

ENDIS-RISKS: ENDOCRINE DISRUPTION IN THE SCHELDT ESTUARY – A FIELD STUDY

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ENDIS-RISKS, a multidisciplinary research project with five institutes, evaluates the distribution, exposure and effects of endocrine disruptors in the Scheldt Estuary. This estuary is known to be one of the most polluted estuaries in the world. Untreated domestic wastewater and effluents of the industrial areas of Ghent and Antwerp are to a large extent responsible for this pollution. During an intensive field study of four years, eight sampling campaigns were executed on seven sampling points along the Scheldt Estuary. A detailed analysis of the distribution of endocrine disrupting substances in the Scheldt Estuary was executed. Water, sediment, suspended solids and biota were analysed for seven groups of chemicals: estrogens, pesticides, organotins, polyaromatic components, polyaromatic hydrocarbons and phenols. Special attention was given to the estuarine mysid shrimp *Neomysis integer*. Its ecotoxicology and population characteristics were studied in detail. A selection of results of this field study is put forward. Water samples, tested *in vitro* for their potential to bind with estrogen, revealed more estrogenic activity in the more upstream stations. Concentrations of chlorotriazine herbicides in water samples, were higher in the upstream reaches compared to the downstream sites. Analyses of TBT in mysid shrimps revealed high concentrations (>2mg.kg⁻¹ dry weight) which suggests a high bioaccumulation capacity. Population characteristics results of *N. integer* show that it has a broader distribution range, with a shift more upstream, in comparison with historical data (Mees *et al.*, 1995). On the other hand, length distribution of developmental stages of *N. integer* along the estuary indicates some environmental stress, caused by the estuarine gradient or by pollutants. Some hypotheses will be put forward to explain these patterns.

Reference

Mees J., N. Fockedeey and O. Hamerlynck. 1995. Comparative study of the hyperbenthos of three European estuaries. *Hydrobiologia* 311:153-174.

Keywords: Endocrine disruption; *Neomysis integer*; Scheldt Estuary; Field study.