

# Species Action Plan for Sussex

## Barn Owl

### *Tyto alba*

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### 1. Introduction/Current Status

#### a) Introduction

The Barn Owl is a characteristic and much loved farmland bird. Like so many species of farmland bird, it has undergone a major decline due loss of feeding habitat resulting from changes in agricultural practices. Losses of nesting sites due to demolition and decay of farm buildings; barn conversions and loss of hollow trees have further contributed to this decline.

Much information is now available on the ecological (feeding habitat and nest site) requirements of the Barn Owl and organisations such as the Hawk and Owl Trust (HOT) have shown that local populations can often be enhanced considerably through changes in habitat management combined with the provision of suitable nest sites. There is considerable potential to increase the Barn Owl population of Sussex.

As a popular species whose fragile population is influenced by a range of factors not entirely addressed by Sussex Habitat Action Plans, the Barn Owl is one of only a few species to have its own Species Action Plan (SAP) for Sussex. It is appreciated that much conservation effort is already underway in Sussex to improve the fortunes of this bird.

However, due to the many and varied factors impacting on our Barn Owl population it is considered that the preparation of a SAP is the best way of addressing all of these issues at the local level.

This action plan also promotes the Barn Owl as a flagship species for conservation management being a good indicator of ecologically rich farmland.

## **b) Habitat requirements**

Barn Owls are birds of low-lying open farmland and woodland edge. They feed on small mammals, predominantly the short-tailed vole, but also mice, shrews and small rats. They require extensive areas of prey-rich habitat, usually rough, ungrazed or lightly grazed tussocky grassland in the form of whole fields, field margins, parkland, orchard and newly planted plantation. A breeding pair requires at least 50 hectares (120 acres) of rough grassland over which to hunt. Temporary ley grassland, closely grazed fields and cereal crops do not provide good hunting grounds. However, the Barn Owl can survive well alongside modern intensive farming if linear strips of rough grass are present in the form of wide field margins and banks of rivers and drainage ditches. Where Barn Owls are dependant on linear grasslands, a breeding pair will require at least 15 km (9 miles) of 6 metre (20 ft) wide field margin or river bank within a 3 km radius of the nest site. For example, a 100 ha farm with ten 10 ha fields each bounded by rough grassland margins (Shawyer 1996).

Being sedentary, Barn Owls require suitable habitat within their home range throughout the year. Localised conditions, such as winter flooding, can have devastating effects. However, since young generally disperse up to about 20 km recolonisation is likely to occur in time unless populations are severely fragmented.

## **c) Nesting and roosting requirements**

Today a significant proportion of Barn Owls in Sussex breed in nest boxes in barns, trees, and mounted on poles. Natural cavities in trees are also used. Other nest sites in Sussex have included church towers, castles, water towers, a disused railway bridge and a crevice in a chalk cliff.

Undisturbed day-time roost sites are another important requirement. Trees and secluded farm buildings are commonly used.

## **d) Current status/distribution in Europe, UK & Sussex**

### **Europe**

The Barn Owl is considered to be a Species of European Conservation Concern having an unfavourable conservation status in Europe (SPEC Category 3). Since the 1950s it has declined throughout much of its European range. The main strongholds are Spain, France, Germany, Italy and the UK (Shawyer In Tucker & Heath 1997).

## UK

In the 50 years between 1932 and 1982 the Barn Owl population of the British Isles fell by 70% (Shawyer 1987). However, by 1997 Project Barn Owl, a joint HOT/BTO (British Trust for Ornithology) research project, revealed that the national population had stabilised at about 4,000 pairs (Toms, Crick & Shawyer 2000).

