Greater Horseshoe Bats in the Avon Valley, Hampshire

Talk for the New Forest Biodiversity Forum

4 March 2026

Photos: Nik Knight & Colleen Hope

Greater Horseshoe Bat
Rhinolophus ferrumequinum

- 90% decline in population in the last 100 years
- Rare in the UK confined mainly to south west of England and south Wales
- Hampshire now on edge of range

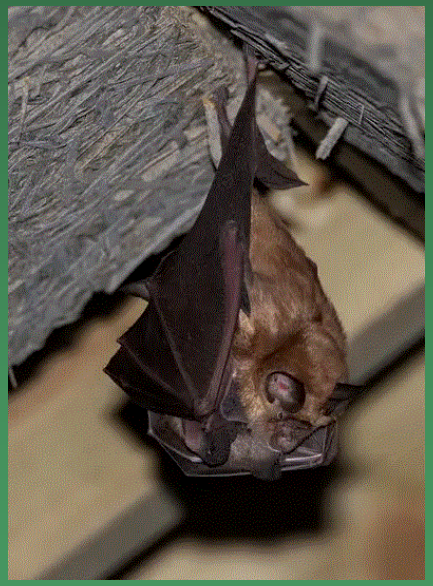


Photo: Vincent Wildlife Trust

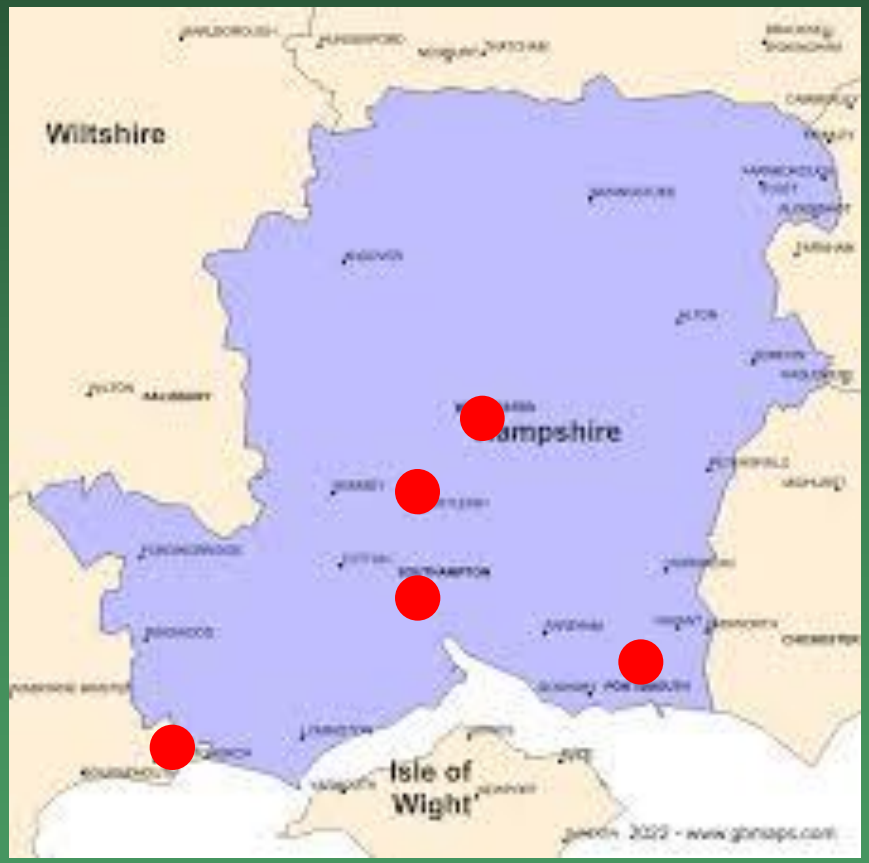
Map: BCT

Greater Horseshoe Bats in Hampshire

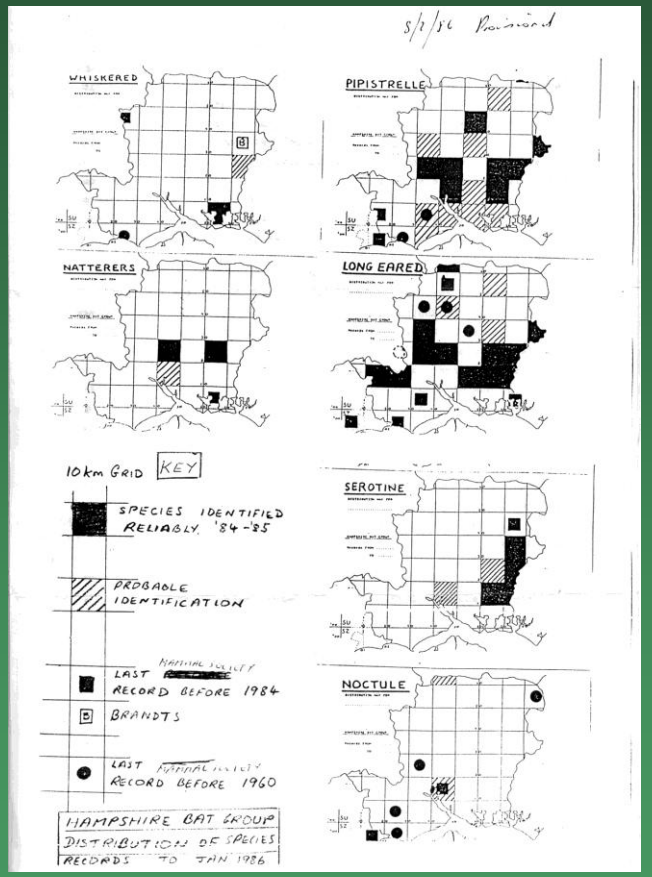
- Habitat loss (including fragmentation)
- Intensive agricultural practices (pesticides impacting food sources)
- Roost disturbance & conversion of outbuildings (relies on built structures/caves)
- Historic catastrophic events (use of lindane in roosts)
- Artificial lighting

Greater Horseshoe Bats in Hampshire

Recorded by Vezey Fitzgerald (1949) in Winchester, Romsey, Southampton, Portsmouth and Christchurch (now Dorset)



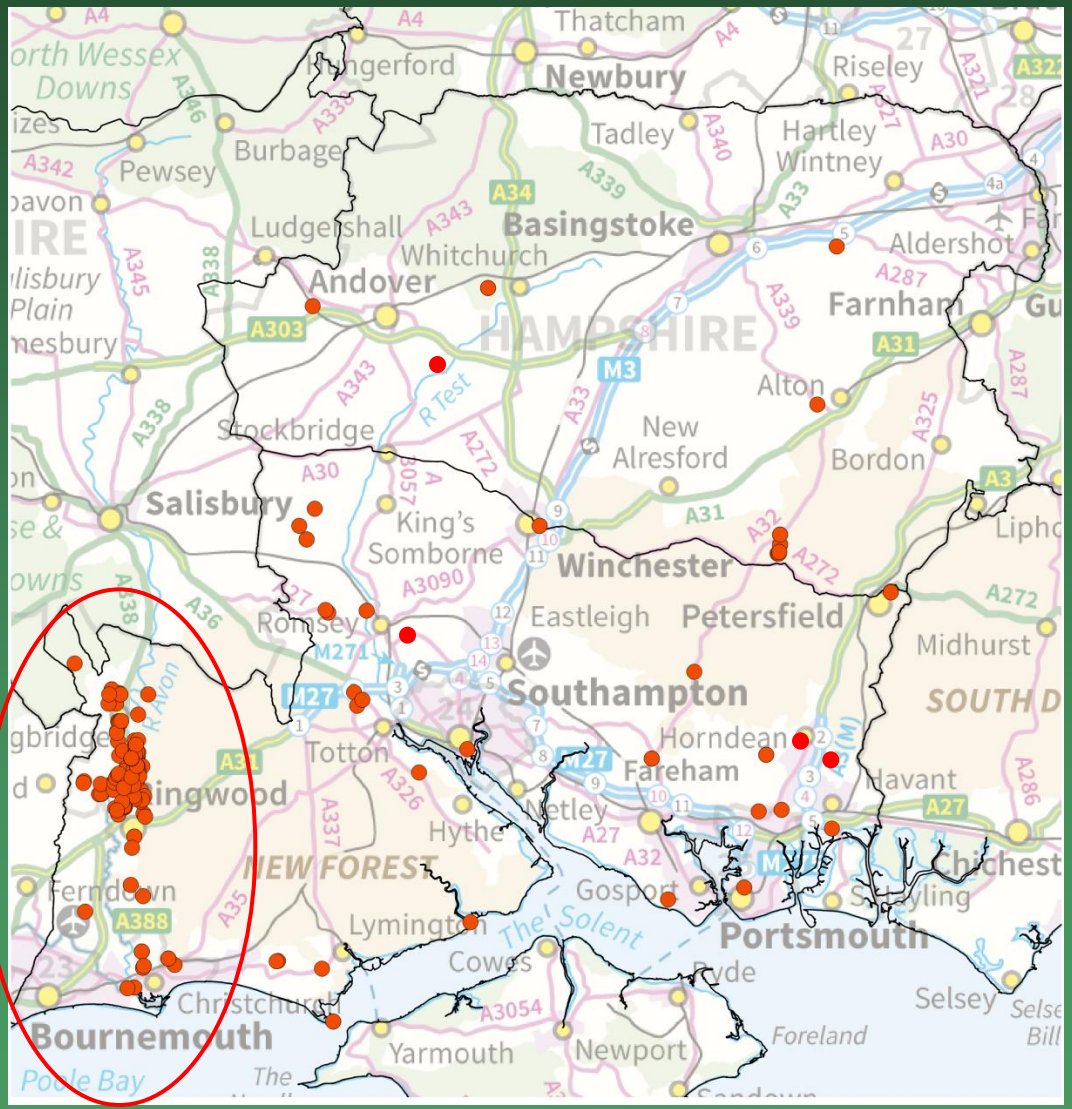
Likely under-recorded as most records are historic (Cathedrals/military sites)



