

## Indicator 1 - Population of Water Voles

The water vole (*Arvicola terrestris*) is one of the 12 priority species of British terrestrial mammals identified in the Biodiversity Steering Group Report, as needing conservation action. To implement the Biodiversity Action Plan, we need to find out where water voles occur and how abundant they are. The presence of water voles is an indication of good water quality and healthy river bank-side habitats.

Threats to water voles include habitat loss, population fragmentation, fluctuations in water levels, persecution, predation and pollution. A register of 100 sites to be monitored on a regular basis has been established by the Hertfordshire Biological Records Centre (HBRC); the aim being to survey 25 stretches of river bank for water voles each year.

The following table shows the results of the monitoring survey for the year 1998/99. Evidence of water voles was found at 16 of the 25 sites investigated. Two of these sites were stretches of river which water voles had re-colonised since 1996. Water voles were absent from 9 sites; one of which had been a positive area for this species in 1996.

Recently remedial action in the River Ver has successfully restored flows to the upper reaches of the river, resulting in evidence of water voles re-colonising these areas. Otters are also continuing to thrive and spread in some of Hertfordshire's rivers. Recent research has shown that where otters are found, mink (a predator of water voles) are less likely to be present. However, whilst there are signs of improvement in some of the river systems, other riverside habitats are continuing to decline with further loss of water voles.

Since 1996, the national methodology adopted for water vole surveys has been refined to obtain a more accurate picture of water vole abundance as well as distribution. It is hoped that during the year 2000, a major re-survey of all sites using this improved methodology can be achieved.

## Water Vole monitoring sites in Hertfordshire

District	River (ditch or pond)	Number of monitoring sites	Sites checked 1998/99	Presence of water voles
North Herts	Hiz	3	2	Present in 2 sites
	Purwell	1		
	Oughton	1		
	Ivel	1		
	Rhee	1		
	Mimram	4	2	Present in 2 sites
East Herts	Stort	9		
	Ash	6	4	Present in 1 site. Absent in 3 sites
	Rib	5	4	Present in 3 sites. Absent in 1 site
	Beane	6	1	Absent
	Mimram	3	1	Present
	Lea	6	1	Present
	Lea	3	1	Present
St Albans/ Harpenden	Lea	3	1	Present
	Ver	6	2	Present in 2 sites
	Colne	3	1	Present
Stevenage	Stevenage Brook	1		
Welwyn/Hatfield	The Commons	1		
	Lea	3		
	Mimram	1		
	Northaw Brook	1		
	Cuffley Brook	1		
	Fir & Pond sWoods	1		
	Mimmshall Brook	1		
Hertsmere	Colne	2		
	New River	1		
Broxbourne	Turnford Brook	1	1	Present
	Lea	5		
	Tring Reservoir	1		
Dacorum	GUC/Bulbourne + ditches	6	2	Absent in 2 sites
	Gade	5		
	Gade	1		
	GUC by Gade	1		
Watford	Colne	1		
	Gade	1		
	Stockers Lake	1		
	Colne Valley Pits	1		
	Chess	5	3	Absent in 2 sites Positive in 1 site
<b>Total</b>		<b>100</b>	<b>25</b>	

## Indicator 2 - A sample of key bird species

By agreement with the British Trust for Ornithology, three key indicator species of birds have been selected for which there is sufficient data in Hertfordshire, derived from their ongoing Breeding Bird Survey. The bird species selected as constant monitoring indicators are: Skylark (indicative of the "health" of the farmed landscape), Song Thrush (reflecting trends within urban and suburban landscapes), and Willow Warbler (reflecting changes in woodland species communities).

For each of these species, quantitative data over three seasons has been collected from 50 or more randomly selected 1x1 km squares of the Ordnance Survey grid across Hertfordshire, and gathered according to standard national methodology. The latest available figures are up to 1998. An index of percentage change year-on-year has been calculated by the BTO for these and other species, both at a national level, and now, from specifically Hertfordshire. A detailed report on these is published annually in the "Hertfordshire Bird Report", part of the *Transactions of the Hertfordshire Natural History Society*, and nationally by the BTO in its annual report on the Breeding Bird Survey.