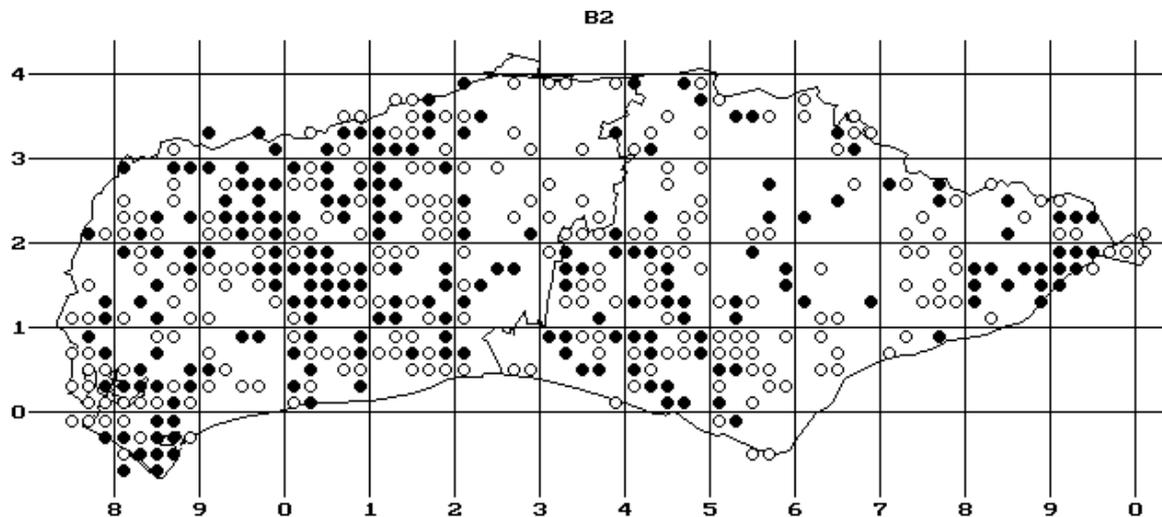
Following the 1982-85 Barn Owl Survey, the HOT developed a National Conservation (Action) Plan for the Barn Owl, 1988-2008. This highlighted the importance of river valleys, which held over 80 % of the total breeding population in the UK.

## Sussex

A similar decline is thought to have occurred in Sussex, with an estimated population of 400 pairs in 1932 falling to 140 pairs by 1985 (Shawyer 1998). The decline may have been halted in Sussex, probably within the last 10 years, due to more favourable habitat management (through Countryside Stewardship, etc) and greatly increased provision of nest boxes. However, the Sussex population remains fragile and fragmented.

The W. Rother, Arun, Adur, Ouse and E. Rother river valleys of Sussex were considered to be nationally important in the HOT's National Conservation Plan for the Barn Owl, 1988-2008.

A detailed review of the species in Sussex is given in *The Birds of Sussex* (James 1996). Further information is published by The Sussex Ornithological Society (SOS) in the annual Sussex Bird Reports.



**Figure 1.** Distribution map of the Barn Owl in Sussex, based on records collated for *The Birds of Sussex* (1988-1992 distribution shown as solid dots and pre-1988 records as open circles). Reproduced with kind permission from The Sussex Ornithological Society.

### **e) Legal Status/Legislation**

Barn Owls are protected under Schedule 1 of the Wildlife and Countryside Act, 1981, making it illegal to kill, injure or take a Barn Owl, or to destroy its eggs. It is also an offence to disturb a Barn Owl, except under licence, 'while it is building a nest or is in, on or near a nest that is containing eggs or young' or to 'disturb dependent young of such a bird'. The release of captive-bred Barn Owls into the wild was formerly permitted under licence but is now illegal.

Paragraph 47 of Planning Policy Guidance Note 9 (PPG9) on Nature Conservation establishes that the presence of a Protected Species, such as Barn Owl, is a material consideration when a local planning authority is considering a development proposal, which would be likely to result in harm to the species or its habitat.

As a species listed in Appendix II of the Berne Convention, member states are required to take special measures to conserve the Barn Owl. It is also included in Appendix II of the EU Birds Directive, 1979.

### **f) Conservation Status**

The Barn Owl is included in *Red Data Birds in Britain* (Batten *et al*, 1990), a book that catalogues those species, which are rare, or in danger of extinction. More recently it was placed on the amber list in *The Population Status of Birds in the U.K.* (Anon 2002) on account of :

- i) Moderate decline (25-49%) in UK breeding population or range over the previous 25 years and
- ii) Species with an unfavourable conservation status in Europe (SPEC 2 & 3: A Species of European Conservation Concern).

In the UK Biodiversity Steering Group Report (1995), the Barn Owl is listed as globally threatened being on the "Long List" (Now replaced by the list of Species of Nature Conservation Concern).

In assessing its own priorities for conservation action, English Nature identified Barn Owl as "High Priority, List 2" (Brown & Grice 1993).

## **2. Current factors causing loss or decline**

Barn Owl populations can be subject to marked annual fluctuations related to natural causes, notably cycles in vole abundance (which affects brood sizes and fledging success), incidence of winter snow cover, periods of heavy or continuous rainfall and flooding (all of which can affect food availability). However, it is the following threats to the population in the long-term, which are of real concern:

- **Loss of feeding habitat (rough grassland) due to agricultural change and urbanisation**

Agricultural intensification is thought to have been the major factor responsible for the decline of the Barn Owl. Factors have included a reduction in the area of rough grassland,

a switch from hay to silage and loss of hedgerows and headlands. Changes in farming techniques have led to a reduction in both the extent and quality of prey-rich habitat for hunting.

