



**Department of Health
Division of Infectious Disease and Epidemiology
WNV/Arbovirus Surveillance: Epidemiologic Report
2011**

Purpose: To monitor the epidemiology, incidence and geographic distribution of WNV and other arboviruses in Rhode Island for early detection and prevention of any human transmission.

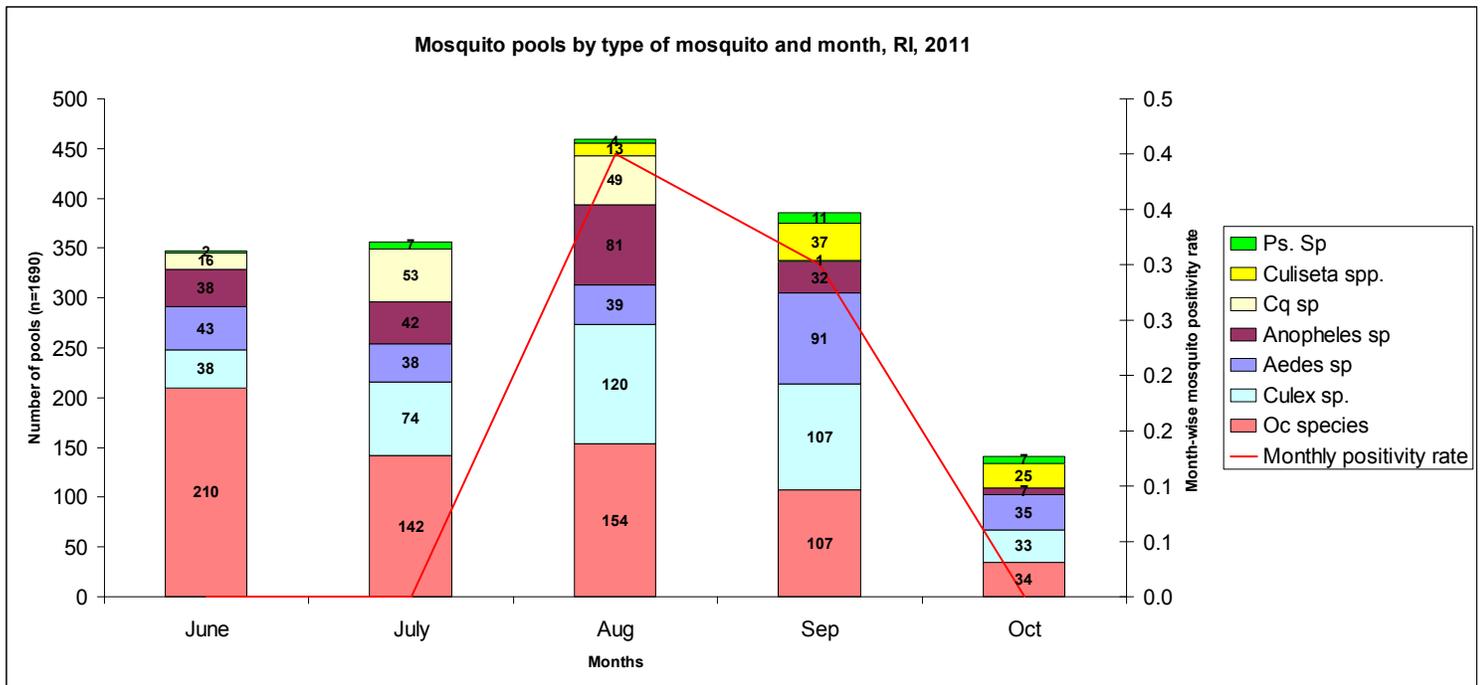
Report at a glance:

- All laboratory confirmed human case/s and positive mosquito/animal pools/specimens have been described over a period of one year.
- One confirmed human case of West Nile Virus (neuro-invasive) was reported in 2011. The case was a 59 year old resident from Providence and had onset of illness on August 25, 2011.
- Three pools tested positive (WNV – 2, Highlands J Virus – 1) for arboviral transmission out of the total 1690 pools tested for the 2011 season (June – October). Nine pools, including two for Eastern Equine Encephalitis (EEE), had tested positive in 2010.
- Pools were collected from June 6 through October 11. The first positive pool (Highlands J Virus, Culex species) for the season was collected on Aug 9, 2011. The last positive pool (WNV, Culiseta species) of the season was collected on September 19, 2011.
- Ochlerotetus species (Oc. sp) was the type of mosquito collected in maximum number of pools (38.3 % of all pools).
- Culex sp had the highest positivity rate (1.3%) for arboviral transmission followed by Culiseta sp (0.5%).
- Highest number of pools (12.2 % of total pools) was collected in South Kingstown; whereas the highest positivity rate of pools was noted in Providence.
- No transmission was detected in animal population.

