



**MONTCLAIR STATE**  
UNIVERSITY

Montclair State University  
**Montclair State University Digital  
Commons**

---

Sustainability Seminar Series

Sustainability Seminar Series, 2023

---

Feb 20th, 3:45 PM - 5:00 PM

## Investigating how urban landscapes alter freshwater environments

Matthew Schuler

Montclair State University, [schulerm@montclair.edu](mailto:schulerm@montclair.edu)

Follow this and additional works at: <https://digitalcommons.montclair.edu/sustainability-seminar>



Part of the [Sustainability Commons](#)

---

Schuler, Matthew, "Investigating how urban landscapes alter freshwater environments" (2023).  
*Sustainability Seminar Series*. 5.

<https://digitalcommons.montclair.edu/sustainability-seminar/2023/spring2023/5>

This Open Access is brought to you for free and open access by the Events at Montclair State University Digital Commons. It has been accepted for inclusion in Sustainability Seminar Series by an authorized administrator of Montclair State University Digital Commons. For more information, please contact [digitalcommons@montclair.edu](mailto:digitalcommons@montclair.edu).



**MONTCLAIR STATE**  
UNIVERSITY

The Doctoral Program in Environmental Science & Management  
and MSU Sustainability Seminar Series Present:

## Investigating how urban landscapes alter freshwater environments

WHEN: February 20, 3:45 pm WHERE: [streamed over Zoom](#)

**Dr. Matthew Schuler**

**Montclair State University – Department of Biology**



I am an Assistant Professor at Montclair State University in New Jersey. As a community ecologist, the goal of my research group is to understand how anthropogenic factors alter ecological communities, given expected patterns of assembly, coexistence, and diversity from fundamental ecological theories. For the past few years, I have been investigating how anthropogenic stressors such as salinization, climate change, and invasive species affect freshwater environments. I also study how urban developments and environmental modifications such as roads alter the chemistry and distribution of species in ponds, lakes, and streams.

In urban environments, impermeable surfaces and climate change are increasing the frequency and intensity of flooding events. Flooding can result in biotic and environmental homogenization, which might result in a loss of important species and ultimately reduce ecosystem functions and services provided by urban wetlands. Walker Avenue Wetlands is an urban metacommunity with twenty small, discrete satellite ponds surrounding a single, large pond. Each pond contained unique zooplankton communities in August 2021. However, intense storm events in late 2021 caused extensive flooding, washing in species from nearby rivers, lakes, and wetlands. Since then, my lab has been collecting data and conducting experiments investigating how urban flooding can alter prokaryotic and eukaryotic communities over space and time.