Persistence of *Enterococcus* in Hudson River sediments

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The Hudson River has a long history of environmental issues, including sewage contamination. Recent research in the Hudson River indicates that *Enterococcus*, a group of sewage-indicating bacteria, are commonly attached to particles, suggesting that they are likely to settle from the water column to the sediments. However, *Enterococcus* in Hudson River sediments have been previously unstudied. In the present study, *Enterococcus* abundance was documented in Hudson River sediments from river bottom and near-shore sites and compared with the concentration in the overlying water. While *Enterococcus* concentrations in sediment and water were highly variable, these two reservoirs were not correlated. High variability was found in *Enterococcus* counts over small spatial scales, including with depth. However, temporal variabilities of *Enterococcus* counts in near-shore sediments were correlated over a distance of up to 0.5 km, regardless of sediment type. Experimental resuspension of sediments at near-shore sampling locations profoundly affected water quality, causing initially acceptable water to exceed the federal guideline of 104 *Enterococci*/100 mL in 60 percent of cases. Resuspension of sediments with *Enterococcus* concentrations larger than 300/100 g dry sediment always increased the *Enterococcus* concentration in the water column, regardless of sediment type.