Dr. Kristin Jaeger, Assistant Professor, and Dr. Mažeika Sullivan, Associate Professor, both in the School of Environment and Natural Resources at the Ohio State University are working on an Ohio Water Resources Center funded project via a USGS 104(b) award. Their project, entitled "**Linked geomorphic and ecological responses to river restoration: Influence of dam removal on river channel structure and fish assemblages**," aims to investigate linked short-term response of the Olentangy River following the removal of low-head dam, with a focus on fish community assemblages in both actively and passively restored river reaches. Recreational fishing is a major revenue generator within the state. Therefore, how fish assemblages respond to dam removal reflects a critical knowledge gap in the burgeoning dam removal and river restoration research.

**Figure 1.** Student Ellen Comes uses McNiel sampler on the Olentangy River to characterize riverbed sediment.

Dr. Sullivan's ongoing work in the Olentangy River system over the last four years serves as a rare baseline ecological data set that both researchers can build on to quantitatively evaluate river channel geomorphic change (the physical shape of the river) and changes in the ecological fish community as a consequence of the removal of the 5th Avenue Dam on the Olentangy River (Figure 1). In the short term, geomorphic response upstream of the dam following its removal included decreased cross-sectional area in the former impoundment, increased and more varied streamflow velocity and channel incision into the reservoir sediment, which has generally flushed finer sediments from the previously impounded, unrestored portion of the river and resulted in coarsening of riverbed sediments at this reach. These geomorphic changes translate to habitat changes for fish. Upstream of the removed dam (at the actively restored reach), fish assemblage composition shifted significantly and was accompanied by a significant decrease in species richness and diversity. These changes represented changes in the relative abundance of taxa. Between year 1 and year 2 post-dam removal, diversity increased significantly at the upstream restored and downstream reaches (Figure 2).

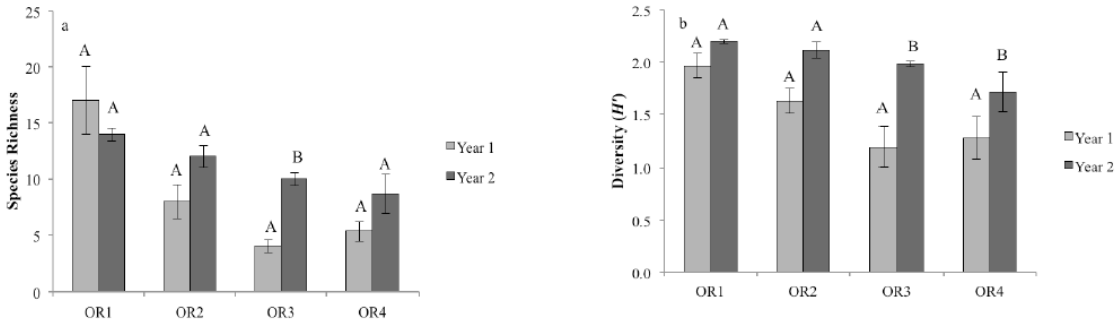


**Figure 2.** Fish assemblage (a) species richness and (b) diversity (*H*') in years 1 & 2 following dam removal of the Olentangy River study reaches. OR1 is the upstream of an existing dam control reach; OR2 is the upstream of the removed dam, unmanipulated experimental reach; OR3 is the upstream of the removed dam, restored experimental reach; and OR 4 is the downstream of the removed dam experimental reach. Significant differences based on *t*-tests are indicated by different letters ($p < 0.05$). Error bars represent +1 SE from the mean. From Dorobek, Sullivan, and Kautza (In press).

Researcher Profile: Dr. Kristin Jaeger works across a range of spatial scales including reach to network scale and headwaters to large mainstem rivers. Her research interests focus on how stream channel morphology and flow regimes adjust to perturbations, either natural or anthropogenic. Her ongoing projects include work on geomorphic response to surface mining, large wood dynamics in mountain channels, and characterizing spatiotemporal patterns of streamflow permanence in dryland systems.