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## Unmasking Climate Change: How the Impacts of Global Warming Alter Disease Spread and Discovery

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Unmasking Climate Change: How the Impacts of Global Warming Alter Disease Spread and  
Discovery  
Ellie Potts

(This abstract is a placeholder for a project to be submitted for publication elsewhere.)

Abstract

What is the relationship between global temperature increase and the number of communicable disease cases, and is this relationship stronger for denser populations? Climate change and communicable diseases are two intertwined global issues. Since the start of the COVID-19 pandemic, business owners, governments, and general consumers have all realized the scale of benefits and risks of an internationally integrated global economy, and how our level of urbanization can cause rapid disease spread. This pandemic has uncovered our lack of preparation for global emergencies. Climate change not only poses a global emergency but will also increase our world's likelihood of diseases. Rising temperatures, warmer waters, polluted air, and denser communities all put us at a greater risk for communicable disease spread. As ocean levels rise, coastal communities will be forced to densify, and simultaneously global surface temperatures will increase.

The relationship between global temperature and the number of communicable disease cases is positive. This relationship is also positive for density and the number of communicable disease cases. An econometrics model with year-fixed and country-fixed effects is used to closely identify the causal relationship between environmental factors and diseases, while controlling for economic and health variables. Forecasting for the future, the impacts of climate change and disease spread will create instability in economic markets for both consumers and producers. Policies to mitigate both climate change and pandemics can be economically efficient, to avoid the costly and vicious feedback loop of rising temperatures, densified populations, and disease spread.