Monitoring sponges in the Menai Strait – what story are they telling us?

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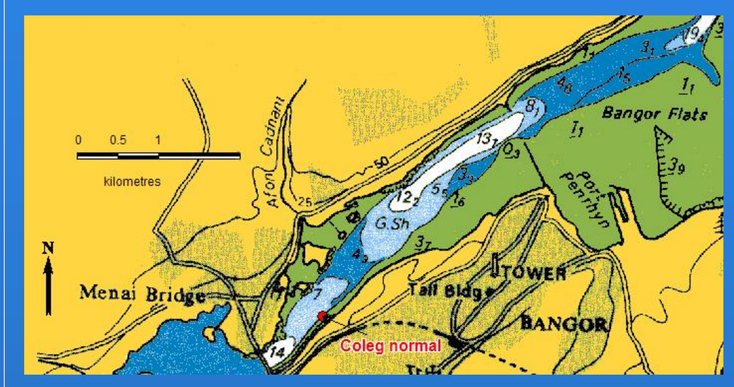
INTRODUCTION

CCW's Across Wales Diving Monitoring Project, running from 2004 until 2011, has been recording species data from a number of sublittoral rock communities within each of four Welsh marine SACs in order to assess the recognised biotic features and attributes of each site. Within the Menai Strait and Conwy Bay SAC, the *'tide-swept circalittoral communities'* of the Menai Strait are dominated by sponges; and are being monitored at Coleg Normal. Data from this site have been gathered on an annual basis since 2004 and are showing a definite trend of reducing sponge biomass. This is a brief summary of the findings to date.



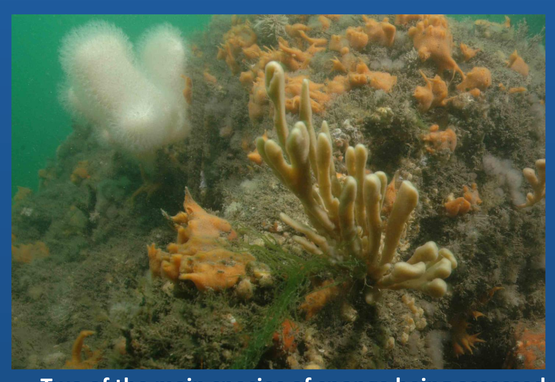
Divers taking a transect tape out on a fixed bearing from the shore.

The monitoring station at Coleg Normal comprises a steep boulder and cobble slope dominated by a prominent sponge community, featuring *Amphilectus fucorum*, *Halichondria panicea* and *Haliclona oculata* species in particular. Tidal streams at the site are fierce (up to 8 knots), limiting recording to short windows during neap low water slack tides.

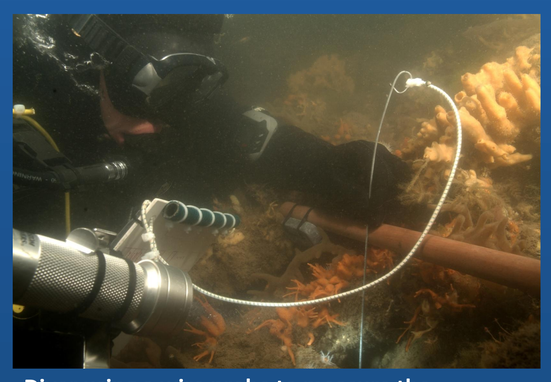
METHODS

Monitoring is undertaken along two horizontal transects following depth horizons. Each transect extends 30m from a measuring tape that is run from a fixed surface reference point perpendicularly down the benthic slope. Each transect provides 60 data points, sampled by point-intercept every 0.5m. Whilst the depth of each transect is constant, the precise positioning of the transect is variable, being dependent on the terrain rugosity. At each sampling point, the presence of encrusting and erect sponges is noted, together with a measurements of thickness (for encrusting species) or height and circumference (for erect species).

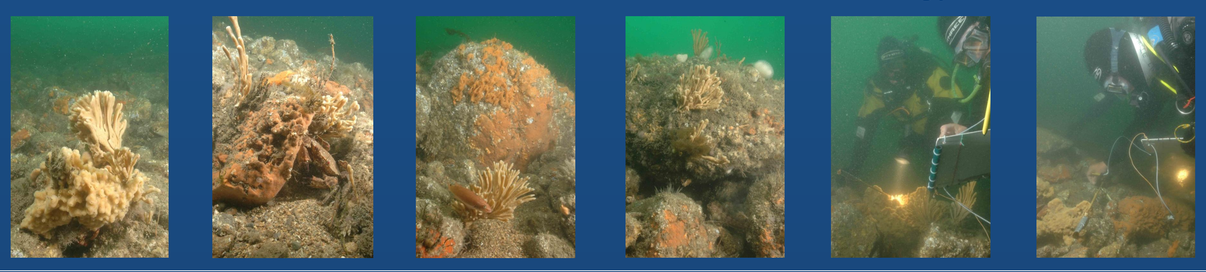
See SOP 05 in: Whittington MW, Holt R, Irving R, Northen K, Stanwell-Smith D (2006) *Across Wales Diving Monitoring Project, volume 2: Standard Operating Procedures,* CCW Marine MonitoringReport No.25, 78pp



