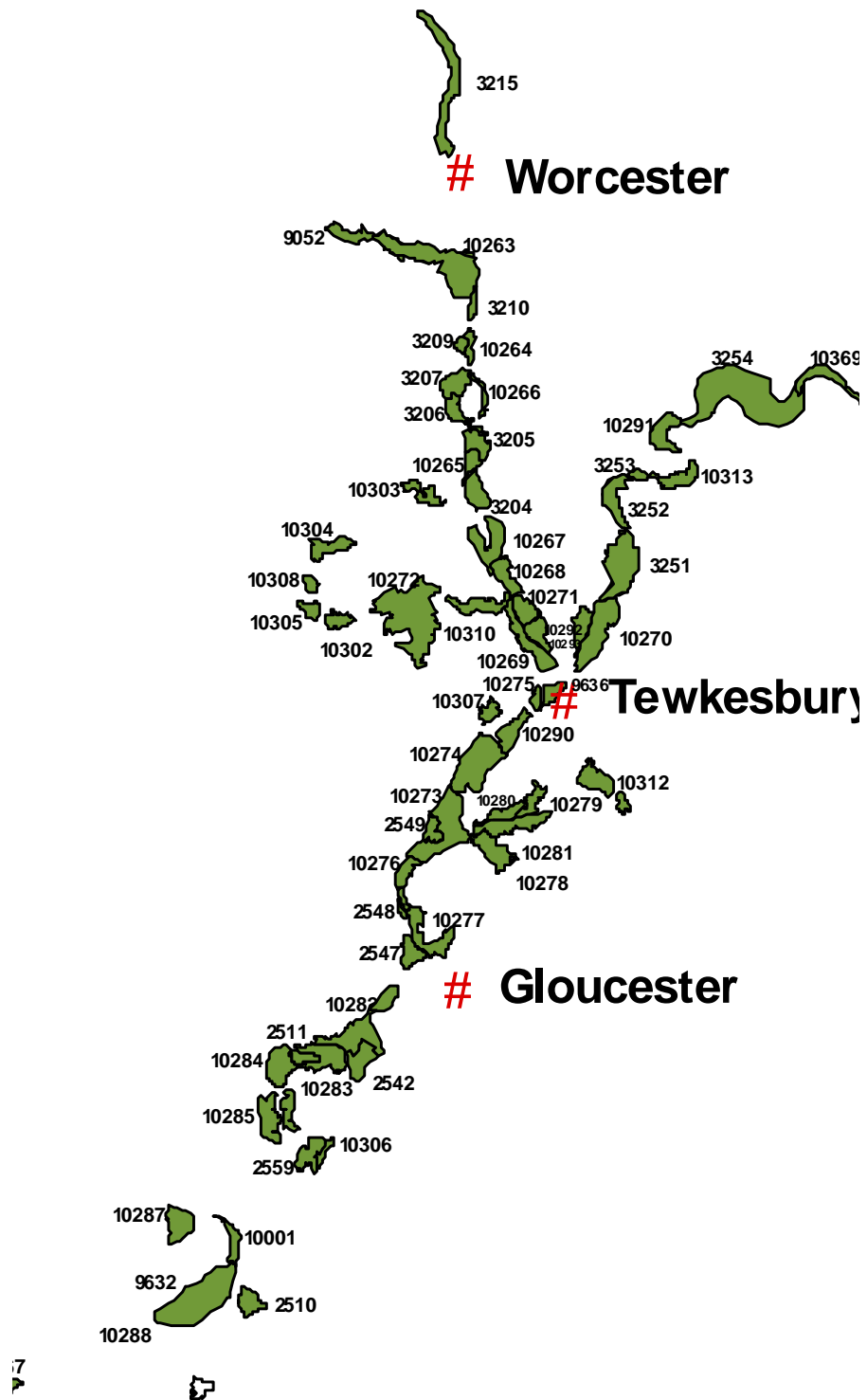
RSPB95 site code	BTO02 site code	Area (ha)	Oystercatcher RSPB95	Oystercatcher BTO02	Lapwing RSPB95	Lapwing BTO02	Snipe RSPB95	Snipe BTO02	Curlew RSPB95	Curlew BTO02	Redshank RSPB95	Redshank BTO02
2.5	10308	41	0	0	0	0	0	0	0	0	0	0
2.6	10305	55	0	0	0	0	0	0	0	0	0	0
2.7	10302	72	0	0	0	0	0	0	0	0	0	0
2.9	10272	387	0	0	5	8	0	0	2	1	0	0
3.11	3254	35	0	0	0	0	0	0	0	1	0	0
3.18	10269	154	0	0	0	0	0	0	1	1	0	0
3.18	10310	12	0	0	0	0	0	0	1	1	0	0
3.20	10303	32	0	0	0	0	0	0	0	0	0	0
3.20	10303	58	0	0	0	0	0	0	0	0	0	0
3.25	10307	63	0	0	0	0	0	0	0	0	0	0
3.27	10280	0	0	0	0	0	0	0	0	0	0	0
3.29	10278	83	0	0	0	5	0	0	1	0	0	0
3.29	10281	2	0	0	0	0	0	0	0	0	0	0
3.3	9052	37	0	0	0	1	0	0	0	0	0	0
3.3	10263	220	0	0	0	1	0	0	1	1	1	0
3.30	2548	10	0	0	0	0	0	0	0	0	0	0
3.30	10276	71	0	0	0	0	0	0	0	0	0	0
3.31	2548	5	0	0	0	0	0	0	0	0	0	0
3.32	2547	105	0	0	0	0	0	0	0	0	0	0
3.4	3210	31	0	0	0	0	0	0	0	0	0	0
3.42	2559	18	0	0	0	0	0	0	0	0	0	0
3.42	10306	119	0	0	0	2	0	0	0	0	0	0
3.5	3209	29	0	0	0	0	0	0	0	0	1	0
3.5	10264	43	0	0	0	0	0	0	0	0	0	0
3.6	10270	8	0	0	0	0	0	0	0	0	0	0
3.6	10271	75	0	0	6	2	0	0	1	0	0	0
3.66	10312	166	0	0	0	0	0	0	0	0	0	0
3.67	2544	16	0	0	0	0	0	0	0	0	0	0
3.8	10313	122	0	0	2	7	0	0	0	0	0	6
Total	6295	0	6	91	74	1	1	38	33	54	37	

