West Nile Virus and Other Mosquito-borne Diseases National Surveillance Report

English Edition

October 9 to October 15, 2016 (Week 41)

West Nile virus

Canada

Humans

During surveillance week 41, ending on October 15, 2016, six (6) human clinical cases of West Nile virus (WNV) have been reported to the Public Health Agency of Canada (PHAC). Of these, one case was reported in Manitoba [Southern (1)], four in Ontario [Peel region (1), Toronto (1), Windsor-Essex County (1), York region (1)], and one in Prince Edward Island .

As of surveillance week 41, a total of 89 human clinical cases have been reported to PHAC: Alberta (4) [Calgary zone (1) and South zone (3)], Manitoba (21) [Interlake-Eastern (3), Northern (1), Prairie Mountain (2), Southern (9) and Winnipeg (6)], Ontario (44) [Ottawa (2),Toronto (20), Niagara (7), York (3), Durham (2), Halton (1), Windsor-Essex County (3), Peel (4) ,Haldimand-Norfolk (1) and Hamilton (1)], Quebec (19) [Capitale-Nationale (1), Laurentides (2)*, Laval (5), Montérégie (4), Lanaudière (5), Montréal (1) and Gaspésie - Îles-de-la-Madeleine (1)] and Prince Edward Island (1). Of these, fifty-six cases (63 %) were classified as West Nile virus Neurological Syndrome, twenty- eight cases (31 %) as West Nile virus Non-Neurological Syndrome, and five cases (6 %) were unclassified. Seven fatal cases have been reported.
In addition, six West Nile virus asymptomatic infections have been reported by three provinces: Saskatchewan (1) [Mixed-Grass prairie ×], Manitoba (1) [Prairie Mountain] and Ontario (4) [Toronto (3), Windsor-Essex County (1)].

Mosquitoes

As of surveillance week 41, 345 (2.28 %) out of 15124 mosquito pools have tested positive for WNV in Canada: Saskatchewan (67), Manitoba (39), Ontario (211) and Quebec (28).

Birds

As of surveillance week 41, the Canadian Wildlife Health Cooperative, the Québec Ministry of Agriculture, Fisheries and Food, and the Québec Centre for Wildlife Health have examined a total of 80 dead birds for WNV: British Columbia (2), Alberta (1), Saskatchewan (5), Ontario (57), and Quebec (15), of which 25 (31%) dead birds have tested positive for WNV: British Columbia (2) [Cranbrook], Saskatchewan (2)[Saskatoon (1), Moose Jaw (1)], Ontario (9) [Bradford (1), Hamilton (1), Sarnia (1), Thorold (1), Toronto (1), Tecumseh (1), Burlington (1), Waterloo (1), Elora (1)] and Quebec (12) [Estrie (2), Lanaudière (1), Montérégie (5), Saint-Jean-Baptiste (1), Abitibi-Témiscaminigue (1), Montréal (1), Capitale Nationale (1)]. The positive birds were identified as American Crows (32%), Red- tailed Hawks (20%), Sharp-shinned Hawks (16%), Merlins (8%), Northern Goshawks (8%), Great- horned Owls (4%), Cooper's hawks(4%), Blue Jays (4%) and Burrowing Owls (4%).

Domestic Animals

As of surveillance week 41, forty-five horses with WNV infection have been reported to the Canadian Food Inspection Agency by various provincial/private animal health laboratories. These are preliminary data under validation: British Columbia (10), Alberta (7), Manitoba (13), Ontario (2) and Saskatchewan (13). In addition, the Quebec Ministry of Agriculture, Fisheries and Food, has reported one horse that tested positive for WNV, in Quebec.

