



Heavy metal contamination of the Sacca di Goro lagoon area (Po River Delta, Northern Italy)

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The lagoon area of the Sacca di Goro, within the Po River delta, is ca. 20 km² wide, with a mean depth of 1.5 m and a mean salinity of 29‰. It holds a major naturalistic interest as well as an economic one due to the aquaculture activities (mussels and clams). In this lagoon system, the quality of the sea-bottom sediments is crucial not only for the cultivated species, but also for the potential bio-accumulation problems in heavy metals. The definition of the qualitative status of the lagoon sediments is crucial for adopting the best management strategies and the protection of the environmental conditions.

We determined the concentration in SiO₂, TiO₂, Al₂O₃, Fe₂O₃, MgO, MnO, CaO, Na₂O, K₂O, P₂O₅, Ba, Ce, Co, Cr, La, Nb, Ni, Pb, Rb, Sr, Th, V, Y, Zn, Cu, Ga, Nd, S and Sr, of 31 samples homogeneously collected over the lagoon area. This large dataset allowed i) to define the environmental quality of the sediments, ii) to recognise the areas with the higher contamination risk; and iii) to emphasise the local occurrence of polluting phenomena associated to chromium, nickel, vanadium, cobalt, lead, zinc and copper.