Appendix 2 continued

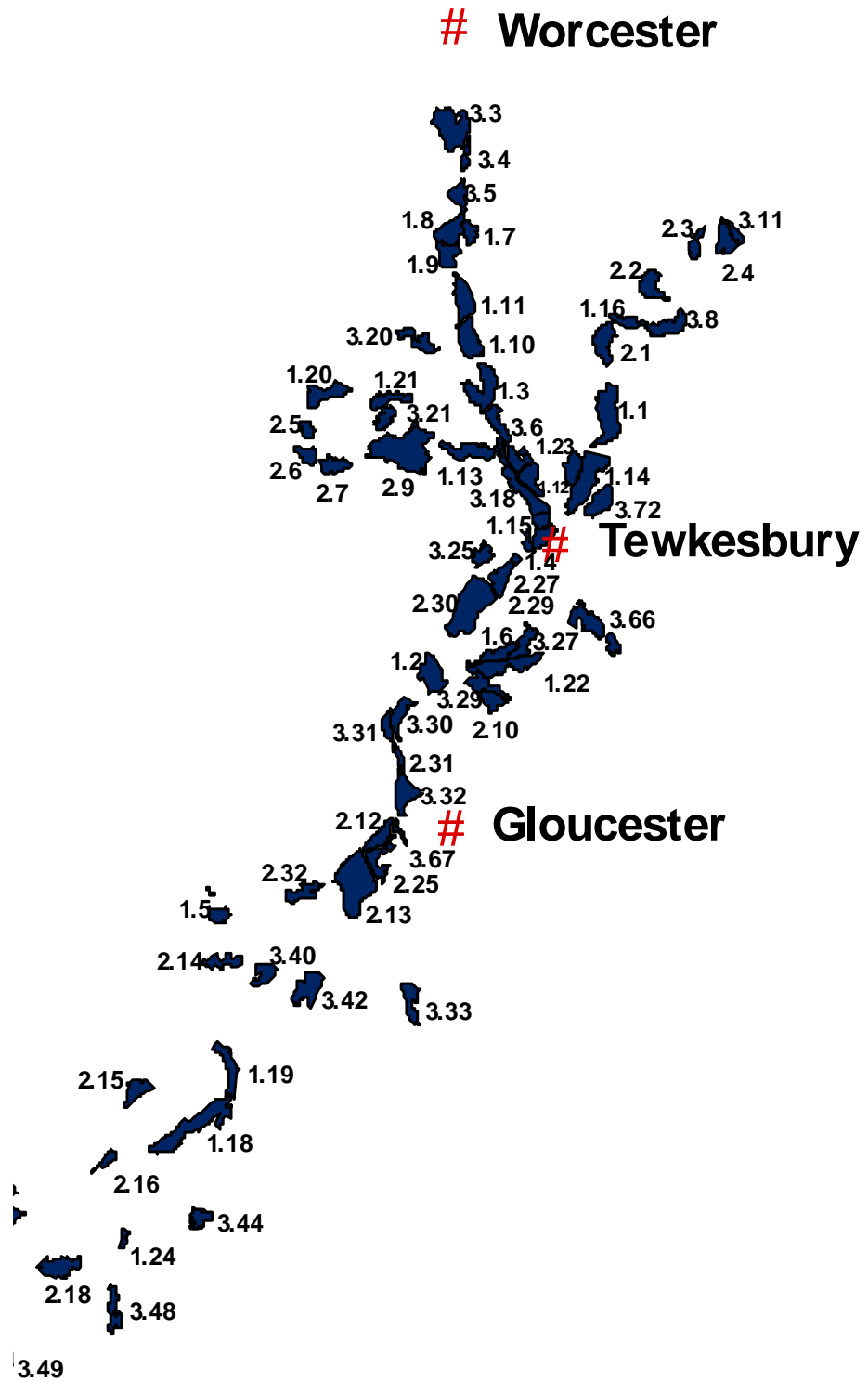
**Appendix 3.** Wader numbers (pairs) and areas covered in BTO02 by Ecoscope Zone and comparison with RSPB95 data