### Skylark

The Skylark is on the national Red List of birds of conservation concern, owing to a steep decline in its numbers across the country. This is considered to be due to major changes in the management of especially large-scale arable farming. The table below shows its population trend in Hertfordshire between 1995 and 1998, and compares this index with the national trend between 1994-8.

#### Skylark population trend

1995-6	1996-7	1997-8	National trend: 1994-8
-4	-7	+20	-5

The increase in Hertfordshire for the last year was statistically significant, and compares with the long-term trend downwards for this species elsewhere. However, national index figures for this species for 1997-8 also showed a small, but statistically insignificant, increase. It is unclear why local populations should have increased, but the effects of set-aside, subtle changes in arable management through the introduction of conservation headlands, etc. may all have had their effect.

### Song Thrush

The Song Thrush is also on the Red List of birds of conservation concern owing to a long-term and very substantial decline in its populations nationally. From being one of the commonest garden birds, it is now quite scarce, although still widespread.

#### Song Thrush population trend

1995-6	1996-7	1997-8	National trend: 1994-8
+4	-18	+6	-1

The reasons for the national decline in this species remain unclear, but increased use of molluscicides in both gardens and farmland has been blamed (snails being a major food resource for the species). Poor winter survival owing to reduced food availability; poor chick survival owing to summer droughts; and reduction in the kind of scrubby habitat generally needed for breeding have

all been identified as possible causes. The recent increase in Hertfordshire is welcome, but not yet statistically significant. Nationally, the population is currently fairly stable, but at an historically very low level.

## Willow Warbler

The Willow Warbler is a summer migrant which winters south of the Sahara, and depends on young scrub or regularly coppiced woodlands for its breeding habitat. Until recently it was the most widespread and abundant warbler species, but has been showing a marked decline locally in recent years. Nationally, however, it has shown a recent upward trend in population, which is statistically significant since 1994.

### Willow Warbler population trend

1995-6	1996-7	1997-8	National trend: 1994-8
-7	-24	-7	+25

The difference between trends nationally and locally would suggest that its local problems are not due to changes in its wintering grounds or on migration. The sharp decline locally in 1996-7 was statistically significant, but not the 1997-8 decline. The overall trend across the three years locally shows a steady reduction in its population, as compared to its stable status in 1990. Possible explanations are uncertain, but could include reduced survival locally during the breeding season owing to food shortages in drought years, especially affecting young birds. Reduction in habitat quality and extent could be a factor, as woodlands in Hertfordshire have ceased to be managed, and as scrub areas have either been cleared or have become too mature for the species. The latter may well be the case, as its sibling, the Chiffchaff, a bird of mature woodland, has shown an increasing trend recently.

## Indicator 3 - Number of Wildlife Sites in Hertfordshire

The total number of Wildlife Sites identified in Hertfordshire at September 1999 was 1774. During the last year a number of Wildlife Sites are known to have been lost either because of development or because the site has lost its value. Of the 13 lost sites across the county: 4 have been destroyed by development, 3 have been ploughed and 6 have lost their ecological interest or been degraded.

### Number of lost Wildlife Sites per District/Borough 1999

Authority	Lost sites	Authority	Lost sites
Broxbourne	0	St Albans	1
Dacorum	1	Stevenage	1
East Herts	1	Three Rivers	1
Hertsmere	2	Watford	0
North Herts	5	Welwyn Hatfield	1

In contrast, there have been 40 new Wildlife Sites selected, mainly on the basis of new data coming into the Records Centre. The majority of these sites are in North Herts District, and one is in Hertsmere Borough. These new sites are now in the revised local plans for these two authorities, along with the other Wildlife Sites.