United States and U.S. territories

As of October 11, 2016, the Centers for Disease Control and Prevention have reported a total of 1,264 human clinical cases of West Nile virus disease in 42 states in the US, including the following border states: Washington (9), Idaho (6), Montana (6), New York (11), North Dakota (68), Minnesota (41), Michigan (34), and Vermont (3). Of these, 645 (51%) were classified as neuroinvasive disease and 619 (49%) were classified as non- neuroinvasive disease. Forty-nine fatal cases have been reported. In addition, 193 presumptive viremic blood donors have been identified.
Detailed information can be accessed via the CDC web site: http://www.cdc.gov/westnile/statsmaps/preliminarymapsdata/histatedate.html

Europe and Neighbouring Countries

As of October 20, 2016, a total of 198 human cases of WNV have been reported in the European Union and 249 cases have been reported in the neighbouring countries.
Detailed information can be accessed via the ECDC web site:
http://ecdc.europa.eu/en/healthtopics/west_nile_fever/West-Nile-fever-maps/pages/index.aspx

Eastern equine encephalitis

Canada

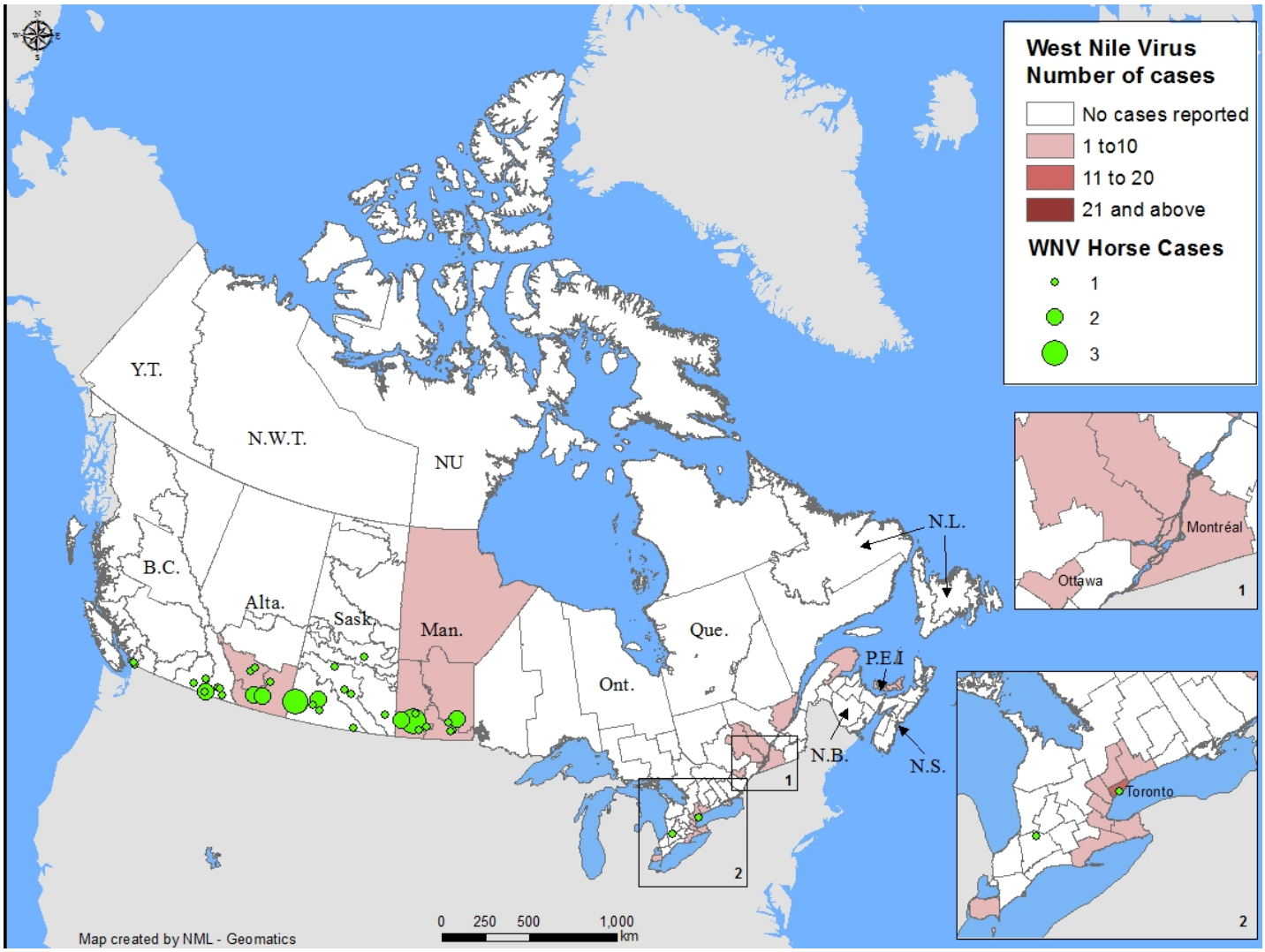
Domestic Animals

As of surveillance week 41, two horses with Eastern Equine Encephalitis in Québec, has been reported to the Canadian Food Inspection Agency by a provincial/private animal health laboratory.

*This case was acquired during WNV season in 2015

×Sun Country, Regina Qu'Appelle, Five Hills, Cypress, Heartland Health Regions

FIGURE 1: Geographic distribution of WNV in humans (clinical cases) and horses* in Canada, as of October 15, 2016



*These are preliminary data, under validation

FIGURE 2: WNV human clinical cases and asymptomatic infections by province/ territory and by report week, as of October 15, 2016