Zone	Total area	Covered in BTO02				Covered in RSPB85 and BTO02						
		Area	Lapwing	Redshank	Curlew	area	Lapwing 1985	Lapwing 2002	Redshank 1985	Redshank 2002	Curlew 1985	Curlew 2002
1	114	114	1	0	0	0	-	-	-	-	-	-
2	424	403	1	0	1	244	0	2	1	0	1	1
3	78	67	0	0	0	64	0	1	1	0	0	0
4	413	370	1	0	0	359	0	0	1	0	4	0
5	25	25	0	0	0	0	-	-	-	-	-	-
6	204	198	0	0	2	166	4	0	0	0	0	2
7	346	339	3	0	1	285	6	2	1	0	4	1
8	508	480	8	0	1	264	5	8	0	0	2	1
9	1247	1055	9	2	6	580	11	2	1	2	6	4
10	609	448	7	0	5	244	0	7	1	0	1	1
11	464	448	0	0	0	408	0	0	0	0	0	0
12	652	531	1	0	0	85	0	0	0	0	0	0
13	236	212	0	0	0	0	-	-	-	-	-	-
14	147	137	0	0	0	0	-	-	-	-	-	-
15	649	649	1	0	0	0	-	-	-	-	-	-
16	620	580	8	0	0	153	0	0	0	0	0	0
17	530	482	13	2	0	0	-	-	-	-	-	-
18	663	624	6	8	10	379	6	3	18	5	6	9
<b>Total</b>	<b>7929</b>	<b>7109</b>	<b>59</b>	<b>12</b>	<b>26</b>	<b>3231</b>	<b>32</b>	<b>25</b>	<b>24</b>	<b>7</b>	<b>24</b>	<b>19</b>

