

# Brown hare

## 1. A Definition

The brown hare (*Lepus europaeus*) is a widespread and well-known farmland species in Britain, and was probably introduced here by the Romans.

Originally an animal of open steppe, the brown hare became widespread in Europe with the spread of agriculture, and is now found over much of lowland Britain.

The brown hare is most common in areas of arable crops, particularly cereals, and prefers a diversity of crops, including areas of grass leys which provide food in summer when crops are too tall. Essentially nocturnal, the hare may use woods, shelterbelts, hedges or fields in which to rest during the day time.

One of the most striking of any animal behaviour is the “boxing” of hares. This is an aggressive display, normally between male and female hares in spring and summer, as part of the ritual of courtship. This remarkable behaviour, though rarely observed, is for many people an evocative symbol of the traditional agricultural scene.



## 2. Why an Action Plan?

Some believe that the sight of hares boxing is becoming more uncommon, indicating a reduction in the hare population, although the current status of the hare population throughout England is in need of clarification.

It appears that there has been a major reduction in the hare population since the turn of the last century, with indications of a significant decline during the 1960s, probably connected with changing farming practice, the increased use of farm machinery and increased use of chemical pesticides, together perhaps with local increases in predator densities associated with the decline of game keeping.

Like so many of our once-common farmland species, the brown hare has been affected by developments in farming practices and land-uses, as well as other contributory factors. Concerted efforts are now required if the brown hare is to be a familiar part of the countryside for future generations.

### 3. Relevant ecology

Brown hares have a strong positive association with mixed farming systems. Greater numbers of hares are found where there are smaller fields with traditional crop rotations.

Hares require young nutritious plant material on which to feed. A farming system that supplies growing vegetation throughout the year will provide suitable feeding conditions for hares, as they will not have to travel far in search of food at any time.

Hares breed between February and September, with up to four litters per year. The number of litters and the number of leverets within a litter are linked to weather conditions.

The main causes of mortality of hares are predation (especially by foxes on leverets), disease (probably exacerbated by poor weather conditions), poor nutrition, and killing by agricultural machinery, mainly from silage cutting, which is probably a major cause of death.

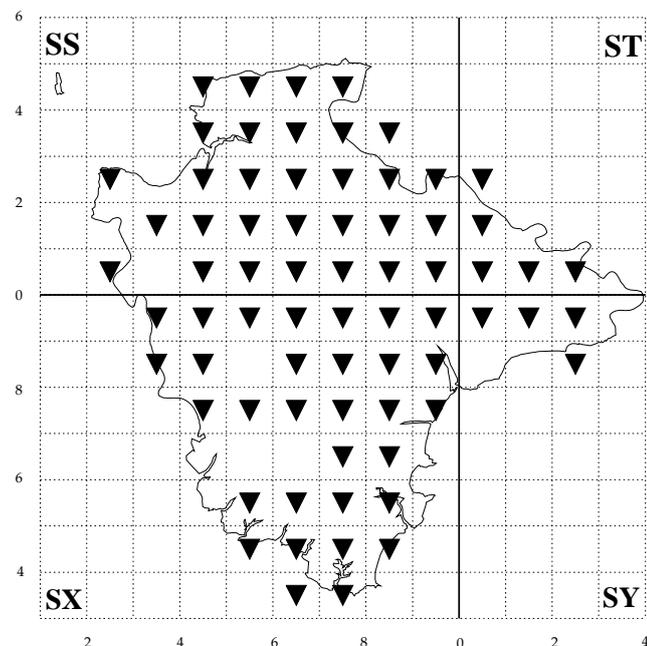
Cover, such as long grass, hedges or woods, is required for breeding and for adult hares to take refuge in during the day.

#### **Management prescriptions:**

- Retain mixed farming systems, and reintroduce mixed farming to areas which specialise in dairying or arable.
- Distribute crops around the farm, rather than together in large blocks. This enables hares in different areas of the farm to access local food sources.
- Small fields are better than large, but in large cereal fields divide the field using "beetle banks" or mown grass strips to provide local feeding when crops are too tall to be grazed by hares.
- Retain hedgerow networks to provide shelter and shade for hares, and manage in conjunction with adjacent field margin habitats.
- Reduce densities of stock in pasture fields, or have stock only in certain fields on the farm at any one time. Hare densities are highest in pastures with the least number of stock.
- Leave areas where grass can grow tall, but avoid succession to scrub by cutting or grazing every few years.

