Wykeham Quarry & the 'Restoring Quarry Silt Lagoons for Migrant Waders' project

Wykeham Quarry, near Scarborough, North Yorkshire

HansonHeidleberg, Birdlife International & Hull University

BIG Challenge 2015 submission category: Large scale permanent

Project overview

The quarry has been operational since the early 1980's. Restoration at the quarry is ongoing and as part of planning aims to create:

- Reedbed
- Wet Woodland
- Arboreal/Mesolithic Woodland
- Hedgerows
- Acid, Neutral and Wet Grassland
- Marginal Wetland Habitats, Water Vole Ditches, Ponds and Open Water Innovative techniques for the creation of acid grassland include green hay strewing and acid grassland translocation. In addition to ongoing restoration there is a special projects being undertaken at Wykeham.
- Restoring Quarry Silt Lagoons for Migrant Waders with Hull University & Birdlife

The project focuses on species and habitats of relevance for the eastern Atlantic flyway with fieldwork carried out in the UK and in the Netherlands.

Photo: ……...

The project aims to use expertise in the ecology of wading birds to assess and improve the value of quarry silt lagoons for declining birds. Study plots at Wykeham are undergoing trial manipulations to modify the sediment.

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

Prior to mineral extraction site was an agricultural field and plantation woodland with little biodiversity. Since the 1980's as mineral has been worked the site has been restored to a variety of uses for both amenity and nature conservation.

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

Habitats are being created in response to UK and LBAP priority habitats and species.

The 'Restoring Quarry Silt Lagoons for Migrant Waders' project is being carried out in recognition that Wykeham has the potential to recreate lost wader habitat through the maintenance of silt areas, which provide feeding and roosting habitat.

A preliminary study indicates that one likely barrier to the use of silt

lagoons by waders is the highly anoxic conditions below the surface which prevent the establishment of sediment-living invertebrate communities.

The study aims to look at ways to improve the sediment for invertebrates, and hence birds.

What were the biodiversity measures taken?

All measures taken to increase biodiversity are replicable on other similar sites.

Planting of hedgerows, reedbeds, wet woodland, green hay strewing to create species rich grasslands, digging water vole ditches and clearing overhanging trees, installation of bird and bat boxes.

The trial modifications to silt beds are also replicable elsewhere and indeed the aim of the project is to roll the technique out should it prove successful.

Green hay strewing and, in particular, the modification to silt beds are both innovative techniques. Wykeham Quarry has a long term management plan and a site specific biodiversity action plan for all habitat areas and species.

Photo: Newly planted reed beds

New areas of habitat have already been created including hedgerows, reedbeds, acid grassland margins and water vole ditches. There will be a biodiversity net gain.

Workers are often keen biodiversity ambassadors on minerals sites. At Wykeham the quarry manager, Tim Harvey, is a keen wildlife photographer and enthusiast. His observations on site have helped inform the ongoing restoration works and provide ideas for attracting wildlife.

For example placing gravel on lake edges to attract waders, such as Oyster Catcher to breed and installing Owl boxes on the processing plant. These are regularly used by Barn Owls and Kestrels.

Tim also created an artificial Sand Martin bank in the processing plant area which is used every year by 20 to 30 pairs.

Tim displays his photographs in the site office so colleagues and visitors can see the range of wildlife on site.

How would you best describe the project?

An enhancement.

Further information

As part of planning lowland acid grassland has been translocated. This involves rotovating the top 15cm of the grassland, placing to one side, removing the remaining top soil and transferring to the receptor area.

The rotovated topsoil is then re-spread over and rotovated and rolled.

The upper layer contains the seed bank and vegetative reproductive structures from which the receptor area grassland develops.

As an enhancement the southern lake was cultivated and seeded with a nurse mix prior to hay strewing.

The species rich hay was sourced from a local donor site to further improve the plant diversity of the lake margin. In future years the species on the lake margin will be harvested and used on others areas of the site.

The area will be monitored and may need to be temporarily fenced off to exclude geese until it has established.

The 'Silt for Waders' project is additional to planning. Mineral has been added to quadrats and is undergoing monitoring to assess the improvement in invertebrates.

As part of planning, watervole ditches have been created around the perimeter of the lake. Tree thinning has also been undertaken around existing ditches. This is monitored.

Common reed has been transplanted to lake margins as works have progressed Gravel has been placed on margins to provide nesting sites for birds such as little ringed plover.

Photo: Acid grassland following translocation

Owl boxes have been installed on the processing plant and are used by breeding Barn Owl and Kestrel.

What was your personal motivation for carrying out the enhancement?

As a landscape architect working for Hanson I have been involved on this site, along with Stewart Laws (Unit Manager) and Tim Harvey (Quarry Manager) for many years.

Both professionally and personally we take great satisfaction in observing how biodiversity on site has developed.