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A method to assess environmental quality in sediments and application to huelva estuary and its littoral of influence

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A new integrated sediment quality assessment method composed of several assays (particle size profile, total metal content, protease K extraction, total organic carbon, toxicity bioassay with *Photobacterium phosphoreum* and macrobenthic community alteration) that provides a single result, the environmental degradation index (EDI), has been developed. The new method was tested on the Huelva estuary (southwest of Spain), a highly polluted area where metals dissolved in the water of the Tinto and Odiel rivers precipitate after flowing through the Iberian Pyrite Belt, one of the largest metallogenic areas of massive sulphide deposits in the world. The proposed method was satisfactorily able to reflect different degrees of pollution on the environmental degradation index. Thus, EDI categorized littoral samples as slightly degraded and all the Tinto and some of the Odiel as very highly degraded, emphasizing the lower zone of the Tinto estuary as the most deeply degraded of the entire study area.

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