Bat records for Hampshire were still rudimentary in 1984: no GHS

Greater Horseshoe bats in Hampshire

Current records (Oct 2025). No maternity roosts



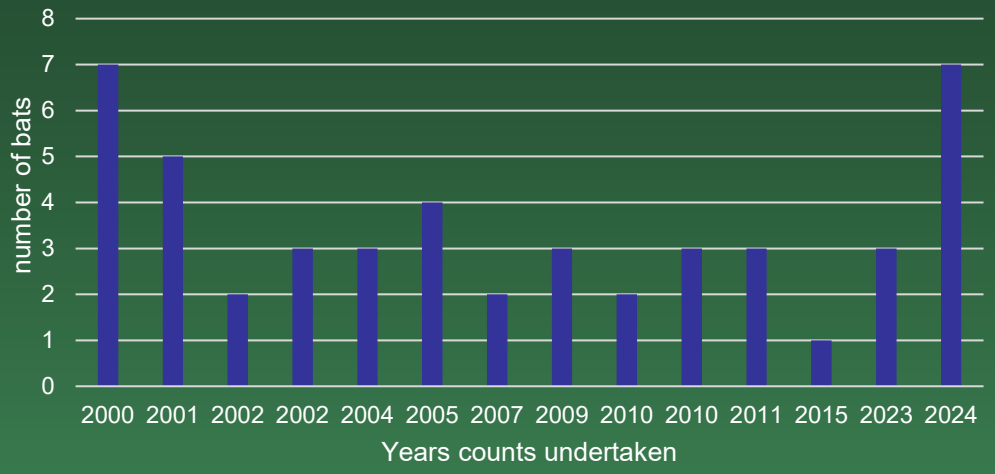
Greater Horseshoe Bats in the Avon Valley

Hampshire's largest known roost is near Blashford, Ringwood in the Avon Valley

Mainly hibernation and spring roost
(0-2 bats present in summer)

Small number of other night and day roosts known locally within c 500-1000m but all generally with <7 bats (and many 0-1 bats)

Main study site nr Blashford



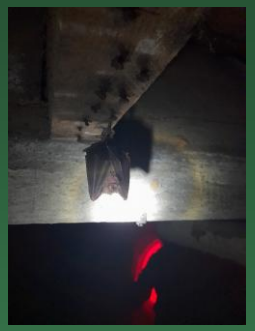


Photo credits: Ian Baker, Colleen Hope

Radio Tracking Study April/May 2025

Aimed to:

- Better understand **size and structure** of the local population of GHS
- Identify other **roost(s)** used by the local population
- Identify key **commuting corridors** / foraging areas and core sustenance zone (CSZ) used in spring (**habitat preferences**)
- Inform Local Plan, **influence development** site designs, site allocations and the Local Nature Recovery Strategy (LNRS)
- Provide improved baseline data to **target further research and practical conservation efforts** (aimed at roosts and habitats)

Radio Tracking Study April/May 2025

Funding provided by NFDC

New Forest District Council

Partnership project

ECS

ECS Ecological Consultancy Services Ltd

DWE Ecology

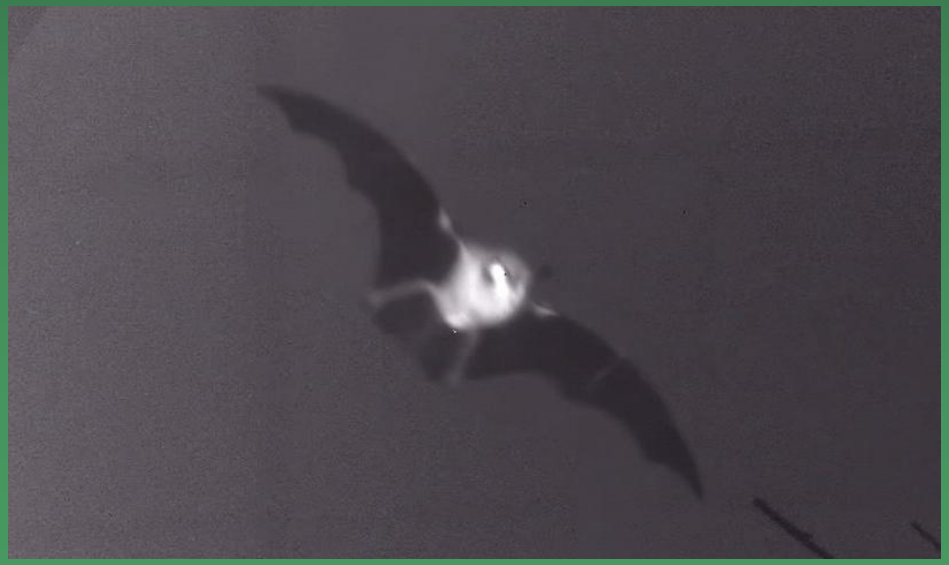
davidson-watts ecology ltd

Hampshire Bat Group

Hampshire Bat Group

Radio Tracking Study April/May 2025

Bats captured on emergence using mist nets and hand nets



Some bats rest after emergence on surrounding walls before dispersing more widely

