

ZOONOTIC AND OTHER ANIMAL DISEASES OF CONCERN IN MARYLAND

Table 1. New or Ongoing Morbidity or Mortality Animal or Zoonotic Disease Events

Estimated first onset	Estimated end date	Jurisdiction affected	Species affected	Diagnosis	Estimated # of cases to date	Lead agency	Comment
July 1, 2014	Ongoing	Various	Mosquito	WNV (33) EEE (1)	34 mosquito pools	DoD, MDA	See below
July 1, 2014	Ongoing	Frederick	Equine	WNV	1	DHMH	See below
July 1, 2014	Ongoing	Various	Human	WNV	4	DHMH	See below

For questions regarding specific disease events, please contact the lead agency noted. This contact information is for use by Maryland veterinarians and health professionals:

MDA - Maryland Department of Agriculture: ahops.mda@maryland.gov, 410-841-5810

DHMH - Maryland Department of Health and Mental Hygiene, Center for Zoonotic and Vector-borne Diseases: dhmh.czvbd@maryland.gov, 410-767-5649

DNR - Maryland Department of Natural Resources, Fish & Wildlife Health Program, FWHP.DNR@maryland.gov 410-226-5193

Maryland Arbovirus Surveillance Update, 2014

Arboviral surveillance began on July 1 and will conclude on October 31. As of October 7, 2014, four human West Nile Virus (WNV) cases have been reported in the Baltimore Metropolitan, National Capital and Western MD regions. A horse in Frederick County was also confirmed with WNV infection. A total of 33 mosquito pools in six jurisdictions have tested positive for WNV. These pools were collectively trapped by Department of Defense personnel at military installations and by the Maryland Department of Agriculture (MDA) in Anne Arundel, Dorchester, Harford, Montgomery, Prince George’s, and Talbot counties. A pool of *Culiseta melanura* mosquitoes tested positive for Eastern equine encephalitis (EEE) in Worcester County, the first EEE activity of the season. MDA mosquito control officials sprayed a 10,000 acre area southwest of Pocomoke in Worcester County in response to the EEE mosquito activity. No other arboviral disease activity has been detected to date.

Please see these websites for additional information:

Maryland Department of Health and Mental Hygiene West Nile Virus page:

<http://phpa.dhmh.maryland.gov/OIDEOR/CZVBD/SitePages/west-nile.aspx>

Maryland Department of Agriculture for mosquito control and reportable diseases in animals:

<http://mda.maryland.gov/Pages/homepage.aspx>

To report cases of disease in:	Contact:
Domestic animals	MDA Animal Health Program Office 410-841-5810 http://mda.maryland.gov/animalHealth/Pages/Diseases.aspx
Wild animals	MD DNR / USDA Wildlife Service Call Center 1-877-463-6497 http://www.wher.org
Humans	DHMH Center for Zoonotic and Vector-borne Diseases 410-767-5649 http://phpa.dhmh.maryland.gov/OIDEOR/CZVBD/SitePages/Home.aspx

ZOONOTIC AND OTHER ANIMAL DISEASES OF CONCERN IN MARYLAND

Mosquito Populations in Maryland in 2014 and Implications for Surveillance and Control Efforts

Maryland agricultural officials have documented interesting patterns in mosquito populations during the 2014 arboviral surveillance season. *Ochlerotatus canadensis canadensis* adult mosquitoes are typically found in fresh flood water habitats, while *Och. cantator* develops in the margins of upland marshes. Both *Och. canadensis* and *Och. cantator* are significant because they are the first mosquitoes of the spring. Both species typically occur in large numbers and are active biters, making them a troublesome nuisance in some areas. Despite favorable conditions in the form of warm temperatures and abundant rainfall this spring, both species were well below expected levels for a typical Maryland spring. *Culiseta melanura*, the Eastern equine encephalitis (EEE) maintenance vector, which is associated with hardwood swamps, was also collected in low numbers this spring. Unlike *Ochlerotatus* species which overwinter as eggs, *Culiseta* overwinter as larvae. The winter vortex, which depressed temperatures in March and early April, may have reduced the survival in these species.

Large populations of spring flood water species and *Culiseta melanura*, followed by large populations of bridge vector species *Och. sollicitans*, the eastern salt marsh mosquito, and *Coquillettidia perturbans*, are needed for sufficient amplification of the EEE virus that will result in multiple EEE-positive mosquito pools and equine cases.

