

## Shropshire Biodiversity Action Plan



### Dipper (*Cinclus cinclus*)



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Dippers feed almost exclusively on larvae that live on the stony beds of shallow fast flowing streams, usually at the rapids, and are never far from such waters. They usually stay on their breeding grounds throughout the year, and might be seen at any time, either bobbing up and down on the rocks in the middle of the stream, or flying low over the water.

Breeding usually starts in late March or early April, sometimes earlier, and nesting pairs will attempt to raise two broods.

Though some Dippers nest in natural cavities along the riverbank, others build nests on ledges on bridges, and they take readily to nest boxes located directly above the flowing water, where predators are unable to reach them. They are very territorial, so nests are evenly spaced on each stretch of river. In the south Shropshire Hills, the spacing is around 1 kilometre. Once some nests are found, and the average distance between them established, it is possible to work out if any territories are unoccupied.

Because they are restricted to, and dependent on, food from the river, they are relatively easy to monitor and a good indicator of the water quality in the river. Pairs nesting along acidic streams tend to lay their eggs later, lay smaller clutches, raise smaller broods and raise only one brood.

## 1 Objectives and Targets

### 1.1 Objectives

- A. In the short term, maintain existing populations and range of Dipper in Shropshire.
- B. In the longer term, reverse the decline in Dipper population, and restore its previous population and range
- C. Establish and maintain a comprehensive understanding of the distribution, status and ecological requirements of Dippers in Shropshire through research, survey and monitoring.
- D. Utilise Dipper distribution data to assess the water quality in streams and rivers
- E. Promote communication, education and awareness of the status and needs of Dipper

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### 1.2 Targets

- Restore the population to the 1985-90 estimate of 160-480 breeding pairs by 2015.
- Restore the range to the 1985-90 figure of 166 Occupied Tetrads by 2015.

## 2 Current Status

### 2.1 Importance

Dippers are restricted to shallow fast flowing streams in Western and Northern Britain. Shropshire is at the Eastern edge of the range of the Welsh population, and will therefore readily reflect any changes in this important population. They are an excellent indicator of acidity and other water pollution, such as diffuse pollution including siltation.

### 2.2 Trends

The Dipper population in Shropshire declined considerably in the late 1980s, attributed to very dry summers in 1989 and 1990. The resulting low water levels in streams lead to a reduction in the abundance of the invertebrates on which Dippers feed, and possibly also to increased rates of predation. Since then invertebrate populations have also been reduced by siltation and, to a lesser extent, eutrophication.

A Biological Survey for the National Trust in 1984 records Dipper as present in all the valleys of the Long Mynd. Breeding was confirmed in several of these valleys during fieldwork for the Shropshire Breeding Bird Atlas in 1985-90. However, breeding was last confirmed in Callow Hollow in 1994, and since then breeding has only been recorded in one valley, Carding Mill Valley.

Dippers have not bred on the Upper Tern for many years.

Population monitoring in the River Teme catchment area (including the Upper Onny Area) indicates a substantial and continuing population decline over the last 20 years.

### 2.3 Population and Distribution

Nationally, populations have fluctuated somewhat over the last thirty years, but the pattern of change does not appear to be reflected in Shropshire, and it appears that the recent national increase found by BTO's Waterways Bird Survey and Breeding Bird Survey has not occurred locally.

The population was estimated at 160 - 480 breeding pairs in the Shropshire Breeding Bird Atlas (1992), which recorded the stronghold as being in the south-western hills, mainly along the rivers Onny, Clun, Teme, Rea and their tributaries, including the upper reaches of The Long Mynd valleys. Smaller numbers were found in the Oswestry uplands, on the upper reaches of the River Tern, along the Rea, Cound, Harley, Farley and Borle Brooks, on the rivers Worfe and Corve, and occasionally elsewhere.

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The population and range now appear to be substantially less than that.

### 3 Current Factors Affecting the Species

Dippers only feed on larvae on stream-beds, so they are very vulnerable to changes in the streams themselves. Dipper populations have collapsed in some areas, due to acidification of streams as a result of acid rain and coniferous afforestation. This reduces the amount of food in the water, resulting in poor productivity and breeding success.

Increased silt and pollution, possibly due to reduced water flows (increased abstraction for agricultural and domestic consumption, and / or lower rainfall), increased surface run-off of rainwater directly into watercourses, increased numbers of farm livestock coming to watercourses to drink, and contamination from agricultural chemicals (such as fertilizers, sheep dips and Avermectin-based drenches) may also have affected Dippers.

Predation by the alien mink, which have escaped (or been irresponsibly “liberated”) from fur farms, has wiped out the population in some other parts of Shropshire, and this too will affect the potential of the species to recover and re-colonise the local streams.

Changes to the design and construction of bridges has reduced the availability of nest sites.

Any or all of these factors may be preventing the recovery of the local population.

