

THE SOUTHERN STRATEGIC SUPPORT MAIN (SSSM) – BEE ORCHIDS NORTH SOMERSET/SEDGEMOOR KIER UTILITIES AND BRISTOL WATER

BIG Biodiversity Challenge Award Category: Temporary

Project overview

The Southern Strategic Support Main is a 31km water pipeline between Barrow and Cheddar reservoirs which will improve the water supply to 280,000 houses and support the growing local population. The pipeline passes through open countryside and towns and villages providing the opportunity for both biodiversity enhancement and community engagement.

What were the biodiversity conditions on site, prior to the enhancement?

The EIA surveys undertaken in 2016 found 25 protected areas, 5 priority/BAP habitats, 200 hedges, 400 standard trees (some TPO protected), 18 ponds with great crested newts, 17 badgers setts within 30m, 3 bat roosts, 1 barn owl roost, 1 kingfisher population, 24 locations of dormice, 400 bee orchids, small population of cave spiders, a small population of reptiles and 10 invasive species. The pipeline was designed to avoid as many of these as possible.

What were the reasons behind this project ?

The SSSM is the largest single pipe line scheme ever undertaken by Bristol Water. There was a shared goal by client, contractor and local stake holders (district councils, local conservation groups) to leave a legacy by providing funding and staff time that were outside contract requirements. Local wildlife and habitats were protected as much as possible within the design and environmental management plan. It was our goal to achieve a biodiversity net gain using the biodiversity index calculator generated between Bristol Water and Ecosulis that would be beneficial.



Bee orchid flowers



Bee orchid being cared for and displayed at the Somerset Wildlife Trust exhibition stand

What were the biodiversity measures taken?

The Phase 1 habitat survey in 2016 identified a significantly large wild colony of bee orchids (c.400 plants) alongside a road verge and roundabout directly in line with the SSSM route with no alternative diversion. Bee orchids are listed under Schedule II of CITES however there was no legal requirement for the orchids to be protected. Bee orchids mimic the look of a bee entering the flower to increase the possibility of being noticed by pollinators. The species is an excellent source of pollen for foraging invertebrates. After discussions with concerned residents it was decided that Kier would temporarily translocate the affected bee orchids (c.100 plants) and care for the species until they could be returned to their original position unharmed by the works. A method statement was agreed between Kier, the subcontractor and the residents that the bee orchids would be dug out with a trowel and planted into pots and favourable conditions maintained. Where areas had large numbers of the species, the entire turf was lifted onto the back of a trailer and then stored in the nearest compound. The environmental team monitored the orchids until it was time to reinstate them, this took approximately 6 months. They were then monitored hereafter until it was confirmed they had taken back to the soil conditions, watering daily through the hot periods. Within a few weeks of reinstatement, there was evidence of the bee orchids successfully flowering back in their original position meaning the protection efforts had been a success. Some of the remaining bee orchids to be reinstated have been used as part of the Somerset Wildlife Trusts education stands at local farmers markets and the Bath and West Show providing education and encouragement for more people to join the trust.



Pieces of turf containing bee orchids in the process of being loaded and taken to nearby compound



First bee orchid to flower once planted back on road side verge

Further information

The SSSM pipeline has been a unique project with many environmental constraints. It has been challenging to manage these constraints but the Kier team has worked alongside nature, moving where possible and protecting ecological features such as the bee orchids. Using the baseline knowledge and consultation with residents, a decision was made to save a locally significant species not only to the community but also to the ecosystem. It also complimented the lowland meadow (neutral grassland action within the Avon Biodiversity Action Plan. This was a decision that was above and beyond the requirements of SSSM and required expertise knowledge and management. Whilst living in pots, the orchids thrived and actually increased their population. Kier reinstated more bee orchids than were translocated which will be beneficial to pollinators. Since the SSSM pipe has been installed and the bee orchids gradually reinstated (depending on weather), Kier and local residents have begun plans to get the road verges and roundabout recognised as part of the Mendip Limestone Grassland Special Area of Conservation (SAC) because of its valuable ecology and to protect the habitat with long term management associated with this type of designation.

Project Team

- Kier Utilities Environment team: Jamie Edmonds, Grace Burdge and Rozy Gray
- Bristol Water Environmental Manager – Natasha Clarke
- Barry Cross – local resident

What was the motivation for carrying out the enhancement?

The SSSM project has had a positive impact on the local community and wildlife. It was our goal, as the environment team and residents to the area to make sure the local natural environment was protected and safeguarded for many years after SSSM is complete. Kier also wanted the community to appreciate their natural environment, once we had reinstated better than originally present. Kier want to leave a legacy of enhancements that include valuable habitat and a respect for wildlife within the local community that will be remembered.



Somerset Wildlife Trust's stand at Axbridge farmers market showing off one of the rescued bee orchids



View of stripped area where SSSM would be laid, reduced working space to avoid unnecessary disturbance