Figures and Tables

Figure1: Mosquito pools by type of mosquito and month

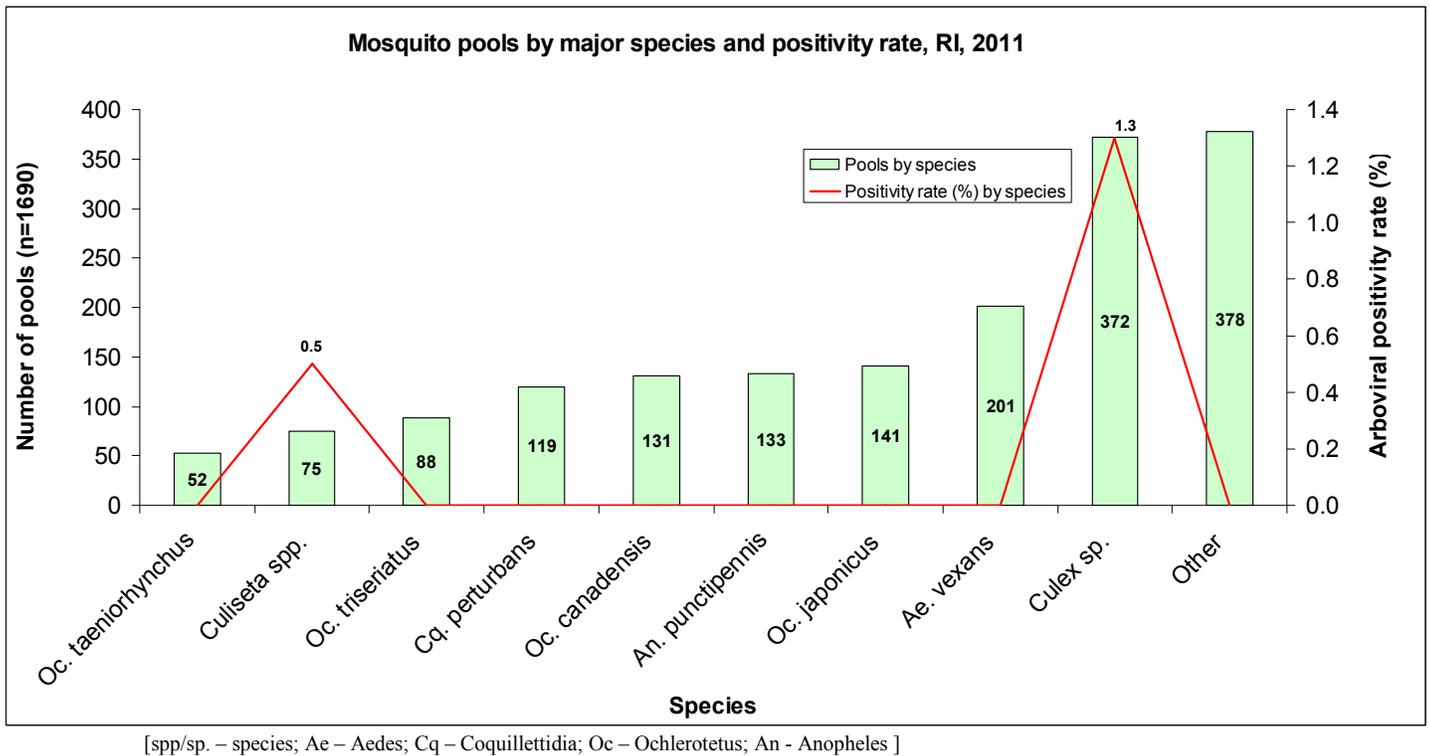
Mosquito pools were studied for type of larval collection and positivity for arbovirus transmission from June through October 2011. Out of the total 12436 larvae collected from 1690 pools during the 2011 season, highest positivity in mosquitoes was noted in the month of August. The only human case from the state this season had onset on August 25 and was a resident of Providence. Notably, one pool (Culex sp) tested positive for WNV from Providence on August 22, 2011. The graph shows significantly higher number of pools for Culex and Anopheles sp in August compared to June and July. Ochlerotetus sp, on the other hand, had highest number of pools in the month of June.



