

**CROWN FARM QUARRY
SANDIWAY – CHESHIRE
ATKINS LTD & TARMAC LTD**

BIG Biodiversity Challenge Award Category: Innovation

Project overview

Atkins/Tarmac have implemented innovative great crested newt (GCN) mitigation and additional habitat enhancement, above and beyond licensing requirements, at Crown Farm Quarry (CFQ) since 2003. Since Atkins involvement at CFQ the GCN population has expanded from a ‘small’ population in 2003 to a regionally important ‘large’ population in 2017.

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

An initial GCN population survey in 2003 recorded a small GCN population utilising waterbodies within the quarry. Planning permission and Natural England development licence objectives included maintenance of the GCN population alongside mineral extraction.

Atkins applied to Natural England for a development licence to allow large scale mineral extraction at the site, the mitigation avoided the traditional approach of amphibian exclusion fencing to exclude GCN from working areas. Instead, innovative mitigation allowed free movement of GCN between all waterbodies on site. Work, over and above planning permission and licensing requirements, included the creation and/or restoration of five GCN waterbodies.

What were the reasons behind this project ?

The main reason for this project was to implement GCN mitigation in line with the Natural England development licence. However, the implementation of this innovative licence and the additional habitat creation has allowed a biodiversity net gain that was not required as part of the scheme planning conditions or the development licence. Since Atkins input into this scheme in 2003, not only has a significant increase in the GCN population at CFQ been recorded, common amphibians, reptiles, bats, badgers, invertebrates and numerous bird species have also been recorded making extensive use of the quarry and the newly created habitats.



Large scale mineral extraction at Crown Farm Quarry



Great crested newt population monitoring at Crown Farm Quarry

What were the biodiversity measures taken?

The biodiversity measures taken include innovative GCN mitigation which does not use amphibian exclusion fencing and allows free movement of GCN throughout the active quarry, and habitat creation (including hibernacula and pond creation/restoration using existing site plant and machinery and re-using waste materials). Innovative mitigation included the construction of sand bunds and installation of signage to protect GCN habitat. The approach at CFQ is easily replicable and is in line with Natural England's EPS policies. Atkins has implemented the basic principles of the Natural England's European Protect Species policies one and three at CFQ since 2003, long before the release of the European Protected Species policies (released December 2016).

This scheme has showcased, through a 15 year monitoring period, that the relatively new EPS policies can work well and give positive biodiversity gains if implemented correctly. The expansion of the GCN population at CFQ contributes towards both national and local (Cheshire) Biodiversity Action Plan (BAP) targets which aim to ensure that there are no losses to the post 1990 range of GCN, increase the number of ponds suitable for GCN, increase the number of ponds occupied by GCN and to achieve an increase in the range of GCN.

Staff at CFQ have been integral to the success of this scheme and have been involved with population monitoring and habitat creation at the site since 2003. Cheshire Wildlife Trust is also engaged with Tarmac and Atkins, and ultimately the whole site will be passed over to Cheshire Wildlife Trust to manage after completion of mineral extraction and restoration on site; part of CFQ has already been passed to Cheshire Wildlife Trust to manage.

Further information

The baseline population of GCN was established through population size class assessment surveys in 2003. Following this baseline population survey, innovative mitigation using sand bunds and signage to protect GCN habitat was implemented and population monitoring has taken place in 2005, 2007, 2009, 2011, 2013, 2015 and 2017 (the next monitoring surveys will take place in 2019).



Pond creation at Crown Farm Quarry



Tradition newt exclusion fencing is not used, instead great crested newt habitats are protected by signage and/or sand bunds



Further information (continued)

The population assessments at CFQ have shown that the scheme objectives have been met. The GCN population is not only being maintained but it is expanding demonstrating a biodiversity net gain. The expansion of GCN has also contributed towards both national and local (Cheshire) Biodiversity Action Plan (now archived documents) targets which aimed to ensure that there are no losses to the post 1990 range of GCN, increase the number of ponds suitable for GCN, increase the number of ponds occupied by GCN and to achieve an increase in the range of GCN.

The whole CFQ site will eventually be restored and handed over to Cheshire Wildlife Trust to manage. The site is being restored with biodiversity in mind and the final restored site will include a number of waterbodies, a mosaic of acid grassland and heath and some areas of pasture and arable land. The restored site will be rich in biodiversity and will provide an excellent range of habitats for birds, invertebrates, bats, reptiles, badgers and amphibians.

Project Team

- Client- Tarmac Ltd
- Consultant Ecologists- Atkins Ltd
- Other stakeholders- Cheshire Wildlife Trust

What was the motivation for carrying out the enhancement?

Atkins/Tarmac implemented innovative mitigation alongside additional habitat creation and enhancement at CFQ in order to not only maintain GCN population at the site but with a view to enhance conditions for GCN and other wildlife at the site and to achieve a biodiversity net gain. The aim was to allow wildlife to benefit from temporary and permanent habitats at the site alongside the mineral extraction process and prior to the final restoration of the quarry as a whole. This was undertaken at minimum cost but resulted in a notable biodiversity net gain.



The great crested newt population at Crown Farm Quarry is thriving alongside large scale mineral extraction



Restored areas of Crown Farm Quarry have been passed to the Cheshire Wildlife Trust to manage for nature conservation