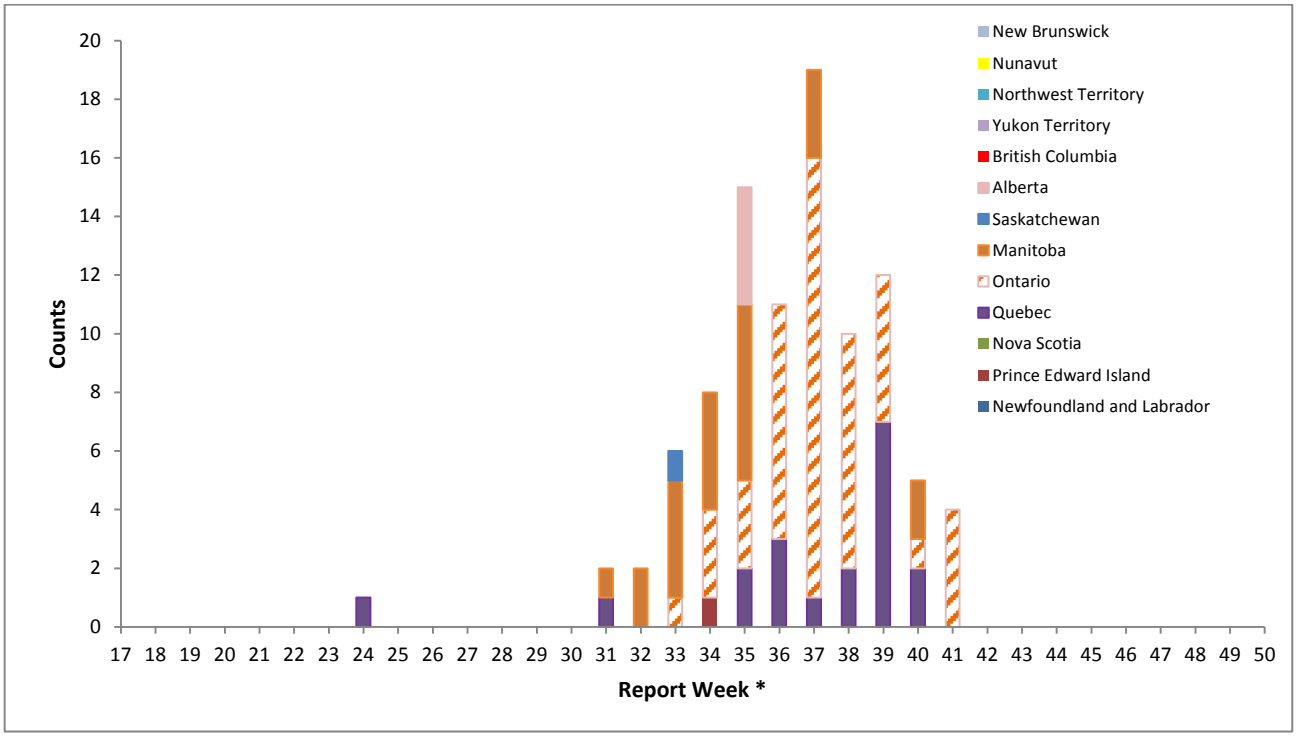
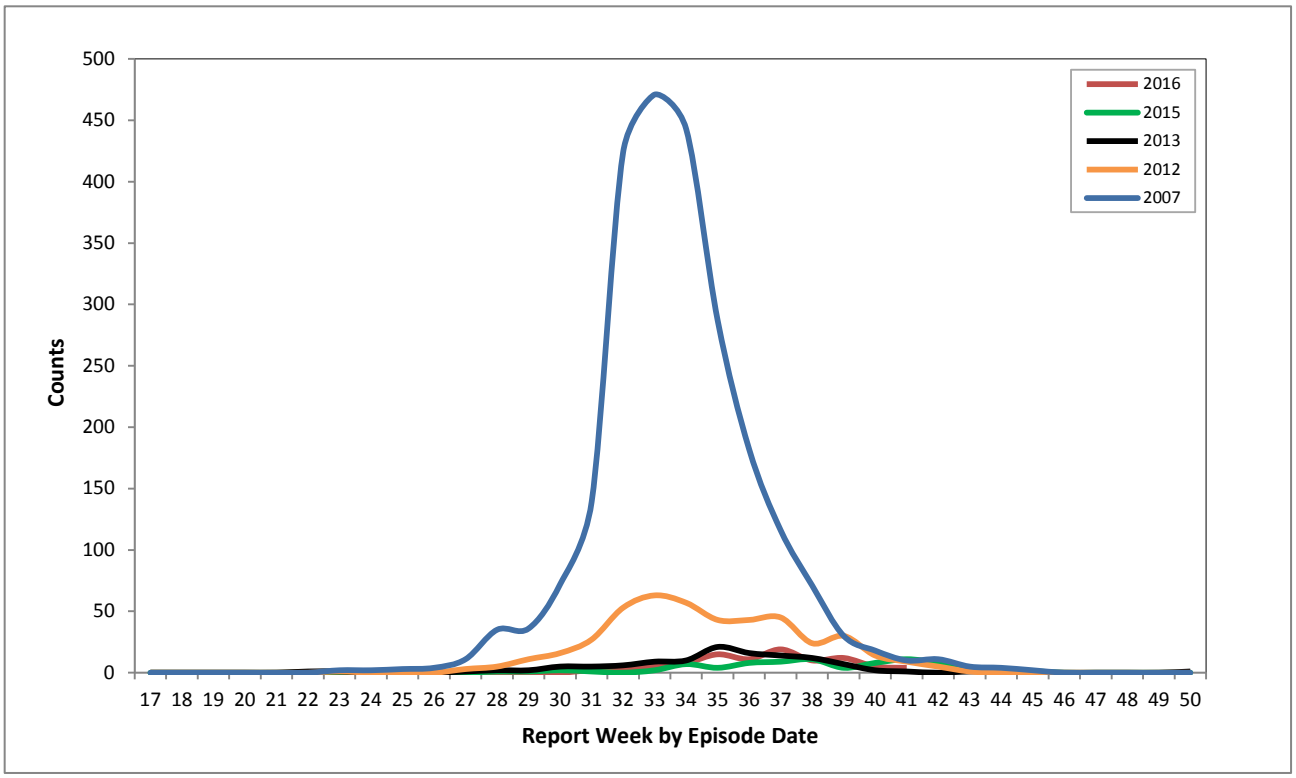


FIGURE 3: WNV human clinical cases and asymptomatic infections by report week for selected years, in Canada



*West Nile virus clinical cases and asymptomatic infections are grouped by report week, based on episode date. Episode date could include one of the following: onset date, diagnosis date, lab sample date or reporting date.

