

Figure 1. (T) Location of deposited soil sampling stations, inundated land during Hurricane Harvey and nearby Superfund sites, (B) Sediment sampling stations in the tidal segments of the HSC-GB estuarine system and nearby Superfund sites

Figure 2. The flow exceedance rates for historical flows and flows at the time of TSS sampling in four of the major bayous in the GHMA

Figure 3. Measured TSS concentrations after Hurricane Harvey (2017) in three of the major bayous in the GHMA.

Figure 4. Boxplot of TSS daily load discharging into the HSC-GB system from each of the bayou within the system with available data.

Figure 5. Percent change in grain type distribution in sediment samples of the HSC-GB system collected before and after severe hydrologic events. MD+TD is Tax Day and Memorial Day floods combined.

Figure 6. Percent change in metal concentrations in sediment samples in different segments of the HSC-GB system collected before and after severe hydrologic events. MD+TD is Tax Day and Memorial Day floods combined.

Figure 7. Measured metal concentrations in deposited soil collected from different locations along Brays Bayou (top, n=6) and Buffalo Bayou (middle, n=5) and bed sediments (bottom, n=8). Arsenic and cadmium are shown separately due to their relatively low values. Station B6 (marked by a star in A and B) is the only station located in a commercial area. Values reported for station S6 are the averaged concentrations of two nearby stations. No error bar was shown since only one sample was collected and analyzed at each station. Laboratory quality control/assurance procedures including laboratory control sample duplicates and lab control sample were conducted on all samples.

Figure 8. (L) Alpha diversity of bacterial communities in different sampling locations (Shannon-Wiener index) and (R) Simpson index. For both plots n=11.

Figure 9. Principal Coordinates Analysis (PCoA) of sediment samples with (A) unweighted, and (B) weighted UniFrac, and (C) PCA for water quality parameters and grain size distributions. For all plots n=11 and the plots show the first two Principal Coordinate axes for PCoA

Figure 10. Canonical Correspondence Analysis (CCA) of sediment samples with (T) all environmental factors except metals (n=11) (B) reduced size environmental factors (clay + silt instead of individual grain types) including metals as the sum of all metal concentrations (n=8). The plots show the first two primary axes for CCA.