

MLA/2016/00386 – Mersea Harbour and Tollesbury Wick Climate change adaptation recharge project

Schedule 8 – Monitoring Programme

Monitoring	Purpose	Location	Pre-placement survey	Post placement monitoring
Surface elevation	Digital surface modelling to monitor any changes in surface elevation above ODN level and any spatial redistribution of material. To be accompanied by fixed-point photography to monitor changes at ground level.	All recharge sites	Pre-commencement	Immediately post-placement then at annual intervals for 5 years.
Bathymetry	To monitor any changes in surface elevation below ODN level and any spatial redistribution of material.	All recharge sites		Immediately post placement then annually for 3 years.
Silt deposition	To measure build-up of silts inside the recharge bunds.	Cobmarsh, Old Hall, and Tollesbury Wick		At 6 monthly intervals for 1 year then annually for 3 years.
Intertidal marine communities	To record any changes in abundance of marine invertebrates and community types and to record presence of invasive species.	All recharge sites	2015 transect survey	Once in August/September, 3 years post placement.

Bird feeding – overwinter	To monitor bird usage of intertidal flats.	Cobmarsh Island and Old Hall foreshore inside recharge bunds.	Over at least 2 seasons prior to placement, recording on 2 separate occasions between October and March	Over 3 seasons
Bird nesting	To monitor nesting of all bird species, with particular focus on the Annex 1 species, the little tern, counting nests and young. Monitoring of little tern in the Blackwater Estuary is already underway through the little tern recovery project and data is being shared with the MHPT.	All recharge proposal sites (and earlier recharge bunds)	.Further monitoring of current recharge sites for at least one season prior to new recharge placement.	Annually over 3 years with 2 counts each season in June and July.
Bird roosting	To monitor bird usage of new recharge	All recharge proposal sites (and earlier recharge sites)		Annually over 3 years – 2 counts between October and March
Turbidity as a surrogate for considering potential for sedimentation on oyster beds.	To assess any increase in turbidity, from an established baseline and the potential for silts to settle on private oyster beds and the free grounds during discharge of early loads.	Private oyster beds in the harbour creeks and the grounds south of West Mersea.	Water samples will be taken at fixed locations for testing within 2 hours of the start of the ebb tide during calm conditions and during easterly winds to obtain a baseline.	Sampling during the early discharge of material to compare with baseline along with monitoring, by the oystermen, of oyster beds for silt settlement. Any significant increase above baseline levels may require a change to the discharge regime.  Recording of discussions with oystermen and mitigation

				<p>measures employed to be included in the yearly report.</p> <p>No monitoring required post placement.</p>
Retainment of recharge	To ensure material is retained where considered to be more vulnerable to wind and wave events.	Cobmarsh and Packing Marsh Islands	To construct fences prior to placement: work will be timed to avoid the bird breeding season and overwintering season.	<p>Checks to be carried out monthly for the first 3 months post placement. Subsequently monitoring to be carried out quarterly to check conditions and repair as required. Further fences to be constructed should monitoring demonstrate the need for this. Additional checks to be undertaken prior to predicted severe weather events and post severe events. Ongoing.</p>

The licence holder must submit a monitoring report summarising the above to the MMO and Natural England at the end of the first year of the works and every year thereafter until the end of the works.