The prevailing pattern of weather conditions in Maryland has not been conducive to large broods of *Och. sollicitans*, which breed in high salt marshes characterized by *Spartina patens* or salt marsh hay. Eggs are laid in the dry depressions and pot holes during the alternating dry periods and hatch when lunar or storm tides inundate the marsh. There is enormous potential for salt marsh mosquito production. Broods can hatch every 2 to 4 weeks from April to October and an acre of salt marsh can produce a million mosquitoes. Much of the high salt marsh areas have stayed wet this season, which interrupts the salt marsh mosquito cycle and maintains a suitable environment for predator fish populations. The Maryland Department of Agriculture typically sprays 150,000 – 300,000 acres of the lower eastern shore annually, to control salt marsh mosquitoes. To date, approximately 5,000 acres have been sprayed in 2014, suggesting that the increased presence of predator fish populations has reduced the need for widespread spraying efforts.

It is interesting to note that the primary container breeding mosquitoes, *Aedes albopictus*, commonly known as the Asian Tiger mosquito, and *Ochlerotatus japonicus*, have been considerably less affected by variations in climate. In fact, entomologists noted a slight uptick in the numbers of *Och. japonicus* collected in light traps this season. *Och. japonicus* is an efficient vector of WNV, Chikungunya, and other vector-borne pathogens and was first collected in Maryland in the mid-1990s. This species is reported to actively feed on humans in other states. It is collected in light traps in Maryland but is rarely collected in biting counts, which may be an indication of its feeding preference. *Och. japonicus* was collected for the first time in the cities of Crisfield and Princess Anne in Somerset County, and its collection in the Pocomoke swamp marks a county record for Worcester County.

MARYLAND ANIMAL RABIES CASES, 2014

Table 2. New (confirmed since the previous Bulletin) and Cumulative Rabies Cases, Week Ending October 4, 2014

Jurisdiction	Bat Total (New)	Cat Total (New)	Cow Total (New)	Dog Total (New)	Fox Total (New)	Groundhog Total (New)	Raccoon Total (New)	Skunk Total (New)	Other Total (New)	Total (New)
Allegany	1(1)						3			4(1)
Anne Arundel	15(5)				2		13(1)	2(2)	1(1)	33(9)
Baltimore	6(2)	2(1)					12(4)			20(7)
Baltimore City	20(13)	1(1)			2		4			27(14)
Calvert	1(1)				1(1)		1	1(1)		4(3)
Caroline							2	1		3
Carroll	2(1)	4					4	1		11(1)
Cecil							3(2)	1(1)		4(3)
Charles	1(1)				2		4(2)	1(1)		8(4)
Dorchester	1(1)				1		5(2)			7(3)
Frederick	2(1)	3			3(2)		13(6)	3		24(9)
Garrett							1			1
Harford	1				3(1)		11(2)			15(3)
Howard	1	1			1		3			6
Kent										
Montgomery	9(7)				1*	1	21(4)	1(1)		33(12)
Prince George's	12(7)				5	1	4(2)			22(9)
Queen Anne's	1						5(1)			6(1)
Saint Mary's						1(1)	1(1)	1(1)		3(3)
Somerset						1	11(3)			12(3)
Talbot							4			4
Washington	1(1)	1			2(1)		4			8(2)
Wicomico	1	1			2		3			7
Worcester	1	2(2)			1		11(5)	1(1)		16(8)
Total (New)	76(41)	15(4)			26(5)	4(1)	143(35)	13(8)	1(1)	278(95)

Other species: Deer (1),

*In Issue 5 the number of foxes for Montgomery county was listed incorrectly as two.

For complete animal rabies data:

<http://phpa.dhmh.maryland.gov/OIDEOR/CZVBD/SitePages/Home.aspx>

To view previous issues of the Maryland One Health Bulletin (MOHB):

<http://mda.maryland.gov/animalHealth/Pages/md-one-health.aspx>

Maryland Department of Health and Mental Hygiene Weekly Public Health and Emergency Preparedness Bulletin:

<http://preparedness.dhmh.maryland.gov/SitePages/Public%20Health%20And%20Emergency%20Preparedness%20Bulletins.aspx>

National Wildlife Health Center New and Ongoing Wildlife Mortality Events Nationwide:

http://www.nwhc.usgs.gov/mortality_events?ongoing.jsp

U.S. Livestock and Poultry Disease Events and Trends:

http://www.aphis.usda.gov/wps/portal/banner/help?1dmy&uril=wcm%3apath%3a%2FAPHIS_Content_Library%2FSA_Our_Focus%2FSA_Animal_Health

Maryland Department of Health and Mental Hygiene Weekly Influenza Report:

<http://phpa.dhmh.maryland.gov/influenza/fluwatch/SitePages/Home.aspx0>