However, since about the early 1990s agricultural intensification has largely been halted in Sussex and measures such as Countryside Stewardship and set-aside are resulting in improved habitat for Barn Owls. Habitat Action Plans (HAPs), notably the Floodplain Grassland HAP for Sussex, identify many actions to reverse the earlier trends of habitat loss.

Urbanisation has also contributed to the loss of some areas of rough grassland. This is likely to remain an issue with the demand for new housing developments.

- **Loss of nest & roost sites**

Loss of nest sites due to the demolition of farm buildings and barn conversions continues to be a major problem in Sussex. Local Authority Development Control Officers have an important role to play.

The blocking off of entrances to church towers, barns and other buildings, usually to exclude pigeons and Jackdaws, has reduced the availability of such buildings as roost and nest sites. It is thought that this is not a significant issue in Sussex, though there are several known examples where traditional nest sites have been lost in this manner in recent years.

Furthermore, Sussex has lost many of its mature farmland trees through Dutch Elm disease and the storms of 1987, 1991 and 2000. This has led to the reduced availability of large tree cavities and the loss of long-established nest sites.

- **Road & rail mortality**

Shawyer & Dixon (In Prep.) estimate that 3,650 Barn Owls are killed annually on dual carriageway Trunk Roads and Motorways in England. This represents a significant toll on the breeding population. Studies have also shown that casualties tend to be concentrated in specific localities or “accident black spots”, such as where roads cross river valleys.

Continuous monitoring of animal fatalities on a 10 mile stretch of the A27 west of Chichester by Graham Roberts between the opening of the road in October 1988 until April 2002 included six dead Barn Owls. It is also known that within a couple of years of the A27 opening, Barn Owls had disappeared from at least one regular breeding site close to the road.

Colin Shawyer of the Hawk & Owl Trust has received as many as 25 reports per annum of Barn Owl road fatalities in Sussex (*pers. com*). Eight road deaths were reported to the Sussex Ornithological Society in 2000 (Roberts 2001). However, the actual number could be far greater than both of these totals.

It seems likely that road mortalities will have increased in recent decades in Sussex, as elsewhere, as the length of trunk road and speeds of traffic have risen. Road deaths may be an important factor in limiting the population and may also account for the absence of Barn Owls in localised areas of otherwise favourable habitat.

- **Second generation anticoagulant rodenticides**

The widespread use of second generation anticoagulant rodenticides is currently of concern. Research has shown that a significant proportion of British Barn Owls contain measurable levels of these rodenticides in their tissues.

- **Drowning in water troughs**

Farmland water troughs can provide convenient drinking and bathing sites for Barn Owls. However, if they fall in, particularly when the water level is low, their soft plumage waterlogs very quickly and they are liable to drown. Such fatalities are not uncommon. E.g. Three reported to the Sussex Ornithological Society in 2000 (Roberts 2001).

- **Collision with wire fences & power lines**

Flying into overhead wires and fence wires represents 5% of all mortality (Shawyer 1998).

- **Climate change including increased flooding**

Widespread flooding can result in the drowning of large communities of small mammals across the flood plain with severe consequences for Barn Owls. Much conservation effort is being concentrated in river valleys but on the edge of flood plains, where possible.

Any long term increase in snowfall could have a big impact through increased winter mortality.

- **Urbanisation**

Loss of rough grassland through urbanisation has already been mentioned. In certain localities, increased levels of human disturbance, especially around nesting and roosting sites, may also be a problem.

### 3. National Species Action Plan

The Report of the UK Biodiversity Steering Group does not contain a Species Action Plan (SAP) for the Barn Owl, though it does include it in the UK "Long List" of priority species for conservation action.

However, in 1992 the RSPB and JNCC (Joint Nature Conservancy Committee) produced a National SAP for the Barn Owl (RSPB/JNCC (1992) SAP 0735 for the Barn Owl) with the following objectives:

i) In the short term, to maintain the present range and numbers of Barn Owl throughout the UK, Isle of Man and Channel Isles, recognising that its distribution is limited by altitude and latitude.

ii) In the medium term, to seek a substantial increase (by at least one half in the next 20 years) in the population of the Barn Owl (making allowance for any short-term fluctuations in population), and re-establishment of its former widespread breeding distribution (as shown in Sharrock, 1976).