## Total Number of Wildlife Sites per District/Borough

Authority	1998	1999
Broxbourne	92	92
Dacorum	220	219
East Herts	518	517
Hertsmere	101	100
North Herts	293	328
St Albans	175	174
Stevenage	40	39
Three Rivers	132	130
Watford	29	29
Welwyn Hatfield	184	183

## Monitoring the Natural Environment in Hertfordshire, 1998-1999

Other work on monitoring the natural environment has gathered pace following the launch of the Hertfordshire Biodiversity Action Plan. Currently, there is no formal reporting procedure for the Plan as a whole, however the following can be reported:

- White-clawed Crayfish This priority species has been surveyed by the HBRC in conjunction with the Herts & Middx Wildlife Trust, the University of Hertfordshire and the Environment Agency. 51 sites have been visited. Only 4 sites with the native crayfish were found, mostly on the River Ash. Most other rivers were colonised by escaped Signal Crayfish, some seen to be diseased. Turkish Crayfish were also found at two sites.
- Dormouse The Herts & Middx Wildlife Trust have organised monitoring of this species, surveying about 20 known sites on a rolling programme, 6 being monitored on a regular basis.
- Natterer's Bat About 200 old listed barns were surveyed through the HBRC for bats, the Natterer's Bat being a priority species. Over half had up to four species of bat. With the increasing trend to barn conversion this information is vital for bat conservation.
- Great Crested Newts Previous survey work was augmented by the HBRC with a commissioned survey of about 200 ponds. This focused on known sites, and was aimed at identifying additional sites within the general areas concerned. Several previously unrecorded sites were discovered. Full details have yet to be analysed, but many ponds were also found to be dry.
- Allotments The importance of allotments for reptiles has long been recognised. The HBRC commissioned a survey of 62 sites, mainly within urban areas threatened by development, to identify key sites for reptiles. Thirteen allotments had been destroyed. Of the remaining sites, half were found to have reptiles, mainly slow worms and grass snakes.
- Grassland Heritage Sites A programme of habitat monitoring of grassland sites, previously set up with management agreements as "Heritage Sites" by the County Council, was carried out by HBRC. Seventeen sites had detailed habitat maps compiled and were compared with similar maps produced in the late 1980's. Four sites had deteriorated markedly, of which three were swamp sites and one acid grassland. Neglect, poor grazing management, or excessive mowing

were the causes. Chalk grassland sites had fared best, while other acid grasslands/heath sites were mainly holding their own.

- Red Data species Work to compile detailed information on red data species in Hertfordshire has progressed, with the help of the Herts Natural History Society, through the HBRC. This has concentrated on invertebrates, especially beetles, butterflies, molluscs and grasshoppers etc.

Work on monitoring the Hertfordshire BAP in the Chilterns is being co-ordinated by the Chilterns AONB office.

Other monitoring and survey work continues on a wide range of areas, including:

Dragonflies and Damselflies The compilation of county data on these insects has been undertaken jointly between the British Dragonfly Society and the Herts Natural History Society (HNHS), with the help of the HBRC.

Higher Plants The Hertfordshire Flora Survey, carried on jointly by the HNHS, the Botanical Society of the British Isles (BSBI) and the HBRC has completed the bulk of field survey this year. A summary of 200,000 records was supplied to the BSBI's national "Atlas 2000".

Mammals The Mammal Society has been undertaking a survey of the localised Yellow-necked Mouse, and the Herts Mammal Group has carried out work locally.

Birds The Hertfordshire Bird Club has been co-operating with national surveys of Willow Tit and Nightingale during the year, as well as its annual participation in wetland bird surveying, and in more local studies of endangered Tree Sparrows.

Butterflies The Herts & Middx branch of Butterfly Conservation has concentrated on completing fieldwork for the national "Butterflies for the New Millennium" project.

Veteran Trees Survey work has started on Hertfordshire's historic trees, through a co-operative partnership between the University of Hertfordshire, HNHS, the Herts & Middx Wildlife Trust, the Countryside Management Service, and HBRC.

Orchards Continued surveying of old orchards has been carried out through HBRC, in association with the Hertfordshire Orchards Initiative. Survey data now covers Dacorum, Three Rivers, Stevenage, Watford and North Herts. Of some 2200 orchards existing in these areas in 1880, only 1200 have survived into the 1990's, and most are in poor condition.

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