# Human land use masks the effects of warming in freshwater ecosystems

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## Abstract

Climate warming is a ubiquitous stressor in freshwater ecosystems, yet its interactive effects with other stressors are poorly understood. We address this by testing the ability of three contrasting null models to predict the joint impacts of warming and a second stressor using a new database of 296 experimental combinations. Despite concerns that stressors will interact to cause synergisms, we found that net impacts were best explained by the effect of the stronger stressor (the dominance null model), especially if it was associated with human land use. Prediction accuracy depended on stressor identity and the magnitude of asymmetry between their effects. These findings suggest we can often effectively forecast impacts of multiple stressors by focusing on the stronger stressor, as habitat alteration and contamination often override the biological consequences of higher temperatures in freshwater ecosystems.

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