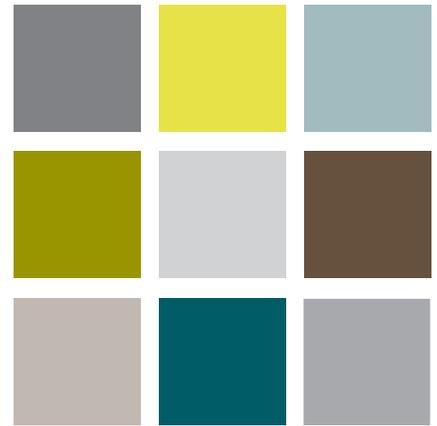


Ecological Responses to Dam Removal

Impact Statement



SUMMARY

Understanding and quantifying the ecological responses of dam removal is critical to informing river restoration.

SITUATION

As of 1999, 75,000 dams existed in the continental United States; Ohio alone contains 4,796 dams. It is widely acknowledged that dams can exert substantial negative impacts on rivers. Dams fragment and disrupt the movement of water, sediment, nutrients, and organisms through a riverine system, with significant deleterious effects on ecosystem processes that often extend beyond the channel to floodplain and riverine wetland environments. The impacts of dams on aquatic insects, fishes, and mussels include obstructions in passage and dispersal, changes in community composition, and alterations in populations relative to both species distributions and genetic structure. The vast majority of all dams are small or lowhead dams (< 4 m in height), and as these dams age or their upstream reservoirs fill with sediment thus limiting their ability to store water, their removal is becoming an increasingly popular river restoration method. Yet despite the increasing trend towards dam removal, the exact nature of the ecological responses to dam removal remains unknown. The recent removals of the 5th Avenue (Olentangy River) and Main Street (Scioto River) Dams present an extraordinary opportunity to address this question.

RESPONSE

In tandem with colleagues studying the geomorphic effects of dam removal, scientists in the OSU Stream and River Ecology Lab (School of Environment and Natural Resources) are conducting research in the Olentangy-Scioto River basin to understand and quantify the ecological impacts of dam removal.



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

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IMPACT

This work is in its early stages, but is expected to advance understanding of the short-term effects of dam removal on ecological communities (aquatic invertebrates, fish, riparian birds) and ecosystem function. Additionally, this study will inform and support efforts to maintain and/or restore ecosystem services within urban rivers, particularly relative to the utility of dam removal as a restoration tool.

Contact Information

Mazeika Sullivan

Assistant Professor

465A Kottman Hall
2021 Coffey Rd
Columbus, OH 43210

614.292.7314

sullivan.191@osu.edu

senr.osu.edu