- Set-aside can provide essential grassy strips in areas where no short grassland exists. Plant non-rotational set-aside in small strips around the farm with mixtures that provide suitable green forage for hares in summer and autumn. On rotational set-aside, spray off and plough as late as possible to provide early summer grazing for hares.
- Promote retention and reintroduction of hay, rather than silage. Hay will enable hares to breed successfully, whereas silage cutting occurs several times through the hare's breeding season, physically damaging or killing the animals or leaving them exposed to predators.
- Reduce herbicide use on cereal fields to provide weedy stubbles, either across the whole field or in Conservation Headlands around its margins. Hares will graze weedy stubbles, whereas "clean" stubbles provide no food. However, if the only source of food is at the field edge, then this makes hares more open to predation.
- Under-sow some spring cereal crops with grass seed to provide a following ley so the green stubble is a food source in winter for hares.
- Promote re-introduction of spring-sowing of cereals to leave weedy winter stubble (also good for cirl buntings).
- Where rabbit and fox populations are high consider the need for their control, to reduce competition and predation respectively.

#### 4. Distribution of brown hare in Devon



▼ Brown Hare presence in 10 Km squares

(Data supplied by Devon Biodiversity Records Centre)

## 5. Current population (1998)

In Devon the brown hare population is widely but locally distributed, except on Dartmoor, where it seems to have undergone a distinct decline from earlier this century. As with the national picture hard data are lacking and much local information is contradictory. The general distribution of the Devon hare population is shown in the enclosed map.

Recent surveys indicate the current UK population is between 817,500 and 1,250,000. It should be stressed that the accuracy of estimates may be rather low, as the hare is a difficult animal to survey since when laid up by day it is very difficult to see, and under many conditions is difficult to disturb so that it can be observed and counted. This inability to make accurate hare counts makes it extremely difficult to make reliable assessments of population size.

2004 revision: a 1997 survey indicated a UK population size of 752,608.

## 6. Current problems for brown hare in Devon (1998)

- The reduction in arable farming in much of Devon has probably contributed to a reduction in the hare population in the County.
- Specialisation (especially to dairying in Devon) and a move to larger field sizes has led to a loss of habitat diversity in the farmland environment.
- Changes in cropping regimes (switch from hay to silage, predominance of autumn-sown cereals compared to spring-sown) and the loss of under-sowing of grass in a spring crop have reduced feeding opportunities for hares.
- Mechanisation of farming (mowing, grass rolling, spraying) can lead to greater disturbance, poisoning by agricultural chemicals and injury or death from machinery.
- Increase in predator densities with the decline of game keeping.
- Poaching/lamping with lurchers is a real problem in certain areas. This either kills off the hares or discourages farmers from conserving them. On some farms there is a deliberate policy to get rid of hares to prevent attracting undesirable poachers.
- Cold and wet springs adversely affect breeding success, and incidence of parasites may be higher in inclement weather.
- Increases in the built environment, since hares avoid human settlement.
- Public access; disturbance from visitors on Dartmoor may have

contributed to the species' demise there.

- High stocking densities appear to deter hares from some pastures.
- Competition with rabbits, as rabbit numbers have recovered since myxomatosis declined, and hares probably benefited from fewer rabbits 30 years ago.
- Hunting, coursing and shooting: Coursing and hunting with beagles, regardless of one's personal views of such activities, is a relatively inefficient method of catching hares, (probably under 5 and 10% respectively in a population where these activities are carried out). In contrast, shooting can remove 60% of a population, but this is done only in parts of the country where hare numbers are considered to cause crop damage (not Devon).

## 7. Recent changes in population (1998)

The brown hare is thought to have undergone a considerable decline since the early 1960s, both in the UK and elsewhere in Europe, although the extent of the decline is masked by the lack of quantifiable data on the abundance of hares, both today and historically.

Over the past ten years however hare numbers appear to have been relatively stable. In Devon particular declines appear to have taken place on Dartmoor, where at the beginning of this century the species was widespread.

2004 revision: Brown hare numbers appear to have decreased recently, particularly in the south west.