TABLE 1: West Nile virus human clinical cases and asymptomatic infections by province/territory for the current report week and year to date, 2016 season

	Week 41: October 9 to October 15, 2016					
	West Nile virus neurological syndrome	West Nile virus non-neurological syndrome	Unclassified/ unspecified	Total clinical cases[1]	Number of travel-related cases[2]	West Nile virus asymptomatic infection[3]
Newfoundland and Labrador	0	0	0	0	0	0
Prince Edward Island	0	1	0	1	1	0
Nova Scotia	0	0	0	0	0	0
New Brunswick	0	0	0	0	0	0
Quebec	0	0	0	0	0	0
Ontario	2	1	1	4	0	0
Manitoba	0	1	0	1	0	1
Saskatchewan	0	0	0	0	0	0
Alberta	0	0	0	0	0	0
British Columbia	0	0	0	0	0	0
Yukon Territory	0	0	0	0	0	0
Northwest Territory	0	0	0	0	0	0
Nunavut	0	0	0	0	0	0
Total	2	3	1	6	1	1

	Year to date: January 1 to October 15, 2016					
	West Nile virus neurological syndrome	West Nile virus non-neurological syndrome	Unclassified/ unspecified	Total clinical cases[1]	Number of travel-related cases[2]	West Nile virus asymptomatic infection[3]
Newfoundland and Labrador	0	0	0	0	0	0
Prince Edward Island	0	1	0	1	1	0
Nova Scotia	0	0	0	0	0	0
New Brunswick	0	0	0	0	0	0
Quebec	14*	5	0	19*	0	0
Ontario	29	10	5	44	3	4
Manitoba	12	9	0	21	2	1
Saskatchewan	0	0	0	0	0	1
Alberta	1	3	0	4	1	0
British Columbia	0	0	0	0	0	0
Yukon Territory	0	0	0	0	0	0
Northwest Territory	0	0	0	0	0	0
Nunavut	0	0	0	0	0	0
Total	56	28	5	89	7	6

[1] Total clinical cases is the sum of both probable and confirmed: West Nile virus neurological and non-neurological syndromes, along with any unclassified or unspecified cases.

[2] Likely related to travel outside the Province/Territory. These cases are included in either the total clinical cases or West Nile virus asymptomatic infections.

[3] Satisfies West Nile virus diagnostic test criteria in the absence of clinical criteria. This category could include asymptomatic blood donors whose blood is screened using a nucleic acid amplification test, by blood operators (i.e. Canadian Blood Services or Hema-Quebec) and is subsequently brought to the attention of public health officials. Blood operators in Canada perform a supplementary West Nile virus specific nucleic acid amplification test following any positive donor screen test result.

* One of the cases was acquired in 2015.

TABLE 2: Number of mosquito pools tested and number of positive mosquito pools by province/territory, 2016 season

Province	Year to date: January 1 to October 15, 2016 *		
	Number of positive mosquito pools	Number of mosquito pools tested	Percentage of positive mosquito pools (%)
Quebec	28	935	2.99
Ontario	211	12198	1.73
Manitoba	39	1394	2.80
Saskatchewan	67	597	11.22
Total	345	15124	2.28

*In 2016, mosquito surveillance is conducted by the following provinces only: Quebec, Ontario, Manitoba and Saskatchewan

