

This is a collection of reports for the Betley Mere SSSI made by J A Lawrence between 1986 and 1994 and presented for inclusion in the West Midland Bird Club archives in electronic form, having previously been submitted to the (then) Staffordshire County Recorder and to the (then) English Nature.
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RINGING REPORT FOR BETLEY MERE. 1985

Areas of reed bed and water exert a considerable attraction for birds of many species particularly after their breeding season, and Betley Mere proved no exception during 1985. It is perhaps the largest expanse of reed bed in the area, being reed fringed around most of its edge and so the total area covered is considerable. This creates a very important habitat for many birds, and it was around the reed bed on the South and West side of the mere that most of my ringing activity took place.

The most important bird of the reeds must be the Reed Warbler, (very noticable during summer by its song) and about 70 of these birds were trapped and ringed. One bird ringed during August was caught 6 days later on Jersey, Channel Isles, (422 Km. Sou'th) :by another ringer and was doubtless on its migration to Spain or Africa. Another trapped at the mere carried a ring, attached when it was caught at Holme Pierrepont , East of Nottingham, in late August 1984.

Although Reed Warblers are birds that live and breed in the reeds, many other species visit the reed beds to feed on the plentiful insect life. The ringing totals list shows that a large number of these were trapped and ringed. Most were caught during the early hours of daylight as bird activity tends to drop off after about 9.00 or 10.00 a.m. particularly during the hot days of late Summer.

The highlight of late Summer and early Autumn was the Swallow roost in one area of the reed bed. This was not a huge roost by Swallow standards (20,000+ may roost together occasionally) but about 2,000 birds proved that the mere is an important stopping place during the birds' Southerly migration. The only other N. Staffs, roost that I know of is at Ford Green, North West Stoke-on-Trent, but doubtless there are other roosts at some of the meres and flashes in Cheshire. About 200 Swallows were ringed but nothing has been heard yet of any being retrapped elsewhere.

A list of the birds ringed at the mere during 1985 is attached.

RINGING TOTALS - BETLEY MERE 1985

Species	<u>Number</u> <u>ringed</u>		
Sparrowhawk	1		
Chaffinch	1		
Treecreeper	2		
Swift	21		
Reed Warbler	83		
Sedge Warbler	10		
Robin	2		
Reed Bunting	28		
Blue Tit	50		
Garden Warbler	6		
Great Tit	5		
Blackcap	12		
Dunnock	2		
Goldfinch	1		
Whitethroat	1		
GrasshopperWarbler	1		
Swallow	1	9	2
Lesser Whitethroat	3		
House Martin	3		
Sand Martin	1		
Willow Tit	2		
Chiffchaff	1		
Magpie	3		
Kingfisher	3		
Redwing	1		
Song Thrush	1		
Wren	16		
Willow Warbler	40		
Long-tailed Tit	3		
	484		

4, Ashlands Crescent,
Harpfields,
Stoke-on-Trent,
Staffs. ST4 6QT.
13/7/85

Dear Miss Royds,

Just a short letter to keep you up to date with my activities at Betley Mere. As the breeding season has barely drawn to a close, I have yet to do a great deal of ringing, having taken my nets on only four occasions. I have, however, been birdwatching around the mere several times and have made a few interesting observations.

Perhaps of the most interest is the large population of Reed Warblers present, this is, I suppose, to be expected due to the reed fringed margins of the mere. I would guess that about 30 - 40 pairs are present, but as the birds invariably keep to the reed beds it is very difficult to estimate numbers - ringing at the site will give us a much better idea of the population size which will, I am sure, prove to be quite large in relation to the few Reed Warbler colonies in the area. Reed Warblers are small plain brown birds, whose main feature is their 'song' which is a random collection of chirps and whistles, this helps to locate the birds in the reed-beds. Another bird present at the mere is the Grasshopper Warbler, equally as unimpressive as the Reed Warbler, but with a 'reeling' song, very similar to that of a Grasshopper from which it takes its name. Only one pair is present, but it is a rare bird in Staffordshire and Cheshire so even this one bird is of some significance.

At least one Cuckoo was heard during May, and, as I am sure you know, this bird is a parasite on smaller birds, Reed Warblers being one of the most frequently parasitized species - I am sure that the Mere will be the birth-place of more than one young Cuckoo this year.

Other birds of interest present are Reed Bunting, Willow Warbler, Sparrowhawk (one bird ringed - very sharp talons!), Swift, House Martin, and Swallow, the last three catching flying insects which congregate in enormous numbers over the water. There is also some evidence that the reed-bed is used by Starlings as a roosting place.

My ringing programme is just about to start in earnest and I will contact you later in the year to inform you of my progress

yours sincerely,

Andrew Lawrence.

Betley Report for 1986

BIRDS AT BETLBY MERE

Most of the work completed so far this year has been concentrated on an area of the reed bed on the east side of the mere and therefore most of the observations concern this area. Two visits were made in spring to census the singing birds around the perimeter of the main mere, but clearly this is not enough to obtain more than a rough picture of bird distribution.

Betley Little Mere (also included in the SSSI) was visited once, but access to this is more restricted. This area has been adopted as a Clay Pigeon shooting base with high and low level butts permanently in position. There appears to be no standing water at the little mere but the whole area is a bed of Phragmites.

There are, apparently, breeding records of waders at the site but apart from the occasional Curlew heard no other signs were noted in 1986. The outlet stream on the west side of the large mere has been enlarged and cleared and other dykes in this area have recieved the same treatment. This does not appear to have affected the water level of the mere but drainage of what must once have been a wet meadow site will have been made more efficient.

From an ornithological point of view the Phragmites have to be the most important habitat within the SSSI. The total area covered around the perimeter of the main mere is roughly 13000 square metres, and the large number of Reed Warblers trapped (203 individuals) clearly demonstrate the local importance of the mere to this species for both breeding and feeding. The reeds also provide roost shelter for Swallows (1500+ most evenings in summer), Starlings (3000+) and Reed Buntings. A large area of Phragmites is also present at the Little Mere but this has not been studied.

The woodland around the west side of the mere provides breeding opportunities for most of the usual woodland species but the concentration of my activity on the east side meant that this area has not recieved much attention. Some Rhododendron bushes at the north end of the wood are used as a winter roost by Chaffinches and, probably, Redwings, and on most nights a large Crow roost occupies the taller trees.

The list below details the birds recorded at the mere during 1985 and 1986 (up to November) with notes concerning status and other points of interest included.

G.C.Grebe	Breeding bird. 2 pairs with young.
Little Grebe	Present through summer so breeding suspected but not confirmed in 1986.
Heron	Frequent visitor. Uses meadowland for feeding.
Mallard	Breeding bird. Also uses mere as moulting ground.
Teal	Winter visitor.
Shoveler	Winter visitor.
Tufted Duck	Breeding bird. About 10 birds present throughout the summer but only one brood of ducklings seen.
Pochard	Visitor. Birds seen during winter and from Sept. 1986.
Ruddy Duck	Breeding bird. 6 males present during summer 1986. Ducklings seen 13/8/86.

Goldeneye	Occasional winter visitor. 1 male present March 1986.
Shelduck	1 bird present on 12/8/86.
Canada Goose	A pair present during spring 1986 with a larger flock occasionally seen.
Mute Swan	1 pair summered in 1986 but breeding not attempted. See recoveries.
Sparrowhawk	Regularly seen. Adult male ringed 22/7/86 and a female seen on same date.
Kestrel	Seen occasionally during spring.
Hobby	1 bird present on 29/8/86 was seen to catch a Swallow in flight, from a roosting flock of about 1000.
Moorhen	Breeding bird.
Coot	Common breeding bird, with numbers increasing in autumn.
Lapwing	Overhead birds only. ,
Ringed Plover	1 winter record - 1/12/85.
Snipe	Mainly a winter visitor. This is a species that has apparently bred at the mere in the past but was not noted until September in 1986.
Woodcock	1 bird present on 16/2/86.
Curlew	Birds heard during spring and summer 1986 but breeding not confirmed.
Green Sandpiper	Passage migrant. 2 on 10/8/85
Common Sandpiper	Passage migrant. 3 on 10/5/86.
Redshank	Passage migrant only. No sign of breeding. 2 on 26/7/86.
G.B.B.Gull	Occasional visitor.
Herring Gull	Occasional visitor.
L.B.B.Gull	Occasional visitor.
B.H.Gull	Birds always present from early July with the mere possibly use for roosting. Many birds seen overhead in the late evenings probably going to roost at Doddington Res.
Stock Dove	Birds occasionally seen.
Woodpigeon	Breeding bird.
Turtle Dove	Male bird singing during 1985 and 1986 at Cracow Moss, therefore breeding suspected.
Collared Dove	Occasionally seen.

Cuckoo	Both male and female birds present during early summer and the presence of a potential host suggests that this may be a breeding species, but no confirmation to date.
Little Owl	Breeding probable locally.
Tawny Owl	Breeding probable locally.
Swift	Large numbers over the mere during summer.
Kingfisher	Commonly noted from mid July. 1 juvenile bird ringed. See recoveries.
G.S.Woodpecker	1 record: Sept.1985. Holed Birch tree in the wood but no other sign of breeding.
Skylark	Singing birds over Cracow Moss during summer.
Swallow	Both feeding and roosting birds use the mere. the reed beds are of great importance to this species during the late summer when an area to the south side of the mere is used for roosting. Up to 2000 birds per night have been recorded (only 4 visits made) and presumably numbers will vary according to the number of migrating birds in the area. One pure albino bird in the roosting flock on 20/8/86. The one bird controlled so far indicates that the roost is used by locally bred birds but obviously, more details are required before the general composition of the roost can be determined.
House Martin	Feeds over the mere. Maximum number seen about 150.
Sand Martin	Usually a few birds accompanying the House Martins during spring and late summer.
Carrion Crow	Breeds locally.
Rook	Breeding bird. The trees around Betley Little Mere hold a rookery of 50 nests. Large roost with Jackdaws (total about 700 birds) in woodland by main mere.
Jackdaw	Large late summer/autumn/winter roost in woodland area
Magpie	Breeding bird. Over abundant.
Jay	Present during breeding season.
Great Tit	Breeding bird. See recoveries
Blue Tit	Breeding bird.
Coal Tit	Occasional.
Willow Tit	Juvenile birds trapped in late summer.
L.T.Tit	Occasional parties, may breed.
Treecreeper	Present during breeding season in woodland.
Wren	Breeding bird.
Mistle Thrush	Regularly seen.

Fieldfare Hawthorn hedges near the site attracted large numbers in early winter.

Song Thrush Probably a breeding bird.

Redwing An area of Sallows within the reed bed to the SE of the mere was used as a roost by a few birds in early December 1985 and birds were seen entering the Rhododendron bushes in the woodland in early 1986.

Blackbird Breeding bird.

Robin Breeding bird.

G'hopper Warbler Male singing during summer 1985 in the rough grassland area to the east of the mere, but species not recorded during 1986.

Reed Warbler Breeding bird. 23 singing males recorded in the reed beds around the perimeter of the mere, but as there are problems associated with the censusing of this species (see Bell et al, 1973) this figure may represent a low proportion of the true population. Certainly more census work is required in 1987. That the population is higher than the above figure is also suggested by the ringing results, with 54 birds trapped during 8 sessions up mid July (when the first 3J""*s began to appear), this in just 100 metres of reed bed on the east side of the mere. No birds from a sample of 15 ringed on the west side of the mere in early June appear in this total, suggesting that the birds are not very mobile within the breeding habitat, and therefore, that the figure of 54 is again only a proportion of the actual population (which includes both breeding and transient birds). Further work is obviously required to assess the population structure but I would estimate a breeding population of no less than 25 pairs in 1986 within the area of the SSSI which also includes suitable habitat at Betley Little Mere. The total of Reed Warblers trapped throughout the summer (103 individuals), indicates the local importance of the mere to this species. See recoveries.

Sedge Warbler Breeding probable. Large numbers appeared in early May singing in the reed beds. Some may have been passage birds as numbers trapped rapidly declined but certainly one pair was present throughout the summer. 31- individuals trapped. See recoveries.

Blackcap Breeding bird. At least 2 males held territory in the woodland area and several juveniles were trapped in late summer.

Garden Warbler 1 bird ringed.

Whitethroat Probable breeding. One pair present through the summer on the east side of the mere.

Lesser Whitethroat	Probable breeding. One pair present through the summer on the east side of the mere.
Willow Warbler	Breeding bird. Several males held territory in 1986 and also a few passage birds usually present in late summer.
Chiffchaff	One late summer record in 1985.
Goldcrest	Occasional.
Duncock	Breeding bird.
Pied Wagtail	Occasional. One White Wagtail present on 24/4/86.
Yellow Wagtail	Spring passage migrant.
Starling	Breeding bird. Large late summer roost in reed bed on the
	east side of the mere with about 1000 birds usually
	present.
	3000+ birds present at roost in reeds near boathouse-17/
	11/86
Greenfinch	Feeding on seeds in grassland area on the east side of mere.
Goldfinch	Flocks from late June on seeds in grassland area.
Siskin	Small flocks during the winter.
Linnet	Flocks from late June on seeds in grassland area.
Redpoll	Occasional in winter.
Bullfinch	1 trapped bird is the only record so far.
Chaffinch	Breeding bird. Small roost in Rhodedendrons during winter.
Yellowhammer	Breeds on adjacent farmland.
Reed Bunting	Common breeding bird. Roosts in Sallows in reed bed on the
	east side of the mere.
House Sparrow	Breeds locally, small flocks in hedgerows in late summer.

REFERENCES

Bell, B.D. et al, 1973, The Relationship between Census Results and Breeding Populations of some Marshland Passerines. Bird Study 20:127-140.

RINGING AT BETLEY MERE - 1986

1986 was the first year of a Constant Effort Scheme run by the British Trust for Ornithology of which the site at Betley is number 141. Hopefully some idea of bird population changes will be gained from this. The totals of birds trapped during 1986 are shown below, including controls, the details of which are also presented. CES totals are shown in the first two columns and are the results of 12 five hour sessions completed from May to September, these birds are also included in the grand total.

Species	CES Totals		Grand Total (inc. CES)
	Ad.	Juv.	
Sparrowhawk	1	-	1
Woodpigeon	1	-	1
Swift	-	-	1
Kingfisher	-	-	1
House Martin	-	1	1
Swallow	-	1	258
Magpie	-	-	1
Jay	1	-	3
L.T.Tit	-	-	7
Great Tit	2	3	13
Blue Tit	10	2	52
Willow Tit	-	1	2
Treecreeper	-	-	1
Wren	1	7	14
Song Thrush	1	1	3
Redwing	-	-	1
Blackbird	1	2	9
Robin	-	2	12
Reed Warbler	51	70	203
Sedge Warbler	8	4	31
Blackcap	-	2	11
Garden Warbler	-	-	1
Whitethroat	4	1	6
L.Whitethroat	4	-	5
Willow Warbler	15	15	38
Dunnock	4	-	4
Starling	-	-	1
Greenfinch	-	-	1
Goldfinch	5	1	8
Linnet	-	-	4
Chaffinch	-	-	5
Bullfinch	-	-	1
Reed Bunting	18	4	63

Recoveries

v = bird trapped with ring already applied.
 Juv = bird hatched in the relevant year

Mute Swan

A 'Darvic' ringed bird was originally ringed at Blithfield Res., Staffs. in August 1983 (breeding), was seen at Westport Lake, S-O-T. in January 1985 and was present at Betley Mere during February, 1986.

Swallow

C572214	Nestling	12.7.86	Bridgemere, Cheshire	
	Juv.	3.9.86	Betley Mere, Staffs.	4 Km.

Reed Warbler

B085549	Juv.	9.8.85	Copmere, Staffs.	
	v	24.5.86	Betley Mere, Staffs.	17 Km.
C075829	Juv.M.	3.8.85	Maer, Staffs.	
	v	7.6.86	Betley Mere, Staffs.	10 Km.
C253592	Ad. F.	7.7.85	Rode Pool, Cheshire.	
	v	7.6.86	Betley Mere, Staffs.	12 Km.
C766455	Ad. F.	24.5.86	Betley Mere, Staffs.	
	v	5.7.86	Maer, Staffs.	10 Km.
E113160	Juv.	6.8.86	Betley Mere, Staffs.	
	v	20.8.86	Blandford, Dorset.	239 Km.
C452951	Juv.	17.8.85	Windsor, Berks.	
	v	22.6.86	Betley Mere, Staffs.	212 Km.
C253800	Nestling	4.7.85	Knutsford, Cheshire	
	v	26.7.86	Betley Mere, Staffs.	30 Km.

