

Establishing the causes & ecosystem impact of *Enteromorpha* spp growth on Tees intertidal mudflats

Client: Northumbrian Water Ltd
Project duration: 2 years



Project description:

Teesmouth flats and marshes are of international importance and Seal Sands represents the largest and most ecologically important area of intertidal mudflat within the Tees estuary. It is part of an SPA, and provides an important feeding ground for estuarine birds (resident and migrating). However, the Seal Sands area has been assessed as being “unfavourably maintained” as a consequence of continuing high coverage of *Enteromorpha* algal mats.

Enteromorpha algal mats have been increasing in size on Seal Sands since 1996. Over this two-year study, algal mats were found to be consistently concentrated on the eastern side of the Bay, and sediment were generally composed of silts and clays. The presence of *Enteromorpha* resulted in a

sediment macrofauna community consisting of opportunistic and generally pollution tolerant species. *Enteromorpha* had a negative effect on the abundance of *Corophium volutator*, which is one of the main components of the diets of birds, and *Hediste diversicolor* was also negatively associated with algal mats. The ecological quality of the estuary has shown improvement between 2006 and 2007, although this still needs to be correlated with nutrient levels and bird counts to draw any firm conclusions.

Key elements:

Within this programme, SERG:ES took macroinvertebrate samples, sediment cores and measured *Enteromorpha* abundance and biomass. Species assemblages were analysed using the PRIMER statistical software.



The view across Seal Sands. The mudflats are surrounded by heavy industry.
