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A survey and assessment of the birds of the Cam Washes and Berry Fen SSSIs, Cambridgeshire, focussing on breeding and wintering waterbirds

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EXECUTIVE SUMMARY

- 1. This report summarises the results of ornithological surveys and a data search undertaken in order to assess the current importance of birds using the Cam Washes (169 ha) and Berry Fen (18 ha) Sites of Special Scientific Interest (SSSIs) in Cambridgeshire. Both sites were originally scheduled for their important bird fauna, particularly of waterbirds.
- Three surveys of the breeding waterbirds using the two sites were conducted between mid-April and mid-June 2005, following methods used in previous Breeding Waders of Wet Meadows Surveys. Two further visits were made to each site in December 2005 and January 2006 to assess numbers of wintering waterbirds.
- 3. Results of the surveys are compared to previous information obtained from Breeding Waders of Wet Meadows Surveys in 1982 and 2002, Wetland Bird Survey (WeBS) data, Winter Gull Roost Survey data and other incidental records.
- 4. In total, 11 species of wader were recorded at the Cam Washes SSSI during the 2005 breeding season. Three pairs of Oystercatcher *Haematopus ostralegus*, six of Lapwing *Vanellus vanellus*, four of Snipe *Gallinago gallinago* and 13 of Redshank *Tringa totanus* were estimated to have bred (following the standard methods of O'Brien & Smith 1992). Three pairs of Lapwing and one pair of Redshank were assumed to have bred at Berry Fen.
- 5. Wildfowl species confirmed to have bred at the Cam Washes SSSI in 2005 were Mute Swan *Cygnus olor*, Greylag Goose *Anser anser*, Canada Goose *Branta canadensis*, Shelduck *Tadorna tadorna*, Mallard *Anas platyrhynchos* and Shoveler *A. clypeata*; Gadwall *A. strepera*, Teal *A. crecca* and Tufted Duck *Aythya fuligula* were also likely to have bred. Probable breeding wildfowl at Berry Fen were Gadwall, Teal, Mallard and Shoveler.
- 6. During the 2005/06 winter, 18 waterbird species were recorded at the Cam Washes and nine at Berry Fen. Most numerous (>100 individuals) were Greylag and Canada Geese and Wigeon *Anas penelope* at Cam Washes and Lapwing at Berry Fen.
- 7. Using the same methods as above, in the 1982 Breeding Waders of Wet Meadows Survey the Cam Washes south section (Upware Washes) held an estimated eight pairs of Lapwing, nine of Snipe and 12 of Redshank, and in 2002, one pair of Oystercatcher, 14 of Lapwing and 18 of Redshank. In comparison, this section held an estimated one pair of Oystercatcher, four of Lapwing, three of Snipe and 11 of Redshank in 2005.
- 8. A total of 48 waterbird species were recorded by WeBS core counts during spring/summer (April-June) between 2000 and 2004 on the River Cam: Kingfisher's Bridge WeBS sector and a total of 38 species on the River Cam: Upware to Dimmock's Cote sector. During winter (November to March, 2000/01 to 2004/05), the same sectors held 51 and 34 species respectively. No gulls were recorded at Berry Fen in the 2004 Winter Gull Roost Survey.
- 9. Both SSSIs remain important for the breeding and wintering waterbirds for which they were designated. Despite its small size, the Berry Fen SSSI supported two species of breeding wader and four of wildfowl and at least nine species of waterbird in winter. The site was originally designated for the Bewick's Swans *Cygnus columbianus* that may use it in winter when the adjacent Ouse Washes are too deeply flooded and although none were recorded during the current surveys, incidental records suggest continued use of the area by the species. The Cam Washes held four species of breeding wader in 2005, though in lower numbers than previous surveys in 1982 and 2002, and at least 51 species in winter (WeBS counts). The future for the ornithological interest of the sites, however, is likely to be highly dependent on grazing and flooding, which if managed can provide beneficial foraging habitat for both breeding and wintering waterbirds.

1. INTRODUCTION

Berry Fen and the Cam Washes are wet grassland / washland Sites of Special Scientific Interest (SSSIs) situated in the Cambridgeshire fens. Both sites were originally scheduled for their important bird fauna, particularly of breeding and wintering waterbirds. However, though there are recent ornithological records from both sites, surveys have often been patchy and there remains a need for a comprehensive assessment of the status of the sites.

The purpose of this work was to:

- i. Obtain up-to-date and complete surveys of the birds using the two sites, both in the breeding season and winter, and
- ii. Supplement these data with information collated from other relevant surveys and records.

This report summarises the results of the surveys and data search undertaken and reviews the current importance of the birds using the two SSSIs. The report focuses on waterbirds, as these are the main features of interest on the two sites. Waterbirds are defined as divers, grebes, cormorants, herons, wildfowl, rails, waders, gulls and terns (Collier *et al.* 2005).

Sites and location

The Cam Washes (TL5370) extends for 6.5 km along the banks of the River Cam in eastern Cambridgeshire, between the junction with the River Great Ouse in the north and Commissioner's Farm in the south (Fig 1). The SSSI encompasses 169 hectares of flood meadows and wet grassland, and was designated (in 1986) primarily for its importance for breeding and wintering waterbirds. In spring, breeding bird species of note include Teal Anas crecca, Gadwall, Anas strepera, Shoveler Anas clypeata, Redshank Tringa totanus, Snipe Gallinago gallinago, Grasshopper Warbler Locustella naevia and Reed Warbler Acrocephalus scirpaceus. In winter, the site supports large numbers of Wigeon Anas penelope. The site is divided into three sections – for the purposes of this report, north, mid and south.

Berry Fen (TL3774) is situated between Earith and Bluntisham on the northern banks of the River Great Ouse in east Cambridgeshire (Fig. 2). The site covers approximately 18 hectares of wet grassland and was designated as a SSSI in 1971. Ornithologically, the site is principally designated due to the large numbers of Bewick's Swans *Cygnus columbianus* that may use it in winter when the adjacent Ouse Washes are too deeply flooded. The site's wet grassland also supports a small number of breeding waders.

Habitat photos of both sites are contained in a separate annex to this report.