Sedge Warbler

E113129	Juv.	3.8.86	Betley Mere, Staffs.	
	v	20.8.86	Abbotsbury, Dorset	263 Km.
C693326	Juv.	19.7.86	Woolston, Warrington, Ches.	
	v	3.8.86	Betley Mere, Staffs.	44 Km.

Great Tit

E113039	Juv.	5.7.86	Betley Mere, Staffs.	
	Dead	9.8.86	Betley, Staffs.	0 Km.

Kingfisher

SB35502	Juv.	27.7.85	Betley Mere, Staffs.	
	Dead	11.1.86	Crewe, Cheshire.	11 Km.

BIRDS AT BETLEY MERE 1987

As last year, most of the work in 1987 concentrated on the unwooded side of the mere. Mist netting was started on the 24th of April when quite large numbers of the summer migrants had arrived, and continued until the end of October. A total of 1206 individuals of 31 species were trapped. It was during the mist-netting sessions that most of the observations were made. The mere was also visited once a month during the winter and any wildfowl present were counted. The ringing site at the mere was again used as a site in the Constant Effort Scheme (CES) run by the B.T.O. and the data from both the 1987 and 1986 seasons are presented towards the end of this report, together with a short discussion. Unfortunately the B.T.O. have still to publish the 1987 results for the CES so no comparison with the national figures can yet be made for Betley.

No major changes appear to have occurred to affect the *Phragmites* beds which continue to support a good number of Reed Warblers (269 individuals trapped) and hold roosts of Swallows and Starlings. It is speculative whether the increase in Sedge Warbler numbers is due to a good year generally for the species, or to other factors operating locally eg. drying out of the outer (landward) side of the reed bed. Further emphasis of the value of the reed beds from an ornithological viewpoint was provided by a Bittern in mid February.

The area of willows in the reed bed at the southern end of the mere is proving to be of particular value to birds with a small but regular roost of Reed Buntings in late summer/autumn, joined this year by a small flock of Pied Wagtails. A net site on the edge of this area always seems to be the most productive of all the trapping sites especially so in the late summer. The present stage of growth of this area appears to provide ideal feeding conditions for most species, particularly the *Acrocephalus* warblers.

Birds breeding at the mere in 1987 were much as in 1986, but Grey Wagtails reared one brood of 5 chicks whilst Sedge Warblers were certainly up in numbers. Ruddy Duck and Tufted Duck again raised broods.

The species list below shows all the species I have recorded at the mere since 1985, and some comments for 1987 have been made.

G.C.Grebe

Little Grebe

Cormorant 1 on 26.8.87. 4 on 2.9.87.

Heron

Bittern 1 on 14.2.87.

Mallard

Teal Regular in small numbers.

Shoveler Regular in small numbers.

Tufted Duck Breeding, with about 6 pairs in 1987 and usually a winter population of 20-30 birds.

Pochard	Usually present throughout the winter.
Goldeneye	Occasional in winter
Shelduck	2 on 9.8.87
Ruddy Duck	Breeding, with about 6 males usually present.
Canada Goose	Frequent visitor. Probably the resident flock from Betley Hall Lake.
Mute Swan	Pair present from June.
Sparrowhawk	Very regular, particularly in evening when roosting Swallows, Buntings etc an obvious attraction.
Hobby	
Kestrel	
Pheasant	
Water Rail	At least 3 birds present on 13.12.87
Moorhen	
Coot	Very common. Maximum of 204 on 26.8.87
Lapwing	
Ringed Plover	1 on 2.11.87
Snipe	Regular from September. Not noted during summer.
Woodcock	
Curlew	2 on 28.6.87
Green Sandp.	
Common Sand.	1 on 10.5.87. 1 on 5.8.87.
Redshank	
G.B.B.Gull	
L.B.B.Gull	
Herring Gull	
B.H.Gull	After summer, regular from 20.7.87 with 800 on 20.9.87
Stock Dove	
Woodpigeon	
Turtle Dove	Heard occasionally from 31.5.87
Collared Dove	

Cuckoo	Birds present from 24th April, but still no conclusive breeding proof.
Little Owl	
Tawny Owl	
Swift	
Kingfisher	Regular from 2.8.87
G.S.Woodpkr.	Regular in woodland.
Skylark	
Swallow	Summer roost of up to 3000 birds invariably uses the area of reed bed on the S.W. fringe of the mere. The two recoveries at the roost suggest that most of the birds are of local origin. See also the 1986 report.
House Martin	
Sand Mart.	Regular from 5.4.87.
Carrion Crow	
Rook	Rookery in the willows at Betley Little Mere was the same size as in 1986 with ca. 50 nests.
Jackdaw	
Magpie	Over abundant.
Jay	
Great Tit	
Blue Tit	
Coal Tit	
Willow Tit	
L.T.Tit	
Treecreeper	
Wren	
Mistle Thrush	
Fieldfare	Large flock on grassland on 14.2.87. Autumn records from 23.10.87.
Song Thrush	
Redwing	
Blackbird	

Whinchat Pair present on 4.5.87. Male trapped and ringed.

Robin

G'hppe W. Not recorded during 1987

Reed Warb. No figures for breeding numbers in 1987. The number of birds trapped during the year (269) was up on the 1986 total (203) and, as there was little difference in trapping effort over the two years, the increase may possibly be reflecting a better breeding season in 1987. See CES discussion. Apart from the roosting Swallows, the Reed Warblers are the commonest birds at the mere.

Sedge W. Breeding confirmed in 1987 with some very young birds trapped. The ringing total (102 birds) indicates a much better year for this species than last (31 birds ringed) and this was also borne out by observation.

Blackcap

Garden W. Appeared more commonly in 1987 than in 1986.

Whitethroat

Lesser Whthrt

Willow Warbler

Chiffchaff First on 5.4.87. Undoubtably far more common in 1987 than in the previous two years.

Goldcrest

Dunnock

Meadow Pipit 2 on 22.3.87.

Pied Wagtail About 30 used the bed of willows at the S.W. fringe of the mere to roost during October probably these being the birds that were feeding at the sewage farm in the late evening.

Grey Wagtail Bred in 1987. 5 chicks ringed.

Yellow Wag

Starling Summer roost of juvenile birds from June. Up to 1500 birds throughout autumn and early winter.

Greenfinch

Goldfinch

Siskin Regular

Linnet

Redpoll

Bullfinch

Chaffinch

Yellowhammer

Reed Bunting Small roost in willow bed during late summer and into autumn but this then appears to decline from late October. 2 recoveries of birds from this roost show movements to Shrewsbury and the Leamington Spa area of Warks.

House Sparrow

Wildfowl Counts for Betley Mere 1987

The table below details the wildfowl present at the mere on certain dates during 1987. The winter counts (Sept - March) are submitted to the Wildfowl Trust as part of the nationwide wildfowl counts and all birds present have been recorded for these dates. The other counts (5.4.87 - 2.9.87) do not necessarily number all the birds present and so a no entry blank in the appropriate column may mean either not counted or not recorded.

	14.02.87	22.03.87	05.04.87	04.05.87	25.04.87	10.05.87	31.05.87	20.06.87	28.06.87	26.07.87	02.08.87	09.08.87	13.08.87	16.08.87	26.08.87	02.09.87	13.09.87	18.10.87	15.11.87	13.12.87
Mute Swan	0	0	0	0	0	0	0	1	4	4	2	2	2	2	2	2	2	2	2	2
C. Goose	0	2	0	2	4	4	13	0	0	2	8	0	0	0	0	0	9	0	0	0
Mallard	6	0	2	-	8	-	-	-	-	-	-	-	-	-	-	-	12	8	6	25
Teal	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0
Shoveler	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Tufted D.	27	31	34	13	22	-	-	-	6	-	-	-	-	-	14	-	32	23	27	0
Pochard	5	6	11	-	0	-	-	0	0	0	0	0	2	0	0	0	0	18	19	0
Goldeneye	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ruddy D.	0	4	15	10	0	-	0	-	2	6	-	-	-	9	5	-	0	4	1	0
Shelduck	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
Cormorant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0
Coot	27	50	33	16	22	-	-	-	40	-	-	-	-	-	204	-	92	188	152	51
G.C.Grebe	3	4	0	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	0

Observations so far would suggest that the mere is not of great importance to wintering wildfowl, this probably being due to the small size of the open water. The birds do seem to tolerate a small degree of disturbance from the waters edge but congregate furthest from any human activity.

Although the mere is shallow, the lack of a shelving bank means that the dabbling ducks do not find it as attractive as the diving ducks.⁶⁰ This is reflected in the count figures with the Tufted Duck and Pochard far outnumbering the Mallard, Shoveler etc. Incidentally, the highest Mallard count occurred in December when the surface of the mere was frozen; this may suggest that the mere is often visited by birds that do not usually find conditions satisfactory and consequently do not stay long.

The summer counts tend to be influenced by birds being in the fringes and so accurate counts are difficult to make. The main importance of the mere to summer wildfowl is in the availability of breeding habitat for Ruddy Duck and Tufted Duck (both estimated at 6 pairs in 1987).

BETLEY MERE CONSTANT EFFORT RINGING RESULTS 1987

The table below presents the Constant Effort ringing results for 1987 and 1986 with the 1986 results being bracketed after the 1987 entry. As one of the 12 trapping sessions in 1987 was missed due to bad weather, the results from the corresponding session in 1986 (on 4/6/86) have been excluded from the table, thus making any comparison valid.

Species	Juveniles	Adults	Total
Sparrowhawk	0(0)	0(1)	0(1)
Wood Pigeon	0(0)	0(1)	0(1)
House Martin	0(1)	0(0)	0(1)
Swallow	1(1)	0(0)	1(1)
Wren	12(7)	1(1)	13(8)
Dunnock	4(0)	0(4)	4(4)
Robin	0(2)	0(0)	0(2)
Whinchat	0(0)	1(0)	1(0)
Blackbird	0(2)	5(1)	5(3)
Song Thrush	0(0)	0(1)	0(1)
Sedge Warbler	31(4)	23(6)	54(10)
Reed Warbler	87(70)	41(46)	128(116)
Lesser Whitethroat	2(0)	0(3)	2(3)
Whitethroat	2(1)	0(3)	2(4)
Garden Warbler	4(0)	2(0)	6(0)
Blackcap	2(2)	2(0)	4(2)
Chiffchaff	12(0)	0(0)	12(0)
Willow Warbler	29(15)	10(15)	39(30)
Willow Tit	1(1)	0(0)	1(1)
Blue Tit	24(2)	3(8)	27(10)
Great Tit	5(3)	2(1)	7(4)
Jay	0(0)	0(1)	0(1)
Magpie	1(0)	0(0)	1(0)
Greenfinch	1(0)	0(0)	1(0)
Goldfinch	0(1)	0(5)	0(6)
Bullfinch	0(0)	1(0)	1(0)
Reed Bunting	6(4)	16(15)	22(19)

Analysis of these results is best attempted with a large a sample as possible, as is the case with the national CES. For the majority of species trapped at Betley the totals are clearly too small to have any significance but analysis may be possible with the commonly trapped species, but here again any conclusions have to be tentative.

Sedge Warbler	Results show a large increase from 1986 this also being confirmed by observations.
Reed Warbler	Little difference between the 2 years - the results suggest that production was slightly better in 1987.
Chiffchaff	Results clearly show a good year for this species that was not trapped at all in 1986 but occurred commonly in 1987.
Willow Warbler	Numbers trapped up slightly, some indications from the results that production was a little better in 1987 than 1986.
Blue Tit	Results suggest a good breeding year.
Reed Bunting	Little change in population indicated.

BETLEY MERE RINGING TOTALS 1987

Species	No. ringed	No. of retraps from 1986	Total
KINGFISHER	1	0	1
SAND MARTIN	3	0	3
HOUSE MARTIN	2	0	2
SWALLOW	513	3	516
GREY WAGTAIL	5	0	5
WREN	22	1	23
DUNNOCK	5	0	5
ROBIN	5	0	5
WHINCHAT	1	0	1
BLACKBIRD	6	0	6
SONG THRUSH	2	0	2
REDWING	6	0	6
SEDGE WARBLER	101	1	102
REED WARBLER	248	21	269
LESSER WHITETHROAT	7	0	7
WHITETHROAT	3	0	3
GARDEN WARBLER	9	0	9
BLACKCAP	13	0	13
CHIFFCHAFF	28	0	28
WILLOW WARBLER	50	0	50
GOLDCREST	2	0	2
WILLOW TIT	1	0	1
BLUE TIT	57	4	61
GREAT TIT	8	0	8
MAGPIE	1	0	1
CHAFFINCH	1	0	1
GREENFINCH	1	0	1
LINNET	4	0	4
REDPOLL	1	0	1
BULLFINCH	1	0	1
REED BUNTING	58	12	70
TOTAL	1164	42	1206

1987 Report Recoveries

v = Controlled; bird trapped and released by another ringer.

Woodpigeon

FC01131	Adult	05.07.86	Betley Mere, Staffs.	
	Shot	21.01.87	Doddington, Cheshire.	4 Km.

Swallow

C540085	Nestling	15.06.87	Rease Heath, Nantwich, Ches.	
	v(roost)	09.08.87	Betley Mere, Staffs	12 Km.

C540092	Nestling	25.06.87	Rease Heath, Nantwich, Ches.	
	v(roost)	09.08.87	Betley Mere, Staffs	12 Km.

Sedge Warbler

E372789	Juvenile	01.08.87	Walcot, Wellington, Salop.	
	v	16.08.87	Betley Mere, Staffs.	38 Km.

E531225	Juv.	16.08.87	Betley Mere, Staffs.	
	v	23.08.87	Kenfig Pool. S. Glamorgan.	191 Km.

Reed Warbler

C082721	Nestling	20.07.75	Walcot, Wellington, Salop.	
	v	05.07.87	Betley Mere, Staffs.	38 Km.

B085621	Juv.	03.08.86	Copmere, Staffs.	
	v	28.06.87	Betley Mere, Staffs.	17 Km.

E113140	Juv.	03.08.87	Betley Mere, Staffs.	
	v (Fem)	06.08.87	Rostherne Mere, Cheshire	37 Km.

Willow Warbler

BN0251	Juv.	05.07.87	Betley Mere, Staffs.	
	v	26.07.87	Cassington, Oxfordshire.	161 Km.

Reed Bunting

C531---	-	--.10.86	Betley Mere, Staffs.	
	v	--.12.86	nr. Leamington Spa, Warks.	

C531---	-	--.10.86	Betley Mere, Staffs.	
	v	--.12.86	Shrewsbury, Shropshire.	

Betley Mere Ringing Report 1988

29 visits were made to the mere during 1988 and a total of 1094 individual birds were trapped, this figure including 51 birds ringed in previous seasons. As usual Swallows predominated with 421 birds trapped at the roost. Reed Warbler numbers failed to reach the 200 mark for the first time for three years with 197 individuals handled, this possibly reflecting a poorer year for the species.

No new species of birds were recorded at the mere in 1988. I have not included a species list in this report but points of interest are as follows;

Mute Swan managed to rear three young for the first time for at least four years. Canada Geese were observed with six youngsters (1 of uncertain origin) although none appeared to reach maturity. Grey Wagtail, Tufted Duck and Ruddy Duck again reared young successfully. Reed Warblers appeared not to have had as successful season as in 1987 with a slight drop in adult/juvenile ratio from 2.12/1 down to 1.54/1. Sedge Warbler bred with about 4 pairs present on the South West side of the mere.

The Swallow roost appeared later this year than previously, with very few birds present until August. 3 birds trapped at Betley had been ringed elsewhere and one of these, from Northern Ireland provided the first, but not unexpected proof that the roost is used by passage birds as well as locally bred individuals.

The site at Betley Mere was used for the third year running to supply data for the British Trust for Ornithology's Constant Effort Scheme, one of 87 sites in Britain and Ireland so to do. The results from the Mere for this scheme are presented later in this report. Other sections deal with recoveries returned during 1988, Ringing totals and numbers of duck present.

