

# Climate change and multiple stressors in agricultural streams

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Climate change and its impacts are likely to be the dominant driver of biodiversity loss and changes in ecosystem functioning by the end of this century. But how the various drivers of climate change will interact with the multiple stressors already impacting ecosystems remains the largest uncertainty in projections of future biodiversity change.

My research seeks to understand how climate and land-use related stressors interact to affect biodiversity and ecosystem function in freshwaters. In particular, I study how multiple stressors interact to create 'ecological surprises' in the form of complex, non-additive effects such as synergisms (amplified combined effects) or antagonisms (reduced effects). My investigations have studied multiple stressors in streams across a range of spatial scales using multi-factorial manipulative field experiments to disentangle complex interactive effects from genes to ecosystems. This knowledge is essential for effective freshwater management and policy, and to advancing multiple-stressor theory in the face of global change.