

## WATERWAYS SURVEYS IN 2004

JOHN MARCHANT

*British Trust for Ornithology*  
*The National Centre for Ornithology*  
*The Nunnery, Thetford*  
*Norfolk, IP24 2PU, United Kingdom*

Support for both the BTO's annual breeding surveys along waterways gained strength in 2004, and another stage of Waterways Breeding Bird Survey (WBBS) development went just swimmingly. *John Marchant* reports.

### CONTEOS EN CURSOS ACUÁTICOS EN 2004

El apoyo a ambos conteos de aves en cursos acuáticos del BTO ganó fuerza en 2004, y una nueva etapa del conteo de aves reproductoras en cursos acuáticos (WBBS) dio sus frutos. *John Marchant* informa.

Following seven years of overlap between the Common Birds Census (CBC) and the Breeding Bird Survey (BBS), the long-running mapping CBC ceased in 2000 and passed the baton to BBS as the ongoing scheme for bird monitoring in the UK's wider countryside. The process involved a detailed statistical comparison of the trends detected by the two schemes. For nearly every species, it has proved possible to link CBC and BBS trends together to produce a joint trend, beginning in the 1960s and maintained now solely by BBS transects. These joint CBC/BBS trends represent both the history and the future of bird population monitoring in the UK (see [www.bto.org/birdtrends](http://www.bto.org/birdtrends)).

The mapping Waterways Bird Survey (WBS), covering linear waters (rivers and canals), filled gaps in species and habitat coverage left by CBC and now performs the same valuable function alongside BBS. For 14 species, the headline trends on the BTO's *birdtrends* web pages, are from WBS rather than BBS. WBS now has its own new rival in the shape of WBBS, a transect scheme modelled closely on BBS, that was first

trialled seven years ago, in 1998. There are many parallels between CBC/BBS and WBS/WBBS: WBBS brings the same advantages of random plot selection, and a much larger annual sample, than BBS had over CBC. It also brings coverage of all bird and mammal species, whereas WBS mapping includes only waterbirds. Will the pattern now be repeated, with the long-established mapping survey being dropped in favour of the new transect survey?

The outcome is far from clear, however, and in the short term both surveys are planned to continue in 2006. One further field season, in 2005, has already been added to the overlap period and will help to overcome the effects of Foot & Mouth Disease (FMD), which reduced the value of data collection in 2001. Continuation in 2006 will increase to seven the number of seasons in which WBS observers have conducted surveys using both mapping and transect methodologies. A decision on whether to pursue WBBS or WBS into the future will need to be taken within a year or two, during which time we hope that extra valuable data will have been gathered.

## WBS LATEST

We were worried this time last year by the recent gradual decline in support for this scheme, evident since the launch of WBBS in 1998. Disregarding 2001, the year of FMD, there was a progressive drop in the number of sites, down to just 85 in 2003 (Figure 1). It is pleasing then that, in 2004, a good number of new plots easily surpassed those dropping out, and the WBS sample rose to 91. There was another large intake of new sites in 2005, which if continued, will greatly aid the comparisons.

For 2003's 85 WBS submissions, all but five observers provided comparable data also for 2004. There were thus 80 plots helping to estimate population change for 2003–04, signifying an increase from the low point of 74 paired sites for the previous year-to-year comparison (*BTO News* 253: 14). The results of this comparison are set out in Table 1.

There were 21 species for which WBS could estimate population change between 2003 and 2004. Of these, two-thirds increased. Increases for Sedge Warbler and Whitethroat, both statistically significant, were the most striking. The upturn for Reed Bunting, a Red-listed species, was also significant. In contrast, Pied and Grey Wagtails both declined significantly. No other decreases reached statistical significance, but the 22% decline estimated for Lapwings is also worthy of note. By far the largest sample sizes among the waterbirds covered are for Mallard, where the almost ubiquitous domestic type birds are included in the counts, and for Sand Martin, where the counts tabulated are of apparently occupied nest holes. Yellow Wagtail, Little Grebe and Redshank have become too scarce now on rivers and canals for annual estimates of change to be made.