BETLEY RINGING TOTALS 1988

SPARROWHAWK	1
SWIFT	2
KINGFISHER	3
SAND MARTIN	3
SWALLOW	421
WREN	34 (1 retrap)
DUNNOCK	9
ROBIN	9
BLACKBIRD	13 (2 retraps)
SONG THRUSH	2
REDWING	2
SEDGE WARBLER	56 (5 retraps)
REED WARBLER	197 (28 retraps/controls)
LESSER WHITETHROAT	7
WHITETHROAT	4
GARDEN WARBLER	4
BLACKCAP	27
CHIFFCHAFF	28
WILLOW WARBLER	61 (3 retraps)
LONG TAILED TIT	15 (1 retrap)
WILLOW TIT	3
BLUE TIT	53 (4 retraps)
GREAT TIT	12 (1 retrap)
TREECREEPER	2
MAGPIE	1
STARLING	5
CHAFFINCH	1
GOLDFINCH	5
BULLFINCH	15
REED BUNTING	95 (5 retraps)

RECOVERIES 1988

Disappointingly few recoveries recieved in 1988 but the Swallow from Northern Ireland Supplied the first evidence that passgae birds do use the roost site at Betley Mere, all the previous recoveries have been of relatively local birds.

SWALLOW

E834200	Nestling	05.07.88	Ballycreen, Down, Northen Ireland.	
		05.09.88	Betley Mere, Staffs	282 km.
E564737	Nestling	06.06.88	Streetlane Farm, Cheshire	
		23.08.88	Betley Mere, Staffs.	39 km.
E938337	juvenile	07.09.88	Ellesmere Port, Cheshire.	
		09.09.88	Betley Mere, Staffs.	44 km.

REED WARBLER

E050739	1st Yr. F.	29.07.87	Walcot, Salop. .	
		11.06.88	Betley Mere, Staffs.	38 km.
B453528	1st Yr.	29.08.87	Copmere, Staffs.	
		30.07.88	Betley Mere, Staffs.	17 km.
C334063	1st. Yr.	26.08.84	Holme Pierrepont, Notts.	
		17.08.88	Betley Mere, Staffs.	87 km.

CONSTANT EFFORT RINGING RESULTS 1988

	1986		1987		1988	
	Adults	Juveniles	Ad.	Juv.	Ad.	juv.
SPARROWHAWK	1					
KINGFISHER					1	1
WOODPIGEON	1					
HOUSE MARTIN		1				
SWALLOW		1		1		
* WREN	1	7	1	12	2	15
DUNNOCK	4			4	4	4
ROBIN		2				7
WHINCHAT			1			
BLACKBIRD	1	2	5		3	3
SONGTHRUSH	1	1				
* SEDGE WARBLER	8	4	23	31	15	24
* REED WARBLER	51	70	41	87	48	74
LESSER WHITETHROAT	4			2	1	1
WHITETHROAT	4	1		2	1	
GARDEN WARBLER			2	4		2
* BLACKCAP		2	1	2	5	10
* CHIFFCHAFF				12	1	6
* WILLOW WARBLER	15	15	10	29	9	21
WILLOW TIT		1		1		3
* BLUE TIT	10	2	3	24	11	19
GREAT TIT	2	3	2	5	3	4
TREECREEPER						1
JAY	1					
CHAFFINCH					1	
GREENFINCH				1		
GOLDFINCH	5	1				
BULLFINCH			1		2	5
* REED BUNTING	18	4	16	6	14	9

As mentioned in last year's report, any analysis of such a small amount of data has to be made with care, but several of the species caught at Betley in 1988 are trapped in numbers great enough to be worthy of comment. These species are:

SEDGE WARBLER - Last year's huge increase seems not to have continued, the figures showing a drop in adult numbers and a similar fall in the numbers of juvenile birds trapped.

REED WARBLER - More adults trapped in '88 from '87 but fewer juveniles, this probably explained by a poorer breeding season.

CONSTANT EFFORT RINGING (continued)

BLACKCAP - Numbers trapped suggest a better breeding year for this species in 1988 compared with the previous two years.

CHIFFCHAFF - Last year's spectacular increase seems not to have continued although the species occurred far more commonly than in 1986 when no birds at all were trapped.

WILLOW WARBLER - Similar numbers of adults as in 1987, but fewer juveniles suggests lower breeding success.

BLUE TIT - 1987's good breeding season seems to have been followed by higher survival into 1988 but lower breeding success, possibly because of greater numbers of inexperienced birds in the population.

REED BUNTING - Little change suggested from the figures between all three years.

	DUCKS AT BETLEY 1988								
	17.01.88	14.02.88	20.02.88	19.03.88	04.04.88	09.04.88	21.06.88	18.09.88	18.12.88
MUTE SWAN	2	2	2	2	2	2	1	6	0
CANADA GOOSE	0	5	5	2	-	1	-	19	0
G.C.GREBE	2	2	0	3	-	-	-	2	0
COOT	44	52	47	46	-	-	88	117	54
TUFTED DUCK	11	25	30	37	-	23	-	24	26
MALLARD	5	4	0	4	-	5	-	3	2
POCHARD	0	2	0	2	-	1	-	0	0
TEAL	0	0	0	0	10	1	-	0	0
RUDDY DUCK	0	0	0	6		20	-	1	0

Ruddy Duck and Tufted Duck both bred again at the meee in 1988 and for the first time since at least 1984, Mute Swan bred successfully. Canada Goose goslings were also observed on the 14th of May, but did not appear to reach maturity.

Betley Mere Report (1989-90)

This report includes recent information for the combined years of 1989 and 1990, continuing from the previous reports for 1986, 1987 and 1988.

Almost 1000 birds were marked in 1989 but a sharp drop to about 350 in 1990 was a result of less observer effort rather than fewer birds present. The Swallow roost, although regular in 1990, was not ringed (due to a lack of funds!) and also a reduction in general visits by about 25% accounts for the lower total.

The site was used for the fifth year running to provide data for the British Trust for Ornithology's Constant Effort Scheme, my results for which are presented on page 5.



Three new birds were added to the Betley Mere species list during 1989: an *OSPREY* (7.5.89) *BLACK TERN* (20.5.89) and a *DUNLIN* (15.7.89). Other interesting observations include *SHELDUCK* (10.6.89), *RUDDY DUCK* (30 on 5.8.89) and *REED WARBLER* (35 males singing on 15.6.89).

New birds during 1990 were *NUTHATCH*, *GREEN WOODPECKER* and *GARGANEY* (26.5.90). *MUTE SWAN* numbers were noticeably high with 19 birds present on 25.6.90, these included marked birds previously seen at Nantwich. The *SWALLOW* roost convened as usual during late summer of both years although numbers probably did not exceed 3-400. The *STARLING* roost was noticeably reduced or absent during the summer of 1990.

From a habitat point of view, there is now an obvious encroachment of willow scrub into the *Phragmites* bed on the south side, this being the only part of the periphery of the mere that is relatively clear of the stuff. The small trees are particularly noticeable during early spring when the new reeds have yet to show. Stinging Nettle is also making its presence felt(!) - this possibly indicating a slight drying out of the habitat.

The following pages give an up to date species list, 1989-90 ringing totals, Duck Count totals and Constant Effort Ringing results.



Andrew Lawrence
April 1991

BIRD SPECIES LISTED FOR BETLEY MERE UP TO 1990

* Little Grebe	Common Sandpiper	* Grasshopper Warbler
* Great Crested Grebe	Black-headed Gull	* Sedge Warbler
Cormorant	† Common Gull	* Reed Warbler
Bittern	Lesser Black-Backed Gull	Lesser Whitethroat
Grey Heron	Herring Gull	* Whitethroat
* Mute Swan	† Great Black-Backed Gull	* Garden Warbler
† White Fronted Goose	† Common Tern	* Blackcap
* Canada Goose	Arctic Tern	* Chiffchaff
Shelduck	Black Tern	* Willow Warbler
† Wigeon	Stock Dove	Goldcrest
Teal	* Woodpigeon	Spotted Flycatcher
* Mallard	Collared Dove	* Long-tailed Tit
Garganey	* Turtle Dove	* Willow Tit
Shovellor	* Cuckoo	Coal Tit
Pochard	Little Owl	* Blue Tit
* Tufted Duck	Tawney Owl	* Great Tit
Goldeneye	* Swift	Nuthatch
† Smew	Kingfisher	* Treecreeper
† Goosander	Green Woodpecker	* Jay
* Ruddy Duck	Great Spotted Woodpecker	* Magpie
* Sparrowhawk	Skylark	* Jackdaw
† Buzzard	Sand Martin	* Rook
Osprey	Swallow	* Carrion Crow
Kestrel	House Martin	* Starling
Hobby	† Tree Pipit	* House Sparrow
† Red-legged Partridge	Meadow Pipit	* Chaffinch
Grey Partridge	Yellow Wagtail	* Greenfinch
* Pheasant	* Grey Wagtail]	* Goldfinch
Water Rail	* Pied Wagtail	Siskin
* Moorhen	White Wagtail	Linnet
* Coot	* Wren	Redpoll
Oystercatcher	* Dunnock	* Bullfinch
Little Ringed Plover	* Robin	* Yellowhammer
Ringed Plover	Redstart	* Reed Bunting
Lapwing	Whinchat	
Dunlin	* Blackbird	
Snipe	Fieldfare	
Curlew	* Song Thrush	
Redshank	Redwing	
Green Sandpiper	Mistle Thrush	

Note: species marked with an asterisk (*) have been recorded as breeding at, or within a short distance from the site. Species marked † have been recorded by other observers and are noted in *The Birds of Betley Mere* by Alan and Ken Booth in the *Cheshire Bird Report 1982*, their work is gratefully acknowledged.

BETLEY MERE RINGING TOTALS, 1989 and 1990

Figures in brackets indicate the number of previously ringed birds trapped during the year.

	1989	1990
MUTE SWAN	1	0
SPARROWHAWK	1	0
GREAT SPOTTED WOODPECKER	0	1
SAND MARTIN	13	0
SWALLOW	313	23
HOUSE MARTIN	2	0
WREN	25(+2)	20(+1)
DUNNOCK	11(+1)	7(+3)
ROBIN	9	3
REDSTART	1	0
BLACKBIRD	9(+2)	6(+1)
SONG THRUSH	1	0
REDWING	2	2
GRASSHOPPER WARBLER	3	0
SEDGE WARBLER	62(+3)	29(+5)
REED WARBLER	128(+35)	90(+26)
LESSER WHITETHROAT	3	0
WHITETHROAT	4	6
GARDEN WARBLER	8	4
BLACKCAP	18(+1)	6(+1)
CHIFFCHAFF	15	7
WILLOW WARBLER	60(+7)	27(+5)
GOLDCREST	2	0
LONG TAILED TIT	13(+1)	6(+1)
WILLOW TIT	6	4(+1)
BLUE TIT	63(+5)	16(+5)
GREAT TIT	10(+2)	1
TREECREEPER	3	2
MAGPIE	3	0
STARLING	3	1
CHAFFINCH	4	0
GOLDFINCH	2	1
BULLFINCH	3(+1)	3(+1)
REED BUNTING	65(+10)	34(+9)
TOTAL	936	358

WILDFOWL AT BETLEY MERE 1989-90

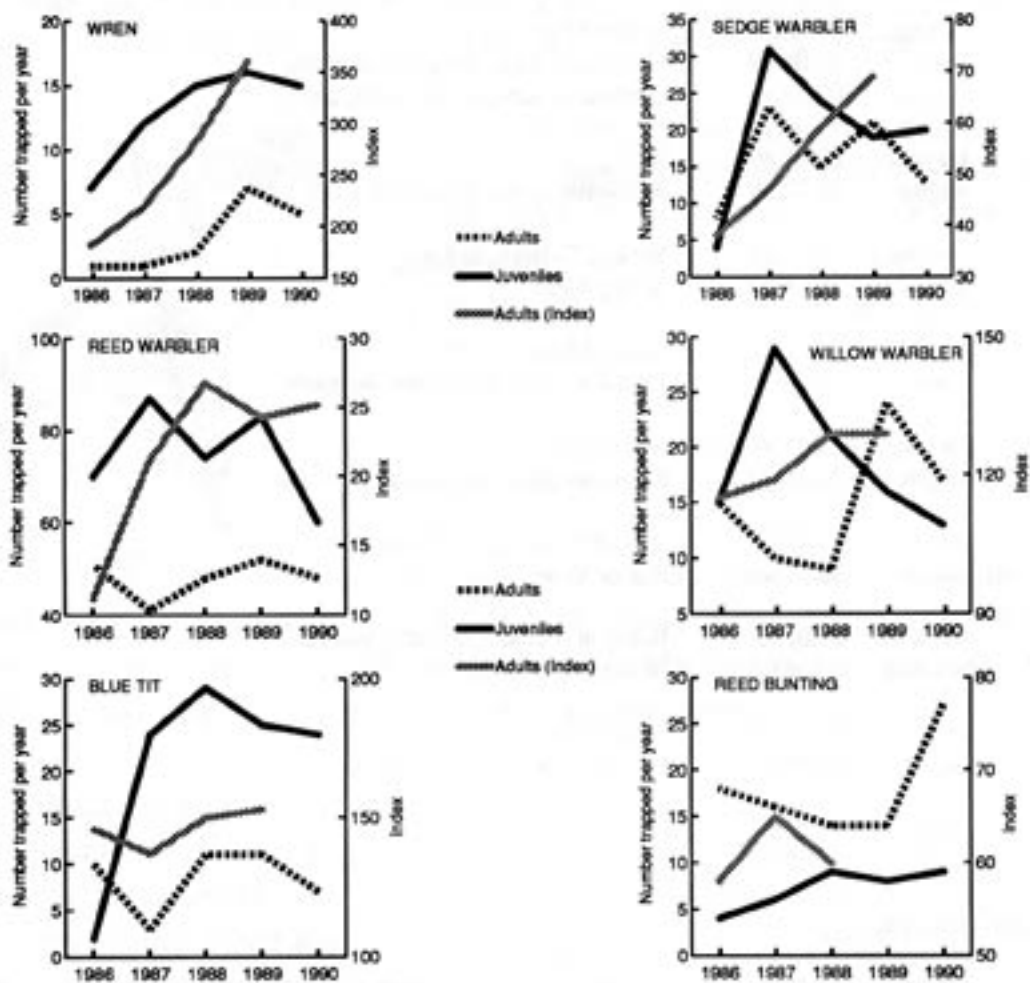
The following table shows the results from the Duck Counts carried out at Betley Mere as part of the Wildfowl Trust's monthly winter census.

	15.01.89	18.02.89	05.03.89	09.04.89	16.09.89	15.10.89	17.12.89	14.01.90	11.02.90	11.03.90	08.04.90	23.09.90	13.10.90	11.11.90	16.12.90
GT. CRSTD. GREBE	1		2		6			1	2	2	4	4	3		
MALLARD		4	2		25	32			4	7		1		2	
SHOVELLOR		2								1	6				
TUFTED DUCK	55	55	40	50	45	25	1	25	37	25		13	21		2
POCHARD	11	1					1	3	22	1					
RUDDY DUCK			9	10	28	3				1	13	0			
GOLDENEYE	1						2	2	1					1	
CANADA GOOSE		9	15	6	1	26			23	22			10		
MUTE SWAN	2	2		2	8	7	7	6		5		3	2		
TEAL		2	20									1			
COOT	67	79	55		106	42	18	13	87	67		7	15	37	17

As has been the case in previous years, diving ducks were the most numerous with *Tufted Duck* predominating. A large flock of *Canada Geese* were often present during the 1989-90 winter but the most unexpected feature of the two years, although not showing up in these winter counts, was the large numbers of *Mute Swans* present during the 1990 summer. Numbers of these at one time during June reached 19 individuals with some of the birds having been ringed at Nantwich during the previous winter. A later than usual attempt at breeding was also made by the local pair who must have had a hard time of it defending territory. The breeding wildfowl appeared to be unchanged during the two years with *Ruddy Duck*, *Tufted Duck*, *Coot*, *Great Crested Grebe*, *Little Grebe*, *Mallard* and *Moorhen* all producing young, although the exact numbers and breeding success are unknown.

CONSTANT EFFORT RINGING AT BETLEY 1989-90

Results for these two years are presented below in line graph form. This allows all the Constant Effort Scheme (CES) results for Betley over a five year period to be presented for six species together with a national index figure for each species - comparison should (hopefully) be easy. The national index is usually derived from the BTO's Common Bird Census (CBC) but in the case of the Reed Warbler the figure comes from the Constant Effort Scheme's national figure for the relevant year. It should be noted that the CBC only provides information on the number of adult males whilst the CES results also include adult females; assuming that there is no difference between the survival of males and females the two lines on each graph should be comparable.



The CES results do show some general similarities to the index values but are characterised by greater oscillations due, probably, to the small sample size. The general 1990 trend in all of the species covered here seems to be downwards for both adult populations and productivity (number of juveniles produced), a very noticeable exception being for Reed Buntings where a large increase in the number of adults trapped occurred. These were mainly males, a fact that suggests a surplus of males in the adult population - a smallish increase in the number of juveniles produced rather than a similar large increase helps to corroborate this, but obviously many other factors may be operative.

