Divotfill Readme

Due to the high prevalence of divots and the high frequency of their creation (i.e., new divots on top of old divots, so that it was unclear when a patch of habitat had last been disturbed and the majority of the bed appeared disturbed), it was not possible to estimate directly how divoted sediments differed from those that were undisturbed. Instead, we estimated how divots change organic matter retention and invertebrate abundance in the streambed using artificially-created divots made from 120 mL specimen cups (0.02 m2 orifice, generally similar in shape and diameter to natural divots; cups are 5-20% deeper than natural and the downstream wall of the cups is more vertical.). At each of three sites in 2010, 20 cups were embedded in the sediment so the opening was flush with the bed surface in a four by five array, with five cups collected at each sampling interval of 1, 3, 5, and 10 days. On day 5, five replicate ambient “no divot” sediment samples were collected at each site by quickly scooping sediment in specimen cup. Samples were frozen for storage, thawed, and filtered through 1 mm, 250 µm, and 45 µm mesh filters. The 1 mm and 250 µm fractions were sorted under a dissecting microscope removing all invertebrates, then all fractions were combusted using standard protocols to measure organic matter content (Wallace et al. 2006, Hutchens et al. 2017). Invertebrate taxa were identified to major taxonomic groupings (family) and dried and weighed to determine biomass.

Column headers

Site: internal site references, Longitude and Latitude provided for site locations

Treatment: Divot—artificial divots created with 120 mL specimen cups, no divot—ambient samples collected on day 5

Cup#: replicate number

Total Cups: Divot treatments had 5 replicate cups, no divot samples were collected in triplicate

Hydracarina(#/m2), Ephemeroptera (#/m2), Diptera (#/m2), Elmidae (#/m2), Other (#/m2), Total (#/m2): total number of individuals sampled in each sample cup divided by the surface area of the cup (0.02 m2)

Invert mass small (g/m2), Invert mass large (g/m2), Invert mass total/m2: The majority of the invertebrates sampled were small, relatively few large organisms (e.g., dragonfly larvae) were captured by the divots.

DM >1mm (g/m2), DM 1mm-250um (g/m2), DM 250-45um (g/m2), DM total (g/m2): dry weights of each size fraction of sample collected in the artificial divot cups.

AFDM >1mm (g/m2), AFDM 1mm-250um (g/m2), AFDM 250-45um (g/m2), AFDM total (g/m2): ash free dry weights of each size fraction of sample collected in the artificial divot cups.