Including these three scarce species, there are 24 species for which a long-term estimate of change can be made, typically for the period 1975–2003 (Table 2): seven species require a later start year, having been recorded too infrequently at the start of the survey. Winners and losers more-or-less balance in this table. Four species have halved in number, but five have doubled. The virtually complete loss of Yellow Wagtails from the waterway habitat stands out as the most remarkable of these changes, but at the other end of the scale the rapid rise of introduced Greylag Geese is also astonishing — especially

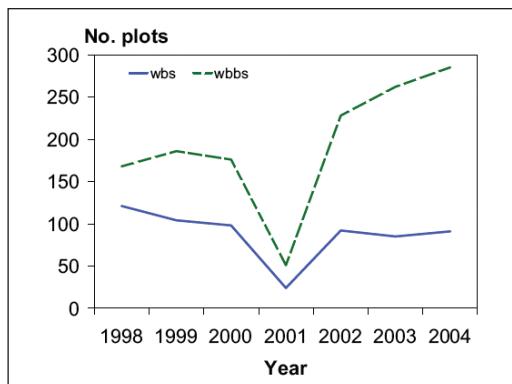


FIGURE 1. Numbers of plots surveyed for WBS and WBBS, 1998–2004.

given that, as recently as 1992, the species was too infrequent on WBS plots to be indexed.

Table 2 sets the background to the latest annual changes. For example, the decreases among wagtails in 2004 follow a long period of overall decline for these species. Interestingly, however, CBC/BBS has detected little change over the same period for Pied Wagtail in the other habitats in which it occurs. The longterm rises of Canada Goose, along with Oystercatcher, Whitethroat, Goosander, Mute Swan and Reed Warbler were evident on WBS plots in 2004.

## WBBS PHASE 3

A further three seasons of WBBS transect fieldwork, funded again by the Environment Agency, were completed in 2004. Our aims for this phase were to develop the overlap between WBS and WBBS, to encourage more volunteer support for WBBS, and to compare population trends emerging from WBBS with those from other monitoring schemes.

Figure 1 charts WBBS development. 2001 aside, the number of stretches covered each year for WBBS has continued to grow, reaching 285 in 2004. We are pleased with this success, and hope this number can grow still further over future seasons. Given that we want both schemes to be operating fully during their overlap period, it was encouraging that both WBBS and WBS enjoyed an upturn in support in 2004. We are very grateful to everyone who helped to achieve this.

With an annual sample size approaching 300, WBBS has the potential to replace WBS as a

TABLE 1. Estimates of population change 2003–04, from WBS data.

Species	Territory totals		% change	lcl	ucl	Number of plots
	2003	2004				
<i>Mute Swan</i>	90	98	+9	-6	+26	50
Greylag Goose	61	50	-18	-57	+97	15
Canada Goose	166	184	+11	-16	+54	41
Mallard	2085	1987	-5	-11	+2	79
Tufted Duck	74	68	-8	-37	+24	17
Goosander	59	64	+8	-11	+37	24
Moorhen	628	648	+3	-7	+14	71
Coot	242	277	+14	-6	+39	39
<i>Oystercatcher</i>	216	255	+18	-4	+32	23
<i>Lapwing</i>	194	152	-22	-39	+5	32
<i>Curlew</i>	52	54	+4	-19	+27	17
Common Sandpiper	90	96	+7	-5	+17	18
<i>Kingfisher</i>	44	50	+14	-9	+47	36
<i>Sand Martin</i>	1173	1343	+14	-32	+160	18
<i>Grey Wagtail</i>	173	143	-17 *	-30	-3	53
Pied Wagtail	191	152	-20 *	-35	-7	53
Dipper	89	79	-11	-24	+6	28
Sedge Warbler	306	389	+27 *	+9	+50	41
Reed Warbler	265	292	+10	-11	+39	21
Whitethroat	203	252	+24 *	+3	+49	47
<b>Reed Bunting</b>	216	247	+14 *	+1	+32	44

Lcl and ucl = 95% lower and upper confidence limits; \* = statistically significant change. Species shown as *italic* are Amber-listed, and those shown as **bold** are Red-listed, according to the 2002–07 assessments. Species with fewer than 15 plots contributing paired data are excluded.

monitoring programme. Comparison of the trends detected by the two schemes is presently hampered by the relatively short overlap of six years — three before and three after 2001, from which year the data could not be used. We are seeking funding to extend this period, so we can compare WBS and WBBS trends more fully.

The results so far are encouraging, however. In Figure 2, trends from WBS mapping data are compared with those from all WBBS sites for a few example species. The data are completely independent between the two trend lines, but about a quarter of the WBBS data have been collected from stretches also covered by the same observers for the WBS mapping survey. Even allowing for this, the similarities in trends are very striking. It is especially pleasing that the Sand Martin graphs, with WBS data drawn from counts of nest holes, and WBBS data being birds seen, show such close correspondence. If the trend data continue to be similar over the rest of the overlap period, there should be no problems in constructing joint WBS/WBBS trend lines like those of CBC/BBS, at least for most of

the waterways birds presently monitored. Additionally, WBBS will create new indices for a much wider range of species using the waterside habitat than was possible through the WBS.