BETLEY MERE RINGING CONTROLS FOR 1989-90

MAGPIE

EJ41541	Ad. F.	07.06.86	Betley Mere	
	Dead	19.09.89	Ravenshall, Betley	1 km.

SAND MARTIN

F640501	1st year	28.07.89	Betley Mere	
	caught	29.06.90	Dorrington, Shewsbury, Salop	51 km.

SEDGE WARBLER

E764970	1st year	19.07.88	Betley Mere	
	caught	15.07.90	Shotton, Clywd, Wales.	48 km.

REED WARBLER

E184974	1st year	28.06.87	Betley Mere	
		02.07.89	Walcot, Wellington, Salop.	38 km.

E531222	1st year	11.08.87	Betley Mere	
	caught	02.09.89	Chelmarsh Res., Bridgenorth, Salop	59 km.
	caught	07.07.90	Chelmarsh Res., Bridgenorth, Salop.	59 km.

F219259	1st year	02.07.89	Betley Mere	
	caught	29.07.89	Rostherne Mere, Knutsford, Cheshire	37 km.

F038514	Nesting	29.07.88	Walcot, Telford, Salop.	
	caught	29.05.89	Betley Mere	38 km.

E417569	1st year	26.07.87	Betley Mere	
	caught	16.05.89	Heusden, Oost Vlanderen, Belgium	476 km.

F065568	1st year	13.08.88	Betley Mere	
	caught	26.07.90	Rostherne Mere, Knutsford, Cheshire	37 km.

F109374	1st year	09.09.89	Walcot, Wellington, Salop.	
	caught	18.08.90	Betley Mere	36 km.

F192296	Adult M.	21.05.89	Brandon Marsh, Coventry, Warks.	
	breeding	03.06.90	Betley Mere	94 km.

F380813	1st year	06.07.90	Betley Mere	
	caught	21.07.90	Woolston, Warrington, Cheshire	44 km.

F380886	1st year	18.08.90	Betley Mere	
	dead	13.09.90	Moretonwood, Market Drayton, Salop.	18 km.

WILLOW WARBLER

6R4049	1st year	21.08.88	Betley Mere	
	caught	18.09.89	Maisonneuve, Vienne, France.	720 km.

4V8128	1st year	23.06.90	Betley Mere	
	caught	28.07.90	Shavington, Market Drayton, Salop.	14 km.

REED BUNTING

E764546	1st year	01.11.87	Betley Mere	
	caught	18.07.89	Pennington Flash, Leigh, Manchester.	53 km.

F219191	2nd yr. F.	07.05.89	Betley Mere	
		15.12.90	Bromham, Wiltshire	183 km

F640831	1st year	28.09.89	Betley Mere	
	dead	09.02.91	Aston, Pipe Gate, Salop.	6 km.

Betley Mere Bird Report 1991

This report contains information for 1991 continuing from the previous reports for 1986-90

The total of 469 individual birds caught during 1991 was the result of 17 visits to the site from late April to October. The site was used for the sixth consecutive year to provide data for the British Trust for Ornithology's Constant Effort Scheme (CES), part of their monitoring programme which provides data for conservation bodies and others interested in British bird population trends.

The main species supported by the Betley data is the Reed Warbler, not otherwise well censused by means other than the CES, and the six years' worth of trapping information (970 Reed Warblers caught since 1985) is now also providing valuable insights into Reed Warbler survival rates. Interestingly, one bird first caught as an adult in 1985 was again trapped in 1991, this individual therefore being at least 7 years old - a real survivor!

Looking at the yearly ratio of total number of adult Reed Warblers trapped against the number of these birds caught in previous years, we may be able to assess how well the population survived their time away from the breeding site. For instance in 1991, 53% of the adults birds had been trapped in previous years whilst for 1990, 1989, and 1988 the proportions were 40%, 55% and 43% respectively; however, the spread between all four is only 15% and it would be helpful to know what proportion of the unmarked adults were birds of only one year old. This may repay further investigation.

The only new bird species recorded in 1991 was Barnacle Goose (2 on 15th December) this bringing the total for the site to 115 species (see 1990 report for a full list).

Other observations of interest include the usual Swallow roost during July/September consisting of 3-400 birds. Starling roosts at the same time consisting of about 500 birds (mainly juveniles). High numbers of Canada Geese later in the year with a maxima of 87 on the 15th December and the usual breeding records for Ruddy Duck, Tufted Duck, Great Crested Grebe Little Grebe and Mallard.


Betley Mere ringing totals 1991

The figures below show the number of individual birds handled at Betley during 1991

	Ringed 1991	Retrapped 1991		1991	1991
SWIFT	3		WHITETHROAT	1	
SAND MARTIN	1		GARDEN WARBLER	5	
SWALLOW	165		BLACKCAP	16	3
WREN	6	2	CHIFFCHAFF	18	
DUNNOCK	3		WILLOW WARBLER	35	5
ROBIN	1	2	LONG-TAILED TIT	3	5
BLACKBIRD	1	2	WILLOW TIT	6	2
SONG THRUSH	3	0	BLUE TIT	10	1
SEDGE WARBLER	34	2	GREAT TIT	6	1
REED WARBLER	61	18	BULLFINCH	9	
LESSER WHITETHROAT	2		REED BUNTING	28	12
	Ringed	Retrapped		Wildfowl at Betley Mere 1991	

The available results submitted for Betley Mere by me for the Wildfowl and Wetlands Trust monthly winter census are shown below.

The specified monthly count date unfortunately coincides with a clay pigeon shoot about 400m to the west at Betley Little Mere but the effect of this is not to

	13.01.91	17.03.91	13.10.91	15.11.91	15.12.91
GT. CRSTD. GREBE	1	5	3	1	
MALLARD	18	3	16	14	20
TUFTED DUCK	4	55	41	20	5
POCHARD			14		8
RUDDY DUCK	1		6	2	
GOLDENEYE	3				
CANADA GOOSE			35	46	87
BARNACLE GOOSE					2
MUTE SWAN			2	4	
TEAL	1				
COOT	26	23		56	17

noticeably frighten the birds that are present.

Main points to note is the high number of Canada Geese present late in the year. These were usually grazing in the fields to the east of the mere and were accompanied by 2 Barnacle Geese on the occasion of the highest count of 87 on 15.12.91.

Breeding proved again for Ruddy Duck, Tufted Duck, Great Crested Grebe Little Grebe and Mallard.

Constant Effort Ringing at Betley Mere, 1991

For the sixth year running Betley Mere has contributed results to the Constant Effort Ringing Scheme (CES), part of the British Trust for Ornithology's integrated population monitoring programme; during 12 evenly spaced visits from May to August each year the same amount of netting is set for the same length of time, the number of birds caught provides a measure of population change. The table overleaf presents CES results for 1990-1.

Table showing CES results and local and national changes for 1990 to 1991

Species	Adults				Juveniles				Productivity			
	No. trapped 1990	1991	Betley change	National change	No. trapped 1990	1991	Betley change	National change	1990 Betley	1990 National	1991 Betley	1991 National
Wren	5	3	-40%	(-54%)	15	3	-80%	(-48%)	75%	(69%)	50%	(71%)
Dunnock	5	3	-40%	(-26%)	0	4	+∞	(-23%)	0%	(56%)	57%	(57%)
Robin	1	1	0%	(-32%)	4	2	-50%	(-25%)	80%	(74%)	67%	(76%)
Blackbird	4	3	-25%	(-29%)	2	0	-∞	(+42%)	33%	(32%)	0%	(48%)
Song Thrush	1	3	+200%	(-27%)	0	0	-	(+20)	0%	(30%)	0%	(42%)
Sedge Warbler	13	17	+31%	(-22%)	20	12	-40%	(-25%)	61%	(57%)	41%	(56%)
Reed Warbler	48	29	-40%	(-23%)	60	35	-42%	(-14%)	56%	(43%)	55%	(46%)
L. Whitethroat	0	1	+∞	(-11%)	0	0	-	(-16%)	-	(49%)	-	(48%)
Whitethroat	0	1	+∞	(-44%)	4	0	-∞	(-58%)	100%	(58%)	0%	(51%)
Garden Warbler	1	2	+100%	(-28%)	2	1	-50%	(+13%)	66%	(71%)	100%	(78%)
Blackcap	1	5	+500%	(-32%)	5	10	+100%	(0%)	83%	(54%)	66%	(67%)
Chiffchaff	2	0	-∞	(-46%)	4	7	+75%	(-24%)	66%	(71%)	100%	(78%)
Willow Warbler	17	22	+29%	(-15%)	13	9	-31%	(-35%)	39%	(64%)	29%	(58%)
Long Tailed Tit	1	3	+200%	(-19%)	6	4	-33%	(-22%)	86%	(67%)	57%	(66%)
Willow Tit	1	3	+200%	n/a	4	5	+25%	n/a	80%		63%	
Blue Tit	7	7	0%	(-16%)	14	4	-71%	(-14%)	67%	(77%)	36%	(77%)
Great Tit	1	2	-100%	(-7%)	0	2	+∞	(-6%)	0%	(71%)	50%	(71%)
Bullfinch	4	0	-∞	(-24%)	0	0	-	(+26%)	0%	(30%)	-	(42%)
Reed Bunting	27	25	-7%	(-28%)	9	12	+33%	(-20%)	25%	(36%)	32%	(39%)

The first set of columns compare the adult population between the two years, with the percentages reflecting the population changes implied by the capture totals. Effectively, this section shows how well the birds of 1990 survived the pressures imposed upon them in the time before the 1991 breeding season.

The next set of columns similarly shows the changes in the number of birds in the juvenile population between the two years.

The final set of columns illustrates the breeding success (productivity) of the 1991 adults, by showing the percentage of juveniles within the total population. This treatment negates the effects of a variably sized adult population and gives an indication of their productivity - a 'better' year is indicated by a higher figure.

All figures in brackets show the national percentages for each category as published in BTO News No. 179. The national figures are analysed using results from between 47 and 79 sites (depending on species) from all over Great Britain and Ireland which submitted results for both 1990 and 1991. These figures have the advantage of a large sample size and are therefore statistically more significant than the much smaller set of data from Betley, where results can be affected from day to day by weather conditions or other anomalies. The majority of species trapped at Betley are caught in such low numbers as to be ignored for review purposes but the seven species caught in reasonable numbers (15 or more individuals in either 1990 or 1991) are:

WREN

An apparent drop in the adult population (but a small sample size), coupled with a decline in productivity.

SEDGE WARBLER

At Betley an increase in adult numbers conflicted with the national scene. Fewer young produced than in 1990 despite the higher level of adult birds.

REED WARBLER

A marked drop in the adult population was noticeable even early in the season with no birds trapped until late May; the final total suggested a 40% decline locally equating with a 23% drop nationally. The overall scene appeared to be on eof a late arrival of a lower number of birds. Little change in the productivity with fewer adults producing fewer young in 1991 from 1990.

BLACKCAP

Betley results are statistically insecure, but the 10 juveniles trapped implied a better year for this species, a trend not seen in the national totals.

WILLOW WARBLER

An apparent increase in the adult population that had a slightly worse breeding year during 1991 than in 1990.

BLUE TIT

No change in the adult population but far fewer young produced.

REED BUNTING

A small change in both adult population numbers and productivity - a slight drop and increase respectively.

Overall the season was characterised by a drop in the populations of many of the small birds using Betley Mere. The national figures support the Betley results for some species although the changes are often more marked in the Betley results. For one or two species the Betley results ran against national trends.

Betley Mere Ringing Controls, 1991

Only five new recoveries were reported during the year this reflecting the drop in total number of birds ringing in the last two years.

SEDGE WARBLER

H324332	Adult M	25.05.91	Betley Mere	
	caught	10.08.91	Icklesham, Sussex.	314 km.
H324379	Adult F.	28.06.91	Betley Mere	
	caught	30.07.91	Station Ho., Sudbury, Staffs..	46 km.

REED WARBLER

E531159	1st year M	02.08.87	Betley Mere	
	caught	19.05.90	Attenborough N.R., Notts..	77 km.
F380934	1st year F.	24.08.90	Betley Mere	
	caught	13.07.91	Rostherne Mere, Cheshire.	37 km.

BLACKCAP

F577753	1st year M	27.08.90	Elvaston Park, Derbys.	
	caught	24.08.91	Betley Mere.	65 km.

Betley Mere Ringing and Bird Report, 1992

This report contains information for 1992 continuing from the previous reports for 1986 - 91. Also included is a report on the habitats within the site on the south side of the mere within which the ringing takes place and the relative use made of each habitat type by the local birdlife.

As usual, the main thrust of the ringing study was directed towards the provision of information for the British Trust for Ornithology's Constant Effort Scheme (CES) which is conducted as part of their Integrated Population Monitoring Programme. The Betley site has now completed its seventh unbroken year of contributions towards this project and is supplying data, which provides a measure of changing population size, productivity (of young), and survival of our regional and national birdlife.

Overall, the numbers of birds trapped at Betley was higher than in the previous year and the season was characterised early on by some good numbers of adult birds. The latter part of the summer saw no large catches of juvenile birds although the grand total for the CES site saw a jump from 104 in 1991 to 191 in 1992. Of main interest was the extremely high number of young Blackcaps appearing, the total for this species was, at 27, almost triple that previously recorded.

Other noticeable variations in the ringing totals between years were an increase in the number of young Wrens, Blue Tits and Great Tits, and the continued decline of Willow Warbler numbers.

Reed Warblers appear to have recovered a little from their lowest numbers of 1991, with the adults returning in better numbers. The number of young fledged per adult was more or less similar; down to 1.167 from 1.207. Just one count of singing males was made on the 21st of May when 36 males were adjudged to be holding territory around the entire perimeter of the mere.

One Reed Warbler retrap of particular note was that of 'B763340' which returned yet again in 1992, now at least in its eighth year.

A comparison between the numbers of ringed and unringed Reed Warblers trapped as adults at the mere in any one season was made in the 1991 report. Interestingly, of the adults present in 1992, only 25.5% had been trapped in previous years compared to the figures for the previous four years which varied between 40 - 55%. Given the site fidelity of this species (BTO records show only about 30% of birds ringed as adults in the breeding season and found dead in subsequent seasons are recovered more than a few kilometres away from the place of ringing), this comparatively low percentage of ringed birds may imply a far higher than usual number of first year birds in the breeding population; presumably as a result of improved migration/winter survival over previous years. Certainly adult numbers which were at their lowest (with 29 individuals trapped in the CES index nets) in 1991, recovered slightly (to 41 individuals) in the 1992 season, an upwards trend which hopefully will continue.

Ringing recoveries are always of great interest and the highlight of this year's crop features that of a Reed Warbler (ring E531153) ringed as a juvenile at Betley on the 2nd August 1987 and netted on 5th of April 1992 by a group of British ringers operating in the Parc National du Djoudj, Senegal, West Africa, during its return journey to its breeding grounds. This is the first recovery of a Betley bird from another continent, and with impeccable timing, the report of the recovery came to me within a month of the 1000th Reed Warbler being ringed at the mere (the total now stands at 1071 ringed since 1985). One

other Reed Warbler recovery was reported, from Belgium, this concerns a juvenile bird ringed in 1991 which was trapped near Antwerp in September of that year, this bird probably 'refuelling' for its migration to its winter quarters.

Two Reed Bunting recoveries were also reported during the year, one, of a bird ringed at the mere in 1989, caught at Bromham in Wiltshire in 1990, then retrapped there again in 1992; this would seem to imply that the bird has taken up residence in the Bromham area, although the possibility of a regular winter movement to the area cannot be discounted and is suggested by the recovery of another Betley bird, near Dorchester in Dorset, 2 days prior to the Bromham retrap.

Much work has been done by the Cheshire Swan Study Group over the last few years resulting in many of the regions swans now possessing blue Darvic leg rings. A particular effort was made at Betley to note as many numbers as possible and the movements made by these birds are reported in the recovery section of this report. Good numbers of Mute Swans have been a feature of the summer at Betley in recent years and highlight the value of the evenly shallow depth of the mere to the feeding methods of these birds. High-protein baits fed heavily as 'free offerings' by anglers appear to be appreciated by the swans as a welcome addition to their diet!

Starlings roosted in the north part of the reed bed (see map), these first appeared towards the middle of June and numbers were steady at about 2000 birds throughout summer. Swallows were again present at roost but not in large numbers.

