

# Assessment of biopollution in Belgian coastal harbours

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Harbours, which are often characterised by anthropogenic stress in combination with intensive international ship traffic tend to be very susceptible to aquatic invasions. Since alien macrocrustaceans are known to be very successful invaders across many European waters, a study was made on their occurrence in the four Belgian coastal harbours (Nieuwpoort, Ostend, Blankenberge and Zeebrugge). Biological and physical-chemical data were gathered at 43 sampling sites distributed along a salinity gradient in the four harbours. One fourth of all crustacean species recorded were alien and represented on average 30% of the total macrocrustacean abundance and 65% of the total macrocrustacean biomass. The large share of alien crustaceans relatively to the total macrocrustacean biomass was mainly due to several large alien crab species found in the samples. Most alien species were found in the oligohaline zone, whereas the number of indigenous species was highest at the euhaline zone. The low number of indigenous species present at low salinities was probably not only caused by salinity, but also by the lower water quality in this salinity range. Based on the site-specific biocontamination index (SBCI, Arbačiauskas *et al.*, 2008), the harbour of Nieuwpoort and Ostend scored low with regard to biopollution, indicating the limited abundance and the low number of alien macrocrustaceans. Sampling locations situated more inland (brackish water) generally had a higher SBCI. Zeebrugge and Blankenberge were characterised by a severe biopollution. For Zeebrugge this is probably related to the intensive transcontinental commercial ship traffic, whereas for Blankenberge this could be due to introduction of alien species via recreational crafts or due to its geographic location in the proximity of Zeebrugge. Consistent monitoring of estuarine regions and harbours, which are seen as hotspots for introductions, could help to detect alien species in an early stage in order to avoid or limit their further distribution.

## References

Arbačiauskas K., Semchenko V., Grabowski M., Leuven R.S.E.W., Paunovic M., Csanyi B., Gumuliauskaite S., Konopacka A., Nehring S., Van der Velde G., Vezhnovetz V., Panov V.E. 2008. Assessment of biocontamination of benthic macroinvertebrate communities in European inland waterways. *Aquatic Invasions* 3: 211–230.