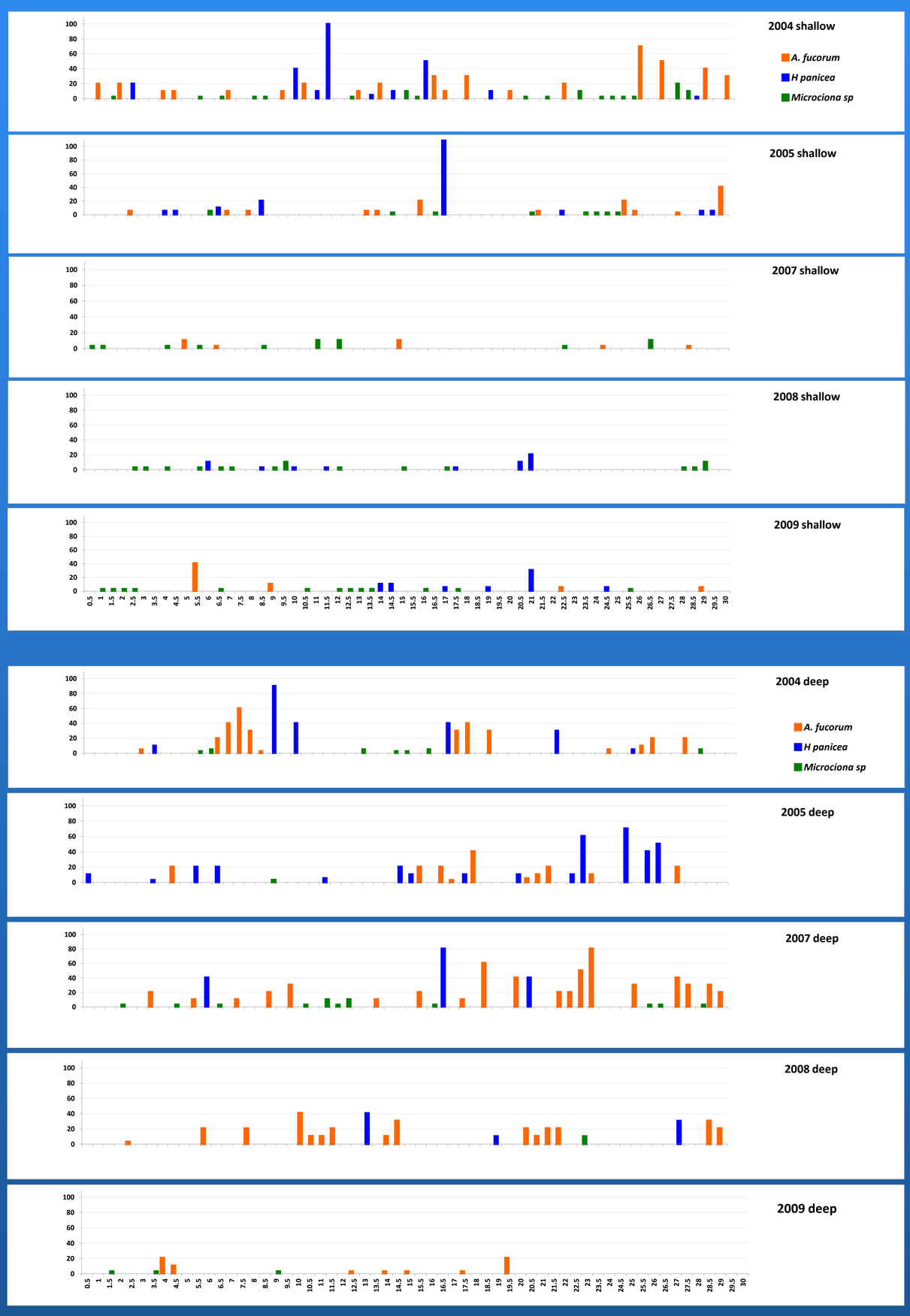
Two of the main species of sponge being assessed: the encrusting *Amphilectus fucorum*, and the erect *Haliclona oculata*.



Diver using a wire probe to measure the thickness of encrusting sponges directly beneath a 1.0 m measuring pole.



RESULTS



CONCLUSIONS

A clear pattern of reducing sponge biomass has been observed at the Coleg Normal site, over the last five years. Anecdotal evidence suggests that this may correlate with changes patterns of effluent discharge and resultant eutrophication of the waters of the Menai strait. The luxuriant sponge community within the tide-swept circalittoral zone contributed to the designation of the SAC; and its trend of increasing paucity is a concern.

The archived results of video transects taken at a neighbouring site at "Nelson's column" on the strait are currently under analysis, together with sourcing co-varying turbidity data to investigate possible drivers affecting the sponge reductions.

Acknowledgement:

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