Regular monthly counts of wildfowl numbers were made during the winter months as part of the Wildfowl and Wetlands Trust monitoring scheme.

Other bird notes of interest:

- 16.02.92 Cormorant
 - 22.03.92 Sand Martin
 - 18.04.92 Swallow
 - 04.05.92 1 Shelduck, 2 Oystercatchers
 - 16.05.92 Spotted Flycatcher
 - 07.06.92 1 Curlew
 - 13.06.92 Grasshopper Warbler, Starling roost of ca. 2000 birds.
 - 16.08.92 Nuthatch in ringing site area.
 - 28.08.92 Starling roost ca. 2000 birds, 30 Swallows in roost.
 - 29.08.92 Kingfisher - This species was usually noted on almost every visit in late summer during the 1980's but this is the first observation since 1990.
 - 27.09.92 Gadwall (new bird for Betley)
 - 04.10.92 Late records for: 1 Reed Warbler, 1 Chiffchaff, 4 House Martins.
 - 11.10.92 Starling roost still at ca. 2000 birds.
 - 15.11.92 Report (by angler) of Bittern in reed bed.
 - 13.12.92 20 Snipe in marsh to south of mere. Cormorant over.
-

Betley Mere ringing totals 1992

The figures below show the number of individual birds handled at Betley during 1992

	RINGED 1992	RETRAPS 1992		RINGED 1992	RETRAPS 1992
SWALLOW	83		GOLDCREST	1	
WREN	26	1	LONG-TAILED TIT	24	
DUNNOCK	5	1	WILLOW TIT	3	
ROBIN	5		BLUE TIT	35	5
BLACKBIRD	6	3	GREAT TIT	22	
SEDGE WARBLER	38	6	TREECREEPER	6	1
REED WARBLER	99	14	MAGPIE	1	
WHITETHROAT	6		CROW	3	
GARDEN WARBLER	7		CHAFFINCH	3	
BLACKCAP	34		BULLFINCH	2	2
CHIFFCHAFF	16		REED BUNTING	74	12
WILLOW WARBLER	27	1			

Constant Effort Ringing at Betley Mere, 1992

For the seventh consecutive year Betley Mere has contributed results to the Constant Effort Ringing Scheme (CES), part of the British Trust for Ornithology's integrated population monitoring programme; during 12 evenly spaced visits from May to August each year the same amount of netting is set for the same length of time, the number of birds caught provides a measure of population change. The table presents CES results for 1991-2.

Table showing CES results and local and national changes for 1991 to 1992

Species	Adults				Juveniles				Productivity			
	No. trapped 1992	1991	Betley change	National change	No. trapped 1992	1991	Betley change	National change	1992 Betley	1992 National	1991 Betley	1991 National
Swallow	1	0	+∞	(n/a)	0	0	-	(n/a)	-	(n/a)	-	(n/a)
Wren	5	3	+67%	(+44%)	14	3	+367%	(+62%)	64%	(73%)	50%	(71%)
Dunnock	3	3	0%	(+4%)	0	4	-∞	(+46%)	n/c	(63%)	57%	(57%)
Robin	0	1	-∞	(+3%)	5	2	+150%	(+31%)	n/c	(79%)	67%	(76%)
Blackbird	5	3	+67%	(+6%)	2	0	+∞	(+7%)	28%	(46%)	0%	(48%)
Song Thrush	0	3	-∞	(-5%)	0	0	-	(-8%)	n/c	(42%)	0%	(42%)
Sedge Warbler	24	17	+41%	(+9%)	13	12	+8%	(+20%)	35%	(57%)	56%	(56%)
Reed Warbler	42	29	+45%	(+16%)	49	35	+40%	(+33%)	54%	(49%)	55%	(46%)
L. Whitethroat	0	1	-∞	(-29%)	0	0	-	(+18%)	-	(81%)	-	(48%)
Whitethroat	0	1	1∞	(+2%)	6	0	+∞	(+144%)	n/c	(71%)	0%	(51%)
Garden Warbler	3	2	+50%	(+7%)	4	1	+300%	(+17%)	57%	(53%)	100%	(78%)
Blackcap	3	5	+67%	(+18%)	27	10	+170%	(65%)	90%	(71%)	66%	(67%)
Chiffchaff	2	0	+∞	(+12%)	9	7	+29%	(-12%)	82%	(74%)	100%	(78%)
Willow Warbler	11	22	-50%	(-14%)	11	9	+22%	(-2%)	50%	(62%)	29%	(58%)
Treecreeper	1	0	+∞	(-31%)	4	0	+∞	(+15%)	n/c	(77%)	-	-
Long Tailed Tit	5	3	+67%	(-11%)	8	4	+100%	(+18%)	62%	(71%)	57%	(66%)
Willow Tit	0	3	-∞	n/a	3	5	-40%	n/a	n/c		63%	
Blue Tit	9	7	+28%	(-22%)	15	4	+275%	(-23%)	63%	(75%)	36%	(77%)
Great Tit	5	2	+150%	(-14%)	15	2	+650%	(+30%)	75%	(78%)	50%	(71%)
Chaffinch	3	0	+∞	(-9%)	0	0	n/c	(+15%)	n/c	(44%)	-	-
Bullfinch	4	0	+∞	(-8%)	0	0	n/c	(+16%)	n/c	(46%)	-	(42%)
Reed Bunting	22	25	-12%	(-15%)	6	12	-50%	(-1%)	21%	(42%)	32%	(39%)

The first set of columns compare the adult population between the two years, with the

percentages reflecting the population changes implied by the capture totals. Effectively, this section shows how well the birds of 1991 survived the pressures imposed upon them in the time before the 1992 breeding season.

The next set of columns similarly shows the changes in the number of birds in the juvenile population between the two years.

The final set of columns illustrates the breeding success (productivity) of the 1992 adults, by showing the percentage of juveniles within the total population. This treatment negates the effects of a variably sized adult population and gives an indication of their productivity - a 'better' year is indicated by a higher figure.

All figures in brackets show the national percentages for each category as published by the B.T.O. on 11th of March 1993. The national figures are analysed using results from between 34 and 74 sites (depending on species) from all over Great Britain and Ireland which submitted results for both 1991 and 1992. These figures have the advantage of a large sample size and are therefore statistically more significant than the much smaller set of data from Betley (where only that for Reed Warbler may be reliable from year-to-year), and where results can be affected from day to day by weather conditions or other anomalies.

The majority of species trapped at Betley are caught in such low numbers as to be ignored for review purposes but the seven species caught in reasonable numbers (15 or more individuals in either 1991 or 1992) are:

WREN

A significant increase locally in both the adult and juvenile population probably as a result of the mild winter.

SEDGE WARBLER

A local increase of 34% in adult totals and 8% on juveniles. Fewer young produced per bird.

REED WARBLER

Last year's total of 29 adults was the lowest recorded since the Betley CES was started. The low number of adults produced a similarly low number of young. In 1992 adult numbers recovered a little and productivity was similar between years and resulted in a proportional increase in the the number of juveniles.

BLACKCAP

Adult numbers declined but their productivity was markedly up on previous years. Locally, this was very apparent with high numbers of juveniles appearing in late Summer and Autumn. The national figures also reflected this trend with an increase of 65% - very significant considering the large sample size used for this species.

WILLOW WARBLER

A drop in adult numbers of 50% locally and 15% nationally reflects the recent decline in this species' status. A slight increase in productivity.

BLUE TIT / GREAT TIT

A slight increase in adult numbers locally but a decrease nationally. These birds move in flocks and are difficult to sample well with mist nets due to the distorting (all or none) effect of this sampling method. Without a large sample of birds, results are best treated with caution, however, the general impression of more Tits about in 1992 was supported by increase in the local CES indices.

REED BUNTING

A slight drop in adult and juvenile numbers. Interestingly, adults of this species are always trapped in greater numbers than are juveniles. This is an unusual situation especially considering that the species is a common breeding bird of the mere site with in most years at least half a dozen or so males holding territory within 200 metres of the centre of the ringing site. This species is often double-brooded so we should expect to see a good number of young being produced in most years and yet they rarely appear in the CES nets - those that do are often trapped as recently fledged birds. Presumably, therefore, young birds either do not stay long on site and soon disperse or they don't approach mist nets! The former situation would seem to be the most likely.

Habitat.

This section contains a brief description of the habitats found in and around the ringing site on the south-east side of the mere, and the use made of them by the local bird population (see map).

As noted in the 1986 report the southern area around the perimeter of the mere contains, in an area of about 200 metres by 60 metres, several different habitat types, each offering a range of feeding and breeding opportunities for a wide variety of bird species, these habitats do obviously not have rigid boundaries, often merging into one another

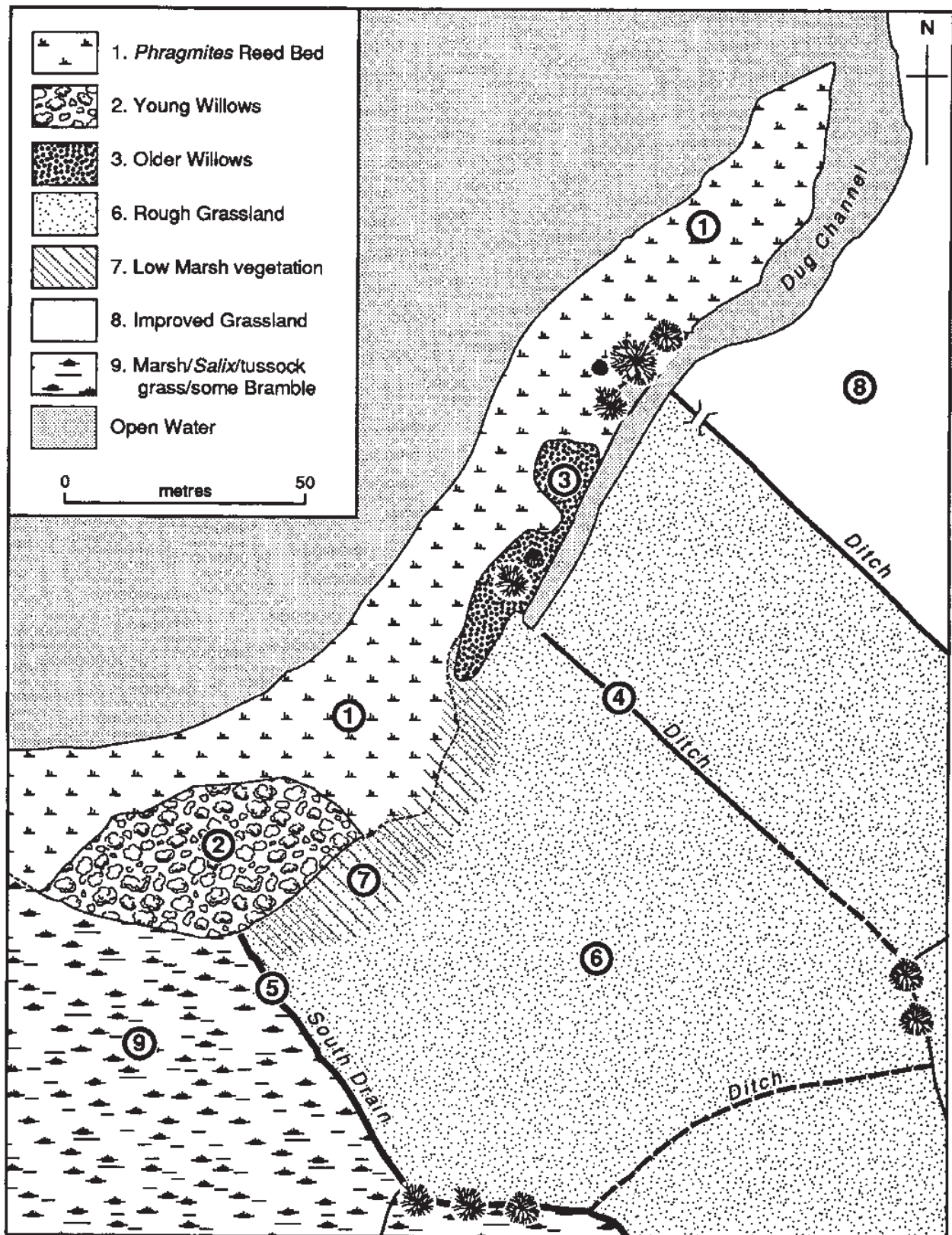
The predominant area towards the mere itself is the *Phragmites* reed swamp (1), this stretches from the water edge (where *Typha* is also abundant) towards the grassland area to the south, in some cases giving a zone of up to about 40 metres. This area has been, by the usual process of succession, invaded by a variety of species of shrub and field layer plants. Some of the shrubs are now better classified as small trees. Access to this area is provided by wooden staging put in for use by anglers

The prime breeding species of this zone is the Reed Warbler, which although preferring to nest over water, also uses the drier, mid-range area further away from the water. Towards the outer (landward) side of the reed bed where it begins to shade towards the grassland, incursion by a variety of plants occurs and it is in these drier areas that Sedge Warblers nest, often amongst Woody Nightshade.

The reed swamp area is used as a feeding zone by a variety of birds. In addition to the 2 species mentioned above, it is also of importance for Reed Bunting, a species that spends much time in the zone, Blue Tits are also often to be found in the mid-area of the zone. The *Phragmites* also provides roosting cover for Starlings and Swallows, although the numbers of the latter have declined in recent years

Willow and sallow, together with alder and birch are the main species invading the reed swamp. Of these, alder is represented in the site by some large trees of some 6 metres in height near the dug channel area and some smaller trees of about 3 metres within the reed swamp zone. birch is invading mainly at the grassland / reed swamp transition zone in the middle of the site. Here one or two quite old birch trees are present around the south side of the thicket area (see below) whilst younger trees of about 2 metres are within the reed bed itself. However, *Salix* spp. are the most important invasive shrubs on the site and two main areas can be identified, both very different in character and in the way that they are used by birds:

Locality map of the ringing site area showing broad habitat categories.



The wet area where the drain enters the mere from the South is densely covered by willow (2), these bushes are young, I would guess their age at about 15 - 20 years old, the height of them being around the 3 metre mark. They are heavily admixed with a variety of field layer plants, notably *Phragmites*, woody nightshade, nettles and hairy willowherb.

This area is of extreme value to birds for a feeding area and the one mist net situated in this area is by far the most productive in the entire site (although the height of the vegetation is a contributive factor to this success). *Acrocephalus* warblers constantly use this zone for feeding, particularly in late Summer, with the cover and feeding opportunities also being heavily exploited by the leaf and scrub warblers together with practically all other passerines passing through the site. Reed Bunting, in particular, find this area appealing and in past years have used this area as a roost site. This area of willow is surrounded in places on the landward side by sallow bushes which, although of a similar age are of much stronger growth which reduces the field layer herbage.

The area of sallow around and to the East of the large group of Crack Willow trees in the middle of the site represents another habitat type (3). The landward side bushes are older than those in area (2) by the south drain and are now turning into trees with quite distinct trunks and canopy. The height of the canopy is such that in the drier parts of the area the field layer is sparse. Scrub birds passing through the site often use the mere side of this area (where the bushes are willows, similar to those found in the area (2) near the south drain). This area will soon turn into a thicket area such as that found around much of the south-west perimeter of the mere, the value of which seems limited compared to that of the younger willows, and the reed bed area.

Tits and some leaf warblers are the main species to use this low tree area with Reed Warblers occasionally seen feeding in the upper branches of the willows near the water of the dug channel between this zone and the field.

Two groups of large willow trees are present. The group in the centre of the site is surrounded by a thicket area of predominantly tall shrubs: sallow, alder, and hawthorn admixed with bramble. Field layer plants are sparse within the thicket due to the dense canopy and few birds are regularly present, most preferring to skirt around the outside of the area or to use the tree/bush canopy. If any bird is characteristic of the thicket habitat zone it is the Wren. The other group of willows first seen when entering the site from the north have little understory other than a thin *Phragmites* growth and some invading sallow - the trees are the first high vegetation reached by birds prepared to cross to the site from the sewage farm cover to the north.

Foraging birds moving around the local area, particularly in late summer and autumn, rely heavily on 'corridors' of hedges and ditches to move along, and birds entering the Betley site tend to have been funnelled along the two or three such 'corridors' available to them. The most important of these is the wet ditch (4) in the centre of the site which is filled with a range of scrub; small bushes and field layer plants, mainly willow, hawthorn, bramble and nettle. Many of the birds entering the mere site from the Cracow Moss area use this 'corridor' or the vegetative cover present along the south drain some 100 metres to the south (5).