2. METHODS

2.1 Ornithological Surveys

2.1.1 Breeding waterbirds

Surveys of the breeding waterbirds using the two sites were conducted between mid-April and mid-June 2005. Methods followed O'Brien and Smith (1992) and were comparable to those of previous Breeding Waders of Wet Meadows Surveys (Smith 1983, O'Brien & Smith 1992, Wilson *et al.* 2005; see *Data Search*). Three visits were made to each site (i.e. Berry Fen and the three parts of the Cam Washes), as recommended with a minimum of two weeks between each visit. All surveys were undertaken between dawn and midday.

The two SSSIs were viewed from public rights of way, the survey route covering all areas to within 100 m. Each site was sub-divided into its constituent fields and the locations of waterbirds mapped. Any evidence of breeding (displaying, nests or young) was noted.

During surveys, we also recorded other birds present on the study sites using standard Common Bird Census (CBC) methodology. As the surveys were primarily limited to waterbirds and it was possible to survey these species, i.e. the key interest features of the sites, from public rights of way, we did not attempt to access every field during the surveys. Consequently records may underestimate the numbers of other species (such as passerines) present.

2.1.2 Wintering waterbirds

Two visits were made to each site to assess numbers of wintering waterbirds, one during December 2005 and one during January 2006. All waterbird species present were counted, following standard Wetland Bird Survey (WeBS) methodology (Bibby *et al.* 2000, Collier *et al.* 2005).

2.2 Data Search

2.2.1 Breeding waterbirds

Supplementary data on breeding waterbirds from two previous Breeding Waders of Wet Meadows Surveys (see Smith 1983, Wilson *et al.* 2005) were available for the southern (Upware Washes) section of the Cam Washes. These data were collected under the same methodology as outlined above, during three visits between mid-April and mid-June in 1982 and again in 2002.

In addition, WeBS data were obtained for the spring/summer period (April to June) for two sectors of the Cam Washes – "River Cam: Kingfisher's Bridge" (WeBS sitecode 32344) and "River Cam: Upware to Dimmock's Cote" (WeBS sitecode 32340) – that have been monitored since 1996 and 1993 respectively. These two WeBS Core Count sectors include part of the north and mid sections of the Cam Washes SSSI (Fig. 3) and data were available up to 2005.

2.2.2 Wintering waterbirds

WeBS counts were also obtained to provide further information on the numbers of waterbirds using the north and mid sections of the Cam Washes in autumn (July to October) and winter (November to March). As above, data were available for the periods 1996 and 1993 to 2005.

Data were also obtained from the Winter Gull Roost Surveys carried out in 1973 and 2004 (see Hickling 1977, Banks *et al.* submitted).

In addition, recent Cambridge Bird Reports (Clark 2004, 2005) and online resources were referenced to look for any other significant records of breeding, passage or wintering birds.

3. RESULTS

3.1 Ornithological Surveys

3.1.1 Breeding waterbirds

A total of 30 species of waterbird were recorded at the Cam Washes SSSI during the 2005 breeding season, 23 of which were present on at least two out of the three visits (Table 1, Appendix 1). During the same period nine species were present at Berry Fen, with five of these being present during at least two visits.

In total, 11 species of wader were recorded at the Cam Washes SSSI, of which at least four -Oystercatcher Haematopus ostralegus, Lapwing Vanellus vanellus, Snipe and Redshank - can be assumed to have bred. Of the 11 species of wader recorded, eight are recognised as being of Medium Conservation Concern (Amber listed) and one - Black-tailed Godwit Limosa limosa - as being of High Conservation Concern (Red listed) based on their breeding populations (Gregory et al. 2002). Using the methods described in O'Brien & Smith (1992) (see also Gilbert et al. 1998) to estimate the numbers of breeding pairs of waders, it can be concluded that one pair of Lapwing bred in each of the northern and mid sections of the Cam Washes while four pairs may have bred in the southern section. The same methods indicated that two pairs of Redshank bred in the northern section and up to 11 pairs were present in the southern section, with breeding confirmed by the presence of a brood of four young in the southern section during early June. Assumed breeding attempts by Oystercatcher were based on the presence of two individuals on the northern section (minimum estimate of one pair) and one individual on each of the mid and southern sections (one pair each). Up to three drumming Snipe were present on the southern section of the Cam Washes indicative of three breeding pairs and one on the mid section. It should be noted that Lapwing present on the Cam Washes during surveys may have actually nested on adjacent farmland, though pairs may have then brought their young to the SSSI to feed once they were hatched. Breeding waders were evenly distributed within the most important southern section of the Cam Washes (the Upware Washes).

Wildfowl species confirmed to have bred at the Cam Washes SSSI (i.e. young seen) were Mute Swan *Cygnus olor*, Greylag Goose *Anser anser*, Canada Goose *Branta canadensis*, Shelduck *Tadorna tadorna*, Mallard *Anas platyrhynchos* and Shoveler *A. clypeata*, with Gadwall *A. strepera*, Teal *A. crecca* and Tufted Duck *Aythya fuligula* also likely to have bred.

The only breeding waders at Berry Fen were an estimated three pairs of Lapwing and one pair of Redshank. Probable breeding wildfowl at Berry Fen were Gadwall, Teal, Mallard and Shoveler.

In addition to the species of waterbird listed in Table 1, a further 50 bird species were recorded on the Cam Washes and Berry Fen SSSIs during breeding season surveys (Appendix 1).

It should also be noted that several waterbird species were also present on the wetland habitat at TL5473 adjacent to the Cam Washes, a site at present undesignated.

3.1.2 Wintering waterbirds

During the early winter visit a total of 16 waterbird species were recorded at the Cam Washes (Table 2, Appendix 2). Of these, six species are recognised as species of Medium Conservation Concern (Amber listed), having an unfavourable conservation status based on their wintering population (Gregory *et al.* 2002). A total of 13 species were recorded during the later winter period, of these two were additional to those recorded during the early period. These two additional species were both Amber listed species. Waterbirds were most concentrated around floodwater (present both in winter and the breeding season) in the southern section of the Cam Washes, near Duckett's Farm (TL535696) and Angler Drove (TL531693).

The early winter visit at Berry Fen revealed seven species of waterbird, five of which are Amber listed (Table 2). An additional two species were present during the later visit. Again waterbirds were concentrated around floodwater between the two ditches running into the main channel through the site.

In summary, 18 species were recorded at the Cam Washes of which eight are Amber listed and nine species were recorded at Berry Fen, including five that are Amber listed. Most numerous (>100 individuals) were Greylag and Canada Geese and Wigeon at Cam Washes and Lapwing at Berry Fen.

