

Bringing the British Black Bee (*Apis mellifera mellifera*) back from the brink

HS2 mitigation sites: Halse Copse South, Fox Covert, Oaks Farm, Doddershall, Nash Lee Road Orchard and Stoke Mandeville.

HS2 Ltd The Great British Bee Project, EKFB JV (Eiffage, Kier, Ferrovial Construction, and BAM Nuttall)

BIG Biodiversity Challenge Award Category: Insert category (one per entry)

Project overview (50 words max)

Britain's only native honeybee's population, the British Black Bee, has plummeted. HS2 and the Great British Bee Project have installed 19 hives on HS2 mitigation sites, supporting over 50,000 bees. Rearing queen bees and expanding colonies into new locations, builds resilience for the native population reducing extinction risk.

May 2023

What were the biodiversity conditions on site prior to the enhancement? (100 words max)

HS2 mitigation sites are designed and created to provide biodiversity rich habitats with habitats for various protected species. However, to date they have not supported beehives. The innovative idea to rear and expand populations of British black bee on these sites makes use of protected and managed wildflower rich habitats to increase the species distribution and population levels. This declining native species is more resilient and able to withstand the harder winters, supporting reliable populations of pollinators within the UK. This supports Governments Pollinator Action Plan to improve the status of pollinating insects in England.

What were the reasons behind this project? (100 words max)

The British black bee conservation project serves dual purposes: firstly, actively supporting the national pollinator strategy to reduce the decline of this native bee species, and secondly in fulfilling corporate social responsibility for HS2 and our contractor group EKFB (Eiffage, Kier, Ferrovial Construction & BAM Nuttall). Taking on the Big Biodiversity Challenge, this project engages beekeepers and local communities – including school groups, and contributes to citizen science.



Radstone Primary School children visiting the Black Bee site at Halse Copse, September 2022.
Andrew Hendry for HS2 visual library



Staff from the Great British Bee Project at Halse Copse, September 2022. Andrew Hendry for HS2 visual library

What were the biodiversity measures taken? (300 words max)

Site selection prioritized areas with minimal construction disturbance, good access, and suitable habitats. Low-density regions with non-native bees were chosen, and new queens introduced, to prevent crossbreeding.

Once installed, the 14 hives have been regularly monitored and maintained. Beekeepers report back through an app, allowing us to track colony status and carry out any maintenance works as needed. This ensures traceability and an up-to-date maintenance log.

By closely managing the hives, we address issues, rear queens, and monitor colony numbers. Our goal is to positively impact the UK's bee population.

Unlike typical mitigation sites, our project includes rearing queen bees of threatened native species. This enhances biodiversity. Citizen science participation and public engagement provide valuable health data whilst raising awareness of need and ownership of improving native bee populations.

Hives provide essential habitat. Native bee decline due to habitat loss is mitigated by ensuring suitable spaces are available for colonies. By placing these hives within HS2 mitigation sites, this ensures colonies are located within HS2's Green Corridor which will create over 33 km² of woodland and wildlife habitat, benefiting bees.

Boosting pollinator populations has a direct impact on local wildflower growth within communities. By promoting germination and increasing the natural seed stock, we facilitate self-seeding for years to come.

We've engaged in various awareness initiatives, ranging from articles to videos, all aimed at educating people about the essential needs of pollinators for survival and thriving. Additionally, local school children have actively participated in the project - <https://www.youtube.com/watch?v=24pgZXSldA>. They've heard talks, visited the hives, and contributed to planting wildflowers, ensuring a robust food resource for the bees.

The replicable project will be reviewed for further funding to look at expanding its reach across all HS2 main works contractors.



HS2 Radstone School children plant wildflowers for the Black Bee site at Halse Copse, September 2022. Andrew Hendry for HS2 visual ...



Radstone Primary School pupils visiting Halse Copse September 2022 to learn about the British bee. Andrew Hendry for HS2 visual library

Further information (250 words max)

HS2, contractor group EKFB, and the Great British Bee Project (GBBP) collaborated to identify ecological mitigation sites suitable for installing a minimum of one colony of British Black Bees per site. Over 12-months, the hives were monitored, and their success reported.

Over 300 beekeepers across the UK regularly monitor hives, sharing data and reporting via online resources such as Beebase UK. The results of this work is provided via the same mechanism.

In 2023, over 50,000 native bees were added to HS2 Mitigation Sites via the bee hives installed. Assuming two swarms per colony and a 50% survival rate, the initial 17 colonies could multiply to 51 colonies after one year, resulting in a 200% increase in the local black bee population. While idealized, this growth remains constant annually under project protection. Real-world factors like weather, food availability, diseases, and predators may impact actual outcomes.

By placing hives on mitigation sites, a food-rich resource supports bee populations. Regular inspections and maintenance promote growth and swarming, contributing the population in the UK. Their native resilience makes them better suited to withstand pests and challenges.

Further funding has been released for bee cameras, within hives, to support engagement and data collection. Funding for extension of the project is being sought for broader implementation across HS2 sites. Our participation in the Big Biodiversity Challenge sets a precedent for biodiversity protection in construction, with potential applicability industry-wide.

Project Team

- HS2 biodiversity and ecology team
- EKFB contractor joint venture comprising of Eiffage, Kier, Ferrovial Construction, and BAM Nuttall
- The Great British Bee Project and associated bee keeping volunteers

What was the motivation for carrying out the enhancement? (100 words max)

The Great British Bee Project contacted HS2 for collaboration on this project. The challenge and national Pollinator objectives set by Defra identified this as a fantastic opportunity to educate the wider public and bolster native pollinating population in the UK. By showcasing this project and sharing the success story, HS2 hope that other construction projects initiate a similar approach with their mitigation sites to support declining bee and other insect populations.



Black bees at their hive on Halse Copse.
Andrew Hendry for HS2 visual library



Still of an educational outreach video filmed at Halse Copse and published on HS2 YouTube site.
Creator: DRPG for HS2 visual library