The intermediate zone between the grassland and the reed swamp (7) is very damp, with Iris and Marsh Marigold plentiful, together with Meadowsweet, Pennywort, Lady's Smock and Ragged Robin. This area is used to some extent by the *Acrocephalus* Warblers, mainly Sedge Warbler, and during winter Snipe are often present.

The improved grassland field to the north of the site (8) is used mainly for feeding by Moorhen and Coot with Canada Goose flocks regular in winter.


The rough grassland area is utilised mainly by Reed Bunting which nest around the perimeter. The grassland was previously be used in late summer by finch flocks, mainly Goldfinch, Greenfinch and Linnet, but in the last few years grazing has prevented grasses

from seeding and these species are now rarely attracted to the site. Bramble bushes are regenerating in some parts of the grassland area and these provide valuable feeding and cover for a variety of species.

To the South-west of the site is an area (9) which becomes drier further away from the mere and which comprises several habitat types, most importantly marsh as described at (7) above, although tussock grasses of up to 1 metre in height are abundant here and sallow is invading. Beyond this area, small sallow trees are present, similar to those described at (3). Bramble cover near the south drain at the edge of this area is used regularly as a nest site by Whitethroat.

Wildfowl at Betley Mere 1992

The available results submitted for Betley Mere by me for the Wildfowl and Wetlands Trust monthly winter census are shown below.

	* 12.01.92	* 16.02.92	† 24.02.92	* 15.03.92	† 22.03.92	† 18.04.92	† 04.05.92	* 21.05.92	* 05.06.92	* 07.06.92	* 13.06.92	† 28.06.92	* 08.07.92	† 19.07.92	* 10.08.92	* 29.08.92	* 27.09.92	† 04.10.92	* 11.10.92	* 15.11.92	* 13.12.92
LITTLE GREBE	1			2		2								2							1
GT. CRSTD. GREBE	3	4	6	6	6	2	1				2+	2	n/c	2			2				
CORMORANT		1																			
MUTE SWAN	2	2	2				2	12	8	6	n/c	8	11	10	12	14	20	17	10	12	
CANADA GOOSE	17	17	25	6	2	3	4	1+						17							21
SHELDUCK							1														
WIGEON																	2	4			
TEAL																	1				1
MALLARD	9	7	3	3	5	3	4	4					20	6			14	5		13	10
GADWALL																	2				
SHOVELLOR						1											3				
POCHARD		28		2								4							1		
TUFTED DUCK	9	72	31	7	12	12	2	12		6	6	3+		1			17	8		4	3
GOLDENEYE																					1
RUDDY DUCK		1	6		1	10	4	8		3	6	1		10			3				1
COOT	42	59	73	34	25	16	9	n/c	n/c	n/c	20	20	n/c	28			60	62	25	80	134

* Count submitted for W.W.T. winter census

† Other full counts

* Count incomplete

n/c Not counted

Breeding proved for Ruddy Duck, Tufted Duck, Canada Goose, Great Crested Grebe and Mallard.

Betley Mere Ringing Controls, 1992

SWALLOW

F640799	1 st year dead	16.09.89 18.03.92	Betley Mere Dunblane, Central Scotland	366 km.
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SAND MARTIN

H324436	juvenile caught	14.08.91 09.09.91	Betley Mere Icklesham, Surrey	314 km.
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BLACKBIRD

RH12390	Juvenile dead	07.06.92 20.09.92	Betley Mere, Staffs. Cooksgate, Betley, Staffs.	1 km
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REED WARBLER

H551579	1st year M caught	31.08.91 16.09.91	Betley Mere Herselt, Belgium	541 km
E531153	juvenile caught	02.08.87 05.04.92	Betley Mere Parc de Djoudj, Senegal, West Africa	4248 km.

REED BUNTING

F219191	07.05.89 caught caught	2nd yr. F 15.12.90 31.10.92	Betley Mere, Staffs. Bromham, Wiltshire Bromham, Wiltshire	183 km 183 km.
H887583	1st yr. M caught	27.09.92 29.10.92	Betley Mere, Staffs. Lewell, Dorchester, Dorset	257 km
H051272	?? Adult M.	?????? 04.10.92	S.W. Lancs. area Betley Mere, Staffs.	ca 50 km

MUTE SWAN

Z54184	Adult F	18.02.90 31.05.90 14.10.90 16.06.91 15.11.91 29.12.91	Rhyl, Clwyd, North Wales Inner Marsh Farm, Burton, Cheshire Rhyl, Clwyd, North wales Doddington, Cheshire Betley Mere, Staffs Westport Lake, Stoke-on-Trent, Staffs.
U01532	Adult F	11.01.92 09.02.92 21.05.92	River Dee, Cheshire Chester, Cheshire. Betley Mere, Staffs.
Z71706	Adult M	19.01.91 02.02.91 03.02.91 11.02.91 18.02.91 05.06.92	Winterley, Sandbach, Cheshire Alsager, Cheshire Westport Lake, Stoke-on-Trent, Staffs. Bottom Flash Winsford, Cheshire Winterley, Sandbach, Cheshire Betley Mere, Staffs.
U01558	2nd yr. F	07.06.92 14.06.92 21.06.92 11.10.92	Nantwich Nantwich, Cheshire Nantwich, Cheshire Betley Mere, Staffs.
U01570	1st yr. F	13.10.91 24.11.91	Park Hall Lake, Staffs
	[until]	05.01.92 26.01.92	Westport Lake, S-O-T, Staffs
	[until]	23.02.92 01.03.92	Winterley, Sandbach, Cheshire

MUTE SWAN (CONT.)

	[until]	19.09.92	Westport Lake, S-O-T.
		11.12.92	Betley Mere, Staffs
U01566	1st yr. M	13.10.91	Central Forest Park, S-O-T, Staffs
		11.10.92	Betley Mere, Staffs.
U01563	1st yr. M	13.10.91	Central Forest Park, S-O-T, Staffs.
		11.10.92	Betley Mere, staffs.
Z71775	1st yr. M	24.11.91	
	[until]	23.02.92	Westport Lake, S-O-T, Staffs
		11.10.92	Betley Mere, Staffs.
U01588	1st yr. F	27.10.91	
	[until]	23.02.92	Westport Lake, S-O-T, Staffs.
		11.10.92	Betley Mere, Staffs.
U01622	1st yr. M	24.11.91	
	[until]	29.12.91	Winterley, Sandbach, Cheshire
		11.10.92	Betley Mere, Staffs.
U01562	1st yr. Male	13.10.91	Central Forest Park, Hanley, S-O-T, Staffs.
		23.02.92	Westport Lake, Staffs
		11.10.92	Betley Mere, Staffs.

Acknowledgements

The Constant Effort Scheme project expenses for 1992 have been covered by a West Midland Bird Club Grant the receipt of which is very gratefully acknowledged

Permission to use the site has been kindly granted by Mr. F. Speed, and by English Nature.

On-site help with ringing was provided by Alan Robinson, in particular, and also by Janet Cameron and Alan Hancock. Swan movement information supplied by the Cheshire Swan Study Group (via D. Cookson).

Andrew Lawrence,
April, 1993.

Betley Mere Ringing and Bird Report, 1993

This report contains information for 1993 continuing from the previous reports for 1986-92.

The total number of birds handled during the summer was lower than in the previous year although this was, in part, due to a lessening of observer effort, with one of the usually most productive sessions being missed in mid-July, and also because no netting of Reed Buntings was attempted in October/November. Slightly lower number of adults of some species were trapped in the earlier part of the summer, but of most concern is the Swallow "total" - a single bird - this was the sum result of two evening trips during what has been the most productive time of the season during earlier years. The reed bed was used as a roost in 1993 by a few 10's of birds (which can be seen exiting just after dawn) but the large numbers present in the late 1980's have dwindled dramatically in recent years.

Constant Effort netting at the site indicated a lower number of adult Reed Warblers, the main species caught, than in 1992 (32 down from 42) with the proportion of ringed birds in the sample of the total adult population being 39.5% (15 out of 38) - see reports for 1991 and 1992 for a discussion of this.

Reed Warbler breeding success appears to considerably improved over 1992 - comparing the number of adults trapped in the Constant Effort index nets (32) with the total number of young birds (58) gives a figure of 1.81 young birds per adult, well up from the 1.21 young birds per adult in 1992.

Of the recoveries reported for the year, perhaps of most interest is that of the juvenile Reed Warbler trapped during July - this is the first time that a first-year bird of this species from another site has been trapped at Betley. Although exploratory visits from young birds would be expected this is the first time they have been demonstrated for Betley. Also interesting is the short period between ringing and retrapping of the bird especially since it was initially caught only shortly after leaving the nest, clearly this bird could have only stayed in its natal area for a few days after fledging.

Following on from last year's notes on the habitats available to birds on the south side of the mere, I have attempted some botanical species identification. Some 70 plants have been identified to species level, but as the list is very incomplete and as observer expertise is still to be improved, a listing of these is not made in this report

The usual regular monthly counts of wildfowl numbers were made during the winter months as part of the Wetland Bird Survey, these counts are to be continued into the summer months from 1994. A Ruddy Duck survey is to be conducted in 1994 as part of a national scheme to establish a figure for the number of these ducks breeding in Britain, this following concern over their interaction with the endangered Spanish population of the closely related White-Headed Duck

Other bird notes of interest:

16.05.93	200 Starlings in reed-bed.
22.05.93	1 Curlew, Canada Goose with goslings.
05.06.93	Male Grasshopper Warbler reeling in reed bed
27.06.93	1 Curlew, Starlings ~4000
24.07.93	17 male, 4 Female Ruddy Ducks, Canada Goose - 43.
03.08.93	11 Ruddy Ducks inc. 1 brood of ducklings, Tufted Ducks with ducklings.
26.09.93	Last Sedge Warbler recorded.
02.10.93	Last Reed Warbler recorded.

Constant Effort Ringing at Betley Mere, 1993

For the eighth consecutive year Betley Mere has contributed results to the Constant Effort Ringing Scheme (CES), part of the British Trust for Ornithology's integrated population monitoring programme; during 12 evenly spaced visits from May to August each year the same amount of netting is set for the same length of time, the number of birds caught provides a measure of population change. The table presents CES results for 1992-3. Note also that the figures for 1992 have had the totals for visit 8 deducted as this visit was missed in 1993

Table showing CES results and local and national changes for 1992 to 1993

Species	Adults				Juveniles				Productivity			
	No. trapped 1993	1992	Betley change	National change	No. trapped 1993	1992	Betley change	National change	1993 Betley	1993 National	1992 Betley	1992 National
Swallow	0	1	-∞	(n/a)	0	0	-	(n/a)	-	(n/a)	-	(n/a)
Wren	6	8	-25%	(+39%)	11	12	-8%	(+23%)	64%	(74%)	64%	(73%)
Duncock	3	3	0%	(+5%)	1	0	+∞	(+25%)	25%	(67%)	n/c	(63%)
Robin	0	0	+24%	(+24%)	4	4	0%	(+20%)	n/c	(78%)	n/c	(79%)
Blackbird	3	5	-40%	(-3%)	3	2	+50%	(+10%)	50%	(48%)	28%	(46%)
Sedge Warbler	14	24	-42%	(-13%)	28	11	+155%	(-13%)	67%	(56%)	35%	(57%)
Reed Warbler	32	42	-24%	(-1%)	58	45	+29%	(-10%)	64%	(45%)	54%	(49%)
Whitethroat	0	0	-	(+19%)	2	3	-33%	(-21%)	n/c	(61%)	n/c	(71%)
Garden Warbler	2	3	-33%	(+2%)	2	4	-50%	(+11%)	50%	(56%)	57%	(53%)
Blackcap	2	3	-33%	(-4%)	6	27	-78%	(+5%)	75%	(74%)	90%	(71%)
Chiffchaff	0	2	-∞	(+4%)	2	8	-75%	(+34%)	n/c	(79%)	82%	(74%)
Willow Warbler	11	11	0%	(+9%)	13	11	+18%	(+10%)	54%	(65%)	50%	(62%)
Treecreeper	0	1	-∞	(+2%)	0	4	-∞	(+26%)	-	(80%)	n/c	(77%)
Long Tailed Tit	0	5	-∞	(+39%)	0	8	-∞	(+44%)	-	(73%)	62%	(71%)
Willow Tit	1	0	+∞	n/a	3	3	0%	n/a	75%		n/c	
Blue Tit	5	9	-44%	(+9%)	15	14	+7%	(+71%)	75%	(83%)	63%	(75%)
Great Tit	3	5	-40%	(+9%)	2	15	-87%	(+13%)	40%	(79%)	75%	(78%)
Chaffinch	0	3	-∞	(+13%)	0	0	n/c	(-10%)	-	(42%)	n/c	(44%)
Bullfinch	9	4	+125%	(-1%)	1	0	+∞	(-5%)	10%	(42%)	n/c	(46%)
Reed Bunting	15	20	-25%	(+11%)	9	3	+200%	(-3%)	37%	(39%)	21%	(42%)

The first set of columns compare the adult population between the two years, with the percentages reflecting the population changes implied by the capture totals. Effectively, this section shows how well the birds of 1992 survived the pressures imposed upon them in the time before the 1993 breeding season.

The next set of columns similarly shows the changes in the number of birds in the juvenile population between the two years.

The final set of columns illustrates the breeding success (productivity) of the 1993 adults, by showing the percentage of juveniles within the total population. This treatment negates the effects of a variably sized adult population and gives an indication of their productivity - a 'better' year is indicated by a higher figure.

All figures in brackets show the national percentages for each category as published by the B.T.O. in the March/April issue of BTO News. The national figures are analysed using results from between 16 and 86 sites (depending on species) from all over Great Britain and Ireland which submitted results for both 1992 and 1993.

As usual, the major value of the Betley results lie in their contribution to the national figures. These figures have the advantage of a large sample size and are therefore statistically more significant than the much smaller set of data from Betley where results could possibly be affected from day to day by weather conditions or simple random chance. However, those species which breed in some numbers on the site do supply results that give an insight into the fortunes of the local populations:

The two *Acrocephalus* warblers, Reed and Sedge Warblers, showed a fall in adult numbers present in 1993, but a better breeding season was suggested by higher numbers of juveniles captured. Last year's high productivity of Blackcaps was not reflected by an increase in adult numbers and numbers of juveniles returned to the more usual figures of previous years. Few other species produced results that indicated significant changes had occurred between years.

Wildfowl at Betley Mere 1993

The results submitted for Betley Mere for the Wetland Bird Survey (WeBS) monthly winter census are shown below.

	* 17.01.93	* 23.01.93	* 13.02.93	* 14.03.93	† 31.04.93	† 22.05.93	† 02.06.93	* 27.06.93	† 04.07.93	† 24.07.93	† 28.07.93	† 03.08.93	* 19.09.93	† 26.09.93	† 03.10.93	* 17.10.93	* 14.11.93	* 12.12.93
LITTLE GREBE				1	1									2	2	3	2	
GT. CRSTD. GREBE			4	1	2	5	1	3		3	5	4		2		2	2	
CORMORANT																		
MUTE SWAN	2				2	2	2	2	1		3	3	7	6	9	6	3	3
GREYLAG GOOSE															2			
CANADA GOOSE				4	7	2	4			43		14			39			18
SHELDUCK																		
WIGEON			1															
GADWALL		4																
TEAL																		
MALLARD	8		2			4	12		18	12	85	31		9	11	161	19	10
GADWALL																		
SHOVELLOR		10	1															
POCHARD												2						
TUFTED DUCK	13		5	1	3	3	15		12	5	3	11		10	8		8	2
GOLDENEYE																		
MANDARIN			1															
RUDDY DUCK			1	3		1	4	4	6	21	9	11		0		1	2	
MOORHEN			4	3								2					5	
COOT	45		51	33	14	30	44		56	200	93	175	190	180	157	137	183	47

* Count submitted for Wetland Birds Survey

† Other full counts

* Count incomplete

n/c Not counted

Grebes - Little Grebe is undoubtedly under recorded at the mere and are far more often heard than seen, tending to use the reed bed margins more than the open water. There are probably about four or five pairs on the site during the summer. Great Crested Grebe are far more visible and the summer count is a good representation of breeding birds - 2 to 3 pairs.

Cormorant - A null count in 1993 but the mere is used by this species. Singles are commonly seen during the early morning ringing sessions but often fly over rather than settle. I suspect that they find disturbance a problem and are not seen when many people are near the mere. This species has been recorded during WeBS counts in 1994.

Mute Swan - The pair present on the mere during the breeding season did not appear to raise any young and the usual increase in numbers were noted in the late summer.

