



Understanding the environmental drivers of West Nile Virus (WNV) emergence in Europe

Marcantonio M¹, Neteler M¹, Rosà R¹, Metz M¹, Marini G¹, Maramma L², Rizzoli A¹

¹ *Research and Innovation Center, Edmund Mach Foundation, San Michele all'Adige (TN), Italy*

² *European Center for Diseases Prevention and Control, Stockholm, Sweden*

Corresponding Author: Matteo Marcantonio Email: matteo.marcantonio@fmach.it Tel: +39 461615669

Abstract

WNV is a mosquito-borne pathogen with continuous geographic expansion in Eurasia. Its ecology in Europe is still poorly understood due to the high viral diversity and the complexity of its cycle. Several vertebrate and mosquito species are involved in WNV dynamic, although a limited set are playing a major role. Moreover, the interplay among the many biotic and abiotic factors driving WNV amplification is complex. To shed light on the dense relationships among WNV emergence and environmental drivers is therefore essential. The aim of this study was to analyze the relationships among WNV human cases in Europe (2010-2012; ECDC) and a series of climatic and environmental parameters characterizing the areas with WNV cases. The modeling procedure has been carried out using GLMs, WNV incidence as response variable and a complete set of climatic and environmental predictors. Best models were identified using AIC model selection. Preliminary results showed that WNV incidence is positively influenced by summer temperature anomalies while spring precipitation anomalies have negative effects. Besides, the most important environmental predictors include the presence of populated forest, irrigated croplands and mosaic grasslands. Several other parameters are currently under examination. In conclusion, results showed how using a multi-set of predictors within a robust modeling framework could provide a better perception on the parameters creating the favorable condition for WNV spill over.

In caso di problemi durante l'upload, inviare l'Abstract a:
congressosite2013@gmail.com



Sessione scelta (è possibile indicare più di una sessione):

- Biodiversità e funzionamento ecosistemico: un tributo a Carlo Heip
- Ecologia dei parassiti e delle malattie infettive
- Ecotossicologia, alterazione e restauro ambientale
- Ecologia microbica
- Ecologia delle macrofite
- Ecologia quantitativa
- Stress ambientali e servizi ecosistemici
- Educazione ambientale e didattica nell'ecologia
- Sessione libera

In caso di problemi durante l'upload, inviare l'Abstract a:
congressosite2013@gmail.com