3.2 Data Search

3.2.1 Breeding waterbirds

Breeding Waders of Wet Meadows

During past Breeding Waders of Wet Meadows Surveys on the Cam Washes south section (Upware Washes), three species were recorded during 1982 and six in 2002, three of which were deemed to have bred (Table 3). Using the same methods as above, there were estimated eight breeding pairs of Lapwing, nine of Snipe and 12 of Redshank in 1982, and one breeding pair of Oystercatcher, 14 of Lapwing and 18 of Redshank in 2002. In comparison, this section held an estimated one pair of Oystercatcher, four of Lapwing, three of Snipe and 11 of Redshank in 2005.

Wetland Bird Survey counts

Wetland Bird Survey core count data were collated for spring and summer months (April to June) between 2000 and 2004 (Tables 4 & 5). During the spring and summer period a total of 48 waterbird species were recorded on the core count sector River Cam: Kingfisher's Bridge (32344) and 38 species were present on the River Cam: Upware to Dimmock's Cote sector (32340). This includes 17 wader species across the count sectors; furthermore, the main species identified through breeding surveys – Oystercatcher, Lapwing, Snipe and Redshank – were also present at each site. In addition, up to eight Little Ringed Plover *Charadrius dubius* and four Ringed Plover *C. hiaticula* – both potential breeding species – were recorded during this period. A peak of 14 Ruff *Philomachus pugnax* was also recorded over the five-year period – this species breeds intermittently at the nearby Ouse Washes (Stroud *et al.* 2001) and it is likely that birds were on passage to that or another breeding site. Ruff was the only species present on the Cam Washes in nationally important numbers; the five-year mean of the spring peaks at sector 32340 surpassed the national threshold of seven birds by 43%.

The count areas used for WeBS only partially overlapped with the north and mid areas of the Cam Washes SSSI, therefore these species may not have necessarily have been recorded within the SSSI boundary. In particular counts of many species for the northern sector are likely to refer to birds on the lake and surrounding land adjacent to the River Cam at TL5473. Similarly, birds recorded on the southern WeBS sector were possibly recorded on the small lake south of the mid-Cam Washes SSSI boundary.

Other sources

Records of breeding waders were also collected from county bird reports between 2000 and 2004. Up to 15 pairs of Lapwing, seven pairs of Redshank and two pairs of Little Ringed Plover were recorded at Kingfisher's Bridge (Cam Washes north sector) in 2004 (Clark 2005), while up to four drumming Snipe were recorded during 2003 (Clark 2004). Breeding records for Upware Washes (Cam Washes south) included two pairs of Lapwing plus four young during 2004, one pair of Redshank and one pair of Snipe (Clark 2005). Additionally, two pairs of Avocet *Recurvirostra avosetta* were evident on the Cam Washes during 2003, with three juveniles present in August of the same year. A flock of 34 Ruff were present at the "Earith Washes" during spring 2004, as were 17 Black-tailed Godwit (Clark 2005). As with WeBS data, sites referred to in county bird reports may have only partially overlapped with

areas of the Cam Washes SSSI, therefore these species may not have necessarily have been recorded within the SSSI boundary.

3.2.2 Wintering waterbirds

Wetland Bird Survey counts

Peak WeBS counts over the past five winters (November to March, 2000/01 to 2004/05) are shown in Tables 4 and 5. During this time 51 waterbird species were recorded at sector 32344 and 34 species at sector 32340. No species was regularly recorded in nationally important numbers in winter.

Again it should be noted that the count areas used for WeBS only partially overlapped with the north and mid areas of the Cam Washes SSSI, therefore these species may not have necessarily have been recorded within the SSSI boundary. In particular counts of many species for the northern sector are likely to refer to birds on the lake and surrounding land adjacent to the River Cam at TL5473. Similarly, birds recorded on the southern WeBS sector were possibly recorded on the small lake south of the mid-Cam Washes SSSI boundary.

Winter Gull Roost Surveys

A total of 1,015 gulls were recorded roosting at "Gull Field" (TL370742) adjacent to Berry Fen in 1973, including 840 Black-headed Gulls *Larus ridibundus*, 120 Common Gulls *L. canus*, 10 Herring Gulls *L. argentatus*, 10 Lesser Black-backed Gulls *L. fuscus* and 35 Great Black-backed Gulls *L. marinus*. No gulls were recorded either here or on the SSSI when surveyed on 8 January 2004.

Other sources

Reports of 78, 105 and 158 Bewick's Swans, on 1, 9 and 15 February 2003 respectively, were obtained from *Birdguides.com* (http://www.birdguides.com, accessed 15 March 2006).

4. DISCUSSION

Breeding species

Our surveys of the Cam Washes identified four species of breeding wader – Oystercatcher, Lapwing, Snipe and Redshank. All four were also recorded during past surveys of the southern section of the Cam Washes (the Upware Washes) undertaken in 1982 and 2002. On this section of the SSSI, both Lapwing and Redshank bred in lower numbers in 2005 than during the previous two surveys. Numbers of breeding Snipe were a third of the total in 1982, but the species was absent as a breeding species during the 2002 survey. A single Oystercatcher pair was present in 2005 and 2002, though none in 1982. These changes are likely to reflect declines in the national populations of these species (Wilson et al. 2004, 2005), as well as local conditions. Early spring visits revealed that the Cam Washes were generally dry, although the southern section was on the whole wetter with some standing water in places. During late April and early May heavy rain meant the washes became predominantly wetter (see photos in Annex). The Cam Washes also supported nine species of wildfowl that likely bred, including Gadwall and Shoveler. Of the two other breeding species noted in the site's original designation, Reed Warblers were absent and only one Grasshopper Warbler was noted.

Despite its smaller size and disturbed location – adjacent to a busy road and caravan site – two species, Lapwing and Redshank, were believed to have bred at Berry Fen. The site was generally wetter in the centre and around drains. Vegetation at the site was uniform with no apparent bare patches between tussocks or adjacent to the ditches, which became heavily vegetated as the season progressed. Wader chicks often forage along the muddy fringes of drains or other wet patches and, as shown for example on RSPB reserves, may benefit from the creation of such microhabitat (Ausden *et al.* 2001, Joiner 2002, Smart & Coutts 2004, Smart *et al.* in press). Precise requirements (e.g. the extent of vegetative cover) may vary between species, however (Coutts 2005).