Ducks - Mallard, Tufted Duck and Ruddy Duck all produced young during 1993. Tufted Duck appear to maintain similar numbers throughout the year, but large numbers are rarely recorded. For Mallard, the count of 161 birds during October was of particular note. The expected exodus of Ruddy Ducks occurred over the winter period, this species is the subject of specific survey work during 1994 and hopefully a better idea of the number of breeding pairs will be obtained.

Coot/Moorhen/Water Rail - Coot is the most plentiful species of waterfowl present on the site with an estimated breeding population of 20-30 pairs. The Moorhen numbers represent only a small proportion of the population present during a count since they run for cover when anyone is seen. Water Rail has not been recorded on site during the breeding season although it maintains a presence during the autumn and winter months.

Betley Mere ringing totals 1993

The figures below show the number of individual birds handled at Betley during 1993

	RINGED 1993	RETRAPS 1993		RINGED 1993	RETRAPS 1993
KINGFISHER	1		CHIFFCHAFF	1	
G.S. WOODPECKER	1		WILLOW WARBLER	34	
SWALLOW	1		GOLDCREST	1	
WREN	20	6	LONG-TAILED TIT	8	
DUNNOCK	4	1	WILLOW TIT	4	
ROBIN	4		BLUE TIT	36	3
BLACKBIRD	7	1	GREAT TIT	5	1
SEDGE WARBLER	55	6	GOLDFINCH	1	
REED WARBLER	121	15	BULLFINCH	8	2
LES. WHITETHROAT	4		REED BUNTING	33	6
WHITETHROAT	5				
GARDEN WARBLER	5	1	TOTAL	363	42
BLACKCAP	14				
				<u>405</u>	

Betley Mere Ringing Controls, 1993

SWALLOW

H324467	1 st year	14.08.91	Betley Mere	
	caught	09.09.91	Pitsea Marshes, Basildon, Essex	256 km.

SEDGE WARBLER

H456545	Adult	07.07.92	Sankey Bridges, Warrington, Cheshire.	
	caught	01.05.93	Betley Mere	44 km.
H718810	1st year F	29.08.92	Icklesham, Sussex..	
	caught	03.08.93	Betley Mere.	314 km

REED WARBLER

H632691	Just fledged	17.07.93	Frodsham Marsh, Cheshire.	
	caught	03.08.93	Betley Mere	41 km

Acknowledgements

The Constant Effort Scheme project expenses for 1992 were covered by a West Midland Bird Club Grant the receipt of which is very gratefully acknowledged

Permission to use the site has been kindly granted by Mr. F. Speed, and approved by English Nature.

On-site help with ringing was provided by Alan Robinson, Alan Hancock, Neil Carter and Gareth Richardson.

Andrew Lawrence,

April, 1994.

Betley Mere Report 1994

This is the eighth report produced for Betley Mere and continues from the previous reports for 1986-93.

A slightly different approach has been taken this year in that some analysis of past results has been attempted (the Reed Warbler movements have been plotted) and some signs of diversification have appeared with the addition of a flowering plant list. A new investigation of the Swallow population using the mere has been started and provisional results from this are detailed, as are results of the Constant Effort ringing and waterfowl counts. Bird notes, and recoveries and totals generated from the ringing effort are also presented.

The site was once again run as a constant effort ringing site, contributing results to the British Trust for Ornithology's Constant Effort Scheme (CES). The national scheme has now been running as an official BTO project since 1984 with Betley contributing results for nine of its eleven years. Other national surveys that the mere has contributed data to are the monthly Wetland Bird Survey (WeBS), the 1994 Ruddy Duck Survey and the Nest Record Scheme.

Reed Warblers

Reed Warbler continues to be the main species trapped during the general mist netting sessions and as usual warrant a few lines of analysis. A total of 177 individuals were handled during 1994, over half of these being trapped in CES index nets and so provide results comparable with 1993. These CES results show the proportion of adults:juveniles was 40:56 or 1.4 young birds per adult, down from the figure of 1.81 juveniles per adult in 1993, suggesting that this species may have experienced a slightly less productive year in 1994 than

in 1993. Of the **overall** adult total trapped (58 birds) 15 were already ringed (26%), this low proportion (its usually around the 40-50% mark) may indicate a higher than usual number of young birds in the population, certainly the good number of controls (birds previously ringed elsewhere) caught in 1994 suggest that the region's breeding population of Reed Warblers was generally high and that some individuals were struggling to establish territories (and so having to move around the area).

Bird Notes

Great Crested Grebe

18.06 8 birds + 2 chicks.

Cormorant

16.01 15 birds overflowed mere; did not "land"

14.03 2 birds on mere

Mute Swan

28.05 Bred at mere in 1994 - 5 cygnets believed raised

Canada Goose

14.08 30 birds. Mere is used regularly by this species.

Shelduck

15.05 2 birds.

Mallard

10.08 135 - max count

Tufted Duck

16.07 2 pairs, 1 of which with 4 ducklings

Water Rail

28.05 Single bird calling- first summer record

27.11 3 on South side of Mere

Oystercatcher

18.06 3 birds over Mere

16.07 1 bird over Mere

Curlew

05.06 single bird

Common Sandpiper

27.04 single bird

Barn Owl

first record for the site in May; a single bird was observed on a few occasions during the year but almost certainly holds territory in the area *eg* seen on 22.01.95.

14.05 1 bird - seen at dawn

27.07 1 bird seen at dusk

Kingfisher

16.07 2 birds

L.S. Woodpecker

27.07 1 at Betley Mere *per* Alan Hancock and Neil Carter - first record since 1980.

Swallow

see later section (page 2)

One bird trapped during August had been ringed at the site as a juvenile exactly two years earlier.

House Martin

27.04 ca. 100 at Betley Mere

12.08 ~100 at Betley Mere

Grey Wagtail

29.08 2 birds

Sedge Warbler

27.04 First record for the year.

A total of 33 Sedge Warblers were trapped at the site during the entire 1994 season.

Reed Warbler

30.04 First record for 1994

09.10 Last record for 1994

Chiffchaff

late summer birds were more noticeable than usual at Betley Mere although only quantifiable data from Constant Effort site is 5 juveniles trapped in 1994 compared with 2 in 1993 - such low numbers can not be statistically significant.

Starling

27.07 ca. 300 in to roost.

15.08 ca. 1000 in to roost.

18.08 ca. 600 in to roost.

23.08 ca. 2500 in to roost.

2.09 ca. 3000 in to roost.

6.09 ca. 3000 in to roost.

08.09 ca. 2500-3000 in to roost

Reed Bunting

Sept/Oct this species is noticeable at the mere when on migration; during calm early mornings birds quite a large turn-over is apparent with birds often appearing to be travelling in pairs, usually with much interaction.

Swallows

Reference to previous Betley Mere reports will show that one of the features of late summer at the mere has been the presence of a Swallow roost in the reed bed. The birds generally feed over the mere for some time before entering the reed bed and settling down, and some quite impressive numbers of birds have been present in the past, with the roost holding up to 3000 birds. This is a low number in comparison with some other local roosts, such as those at Ford Green (Stoke) or Doxey Marshes (Stafford) where up to 20,000 are recorded annually, but the Betley roost nevertheless has on occasion held a substantial proportion of the area's birds. Two or three visits were usually made each year to the mere to ring a sample of these birds, and controls have shown that both birds from the local area and from further afield were using the roost.

In the last few years a decline in Swallow numbers had been noted and only a few tens of birds appear to have been using the reedbed as a roost site. However, few visits had been made in the evenings to attempt to catch the birds present and therefore exact numbers of roosting birds were unknown ... had there been a true drop in numbers or were we simply not there to observe them?

A particular effort was made in 1994 to visit the mere during the evenings from mid-August onwards, both to count numbers of Swallows present and to mark a sample of these birds. Mist nets were erected along the grassland/reedbed interface at the south side of the mere, and a taped call of the song was used to attract any birds present to this area where a proportion (usually about 10%) were trapped, ringed and immediately released. An estimate of the total numbers of Swallows present was also made. 16 visits were made in total, with the spacing between these being about every three days - we finished in late September with a good picture of Swallow occurrence at the site as shown in the below table:

Date	Estimated total present	Number ringed	No. Adults: Juveniles	No. of retraps from earlier sessions
27.07.94	200	60	3:57	n/a
04.08.94	30	3	1:2	0
12.08.94	200	40	1:38	0
15.08.94	75	13	2:11	0
18.08.94	200	36	5:32	0
22.08.94	20	5	0:5	0
25.08.94	30	2	0:2	0
29.08.94	300	29	1:29	0
02.09.94	200	21	2:19	0
05.09.94	475	39	3:36	0
08.09.94	1500	79	6:73	0
13.09.94	200	26	3:23	0
16.09.94	300	24	3:21	0
21.09.94	250	54	14:40	0
26.09.94	0	0	-	-
29.09.94	0	0	-	-

Late summer Swallow occurrence, and ringing results, 1994

These figures clearly show that birds were present at the site throughout most of August and September, although numbers present vary considerably from night to night. A single visit to the site during early mid-September would have recorded good numbers of birds, almost comparable to those recorded during the peak years of the 1980's, but there does seem to be an average of about 2-300 birds around which numbers fluctuate.

The population is clearly highly mobile, this being shown by the fact that not a single bird was caught twice throughout the course of the 1994 season. The origins of these birds have been shown to be a mix of relatively local and long distance birds (nestlings from Cheshire, Shropshire, Lancaster and Northern Ireland have been caught previously) and so the 1994 results fit in well with the idea of young Swallows moving dynamically around an area within 20-30 km of their birthplace, familiarising themselves with feeding and nesting sites before migrating slowly down the country mixing with others as they go. When you "tune-in" to these common birds, groups of 10-20 are noticeable during early autumn, moving around the area feeding as they go. This year's figures suggest peak numbers of migrating birds passing through the site in the second week of September.

Despite this season's work we are uncertain if there is still a roost of Swallows at the mere; certainly on the visits made after the peak passage of birds, the birds attracted to the tape did not stay at the mere once the tape was turned off, flying off *en masse* to the south east - it is suggested that a large roost, exact whereabouts unknown, is attracting these birds. Interestingly, no roosts of any size have been recorded at the traditional Staffordshire sites (see above) for at least two years, suggesting either a drop in numbers (unlikely to be of such magnitude), or that the species is not adverse to changing its roost sites from year-to-year.

In 1995 further work concentrated around consecutive dates is needed to assess daily turnover at the site and also to provide comparative figures with this year's data. Work away from the mere is would also be useful to establish where swallows are roosting - the Maer/Eccleshall area may well be a good starting point.

Andrew Lawrence and Alan Robinson

Constant Effort Ringing

For the ninth consecutive year Betley Mere has contributed results to the

Constant Effort Ringing Scheme (CES) run by the BTO. During 12 evenly spaced visits from May to August each year the same amount of netting is set for the same length of time, the number of birds caught provides a measure of population change.

The table below presents the CES results for Betley Mere for 1993-4. Please note that the figures for 1994 have had the totals for visit 8 deducted as this visit was missed in 1993 - this accounts for the discrepancy in some compared figures earlier in this report.

National results from the CES are usually published in

April and are therefore currently not yet known (nyk) - the structure of this table is, however retained for future use (this report has appeared earlier than usual!).

The first set of columns of this

Betley Mere CES results 1994

Species	Adults				Juveniles				Productivity			
	No. trapped 1994	Betley 1993	National change	National change	No. trapped 1994	Betley 1993	National change	National change	1994 Betley	1994 National	1993 Betley	1993 National
Swallow	0	0	-∞	(nyk)	0	0	-	(nyk)	-	(nyk)	-	(n/a)
Wren	8	6	+33%	(nyk)	8	11	-27%	(nyk)	50%	(nyk)	65%	(74%)
Dunnock	0	3	-∞	(nyk)	0	1	-∞	(nyk)	-	(nyk)	25%	(67%)
Robin	0	0	-	(nyk)	7	4	+75%	(nyk)	-	(nyk)	-	(78%)
Blackbird	5	3	+66%	(nyk)	6	3	+100%	(nyk)	54%	(nyk)	50%	(48%)
Sedge Warbler	12	14	-14%	(nyk)	8	28	-71%	(nyk)	40%	(nyk)	66%	(56%)
Reed Warbler	40	32	+25%	(nyk)	45	58	-22%	(nyk)	53%	(nyk)	64%	(45%)
Whitethroat	0	0	-	(nyk)	0	2	-∞%	(nyk)	-	(nyk)	-	(61%)
Garden Warbler	0	2	-∞	(nyk)	1	2	-50%	(nyk)	-	(nyk)	50%	(56%)
Blackcap	2	2	0%	(nyk)	3	6	-50%	(nyk)	60%	(nyk)	75%	(74%)
Chiffchaff	0	0	-	(nyk)	5	2	+150%	(nyk)	-	(nyk)	-	(79%)
Willow Warbler	7	11	-36%	(nyk)	6	13	-54%	(nyk)	46%	(nyk)	54%	(65%)
Treecreeper	0	1	-∞	(nyk)	0	0	-	(nyk)	-	(nyk)	-	(80%)
Long Tailed Tit	4	5	-20%	(nyk)	3	0	-	(nyk)	43%	(nyk)	-	(73%)
Willow Tit	0	1	-∞	n/a	2	3	-33%	(nyk)	-		75%	
Blue Tit	5	5	0%	(nyk)	7	15	+7%	(nyk)	58%	(nyk)	75%	(83%)
Great Tit	3	3	0%	(nyk)	3	2	+50%	(nyk)	50%	(nyk)	40%	(79%)
Chaffinch	2	0	+∞	(nyk)	1	0	+∞	(nyk)	33%	(nyk)	-	(44%)
Bullfinch	1	9	-89%	(nyk)	0	1	-∞	(nyk)	-	(nyk)	10%	(42%)
Reed Bunting	14	15	-7%	(nyk)	6	9	-33%	(nyk)	30%	(nyk)	38%	(39%)

table compare the adult population between the two years, with the percentages reflecting the population changes implied by the capture totals. Effectively, this section shows how well the birds of 1993 survived the pressures imposed upon them in the time before the 1994 breeding season.

The next set of columns similarly shows the changes in the number of birds in the juvenile population between the two years.

The final set of columns illustrate the breeding success (productivity) of the 1994 adults, by showing the percentage of juveniles within the total 1994 population, this can then be compared with the previous year's figure. This treatment negates the effects of a variably sized adult population and gives an indication of the productivity - a 'better' year is suggested by a higher figure.

As usual, the main value of the Betley results lie in their contribution to the national figures. The national figures have the advantage of a large sample size and are therefore statistically more significant than the much smaller set of data from Betley where results can possibly be affected from day to day by weather conditions or simple random chance.

It is always difficult to decide which species have been trapped in higher enough numbers to warrant discus-

sion in the text and in an attempt to set a baseline, those species of which 10 or more adults or juveniles have been trapped will be reviewed - its as good a figure as any! Any long term declines will be noted if necessary.

Wren

8 adults and 8 juveniles were trapped during the standardised sessions during 1994. This compares with 6 adults and 11 juveniles trapped during the equivalent sessions in 1993. Little change.

Sedge Warbler

12 adults and 8 juveniles were trapped during the standardised sessions during 1994. This compares with 14 adults and 28 juveniles trapped during the equivalent sessions in 1993. These figures suggest a big drop in breeding success for this species during 1994. Little change for adults can be seen in these figures, but that total is biased to some extent by a first visit catch of 8 adults [males] which had just arrived and were attempting to set up territory. Sedge Warblers always arrive in good numbers at the start of the season but very few of these stay to breed being, I think, ousted from territory within a few days by Reed Warblers which generally arrive a little later. Occasionally, the first visit of the year coincides with this initial influx of Sedge Warblers, and this I believe happened in 1994; consequently the adults show up in the

cont...

Constant Effort Ringing (cont.)

CES figures to a greater extent than perhaps they should.

Reed Warbler

40 adults and 45 juveniles were trapped during the standardised sessions during 1994. This compares with 32 adults and 58 juveniles trapped during the equivalent sessions in 1993. As for Sedge Warbler, a drop in breeding success is suggested by these figures, however, adult survival appears to have improved ... >> more pressure on resources>>lower breeding success??

Willow Warbler

7 adults and 6 juveniles were trapped during the standardised sessions during 1994. This compares with 11 adults and 13 juveniles trapped during the equivalent sessions in 1993. These figures may be demonstrating the slow decline this species is experiencing over the years at Betley - habitat change may be responsible locally although a national decline in numbers has been reported.

