CLIMATE CHANGE EFFECTS ON ECOSYSTEM SERVICES AND HUMAN HEALTH

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Human health and well-being are and will be affected by climate change, both directly through changes in extreme weather events and indirectly through weather induced changes in societal systems and their supporting ecosystems. The goal of this study was to develop and apply a broadly applicable modeling and decision support platform (HYGEIA) that considers direct and indirect climate change effects on human health and the effectiveness of mitigation options from increased ecosystem services. The model's first application examined how climate change induced heat stress could affect morbidity and mortality in Travis County, Texas (Austin and vicinity) and how increased vegetation coverage, applied in several different ways, could quantitatively mitigate heat stress effects. The model was developed in a manner which will allow ready adaptation to other locations and health endpoints, and will allow users to examine tradeoffs and indirect effects of mitigation options. The HYGEIA platform was constructed using the Multiscale Integrated Model of Ecosystem Services (MIMES) and includes a temporally and spatially explicit dynamic eco-hydrology and land use model, as well as a human demographics population model that interacts with the landscape.

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