



Farming in Protected Landscapes programme

Using modelling to inform a citizen science approach to mapping and conserving adders on Cannock Chase

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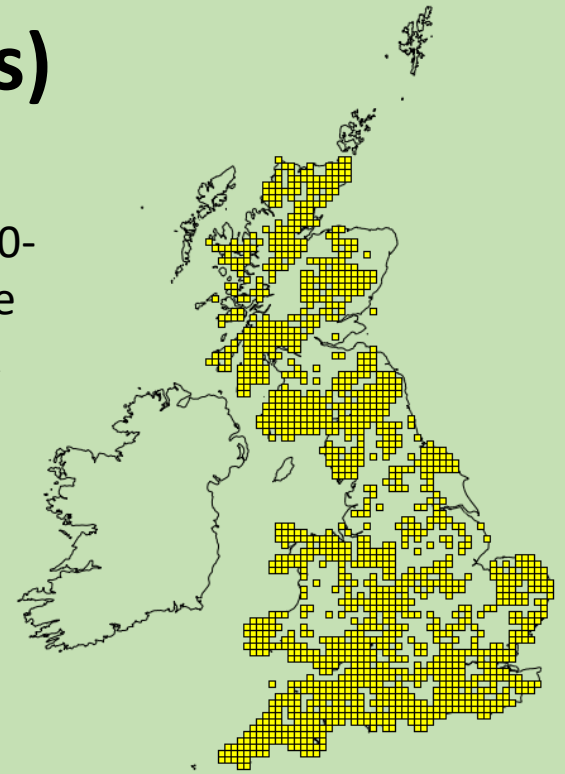
Funded through DEFRA's Farming in Protected Landscapes (FiPL) programme



The Adder (*Vipera berus*)



A small and quite stocky snake – growing to only 40-70 cm in length. Males are typically grey with a black zigzag stripe, and females generally brown with a dark brown zigzag stripe.



Despite their apparent widespread distribution (this diagram includes historic data), adders are extremely vulnerable. They have very specific habitat requirements, and have suffered greatly from historic persecution, predation and poor site management.

All reptiles are protected by the Wildlife and Countryside Act 1981 and by the Nature Conservation Act 2004. It is illegal to intentionally or recklessly kill or injure an adder!



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Long term monitoring programmes such as 'Make the Adder Count' indicate that adders are declining rapidly across many parts of the UK, and faces local extinction in many counties.



Female adder copyright Kevin Clarke

This pattern of declines is likely to be mirrored on Cannock Chase where, despite being widely considered to be a historic 'adder stronghold', there is evidence to suggest that populations may be vulnerable.



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Many land managers are working hard to support wildlife on their sites, but to decisively reverse adder declines we need to act at the landscape level

We need to conserve adders through habitat improvement and by increasing connectivity.



Adder, copyright Tim Baker

We are pleased to be able to recruit many local land owners to the project including: Beau Desert Golf Club, Cannock Chase District Council, Cemex, New Hayes Farm, Staffordshire Borough Council, Staffordshire County Council, South Staffordshire Council, Staffordshire Wildlife Trust, and The National Trust (Shugborough Estate). The project is also supported by The Commonwealth War Graves Commission, Forestry England and Lichfield District Council.



We've also had worrying signs of adder persecution on Cannock Chase.

Alongside the practical conservation effort, there needs to be a significant public outreach programme to encourage our local communities to cherish and champion their adders.

We are planning a family reptile outreach event at Marquis Drive on 30th May 2024. All are welcome!!

Adders are Amazing!!

Image copyright Sam Kelly

Cannock Chase Adder Conservation Project

Department for Environment Food & Rural Affairs
 Cannock Chase National Landscape
 ARG UK
 UK Centre for Ecology & Hydrology
 Farming in Protected Landscapes programme

With thanks to all of our project funders, partners and supporters

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Farming in Protected Landscapes programme



Phase 1: Survey and modelling



Starting in March 2024, we organised a baseline survey for adders and other reptiles and amphibians across Cannock Chase AONB. Local ARG volunteers from Staffordshire, Birmingham & the Black Country, Warwickshire and Nottinghamshire have also run a number of training sessions with Staffordshire County Council, Staffordshire Wildlife Trust, The National Trust, and many local surveyors. To date we've trained over 70 surveyors.



