Looking to lessons from the past to inform the future

Cities face increasing threats to water supplies, but how can they transition towards more sustainable water management? Rapid urbanization, population growth, regulatory frameworks, and multiple competing demands combine to complicate the ability for urban water managers to guarantee future water supplies.

Despite such obstacles, cities have made this transition before. With the goal of informing future management transitions with lessons from the past, a team of doctoral students analyzed urban water management transitions as a SESYNC Graduate Pursuit. Students of civil engineering, policy, and environmental studies synthesized quantitative data, such as biophysical, financial, regulatory, and media data. They then combined the analysis with qualitative, contextual information, such as interviews and reports, to understand better what influences water management transitions. The team produced data narratives, known as empirically informed stories, at the city level that tell what did or did not happen, and also how and why.

By producing data narratives, the team improved theoretical understandings of urban management and policy transitions in response to natural resource scarcities. SESYNC data science staff guided and instructed the team about how they could combine disparate and multi-scalar datasets. Team members further benefited from team science and collaborative research training. The narratives had actionable and academic value, too. Team members presented results to practitioners of the South Florida Water Management District. As a result of the team’s efforts, scientists, policy makers, and practitioners now better understand water threats and are seeking sustainable water resources as cities continue to grow.

Building on this research, the leaders of this team, Margaret Garcia and Aaron Deslatte, recently received a $1.499 million grant from NSF for a project focused on urban water systems.

Audience:
Researcher
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