Thermal imagery: Ian Baker

Radio Tracking Study April/May 2025

Rings fitted to 8 GHS

Radio transmitters fitted to 4 x female and 1 x male GHS

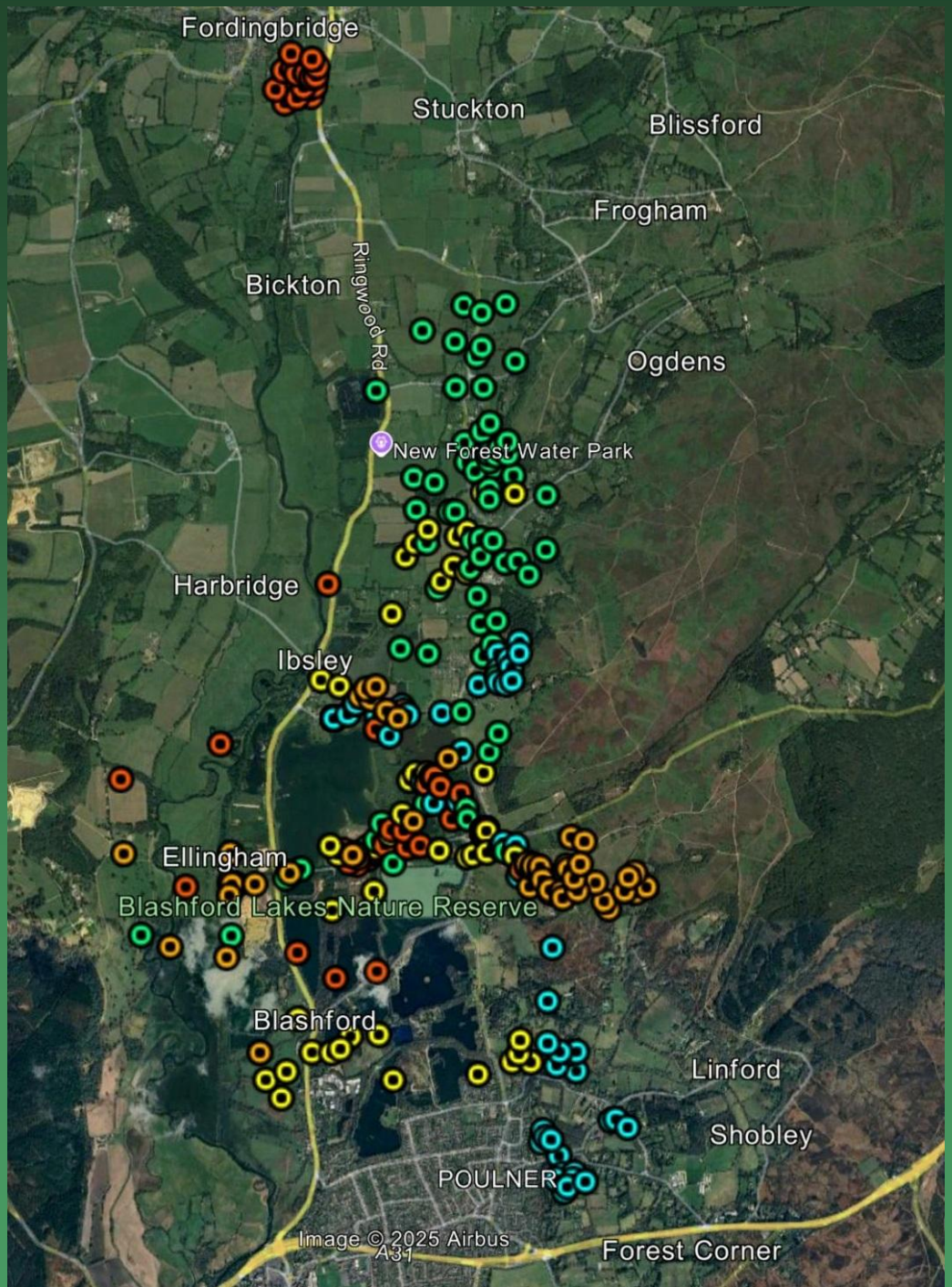
Photo credits: Nik Knight

Radio Tracking Study April/May 2025

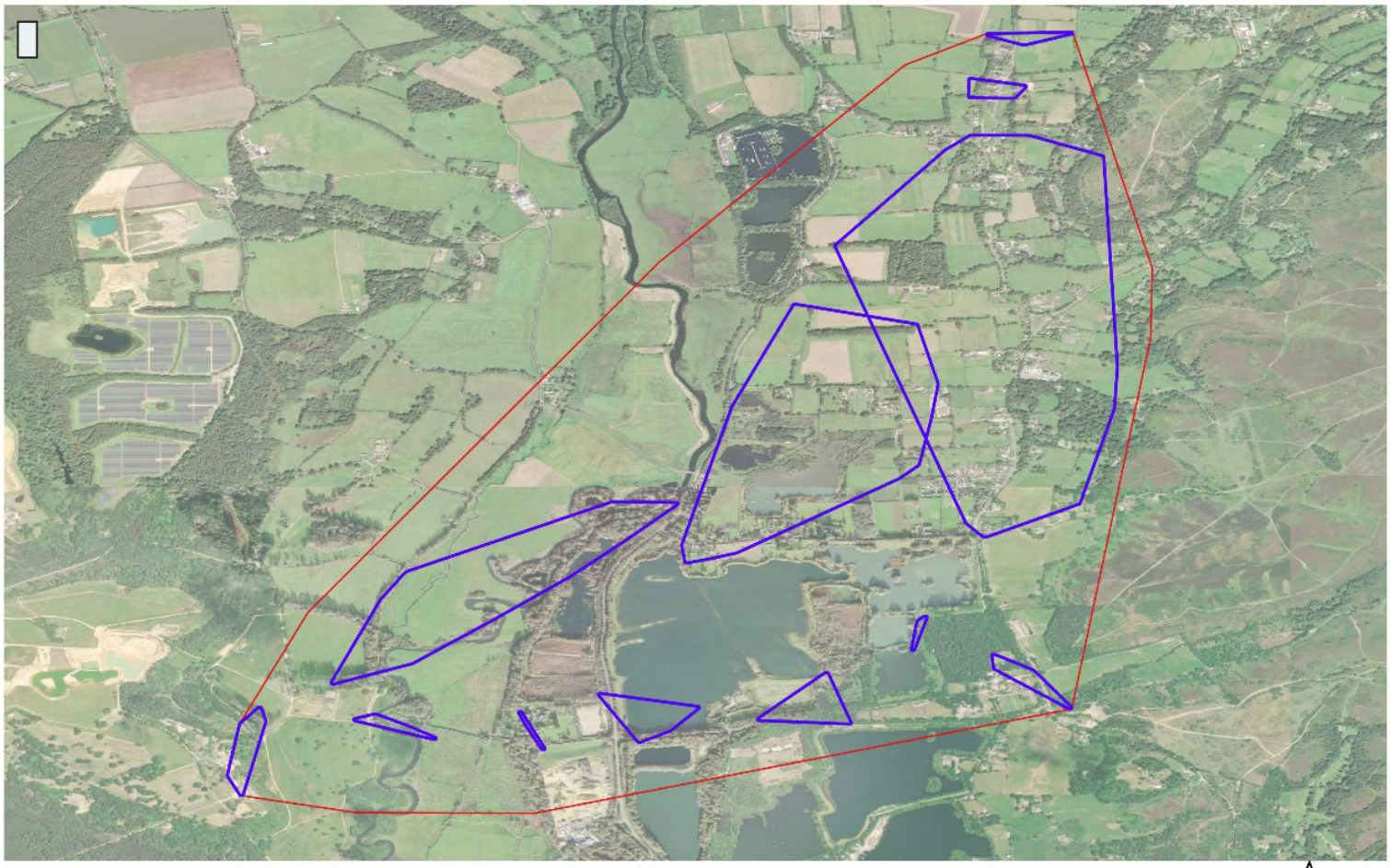
- Two pairs of surveyors. Each pair tracked between 1-2 bats (occasionally splitting up) over a period of 12 nights (dusk to dawn)

- Recorded location fixes every 10 mins whilst contact maintained. Close approach, biangulation & triangulation methods

