



Impact of climate change on invasive mosquito species in S.E. Europe

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Globalization of trade and travel in recent decades has facilitated the invasion of several non-native mosquito species in many countries globally, causing serious environmental, economic and health problems. A combination of climatic and environmental factors such as temperature, precipitation, number of premises per hectare, green covering, and composition of microhabitats influences the survival range and seasonal activity of invasive mosquito species (IMS) and determines the regions that are suitable for their establishment. Using the state-of-the-art GISS ModelE global climate model (GCM), in the framework of the EU co-funded LIFE CONOPS (LIFE12 ENV/GR/000466) project, we investigate the change in the frequency with which IMS find favorable climatic conditions in S.E. Europe, specifically, Greece and Italy, for the establishment of permanent populations by simulating the current and future climate. Given that the outputs of the GCM are relatively coarse for applications in regional and local scales, here we adapt the technique of dynamical regional downscaling in order to increase their spatial resolution. This is done using the mesoscale meteorological model Weather Research and Forecasting (WRF). Results are presented for the years 2009 and 2059. The findings of the current study suggest that climate change modifies the meteorological conditions, locally, affecting the establishment and growth of IMS.