TABLE 3: Number of WNV positive mosquito pools/ total number of WNV mosquito pools tested by report week and by province/ territory, 2016 season ǂ

rovince / erritory	Report week of 2016																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
ewfoundland d Labrador	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ince Edward and	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
w unswick	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ova Scotia	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
uebec	0	0	0	0	0	0	2/59	0/67	0/65	2/78	4/69	2/79	6/76	4/67	2/78	1/89	0/79	1/77	0/52	NA	NA
ntario	0/49	0/90	0/190	0/460	0/542	0/562	0/802	1/795	2/688	5/649	20/927	30/947	36/882	42/886	29/906	17/836	19/767	7/706	2/364	1/102	0/25
anitoba	0/4	0/8	0/3	0/17	0/56	0/58	0/69	0/100	4/113	7/192	5/241	6/246	15/143	1/65	1/42	0/29	0/8	¶	¶	¶	¶
skatchewan	0	0	0/1	0/9	0/8	0/14	1/26	0/37	0/31	3/62	10/68	16/106	31/144	4/55	2/28	0/6	¶	¶	¶	¶	¶
berta	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
itish olumbia	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	—	–
kon rritory	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
orthwest rritory	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
unavut	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
otal	0/53	0/98	0/194	0/486	0/606	0/634	3/956	1/999	6/897	17/983	39/1305	54/1378	88/1245	51/1073	34/1054	18/960	19/854	8/783	2/416	1/102	0/25

ǂ Detailed West Nile virus mosquito surveillance data can be accessed through Provincial/ Territorial websites.

_These jurisdictions do not maintain regular mosquito surveillance.

¶Mosquito surveillance has ended.

FIGURE 4: Reported number of dead birds tested positive for WNV by province/ territory and by report week, 2016 season in Canada

