



REVISED PLAN JULY 2021

HEDGEHOG

Erinaceus europaeus

1. INTRODUCTION

The hedgehog is a familiar and iconic mammal found all over the United Kingdom, occurring in almost every habitat except for moors, coniferous plantations, wetlands and some Scottish islands. Its range extends in similar habitats throughout Europe. Hedgehogs are welcomed by gardeners because of their healthy appetite for 'garden pests'. Their diet consists of worms, slugs, beetles and other insects; the shiny wing cases of the beetles making their droppings distinctive.



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In favourable conditions hedgehogs can have two litters of 4-5 young (hoglets) per year which are dependent for 8 weeks. They can live for up to 8 years, although they usually live around 2 years in the wild. In order to survive hibernation a hedgehog must weigh at least 450g so a ready supply of invertebrate food is very important in their habitat (Morris, 2006)

Home range seasonal averages are 32ha for males and 10ha for females (Morris, 1988). The enclosure of gardens by impenetrable boundaries such as fence panels set into concrete bases prevents them from roaming or dispersing, but is easily corrected by providing gaps in the panels or bases to allow hedgehogs through.

In the wider countryside hedgehogs depend on the availability of insects and earthworms in pasture land, hedgerows, woodlands and field margins. Intensively managed arable land is of low value to them because of a lack of invertebrates (Doncaster, 1994) and populations in open grasslands have been shown to vary in relation to availability of earthworms (Cassini and Föger, 1995). Moorlands and coniferous forest also provide poor sources of food for hedgehogs (Mammal Society, 2012).

2.	OBJECTIVES	TARGETS
	Associated Action Plans are: 'Woodland', 'Churchyards & Cemeteries', 'Gardens', 'Allotments', 'Traditional Orchards', 'Hedgerows', 'Parks & Public Open Spaces', 'School Grounds' and 'Field Margins'	
	PLEASE CONSULT THE '<i>GENERIC SPECIES</i>' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR OBJECTIVES COMMON TO ALL SPECIES PLANS	
A.	Reverse the decline of hedgehogs in Warwickshire.	2030

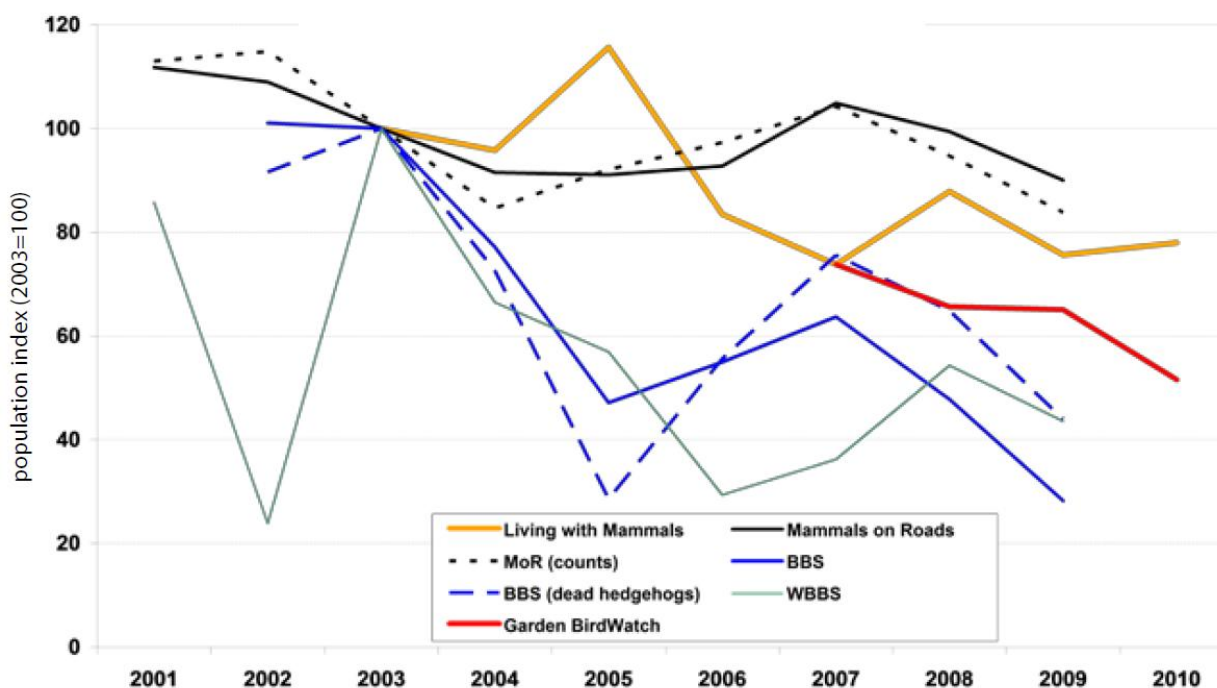
2. NATIONAL BAP OBJECTIVES & TARGETS

The hedgehog is on the current UK Biodiversity Action Plan (BAP) Priority Species list published in 2007 ([Joint Nature Conservation Committee](#)). The targets and objectives for the Hedgehog BAP were updated in 2010.

