

Site Condition Monitoring – the sublittoral sandbanks of the Solway Firth

SeaStar Survey undertook a site condition monitoring survey of the sublittoral sandbanks of the Solway Firth for the Scottish Natural Heritage. The Solway Firth is one of the most important and least industrialised estuarine areas in the UK and EU and has been selected as a candidate Special Area of Conservation (cSAC). The site has been selected for the Annex 1 habitats 'estuaries', 'mudflats and sandflats not covered by seawater at low tide' and 'sandbanks which are slightly covered by seawater all of the time'. The latter formed the focus of interest for this study.

The purpose of this study was to initiate the monitoring of the Solway Firth cSAC. The two principal objectives of the survey were: 1) establish an appropriate baseline biological dataset that will facilitate the assessment of the 'favourable condition' status of the interest features of the sites on future monitoring surveys; and 2) gather sufficient data for SNH to form a judgement on the current condition of the interest features of the sites.

The survey work was carried out on SeaStar Survey coastal survey vessel *Mariner* and comprised sediment sampling using a 0.1m² Day grab (85 grab site locations) and a 2 m Beam trawl to assess the epifauna (60 trawl lines). A topographic survey using an echosounder was also carried out. The subsequent analysis included particle size analysis, invertebrate identification and data analysis (including multivariate analysis) as well as biotope classification of all the grab-sample stations within the survey.

The results showed that all the sites within the survey area were classified as 'sand' (according to the Folk system) with the vast majority (81) of the sites being dominated by fine or very fine sand with only four sites with medium sand as the dominant size fraction. The results furthermore showed that, in geographical distribution terms, abundance was lower in the area towards the northeast of the survey area and species diversity was low throughout the sublittoral zone within the Solway Firth. There is some geographical variation within the area with some evidence of an increase in diversity from the northeast towards the southwest.

The classification of the 85 sites into a designated biotope revealed a total of five biotopes within the survey area. The distribution of the biotopes is described fully in the report (with their characteristic species) but the five recognised biotopes were: **SS.SSA.IFiSa.NcirBat**, **SS.SSA.SSaVS.NcirMac**, **SS.SSA.SSaVS**, **SS.SBR.PoR.SalvMx**, **SS.SBR.SMus.MytSS**. Of particular note is the presence of a *Sabellaria* reef with high abundance of both *Sabellaria alveolata* and *Mytilus edulis* in the Silloth Channel.

Based on data from previous studies there was no evidence to suggest that any marked changes have been taking place in the sediment type or biotope distribution. The data collated from this study has led to a more detailed understanding of the biotope distribution within the Solway Firth than previously and allowed recommendations regarding future site condition monitoring of this cSAC to be made.

Location of the Solway Firth cSAC (shown in red)