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UK CEH have developed models (*4pop models) for adder and common lizard that simulate species' foraging, dispersal and population dynamics. These combine landcover data with knowledge from researchers, NGOs and conservation volunteers to predict species' relative abundance at fine spatial scales (~10m).



Using the models developed by UK CEH we have identified new potential adder sites. Volunteers have been undertaking visual surveys to look for reptiles – including adder, common lizard, slow-worms and common lizard!



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Surveyors can then put their records on our new Cannock Chase Adder Recording Portal on www.recordpool.org.uk

The Cannock Chase National Landscape Adder Conservation Programme
Phase 1: Survey and modelling

Home Part A: Record your survey Part B: Information about the wider site Survey Guidelines

This survey aims to collect information on the distribution and abundance of reptiles across [Cannock Chase National Landscape](#). Although concentrating on adders, the survey aims to find out more about all herpetofauna species so please look out for slow-worm, common lizard, grass snake and any amphibians.

Long term monitoring programmes show that the adder (*Vipera berus*) is declining rapidly across many parts of the UK, and faces local extinction in many counties. This pattern of declines is mirrored on Cannock Chase AONB where, there is evidence to suggest that populations may also be vulnerable.

Starting in the Spring of 2024, we are running a survey and monitoring programme supported by the Farming in Protected Landscapes Programme to collect and collate records for reptiles across Cannock Chase and its environs. This information will be used to refine our adder habitat suitability model to allow us to identify areas of good habitat, and opportunities for habitat connectivity across the landscape. We would also be grateful for any historic records or other information that you may have, that will allow us to better map the distribution of adders, and where possible target survey areas where less is known.

[Part A: Record your survey >](#)

We are also collecting information about the survey timings and habitat information to feed into the model.

The Cannock Chase National Landscape Adder Conservation Programme
Phase 1: Survey and modelling

Home Part A: Record your survey Part B: Information about the wider site Survey Guidelines

Part B : Site Information
This section refers to the area within which the count site is located.

1. Survey start and end times

Start Time End Time

2. What best describes how the count site is connected to other adder sites/populations?

- Completely isolated by many km
- Isolated from nearby sites by sub-optimal habitat
- Linked by corridors (e.g. along a river or railway line)
- Part of a larger group of populations occupying more or less continuous habitat

3. Please describe the habitat(s) at the site. Please tick all that apply to your survey.

- Broadleaved woodland
- Coniferous woodland
- Woodland edge features (exterior, tracks, rides, clearings)
- Woody Linear Features (e.g. hedgerows, tree lines)
- Grassy Linear Features (road verges, field margins)
- Improved grassland
- Lowland Semi-natural Grassland
- Upland Semi-natural Grassland
- Lowland Heathland
- Fen, marsh, swamp
- Arable, horticulture
- Suburban
- Urban

4. Questions about bracken Leave blank if uncertain how to complete this section

Bracken is a common feature of adder sites – but is also regarded as invasive and hence sometimes targeted for control. To quantify the incidence of bracken on adder sites please could you circle the DAFOR score that best quantifies abundance of bracken vegetation cover:

	Dominant (80-100%)	Abundant (50-80%)	Frequent (16-50%)	Occasional (6-16%)	Rare (< 6%)
Bracken in immediate area where you have seen your adders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bracken abundance within the wider site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