Certainly, 3 or 4 pairs were breeding in the netting area when I first started at the site (1985), only one male was singing regularly in 1994

Blue Tit

5 adults and 7 juveniles were trapped during the standardised sessions during 1994. This compares with 5 adults and 15 juveniles trapped during the equivalent sessions in 1993 - suggesting lower breeding success in 1994

Reed Bunting

14 adults and 6 juveniles were trapped during the standardised sessions during 1994. This compares with 15 adults and 9 juveniles trapped during the equivalent sessions in 1993. Little change.

Ringing totals

The following table shows the totals for birds ringed

and retrapped at the

mere during 1994

SPECIES CAUGHT	E.G	PULLI	TOTAL RINGED	PRE-94	TOTAL
SPARROWHAWK	2	0	2	0	2
SAND MARTIN	1	0	1	0	1
SWALLOW	428	0	428	3	431
HOUSE MARTIN	2	0	2	0	2
WREN	29	0	29	3	32
DUNNOCK	1	0	1	0	1
ROBIN	7	0	7	0	7
BLACKBIRD	11	0	11	1	12
REDWING	1	0	1	0	1
SEDGE WARBLER	31	0	31	2	33
REED WARBLER	158	0	158	19	177
LESSER WHITETHROAT	2	0	2	0	2
GARDEN WARBLER	1	0	1	0	1
BLACKCAP	9	0	9	0	9
CHIFFCHAFF	12	0	12	0	12
WILLOW WARBLER	19	0	19	1	20
LONG-TAILED TIT	21	0	21	6	27
WILLOW TIT	3	0	3	0	3
BLUE TIT	30	0	30	6	36
GREAT TIT	7	0	7	1	8
TREECREEPER	3	0	3	0	3
CHAFFINCH	3	0	3	1	4
SISKIN	2	0	2	0	2
REDPOLL	6	0	6	0	6
BULLFINCH	2	0	2	2	4
REED BUNTING	31	4	35	5	40
SPECIES TOTAL (26)	822	4	826	50	876

Recoveries

A good “crop” of recoveries for 1994 all of which, happily, were caught rather than found dead. Of particular note is the Reed Warbler trapped on the East coast, near Felixstowe; this is the first recovery that we have had of a Betley bird moving to the east coast during its migration. The Icklesham recoveries show the typical route by which most of the young birds exit this country. The Frodsham recovery of a young Betley bird shows the “random” local movements made by a bird during its post-juvenile dispersal - this bird was probably familiarising itself with the local area and, possibly by following water courses, found itself in north Cheshire. Previous such movements made by young Betley birds have seen them found at Market Drayton, Warrington, and Knutsford, (does this suggest an initial northerly movement, ... or does it map the distribution of the region’s ringers?).

The Swallow recoveries, particularly that of the nestling, are slowly helping to build the picture of where the individual birds seen around the mere have come from (see section above).

Swallow

J288815	1st year	29.07.94	Woolston Eyes, Warrington, Ches.	
	caught	21.09.94	Betley Mere	42 km.
J408879	nestling	03.08.94	Wennington, Lancaster, Lancs.	
	caught	02.09.94	Betley Mere	123 km.

Reed Warbler

E712590	1st year M	31.07.93	Cop Mere, Staffs.	
	caught	03.07.94	Betley Mere	19 km.
F025294	1st year	29.07.89	Maer Hall, Staffs.	
	caught	07.08.93	Cop Mere, Staffs.	9 km.
	caught	23.07.94	Betley Mere	10 km
H407657	Adult F	22.06.91	Nelson Bog, Glamorgan.	
	caught	16.07.94	Betley Mere	163 km.
H551846	1st year	08.07.92	Betley Mere	
	caught	19.07.94	Bidston, Wirral, Merseyside.	63 km.
H887849	1st year F	24.07.93	Betley Mere	
	caught	30.07.94	Icklesham, Sussex.	314 km
J332835	1st year	05.09.93	Windsor, Berks.	
	caught	23.07.94	Betley Mere.	215 km.
J389720	Adult	05.06.94	Betley Mere.	
	caught	27.06.94	Frodsham, Cheshire.	39 km.
J389904	1st year	10.08.94	Betley Mere.	
	caught	26.08.94	Felixstowe, Suffolk	275 km.

Sedge Warbler

J389753	1st year	03.07.94	Betley Mere.	
	caught	27.07.94	Icklesham, Sussex	314 km

Blackcap

H887844	1st year M	24.07.93	Betley Mere.	
	caught	02.05.94	Anzegem, West-Vlaanderen, Belgium	468 km.

Plant list

The following list of plants have been compiled during 1993 and 1994 and refer mainly to the south west side of the mere. The list is clearly not complete - it is expected that any new species identified in the future will be listed independently. All flowers have been identified using the popular handbook; Wild Flowers of Britain and Northern Europe by Fitter, Fitter and Blamey (1985) and some of the more critical species have been omitted until I've sorted them out (which may take some time). Hopefully a fuller list for the entire SSSI can be generated by future visits to different habitats eg the Alder carr woodland has not yet been properly investigated. Any help with identification would be very welcome.

Yew _____ *Taxus baccata*

Crack Willow _____ *Salix fragilis*
 Goat Willow _____ *Salix capraea*
 Silver Birch _____ *Betula pendula*
 Alder _____ *Alnus glutinosa*
 Pedunculate Oak _____ *Quercus robur*
 Field Maple _____ *Acer campestre*
 Nettle _____ *Urtica dioica*
 Amphibious Bistort _____ *Polygonum amphibium*
 Redshank _____ *Polygonum persicaria*
 Water Pepper _____ *Polygonum hydropiper*
 Common Sorrel _____ *Rumex acetosa*
 Sheeps Sorrel _____ *Rumex acetosella*
 Bog Stichwort _____ *Stellaria alsine*
 Red Campion _____ *Silene dioica*
 White Campion _____ *Silene alba*
 Ragged Robin _____ *Lychnis flos-cuculi*
 Yellow Water Lily _____ *Numphar lutea*

Plant list (cont.)

Marsh Marigold	<i>Caltha palustris</i>	Greater Water Parsnip	<i>Sium latifolium</i>
Meadow Buttercup	<i>Ranunculus acris</i>	Fools Watercress	<i>Apium nodiflorum</i>
Creeping Buttercup	<i>Ranunculus repens</i>	Yellow Loosestrife	<i>Lysimachia vulgaris</i>
Lesser Spearwort	<i>Ranunculus flammula</i>	Field Bindweed	<i>Convolvulus arvensis</i>
Celery Leaved Buttercup	<i>Ranunculus sceleratus</i>	Marsh Bedstraw	<i>Galium palustre</i>
Cuckoo Flower	<i>Cardamine pratensis</i>	Common Cleavers	<i>Galium aparine</i>
Meadowsweet	<i>Filipendula ulmaria</i>	Water Forgetmenot	<i>Myosotis scorpioides</i>
Bramble	<i>Rubus fruticosus</i>	Skullcap	<i>Scutellaria galericulata</i>
Raspberry	<i>Rubus idaeus</i>	White Dead Nettle	<i>Lamium album</i>
Marsh Cinquefoil	<i>Potentilla palustris</i>	Common Hemp Nettle	<i>Galeopsis tetrahit</i>
Tormentil	<i>Potentilla erecta</i>	Hedge Woundwort	<i>Stachys sylvatica</i>
Hawthorn	<i>Crataegus monogyna</i>	Water Mint	<i>Mentha aquatica</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>	Gipsywort	<i>Lycopus europaeus</i>
Greater Birdsfoot Trefoil	<i>Lotus uliginosus</i>	Bittersweet	<i>Solanum dulcamara</i>
Red Clover	<i>Trifolium pratense</i>	Devilsbit Scabious	<i>Succisa pratensis</i>
White Clover	<i>Trifolium repens</i>	Pimeapple Mayweed	<i>Chamomilla suaveolens</i>
Red Current	<i>Ribes rubrum</i>	Marsh Ragwort	<i>Senecio aquaticus</i>
Rosebay Willowherb	<i>Epilobium angustifolium</i>	Spear Thistle	<i>Cirsium vulgare</i>
Great Willowherb	<i>Epilobium hirsutum</i>	Marsh Thistle	<i>Cirsium palustre</i>
Square stemmed Willowherb	<i>Epilobium tetragonum</i>	Prickly Sow Thistle	<i>Sonchus asper</i>
Purple Loosestrife	<i>Lythrum salicaria</i>	Dandelion	<i>Taraxacum vulgare</i>
Marsh Pennywort	<i>Hydrocotyle vulgaris</i>	Common Catsear	<i>Hypochaeris radicata</i>
Angelica	<i>Angelica sylvestris</i>	Yellow Iris	<i>Iris pseudacorus</i>
Ground Elder	<i>Aegopodium podagraria</i>		

Duck Counts 1994

	16.01.94	13.02.94	14.03.94	12.04.94	27.04.94	30.04.94	14.05.94	28.05.94	18.06.94	26.06.94	16.07.94	23.07.94	10.08.94	14.08.94	19.08.94	29.08.94	11.09.94	18.09.94	21.10.94	27.11.94
	*	*	*	*	†	†	*	†	*	†	*	†	†	•	*	†	*	†	*	*
LITTLE GREBE			3							1						1			1	3
GT. CRSTD. GREBE	2	4	8	6	4	3	6	4	8	3	2/3	2	3		4	2	2	2	1	2
CORMORANT			2																	
MUTE SWAN	3	2	2	2	2	2	2	2/6	2/6	2/6	2/6	8	2/6	2/6	2/6	2/6	2/5	2/6		2
GREYLAG GOOSE																				
CANADA GOOSE		2	7	8	6	4	2	5						30	36				36	
SHELDUCK																				
WIGEON																				
GADWALL																				
TEAL													1					2		
MALLARD	12	24	5	0	3	6	0	3	9	7	19	27	135		61	26	31	18	3	4
SHELDUCK							2													
SHOVELLOR																				
POCHARD	4	5	7		1		2					2							3	
TUFTED DUCK	10	22	19	11	4	16	3	4		7	4/4	10	8			4	13	30		
GOLDENEYE																				
MANDARIN																				
RUDDY DUCK			7	5	10	3	9	7	12	6	17	32	10	6	22	17	18	7	3	
MOORHEN			3	2			1		3		6	2	4		4	1	8		15	5
COOT	80	85	56	23	30	24	18	26	54	20	86	85	140	124	115	140	138	100	137	172

* Count submitted for Wetland Birds Survey

e.g. 2/5 = total of 2 adults / total of 5 dependent young

† Other full counts

• Count incomplete

n/c Not counted

Reed Warbler movements

This section presents the movements made by 38 Reed Warblers to and from Betley Mere during the ten year period, 1985 - 1994. Three main categories have been used:

1. movements made by young birds during the summer in which they hatched
2. movements made by birds which were originally ringed during their hatching year, and were then caught elsewhere after their first year.
3. movements by birds which were ringed when adult (ie when at least in their second year)

1. Movements made in their fledging year, by young Reed Warblers, 1985-1994

- ★ - control of bird originally ringed at the mere
- - bird ringed elsewhere, then controlled at the mere

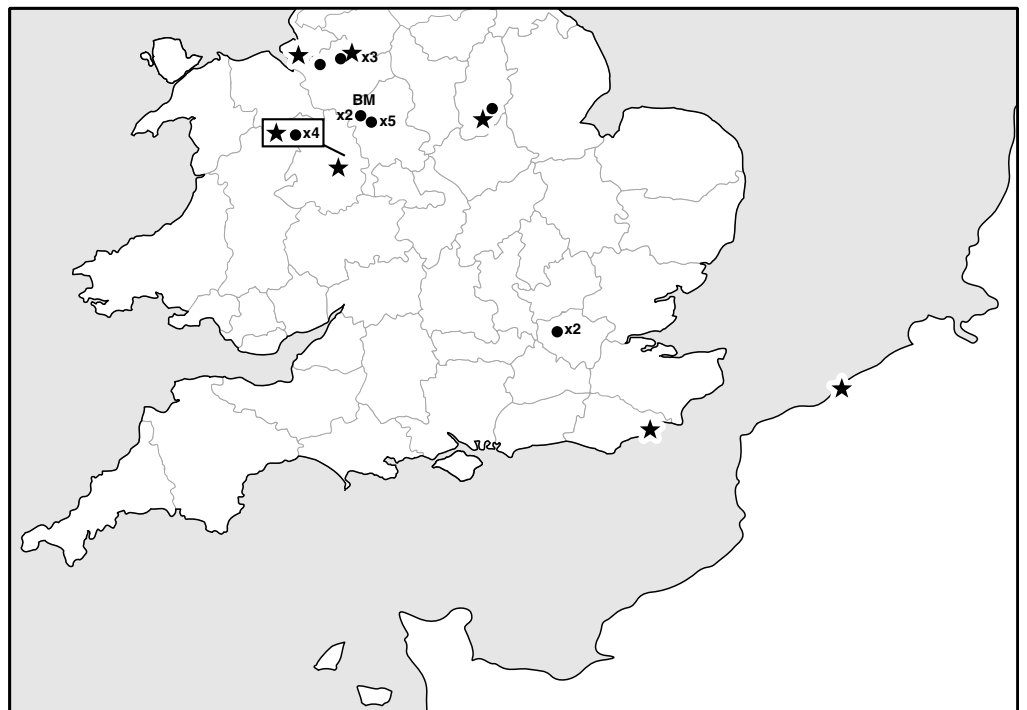
*The recovery of the bird to the SW of the mere is the only incidence of a Reed Warbler from Betley Mere being found dead, rather than being controlled by another ringer



2. Movements made by birds ringed as juveniles, then caught again in subsequent years, 1985-1994

- ★ - control of bird originally ringed at the mere
- - bird ringed elsewhere, then controlled at the mere

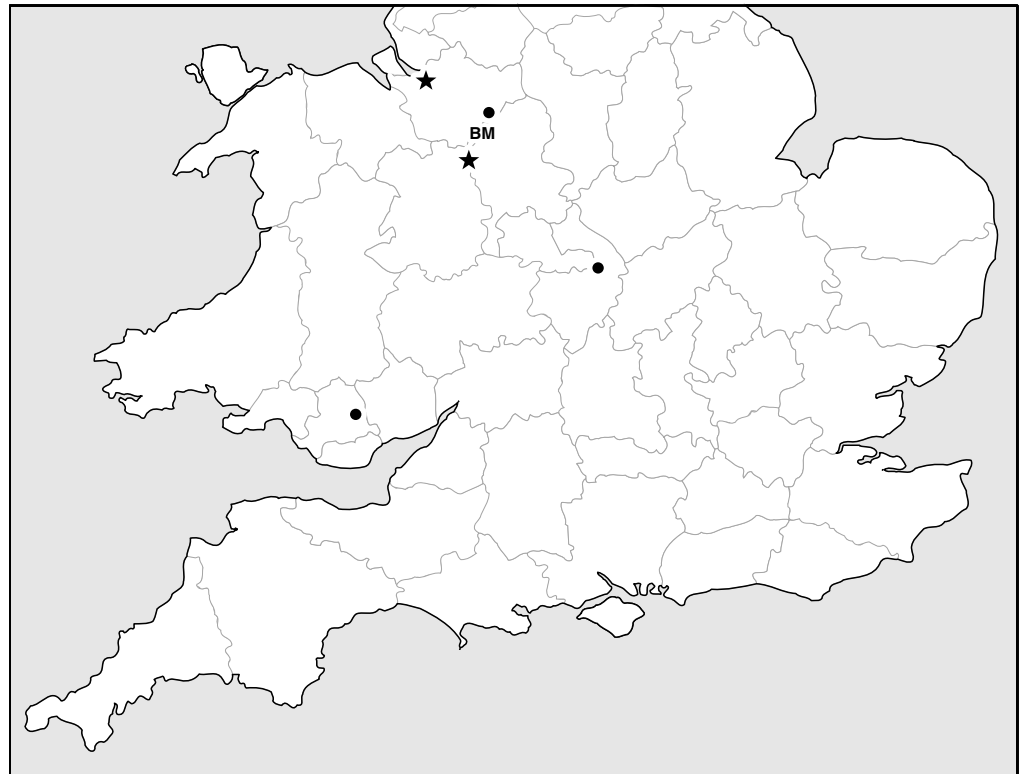
• also included, but not plotted here, is a bird ringed at the mere and controlled in Senegal, 5th April 1992



Reed warbler movements (*cont.*)

3. *Movements of Reed Warblers ringed when adult, 1985-94.*

- ★ - control of bird originally ringed at the mere
- - bird ringed elsewhere, then controlled at the mere



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Andrew Lawrence
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