

## **URBAN RIVERS AS SOCIAL-ECOLOGICAL SYSTEMS: AN EXAMINATION OF HISTORY & ECOLOGY IN THE MIAMI RIVER**

*Daniela Brigitte Daniele, Erin F. Abernethy, Elizabeth P. Anderson*

Florida International University, Miami, FL, USA

Rivers have largely influenced human settlement and played significant roles in development of cities worldwide. Increasing urbanization has diminished the quality of lotic resources and altered the way in which humans connect and interact with rivers, converting free flowing rivers into heavily altered systems. The Miami River in South Florida, USA, provides a model case for examining urban rivers as social-ecological systems. We present an environmental history from 1500 to 2020 to examine how connectivity and water quality of the Miami River has changed over time. In its original extent, the Miami River is a five-mile-long river, and it is now a heavily altered system as a consequence of urban development and years of use as a dumping area. Research on urban rivers in general and the Miami River in particular is limited. To date, how urbanization of Miami and surrounding areas may have disrupted social and ecological riverine connectivity has not been studied. Data collected through by Miami Dade County show that the quality of the Miami River generally improved over the past 40 years. Improvement in water quality in the early to mid-2000s was likely linked to policies and restrictions towards dumping and discharging of pollutants, fertilizer runoff, and sewage in the river and the emergence of watchdog organizations. This research applied a mixed methods approach by integrating long-term water quality data, interview, observational, and archive data. This study will add to the growing knowledge of urban rivers as social-ecological systems, with a focus on historical changes and alterations of river connectivity and water quality.

**PRESENTER BIO:** Daniela was born in Argentina and moved to Miami when she was 7. She is now a master's student in Florida International University after obtaining her BA from the University of Florida. She focuses on urban rivers and has also done with urban soils. She enjoys studying the Miami River ecosystem.