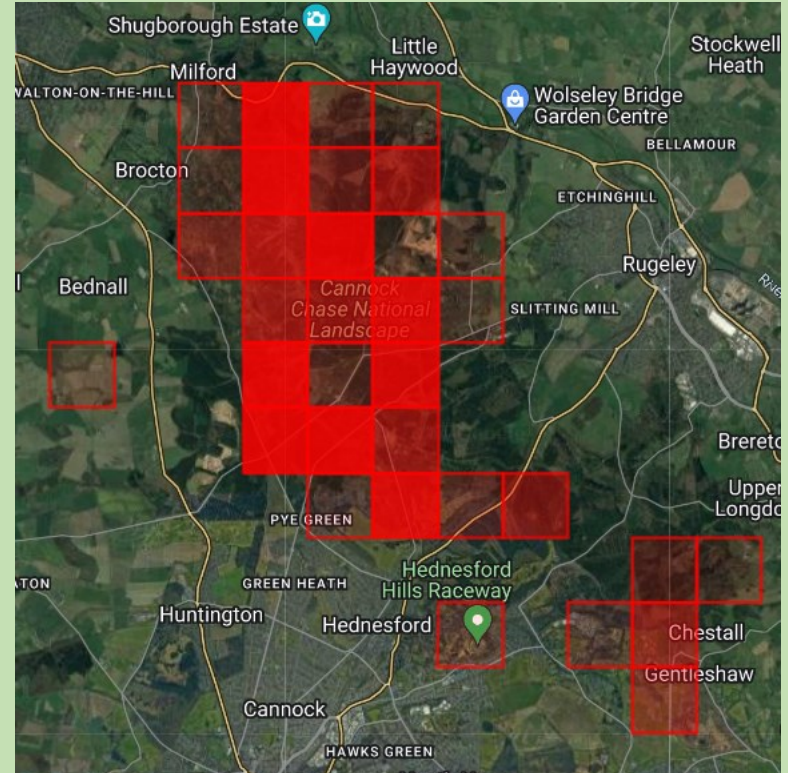
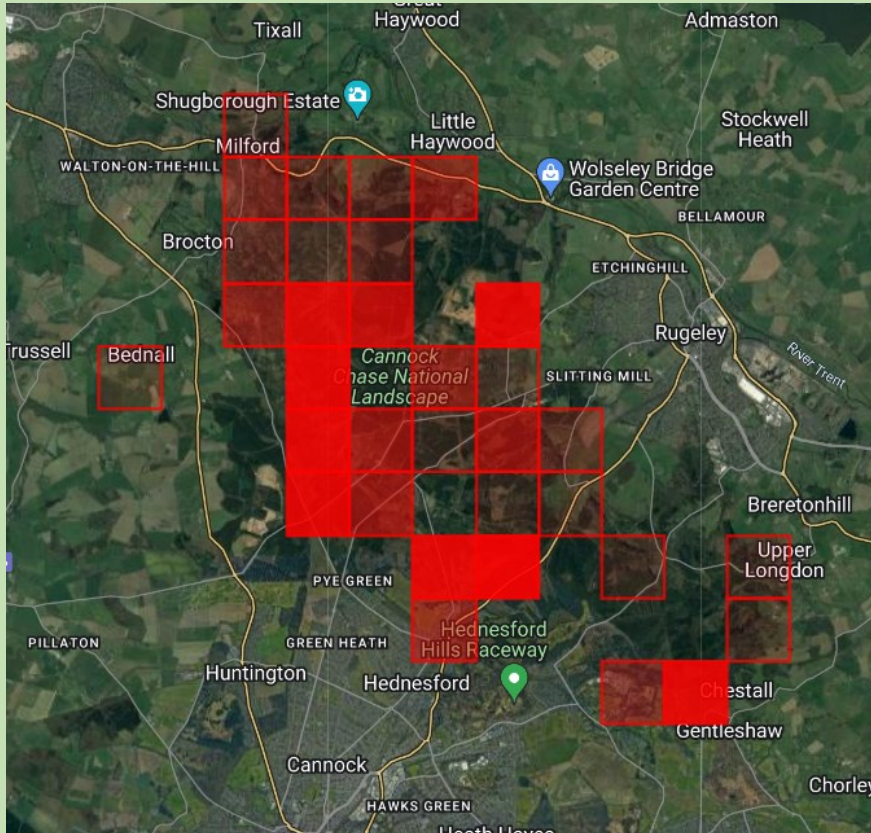
[Back to Part A: Count Data](#) [Next: Submit survey](#)

Powered by [Record Pool](#), a collaborative project from [ARG UK](#) & [amphibian and reptile conservation](#)



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This allows us to map adders!



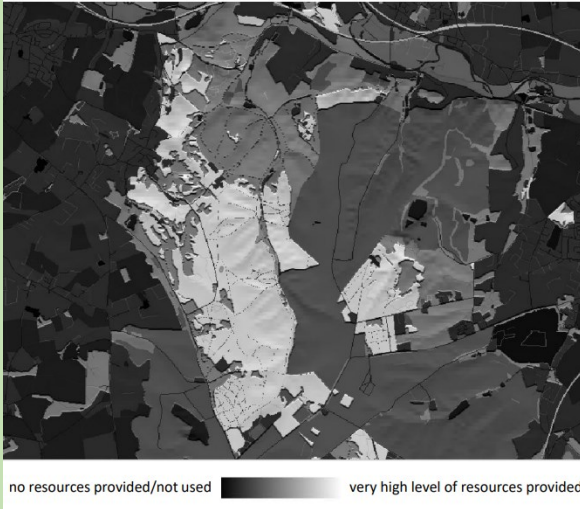
.... and common lizards

Adder and common map for Cannock Chase @1km grid square resolution from Record Pool – www.recordpool.org.uk



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Adult adder hibernation resources – North Zone



And it works!! We are spotting adders in many of the 'good sites'.