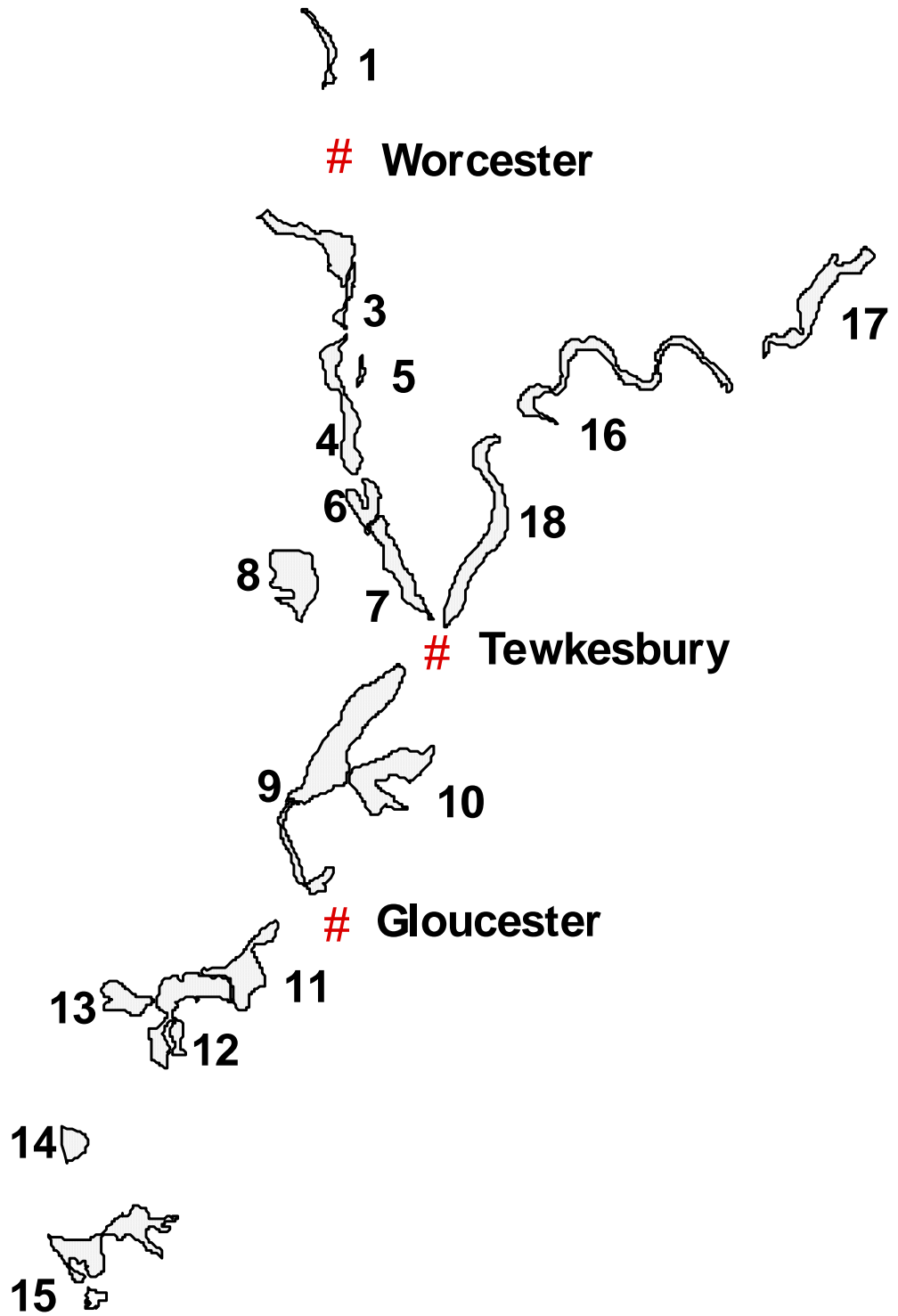
Appendix 4. BTO02 survey sites



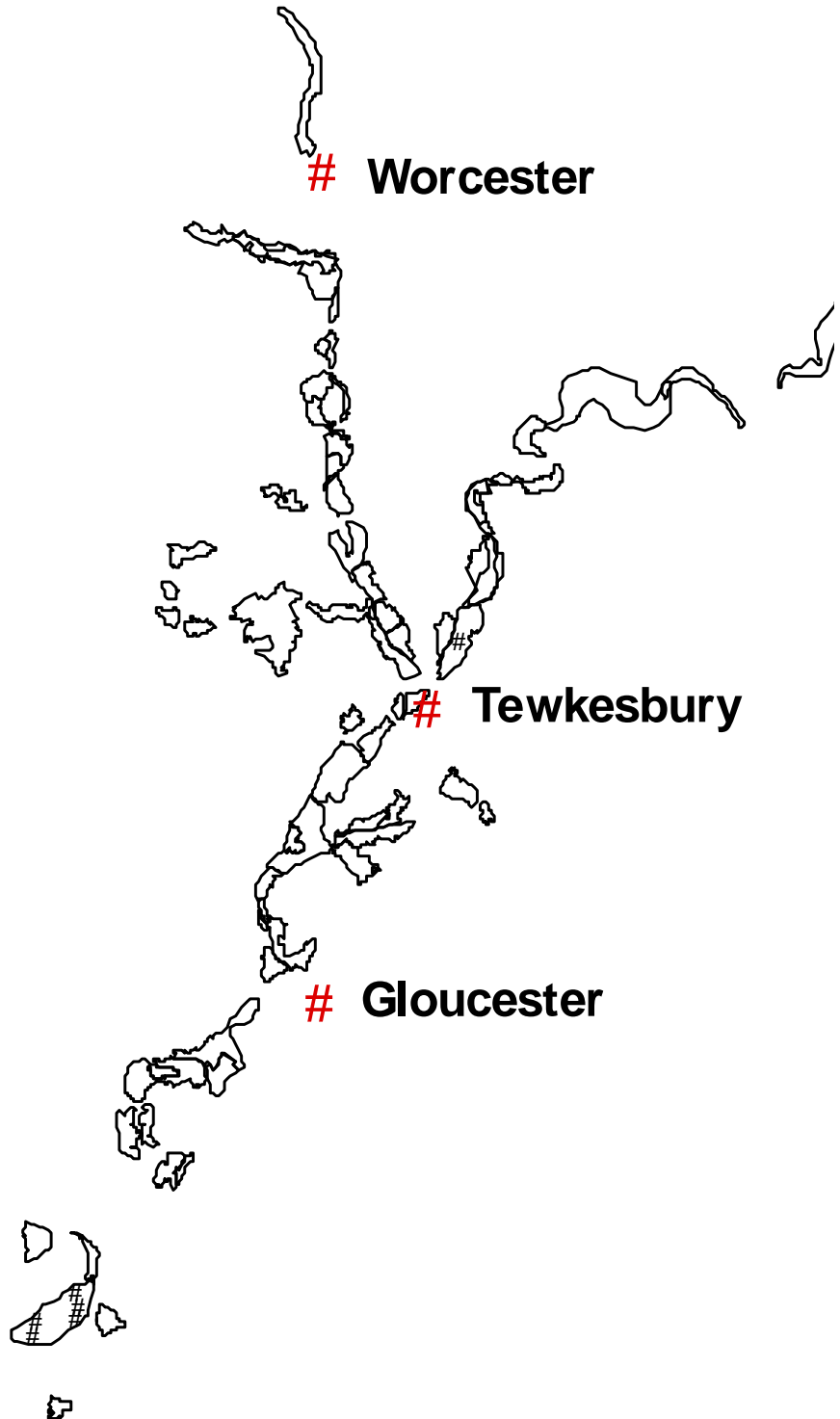
