



Climate change impact on the establishment and seasonal abundance of Invasive Mosquito Species: current state and future risk maps over southeast Europe

Efthimios Tagaris (1), Rafaella - Eleni Sotiropoulou (2), Andreas Sotiropoulos (3), Ioannis Spanos (3), Panayiotis Milonas (4), and Antonios Michaelakis (4)

(1) NCSR Demokritos, Aghia Paraskevi-Attikis, GR (tagaris@ipta.demokritos.gr), (2) University of Western Macedonia, Kozani, GR, (3) Terra Nova Ltd., Environmental Engineering Consultancy, Athens, GR, (4) Benaki Phytopathological Institute, Kifisia, GR

Establishment and seasonal abundance of a region for Invasive Mosquito Species (IMS) are related to climatic parameters such as temperature and precipitation. In this work the current state is assessed using data from the European Climate Assessment and Dataset (ECA&D) project over Greece and Italy for the development of current spatial risk databases of IMS. Results are validated from the installation of a prototype IMS monitoring device that has been designed and developed in the framework of the LIFE CONOPS project at key points across the two countries. Since climate models suggest changes in future temperature and precipitation rates, the future potentiality of IMS establishment and spread over Greece and Italy is assessed using the climatic parameters in 2050's provided by the NASA GISS GCM ModelE under the IPCC-A1B emissions scenarios. The need for regional climate projections in a finer grid size is assessed using the Weather Research and Forecasting (WRF) model to dynamically downscale GCM simulations. The estimated changes in the future meteorological parameters are combined with the observation data in order to estimate the future levels of the climatic parameters of interest. The final product includes spatial distribution maps presenting the future suitability of a region for the establishment and seasonal abundance of the IMS over Greece and Italy.

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