The South Wiltshire Greater Horseshoe Bat Project

Project Update: 2021

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1. Introduction

The South Wiltshire Greater Horseshoe Bat Project (SWGHBP) was launched in October 2020, to focus conservation action upon greater horseshoe bats in South Wiltshire, as well as other rare bats too – Barbastelle bat is widespread in south Wiltshire, and Bechstein's bats have been found at a number of sites too.

The project was set up in conjunction with Simon Smart (Black Sheep Countryside Management), and with Margaret Feneley (Natural England), Tracy Adams (Cranborne Chase AONB), Peter Shallcross (Nadder Valley Farmer Group) and supported by Professor Fiona Mathews (University of Sussex, Brighton). We also enjoy the support of a large number of landowners, and organisations such as Defence Infrastructure Organisation, National Trust and Wessex Water.

Further information on the aims and objectives of the project may be found on the website here. In the first year of the project, a considerable volume of work has been achieved, which I'll summarise as follows, as briefly as I can……

2. Survey & monitoring & enhancement of roosting sites

- **Chilmark Quarries SSSI & Fonthill Grottoes SSSI (the SAC)** - In 2019 we received an induction and handover from the previous surveyor of these sites, and in 2020 (just before the pandemic) we undertook our first hibernation counts. These sites continue to support large numbers of hibernating bats, including greater horseshoe bat. We have been able to expand upon the monitoring of these sites.
- **A new hibernation site** – we began work on a new hibernation site for greater horseshoe bats in 2019, culminating in 2021 with the total replacement of the existing grille, thereby enabling access for hibernation checks. With thanks to Colin Morris for leading on this particular project, and the generosity of two landowners and Wiltshire Bat Group, who funded this work. This site is now included in our annual monitoring for hibernating bats.

Greater horseshoe bat hibernation with new grille (C) Gareth Harris

- **A new bat house** – with thanks to Natural England, and a small grant from Wiltshire Bat Group provided by wildlife photographer, Paul Colley, a small building will be restored for use by roosting horseshoe bats. The building is currently derelict and during March 2022 it will be rep aired and refurbished. Greater (and Lesser) horseshoe bats forage close by and commute past this building, so we're hopeful that this opportunity will be colonised quickly. Again, thank you to Colin Morris for designing the roost and assistance throughout this project. And thank you to the landowner for his unfailing warm welcome and interest in bats on his farm – we have been studying bats here since 2007! Thank you also to Charles Jackson, from Bath, who donated several tonnes of roofing tiles for this project, more than enough to complete this project.

The precise locations of these roosting sites are not published in the public domain, in order to protect these sites and prevent disturbance of the bats using them.

