
THE EFFECTS OF A LARGE RIVER IMPOUNDMENT ON RIVER CHANNEL COMPLEXITY: IMPLICATIONS FOR MACROINVERTEBRATE COMMUNITY STRUCTURE (POSTER)

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Nearly all major rivers are affected by impoundments or other forms of flow regulation. Downstream of dams, river geomorphology is often altered by changes in sediment load and flow regime, which may influence key habitats for biota. Our study examined the impact of Fort Peck Dam on downstream habitat complexity (i.e. proportion of off-channel habitats), and associated macroinvertebrate communities in the Missouri River, MT. We used aerial imagery and GIS software to quantify habitat complexity at four sites between Fort Peck Dam and Lake Sakakawea. Additionally, macroinvertebrates were sampled in the main channel and off-channel habitats in April and July 2015 at the same locations as habitat quantification. Following sampling, macroinvertebrates were taken to the laboratory where they were counted, identified to the lowest practical taxonomic level (usually genus), and measured to the nearest millimeter to estimate biomass using length-mass regressions. Preliminary data indicate that the number and area of off-channel habitats were significantly reduced immediately beneath the dam. Additionally, off-channel habitats contained unique macroinvertebrate communities that had higher abundance and biomass estimates compared to macroinvertebrates in the main-channel. These communities were primarily dominated by oligochaetes and chironomid midges.