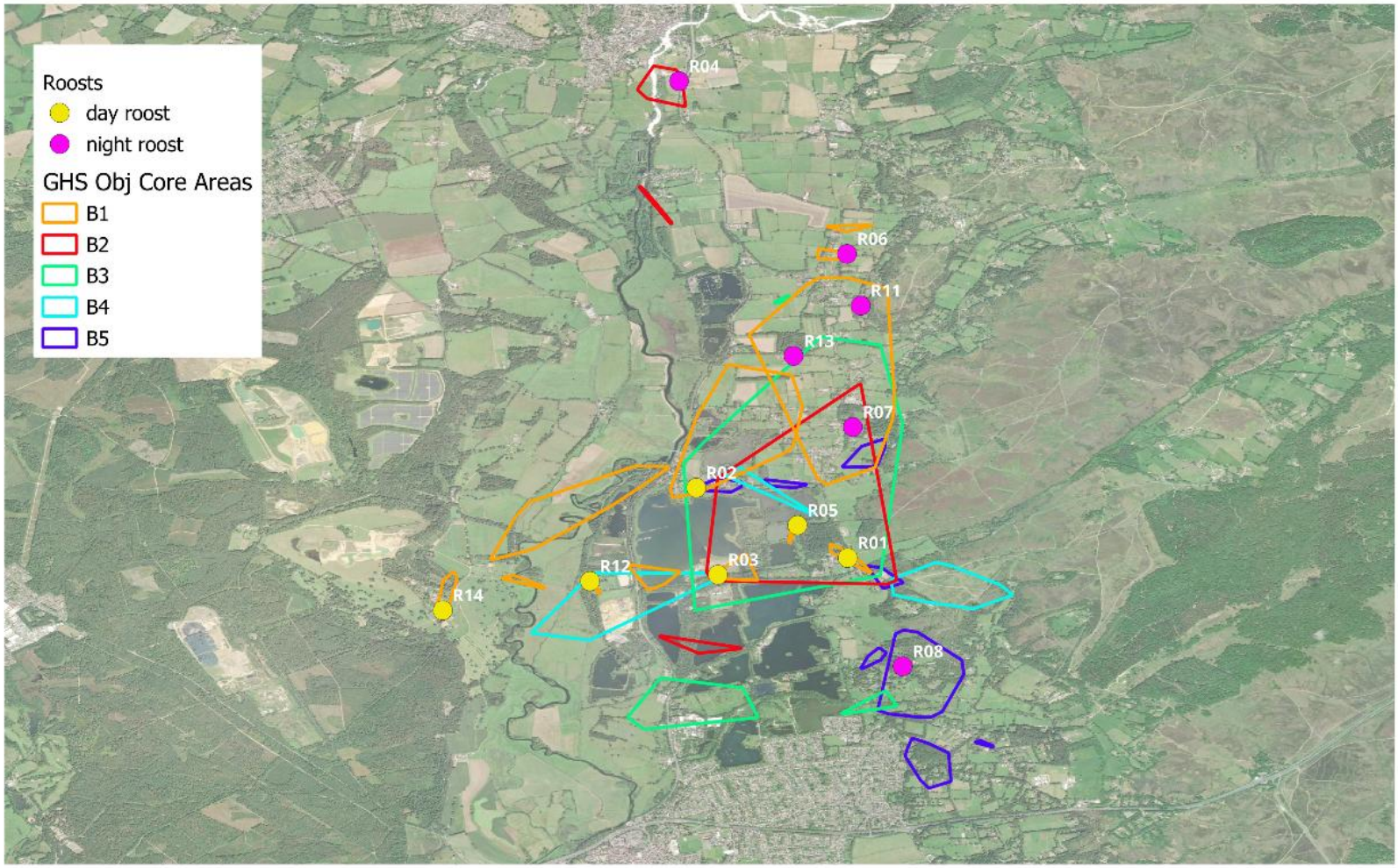
Typical night of fixes



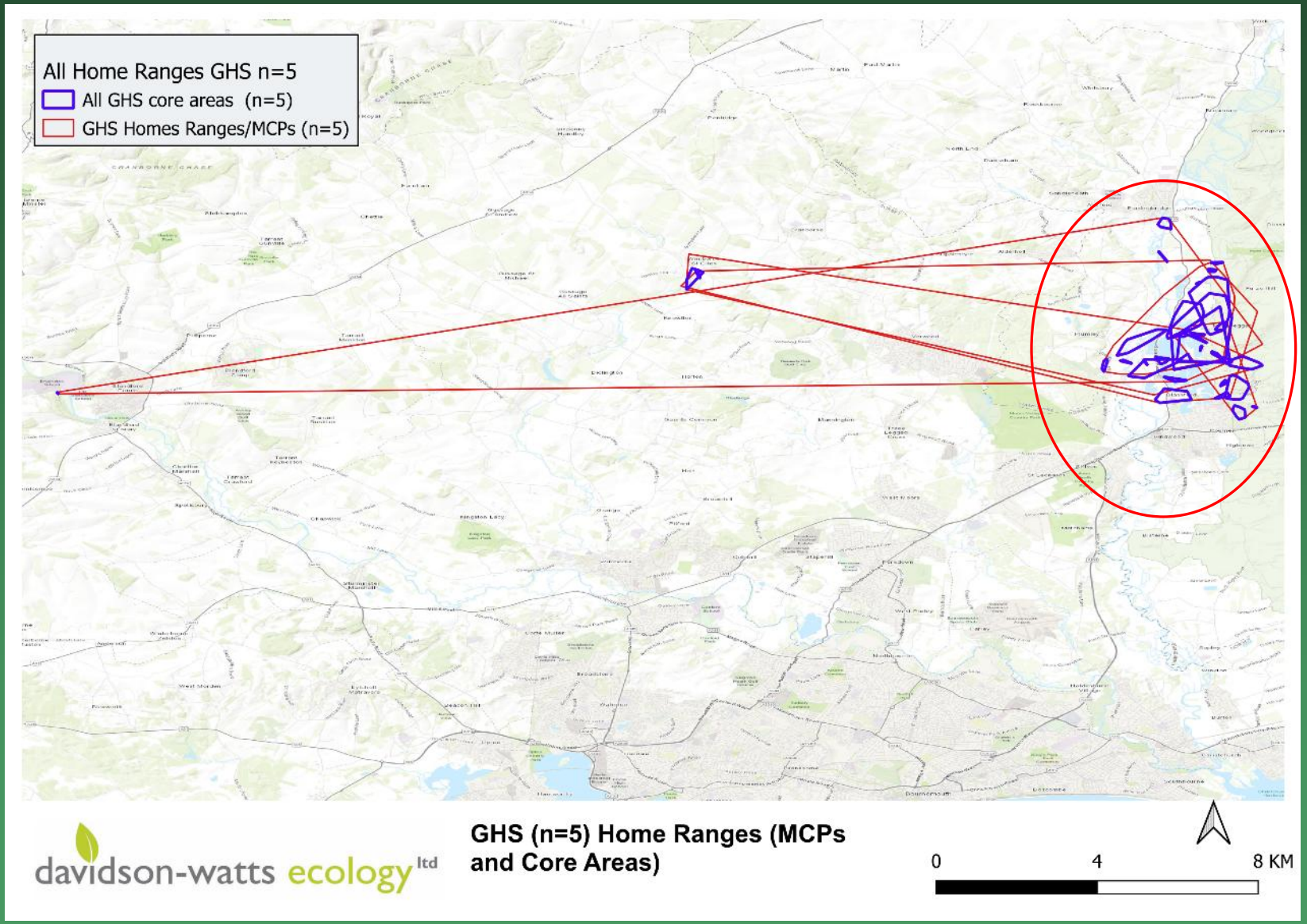
Home range and **core clusters** for Bat B1 (female)
Data always require interpretation & understanding of survey and assessment methods and any limitations



Home range and **core clusters** (all bats, whole period)



Summary of home ranges (MCPs) and core clusters for all 5 GHS bats (all nights) April-May 2025



Habitat Content of the areas ‘used’ – Objective core areas of five greater horseshoe bats (Analysis excluded Dorset roosts)