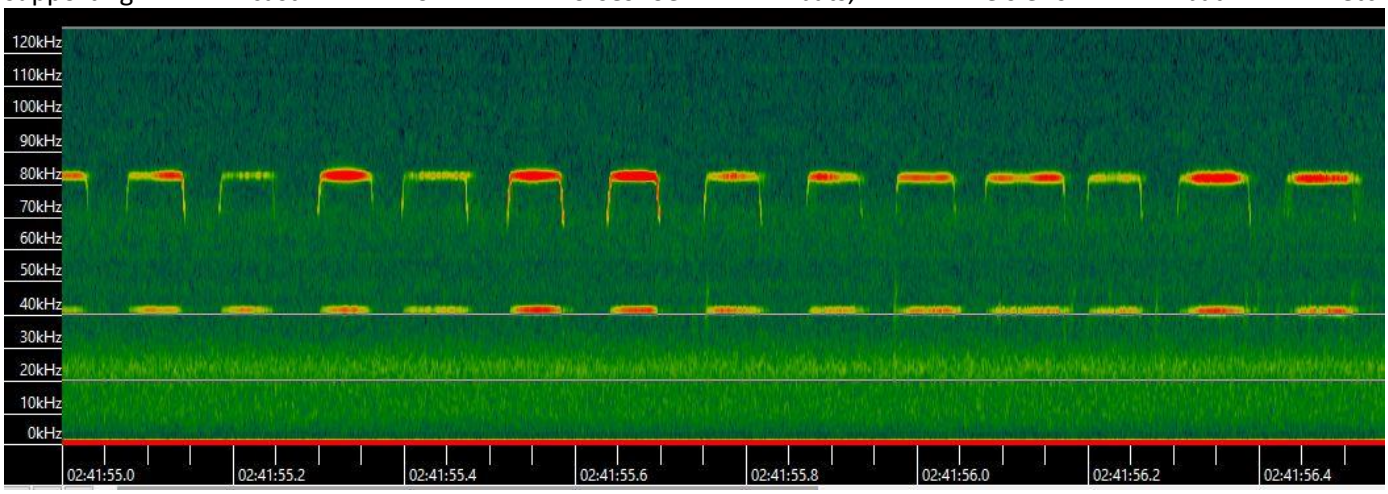
3. Detector surveys

Thanks to equipment purchased by Wiltshire Bat Group, Defence Infrastructure Organisation (DIO) and Chilmark Estates/Natural England, we initiated large scale detector surveys in south Wiltshire, some of which was linked to the programme of dung beetle surveys funded by DIO and Wessex Water.

- Eight sites were surveyed for dung beetles across the Salisbury Plain military training area in 2021, also deploying one or more static detectors at the same time. Jenny Bennett (WBG & DIO) was also able to use her access to the training area to conduct additional monitoring of the Imber Ranges (SPTA-West) too. In all, detectors were deployed to at least 20 locations in 2021. Species of note included greater horseshoe bat, Leisler's bat and very high activity levels of Barbastelle. Over 150 nights of deployment.

Readers may also be interested in publication of an article in the MOD's Sanctuary magazine, in 2020 (Number 49), in relation to Barbastelle bats on Salisbury Plain.

- Thanks to the use of equipment provided by Chilmark Estates/Natural England, I also conducted extensive surveys around the Chilmark Quarries area, which is an area of the county remarkably under-surveyed given its proximity to a bat SSSI/SAC. Over 98 nights of deployment was achieved at 11 locations, with highlights being high levels of summer activity of greater horseshoe bat, high levels of Barbastelle activity, plus a wide range of other species too, including Nathusius' pipistrelle and Leisler's bat.
- As part of the project, Peter Thompson also deployed one of the Wiltshire Bat Group detectors to multiple locations in the Nadder Valley, throughout May to September, generating large volumes of data in an otherwise very under-recorded party of the county. Again, the usual and now expected high activity of Barbastelle bat with a supporting cast of horseshoe bats, Leisler's bat etc.



Greater horseshoe bat - the characteristic "staple-shaped" calls, with peak energy at 84khz (C) Gareth Harris

A series of additional sites were also surveyed, thanks to some funding from Wessex Water, as part of additional dung beetle surveys. Simon Smart also conducted similar surveys with his farmer groups in the Chalke Valley and Pewsey Downs.

Clearly this is a phenomenal volume of data, and so this work was greatly supported by the project's subscription to the BTO Acoustic Pipeline, which not only helps with the collection and collation of data from multiple sources (because each surveyor was able to immediately upload their data), but the pipeline employs advanced bat classifiers and outputs detailed analyses. These data were checked and verified to ensure that identifications are correct prior to reporting and prior to sharing with partners such as the local environmental records centre. Crudely, this amounts to over 700,000 sound files. In due course, a more detailed output will be shared. I'm grateful to Stuart Newson, BTO for all his help and advice this year.

4. Dung beetle surveys

An important food source for greater horseshoe bats (and indeed other bat species that depend upon grasslands and pastures, such as serotine bat and Leisler's bat) are the various species of dung beetle. These will be particularly important for greater horseshoes in close proximity to their hibernation sites, as winter foraging opportunities are important.

We wished to assess dung beetle assemblage in these locations, but hit on the first stumbling block – few, if any, coordinated dung beetle surveys have been undertaken in Wiltshire, so it would be hard to assess this without some sort of baseline survey to compare to. So, we embarked



Cow pats, three species of dung beetle and a White Park bull (C) Gareth Harris

upon dung beetle surveys on Salisbury Plain training area (thanks to a grant from DIO, who also wished to further understand the health of dung beetles on the chalk grassland of the training estate) and in doing so recorded foraging greater horseshoe bats on the northern edge of the Plain (not so far from Bratton and Easterton). Wessex Water supported this work further with a grant to survey additional areas, enabling us to survey pastures in the Chalke Valley, Nadder Valley, Avon valley and the Stonehenge World Heritage site. We're scratching the surface but generating some fascinating data.

Wessex Water featured us in their Winter 2021 customer magazine, joining us when we visited meadows in the Avon valley near Downton.

