



# Department of Environmental Science and Policy

## Student Seminar Series

November 20, 2021 | 10:30 AM



Making way for water: adapting  
to increasing flood risk

**Carolien Kraan**



Opportunities and challenges for  
livelihood resilience in urban and  
rural Mexican small-scale  
fisheries

**Eddie Wintergalen**

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# Making way for water: adapting to increasing flood risk

**Carolien Kraan**

## Abstract:

Flood risk is impacted by climatic changes, such as rising sea level and more extreme weather events on the one hand. And by development patterns and population movements on the other. In high-income nations such as the United States and the Netherlands, flood risk management has historically focused on protection through physical infrastructure, such as sea walls, levees, and storm surge barriers. However, under continuing climate change there are technical, financial, and societal limits to the feasibility of implementation of these measures. Alternatively, flood risk can be managed by designing more space for water in the landscape as a different way to reduce flood risk. In my dissertation research, I evaluate current policies of managed retreat and study potential future adaptation pathways that take accommodation and retreat into account. As societies continue to adapt, I am to study when the best step forward might be to take a step back.

## About Carolien:

Carolien Kraan is a doctoral researcher at the Abess Center for Ecosystem Science and Policy at the University of Miami. Her dissertation research aims to support climate change adaptation that is sensitive to a wide range of societal goals, including equity and environmental justice. She is particularly interested in the idea of making more space for the water through strategic managed retreat.

She has studied managed retreat in the United States by looking at where FEMA-funded voluntary property buyout programs have taken place, and has also written about policy options to address equity concerns that have been raised about buyouts.

Prior to joining UM, Kraan worked at Stanford University, where she focused on integrative assessments, including on the relationship between climate and conflict. She has also worked as a researcher and policy advisor at the Energy research Centre of the Netherlands (ECN), and holds an MSc from the University of Edinburgh, UK, and a BSc from University College Roosevelt, the Netherlands. She has enjoyed living in Hong Kong, Scotland, France, California, and South Florida, and is currently located in the Netherlands, where she grew up.





# Opportunities and challenges for livelihood resilience in urban and rural Mexican small-scale fisheries

**Eddie Wintergalen**

## Abstract

Most small-scale fisheries in the developing world are exploited by rural communities, but global trends in coastal urbanization and development are rapidly transforming many small-scale fishery (SSF) landscapes. The implications for livelihood resilience, or the capacity of a livelihood to overcome shocks and stresses, remain unknown. Meanwhile, the environmental and economic shocks and stresses experienced by SSF communities are becoming more frequent and severe, highlighting the urgent need to understand how urban and rural SSF contexts influence livelihood resilience outcomes. In this seminar, I present the results of a systematic review of the Mexican SSF literature that compares constructions of livelihood resilience across urban and rural communities. While reviewing 112 articles, we use four rounds of hierarchical coding to organize observations into four dimensions of livelihood resilience: buffer capacity, self-organization, learning capacity, and diversity. We find that the greatest threats to livelihood resilience in urban communities are weak self-organization and threats to natural capital, while the greatest opportunities to achieve livelihood resilience are easier access to education, ample prospects for occupational multiplicity, and high learning capacity. In contrast, livelihood resilience in rural communities is most threatened by the relatively fewer opportunities for education and occupational multiplicity but benefits from strong self-organization and high learning capacity. Attributes innate to urbanness and ruralness have profound impacts on how fishers achieve or fail to achieve livelihood resilience, insinuating that trends in coastal urbanization have important implications for livelihood resilience. Accordingly, to bolster livelihood resilience within SSF communities, policymakers must account for the idiosyncratic opportunities and challenges presented by urban and rural contexts.

## About Eddie:

Eddie is a third-year Ph.D. student at the University of Miami's Abess Center for Ecosystem Science and Policy. Broadly, his research focuses on topics related to livelihood resilience in Mexican small-scale fisheries, with a particular focus on the relationship between livelihood resilience and urbanization. Built on an interdisciplinary approach, his research relies on methods and insights from cultural anthropology and econometrics.

