

## Magnesian Limestone Wildflower Meadow, A19 Roadside Enhancements

### North East England

Sir Robert McAlpine

*BIG Challenge 2015 submission category: Large scale permanent*

#### Project overview

As part of the project, a 30 year concession to Design, Build, Finance and Operate (DBFO) 120km of the A19, between Dishforth in North Yorkshire and the Tyne Tunnel, Sir Robert McAlpine have undertaken numerous measures to enhance the biodiversity of the road network.

This work is part of a long-term landscape planning and management strategy, creating meaningful and long-lasting benefits to the local ecology.

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

A large portion of the road network is within the County Durham Magnesian Limestone belt, an area of unique and internationally important habitat; however, prior to Sir Robert McAlpine's involvement when the A19 DBFO was initiated, there was limited consideration given to the existing biodiversity and the verges were planted with low biodiversity value standard highway grasslands and woodland plots.



*Photo: Sheraton Bank following site clearance works*

#### Were there any specific conditions that led to you carrying out this work?

Ecologists were appointed by SRM to undertake a review the existing A19 Biodiversity Action Plan (BAP) and were then commissioned to carry out a network wide survey, paying particular notice to factors such as plants of particular interest and existing wildflower diversity.

During the initial Walkover Survey, the ecologist identified a high quantity of Magnesian Limestone Indicator Species.

It was therefore determined that SRM should carry out a more comprehensive survey of the notable areas.

During these surveys, it was discovered that there were several areas where the vegetation was heavily influenced by the underlying Magnesian Limestone.

Some of these areas were being rapidly overgrown by encroaching scrub and weed and were in danger of being lost.

### What were the biodiversity measures taken?

The road maintenance contract does not include for maintenance of wildflower areas and there was no additional funding available.

However, contract management (SRM) recognised the need to maintain this unique and internationally important habitat.

Existing maintenance regimes were assessed and adjusted to enable basic wildflower management, as recommended by the consultant ecologist.

This included making changes to the annual landscape programme and removing scrub from the most vulnerable areas.

Annual monitoring of these wildflower areas reveals significant increases in the variety and number of Magnesian Limestone indicator species present.

### How would you best describe the project?

An enhancement.

### Further information

Further information – Sheraton Bank Sheraton Bank represents one of the most extensive areas of relatively species-rich grassland along the route corridor.



*Photo: Bee orchid*

Initial baseline surveys were carried out between 2011 and 2013. The surveys confirmed the grassland as being an example of Magnesian Limestone grassland as defined in the Durham BAP albeit with the relevant species in small numbers and with a significant risk of scrub encroachment.

Management recommendations at this time were to carry out scrub control and annual cutting with the removal of arisings. With these management works ongoing at this site for 2-years, monitoring surveys were completed in 2015.

As part of the development of the A19(T) Biodiversity Action Plan, an approach to the survey of grasslands was developed which would enable baseline and monitoring surveys to be repeated using the same methodology.

This approach follows that of the National Vegetation Classification (NVC). Monitoring in 2015 enabled a number of key conclusions to be drawn as follows:

- The area of grassland has been significantly increased and remains a species-rich example of Magnesian Limestone grassland.

- Management has controlled the establishment of scrub and enabled a high species diversity to be maintained.
- Whilst the species-composition remains similar, there has been a significant increase in certain characteristic species, particularly orchids. In particular, Pyramidal Orchid has seen a significant increase from less than 10 plants in 2011 to 166 plants in 2015. Bee Orchid has likewise increased from less than 5 plants in 2011 to 24 plants in 2015.
- Levels of False Oat-grass have been significantly reduced such that this species is now only occasional in the sward.
- Characteristic calcicoles are now more prominent in the sward and are present over a wider area, for example, Common Bird's-foot-trefoil, Common Spotted-orchid, Fairy Flax, Glaucous Sedge, Oxeye Daisy, Pyramidal Orchid and Rough Hawk's-beard.
- Parts of the managed area now meet the LBAP definition for Magnesian Limestone grassland.
- The extended area provides a significantly enhanced habitat for other species, particularly



*Photo: Red-tailed bumblebee on Birdsfoot trefoil*

- butterflies with well-established colonies of species such as Common Blue, Large Skipper, Small Skipper and Wall Brown noticeably more frequent than was previously the case.

Importantly, further enhancement should also be readily achievable. This initial management has proven that it is entirely possible to remove established, low biodiversity value, trees and shrubs and to return this to a species-rich limestone grassland within a relatively short time-frame.

Significant areas remain along the road network with the potential to provide a significant increase in this nationally important habitat.

Ongoing management commitments will ensure that it is maintained in a favourable condition in the long-term.

The site was visited in July 2015 by Sir Robert McAlpine, the consultant ecologist and representatives from Durham Wildlife Trust.

The increase in Magnesian Limestone Indicator species and total number of plants is very significant; the scheme is considered an unmitigated success and inspired the consideration of additional areas to be maintained as wildflower areas.

Maintenance An allowance has been made in the landscaping programme to visit the site annually, to carry out grass and

wildflower cutting, ensuring arisings are removed from site, to prevent adding nutrients to the soil.

During these visits, encroachment of adjacent scrub is also controlled. General Comment The level of opportunity for species-rich grasslands is far more significant than was originally envisaged.

Outside of existing protected sites, particularly former quarries, the habitat type is very rare and the A19(T) has the potential to contribute significantly to the habitat resource and to the long-term conservation objectives for the habitat generally.

With further work, additional sites through the network could be managed differently in order to increase the habitat resource and habitat connectivity.

Sir Robert McAlpine are currently exploring opportunities to further enhance the quantity and quality of wildflower meadows on the A19 road network, including for the preparation of bids for additional funding by Highways England as part of their Biodiversity commitments.

It is hoped that with additional funding, an



*Photo: Pyramidal orchid*

additional 10 hectares of Wildflower Meadow on Magnesian Limestone can be created.

The A19(T) BAP has been reviewed with full consideration of the Highways England Biodiversity Plan.

Important changes which have arisen from this review are particularly associated with placing a greater emphasis on habitat connectivity both within the road network and into the wider countryside.

New actions plans have likewise been developed, for example, to reflect the greater importance now placed on pollinating insects.

### What was your personal motivation for carrying out the enhancement?

Sir Robert McAlpine have been involved in the on-going management of this section of the A19 for many years and the current contract runs for the next 12 years.

Despite the works described above being outside of the contractual obligations, there is strong recognition of the importance of the local biodiversity, and the role that this stretch of road can play in providing important improvements to the ecology.