Earlier analyses had shown very close similarities, within the WBBS data, between the WBS-linked stretches, selfselected by the observers, and those selected randomly. For this reason, we are happy to combine all the WBBS data for indexing purposes. At the end of this phase of WBBS development, therefore, we know that BTO volunteers can provide enough effort to produce results to match those of WBS, and we know a good deal about how best to use the data.

## WATERSIDE MAMMALS

WBBS observers have recorded mammals since 1998, adding to the relatively scant knowledge of distribution and abundance among this group of animals. Riparian species, especially Water Vole, American Mink and Otter, are of particular interest in this context. Power analyses of WBBS data for 1998–2003 for these three species

TABLE 2 Long-term trends from the Waterways Bird Survey

Species	% change
Yellow Wagtail	-92*
Little Grebe	-74*†
Reed Bunting	-67*
Pied Wagtail	-51*
Redshank	-46*†
Common Sandpiper	-28*
Grey Wagtail	-23
SandMartin (1978)	-14 †
Moorhen	-13
Sedge Warbler	-10
Dipper	-7
Lapwing (1980)	-3
Kingfisher	+4
Curlew (1980)	+16
Coot	+34
Tufted Duck	+48
Reed Warbler (1981)	+66*
Mute Swan	+71*
Goosander (1981)	+97*
Canada Goose (1981)	+108*
Whitethroat	+110
Oystercatcher	+114*
Mallard	+185*
Greylag Goose (1993)	+279*†

Data cover 1975–2003 unless a different start year is given. An asterisk indicates statistical significance, and a dagger warns that the sample size is small. Species shown as orange are Amber-listed, and those shown as red are Red-listed. For more information, see [www.bto.org/birdtrends](http://www.bto.org/birdtrends).

demonstrate that, with 300 WBBS stretches surveyed annually, the data would allow a 33% decline in presence to be detected. While this is a long way short of what we can do with the bird data, it represents a significant input to mammal monitoring in the UK.

## THE 2006 SEASON

WBS and WBBS will enjoy another full season in 2006. New plots would therefore be welcome for both schemes, especially WBBS. The BTO's Regional Representatives have lists of the randomly selected sites that need WBBS transect coverage, with just two counting visits to be made to a stretch that may be as short as 500 metres: WBBS is not open to selfselected sites, unless you also plan to conduct a mapping WBS there.

If you have a stretch of river or canal in mind where you can make a regular birdwatching walk during the spring months, the WBS could be for you. A minimum length of 3 km applies.

Please contact me at the Nunnery for more information, or e-mail [wbbs@bto.org](mailto:wbbs@bto.org).

## THANK YOU

We are very grateful to all contributors to waterways monitoring, and to the Environment Agency for funding WBBS.

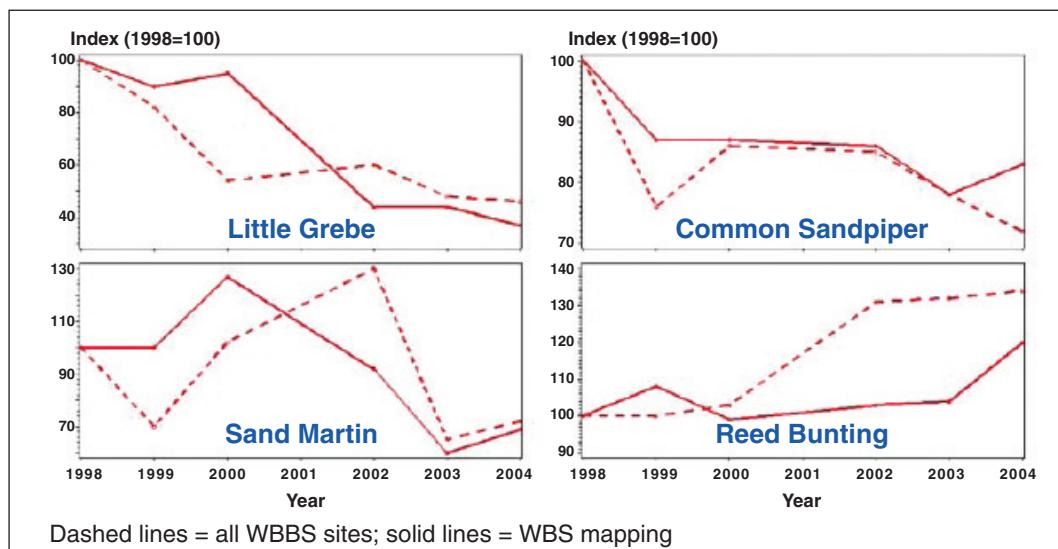


FIGURE 2. Population trends from WBBS transects.