Black-tailed Godwits were recorded on the southern section of the Cam Washes during both the 2002 Breeding Wader of Wet Meadows Survey and the present survey. This species was only recorded during the first visit of each survey and birds were likely to be on passage rather than locally breeding; approximately 45 pairs of the nominate race are known to breed on the nearby Ouse and Nene Washes and passage birds were also noted in the area of Berry Fen (Clark 2005). Monthly WeBS count data indicated that the Cam Washes is used by a number of waterbird species during passage periods, with Ruff occurring in nationally important numbers.

The importance of the sites both for breeding and wintering waterbirds is highly dependent on the extent and management of flooding of wet meadows. At the Ouse Washes, adjacent to Berry Fen, flooding is nowadays more frequent in spring – leading to the more frequent breeding failure of the waders nesting there (Green *et al.* 1987, Ratcliffe *et al.* 2005). At these times, it is possible that Berry Fen may be important not only for any waders that may use it on spring passage, but also in a local context for providing a habitat for breeding waders that is less prone to the disastrous flooding that affects the larger Ouse Washes. Only Lapwing and Redshank were recorded at Berry Fen during the present surveys, though the habitat may also be suitable for other species.

Wintering species

The Cam Washes held 18 species of waterbird during the present winter surveys, with a total of 51 waterbird species being recorded by WeBS counts during the past five years. Good numbers of wildfowl were present on the southern sections, particularly in the floods and areas of standing water (see photos in Annex). The majority of the birds recorded in the mid and northern sections were associated with the River Cam, with most of the areas away from the river remaining dry during both visits. Teal, Gadwall, Shoveler and Wigeon were present on the southern section although during the winter visits records of Redshank and Snipe were restricted to the northern section; however, due to it's secretive nature it is likely that Snipe were present in greater numbers than indicated here.

The importance of Berry Fen for wintering waterbirds is very much dependent on the extent of winter flooding. When the Ouse Washes is deeply flooded, the site may become a feeding and roosting site for Bewick's Swans. It is probably only when it is flooded that Berry Fen or adjacent habitat is also used by roosting gulls.

Over the last 25 years, winter flooding of the Ouse Washes has increased, both in terms of depth and duration (Green *et al.* 1987, Posthoorn *et al.* 2001). Numbers of Bewick's Swans on the Ouse Washes have shown a sharp decline in numbers since the late 1990s, though this seems to be due to a national trend (Maclean *et al.* 2005) rather increased use of other local sites such as Berry Fen consequent of increased flooding. Although no Bewick's Swans were recorded at Berry Fen during the current surveys, records from *Birdguides.com* suggest continued use of the area by the species.

Conclusions

Both the Cam Washes and Berry Fen SSSIs remain important for the breeding and wintering waterbirds for which they were designated, though the latter perhaps less so due to the decline in numbers of Bewick's Swans wintering in the country. The future for the ornithological interest of the sites, however, is highly dependent on appropriate seasonal grazing and the extent and management of flooding of wet meadows, which may reflect not just the needs of enhancing biodiversity, but also of flood defence and agricultural management (Morris *et al.* 2004). Clear action plans, such as that produced for floodplain grazing marsh by Cambridgeshire County Council, and agri-environment schemes (Ausden & Hirons 2002) can benefit both breeding and wintering waterbirds, though need to be tailored to species' specific needs, as described above.

The area of lakes adjacent to the northern section of the Cam Washes, although not comprehensively surveyed, held a number of waterbird species during both the breeding and winter surveys as well as during WeBS counts. It is likely that this area provided additional breeding and wintering habitats for many of the species that also occurred within the SSSI boundary. A further survey of this area would be needed to assess its importance in relation to the adjacent SSSI.

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Table 1. Mean and peak counts of adult waterbirds recorded at the Cam Washes and Berry Fen SSSIs in the breeding season showing species categorised as being of High (**) or Medium (*) Conservation Concern by Gregory *et al.* (2002).

-	Cam	Washes n	orth	Car	n Washes	mid	Can	1 Washes s	outh		Berry Fen	
Species	Visits	Mean	Peak	Visits	Mean	Peak	Visits	Mean	Peak	Visits	Mean	Peak
Little Grebe Tachybaptus ruficollis							3	1.7	2			
Great Crested Grebe Podiceps cristatus	1	0.7	2				2	1.3	2			
Cormorant Phalacrocorax carbo*							2	1.0	2			
Grey Heron Ardea cinerea	1	0.3	1	1	0.3	1	3	3.0	4	2	0.7	1
Mute Swan Cygnus olor*	3	4.7	6	3	1.7	2	3	7.3	8			
Greylag Goose Anser anser							3	32.7	52			
Canada Goose Branta canadensis	3	6.0	8	3	2.0	2	3	22.7	31			
Shelduck Tadorna tadorna							3	6.0	12			
Wigeon Anas penelope										1	0.3	1
Gadwall Anas strepera*	3	5.7	8	2	1.7	3	3	5.0	7	1	0.3	1
Teal Anas crecca	2	2.0	4				3	10.7	25	1	0.7	2
Mallard Anas platyrhynchos	3	15	19	3	7.0	9	3	20.7	26	3	5.7	7
Shoveler Anas clypeata	3	6.3	7	3	1.0	1	3	7.3	9	3	1.7	2
Tufted Duck Aythya fuligula	3	2.7	3				2	1.0	2			
Moorhen Gallinula chloropus	3	4.7	7	3	4.0	5	3	10.3	16	2	2.3	4
Coot Fulica atra	1	0.7	2	2	1.7	3	3	14.3	17	1	0.3	1
Oystercatcher Haematopus ostralegus*	3	1.7	2	1	0.3	1	3	3.0	7			
Avocet Recurvirostra avosetta*	3	1.7	2				2	0.7	1			
Little Ringed Plover Charadrius dubius							1	0.3	1			
Lapwing Vanellus vanellus*	2	1.0	2	3	3.0	3	3	5.7	9	2	3.0	6
Snipe Gallinago gallinago*	1	0.7	2	2	0.7	1	3	4.0	5			
Ruff Philomachus pugnax*							1	1.0	3			
Black-tailed Godwit Limosa limosa**							1	7.3	22			
Whimbrel Numenius phaeopus*							1	0.7	2			
Redshank Tringa totanus*	3	2.7	3	1	0.3	1	3	11.3	15	2	0.7	1
Green Sandpiper Tringa ochropus*							1	1.0	3			
Common Sandpiper Actitis hypoleucos							1	0.3	1			
Black-headed Gull Larus ridibundus*							3	10.3	12			
Lesser Black-backed Gull Larus fuscus*							2	0.7	1			
Common Tern Sterna hirundo	2	1.3	2	3	1.7	2	3	2.3	3			

Table 2. Maximum counts of waterbird species recorded at the Cam Washes and Berry Fen SSSIs in winter showing species categorised as being of Medium Conservation Concern (*) by Gregory *et al.* (2002).