Nationally, [People's Trust for Endangered Species](#) (PTES) and the [British Hedgehog Preservation Society](#) (BHPS) have joined forces to carry out a three year project to conserve hedgehogs, funding research into how hedgehogs move about the countryside and what features of farmland they like best. [Hedgehog Street](#) is the public participation part of this larger project; people are being asked to become Hedgehog Champions, to rally support from their neighbours and work together to create ideal hedgehog habitat throughout their street, estate or communal grounds.

4. CURRENT STATUS

In the 1950s it was estimated that the population of hedgehogs was about 30million individuals but by 1995 this figure had drastically declined to an estimate of only 1.5million. Studies by PTES) have shown a further 25% population decline between 2005 and 2011. In some regions, particularly rural areas, the numbers have dropped by up to half (Wembridge, 2011).



Figures 1: Graphs showing the decline in hedgehog population between 2001-2010. Population index is based on detection probability from 7 surveys. Source: www.britishhedgehogs.org.uk

Despite subsequent research into the reasons for the decline, there appears to be no further published data (Deborah Parsons, pers.comm. 2020).

4.1 Legal and Policy Status

The Hedgehog is partially protected under the [1981 Wildlife & Countryside Act](#) and the [Wild Mammals \(Protection\) Act 1996](#), making it an offence to kill or take hedgehogs from the wild by certain methods.

4.2 Current Factors Affecting the Species

There are several suggested causes for the decline in hedgehog populations. Overall reasons for the decline are:

- **Current threats to conservation status:**
 - the use of pesticides leading to a reduction of available food
 - quality of field margins – more worms if they are not compacted by heavy farm machinery, more insects if sown with a nectar and pollen mix.
 - presence / quality of hedgerows – a laid hedge is better than a flailed hedge as it often has dead wood in the bottom providing extra food .
 - habitat loss and fragmentation – the reduction in accessible gardens and hedgerows; an increasingly fragmented landscape through the building of new roads and impenetrable boundaries.
 - increase in road traffic and new roads leading to high road mortality.
 - climate change - more extreme weather including drier summers and wetter winters.
 - changes in gardening practices - tidier and inaccessible gardens without suitable shelter or areas for adequate foraging and the use of slug pellets that are linked to poisoning.
- **Contributory factors:**
 - cattle/sheep grids without ramps - hedgehogs can get trapped in them.
 - garden ponds – can be a danger if designed without sloping edge or log so that hedgehogs can climb out.
 - bonfires, especially in autumn/winter, can lead to hedgehog deaths if not checked for their presence.
 - electric fencing around poultry runs
- **Constraints to delivery of conservation action:**
 - increase in urban sprawl and rural development leading to further fragmentation of habitats and an increase in traffic.
 - lack of knowledge of the impacts of climate change on hedgehogs.

