

MALLOWS COTTON BIODIVERSITY OFFSETTING SCHEME
KETTERING, NORTHAMPTONSHIRE
AREA 7 EMAD, KIER HIGHWAYS & HIGHWAYS ENGLAND

BIG Biodiversity Challenge Award Category: *Habitat Creation – (< 5Ha small scale)*

Project overview

Innovative off-network biodiversity offsetting measures have been undertaken along the A45 in lieu of the £24m re-development of the major roundabout at Chowns Mill, Northamptonshire (*Plate 1*). Working proactively with multiple stakeholders, Kier Highways and Highways England have been busy enhancing the habitats of Mallows Cotton to create a true wildlife haven!

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

Nestled along the A45 between the Upper Nene Gravel Pits SPA/SSSI and the former site of the medieval village of Mallows Cotton, the 3.6ha Mallows Cotton site contains a heterogeneous mosaic of planted woodland and scrub, semi-improved grassland and a wet drain. Historically the site contained records for an array of interesting wildlife species (*Plate 2*) including badgers, barn owls, bats and even otters along Hog Dyke. Yet prior to work, the site was neglected and lacking in species diversity due to ruderal vegetation encroachment. The key management objectives included woodland and scrub thinning, re-planting with trees of native provenance, over-sowing grassland areas with yellow rattle to subdue competitive grass species and even designed in an bespoke otter holt!

What were the reasons behind this project?

Whilst the impact of road widening at Chowns Mill will in part be addressed by a sympathetic landscaping and replanting plan within the Scheme footprint, there is an outstanding commitment to provide additional Biodiversity Units (BU) for a quantifiable 'net gain'. Ambitions for habitat creation and enhancement at Mallows Cotton align with Highways England's 'no net loss' KPI 4.2 target for biodiversity (Highways England, 2020). Furthermore, a wider focus was to seek to improve the quality of local greenspace and to broaden public awareness of wildlife issues in response to a successful Public Engagement Event held in February 2020.



Artists impression of the completed A45/A6 Chowns Mill Roundabout Improvement Scheme.



*Male blackcap (*Sylvia atricapilla*, left) and Lady's smock (*Cardamine pratensis*, right) from the site. Spring 2021.*

What were the biodiversity measures taken?

Biodiversity measures have included:

- The selective thinning of pole stage ash trees (including those infected with ash dieback) and coppicing to introduce the desired woodland stratification with benefit for birds.
- Bramble briar clearance followed by replanting with 300 native trees and shrubs representative of National Vegetation Classification 'W8 Ash - Field maple - Dogs mercury' native woodland type. Trees were mulched with wood chip produced on site.
- Innovative oversowing of mown grassland areas with yellow rattle (*Rhinanthus minor*) to reduce the vigour of competitive grasses, decrease reliance on cutting and improve grassland condition for hunting barn owls and insect pollinators.
- Re-instatement and installation of bird and bat boxes, hibernacula creation and creation of woodchip paths near an existing public footpath.
- Future maintenance includes biannual wildflower glade cuts and scalloping of scrub margins to create warm microclimates suitable for pollinating insects.

The work clearly contributes to the Habitat Action Plan for lowland mixed deciduous woodland through reinstating sustainable practices in neglected woodlands under the Northamptonshire BAP (2016), as well as targeting the autecological requirements of a wide diverse assemblage of wildlife species including bats, otters and barn owls (Plate 3). Works have exceeded the BU shortfall by 21%, ensuring resilience in meeting Highways England obligation for a 'net gain' in biodiversity offsetting but also set out to improve the quality of local greenspace nearby to the small town of Raunds with synergetic benefits for mental and physical well-being of local residents.

The Kier approach has been one of fostering true collaboration amongst the Construction Works Framework (CWF) with Early Contractor Involvement (ECI) and close liaison with other stakeholders to ensure desired biodiversity targets are achievable on the edge of a European designated site. Long-term aims will maintain a site of low intervention, and create a more diverse habitat structure with potential ambitions to designate the site as a non-statutory Potential Wildlife Site (PWS). Public liaison activities have also proven key in lieu of refining measures, where staff readily volunteered their own time.



