WE237 Development of a triad assessment method for brackish sediments in Flanders K. De Schamphelaere, Universiteit Antwerpen; J. Teuchies, University of Antwerp / Systemic Physiological and Ecotoxicological Research Department of Biology; T. Ysebaert, University of Antwerp - Wageningen UR / Instituut voor Milieu & Duurzame Ontwikkeling - Imares; P. Meire, University of Antwerp / Departement of Biology (Ecosystem Management); R. Blust, University of Antwerp. In sediment risk assessment, analysis of the pollutant concentrations is essential in determining the degree and nature of sediment contamination. However, chemical analyses provide no evidence of toxic effects or effects in situ. The Sediment Quality Triad method incorporates measures of various chemical parameters, toxicological effects and benthic community structure in view of conducting an integrated assessment of sediment quality. In framework of developing a triad assessment method for the quality evaluation of brackish sediments in Flanders, in 2015-2016 38 sediment samples were taken along the Scheldt estuary (Sea Scheldt (Flanders) and Western Scheldt (the Netherlands)) and other brackish aquatic systems in Flanders. For these samples, chemical parameters (e.g. metals and organic pollutants), toxicological effects and benthic community structure were assessed. In this study 3 bioassays were carried out to test their suitability for uptake in a quality triad method for brackish sediments as indicator of ecotoxicological effects. Two sediment contact bioassays with the polychaete worm *Hediste diversicolor* and the amphipod *Corophium volutator*, and a pore water test with the rotifer *Brachionus plicatilis* were performed to test the toxicity of the samples. For the sediment contact tests observed mortalities varied between 0%-33% for *H. diversicolor*, between 1%-22% for *Corophium volutator* and between 10%-43% for *B. plicatilis*. Control tests with reference sediment showed for the 3 tests mortalities lower than 10%. For the Scheldt estuary, the 3 tests showed significantly higher mortalities for sediments from the upper part of the estuary in the Sea Scheldt, which was characterized by higher levels of micropollutants, than for the lower part of the estuary (Western Scheldt). Based on a literature inventory of existing sediment quality standards, quality guidelines for chemical parameters for Flemish brackish sediments were formulated. For the biological component of the triad method, comprising an evaluation of the benthic invertebrate community, a separate evaluation method was included for brackish oligohaline more static water systems, and for brackish sediments in the different ecotopes of the Scheldt estuary. For the latter the M-ABMI (‘Multivariate AMBI’, Bald et al., 2005; Muxika et al., 2007) and the Occurrence Intactness Index are tested for their suitability as biological index in a triad method for the evaluation of Scheldt sediments.