Fieldwork was undertaken by Simon Smart, Pete Thompson and I, with Marc Arbuckle (county recorder for Coleoptera in Wiltshire) delivering the identification work. This was a fairly large undertaking with some logistics to deal with; ranging from surveying on a military training estate (warm thanks to the MOD ecologists and the MOD training safety officers who facilitated our work, kept us safe and showed such interest); working alongside some amazing graziers and some brilliant livestock including some rather lively bulls; to dealing with an awful lot of cow poo! In particular, Marc had the added challenge of microscopic identification of a few thousand dung beetles, which is a very challenging group of beetles. It's been a big team effort – thank you everyone.

The bat and dung beetle survey findings are too much to present here in a meaningful way, so in coming weeks and months we'll share these findings in a series of blogs. So, watch this space!

5. Promoting the importance of dung beetles in soil health & pasture management

Another important aspect of our work with dung beetles, is engaging with the farming community to promote the importance of dung beetles in soil health, nutrient cycling, carbon sequestration, and crucially their role in management of livestock endo-parasites. Many of the veterinary products used to combat "worms" in livestock have long-lasting affects in the environment once excreted in dung.

The farming community is acutely aware of this, and a number of projects and initiatives are underway to promote alternate means to treat worms. Dung beetles are one of the first species to suffer from veterinary anthelmintics in the environment, therefore with knock-on effect to the wider food chain (including bats).

The project has therefore been working with Dung Beetles for Farmers to coordinate and deliver online training events within the project area promoting dung beetles, and alternative ways to manage pastures and "worms" in livestock. The farming community is widely supportive of this, and the training was delivered by Max Anderson and

Sally-Anne Spence to the Chalke Valley Farm Cluster and the Nadder Valley Farmer Group (some of whose members graze in close proximity to the bat SSSIs). Many of you will remember Max's presentation at the Devon Greater Horseshoe Bat Project Conference in 2020 on this same topic, as Max's PhD is also supervised by Fiona Mathews.

Those of you interested in seeing this training may be interested in Dung Beetles for Farmers' presentation at the Oxford Real Farming Conference in January 2022, which broadly covered the same discussion points.

6. Community engagement

Finally, we promised we'd do some people engagement as part of this project, and we were warmly welcomed at two events with the Nadder Valley Farmer Group, a walk with Tisbury & District Natural History Society (with warm thanks to Jenny Bennett & Mariko Whyte for assisting with these three events), as well as an evening talk with the Avon Valley Farmer group hosted by GWCT, and two guided walks and an online evening talk for Wiltshire Wildlife Trust, linked to their Heritage Lottery-funded project at Coombe Bissett Down (warmly hosted by Mel Evans). Around 80 people were engaged in these events.

Next steps

In year one we've achieved far more than I imagined, and that is largely thanks to the support and interest of a large community of people, in particular, Simon Smart, Margaret Feneley, Peter Shallcross, and many more. The number of landowners and farmers involved in this work is extensive.

The funders of work in 2021 include Natural England, DIO, Wessex Water, Wiltshire Bat Group, Paul Colley and several landowners wishing to remain anonymous. Thank you to Daniel Hargreaves for generously sharing photos to help promote this project.

In Spring 2022, we were fortunate to secure additional funding from the Defra-funded *Farming in Protected Landscapes in Cranborne Chase AONB* which has enabled the project to develop some materials and information to further the aims of the project. In addition, further funds have been secured form Defence Infrastructure Organisation to build upon the 2021 surveys.

Thanks

This project, and its successes, are the result of collaboration between many organisations, landowners, farmers and volunteers. The funders and supporting organisations are warmly thanked, including Black Sheep Countryside Management, Defence Infrastructure Organisation, Natural England, Wessex Water, Cranborne Chase AONB, Wiltshire Bat Group, as two landowners who wish to remain anonymous, Nadder Valley Farmer Group, Tisbury & District Natural History Society, and National Trust. Many landowners facilitated access for surveys of bats and dung beetles, and many graziers provided access to livestock for dung beetle surveys. The Training Safety Officers of Salisbury Plain military training area are warmly thanked for assisting with surveys and for keeping us safe.

Surveyors and volunteers involved in this project include Simon Smart, Peter Thompson, Jenny Bennett and Lisa Wade. Photographer, Daniel Hargreaves, is thanked for supply his images to promote bat conservation.

Further information: South Wiltshire Greater Horseshoe Bat Project

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