Species	Cam Washes	Berry Fen
Little Grebe Tachybaptus ruficollis	10	
Grey Heron Ardea cinerea	1	5
Mute Swan Cygnus olor *	16	4
Greylag Goose Anser anser	400	3
Canada Goose Branta canadensis	500	36
Shelduck Tadorna tadorna *	9	
Wigeon Anas penelope *	163	
Gadwall Anas strepera *	62	
Teal Anas crecca*	94	
Mallard Anas platyrhynchos	28	
Shoveler Anas clypeata*	12	
Tufted Duck Aythya fuligula	3	
Moorhen Gallinula chloropus	10	3
Coot Fulica atra	68	
Lapwing Vanellus vanellus *		326
Dunlin Calidris alpina*		48
Ruff Philomachus pugnax *		2
Snipe Gallinago gallinago *	3	
Redshank Tringa totanus *	3	41
Black-headed Gull Larus ridibundus	21	
Herring Gull Larus argentatus	2	

Table 3. Counts of adult waders and minimum estimated numbers of pairs recorded on Cam Washes south (Upware Washes) during the Breeding Waders of Wet Meadows Surveys in 1982 and 2002.

				1982		2002						
Species					Estimated				Estimated			
_		25/04	09/05	30/05	territories	21/04	20/05	22/06	territories			
Oystercatcher	Pairs					1		1				
Haematopus ostralegus	Total					2	1	1	1			
Lapwing	Pairs	5	6	6		7	6	3				
Vanellus vanellus	Total	12	16	17	8	28	18	49	14			
Snipe	Pairs	7	9	4								
Gallinago gallinago	Total	7	9	4	9	2		4	0			
Black-tailed Godwit	Pairs											
Limosa limosa	Total					43			0			
Redshank	Pairs	8	7	7		8	5	4				
Tringa totanus	Total	13	13	10	12	22	10	22	18			
Green Sandpiper	Pairs											
Tringa ochropus	Total							1	0			

Table 4. Monthly peak numbers of waterbirds recorded on WeBS count sector 32344 (River Cam: Kingfisher's Bridge) between April 2000 and March 2005.

S = Spring five-year mean peak; A = Autumn five-year mean peak; W= Winter five-year mean peak

	Spri	ng/Sur	nmer						Winte	er					
Species	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	S	A	W
Little Grebe	14	7	6	16	23	16	13	7	8	8	8	13	9	14	10
Tachybaptus ruficollis Great Crested Grebe Podiceps cristatus	9	9	5	2	2	5	2	1	1	1	5	5	7	3	3
Slavonian Grebe	0	0	0	0	0	0	1	1	0	0	0	2	0	0	1
Podiceps auritus															
Cormorant	11	16	23	12	37	36	41	25	5	15	6	10	13	27	13
Phalacrocorax carbo															
Shag Phalacrocorax aristotelis	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0
Bittern Botaurus stellaris	1	1	0	0	2	0	0	0	0	1	0	1	1	0	0
Little Egret Egretta garzetta	0	0	0	0	4	2	0	0	0	0	0	0	0	1	0
Grey Heron Ardea cinerea	1	3	3	1	5	4	4	3	2	2	3	2	3	3	2
Mute Swan Cygnus olor	51	56	4	9	6	6	7	15	14	22	12	9	22	5	13
Bewick's Swan Cygnus columbianus	0	0	0	0	0	0	0	15	2	0	0	0	0	0	4
Pink-footed Goose Anser brachyrhynchus	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0
European White-fronted Goose Anser albifrons albifrons	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Greenland White-fronted Goose Anser albifrons flavirostris	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
Lesser White-fronted Goose Anser erythropus	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Greylag Goose (re-established) Anser anser	66	86	18	24	55	166	248	223	203	300	195	69	46	171	199
Bar-headed Goose Anser indicus	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
Canada Goose Branta canadensis	67	72	23	56	317	335	236	385	253	165	129	118	55	264	199
Barnacle Goose (naturalised) Branta leucopsis	0	5	0	0	0	1	2	0	0	0	0	0	1	1	0
Feral/hybrid Goose	2	1	0	0	3	2	1	1	1	4	1	2	1	1	2
Egyptian Goose Alopochen aegyptiacus	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Ruddy Shelduck Tadorna ferruginea	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Shelduck Tadorna tadorna	9	4	5	0	2	0	0	0	3	3	9	10	6	0	8
Wigeon Anas penelope	35	0	1	0	1	31	32	265	510	150 0	108 0	730	10	24	941
Gadwall Anas strepera	69	36	24	6	13	41	29	27	27	40	106	26	39	29	42
Teal Anas crecca	71	4	2	0	4	99	80	178	142	160	177	169	45	70	155