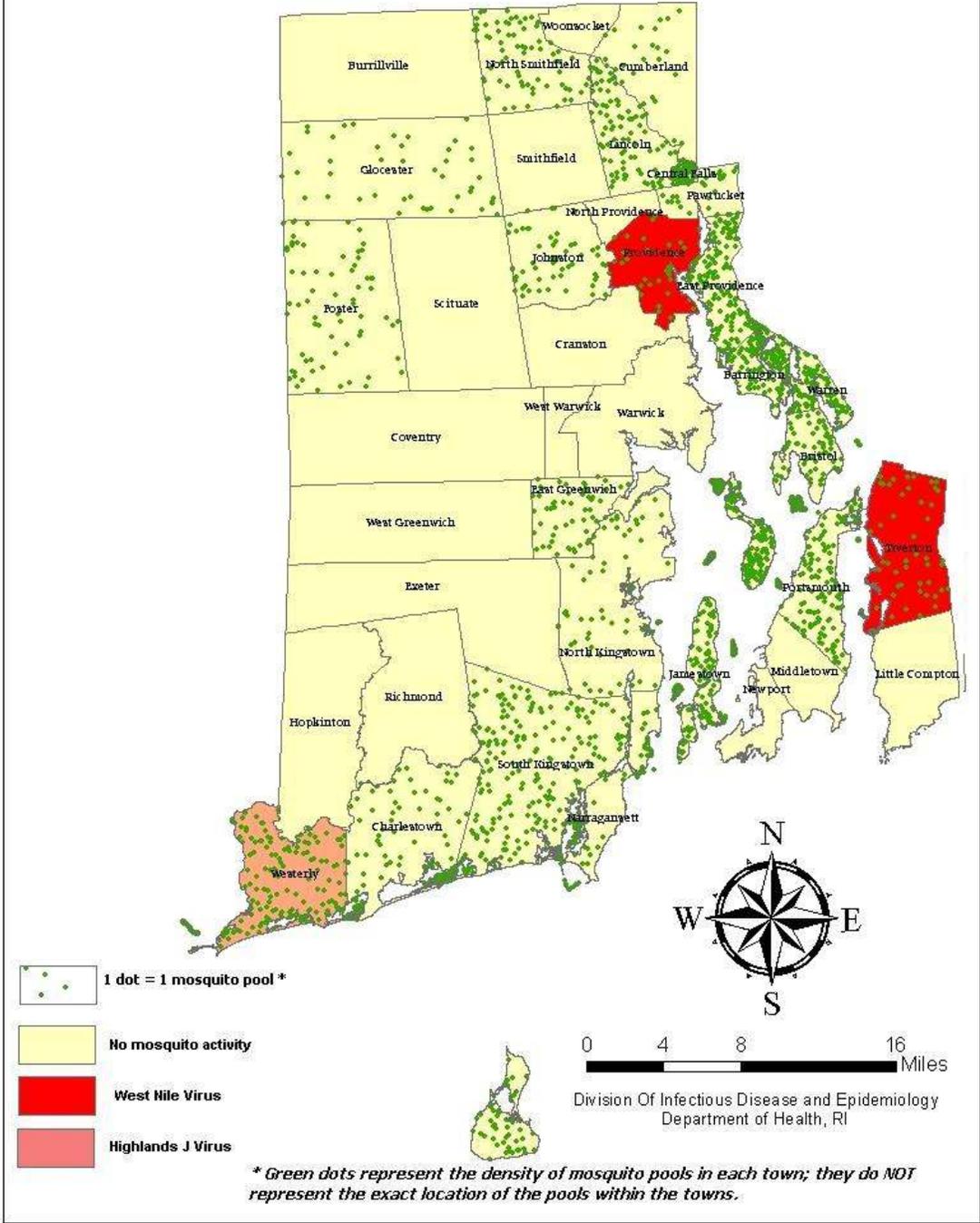
[sp – species. Ps – Psorophora; Cq – Coquillettidia; Oc - Ochlerotetus]