Adult adder foraging resources – North Zone

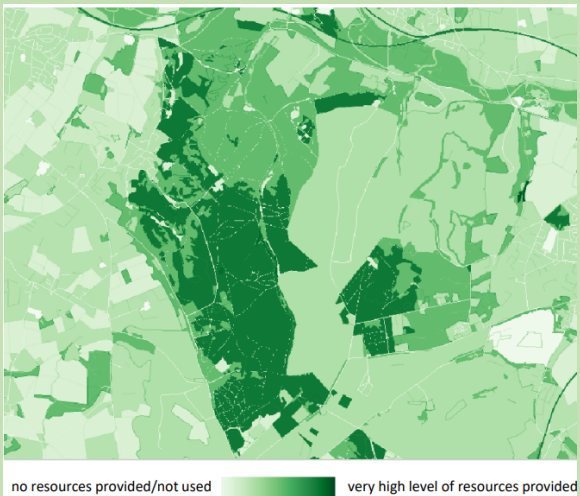
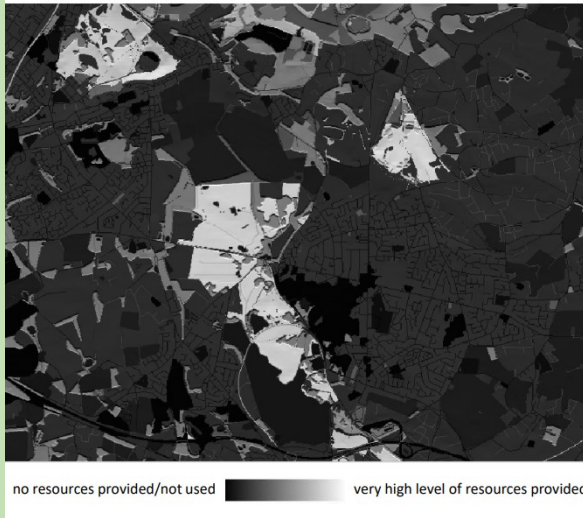


Image copyright Kevin Clarke



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Adult adder hibernation resources - South Zone



What is interesting is that there are other sites (e.g. Gentleshaw Common, Chase Water) that are considered suitable for adders, and we are finding an abundance of common lizards, but no recent adder records. We can speculate that adders have been lost from these sites, perhaps due to historic persecution, disturbance or loss of key habitat features such as hibernation sites.