Mallard <i>Anas platyrhynchos</i>	165	105	69	12	286	104	87	294	160	152	294	141	99	147	177
Pintail Anas acuta	1	0	0	0	0	3	7	0	0	3	33	2	0	3	11
Garganey Anas querquedula	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shoveler Anas clypeata	48	13	5	14	18	29	31	21	24	11	45	65	26	22	46
Pochard Aythya ferina	7	4	4	0	10	0	4	0	14	56	28	14	6	3	33
Tufted Duck Aythya fuligula	53	42	35	10	8	5	41	44	40	58	68	57	42	23	54
Scaup Aythya marila	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Goldeneye Bucephala clangula	2	0	0	0	0	0	0	0	4	2	3	2	1	0	2
Ruddy Duck	2	3	3	2	0	1	0	0	0	0	0	2	2	1	1
Oxyura jamaicensis															
Water Rail Rallus aquaticus	3	0	0	0	6	0	4	3	8	8	4	12	1	4	8
Spotted Crake Porzana porzana	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Moorhen Gallinula chloropus	30	16	13	6	25	10	10	9	7	8	24	25	15	11	17
Coot Fulica atra	69	69	145	199	164	193	252	149	131	127	166	79	117	194	122
Oystercatcher Haematopus ostralegus	3	3	3	3	3	0	0	0	0	0	2	4	3	1	2
Avocet Recurvirostra avosetta	2	3	0	0	0	0	0	0	0	0	0	1	2	0	0
Little Ringed Plover Charadrius dubius	3	1	1	1	0	0	0	0	0	0	0	0	1	0	0
Ringed Plover Charadrius hiaticula	1	0	1	0	0	5	0	0	0	0	0	0	1	1	0
Golden Plover Pluvialis apricaria	0	0	0	0	5	10	100 0	120 0	0	200 0	105 0	160	0	217	700
Grey Plover Pluvialis squatarola	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lapwing Vanellus vanellus	40	29	21	608	350	220	180	513	100	11	110 0	408	29	285	513
Little Stint Calidris minuta	1	0	0	0	0	0	0	0	0	0	0	0			
Dunlin Calidris alpina	3	1	1	1	1	4	1	2	1	0	0	0	1	2	1
Ruff Philomachus pugnax	7	0	0	1	2	4	0	0	0	3	0	0	2	2	1
Snipe Gallinago gallinago	19	3	1	0	9	1	16	21	32	13	15	5	8	6	18
Woodcock Scolopax rusticola	0	0	0	0	0	0	0	5	1	5	1	1	0	0	3
Black-tailed Godwit Limosa limosa	0	1	0	0	3	0	0	0	0	7	0	0	0	1	1
Bar-tailed Godwit Limosa lapponica	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0
Whimbrel Numenius phaeopus	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Spotted Redshank Tringa erythropus	1	1	0	0	0	1	0	1	1	1	0	0	1	0	0
Redshank Tringa totanus	20	9	4	0	7	2	2	4	2	2	9	6	12	3	5
Greenshank Tringa nebularia	0	1	0	0	3	9	0	0	0	0	0	0	0	3	0
Green Sandpiper Tringa ochropus	0	0	0	2	6	7	1	1	0	2	0	0	0	4	1
Common Sandpiper Actitis hypoleucos	0	0	0	0	2	10	0	0	0	0	0	0	0	3	0

Turnstone Arenaria interpres	0	2	0	1	0	1	0	0	0	0	0	0	1	0	0
Black-headed Gull Larus ridibundus	372	301	240	90	25	10	21	150	100	126	760	370	254	39	323
Common Gull Larus canus	0	0	0	0	0	0	0	1	0	1	1	1	0	0	1
Lesser Black-backed Gull Larus fuscus	7	8	33	3	1	1	6	3	1	50	5	17	12	2	15
Herring Gull Larus argentatus	0	1	0	0	0	0	0	1	0	0	4	0	0	0	2
Unidentified Yellow-legged Gull	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
Great Black-backed Gull Larus marinus	0	0	0	0	0	0	0	0	1	41	1	1	0	0	11
Common Tern Sterna hirundo	6	22	23	14	7		0	0	0	0	0	0	17	6	0
Arctic Tern Sterna paradisaea	1	0	0	0	0		0	0	0	0	0	0	0	0	0

Table 5. Monthly peak numbers of waterbirds recorded on WeBS count sector 32340 (River Cam: Upware to Dimmock's Cote) between April 2000 and March 2005.

S = Spring five-year mean peak; A = Autumn five-year mean peak; W= Winter five-year mean peak.

	Spri	ng/Sur	nmer						Winte	er					
Species	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	S	A	W
Little Grebe	2	3	2	5	7	8	3	2	6	2	2	2	1	3	3
Tachybaptus ruficollis Great Crested Grebe Podiceps cristatus	1	2	0	0	0	2	0	0	0	0	0	0	1	0	0
Cormorant	11	7	3	12	14	15	14	7	5	6	6	7	5	10	5
Phalacrocorax carbo															
Little Egret Egretta garzetta	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
Grey Heron Ardea cinerea	7	4	2	3	3	3	4	4	5	6	3	5	5	3	5
Mute Swan Cygnus olor	9	9	10	7	9	19	15	21	17	19	35	6	9	12	17
Whooper Swan Cygnus cygnus	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1
Pink-footed Goose Anser brachyrhynchus	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Greylag Goose (re-established) Anser anser	39	46	121	149	141	168	204	332	132	181	242	104	52	78	173
Canada Goose Branta canadensis	48	29	37	97	6	97	287	279	287	296	57	100	31	74	209
Barnacle Goose (naturalised) Branta leucopsis	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
Shelduck Tadorna tadorna	16	25	29	29	11	0	1	1	2	5	14	8	23	9	8
Mandarin Aix galericulata	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Wigeon Anas penelope	18	2	0	0	0	4	295	598	120 0	345	447	282	9	68	544
Gadwall Anas strepera	28	30	22	21	18	4	7	7	14	18	8	10	25	12	10
Teal Anas crecca	62	18	2	19	27	258	280	344	365	195	218	226	34	95	205
Mallard Anas platyrhynchos	179	301	249	288	138	87	39	101	140	24	40	58	169	102	60
Pintail Anas acuta	5	0	0	0	0	0	0	1	0	1	2	6	3	0	2
Garganey Anas querquedula	1	2	3	2	0	0	0	0	0	0	0	0	2	0	0
Shoveler Anas clypeata	52	25	12	12	21	11	20	22	14	10	6	44	34	14	20
Tufted Duck Aythya fuligula	8	4	5	6	0	2	4	2	3	6	9	4	6	3	4
Goldeneye Bucephala clangula	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Moorhen Gallinula chloropus	49	18	26	33	27	28	33	31	15	34	82	19	35	19	32
Coot Fulica atra	68	54	85	81	58	55	44	58	49	62	170	72	57	40	70
Oystercatcher Haematopus ostralegus	2	2	4	3	0	0	0	0	0	0	0	2	3	2	1
Avocet Recurvirostra avosetta	6	5	0	0	0	0	0	0	0	0	0	2	3	0	1
Little Ringed Plover Charadrius dubius	8	2	2	7	1	0	0	0	0	0	0	0	4	2	0
Ringed Plover Charadrius hiaticula	4	1	1	0	0	1	0	0	0	0	0	0	2	0	0