Figure2: Mosquito pools by major species of mosquito and positivity rate

The highest positivity rate for arboviral transmission was noted in *Culex* sp with two of the 372 pools for the species testing positive in this season. One pool of *Culiseta* sp also tested positive for WNV. Although both the pools for *Culex* tested positive in August, the *Culiseta* pool was collected in third week of September. Species included under “other” in the graph are: *Ae. cinereus*, *Ae. excrucians*, *Ae. thibaulti*, *Ae. triseriatus*, *An. barberi*, *An. crucians*, *An. quadrimaculatus*, *An. walkeri*, *Oc. abserratus*, *Oc. aurifer*, *Oc. cantator*, *Oc. cinereus*, *Oc. communis*, *Oc. dorsalis*, *Oc. excrucians*, *Oc. punctor*, *Oc. sollicitans*, *Oc. sticticus*, *Oc. stimulans*, *Oc. thibaulti*, *Oc. trivittatus*, *Or. Signifera*, *Ps. ferox*.



Arboviral surveillance: Mosquito activity and pool density per Town, RI, 2011



Arboviral surveillance: Human Cases by Town, RI, 2011



Arboviral Transmission: Human Cases by Town

- No human cases
- West Nile Virus, neuro-invasive (1 case)

0 4 8 16 Miles

Division Of Infectious Disease and Epidemiology
Department of Health, RI

Table: Mosquito surveillance: Pools by Towns, RI, 2001*

Town	Total pools	Percentage	Positive pools	Positivity rate by town
South Kingstown	206	12.2%	0	0.0%
East Providence	142	8.4%	0	0.0%
Westerly	135	8.0%	1	0.7%
Portsmouth	118	7.0%	0	0.0%
Warren	98	5.8%	0	0.0%
Lincoln	93	5.5%	0	0.0%
Jamestown	90	5.3%	0	0.0%
North Smithfield	75	4.4%	0	0.0%
Central Falls	70	4.1%	0	0.0%
Foster	69	4.1%	0	0.0%
Barrington	65	3.8%	0	0.0%
Bristol	64	3.8%	0	0.0%
Johnston	58	3.4%	0	0.0%
Charlestown	57	3.4%	0	0.0%
East Greenwich	56	3.3%	0	0.0%
North Kingstown	52	3.1%	0	0.0%
New Shoreham	50	3.0%	0	0.0%
Tiverton	50	3.0%	1	2.0%
Glocester	44	2.6%	0	0.0%
Providence	32	1.9%	1	3.1%
Cumberland	26	1.5%	0	0.0%
Pawtucket	26	1.5%	0	0.0%
Narragansett	14	0.8%	0	0.0%
Grand Total	1690	100%	3	

* Towns without any pools have been excluded from the table; "percentage" of pools per town is calculated with respect to total pools in the state.

Table: Mosquito surveillance: summary data, RI, 2001- 2011*

Year	Number of pools tested	Number of positive counties	Total number of positive pools	Number of WNV positive pools	Earliest positive date for WNV	Number of EEE positive pools	Earliest positive date for EEE
2001	1856	3	14	14	7/16/01	0	NA
2002	1417	2	4	4	8/28/02	0	NA
2003	2383	4	27	7	8/21/03	17	9/10/2003
2004	3062	2	7	0	NA	7	7/19/2004
2005	1466	2	2	1	9/19/05	0	NA
2006	1382	4	19	10	8/8/06	3	9/17/2006
2007	1048	2	5	5	8/20/07	0	NA
2008	1207	2	10	10	8/26/09	0	NA
2009	1138	2	14	3	9/8/09	3	8/24/2009
2010	1621	3	9	2	8/30/2010	2	8/23/2010
2011*	1690	3	3	2	8/22/2011	0	NA

(*As on 12.27.11)

All data provisional as on 12.27.11.

For questions/comments on data/methods, please contact Ananda S Bandyopadhyay at 401-222-6056. Division of Infectious Disease and Epidemiology, Department of Health, RI.