Appendix 5. RSPB95 survey sites



Appendix 6. Ecoscope Zones

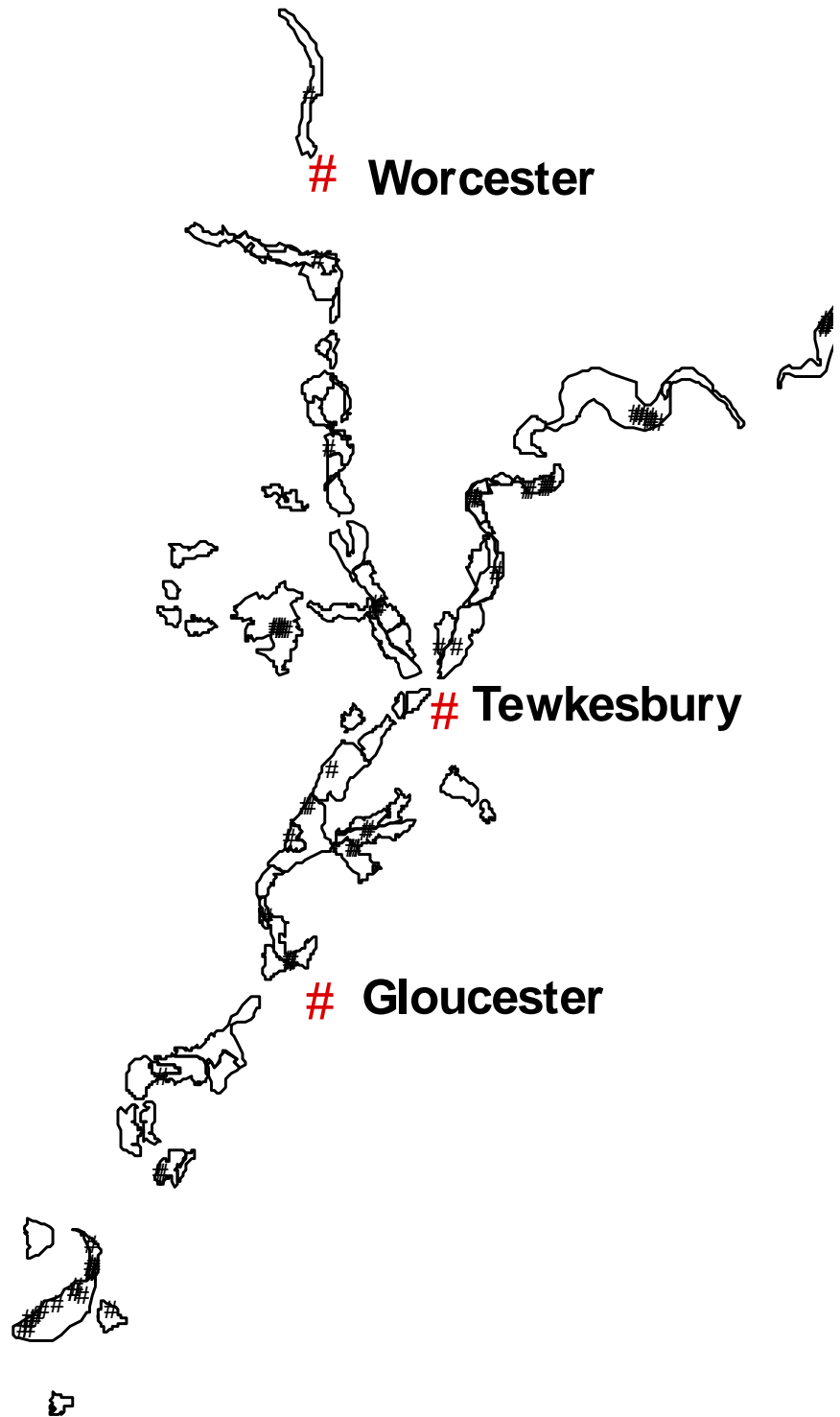


**Appendix 7.