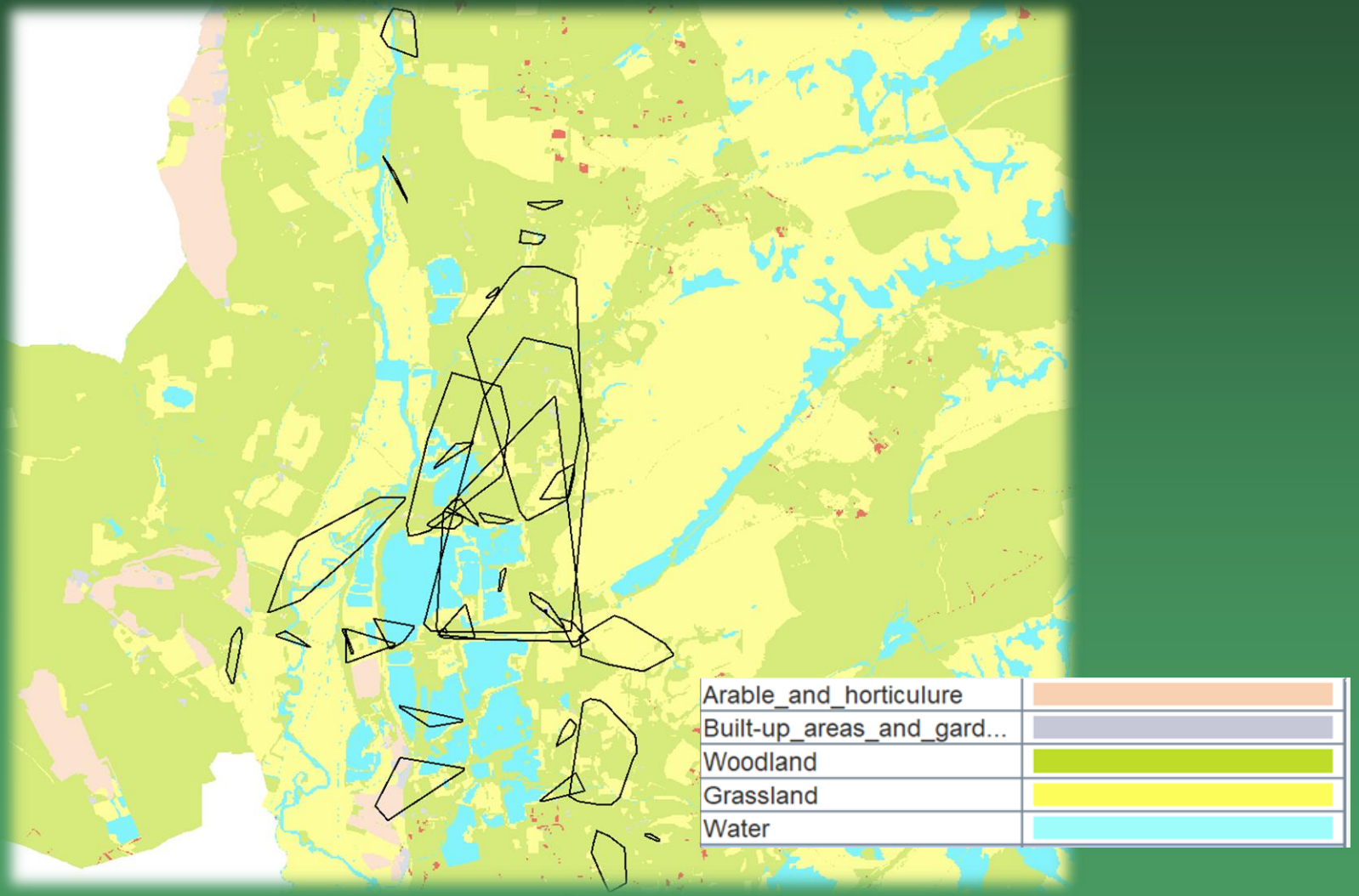


Chart 1 – Proportion of broad habitats used and available to five GHS bats in the Avon Valley.

Significant difference between habitat types is shown by +++ (selected for) or — (avoided), with + or – showing a nonsignificant trend. The ranking matrix was calculated by adding the number of + and +++ scores. **A rank of 0 signifies the least preferred habitat, with 10 being the most important habitat.**

	ArHor	Built/Gardens	Woodland	Grassland	Water	Rank
ArHor		-	-	-	+	1
Built/Gardens	+		-	+	+	3
Woodland	+	+		+	+	4
Grassland	+	-	-		+	2
Water	-	-	-	-		0

Preferences: broadleaved woodland but not significant.
Mosaic of habitats were used

Summary of home range data of all 5 GHS bats (Avon Valley, Hampshire only)

Bat ID	Sex	Month	Number of Fixes	MCP Area (ha)	MCP Range Span (m)	Mean Core Area (ha)
1	Female	April/May	279	863.6	5201.6	25.1
2	Female	April/May	79	1280.4	6423.4	52.8
3	Female	April/May	137	866.5	5725.6	58.9
4	Female	April/May	47	497.0	3646.5	8.8
5	Male	April/May	138	369.1	3838.9	7.4
Average (mean)			**136**	**775.3**	**4967.2**	**30.6**

ROOST USE, RANGING BEHAVIOR, AND DIET OF GREATER HORSESHOE BATS (*RHINOLOPHUS FERRUMEQUINUM*) USING A TRANSITIONAL ROOST

Broadly similar results to 2009 study. Flanders and Jones found principal prey items in spring to be *Tipulids* (craneflies), caddis, ichneumon wasps, *Melolontha* (May bugs) and *Lepidoptera* (moths) with more dung beetles and dung flies in autumn.

Compositional analysis only allows for as many bats as habitats

Broad habitat type	Habitat description
Water	Rivers and streams Fen, marsh and swamp Standing open water and canals Unidentified water habitats
Arable and horticulture	Arable, horticulture, bare land
Woodland	Broadleaved, mixed and yew woodlands Coniferous woodland Dense scrub
Grassland	Calcareous grassland Grassland, possibly unimproved Grassland, probably improved Improved grassland Neutral grassland Acid Grassland Dwarf Shrub heath Bracken
Built up areas and gardens	Village settlements, suburban areas, towns and small to large gardens

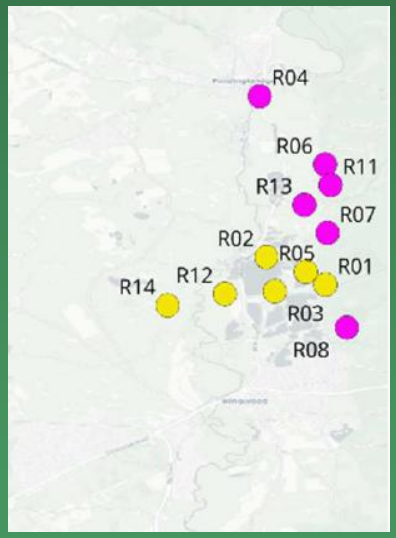
Pockets of scrub and woodland around wetlands/lakes

Bats optimise foraging within a mosaic of habitats

Built up/gardens+ woodland edge and potential night roosts

Greater horseshoe bats in the Avon Valley

Roost use



Roost ID	Date found	Type	Roost feature	Bat count*	Bat ID use	Roost type
R01	21/04/25	Building	Cellar	38	B1, B2, B3, B4, B5	Day roost
R02	22/04/25	Building	Block building	3	B5	Day roost
R03	22/04/25	Building	Block building	Nos	B4	Day roost
R04	24/04/25	Building	Internal	1	B2	Night roost
R05	25/04/25	Building	Internal		B2, B1, B3	Day roost
R06	25/04/25	Building	Internal	NA	B3	Night roost
R07	26/04/25	Building	NA	1	B3	Night roost
R08	27/04/25	Unknown	NA	1	B5	Night roost
R09	28/04/25	Unknown	NA	1	B4, B3	Maternity roost
R10	28/04/25	Building	Old kitchens	NA	B2	Maternity roost
R11	24/04/25	Building	NA	NA	B1	Night roost
R12	24/04/25	Building	NA	NA	B1	Night/day roost
R13	30/04/25	Building	NA	NA	B1	Night roost
R14	1/05/2025	Building	NA	NA	B1	Day roost

GHS Relationship between maternity and transitional roosts

Greater horseshoe bats in the Avon Valley

Potential roost use; number of WW2 structures

Disturbance a significant issue

Greater horseshoe bats in the Avon Valley

Some less disturbed but not always human access to inspect

More potential when on private land

Greater horseshoe bats in the Avon Valley
New roost found south of Ringwood autumn 2025

Greater horseshoe bats in the Avon Valley
New Roost found south of Ringwood autumn 2025

