

## **IMPACT OF DREDGE DUMPING ON THE EPIBENTHOS IN THE BELGIAN COASTAL ZONE**

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As an exception to the OSPAR Convention, material that has been dredged to maintain the maritime access to the coastal harbours may be dumped at specific sites in the Belgian coastal zone. The impact on mobile epibenthic organisms is likely to be limited and masked by other factors, such as climatologic changes, hydrological circumstances, year class strength and anthropogenic impacts on a broader scale (beyond the borders of the Belgian Continental Shelf).

In 2005 the epibenthos was sampled twice with an 8 meter beam trawl at five dumping sites, in the direct vicinity of these sites and at some reference zones. The epibenthic communities 'on and nearby' the dumping sites Nieuwpoort and S1 were characterized by average to high densities and biomasses and relatively high species richness. For the communities 'on and nearby' the dumping sites S2 and Zeebrugge Oost the three parameters had average to low values. This could be indicative for a more or less 'natural' spatial variation.

At first sight, also the seasonal patterns in the epibenthic communities in the coastal zone of the BCS can be attributed to 'natural' variation or year class strength. For example, anemones are typically found in spring and cephalopods in autumn at low densities in different zones, while shellfish like *Abra alba* and *Ensis* spp. were found at extreme high densities near the Vlakte van de Raan in autumn 2004 and 2005. Also, high(er) densities and/or biomasses were noted in almost all fish tracks during the autumn campaigns, with an overwhelming presence of brittle stars (mainly *Ophiura ophiura*) and crustaceans (mainly brown shrimp *Crangon crangon* and swimming crab *Liocarcinus holsatus*).

However, this typical seasonal pattern in the epibenthos was masked by high densities and/or biomasses for a number of species at three out of four dumping sites in spring 2005. This was the case for white furrow shell *Abra alba* and netted dogwhelk *Nassarius reticulatus* in dumping site Nieuwpoort, Baltic tellin *Macoma balthica* in dumping site Zeebrugge Oost, and starfish *Asterias rubens* in dumping sites Nieuwpoort, Zeebrugge Oost and S1. Neither in the reference zones nor in the zones 'nearby' the dumping sites such high values were recorded in spring. All four species can be considered to be opportunistic and attracted from neighbouring areas to the respective dumping sites to profit from a higher food supply, possibly correlated with higher mud contents or a higher local secondary production. Also, the number of species per season was higher in most of the dumping sites compared to the respective 'nearby' zones. The latter results suggest that the dredge dumping activities do have an impact on the epibenthic communities of the Belgian coastal zone.