### 4 Current Action

#### 4.1 Policy and Protection

- None over and above Wildlife and Countryside Act, perhaps because of its specialised habitat and restricted distribution which make it difficult for national monitoring schemes to assess population change.

#### 4.2 Management, Survey and Research

- The Multi-agency catchment sensitive farming project (MCSFP), including a pilot on the River Teme and its catchment, is looking to use a range of mechanisms, including Environmental Stewardship and soil and waste management plans to reduce siltation and enrichment of rivers to meet the targets of the EU water framework directive.
- The overall population and survival rate is monitored by catching birds at night-time roosts during the winter. At 10 bridges in and immediately adjacent to the Upper Onny area, 10 birds were caught during the winter of 2004 - 05, compared with 13 in 2003 - 04 and larger numbers in the 1980s and 1990s. The number in 1994 was only 72% of the 1988 figure, and the 2004 count was only 40% of it. For 69 bridges in the whole of the Teme catchment, monitored since 1987, the 1994 figure was 71% of the 1988 count, and the 2004 count fell to 50%.

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- Initial survey work in the Upper Onny area in 2005 found seven Dipper nests. In three cases where the nest in each of two adjacent territories was found, the average nearest neighbour distance extended 1.4 kilometres along the river. The Upper Onny Wildlife Group intends to extend the survey work, and install nest boxes.
- The County Council Highways Department has agreed to install suitable nest boxes under bridges during regular maintenance work, in the areas where Dipper were shown to occur in the Shropshire Breeding Bird Atlas, and will incorporate them into the design as and when each bridge is refurbished or replaced.

### **5 Key Habitats**

Shallow fast flowing streams.

### **6 Complementary Plans**

Shropshire Rivers and Streams HAP

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Habitat / Species	Action Code	Action text	Location of action	Start Date	End Date	Lead	Assisting
Dipper	SHR DIP HS 01	Implement Multi-agency catchment sensitive farming (MACSF) project on River Teme Catchment, and monitor progress by 2015.	River Teme	2006	2015	EA	NE
Dipper	SHR DIP HS 02	Develop action plan for monitoring and improving water quality using Dipper distribution and breeding success data by 2015.	Shropshire	2006	2015	EA	UOWG
Dipper	SHR DIP SM 01	Install nest boxes in the Upper Onny Area annually until 2015.	Upper Onny area	2006	2015	UOWG	SWT
Dipper	SHR DIP SM 02	Install nest boxes in the Clun ESA annually until 2015.	Clun ESA	2006	2015	SWT	
Dipper	SHR DIP SM 03	Install nest boxes under bridges during maintenance work until 2015.	Shropshire	2006	2015	SC	
Dipper	SHR DIP SM 04	Incorporate nest boxes into design of new & refurbished bridges by 2015.	Shropshire	2006	2015	SC	
Dipper	SHR DIP SM 05	Eliminate Mink from Dipper breeding range by 2015.	Shropshire	2006	2015	EA	
Dipper	SHR DIP SU 01	Monitor population, population change and breeding success at breeding sites annually in the Upper Onny Area until 2015.	Upper Onny area	2006	2015	UOWG	SWT
Dipper	SHR DIP SU 02	Monitor population, population change and breeding success annually at breeding sites in the Clun ESA until 2015.	Clun ESA	2006	2015	SWT	
Dipper	SHR DIP SU 03	Monitor population & population change annually at winter roost sites in the River Teme catchment until 2015.	River Teme catchment	2006	2015	SWT	UOWG
Dipper	SHR DIP SU 04	Survey use of nest boxes installed by SCC outside Upper Onny & Clun areas (these areas already covered by Actions HS 02 & HS 03) by 2015.	Shropshire	2006	2015	SWT	UOWG

### Dipper

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Dipper	SHR DIP SU 05	Survey population in 2010 and 2015	Shropshire	2006	2015	SWT	SOS
Generic Birds Plan	SHR BRD AP 02	Establish monitoring arrangements to record the population, population change, breeding success and habitat usage for all BAP and PSA Target Bird Species on all farms covered by any Agri-environment scheme in Shropshire, and measure the effectiveness of such schemes.	Shropshire	2006	2007	NE	
Generic Birds Plan	SHR BRD AP 03	Monitor population, population change, breeding success and habitat usage for all BAP priority bird species on all CSS & ESA Farms in Shropshire until 2015.	Shropshire	2006	2015	NE	FWAG, RS AONB, SOS, SWT, UOWG
Generic Birds Plan	SHR BRD FR 06	Seek the necessary resources to implement all the above actions.	Shropshire	2006	2015	SC	

### Key to Organisations:

SC	Shropshire Council
FWAG	Farming and Wildlife Advisory Group
AONB	Shropshire Hills AONB Partnership
RS	Ruralscapes
SWT	Shropshire Wildlife Trust
UOWG	Upper Onny Wildlife Group
EA	Environment Agency
SOS	Shropshire Ornithological Society
NE	Natural England

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