Replanted area (left), otter field signs (centre) and artificial boxes providing confirmed roosting site for bats (right). Spring 2021.



An array of fascinating management options were designed to improve the ecological condition of the site, including the oversowing of the curious yellow rattle (left) plant, which is a hemiparasite of fast growing grass species. Summer 2020.

Further information

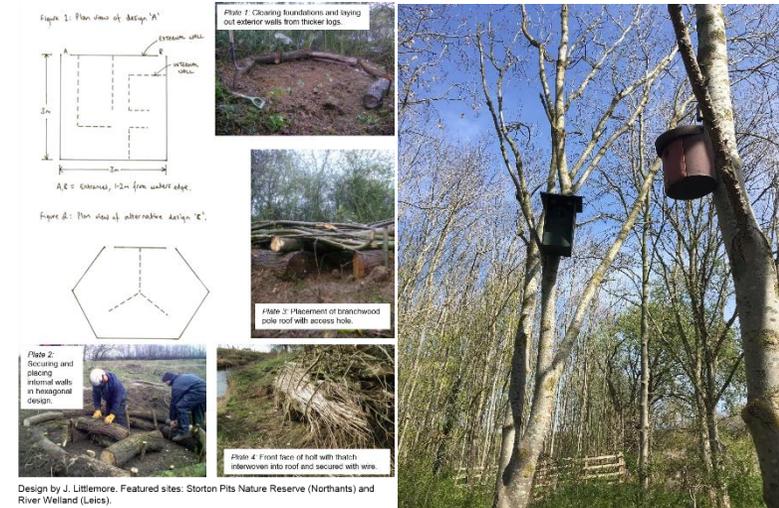
The Specification for Highway Works design was built from lessons learnt from a previous EFD funded Nene Valley Improvement Scheme in 2017 and was initiated from a recent Extended Phase 1 Ecological Audit trail so is readily replicable. Baseline habitat condition data collated by Highways England has enabled the initial impact of biodiversity measures to be evaluated. Following ‘construction’ in 2020, the initial survival rates of planted trees remains high, a more diverse flora with finer grasses and delicate herbs are beginning to appear during the spring monitoring window and bats and tawny owls have moved into their new homes! (Plate 5). The core vision is for a legacy building opportunity to work with stakeholders on common goals of sustainable woodland management, biodiversity gain and improving the quality of accessible greenspace for the local community. Indeed, there is even potential to pro-actively safeguard the site to seek a PWS designation to cement that legacy. In terms of lessons learnt, for the main scheme capturing the importance of the mitigation hierarchy at the design stage and the value local people apportion to local heritage features was paramount. At the local scale at Mallows Cotton and given the prevalence of hungry deer on site, previously failed plantings were not adequately protected so taller deer proof guards were utilised this time round. Also expect the unexpected - the Design team had also to be reactive when ash dieback was discovered on site. Mallows Cotton is of course just one part of the environmental puzzle – back at Chowns Mill, the Contractor has donated trees to the Stanwick Environmental Project and Highways England commissioned the ‘Three Oaks’ artwork sculptures to create a ‘sense of place’ in tune with the local environment (Plate 6).

Project Team

James Littlemore & Warren Willshaw (Kier Highways); Gareth Wilson, Dave Marlow & Dean Holloway (Highways England). CWF input including ECI with Jeremy Willis (Ground Control), Kier Design Services and the Carnell Group.

What was the motivation for carrying out the enhancement?

Due to the constraints of limited land availability within the scheme footprint, off-site land was required to deliver the remaining balance of biodiversity units to work towards a ‘net gain’. This project has created a unique learning blueprint to gauge the efficacy of instigating other off-network biodiversity enhancements in Area 7. Not only that, following the periods of public liaison, it emphasises the strategic importance of accessible greenspace for local communities and a resilient ecological network.



Design by J. Littlemore. Featured sites: Storton Pits Nature Reserve (Northants) and River Welland (Leics).

Innovative otter holt design for Mallows Cotton (left) and an owl box occupied by a tawny owl (right). Spring 2021.



Ornately carved rustic benches were donated to the local community in Higham Ferrers as part of the main landscaping works. Autumn 2020.