

# Realign flood defences to increase coastal and intertidal habitat

## Project Summary

**Title:** North Trimley Marsh Habitat Creation

**Location:** Trimley, Suffolk, England

**Technique:** Managed realignment

**Cost of technique:** £££££

**Overall cost of scheme:** ££££££

**Benefits:** ££££££

**Dates:** 1998-2010

## Mitigation Measure(s)

Realign flood defences to increase coastal and intertidal habitat

Create compensatory habitat to offset impacts

## How it was delivered

Delivered by: Harwich Harbour Authority

Partners: Department for Transport, Department for Environment, Food and Rural Affairs; Centre for Environment, Fisheries and Agriculture Science; The Royal Society for the Protection of Birds; Natural England; Suffolk County Council; Environment Agency; Eastern Sea Fisheries Joint Commission (now Eastern Inshore Fisheries and Conservation Authority).



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## Background and issues

In October 1998, the Harwich Haven Authority (HHA) commenced works to deepen the approach channel to the Haven Ports. As a condition of obtaining the various permissions to carry out the deepening, a Mitigation and Monitoring Package (MMP) was agreed with the Department of the Environment, Food and Rural Affairs (Defra) and the Department for Transport (DfT) to minimise the potential environmental impacts of the

scheme. Part of the package was to develop a habitat creation scheme to compensate for potential impacts on the Stour and Orwell Estuaries Special Protection Area (SPA). To this end, 16.5 ha of intertidal habitat was created through managed realignment at North Trimley Marsh. This habitat represents 0.5 % of the total SPA designated area.

Location of the Trimley managed realignment site on the Orwell Estuary



## Step-by-step

The Trimley managed realignment site is situated on the east bank of the Orwell Estuary, approximately two nautical miles upstream from Felixstowe. The site now consists of approximately 16.5 ha of intertidal mudflat fringed with developing pioneer saltmarsh.

The site was created on arable land. The western perimeter is made up of the seawall which previously separated the Orwell Estuary from the farm land. A new counter-wall was created around the northern, eastern and southern perimeters of the land.

One of the required criteria for the site was that no more than 30% of its area should develop into saltmarsh. At least 70% of the realignment area was, therefore, designed to be below the level of +3.5m Chart Datum (CD), as saltmarsh is estimated to develop at levels higher than +3.5 m CD. The entrance (i.e. the breach in the sea wall) was designed at +1.5 m CD to enable the site to completely drain at low tide.

Maintenance dredged material (fine mud) from the channel in the lower Orwell Estuary was pumped into the site to provide a suitable substratum for colonisation of estuarine flora and fauna. Approximately 35,000 m<sup>3</sup> of dredged material was pumped from a trailing suction hopper dredger, through a floating pipeline (which entered the site through the breach) to a floating pontoon. At high water, the material on the pontoon was deposited in four locations, from where it was spread out over the site. The dredged material formed a layer approximately 30 to 50 cm deep above the underlying soil and a series of mini-bunds were created throughout the site, to retain the dredged material and to allow access for surveying.

As part of the original agreement, a 10-year monitoring programme was conducting following scheme implementation to monitor a number of physical, chemical and biological factors to determine the long-term success of the scheme.



Progression of the Trimley managed realignment scheme during the 10-year monitoring programme (2001-2010)

## Benefits

- Since construction, the benthic community has increased in species richness, abundance and diversity as the site has developed.
- The diversity and density of saltmarsh plants on the Trimley managed realignment site has increased significantly since construction. The distribution of saltmarsh over the site is uneven and some areas support much larger areas of vegetation than others, particularly the northern extent of the site. The saltmarsh area is expanding slightly.
- Of the species which qualify for international status as part of the Stour and Orwell SPA, there were increases in numbers of five species in 2009/10 including black-tailed godwit, dunlin, grey plover, knot and redshank. The site is functioning well as a SPA habitat.



Habitat creation around the opening in the flood defence

## Lessons Learnt

- Recognition of the importance of monitoring in mitigation
- For schemes with significant implications, the establishment of a participatory forum
- Ensuring delivery and establishing trust are key to the success of such as scheme
- Enabling shared decision-making amongst partner organisations
- Delivery through existing management forums improves participatory engagement.

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