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Investigation of horizontal and vertical variability of sediment pollution in groyne fields of the Middle Elbe (Germany) in a perspective of sediment monitoring

Olaf Büttner (1), Martina Baborowski (1), Peter Morgenstern (1), Thomas Jancke (2), and Bernhard Westrich (2)
(1) UFZ Helmholtz Centre for Environmental Research, Germany (olaf.buettner@ufz.de), (2) University of Stuttgart, Germany

High spatial heterogeneity of physical and chemical sediment properties was observed in horizontal and vertical direction of the deposits in a groyne field of the middle Elbe. The respective sediment cores were less polluted on the top as compared to consolidated deeper layers, indicating a decreasing trend of contamination in the river basin. In contrast to water quality monitoring, the impact of the large Elbe flood in 2002 was still visible in the deeper layers of the groyne field sediments six years after the event. Because environmental risk increases with erosion potential of discharge and contamination level of sediments, monitoring for environmental risk must capture not only surface sediments but also deeper layers up to an anticipated erosion depth [1].

Reference
[1] Baborowski M, Büttner O, Morgenstern P, Jancke T, Westrich B (2012) Spatial variability of metal pollution in groyne fields of the Middle Elbe – Implications for sediment monitoring. Environmental Pollution 167(0): 115-123