** Distribution of pairs of Oystercatcher in BTO02  
(black dots = location of pairs)

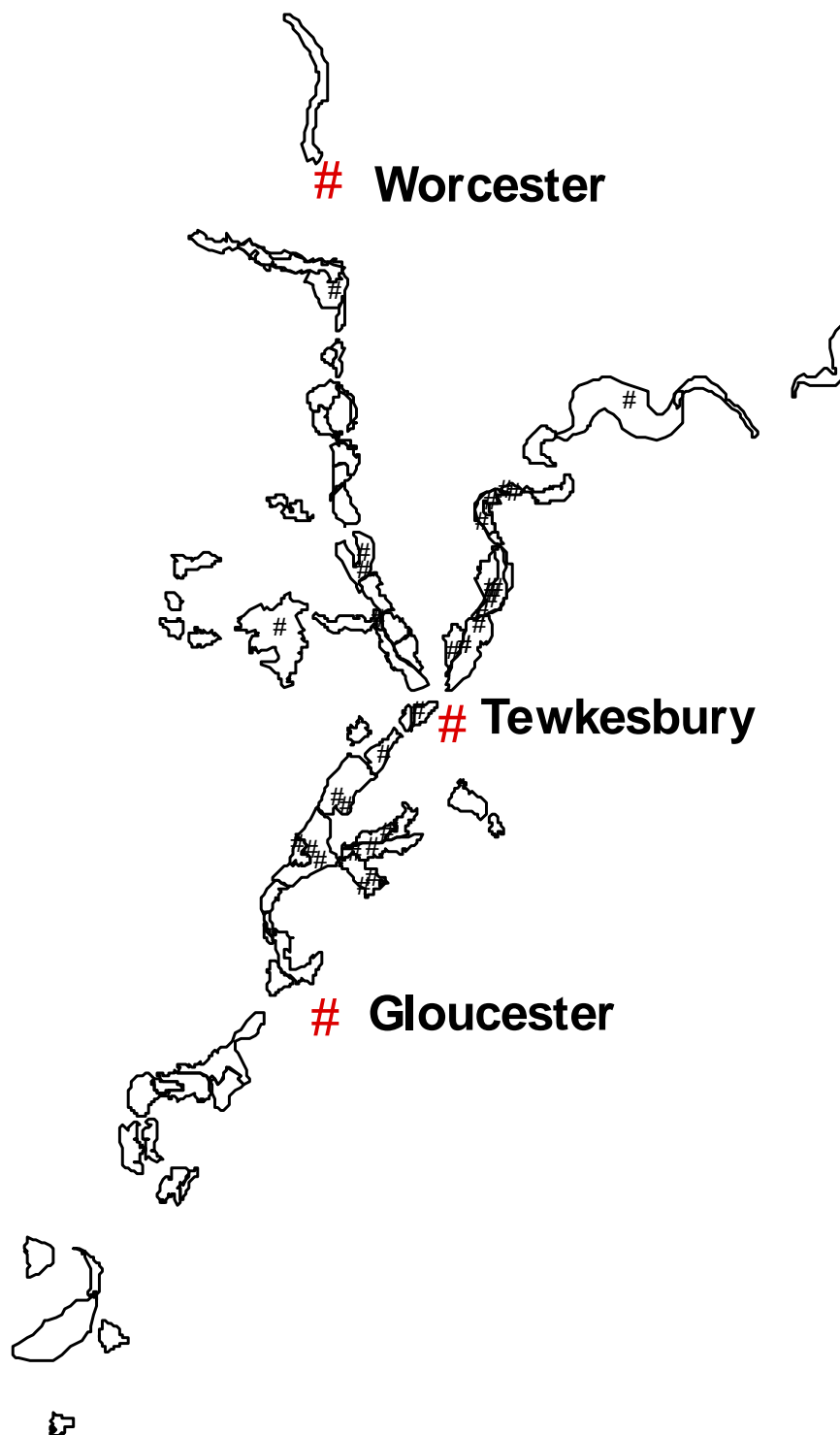