	ı														
Golden Plover	0	0	0	2	0	0	0	355	0	0	0	0	0	0	141
Pluvialis apricaria															
Grey Plover	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pluvialis squatarola															
Lapwing Vanellus vanellus	120	52	184	554	715	153	457	106 4	369	126	239	180	117	391	633
Dunlin Calidris alpina	5	3	9	5	2	0	0	2	1	1	0	4	4	1	1
Ruff Philomachus pugnax	14	0	0	8	13	12	1	1	0	2	0	5	10	5	2
Snipe Gallinago gallinago	27	44	31	15	48	69	57	35	23	28	12	48	20	25	33
Black-tailed Godwit Limosa limosa	40	13	0	15	0	5	1	0	0	0	0	0	19	5	0
Spotted Redshank	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tringa erythropus															
Redshank Tringa totanus	37	28	65	53	6	0	5	13	17	9	27	53	52	14	21
Greenshank Tringa nebularia	0	1	0	3	1	1	2	0	0	0	0	0	0	1	0
Green Sandpiper Tringa ochropus	2	2	2	14	5	11	6	1	0	1	2	1	1	6	1
Wood Sandpiper Tringa glareola	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Sandpiper Actitis hypoleucos	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0
Black-headed Gull Larus ridibundus	62	17	102	41	79	13	27	88	56	67	75	14	67	33	62
Common Gull Larus canus	0	0	0	0	0	0	0	1	2	13	4	0	0	0	4
Lesser Black-backed Gull Larus fuscus	3	2	0	4	5	0	6	4	3	1	0	0	1	3	1
Herring Gull Larus argentatus	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0
Common Tern Sterna hirundo	0	3	5	6	4	0	0	0	0	0	0	0	4	3	0

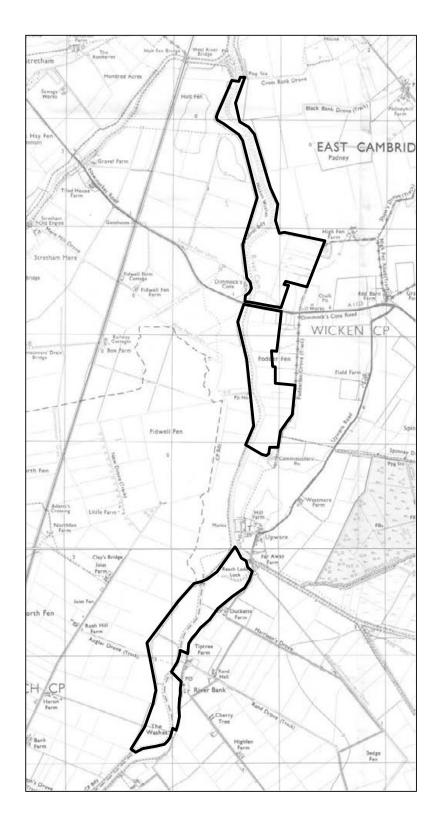


Figure 1. The Cam Washes SSSI (bold outline) near Upware, Cambridgeshire.

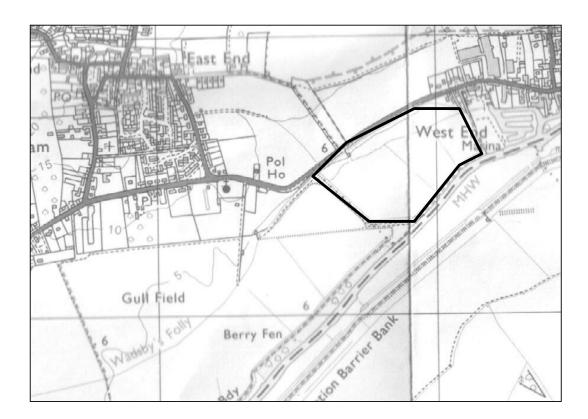


Figure 2. The Berry Fen SSSI (bold outline) and the adjacent "Gull Field" near Earith, Cambridgeshire.

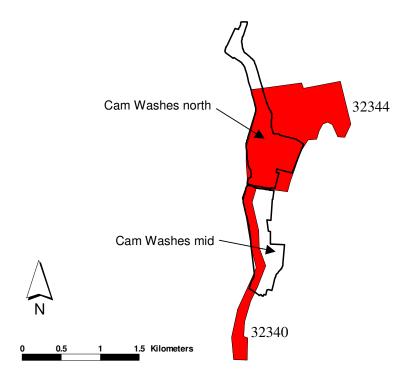


Figure 3. Map of overlap between two WeBS count sectors "River Cam: Kingfisher's Bridge" (WeBS sitecode 32344) and "River Cam: Upware to Dimmock's Cote" (WeBS sitecode 32340) (shaded) and the north and mid sections of the Cam Washes SSSI (thick black outline). Note the northern WeBS count sector overlaps with adjacent wetland habitat presently undesignated.

Appendix 1. Waterbirds (adults) recorded during breeding season surveys of the Cam Washes and Berry Fen SSSIs in 2005. Numbers of males (included in totals) and juveniles (not included in totals) are shown in parentheses.

		Cam	Washes No	orth	Cam	Washes M	lid	Can	n Washes S	South		Berry Fen	l
Species		22/04	10/05	03/06	22/04	13/05	03/06	21/04	09/05	02/06	21/04	09/05	02/06
Little Grebe	Tachybaptus ruficollis							2	2	1(1j)			
Great Crested Grebe	Podiceps cristatus	2						2	2				
Cormorant	Phalacrocorax carbo							1		2			
Grey Heron	Ardea cinerea			1			1	2	4(1j)	3(1j)		1	1
Mute Swan	Cygnus olor	6	3	5(4j)	1	2	2	8	8	6(5j)			
Greylag Goose	Anser anser							52	25(2j)	21(10j)			
Canada Goose	Branta canadensis	4	8(6j)	6(4j)	2	2(6j)	2a	31	14	23(10j)			
Shelduck	Tadorna tadorna							1(1m)	5(3m)	12(6m,6j)			
Wigeon	Anas penelope										1(1m)		
Gadwall	Anas strepera	8(4m)	3(3m)	6(3m)		3(2m)	2(1m)	5(4m)	3(2 m)	7(6m)	1(1m)		
Teal	Anas crecca	4(2m)	2(1m)					25(15m)	2(1m)	5(2m)	2(1m)		
Mallard	Anas platyrhynchos	19(10m)	16(10m)	10(6m, 4j)	8(4m)	4(4m)	9(4m)	22(9m) 1	4(9m, 6j)	26(17m,9j)	7(4m)	5(3m)	5(4m)
Shoveler	Anas clypeata	7(4m)	5(5m)	4(3m,3j)	1(1m)	1(1m)	1(1m)	9 (7m)	6(5m)	7(5m)	2(1m)	2(2m)	1
Tufted Duck	Aythya fuligula	3(2m)	3(2m)	2(1m)					2(1m)	1(1m)			
Marsh Harrier	Circus aeruginosus				1					1			
Sparrowhawk	Accipiter nisus		1				1	1					
Kestrel	Falco tinnunculus			1	1		1					2	1
Hobby	Falco subbuteo			1	1								
Red-legged Partridge	Alectoris rufa			2					1				
Pheasant	Phasianus colchicus	1		1	1			3					
Moorhen	Gallinula chloropus	4	7	3	5	3	4(1j)	16	7	8(1j)	3	4	
Coot	Fulica atra			2		3	2	14	17	12(5j)			1
Oystercatcher	Haematopus ostralegus	2	2	1(1j)	1			7	1	1			
Avocet	Recurvirostra avosetta	2	2	1					1	1			