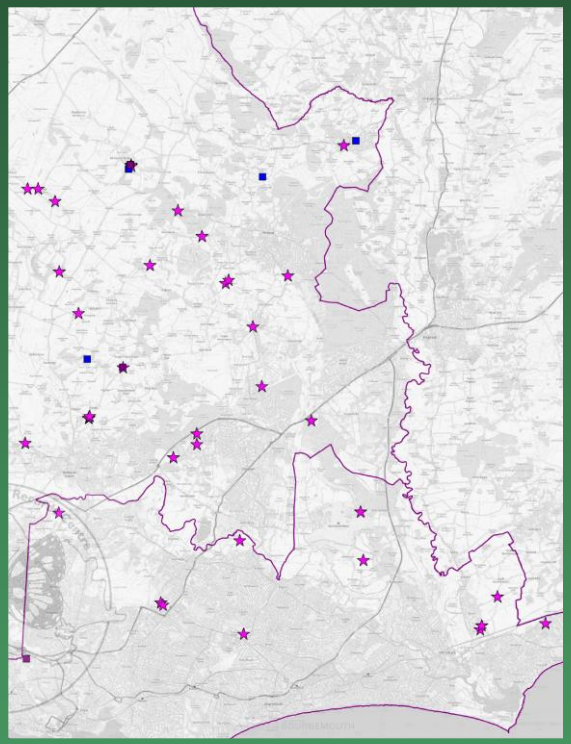
Technically two roosts

Acoustic surveys in targeted areas followed by trapping also recorded other species

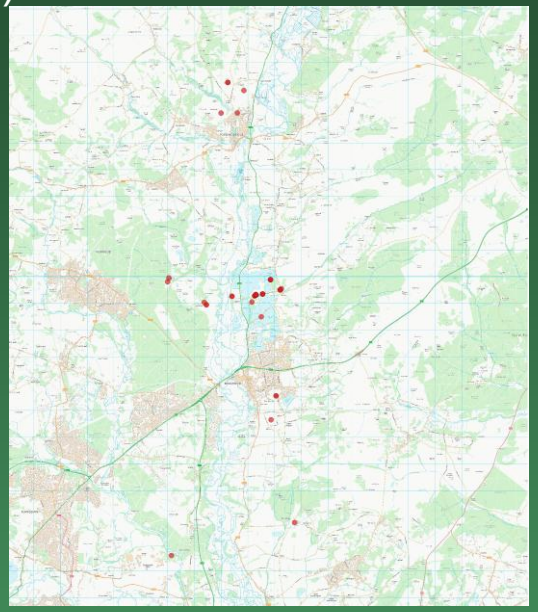
Brandt’s bat (juvenile male)

Avon Valley: Increase in GHS records (pre and post 2025 surveys)

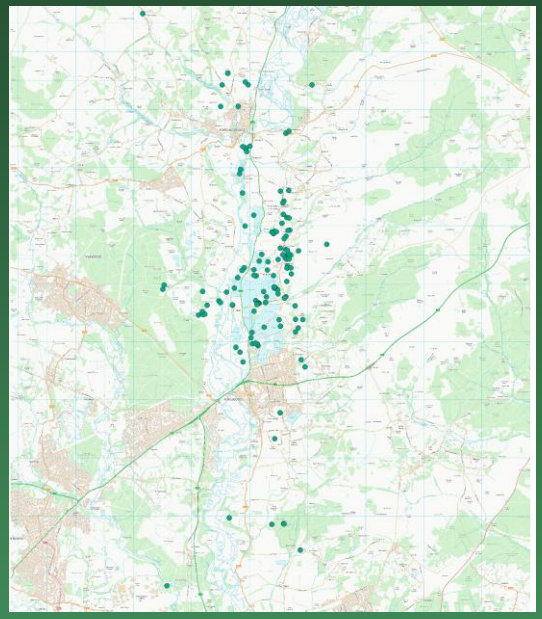
GHS in East Dorset (Jan 2026)
Data provided by DERC



DERC
Dorset Environmental Records Centre



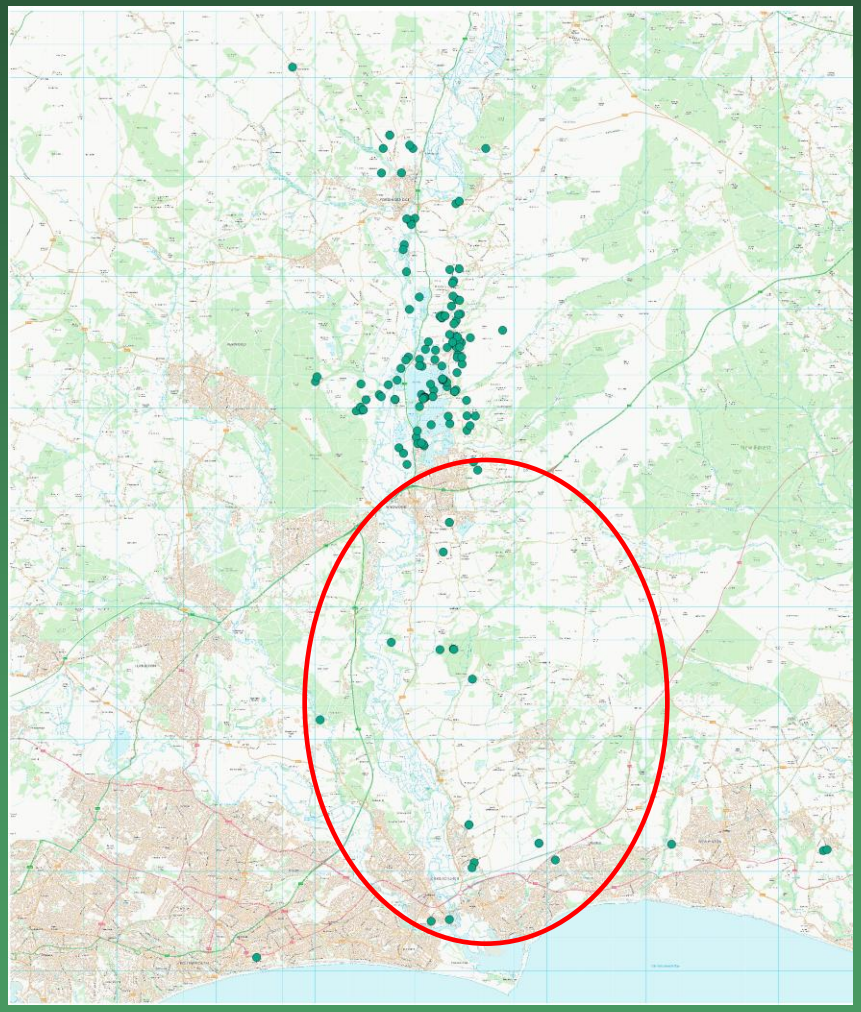
Dec 2024



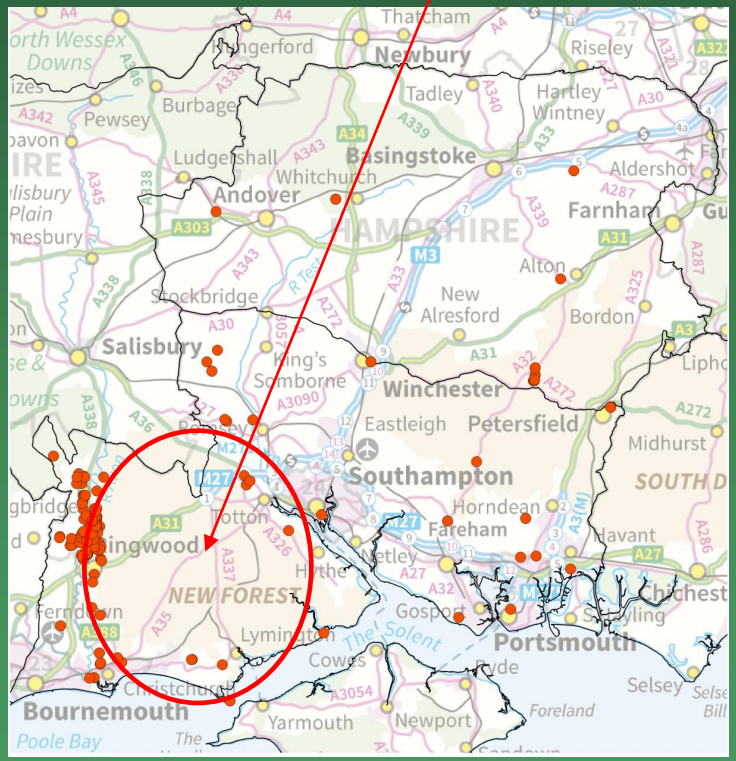
Nov 2025

Most of the new records were obtained in **April and early May** which are seasons often not included by consultants

GHS in the wider New Forest & Hampshire
What would the map look like if we put the same survey effort in here?