Adult adder foraging resources – South Zone

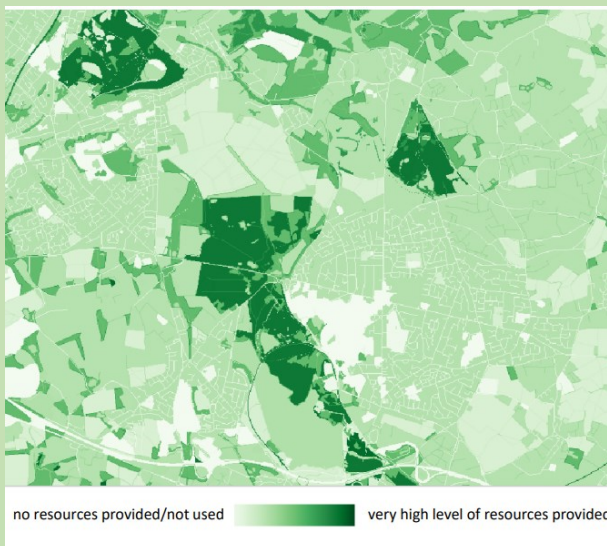


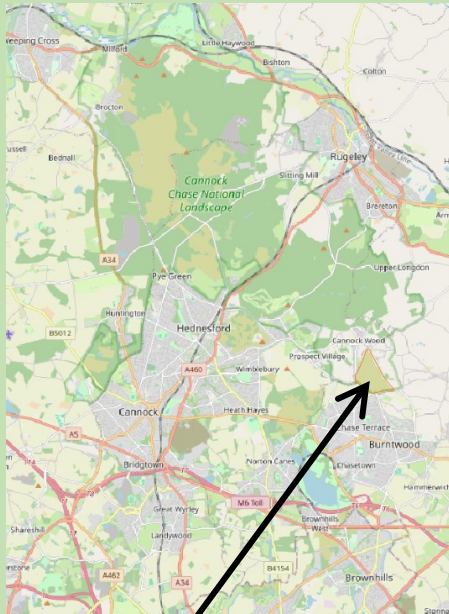
Image copyright Kevin Clarke



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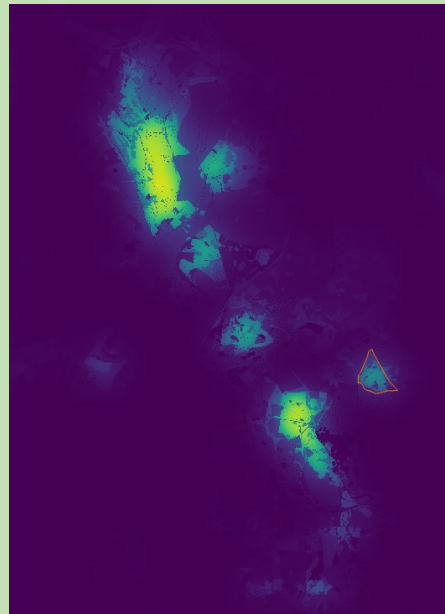
Model simulations show **how difficult it is for adders to recolonize areas like Gentleshaw Common after a population crash.**

→ emphasizes the **importance of work to reconnect populations** across the Chase



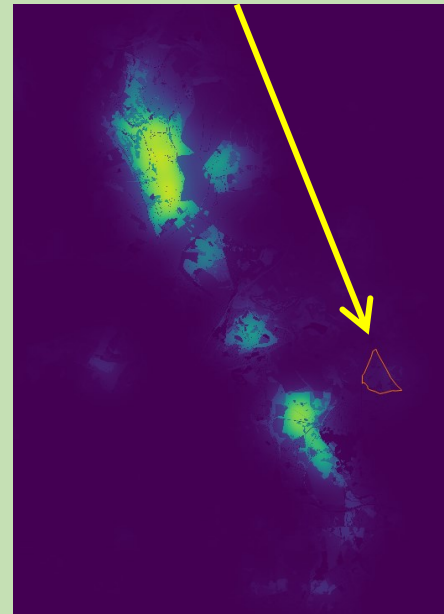
Gentleshaw Common

Predicted adder activity

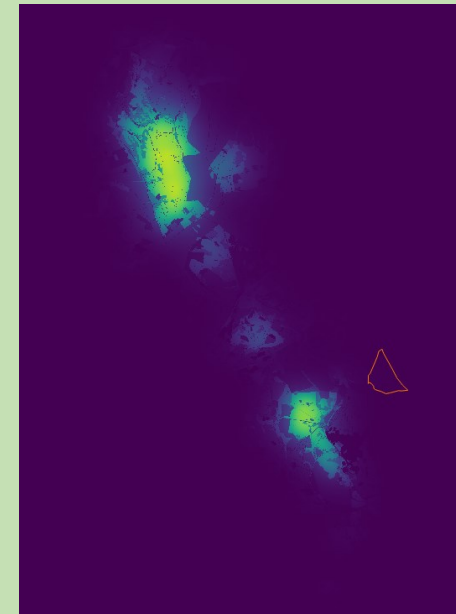


low foraging rate [color scale] high foraging rate

Simulate loss of adders from Gentleshaw Common



10 years later still no signs of significant recolonization



Run model forward in time, simulating adder population growth and dispersal...



Farming in Protected Landscapes programme

We have had a fantastic response to date – and we would like to extend a huge thank you to all of the surveyors who have spent many hours searching for reptiles, and to our ARG trainers for giving up their time for this project. Also to our partner land managers for their patience and support.

Next steps are to identify suitable locations for habitat improvements and improving connectivity for reptiles and especially adders.

If you would like to find out more, join our survey team or have any other comments please contact Dr Angela Julian, ARG UK on angela.julian@arguk.org.

