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Making the case for urban stream restoration and urban stream channel management

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Athens, Ohio, the home of Ohio University, sits on the Hocking River. In the 1970's amid multiple floods of the University campus, the Army Corps of Engineers rerouted the river into an engineered channel to direct floodwater through town quickly and avoid further flooding of campus. Athens is situated in the foothills of the Appalachians and is characterized by steep sided valleys and rolling hills. The relocation of the river has led to further development on the floodplain as the primary flat land in the area. The engineered channel is managed with mowing and dredging; the Hock Hocking Bike Path is a popular multi-use path built on the levy. The main urban tributary of the Hocking River in Athens, Coates Run, is confined in a partially natural, partially hardened channel amid significant floodplain development. Coates Run floods frequently, damaging businesses and restricting access to a main road, despite recent improvements to stormwater conveyance. Monitoring and evaluation suggest that changing the mowing frequency of the channelize area of the Hocking River could save money, improve pollinator habitat, and, with appropriate planting, encourage native species without threatening flood water conveyance. Water level monitoring and storm observations in Coates Run suggests that increased storm intensity, increased impervious surfaces, and physical restrictions and debris reduce channel capacity leading to increased flooding. These studies support integrated management of ecological engineering approaches to urban stormwater management. The traditional approach taken currently of quickly conveying floodwaters away from the city are not being effective for both ecological quality and flood protection, while increasing water retention through green infrastructure and, where possible, floodplain connection could improve outcomes for the city.

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