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**Differences in SEM-AVS and TEL-PEL predictions of sediment impacts from metals in a coastal lagoon (NW Adriatic)**

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Biological effects of chemical pollutants in the aquatic habitats largely depend by their bioavailability, which in turn reflects chemical bonds, organisms susceptibilities and environmental conditions that are very variable in transitional waters. Sediments from a coastal lagoon (Pialassa Baiona, Italy) were examined for potential metal impacts on aquatic biota by comparing sediment chemistry data with two sediment quality guideline (SQG) values: the ratio of simultaneously extractable metals to acid volatile sulfides (SEM-AVS), and Threshold- and Probable Effects Level (TEL-PEL) values.

Sampling was designed in order to take into account of the natural land-sea gradient, typical of the transitional water bodies, the anthropogenic disturbance gradient, which in this case is geographically orthogonal to the natural gradient, and the high spatial heterogeneity.

TEL-PELs predicted Zn rather than Cd, Cu, Pb, Ni is likely to cause adverse effects in the area closed the anthropic disturbance, but not in other areas far from the disturbance and under the sea influence.

The SEM/ AVS ratio was found to be  $< 1$  at all areas located near and far the anthropic disturbance. The AVS-SEM method predicted that sediments would have fewer effects due to high AVS-forming metal sulfide complexes, reducing trace metal bioavailability. These results indicated that adverse effects on aquatic biota should rarely occur.

These somewhat contradictory predictions demonstrate the importance of validating the results of either of these methods with other biological measures before making any management or regulatory decisions of point and non point sources of pollution. This is especially important in transitional water bodies such as coastal lagoons where sediment quality guidelines have not been validated at European level.

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