

Manage water levels appropriately

Project Summary

Title: Beckingham Marshes Washland Creation

Location: Gainsborough, Nottinghamshire, England

Technique: Changes to a water level management strategy

Cost of technique: £

Overall cost of scheme: £££££

Benefits: ££££

Dates: 2010-Present

Mitigation Measure(s)

Manage water levels appropriately

Allow the river to flood its floodplain

How it was delivered

Delivered through: Environment Agency

Partners: RSPB



Beckingham Marshes
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Background / Issues

The towns of Gainsborough and Beckingham have a long history of flooding from the tidal River Trent. A flood protection program aimed at decreasing flood risk was undertaken in the 1960s, resulting in the embankment of 1000 ha of agricultural land. While this water level management strategy has been effective in reducing flood risk, it has also resulted in the loss of a large area of wetland habitat and associated range of wildlife.

The project aimed to create approximately 94 ha of floodplain grassland and improving habitats for breeding wildfowl, wading birds (such as lapwings and curlews), water voles, dragonflies and damselflies, amphibians and a variety of aquatic plant life. This has involved a restructuring of the water management strategy in the area, promoting a water storage function.



Overview of area to be wetted through project and the River Trent

Step-by-step

The “retro-fitting” of wetland habitat into an existing drained flood washland has involved:

- The creation of 4 km of new ditches;
- The digging of 100 large wet ponds;
- The design and installation of a gravity and wind pump assisted drainage system;
- The removal of approximately 30,000 tons of soil related to “ground lowering” and creation of wetland storage.

When the floodplain is inundated, water levels are controlled via a fixed level inflow into the marsh drainage system. Floodwater leaves the floodplain via a flapped outfall. Water that remains in the marshes is controlled

with via a combination of a natural system where water levels are controlled by the levels of the ditches and in the river, and pump-assisted drainage. This has resulted in a substantial increase of the water storage capacity in the area of Beckingham Marshes, creating conditions capable of supporting floodplain grassland habitats through changes to the water level management strategy.



Digging of wet ponds

Benefits

- The project will make a significant contribution towards Defra’s Outcome Measure 5 target for freshwater habitat creation. Beckingham Marshes will be responsible for approximately 50 % of the regional BAP target in the Nottinghamshire BAP.
- The project will provide supporting habitat for breeding waders, wildfowl, water voles, brown hares, dragonflies and barn owls.
- Increased amenity value and educational opportunities neighbouring population.
- The project will provide added opportunities for off-setting the potential loss of storage associated with raising water levels associated with climate change.
- In addition, the project will offer storage for 1:10 year floods.



Floodplain grassland habitat

Lessons Learnt

Constraints related to the project’s location, utilities present in and archaeological value of the landscape are providing valuable lessons related to:

- The need to ensure buried infrastructure (in this case oil pipelines) is not compromised
- Identification and mitigation of the potential impact of landscaping and re-wetting on buried archaeology.

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