Mercury methylation, pore water geochemistry and legacy mercury contamination along the floodplain of the Connecticut River

Anna Martini1*, Jon Woodruff2, Daniel Kekacs1, Hanna Bouberhan1, and Caryl Ann Bercerra1
1Amherst College, Geology, Amherst, U.S., annmartini@amherst.edu (* presenting author)
2University of Massachusetts, Geosciences, Amherst, U.S., woodruff@geo.umass.edu

Mercury has long been stored in the fine-grained sediment along the various tributaries, ponds, lakes, and coves connected to the Connecticut River. Concentrations rose above background (<80 ppb) by the dawn of the Industrial Revolution and have, for the most part, mirrored the rise and fall of atmospheric mercury concentrations[1]. Total mercury concentrations in the sediment peak upstream in the Oxbow at approximately 500 ppb and near the mouth of the river, in Hamburg Cove, increase to nearly 3000 ppb. This sixfold rise is further exacerbated by the changing sedimentation rate towards the Long Island Sound are due to the influence of tidal pumping, allowing significant quantities of sediment fines to accumulate in these depocenters. In comparing the influence of tidal pumping, allowing significant quantities of sediment fines to accumulate in these depocenters. In comparing...