Frodsham Wind Farm

Frodsham, Cheshire West and Chester

Atmos Consulting Ltd on behalf of Frodsham Wind Farm Ltd

BIG Challenge 2015 submission category: Large scale permanent

Project overview

The project comprises a large wind farm development, still under construction, located on a series of cells formed by disposal of silt from dredging of the adjacent Manchester Ship Canal with the Mersey Estuary SPA located immediately north.

The mitigation site, a substantial bunded former silt storage lagoon known as Cell 3, was constructed by the Manchester Ship Canal Company as a disposal ground for materials dredged from the Manchester Ship Canal.

Cell 3 comprises a 41ha area which will not be developed but restored and managed for waders requiring significant reprofiling of the Cell and the creation of new, wet scrapes.

Major reprofiling works and scrape creation was undertaken in summer 2014 and works are currently being completed In August 2015 including lining scrapes and managing invasive ruderals.

Photo: Cell 3 prior to clearance

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

Cell 3 was divided into two. The northern half comprised short grassland on open, flat ground grazed by livestock.

The southern half was unused due to highly variable terrain resulting from previous excavations.

The area hadn't been managed and had developed to comprise large and dense stands of rank vegetation.

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

Atmos were commissioned to develop the design of the scrape and wetland mitigation areas to satisfy relevant planning conditions.

The aim of the mitigation work was to provide suitable wader habitat which would extend the suitable wading bird habitat across a large and connected area.

The SPA supports nationally important numbers of wintering waders, which currently use the estuary intertidal area and Cell 6 (located to south of Cell 3).

It was reported that Cell 3 hadn't been used by waders

for 30 years and the creation of new wader habitat was viewed as a positive gain from the development.

What were the biodiversity measures taken?

As described above the southern half of Cell 3 comprised a vast area of undulating scrub and ruderal habitat.

Extensive earthworks were undertaken under ecological supervision (including first checking the area for any signs of protected or notable species) to remove the scrub and vegetation layer to allow a more detailed assessment of the current topography.

Vegetation stripping and site levelling was then undertaken across the southern half of the Cell so that the entire Cell had a flat, open aspect with good visibility and accessibility for wading birds.

In addition no material was brought onto or taken offsite to minimise environmental impacts of the work and rescue material on site.

Upon the completion of site clearance and levelling. Several large scrapes and/or scrape clusters were then dug in the north and south of the Cell providing a suitable foraging resource.

Photo: Cell 3 following clearance and levelling

These scrapes were then lined to ensure they hold a suitable amount of water over winter following ground investigation work to assess groundwater levels across the Cell.

The site will be managed long term to provide short grassland suitable for wading birds.

This has created a very ecologically valuable habitat, particularly in consideration of the site's location adjacent to the Mersey Estuary SPA, and although undertaken in mitigation for the adjacent development it is considered there will be a net gain as the Cell was previously unmanaged and suitable for a smaller number of non-wading bird species.

A Habitat Creation and Management Group was set up which includes the LPA, NE, developer and members of the local birding community to discuss mitigation work, assess progress and exchange ideas to achieve maximum biodiversity benefit.

How would you best describe the project?

Mitigation.

Further information

The work was undertaken using a local subcontractor and involved the use of tracked excavators, a bulldozer, tractor and trailer and dumper trucks and as described above the difficult terrain made this a challenging project.

The site clearance, levelling and scrape excavation was undertaken prior to winter 2014.

Works were then finalised in July and August of this year (to avoid the breeding bird season) which involved lining the scrapes and making minor adjustments to final scrape profiles.

It is too early to measure overall success but early results show that wading and breeding birds have already started using the Cell during winter 2014-15 and spring/summer 2015.

The local tenant farmer will graze the site to manage it as short grassland suitable for wading birds and may need to cut vegetation around the scrape edges periodically.

However the initial scrape designs were not uniform and on consultation with the farmer these were changed to make machine access and subsequent management work more practical.

It is important that the future land manager is consulted at an early stage to ensure that mitigation plans are applicable on the ground to ensure management can be implemented as intended, thereby ensuring maximum biodiversity benefit.

Photo: Cell 3 scrape creation and early development

What was your personal motivation for carrying out the enhancement?

The silt storage Cells within the site present a unique local habitat and in connection with the site's location immediately adjacent to the Mersey Estuary the project provided an opportunity to achieve effective mitigation and biodiversity gain on a large scale renewable energy development.