Priority for further survey



Hampshire Nature Recovery Strategy Summary

- Surveys should consider GHS and include **assessment of spring transitional roost use (April)**
- **Safeguard known roosts** including '**minor'** roosts
- Ensure robust and comprehensive **mitigation and monitoring** where impacts unavoidable
- **Proactive** provision of suitable roosting structures
- Further **targeted survey** work to ID key routes through landscape, better define CSZ and maintain dark corridors
- Reduce use of **parasitic wormers**
- **Restore and replant** hedgerows/woodland particularly riparian habitats within **4km of CSZ**

Greater Horseshoe bats in the Avon Valley – questions?

- All five bats remained in the area between Ringwood and Fordingbridge - What did the other 34+ do?
- Why is the Avon Valley so important for a short period?
- Do all females go to known maternity roosts in Dorset?
- Do some bats remain?
- **Could we see the ‘return of GHS‘ to Hampshire as a breeding species?**

Can we get GHS back into Hampshire as a breeding species?

West Sussex (Sussex BG & Vincent WT)

2024 breeding confirmed

Photos: Daniel Hargreaves, VWT

Relatively cheap, night and small day roosts can be created or adapted

and don’t need to be expensive!

HBG Objectives for New Forest 2026

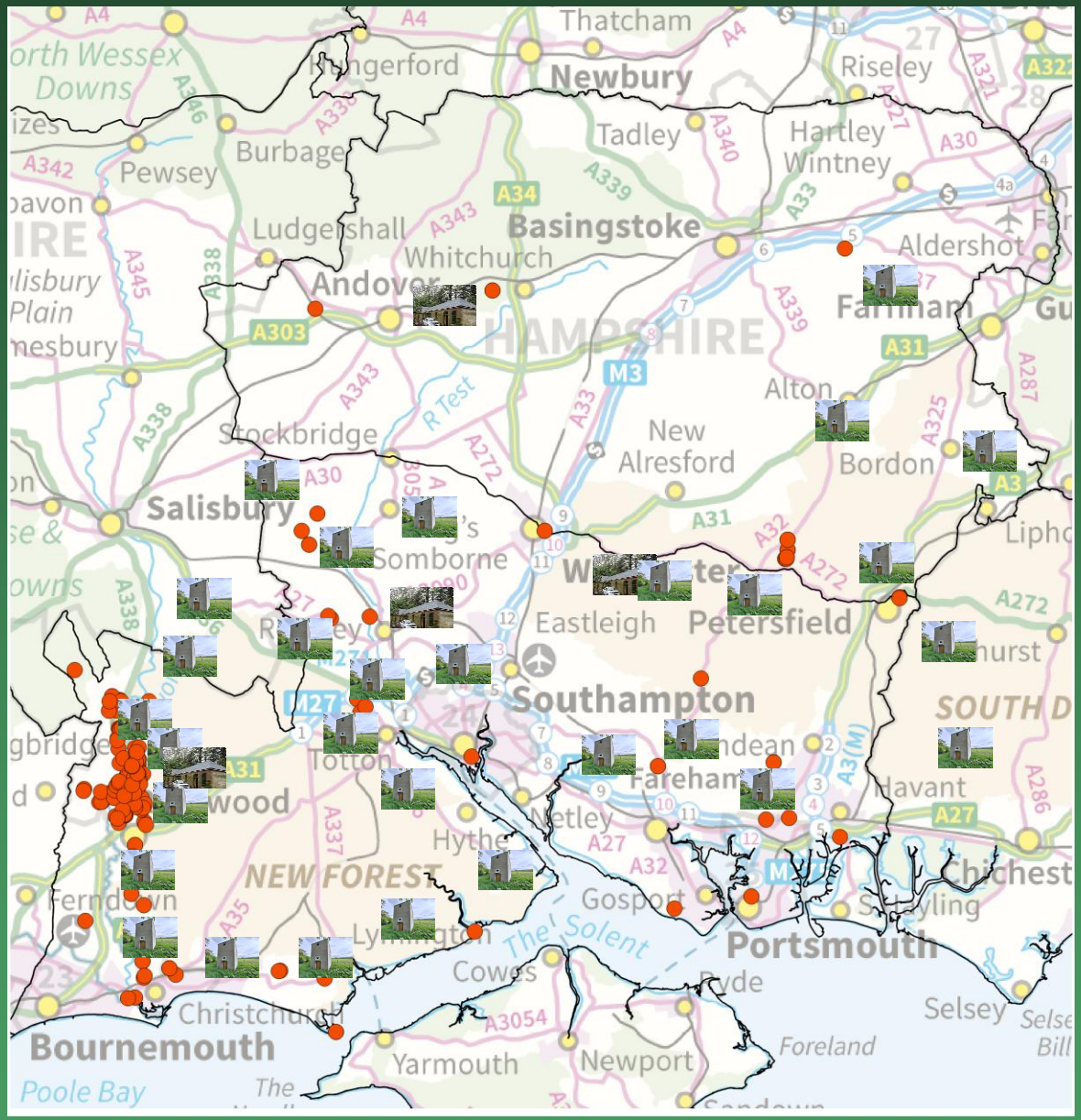
- **Acoustic surveys** focussed on GHS (HBG & training for VESPA volunteers)

- Working with VWT and other partners (including land owners) to fund building enhancements and potentially **build maternity roost** close to Blashford. **Improve and monitor roost** nr Totton (including fund raising).

- **Trapping** across New Forest with **target areas** along Avon Valley and extend to previously under surveyed areas (coast and private land). **Potentially radio tracking** if resources.

- Ties in with objectives to continue assessing rarer species (Bechstein's, barbastelle, grey long-eared, Nathusius's pipistrelle & *Myotis alcathoe*)

Hampshire 2035



Acknowledgements & thanks:

NFDC (Chris Hodsman and Jo Richmond)
HBG volunteers-particularly Nik Knight
Crispin Sampson and farm cluster
NFNPA (particularly Ian Barker), National Trust and Forestry England (Leanne Sargeant & keepers)
Russell Wynn
Roost owners and managers
Vincent Wildlife Trust (Daniel Hargreaves)
Hampshire Wildlife Trust (Blashford Lakes)
Bisterne Estate (Rupert Brewer)
GWCT, Colin Morris, Sussex, Dorset and Wiltshire Bat Groups/Environmental Records Centres

Greater horseshoe bats in Hampshire
Priority Actions: Survey

Build on existing survey data	**Resources**
Extend acoustic surveys **Avon Valley** Lower Test Valley New Forest/Totton Central/southern Hampshire Wickham/Portsmouth areas	Time, money (detectors, licences, mileage) expertise (training and retention) Data management considerations Non invasive and no licences required
Targetted trapping surveys	Time, money, expertise (HBG licence)

