

**THE SOUTHERN STRATEGIC SUPPORT MAIN (SSSM) – POND RESTORATION
NORTH SOMERSET/ SEDGEMOOR
KIER UTILITIES/ BRISTOL WATER**

BIG Biodiversity Challenge Award Category: Small Scale

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 (GCN), 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 biodiversity conditions on site, prior to the enhancement?

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.



*Stock pile of water pipeline ready to be installed.
31km in total mostly across agricultural land*



*Pond enhancement complete at Mendip Springs
Gold Club*

What were the biodiversity measures taken?

The Kier environmental team developed a pond restoration project to increase amphibian suitable habitat. Although not included within the SSSM license conditions, it was identified early on that the impact to GCN would be the highest amongst the protected species identified along the SSSM route. Ponds and GCN are also included within the Avon Biodiversity Action Plan for habitat improvement. Three sub optimal ponds with GCN records were chosen for restoration. Pond works were restricted to the winter months when the risk to disturbing the species in the ponds is lowest.

The surrounding ponds at Brockley had been confirmed to support great crested newts but the restored pond had been historically deemed unsuitable due to the blanket covering of invasive species parrot's feather. Habitat improvements took place in January 2018. The improvements involved removing all the parrot's feather plant from the pond. The plant was piled up away from the water's edge and over logs which created new refugia.

Mendip Springs Golf Club pond was heavily overgrown with bull rush, however GCN surveys (2016) confirmed the presence of a medium sized GCN population. Kier environmental team and Bristol Water volunteers cleared dense vegetation from the pond. The clearance provided the opportunity for a more diverse species mix to establish that GCN would use to lay eggs and then more food availability for the juveniles once hatched. The removed vegetation was constructed into refugia and hibernacula on the pond bank.

Slader's Leigh Local Nature Reserve has a small pond used by GCN. The pond had become overgrown with New Zealand Pygmyweed and Curly Waterweed, both invasive non-native species. The Kier Environment Team and the Mendip Society (reserve owners) organised a biodiversity enhancement day for the reserve which included the removal of the invasive species.



Mendip Spring Golf Club before & after restoration.



Clearance of Slader's Leigh Local Nature Reserve in Action

Further information

The outcome of the pond clearances has found that species such as newt (all UK species), frogs, toads, aquatic invertebrates, water lily, water mint and flowering rush have all encroached into the improved pond habitats. Post enhancement monitoring by the Kier environmental team as found a population increase for great crested newts in all ponds. It is part of the SSSM monitoring plan that these ponds will be monitored for a further 5 years to ensure biodiversity has not been negatively impacted by SSSM.

Overall, the pond restoration project has successfully improved the suitability of three ponds for great crested newts and other wildlife whilst creating new habitat in the form of refugia or hibernacula. The ponds have increased the connection of habitat availability within the wider landscape which will hopefully increase the migration of protected species and subsequently widen the gene pool. Kier environmental team are keen to continue the project with more pond improvements next year and encourage the replication elsewhere within the Kier business.

Project Team

- Kier Utilities Environment team: Jamie Edmonds, Grace Burdge and Rozy Gray,
- Bristol Water Environmental Manager: Natasha Clarke
- Mendip Spring Golf Club manager: Mike Edwards
- The Mendip Society

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 completed SSSM and improved the surrounding habitats. 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.



Parrots Feather removed & pond restoration complete, Brockley.



Newt Survey conducted at Mendip Spring Golf Club