## 8. Current protection

Limited protection is afforded to hares at certain times of the year under the Ground Game Act of 1880 and the Hare Protection Act of 1911.

## 9. Biodiversity planning context

National BAP Context

Species of principal importance in England (NERC Act, S.41):

- Brown hare

Current national BAP targets can be viewed on the [Biodiversity Action Reporting System](#) (BARS).

## Associated Action Plans within the Devon BAP:

- Species-rich and/or ancient hedgerows
- Flower-rich meadows and pasture
- Rhôs pasture
- Barn owl
- Cirl bunting

## 10. Biodiversity objectives and targets for brown hare in Devon

### Objective 1

Expand the range of brown hare in Devon.

#### Target:

- Maintain existing populations of brown hare and expand the current range of the hare to areas that seem suitable for the species but which hold few, if any, records.

Note: a target for population increase can only be set when a better estimate of the population is achieved.

### Objective 2

Achieve a better understanding of the reason for any detected hot/cold spots in hare numbers in Devon, in order to better target potential areas for expansion of its population.

#### Target:

- By 2006, identify areas that appear suitable for either enhancing existing populations or re-establishing new populations.

### Objective 3

Improve and validate methods of surveying hare numbers in Devon in order to be able to detect trends in its population.

#### Target:

- Determine suitable survey/monitoring techniques for the Devon situation and

establish at least 4 sites for monitoring the hare population of the County by 2006.

## Objective 4

Foster increased understanding and awareness on the part of landowners/managers and the general public of the brown hare and its requirements.

Target:

- Ongoing.

## 11. Wider benefits from pursuing these objectives

The pursuit of the objectives and targets set out above will not only benefit the brown hare. Conservation has wider benefits and advantages for society, by providing a resource which is the basis of many aspects of the local economy, and by adding to the quality of life of the people of Devon in ways which are beyond financial measure. Thus enhancing the interests of biodiversity will also enhance the interests of society as a whole. Some of these wider benefits are as follows.

A more diverse countryside with features of interest to visitors (mixed farming systems, hedge and grass bank networks) will maintain and enhance the economy of the County by stimulating tourism.

Many other forms of farmland wildlife will benefit from the results of the measures outlined in this Action Plan. Pursuing these objectives will contribute to making the agricultural environment of Devon rich in wildlife of all kinds, as well as economically sustainable.

## 12. Priority or indicative actions for brown hare in Devon

Action	Key Partners
1. Ensure agri-environment schemes (e.g. Environmental Stewardship) support management of habitat for hares, especially in areas where they already exist, to help consolidate and expand populations.	DEFRA; RDS; FWAG; DWT; EN
2. Continue to disseminate information giving habitat advice on management for hares.	FWAG; DWT; ADAS; RSPB
3. Continue to monitor hare populations and improve estimates of populations and distribution of hares in Devon. Data to be collected by the Devon Biodiversity Records Centre.	DBRC; FWAG; DWT; CLA; AMHB; GCT; NFU

Action	Key Partners
4. Continue to raise awareness of the impacts of modern agricultural practices to encourage the uptake of more sustainable farming practices such as organic farming, agri-environment schemes, set-aside and cross compliance as part of CAP reform.	DEFRA; DWT; RDS; FWAG; NFU; CLBA; RSPB; AMHB
5. Use articles in journals, newspapers and other media to aid recording and promotion of appropriate management of farmland for biodiversity.	DWT; FWAG; EN; GCT; NFU; CLA; AMHB
6. Ensure advice given to landowners is updated as new information comes to light.	DWT; FWAG; ADAS

Brown Hare Action Plan Champion - Farming and Wildlife Advisory Group

Abbreviations used in text and table

AMHB	Association of Masters of Harriers and Beagles
BAP	Biodiversity Action Plan
CLA	Country Land and Business Association
CS	Countryside Stewardship
DEFRA	Department of Environment, Food and Rural Affairs
DWT	Devon Wildlife Trust
EN	English Nature
FWAG	Farming and Wildlife Advisory Group
GCT	Game Conservancy Trust
JNCC	Joint Nature Conservation Committee
LAs	Local Authorities
NFU	National Farmers' Union
RSPB	Royal Society for the Protection of Birds
RDS	Rural Development Service