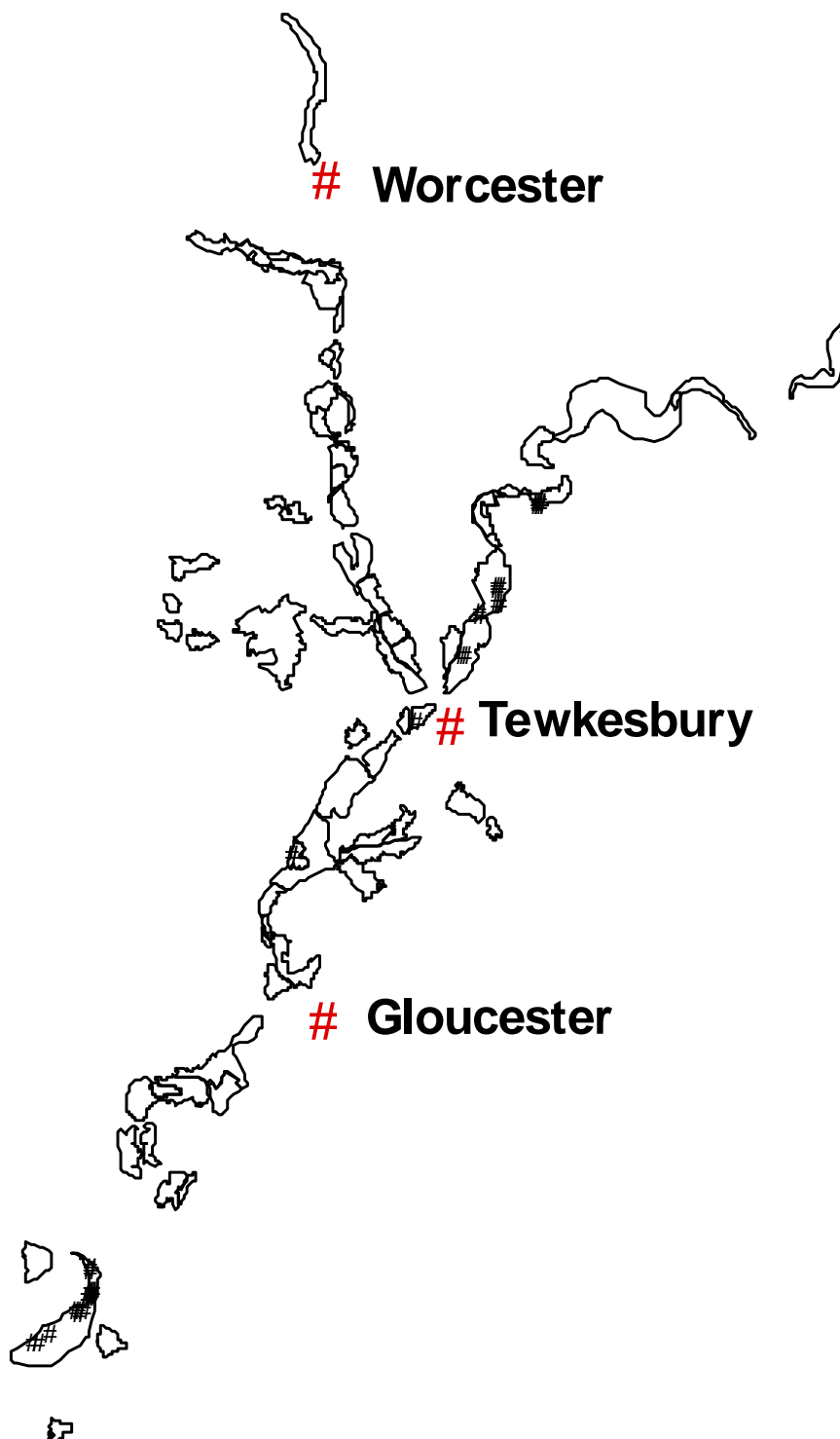
**Appendix 8.** Distribution of pairs of Lapwing in BTO02  
(black dots = location of pairs)



