



CONCLUSION

WNV management programs are designed to reduce human risk of contracting the disease by limiting the amplification of the virus within the *Culex* mosquito population. This should limit the number of infected birds and thus the number of bridge vector mosquitoes that might become infected and pass the disease on to people.²⁷

In Peel in 2003, the first indication of WNV activity was a WNV-infected dead bird found in Caledon on July 4th. The first human illness from WNV had an onset of symptoms on August 13th, approximately three weeks following the collection of the first WNV-positive batch of adult mosquitoes on July 24th.

Results from the 2003 mosquito season indicate that WNV activity, including cases of illness in people due to WNV, was substantially reduced compared to 2002. This may have been a function of several components to the WNV Prevention Plan:

- the aggressive mosquito larvae reduction campaigns – treatments of catch basins and standing water likely resulted in lower numbers of adult *Culex* mosquitoes emerging from these types of breeding sites;
- improved public awareness of personal protective practices, including the use of insect repellent, long-sleeved clothing or avoidance of outdoor activities at times when mosquitoes are most active;
- the reduction of standing water in artificial containers located on private property, especially tires, planters, bird baths, children's wading pools and other areas where stagnant water can collect.

However, other natural factors may also have been at play, including temperature, rainfall levels, or a smaller host population in which WNV could amplify as a result of the decimation of the crow population and immunity in other birds in parts of Peel Region during the 2002 mosquito season. All of these variables may have had a role in reducing the amount of contact between infected mosquitoes and humans in 2003.

Analysis of the Region of Peel's complete surveillance results shows that the monitoring of this information has served as an "early warning system" for human illness from WNV. Detailed analysis of information on Peel mosquitoes shows that *Culex* mosquitoes play a key role in local transmission of WNV as reported for other similar areas in the North American literature. In Peel, in 2003, *Culex* mosquitoes continued to be numerous and were the predominant species having positive WNV testing results. Compared to 2002, the number of *Culex* mosquitoes was substantially decreased, possibly as a result of the larviciding program, although other factors such as weather and a decreased number of WNV-susceptible birds may have also played a role. It is appropriate that the Peel WNV Prevention Plan continue to focus control efforts on *Culex* mosquitoes.