

# Back from the Brink – Species summary

## Greater Horseshoe Bat

**BftB project:** IPO4 Limestone’s Living Legacies

**Project lead organisation:** Butterfly Conservation

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**Partner organisation for species:** Bat Conservation Trust

<b>Species name – common &amp; scientific</b>	<b>Greater Horseshoe Bat</b> <i>Rhinolophus ferrumequinum</i>
<b>Photograph</b>	 <p>© Gareth Jones (BCT) / Back from the Brink</p>
<b>Taxon group</b>	Mammalia, Chiroptera (Bats)
<b>Conservation status</b>	Section 41 of the Natural Environment and Rural Communities Act 2006 Protected in the UK under the Wildlife and Countryside Act, 1981. Priority Species under the UK Post-2010 Biodiversity Framework. European Protected Species under Annex IV of the European Habitats Directive.
<b>UK distribution</b>	Found largely in south west England and Wales. Its range has contracted in the last century, but with climate change alongside sensitive land management, it could spread back to its original distribution which would include as far north as Yorkshire.
<b>Habitat associations</b>	This species needs a patchwork landscape of grazed small pasture and woodland with hedgerows providing connectivity. Mature ancient semi-natural woodland with some areas of dense understorey. Networks of tall, bushy hedgerows are important for foraging and to connect the roost with other foraging habitats.

	<p>A variety of suitable roost and hibernation sites close to foraging habitat is vital. Important winter hibernation roosts are present in old mines and cellars in the Stroud valleys. Recent research has shown bats wake more frequently from hibernation than previously thought and need to feed.</p>
<b>BftB work carried out:</b>	
<b>Survey &amp; Monitoring</b>	<p>Volunteers were trained in how to deploy Audiomoths (static acoustic recorders) to capture the echolocation calls of feeding or commuting bats. BftB was an opportunity to trial the still 'in development' Audiomoths and their potential for more extensive recording effort needed to detect rare bat species.</p> <p>Surveys focussed initially on assessing if the newly introduced cattle paddock grazing at Rodborough Common was made use of as a foraging resource by Greater Horseshoe (and Lesser Horseshoe) Bats. Audiomoths were deployed around three grazing compartments prior to and during grazing in 2019 and 2020 and results analysed by Bat Conservation Trust.</p> <p>Further to this, Audiomoths were deployed at two additional sites, Stuart Fawkes and Jacob's Knowle (part of Minchinhampton Common) over winter to see if leaving cattle to graze over the winter provided a food resource for Greater Horseshoe Bats during milder winter evenings.</p> <p>Data was then sent back to Bat Conservation Trust for analysis</p> <p>Further details of the methodology are provided in the summary reports for each compartment and site produced by Sonia Reveley of Bat Conservation Trust.</p>
<b>Sites habitat management works</b>	<p>Dung flies and beetles are an important food for horseshoe bats, making cattle grazed pasture an important habitat. The newly introduced late summer/autumn/winter paddock grazing on the slopes of Rodborough Common will have improved the dung fly/beetle food resource closer to fringing woodland edges used by commuting horseshoe bats.</p> <p>In addition, winter grazing provided by Gloucestershire Wildlife Trust at Stuart Fawkes Nature Reserve will have provided a source of insects for Greater and Lesser Horseshoe Bats hibernating nearby.</p>
<b>Technical advice provision</b>	<p>Site advice visit to two adjacent sites to discuss general grassland management for a variety of species including bats. Species management factsheets and follow up email advice also provided.</p> <p>Site advice visit to a privately owned site to discuss habitat management for Greater and Lesser Horseshoe Bats. Species management factsheets and follow up email advice also provided.</p> <p>In addition, a site advice visit was made to Painswick Rococo Gardens covering general habitat management and also for bats.</p> <p>A new Greater Horseshoe Bat <a href="#">factsheet</a> also produced with Bat Conservation Trust.</p>