## **4. Current Action**

### **a) Protection, legislation & site designation**

The SOS has been raising awareness amongst planners of the importance of determining the presence/absence of Barn Owl prior to development and to initiate remedial actions well in advance.

### **b) Site management & programmes of action**

A number of organisations and individuals are currently involved in conservation action to assist the Barn Owl in Sussex. Measures have focussed on the restoration of grassland habitat and the provision of secure nest and roost sites. Whilst much has been achieved, some actions, particularly the siting of nest boxes, need to be better focussed in order to give maximum benefit. A good example of focussed conservation action has been demonstrated by the joint approach of the Environment Agency and The HOT to target the main river valleys in Sussex. Since 1995, these two organisations often working with other partners such as the Sussex Downs Conservation Board (Arun and Western Rother) and South East Water Limited (Ouse and Cuckmere) have been actively engaged in the restoration of grassland habitat on river banks followed by the installation of artificial nesting sites. Several of these river valley initiatives have proved extremely successful with very high nest box occupancy within three years.

The SOS, West Sussex County Council (WSCC), the Farming & Wildlife Advisory Group (FWAG) and individuals have also been involved in Barn Owl nest box and habitat management schemes in Sussex.

Without the efforts of all these initiatives the Sussex Barn Owl population would be in a much worse state. There is, however, a need for further co-ordination amongst these projects.

### **c) Survey, research & monitoring**

Many nest box schemes are monitored annually, under the appropriate licence, to record occupancy and in many cases to ring the young to further our knowledge of the species.

The SOS maintains a large computerised database of bird records, including those for Barn Owl.

## **5. Objectives**

The broad objective is to maintain and enhance the present range and population through natural recolonisation.

Objectives for the short, medium & long term are:

**Short term (by 2005):** Achieve a population increase of 30%. Based on Colin Shawyer's estimate of a Sussex breeding population of 175 pairs, a 30% increase would bring the population to 225 breeding pairs.

**Medium term (by 2010):** Achieve a population increase of 50% (to 260 pairs).

**Long term (by 2050):** Maintain a sustainable population of at least 260 pairs.

## 6. Targets & Costs

**This Species Action Plan is now archived**

## 7. Potential

Barn Owl populations can be enhanced quite quickly through a combination of habitat management and the provision of nest boxes. Furthermore, many farmers and landowners express a real desire to encourage Barn Owls. However, to be successful, this will often require a considerable increase in the area of rough grassland habitat on a farm. The extent to which this can be achieved will depend to a large extent on future agri-environment schemes.

There is, however, great potential to further enhance local populations, such as in the river valleys, through targeted conservation action.

Limiting factors, which will restrict the range of the species in the future, include:

- Extent of prey-rich feeding habitat (principally rough grassland).
- Increased incidence/severity of flooding (principally of river valleys) leading to depletion of small mammal populations.
- Availability of nest and roost sites in areas of suitable habitat.
- High incidence of road and rail mortality may cause absence of Barn Owls within 1-2 km of these highways in areas of otherwise favourable habitat.

## 8. Action Plan

**This Species Action Plan is now archived**

## 9. Monitoring/Review

It is proposed that the Sussex Barn Owl SAP Working Group will continue to meet, probably annually, to assess and monitor progress with implementing this plan. The plan will also be reviewed so that it can be updated and amended where necessary. Although the Barn Owl SAP Working Group may undertake the monitoring and review of the plan, the Sussex Biodiversity Partnership will play a lead role.

## 10. References

### General/national

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- James, P. (Ed) 1996 *Birds of Sussex*. Sussex Ornithological Society.
- Roberts, G.C.M. (2001) Barn Owl. *Sussex Bird Report* 53: 105.
- Shawyer, C. R. & Shawyer, V.M. (1995) An Investigation of the Barn Owl Population within the Arun and Western Rother Catchments.
- WSCC leaflet "Guidance Notes for Farm Building and Barn Conversions".

## 11. Consultation

A Sussex Barn Owl Working Group was established in November 1999 to advise Graham Roberts on the content of this Plan and to oversee its implementation. The Group which met several times during the preparation of the Plan included representatives from the SOS (Dr. A.B. Watson and Alan Perry), WSCC (Graham Roberts), HOT (Colin Shawyer and Ann Hillman), EA (Jason Lavender and Mark Elliott), SDCB (Simon Allen and John Blamire), FWAG (Colin Hedley and Paul Ling), RSPB (Sarah Dawkins) and The Sussex Otters and Rivers Partnership Officer (Jon Bramley). EN, ESCC (Dr. Alex Tait) and Dr. Barry Yates, Rye Harbour LNR were also invited onto the Group.

