**MICROPLASTIC QUANTIFICATION AND CHARACTERIZATION IN UPPER MISSISSIPPI RIVER POOL 8**

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Microplastics have become a source of contamination in aquatic environments worldwide, and has raised concerns regarding water quality, aquatic biota, and human health. Microplastic research has mainly focused on marine environments and aquatic vertebrates, yet implications regarding freshwater ecosystems like lakes and rivers need further investigation. In this study, we collected surface water samples (n=20) along the Upper Mississippi River (UMR) Pool 8 main channel in November 2023 to assess microplastic pollution. Samples (10L) were sieved (250µm) into specimen cups to isolate microplastics and analyzed later in the lab. Microscopy was used for identification and enumeration of microplastics, and a subsample was verified via Fourier Transform Infrared (FTIR) spectroscopy to determine polymer type. An additional water sample was collected from each site to evaluate turbidity as a surrogate for turbulence and sediment resuspension. In total, 360 particles were identified ($\bar{x}$ = 17.95 particles/10L) and ranged from 157µm to 5000µm ($\bar{x}$ = 1265µm). The most commonly identified particle type was fibers (n=348, 96.7%). The most common particle colors were clear, black, blue, and red. Microplastic abundance increased significantly with distance downstream. Turbidity was not correlated with microplastic abundance, however, turbidity combined with distance downstream produced the best multiple regression model predicting microplastic abundance. This research suggests hydrologic influences on microplastic abundance and will likely affect distribution of microplastics across habitats in the UMR. Further, hydrologic influence on microplastic abundance should be considered in future microplastic studies in river ecosystems, including those related to consumption of microplastics by organisms.