WEST NILE VIRUS and MTO

Highway Design Office
Ministry of Transportation

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Facts about West Nile Virus (WNv)

- First reported in North America in 1999 in the U.S.A.
- First reported in Canada in 2001 in Ontario
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• Historical advance of virus in humans in Ontario
  – 2001, 0 human cases with numerous bird and mosquito infections
  – 2002, 305 confirmed human cases resulting in 17 deaths with another 84 probable cases
  – 2003, 84 confirmed human cases with no deaths as of this time

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Facts about West Nile Virus (WNv)
• 74 different species in Canada but not all mosquito species can transmit WNv
• Urban, “small puddle”, mosquito species is of greatest concern.
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- These varieties
  - Do well in standing water contained in pots, old bath tubs, discarded tires, eaves troughs and other small containers
  - Do not do well in large open, bodies of water subject to turnover by running water or wind.

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How West Nile Virus is transmitted from host to Humans and Horses
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A Female mosquito can lay between 100 to 400 eggs.
Eggs hatch within 1 day with contact with standing water
Larvae grow through 4 stages
Depending on water temperature entire cycle can take from 5 to 21 days

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Mosquito Life Cycle
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Common Varieties of Birds capable of being infected with WNv

- Crow
- Magpie
- Grey Jay
- Raven
- Blue Jay

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- Principles of MTO Action Control Plan saw MTO committed to:
  - Supporting Ontario Government direction
  - Coordinating Implementation with Other Ministries
  - Coordinating Implementation with Local Health Units and Municipalities
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Data Collection in 2003
- Birds
- Mosquitoes
- Horses
- Humans

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- Resulted in a Planned Surveillance and Control Strategy:
  - 3 Tier Provincial prioritization to focus efforts and control activities
  - Local Health Units set up as leads for all actions taken
  - MTO Action Plan followed in line with government direction
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Provincial Tier designation based on 2002 data.

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- Local health Unit and Municipal Coordination
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- Areas of Application:
  - Highways in Urban Localities

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- Ditch Inlets
  - Catch basins
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- Standing Water in Roadside Ditches

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“Wet” Highway Stormwater Management Ponds
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MTO Control Actions:
- Larviciding in urban areas:
  - Methoprene pellets in catch basins
  - Bti pellets in open water areas
- Maintenance:
  - Re-establishing flow in standing water areas where feasible
  - Clean up of garbage on surplus properties
- Construction:
  - Minimization of standing water time

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MTO Monitoring Results
- Urban Cross Section Catch basins – not suitable habitat
- Rural Cross Section Catch basins – suitable habitat
- Roadside ditches – suitable habitat
- Wet ponds – suitable habitat but natural predator control
- Surplus Property – garbage items created suitable habitat
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Next Steps:
• Refine application areas in coordination with 2003 data and local health unit assessments;
• Continued heightened awareness program on maintenance and construction needs;
• Explore new and improved treatment techniques; and
• Enhanced Public Education Program