Wider circulation of the draft SAP included a sample of landowners (such as The Cowdray Estate and Stansted Park Foundation), tenant farmers, The Country Landowners Association (John Biron), The Forestry Commission and South East Water Limited (Ms. Emma Goddard).

## 12. Appendices

*Standard Conditions*

*Recommended nestbox designs*

*Sources of information e.g. List of projects, contacts for advice*

Graham Roberts, Senior Ecologist, Environment & Economic Policy Service  
West Sussex County Council, December 2002

### **Appendix 1: Recommended planning condition to be applied when planning permission is granted for change of use/modification to a building currently or recently occupied by Barn Owls**

"Prior to the commencement of the development, no works shall take place until proper provision has been made for Barn Owls to roost and breed. Generally this will necessitate the provision of an owl hole to give permanent access to the building, plus a Barn Owl nesting box and/or loft. Occasionally it may be considered impractical to incorporate provision for owls within a building. In such situations, it may be deemed acceptable to install outdoor nest boxes (two are preferable), usually on nearby mature trees. The design and location of the nest box(es)/loft, and if applicable, owl hole, shall be in accordance with details submitted to, and approved in writing by, the Local Planning Authority (LPA). No works should take place during the months of April-September (the breeding season)."

The reason for the imposition of this condition would be:

"In order not to disturb nesting or roosting Barn Owls and to make adequate provision for the nesting and roosting of Barn Owls, a species afforded special protection under the Wildlife and Countryside Act 1981 (Schedule 1)."

*The above wording is based on a model condition recommended by The RSPB and The Hawk and Owl Trust.*

*The Sussex Ornithological Society (SOS) and Hawk and Owl Trust (HOT) may be able to offer advice to Local Planning Authorities and developers, including nest site inspections by licenced Barn Owl workers to establish whether Barn Owls are present, and advice on nest box design and location. Contact details are given in Appendix 2.*

## Appendix 2: Useful Contacts

Author of SAP & Chairman of Sussex Barn Owl SAP Group	Graham Roberts, Senior Ecologist, West Sussex County Council
Licenced Barn Owl worker/SOS Barn Owl adviser <i>Nest/roost site inspections under licence &amp; nestbox advice</i>	Dr. Barrie Watson
Sussex Bird Recorder (SOS) <i>Barn Owl records</i>	John Hobson
HOT/Wildlife Conservation Partnership (WCP) <i>River valley Barn Owl initiatives with the Environment Agency and landowners</i>	Colin Shawyer
Sussex FWAG <i>Advice to farmers</i>	Colin Hedley
Environment Agency <i>River valley Barn Owl initiatives with HOT/WCP</i>	Jason Lavender
Sussex Otters & Rivers Partnership Officer	Fran Southgate
English Nature (Lewes Office) <i>Advice on legal issues</i>	
Sussex Downs Conservation Board Head Office (Storrington)	
South East Water Limited <i>Partners in the Ouse &amp; Cuckmere Valley Barn Owl initiatives</i>	Emma Goddard
Licenced Barn Owl worker (East Sussex)/ HOT contact	Ann Hillman
Rother Valley Project Officer, West Sussex <i>Rother Valley Barn Owl initiative, West Sussex</i>	John Blamire

### **Appendix 3: Further sources of information**

#### **The Sussex Ornithological Society (SOS)**

The Sussex Bird Report, published annually by the SOS, contains a yearly account of the status and distribution of the Barn Owl in Sussex.

[www.susos.org.uk](http://www.susos.org.uk)

#### **The Barn Owl Conservation Network (BOCN)**

The BOCN, a project of The Hawk and Owl Trust, is a UK-wide network of specialist voluntary advisers. The website features useful information on Barn Owl conservation.

[www.bocn.org](http://www.bocn.org)

#### **The Barn Owl Trust**

Based in Devon, this charity has produced a range of leaflets on subjects such as how to prevent drowning in cattle troughs.

[www.barnowltrust.org.uk](http://www.barnowltrust.org.uk)

#### **The Hawk & Owl Trust (HOT)**

The HOT is a national charity dedicated to the conservation and appreciation of all birds of prey and their habitats. HOT publishes newsletters and booklets/leaflets on habitats, nestbox installation and planning guidance.

<http://www.hawkandowl.org/>

#### **The British Trust for Ornithology (BTO)**

The British Trust for Ornithology is an independent, scientific research trust, investigating the populations, movements and ecology of wild birds in the British Isles. Its speciality is the design and implementation of volunteer wild bird surveys.

<http://www.bto.org/>