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## Building a climate service to support an Early Warning System for the West Nile Virus disease in Greece

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According to the National Public Health Organization in Greece, cases of West Nile Virus (WNV) infection in humans and animals have been recorded in various areas over Greece during the years 2010-2014 and 2017-2019 (<https://eody.gov.gr>). In this work we present a climate service which supports an Early Warning System (EWS) for the mosquito-borne WNV disease, operated for the first time over the Region of Central Macedonia in Greece. The EWS is based on a platform fed by time-dependent data (climate information and mosquito population data (*Culex* sp.)) and time invariant data (topography, density of mosquito breeding sites taken from field campaigns and distance to water-related land cover categories). The climate data are produced on a daily basis by the WRF-AUTH-MC weather forecast model over a 2x2 Km grid covering the Region of Central Macedonia, which operates from April to October (mosquito circulation period). Mosquito samples are collected every 2 weeks by the company ECODEVELOPMENT, using CO<sub>2</sub> mosquito traps. The mosquito data along with the climatic and static environmental information are utilized within a Generalized Linear Model (GLM). Based on an empirical relationship derived from the GLM, the overall environmental suitability for the *Culex* mosquito is assessed over the study region. The work is performed in the framework of the German-Greek bilateral project "Establishment of an Early Warning System for mosquito borne diseases" (<http://www.wnvalert.eu/>), which is focusing on improved measures on proactive mosquito control and disease prevention activities.