

## Case Study: Beneficial Use of Sediments

<b><i>Project</i></b>	<b>Mersea Harbour and Tollesbury Wick Climate Change Adaptation Recharge Project</b>
<u>Classification code</u>	R5C_2021_UK
Major function	Resilience
Other functions	Restoration
Major technique	Rainbow discharge and floating pipeline
Other technique	
Location	West Mersea, Essex, UK
Volume	98,944 m <sup>3</sup>
Contaminants	No contamination
Granulometry	Sand and gravel
Scale	Project scale
Client	Mersea Harbour Protection Trust (MHPT)/HHA
Executor	Boskalis Westminster and Van Oord
Research program	-
Contact name	Jim Warner
Contact e-mail	jim.warner@hha.co.uk
Year start - end	November 2021 – January 2022
<b>Description of the project</b>	
<p>Mersea Harbour is surrounded by rich tidal waters with mudflat, salt marsh and beaches home to important bird species, native oyster (<i>Ostrea edulis</i>) beds, restaurants and yacht clubs. It is a valuable area environmentally and economically. Erosion of Old Hill Point, Cobmarsh and Packing Marsh Islands has left the harbour vulnerable to tidal and wave erosion, putting these important tourist and species rich areas at risk.</p> <p>An intertidal recharge was planned by the Mersea Harbour Protection Trust (MHPT- a charitable trust formed by local interest groups), to protect the harbour from erosion. The project was proposed to deliver 1.7 ha of potential nesting ground for little terns, increase the potential for saltmarsh colonisation and absorb long fetch wave energy to reduce erosion. This would result in protection and enhancement of the harbour area. Residual outcomes include long term viability of the harbour for commercial and leisure and to preserve the character of Mersea waterside.</p> <p>The project used dredged sand and gravel, provided from the Harwich Haven Authority channel deepening project, placed in four areas: Packing Marsh Island, Cobmarsh Island, Tollesbury Wick and Old Hall. Placements were ensured to be made precisely using both 'rainbow discharge' over the bow and floating pipeline.</p> <p>The placed sediments have slowed erosion by reinforcing the islands, brushwood fencing was added in two locations preventing the movement of sediment into navigable channels. Bird populations are being monitored by the Royal Society for the Protection of Birds (RSPB) and it is anticipated that the restored areas will develop further to provide ideal habitat for nesting birds in the future.</p> <p>The project was made possible by the drive of MHPT; Harwich Haven Authority spent in excess of £1.2M for the placement and the Environment Agency have contributed £300,000 towards pre and post monitoring which is also being supported by the RSPB. The project was planned to coincide with the capital deepening project and is a good example of how collaboration to connect supply and demand can lead to successful beneficial use of sediment projects.</p>	

**Graphical information**

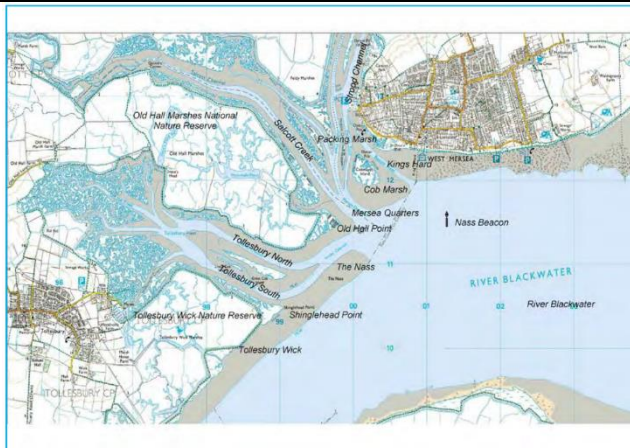


Figure 1: Map of Mersea Harbour, Mersea Harbour Protection Trust, 2016

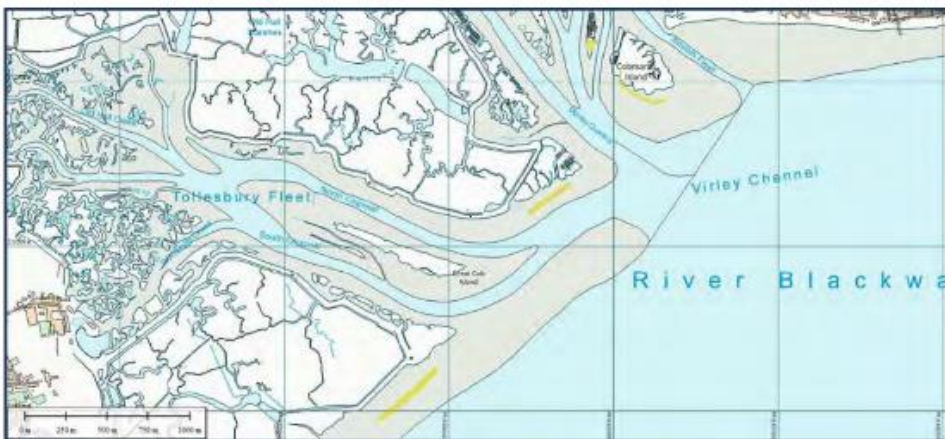


Figure 2: Proposed recharge areas, Mersea Harbour, Mersea Harbour Protection Trust, 2016

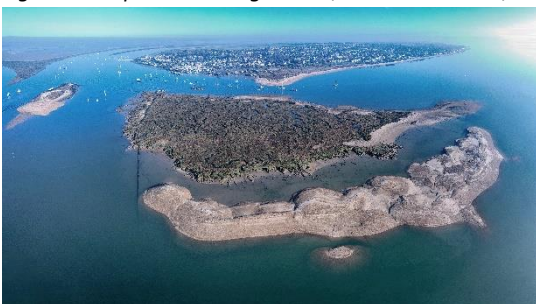


Figure 3: Aerial image of completed work at Mersea Harbour © Jim Pullen UAV Surveys

**References/web links**

1. Omreg.net. 2022. 0027 - Mersea Harbour. [online] Available at: <https://www.omreg.net/query-database/0027-mersea-harbour/> [Accessed 12 July 2022].
2. Mersea Harbour Protection Trust, 2016. Mersea Harbour and Tollesbury Wick Climate change adaptation recharge project. [online] Available at: <http://savemerseaharbour.org/wp-content/uploads/2015/05/ES-final-Mersea-Harbour-Protection-Trust-Climate-change-adaptation-recharge-project.pdf> [Accessed 12 July 2022].
3. HHA. 2022. Beneficial disposal project begins at Mersea Island. [online] Available at: <https://hha.co.uk/channel-deepening-project-blog/beneficial-disposal-project-begins-at-mersea-island/> [Accessed 12 July 2022].



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