

## Guisborough Treatment Works Meadow Creation Guisborough, North Yorkshire

Northumbrian Water

BIG Biodiversity Challenge Award category: Client

### Project overview

Northumbrian Water needed to construct a large 6000m<sup>3</sup> underground storm tank to protect water quality at a nearby bathing beach. This required a large amount of excavation and involved temporary storage and re-profiling of large amounts of soil. Habitat surveys before construction work identified a pond surrounded by species poor ruderal grassland. During construction work heras fencing was used to protect the pond and on completion of the tank we enhanced the site by sowing a specially selected meadow seed mix to create one hectare of lowland meadow.

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

An ecological site assessment identified a pond, broadleaved woodland around the edges of the site and species poor ruderal grassland in the area identified for the installation of the storm tank.

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

Northumbrian Water has a policy of enhancing biodiversity on its landholdings so we are always looking for opportunities to do this as part of our capital construction programme. We are part of the Local Nature Partnership for the Tees area as well as having a long history of partnership working with the local Tees Valley Wildlife Trust and this helped shape our ideas for reinstatement of the site. The construction of a large underground tank provided a great opportunity to create a lowland meadow that would compliment surrounding habitats. This proposal was discussed with the main contractor to ensure correct ground reinstatement and sourcing of an appropriate meadow mix.



*Start of storm tank construction (February 2015)*

### What were the biodiversity measures taken?

We carried out an eDNA assessment of the pond to determine whether great crested newts were present (negative result) as well as instructing the contractor to install heras fencing during construction works to protect the pond. We also surveyed existing habitats on site and identified a stand of Japanese knotweed which was also fenced off with warning signs. Through our in-house knowledge and environmental partnerships we were aware that lowland meadows are a habitat of principal importance (Section 41 list under the NERC Act) and the construction of a large underground tank at Guisborough provided a great opportunity to create one hectare of wildflower meadow which would be of greatest benefit in this area. Working in partnership with our appointed contractor (Lumsden and Carroll) we ensured the careful preparation of the ground and then sourced an appropriate meadow mix of native wildflowers and grasses.

Over the next few years we will be working with Tees Valley Wildlife Trust to source local green hay to enhance the meadow. We will also be working in partnership with the Wildlife Trust to manage the meadow area and they in turn will do this using local volunteers. A programme of non-native invasives control is also in place to prevent the spread of Himalayan balsam which is present within the adjoining woodland. Future monitoring of the site, including the pond, will be undertaken to ensure successful establishment of the meadow. As part of this we will be trialling a new grassland monitoring scheme that has been designed for volunteers to use.



*Same site after tank construction with meadow starting to appear*



### How would you best describe the project?

An enhancement

### Further information

The creation of the meadow involved breaking up of compacted ground and re-profiling, removal of construction debris and weed control to provide the best substrate for establishment. The material was mostly sub-soil which is ideal for a native meadow. Native UK provenance wildflower and grass seed (including 23 species of wildflower such as knapweed, ox-eye daisy, bedstraw and birdsfoot trefoil), was sourced and spread at a rate of 4g/m<sup>2</sup> across the site and photographs are being taken to help monitor establishment of the meadow. Technical issues associated with the tank construction led to delays in spreading the seed mix as it was due to go down in the autumn of 2015 but actually ended up being late spring 2016. This will delay establishment of the perennial herbs but the low fertility of the site will reduce competition by the grasses and the presence of yellow rattle, a parasite of grasses, will help to control grass vigour.

Protection of the pond during construction ensured minimal disturbance and a recent pond dipping exercise found good evidence of invertebrates and amphibians, including newt efts with good marginal vegetation and submerged pond plants.

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

Lowland meadows are in serious decline with a 97% loss in recent decades. This has impacted on pollinating insects which are an essential part of our food production as well as providing an important food source for other wildlife. This construction project **provided a fantastic opportunity to do something a bit different that will, in it's small way, help reverse declines in our wildlife.**