Little Ringed Plover							1						
	Charadrius dubius							1					
Lapwing	Vanellus vanellus		1	2	3	3	3	9	2	6	6	3	
Ruff	Philomachus pugnax							3					
Snipe	Gallinago gallinago		2		1	1		5	4	3			
Black-tailed Godwit	Limosa limosa							22					
Whimbrel	Numenius phaeopus								2				
Redshank	Tringa totanus	3	3	2		1		15	10	9(4j)	1	1	0(4j)
Green Sandpiper	Tringa ochropus							3					
Common Sandpiper	Actitis hypoleucos								1				
Black-headed Gull	Larus ridibundus							12	12	7			
Lesser Black-backed Gull	Larus fuscus								1	1			
Common Tern	Sterna hirundo	2	2		1	2	2	3	2	2			
Stock Dove	Columba oenas				1	1			1				
Woodpigeon	Columba palumbus	3	Present	Present		Present	Present	Present	Present	Present		Present	Present
Collared Dove	Streptopelia decaocto		Present		Present	Present			Present	Present	Present	Present	Present
Turtle Dove	Streptopelia turtur		3	2		1	1						
Cuckoo	Cuculus canorus		1		1	1		1	1				1
Barn Owl	Tyto alba									2			
Swift	Apus apus		2	2		4			Present	Present		6	15
Kingfisher	Alcedo atthis							1					
Green Woodpecker	Picus viridis				1			2		1	1		
Great Spotted woodpecker	Dendrocopos major	1	1	1(1j)					2	1			
Skylark	Alauda arvensis	1			1								
Sand Martin	Riparia riparia			1								3	
Swallow	Hirundo rustica		2	4		5	2		Present	Present		10	25
House Martin	Delichon urbicum		2	1		2			Present	Present		2	10
Meadow Pipit	Anthus pratensis	6	3	2	4	6	3		3	3			
Yellow Wagtail	Motacilla flava								1				
Pied Wagtail	Motacilla alba							1		1			

Wren	T	2	1	1	1	1	2	1	2	1		1	
Dunnock	Troglodytes troglodytes Prunella modularis	3	1	1	1	1	2	1	2	1		1	1
		1	2	4			1		•			2	
Robin	Erithacus rubecula	3	3	4			1	1	1		1	3	
Blackbird	Turdus merula	1	3	2	1	1	2	1	1				1
Mistle Thrush	Turdus viscivorus					1	1	2			1		1
Grasshopper Warbler	Locustella naevia							1					
Sedge Warbler	Acrocephalus schoenobaenus		2	2	1	2	2		5	4			
Lesser Whitethroat	Sylvia curruca		2				1						
Common Whitethroat	Sylvia communis	3	3	2	3	3	4	3	4	4		1	
Garden Warbler	Sylvia borin		1	1									
Blackcap	Sylvia atricapilla	6	2	4		2	1		1	2	2	1	1
Chiffchaff	Phylloscopus collybita		1	2					1	1		1	1
Willow Warbler	Phylloscopus trochilus	6	6	1				4	1	2		1	
Goldcrest	Regulus regulus								1				
Long-tailed Tit	Aegithalos caudatus	3											
Blue Tit	Parus caeruleus			1	1			4	2	1(2j)			
Great Tit	Parus major		1					1					
Treecreeper	Certhia familiaris								1				
Jay	Garrulus glandarius								2				
Magpie	Pica pica	2											
Jackdaw	Corvus monedula				10	15	15		6				
Starling	Sturnus vulgaris				2			6	10	120		6	10
Chaffinch	Fringilla coelebs	4	4	4(2j)		1	2	2	3	2	2	2	
Greenfinch	Carduelis chloris					2							
Goldfinch	Carduelis carduelis	7	2	3	3	4	6		4	6	9	3	
Bullfinch	Pyrrhula pyrrhula	1		4									
Reed Bunting	Emberiza schoeniclus	3	1	2				2	2	2		1	2
Species totals		31	38	39	26	30	27	43	52	45	15	22	19

Appendix 2. Counts of waterbirds on the Cam Washes and Berry Fen SSSIs during winter 2005/06.

		Cam Washes North		Cam Wa	shes Mid	Cam Was	hes South	Berry Fen		
Species		14/12/2005	12/01/2006	07/12/2005	12/01/2006	07/12/2005	17/01/2006	14/12/2005	17/01/2006	
Little Grebe	Tachybaptus ruficollis	10	2				2			
Grey Heron	Ardea cinerea			1		1		2	5	
Mute Swan	Cygnus olor	16	5	5	5	14	2	4		
Greylag Goose	Anser anser	400	160			7			3	
Canada Goose	Branta canadensis	500	202			64	44		36	
Shelduck	Tadorna tadorna						9			
Wigeon	Anas penelope					138	163			
Gadwall	Anas strepera					33	62			
Teal	Anas crecca					94	6			
Mallard	Anas platyrhynchos	2	2			28	13			
Shoveler	Anas clypeata						12			
Tufted Duck	Aythya fuligula					3				
Moorhen	Gallinula chloropus	3		4	3	7	10	3		
Coot	Fulica atra			3		53	68			
Lapwing	Vanellus vanellus							326		
Dunlin	Calidris alpina							48		
Ruff	Philomachus pugnax							2		
Snipe	Gallinago gallinago	3								
Redshank	Tringa totanus	3						41		
Black-headed Gull	Larus ridibundus					2	21			
Herring Gull	Larus argentatus					2				
Total		937	371	13	8	446	412	426	44	