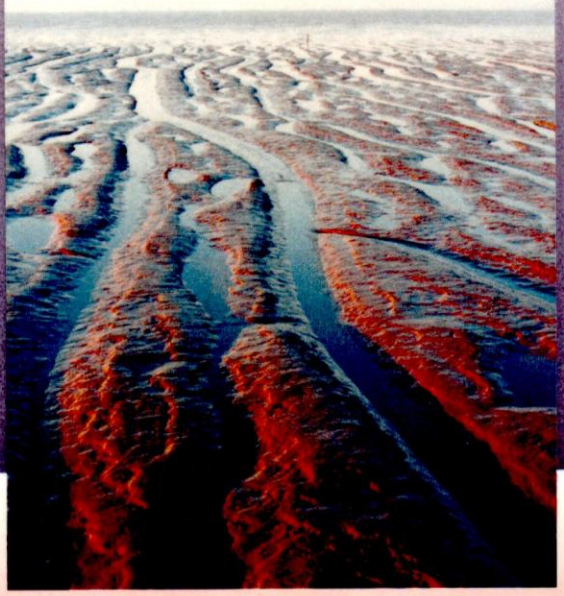
ENVIRONMENT AGENCY

ABSTRACT VOLUME

INTERTIDAL MUDFLATS:
PROPERTIES AND PROCESSES



UNIVERSITY OF PLYMOUTH
Plymouth, England

12-16 April 1999

Sponsored by the
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Supported by the
Environment Agency

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INFLUENCE OF THE MUDFLAT SURFACE SHAPE ON THE GREEN MACROALGAE AND ITS ASSOCIATED MACROEPIFAUNA

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ABSTRACT

Although the mudflats are relatively plain, a closer observation will show that they are a succession of mud ripples, composed by consecutive convex and concave sections. The aim of this study was to determine the influence of those sections on the dynamics of the macroalgae Ulvales (Chlorophyta) and its associated macroepifauna in the Ria Formosa (a tidal lagoon in the southern coast of Portugal).

Monthly, between February 1996 and February 1997, samples were taken from 4 stations in the Ria Formosa. Two stations were located on the convex section of the mudflat and the other two on the concave section. At each station samples of the Ulvales and its related macroepifauna were taken, using 0.5 mm mesh nets and sieves. After being sorted and conserved in a 4% formalin solution, the species were identified, sized, and their ash-free dry weight (AFDW) were determined.

The results indicated that a clear distinction could be made between the stations located in the convex and concave sections. Although in all the stations the only *Genera* of Ulvales present in the samples were *Enteromorpha* and *Ulva*, their relative contributions changed depending on the mudflat section. In the convex sections, *Enteromorpha* dominated, being in several months the only algae present. In the concave sections, the dynamics of *Enteromorpha* and *Ulva* were almost the same, with similar values of biomass. The macroepifauna associated with the algae also changed from one section to the other. In the convex sections, the macroepifauna was formed by fewer species and dominated by the snail *Hydrobia ulvae*. In the concave sections, the number of species sampled was higher, with a dominance of the amphipod *Melita palmata* and gastropods *Nassarius pfeifferi*.

From this study it can be concluded that the mudflats are not simple plains, being the communities present associated with specific surface shapes of the mud.