Environmental concerns of LIFE-SEACAN project: Spatiotemporal analysis of the impact of wastewater from a canning industry on benthic ecosystem

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The Galician Rías Baixas are a group of bays of tectonic origin located in the NW coast of the Iberian Peninsula. They host 80 % of the fish canning industries in Spain, which produce 4300 million cans every year. These industries are characterized by high water consumption and the subsequent emission of large quantities of wastewater. This is a major environmental concern, as Galician Rías Baixas host both a great marine biodiversity and intense fishing and aquaculture activities. The project LIFE-SEACAN (LIFE14 ENV/ES/000852) aims to demonstrate the potential of two innovative biofilm-based technologies (aerobic granular sludge and hybrid bioreactors) to decrease the impact of canning industries on marine ecosystems. The project includes an analysis of the impact of the wastewater from a canning industry on benthic ecosystem. Here we present the results of an initial assessment of the wastewater impact. With that purpose, samples were taken at 6 sites at each of the 4 sampling stations (2 potentially impacted by wastewater and 2 controls). Sampling at each site included taking 6 samples with a Van-Veen grab, 5 for the study of the fauna and 1 for the study of the sediment, plus water samples for the study of its physical-chemical characteristics. Furthermore, sediment traps were installed at each sampling station to measure matter fluxes towards the sediment. Sampling was carried out quarterly during a year. One of the control stations was discarded from this study because of its major differences with the 3 remaining stations regarding sediment type. Significant seasonal variations in the characteristics of the assemblages were found at each site. Differences between sites were also found to be significant and persistent through the year. The results, though not significantly conclusive, suggest the existence of a moderate impact in the area under the influence of the wastewater discharge.

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