5. LOCAL ACTION

- **Survey work** nationally by PTES includes survey within Warwickshire; [tracking tunnels](#) are being piloted by PTES on a 1km basis.
 - [Warwickshire Wildlife Trust](#) (WWT): random gardens footprint tunnel studies were conducted by members of the public but surveys were generally more targeted. More than 30 council sites were surveyed regularly across the project in both HIAs. A torchlight survey monitoring programme has also been set up across two specific sites. Most of these sites are urban, very few rural.
- **Hedgehog recording:**
 - in 2014, through their newsletters, the Warwickshire Association of Local Councils (WALC) and the Warwickshire Federation of Women's Institutes (WFWI) asked for records of hedgehogs, both dead and alive, to be sent to the Local Biological Record Centre.
 - WWT: collected over 3000 hedgehog records county-wide, verified and shared with Warwickshire Biological Record Centre (WBRC).
- **Less intensive land use** and the improvement of hedgerows and field margins is encouraged and supported by [agri-environment schemes](#) administered by [Natural England](#) at both Entry Level Stewardship (ELS) and Higher Level Stewardship (HLS):
 - Options for less intensive land use to create habitat and food for invertebrates include:
 - EK3: Permanent grassland with very low inputs
 - EK21: legume and herb rich swards
 - Options for hedgerows include:
 - management - especially ELS options EB3: hedgerow management for landscape and wildlife and EB10: combined hedge and ditch management (incorporating EB3), and HLS options HB11: management of hedgerows of very high environmental value (both sides) and HB12: management of hedgerows of very high environmental value (one side).
 - restoration - EB14: to improve the condition of hedgerows and encourage management under long term laying coppicing
 - Options for field margins include:
 - EF7: [beetle banks](#) and options for insect-rich foraging habitats (minimum requirement 2-3ha) under HLS: HE10 – floristically enhanced margins and HF20 – uncropped cultivated plots or margins for arable plants.
- **Use of chemical slug pellets:**
 - the promotion of a policy to discontinue the use of these on land controlled by all Local Authorities was achieved by Rugby Borough Council (RBC) in 2016
 - by 2020 only in Local Authorities Rugby Borough Council (RBC), Warwick District Council and North Warwickshire Borough Council has the use of any type has been discontinued. Nuneaton & Bedworth Borough Council does not use any within their grounds maintenance contract.
 - in the Leam Catchment, reduction and management of the level of use of slug pellets is being undertaken by [Severn Rivers Trust](#).
- The [‘Help for Hedgehogs’](#) campaign was begun by WWT in 2013 to raise £250,000 to work with local schools, planners, developers, local businesses and

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landowners to raise awareness of the issues facing hedgehogs. This included creating a distribution map detailing where hedgehogs occur and improving habitats for hedgehogs and other wildlife on school grounds, housing estates and new developments in Warwickshire:

- Advice was given to:
 - leave 'wild areas' with dead wood piles and leaf litter for foraging and hibernacula
 - provide water supplies in shallow containers
 - make fencing 'permeable' by creating gaps in panels and bases
 - provide cat or dog food, not bread and milk
- In 2015 the first conservation area in the country dedicated to hedgehogs was created, funded by the BHPS. A 90ha [Hedgehog Improvement Area](#) (HIA) in Solihull was managed by volunteers as a sanctuary and to encourage a more wildlife friendly approach amongst gardeners. In 2016 a sister HIA was launched in Rugby. The project, which ended in 2019 having only achieved 2 HIAs out of the target of 10, was nevertheless highly successful in directly engaging over 18,000 people and over 4,500 through social media.
- WWT has worked closely with some rescue centres, and runs a small project looking at hedgehog rehabilitation in the Midlands.
- **Hedgehog carers across Warwickshire** – in 2014 there were 12 registered carer groups (including the BHPS) which rehabilitated many orphaned, injured and underweight hedgehogs. [Warwickshire Hedgehog Rescue](#) took in over 100 animals in 2013, 80% of which were released back into the wild. The staff work from home, treating injuries cause by humans, frequently from the use of strimmers, and caring for juveniles orphaned through nest disturbance and road-kill. A back-up fostercarer team overwinters many underweight animals that would not survive hibernation, for release in the spring.
- [Arden Farm Network](#): held a hedgehog workshop about 2 years ago with WWT promoting best practice; a few farms put out some footprint tunnels to see if they had hedgehogs, sadly not. A lot of its training is on increasing soil biology and insects to reduce inputs on farms which will help with lots of wildlife including hedgehog.
- [Canal & River Trust](#): in 2015 installed hedgehog hotels at [Nelson's Wharf](#) as part of its 'Natural Asset Management Strategy'.
- **Hedgehog awareness initiatives:**
 - Stour Valley Wildlife Action Group: in 2015 held a 'Help for Hedgehogs' public lecture.
 - WWT: ran a mini-allotment project in Rugby and Solihull, with a hedgehog-friendly gardening leaflet given to respondents of a survey (which lists alternative methods of pest control).
 - WWT: held a "Hedgehog Ecology and Management for Practitioners" course to educate land managers on how to manage their habitat for hedgehogs.
- **Hedgehog-friendly boundary features:**
 - RBC: permeable hedgehog-friendly fencing was adopted in the design guide for Phase 2 of the 6000 household Radio Rugby development. Similar plans are in place at the Phase B extension at Cawston, with

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connectivity planned for 47 large properties. Work is ongoing with RBC and developers to ensure that these plans come to fruition (Deborah Parsons.pers.comm.2017).

