THE ECOLOGICAL IMPORTANCE OF THE TUBE BUILDING POLYCHAETE *LANICE CONCHILEGA* IN THE *ABRA ALBA – MYSELLA BIDENTATA* COMMUNITY

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The *Abra alba – Mysella bidentata* community is the most diverse (average: 31 spp. 0.1 m^{-2}) and dense (average: 6500 ind. m^{-2}) macrobenthic community on the Belgian Continental Shelf (BCS), in which densities are dominated by polychaetes and bivalves. Numerous species of the community are an important food resource for demersal fish (e.g. cod *Gadus morhua*) and sea birds (e.g. common scoter *Melanitta nigra*). This community is mainly found in fine muddy sediments (median grain size: $\pm$ 200 μm; mud content: 5-10 %) of the swales and slopes of the Western Coastal Banks and Middelkerke Bank and at some local spots along the eastern coast.

Because of their ecological importance within the community, three macrobenthic species were selected for a detailed autecological investigation: (1) the bivalve *Spisula subtruncata*, important as a food resource for seaducks, (2) *Abra alba*, a highly dominant bivalve, and (3) *Lanice conchilega*, a habitat structuring polychaete. At this moment only information about *L. conchilega* is available.

Lanice conchilega (family: Terebellidae) typically occurs within the *A. alba – M. bidentata* community (Indicator Value: 62). Its fringed tubes, with a length of up to 40 cm and extending up to about 3 cm above the sediment, are built from fine to coarse sand grains and shell fragments. When found in high densities (up to 3000 ind. m^{-2}), the patches of tubes create a hydrodynamically benign microclimate in which suspended material is trapped. Consequently, local and patchy sediment elevations of up to 10 cm with a relatively high organic matter content are formed. The fringed tubes, stabilized sediment and increased organic matter content are illustrating the habitat structuring capacity of *L. conchilega*.

The increased habitat complexity in dense patches of *L. conchilega* are believed to be responsible for the high macrobenthic diversity and density of the community. A relatively low macrobenthic density (2447 ind. m^{-2}) and diversity (22 spp. 0.1 m^{-2}) is found if *L. conchilega* is present in low densities (< 100 ind. m^{-2}). If present in high densities, a much higher macrobenthic density (8000 ind. m^{-2}) and diversity (36 spp. 0.1 m^{-2}) occurs. Furthermore, the occurrence of some species (e.g. *Eumida sanguinea*, *Anaitides mucosa*, and *Pariambus typicus*) is almost exclusively linked to the presence of *L. conchilega*.

At present, some information about the life history of *L. conchilega* is available through the ongoing macrobenthos and hyperbenthos research. Very high densities of the hyperbenthic aulophora larvae are found early May (670 ind. m^{-3} on average on the BCS). Settlement of *L. conchilega* takes place in May and is immediately followed by a fast growth till June-July.

Within the framework of a PhD research, the ecological importance of *L. conchilega* will further be evaluated through detailed spatial and temporal investigations of all life stages (planktonic and hyperbenthic larvae and benthic juveniles and adults) from March 2002 till October 2003.