

BEACH CLEANING IN BELGIUM: A SOCIAL AND BIOLOGICAL STUDY

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A study on beach cleaning in Belgium was conducted from a social and biological perspective, to confront the lack of information regarding the two methods used: manual and mechanical beach cleaning. Through direct participation in the pilot project for manual beach cleaning of the municipality of Koksijde, in summer 2004, around 42 kg of man-made waste/km/month were estimated during July and September, and 87 kg during August. An average 1.5 h/km was needed for two persons to manually clean the beach. In average, plastics represented more than 50% of the weight of the waste, and textiles from 16 to 21%. Strict measures should be taken regarding the disposal of plastic; this would in turn reduce the time and costs of manual beach cleaning. The results of a public perception study on beach cleanness and the strandline material, conducted in Koksijde in 2004, showed that aesthetics do play an important role in attracting beach users. More than 80% of beach users would like metal, plastic, glass, rubber, polystyrene, paper and textiles to be removed during beach cleaning, while algae were only chosen by 4%. The natural material of the strandline was appreciated by 76% of respondents and 87% agreed that only artificial strandline material be removed during beach cleaning. The manually cleaned beach was just as visited as the mechanically cleaned one, and was not considered less clean. Belgian coastal communities should therefore consider the tourist potential of offering and promoting a more natural beach, to attract a relatively high proportion of visitors.

Finally, *in situ* experiments were carried out in De Panne to determine the direct effects of mechanical beach cleaning on the strandline macrofauna. No significant effects of the different combinations of speed and pressure of the beach cleaning machine were detected neither on dipteran larvae and pupae (the dominant group), nor on total organism counts, compared to initial conditions. The number of organisms was not significantly reduced after one cleaning event. However, the presence of these organisms was significantly and directly related to the presence of algae. The main problems posed by mechanical beach cleaning are the immediate loss of habitat for the strandline associated fauna, and possible long-term impacts on the recovery of the populations if beach cleaning is continuous over the year.

A zonal coastal management approach is recommended, which would allow areas with only manual cleaning interspersed with areas of mechanical beach cleaning. Such an approach would serve not only to attract tourists who prefer more natural beaches, but also to conserve, restore and enhance habitats and biodiversity in Belgian sandy beaches.

Keywords: Beach cleaning; Belgium; Coastal management; Macrofauna; Public perception; Strandline.