**Appendix 9.** Distribution of pairs of Curlew in BTO02  
(black dots = location of pairs)



**Appendix 10.** Distribution of pairs of Redshank in BTO02  
(black dots = location of pairs)



# Breeding Waders of Wet Meadows Survey – 2002



## Survey Instructions

### Survey aims

This is a repeat of a survey carried out in 1982. We are aiming to assess changes in breeding wader numbers on wet grassland over the last 20 years, thereby indicating changes in the quality of this important habitat. *It is very important that your form is returned, complete with habitat details, even if you found no breeding waders.*

### Area to cover

You have been provided with a copy of a map showing the boundary of your site. Please ensure that you cover **all of** the area indicated so that the results are directly comparable with those from the 1982 survey – **do not** include birds in fields adjoining your site. Please try to cover the site systematically, field by field, walking to within 100m of each part of the site. If you did not visit any part of the site, please indicate this on the visit map using diagonal hatched lines (see example overleaf). **Always obtain permission to survey privately owned sites that are not open to the public.** A letter of introduction to landowners has been provided.

### When to carry out the survey

Please make 3 visits to the site between mid-April and the end of June, with at least two weeks between visits, ideally first visit (a) 14<sup>th</sup>-30<sup>th</sup> April; second visit (b) 1<sup>st</sup>-21<sup>st</sup> May; third visit (c) 22<sup>nd</sup> May -24<sup>th</sup> June. It is important to make the first visit in April if you can as this is the best time for surveying Lapwings, while May is probably the best month for locating other species, such as Snipe. Please make sure you return the form, even if you do not manage to complete all 3 visits. Visits should preferably be made between dawn and midday. Avoid cold, wet or windy weather.

### Recording waders

Record the waders on the map provided using the codes shown in the box (right). Ducks and other species should not be mapped. Please indicate when a registration involves more than one bird with a number BEFORE the relevant species code. We have provided only one map. You can use this for all three visits. Use the notation “a”, “b” or “c” FOLLOWING the species code to indicate the visit number e.g. 1La means one Lapwing on visit a, 3CUb means 3 Curlew on visit b. If there is insufficient space to place all registrations in the correct field(s), use arrows to link fields to the relevant registrations on a clear section of the map.

Interpret ‘pairs’ as paired individuals, displaying/singing individuals, nests or broods, and other single birds not in flocks. For Snipe, breeding is indicated by “drumming” and “chipping”. Record also the total numbers of each species seen or heard on the summary sheet; include all birds in flocks as well as those thought to be breeding pairs or single birds.

#### Species Codes

OC	Oystercatcher
AV	Avocet
LP	Little Ringed Plover
RP	Ringed Plover
L	Lapwing
RU	Ruff
SN	Snipe
BW	Black-tailed Godwit
CU	Curlew
RK	Redshank
CS	Common Sandpiper

## Recording other species

Other species need not be mapped. We are, however, keen to record numbers of ducks (other than Mallard) and Yellow Wagtails and the presence of Meadow Pipits. For ducks, please record the total number of adult birds (including males) with the number of males noted separately in brackets. We are keen to receive counts of any duck species, except Mallard. If a species was present on your site but you did not count it, put a tick in the appropriate box, *we will assume none were present if a box is left empty*. The only passerines to record are Yellow Wagtail and Meadow Pipit. Please estimate the number of breeding pairs of Yellow Wagtails present on each visit. We only need to know whether Meadow Pipits are present (tick) or absent (cross).

## Recording habitat details

Please estimate the percentage of the area falling into each of the five main habitat management types listed in the table on the summary sheet, noting other habitats, including gravel pits, sewage works etc in the "Other" category. Please also record the dampness of the site on all three visits, estimating the percentage of grassland (plus arable) in each of the three categories:

1. Well flooded, with water at least over the toes of boots.
2. Ground damp, but water rises only to soles of boots.
3. Ground dry, with no free water visible around boots.

Please note that this needs only to be a rough estimate, to the nearest 10%.

Mark any arable fields on the map with an **X** (see example below). You may be aware of habitat changes that have taken place on the site since 1982, e.g. creation of gravel pits, land drainage etc. Please sketch these habitat changes on the map, along with any other significant changes such as new roads or buildings. Please note any such changes in the "Notes and habitat changes" box, continuing on a separate sheet of paper if need be. Some sites may include habitats other than wet grassland, such as arable, gravel pits or sewage works. **These should also be surveyed if they are within the site boundary.**

### Example map



*Please return the completed form to your regional organiser by 31<sup>st</sup> July 2002. If you do not have a regional organiser, return to: BWWM, BTO, The Nunnery, Thetford, Norfolk, IP24 2PU.*