- WWT: 15 development sites across the Rugby and Solihull (and 3 more elsewhere in the county) are now set to include hedgehog-friendly fencing after tailored suggestions were made.

6. PROPOSED LOCAL ACTIONS

ACTION	Lead	Partners	By
PLEASE CONSULT THE '<i>GENERIC SPECIES</i>' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR ACTIONS COMMON TO ALL SPECIES PLANS			
Policy, Legislation & Protection			
PL1. Encourage the adoption of a policy discouraging the use of pesticides on land controlled by local authorities, e.g. parks, allotments, and promote organic alternatives.	WCC	LAs	ongoing
PL2. Promote the adoption of a policy to discontinue the use of all chemical slug repellents on land controlled by all local authorities.	RBC	WCC WWT AS	NE LAs 2025
PL3. Encourage the retention and protection of boundary features such as hedgerows and rough field margins on development sites to support connectivity through the countryside.	WCC	WWT	LAs ongoing
PL4. Actively propose the better management of urban sites and new developments by the use of 'permeable' fencing, i.e. with accessible gaps, to connect gardens.	WCC	LAs	WWT ongoing
PL5. Prepare site management guidance for land managers of semi-improved grassland Local Wildlife Sites (LWS) and other relevant habitats that will benefit hedgehogs.	LWSP	HBA LOs	WWT ongoing
Site / Species Safeguard & Management			
SM1. Develop 10 'Hedgehog Improvement Areas' spread across the county that will show a measurable increase in hedgehog populations through community awareness and habitat management improvements.	WWT	HOs	project finished in 2019
SM2. Actively propose management prescriptions under agri-environment schemes which are sympathetic to the hedgehog's requirements with:	NE	FC WWT	WCC ongoing

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ACTION	Lead	Partners	By
<ul style="list-style-type: none"> conservation of hedgerow systems & wooded areas near arable fields wider field margins non-intensive farming practices 			
SM3. Care for orphaned, injured and underweight hedgehogs and reintroduce to suitable release sites.	WHR	WWT LAs Carer groups	ongoing
Advisory			
A1. Continue to promote take-up of agri-environment schemes for sensitive farming options that will benefit hedgehogs (see SM3).	NE	WWT CFE	ongoing
A2. Continue to promote the rebuilding and checking of bonfires for wildlife before setting alight.	WCC	WWT LAs SVWAG	ongoing
Research & Monitoring			
RM1. Co-ordinate records of hedgehogs collected by individuals and organisations, including targeted surveys.	WBRC	WWT WALC WFWI Schools	ongoing
RM2. Continue to undertake surveys where resources allow.	WMG	WWT LOs	ongoing
RM3. Undertake post-mortem testing of corpses for pesticides and produce report of results.	WWT	PTES	project finished in 2019
Communication, Education & Publicity			
CP1. Encourage the public to report sightings of hedgehogs, both dead and alive, to the Warwickshire Biological Record Centre.	WMG	WWT WBRC	ongoing
CP2. Actively encourage engagement in the PTES ' Mammals on Roads ' and ' Living with Mammals ' surveys for gardens and schools.	WWT	WBRC PTES	ongoing

Abbreviations:, **AS** – Allotment Societies, **CFE** – Campaign for the Farmed Environment, **FC** – Forestry Commission, **GCs** – Gardening Clubs, **HBA** – Habitat Biodiversity Audit partnership, **HOs** – Home owners, **LAs** – Local Authorities, **LWSP** – Local Wildlife Sites Project, **NE** – Natural England, **PCCs** – Parochial Church Councils, **PTES** – Peoples' Trust for Endangered Species, **RBC** – Rugby Borough Council, **SVWAG** – Stour Valley Wildlife Action Group, **WALC** – Warwickshire Association of Local Councils, **WBRC** – Warwickshire Biological Record Centre, **WCC** – Warwickshire County Council, **WFWI** – Warwickshire Federation of Women's Institutes, **WHR** – Warwickshire Hedgehog Rescue, **WMG** – Warwickshire Mammal Group, **WWT** – Warwickshire Wildlife Trust.

7. PROGRESS WITH ACTIONS

From 2015–2020 there will be a rolling programme of reporting on progress, of 10 action plans per year with an annual summary of results. Progress with this plan up to 2020 can be seen at www.warwickshirewildlifetrust.org.uk/LBAP.

8. BIBLIOGRAPHY

Morris, P.A. (1988) A study of home range and movements in the hedgehog. *Journal of Zoology* 214.