<p><b>Links made with other taxa / conservation work?</b></p>	<p>The new paddock grazing at Rodborough Common was set up initially to deliver multi-taxa benefits for the Large Blue, Duke of Burgundy, Pasqueflower and Rugged Oil Beetle but also delivers benefits for both Greater and Lesser Horseshoe Bats through the provision of dung fauna.</p>
<p><b>Wider engagement &amp; advocacy activities?</b></p>	<p>A number of landowner workshops have been delivered, both jointly with other BftB partners covering multiple species groups (x 3) and solely for Greater Horseshoe Bats (x 2). These covered advice on habitat management for horseshoe bats, as well as the importance of avoiding using ivermectins to kill livestock parasites which leads to a decline in dung fauna. These were attended by a total of 67 people.</p>
<p><b>BftB results obtained:</b></p>	
<p><b>Recorded Distribution (in BftB focal areas)</b></p>	<p>Distribution is recorded as the number of “bat passes” as detected by the Audiomoth acoustic recorders and classified during software processing of sound files.</p> <p>Audiomoths detected Greater Horseshoe Bat activity at all three surveyed compartments on Rodborough Common during summer monitoring in 2019 and 2020. Results from one compartment showed a noticeable increase in Greater Horseshoe Bat passes from prior grazing to during grazing.</p> <p>Greater Horseshoe Bats were also detected at both Jacobs’s Knowle and Stuart Fawkes nature reserve.</p> <p>More detailed explanation of the results can be found in the summary reports for each compartment and site produced by Sonia Reveley of Bat Conservation Trust.</p>
<p><b>Recorded Abundance of species populations</b></p>	<p>The abundance of Greater Horseshoe Bats at each of the surveyed sites/compartments is difficult to account for as it is unknown if each recorded bat pass is a different individual each time or the same one. However, results did show an increase in Greater Horseshoe Bat passes at compartment 2 at Rodborough Common during grazing suggesting an increased use of the area and a positive impact of grazing.</p> <p>Unfortunately, no increase in use was found at the other two compartments from before to during grazing. This is possibly a result of a lack of data due to the short amount of time cattle grazed each compartment. This highlights a need for more surveying in order to be conclusive that cattle grazing has a positive impact on Greater Horseshoe Bat foraging behaviour.</p> <p>Results from the winter monitoring at Jacob’s Knowle (where no livestock were grazing) and Stuart Fawkes (cattle grazing) found a maximum of one Greater Horseshoe Bat pass at Jacob’s Knowle and nine at Stuart Fawkes. This suggested a positive impact of grazing during winter, however, would need further survey effort to reinforce these findings.</p> <p>More detailed explanation of the results can be found in the summary reports for each compartment and site produced by Sonia Reveley of Bat Conservation Trust.</p>

<p><b>Other results documented?</b></p>	<ul style="list-style-type: none"> <li>• Eight other species of bat were recorded by the Audiomoths at Rodborough Common: Barbastelle, Brown Long-eared Bat, Lesser Horseshoe Bat, Noctule, Serotine, Leisler's Bat, Common Pipistrelle and Soprano Pipistrelle and one species group <i>Myotis</i> (which cannot be identified by call to species level).</li> <li>• Six other species were recorded at Stuart Fawkes: Barbastelle, Brown Long-eared Bat, Lesser Horseshoe Bat, Serotine, Common Pipistrelle and Soprano Pipistrelle.</li> <li>• Three other species were recorded at Jacob's Knowle: Lesser Horseshoe Bat, Common Pipistrelle and Soprano Pipistrelle.</li> </ul>
<p><b>Species Recovery Curve progress made</b></p>	<p>Species recovery curve score remained on 6 as project aimed to learn more about Greater Horseshoe Bat use of sites with grazing animals: Targeting paddock grazing to support known populations trialled during summer and winter at several sites. Monitoring work showed some evidence of an increase in Greater Horseshoe Bat use of the sites when cattle grazing introduced, however due to the short-term nature of the grazing more work is needed to reinforce these findings.</p>
<p><b>Other measures of species recovery progress? e.g. FCS</b></p>	<p>Species recovery curve score remained on 6 as project aimed to learn more about Greater Horseshoe Bat use of sites with grazing animals: Targeting paddock grazing to support known populations trialled during summer and winter at several sites. Monitoring work showed some evidence of an increase in Greater Horseshoe Bat use of the sites when cattle grazing introduced, however due to the short-term nature of the grazing more work is needed to reinforce these findings.</p>
<p><b>Recommendations for future work:-</b></p>	<p>More surveying needed over longer periods to reinforce the conclusion that the targeted paddock grazing at Rodborough Common is providing more foraging opportunities and is therefore beneficial to Greater Horseshoe Bats.</p> <p>In addition, more survey work needed during winter months to show the benefit of having grazing adjacent to hibernacula. Potential to have a Masters or PhD project continue monitoring Greater Horseshoe Bat activity during the winter using a more robust survey design.</p> <p>Work with landowners adjacent to known hibernacula to organise winter grazing.</p> <p>Continue to recommend to landowners to reduce their use of anti-parasitic treatments which persist in the dung and to try other methods of parasite control.</p>

### Additional Information

For further detail on all surveys and results see the following survey summary reports by Sonia Reveley (Bat Conservation Trust):

- 2019 – 2020 Acoustic Summer Monitoring at Rodborough Common (Compartment 10).
- 2019 Acoustic Summer Monitoring at Rodborough Common (Compartment 14–15)
- 2019 – 2020 Acoustic Summer Monitoring at Rodborough Common (Compartment 2).
- Acoustic Winter Monitoring at Stuart Fawkes 2020
- Acoustic Winter Monitoring at Jacob's Knowle 2020
- Summary of the BftB Limestone's Living Legacies summer and winter monitoring of the greater horseshoe bat.

