

## Use of a Belgian sandy beach as a feeding ground for juvenile plaice (*Pleuronectes platessa* L.)

Beyst B.<sup>1</sup> and J. Mees<sup>2</sup>

<sup>1</sup> Ghent University, Biology Department, Marine Biology Section  
K.L. Ledeganckstraat 35, B-9000 Gent, Belgium  
E-mail: bregje.beyst@rug.ac.be

<sup>2</sup> Present address: Flanders Marine Institute  
Victorialaan 3, B-8400 Oostende, Belgium

Macrocrustaceans and juvenile demersal fish were sampled in spring of 1997 in the surf zone ( $\pm 1$  m depth) of an exposed sandy beach at the Belgian coast (Lombardsijde). Three subsequent 24h-cycles were performed in order to investigate tidal, diurnal and/or semi-lunar distribution patterns. Juvenile plaice *Pleuronectes platessa* L. was the main fish species present in the samples: both 0- and I-group individuals were caught. While the 0-group seemed to move passively along with the water mass as it moves up and down the beach, a clear tidal migration pattern was observed for the I-group: highest densities were found at low water. A three-way ANOVA indicated that the effect of tide (low water vs. high water) as well as the effect of day/night and the different sampling cycles, were all significant. Combined effects however did not have a significant effect. While the extreme turbulent conditions within the surf zone of the studied site were probably too severe for the smaller 0-group plaice to cope with, I-group plaice are clearly able to withstand the turbulence.

To investigate if the high dynamics of the surf zone suppresses the ability of juvenile plaice to actively search for food, stomach content analyses were performed. The diet of the 0-group individuals mainly consisted of prey that was most abundant in somewhat deeper water (e.g. palps of the polychaete *Magelona papillicornis*). The I-group however, mainly fed on prey typical for the intertidal area (e.g. the polychaete *Scolelepis squamata*). Moreover, Fulness Indices indicated that feeding was maximal at flood tide. An opportunistic utilisation of available food resources is suggested: I-group plaice clearly disperse during flood in order to migrate high up the beach to profit from the rich macrobenthic area.

Keywords: surf zone; sandy beach; *Pleuronectes platessa*; feeding periodicity; stomach content analyses; tidal migration.