

## **ENDOCRINE DISRUPTORS IN THE SCHELDT ESTUARY: DISTRIBUTION EXPOSURE AND EFFECTS**

Monteyne M. Els<sup>1</sup>, Colin R. Janssen<sup>2</sup> and Patrick Roose<sup>1</sup>

<sup>1</sup> Royal Belgian Institute of Natural Sciences, Management Unit of the North Sea Mathematical Model, 2e en 23 e Linieregimentsplein, B-8400 Oostende, Belgium  
E-mail: [Els.Monteyne@mumm.ac.be](mailto:Els.Monteyne@mumm.ac.be)

<sup>2</sup> Ghent University, Faculty of Bioscience Engineering, Laboratory of Environmental Toxicology and Aquatic Ecology, J. Plateaustraat 22, B-9000, Ghent, Belgium

The Scheldt Estuary is known as one of the more polluted estuaries in Europe (OSPAR, 2000). The major compartments of the estuary, *i.e.* water, suspended solids, sediments and biota, are all affected by common POPs (persistent organic pollutants). In the framework of the ENDIS-RISKS project these compartments were frequently sampled during the last four years and analysed for these POPs indicated as possible endocrine disruptors. As such, the concentration levels of 22 different polycyclic aromatic hydrocarbons (PAHs), 18 polybrominated diphenylethers (PBDEs), 5 organochlorine pesticides (OCPs), 16 polychlorinated biphenyls (PCBs) and 6 organotin compounds *e.g.* TBT were determined by the MUMM laboratory. Their distribution (speciation within different compartments), concentration and geographic distribution are assessed. For the biota compartment, mysids were selected as an indicator organism for this particular ecosystem. In these invertebrates, the highest levels ever found for TBT were noted, with concentrations of up to  $2500\mu\text{g}\cdot\text{kg}^{-1}$  on a dry weight basis (or approx.  $100\mu\text{g}\cdot\text{kg}^{-1}$  on a wet weight basis). In the same species,  $\Sigma\text{PCB}_7$  levels varying from 200 to  $1400\mu\text{g}\cdot\text{kg}^{-1}$  on dry weight were noted. OCPs and PAHs concentrations varied from 5 to  $100\mu\text{g}\cdot\text{kg}^{-1}\text{dw}$ . The geographic distribution - along the salinity gradient of the Scheldt Estuary - of the body burdens of these compounds in mysids are discussed. Finally, the observations were compared to internationally accepted 'Ecotoxicological Assessment Criteria' used to assess the potential adverse effects on the ecosystem.