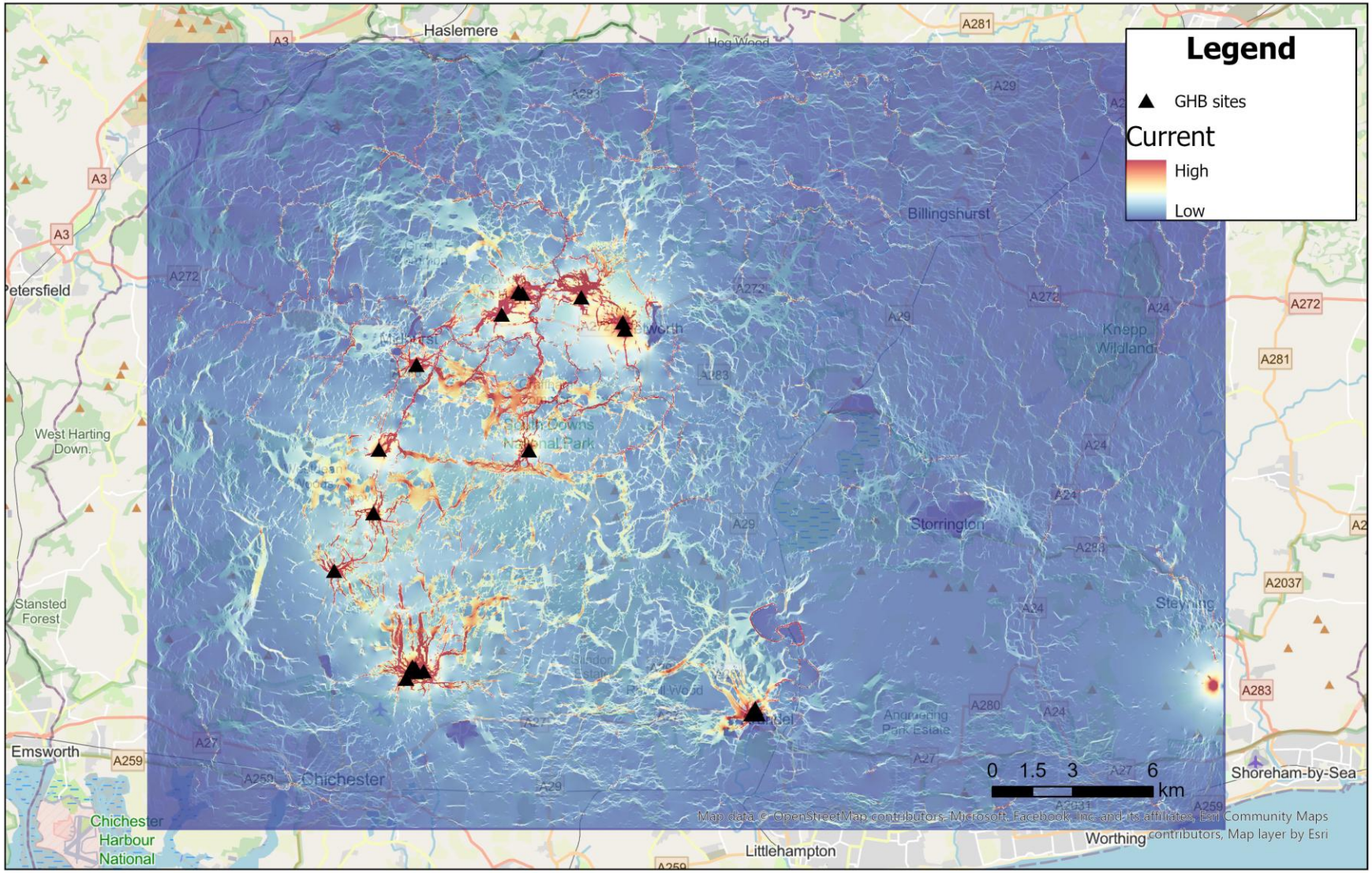
Greater horseshoe bats in Hampshire
Priority Actions: Roosts

Protect roosts **Enhance existing roosts** **Create new roosts**	**How**
Protect existing roosts (known and unknown)	Find roosts Work with consultants to raise awareness Work with LPAs and support with data and expertise Public awareness, understanding and enthusiasm (how many people know they have bats day/night roosting in basements, lofts and outbuildings?
Enhance existing roosts	GHS take up significantly better if existing roosts enhanced (or new roosts created in adjacent buildings/structures) Grants/good will/permissions
New roost creation and enhancement	Build relationships with landowners (trust) Partnerships to encourage sustainability of new measures Funding normally required

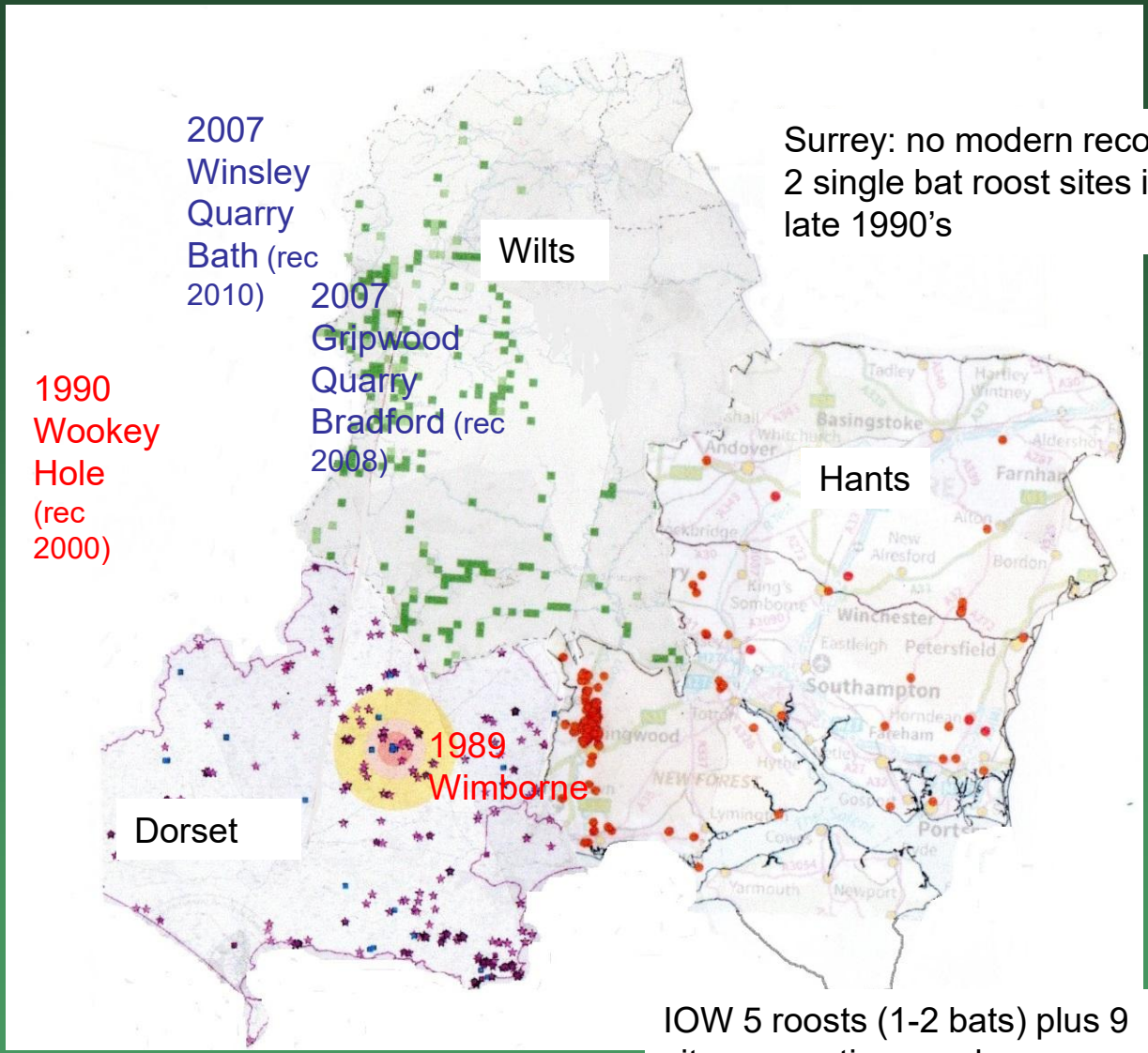
Greater horseshoe bats in Hampshire
Priority Actions

Flight lines and foraging areas	**How**
Artificial lighting: minimise, mitigate	Maintain and create new dark corridors – working with LPAs and consultants
Maintain, enhance and create new commuting corridors and foraging areas	Work with landowners, land management advisors, LPAs Prioritise areas in plans, grant schemes
Discourage/eliminate use of pesticides/parasitic wormers	Working with landowners, GWCT, LPAs, agricultural advisors. Word of mouth between land managers
Create/enhance grasslands (particularly wet grasslands/scrub and woodland matrices) Woodland management Hedgerow management Cattle Dung beetles, craneflies, moths	Through targeted (funded) schemes Advisors Strategic objectives

‘Horseshoes Heading East Project’



GHS in neighbouring Counties (all records)



Surrey: no modern records
2 single bat roost sites in late 1990's

West Sussex:
12 x roosts including one small maternity colony. All central to County

IOW 5 roosts (1-2 bats) plus 9 sites acoustic records

With thanks Wiltshire & Swindon Biological Records Centre, Dorset Environmental Records Centre, Hampshire Bat Group, Surrey Bat Group, Sussex Bat Group, IOW Bat Group