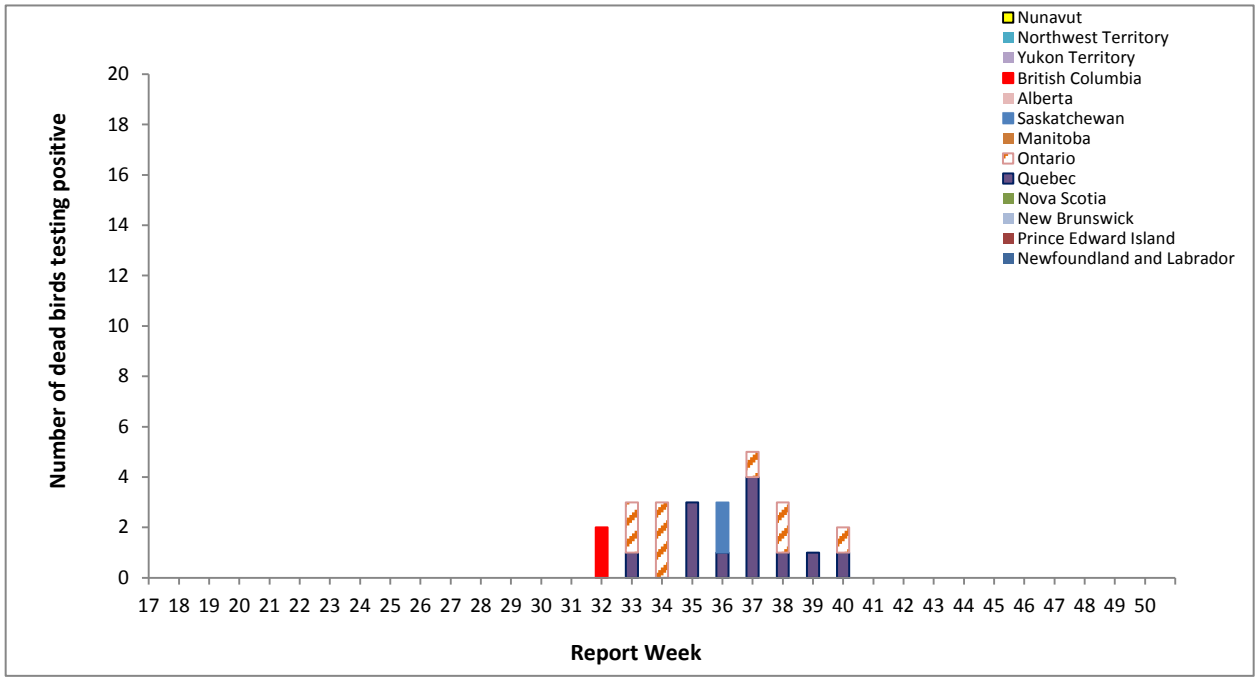
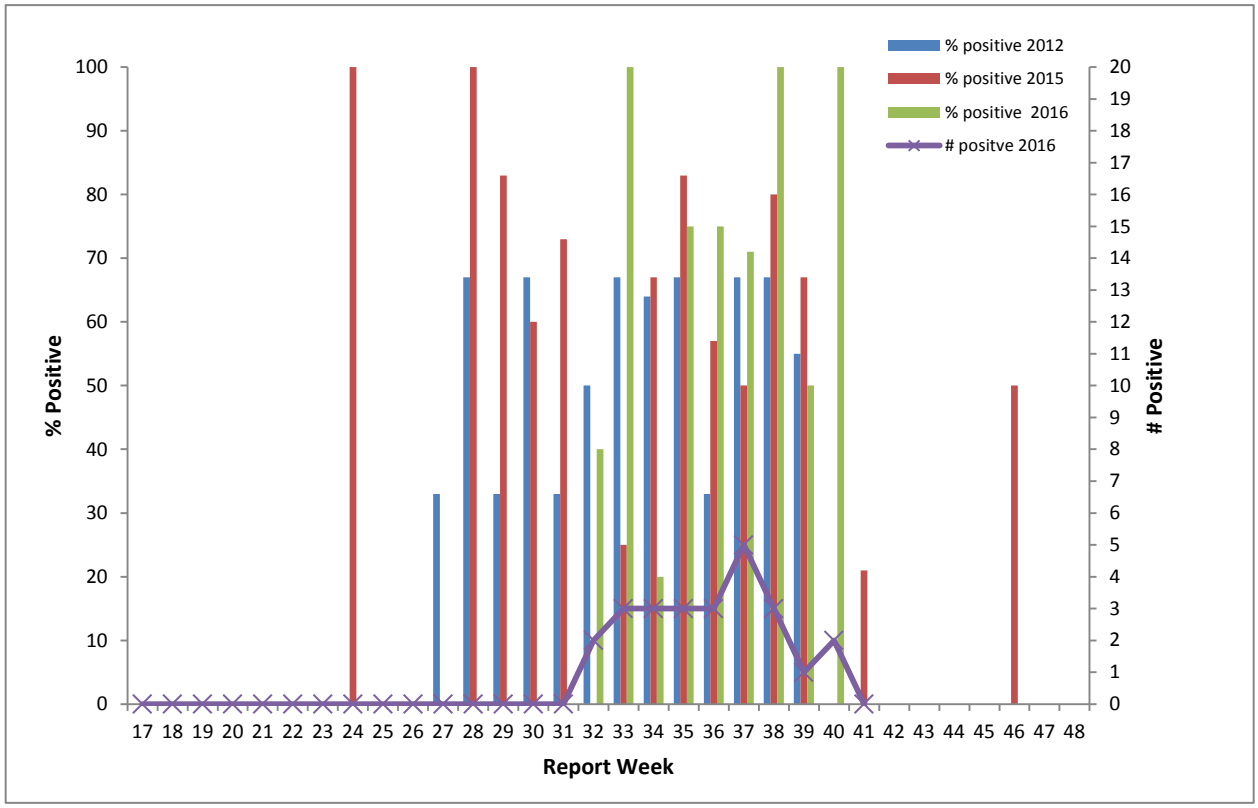


FIGURE 5: Percentage of dead birds tested positive for WNV by report week in 2012, 2015 and 2016, and number of dead birds tested positive for WNV, by report week, 2016, in Canada ¶



¶ Not all provinces are conducting dead bird surveillance as part of their own WNV surveillance program. However, WNV positive dead birds may be identified through the National Wildlife Disease Surveillance Program of the Canadian Wildlife Health Cooperative (CWHC)