

Research program IZS VE 03/15

Biodiversity and West Nile Virus: understanding the ecology of disease circulation

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Since 2008, West Nile Virus (WNV) has rapidly spread in Italy, and its yearly occurrence in north-eastern regions suggests it has become endemic in the area. The marked spread of the virus has been related to changes in environmental conditions, ultimately leading to increases in vectors abundance and distribution. Nevertheless occurrence of WNV in mosquitoes, equines and humans appeared having non predictable geographical patterns, with cases occurring in non-overlapping parts of Veneto region in consecutive years. While this may hamper the implementation of optimised surveillance activities, it also suggests the presence of neglected factors affecting WNV ecology.

The main goal of the project is to enhance the knowledge on the ecology of WNV, by exploring the effect that different levels of biodiversity of vectors, hosts and related ecosystems may have on the risk of disease transmission. This will provide useful information to be exploited in future surveillance plans for WNV, as well as a framework that could be employed also in the context of other infectious diseases strongly influenced by environmental/ecological factors.