Doncaster, C.P. (1994). Factors Regulating Local Variations in Abundance: Field Tests on Hedgehogs, *Erinaceus europaeus*. *Oikos*, 69(2), pp.182 -192.

Cassini, M.H. & Föger, B. (1995). The effect of food distribution on habitat use of foraging hedgehogs and the ideal non-territorial despotic distribution. *Acta Oecologica*, 16(6), pp.657-669.

Morris, P.A. (2006) *The New Hedgehog Book*. Whittet Books, Wiltshire, UK.

Lawton, J.H. (2010) [Making Space for Nature](#): a review of England's wildlife sites and ecological network. Report to Defra, advocating a landscape-scale approach guided by four key principles, summarised as '*more, bigger, better and joined*'.

Defra (2011) [Biodiversity 2020](#): A strategy for England's wildlife and ecosystem services.

Wembridge D. (2011) [State of Britain's Hedgehogs](#): Evidence of a declining hedgehog population. Report for British Hedgehog Preservation Society & People's Trust for Endangered Species.

Mammal Society (2012) *Mammals of the British Isles – Fact sheets and Information*.

Natural England (2013) [Entry Level Stewardship handbook](#)

Paul Bright et al. (2012) The importance of more and denser hedges in rural areas for hedgehogs. *Animal Behaviour* April 2012

Warwick, H. (2016) Britain's Hedgehogs: research and the conservation effort in the face of serious decline. *British Wildlife*, vol.8, no.2:p78-86.

RSPB (2016) [State of Nature](#) – a stocktake of all our native wildlife by over 50 wildlife organisations.

Natural England (2016) [Conservation Strategy for the 21st Century](#). Sets out how NE will help deliver DEFRA's ambitions for the environment to reverse biodiversity loss, sustain distinctive landscapes and enhance engagement with nature.

Warwickshire, Coventry and Solihull Local Biodiversity Action Plan

Morris, P.A. (2018) Hedgehog. Collins New Naturalist no.137

Ben M. Williams et al. (2018) [Reduced occupancy of hedgehogs \(*Erinaceus europaeus*\) in rural England and Wales](#): The influence of habitat and an asymmetric intra-guild predator. A recent survey using footprint tunnels to monitor distribution. Scientific reports 8, article no.12156.

Worldwide Fund for Nature (2018) [The Living Planet Report](#): aiming higher. Published in collaboration with the Zoological Society of London.

9. FURTHER INFORMATION

- PTES information leaflets:
 - [“Hedgehogs and Development”](#) provides guidance that can be used and referred to nationwide into the future, without the need for time-consuming tailored comments on planning applications.
 - [“Hedgehogs on your land”](#) leaflet for farmers.
- Natural England: [Booklets on Wildlife Gardening](#), [Wildlife Gardening Forum](#)
- [British Hedgehog Preservation Society](#) website and information.
- Royal Horticultural Society & The Wildlife Trusts [‘Wild About Gardens’](#) Project and ‘Wildlife Gardening for Everyone’ Question & Answer book.
- [Hedgehog Street](#) works to increase public awareness of hedgehog ecology and wildlife-friendly gardening as well as conducting large-scale surveys. The initiative [Make a hole, make a difference](#) aims to create hedgehog highways through gardens. Two free guides provide advice on how to help hedgehogs are:
 - [Hedgehog Ecology and Land Management](#) – created for land managers, park rangers and ecologists. It covers the ecology of hedgehogs and tips on how to manage land more sensitively to help hedgehogs - including advice about ground maintenance, mowing regimes and potential hedgehog hazards. It also provides advice on how to easily survey your green space for hedgehogs.
 - [Hedgehogs and Development](#) – created to help provide advice on new developments, wherever they may be. It provides advice on how to easily incorporate hedgehogs into ecological surveys, and how to mitigate for hedgehogs before, during and after any build, including how to install Hedgehog Highways. Almost 500,000 people across the UK have signed a petition calling for Hedgehog Highways to be installed in all new developments. The public have spoken, so use this guide to get advice on how to support your local hedgehog population in any future development work on your sites, and how you can integrate this advice into your own policies.
 - [How to help rural hedgehogs](#) – a free guide for farmers
 - [Help hedgehogs in your neighbourhood](#) – 10 top tips to help hedgehogs
- BBC (2017) Hugh Warwick called for the reconnection of our fragmented landscape to preserve our wildlife, in particular the effect of urbanisation and fragmentation, particularly on hedgehogs: <http://www.bbc.co.uk/programmes/b08v8dxw>

10. CONTACT

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