



Title: Anthropogenic Influence of Trace Metals in Sediments of Al-Qilt Catchment, West Bank, Palestine: Metal Pollution Index and Sediment Quality Guidelines.

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Abstract:

A 50 km long stretch of Al-Qilt Wadi is situated to the East of both Ramallah and Jerusalem districts and to the West of the Jordan Valley. Al-Qilt is strongly influenced by waste waters from the Israeli colonies and Palestinian urban waters. The aim of this paper is to verify the chemical status for trace metals in weight to specific toxicity in surface sediments at Al-Qilt catchment during 2008/2009. Therefore, thirty-six surface sediment samples were collected and analyzed with ICP/MS to the fraction less than 63 μm .

The extent of contamination from trace metals in Al-Qilt sediments is evaluated through a three-pronged approach: (i) by comparing the trace metal concentrations by using LAWA and verifying the Sediment Quality Guidelines (SQG)s in term of Threshold Effect Level (TELs) and Probable Effects Levels (PELs), then (ii) by evaluating the Metal Pollution Index (MPI) and (iii) by defining a potential level of biological risk by the use of quality criteria such as the (TEL) and (PEL) benchmarks.

As a result, the trace metal inputs in Al-Qilt catchment must be kept under strict control, since Ras Al-Qilt was considered as one of the most important springs in the area and it is used for domestic purposes for Aqbat Jaber Camp / Jericho, so it not safe water resource if not protected from pollution, therefore a management plan is to decrease the pollution at upstream of Al-Qilt.