Pioneer Valley Mosquito Control District

Summer Update: August 2023

Surveillance Update: Collection numbers have had a significant increase, primarily due to the record setting rainfall we experienced in July. Floodwater species such as Psorophora *ferox* and Aedes *trivittatus* made up most of the collections across Franklin, Hampshire, and Hamden Counties. Both species of mosquitoes are very aggressive biters, however, neither are of any medical importance nor have been implicated as vectors for arbovirus. EPI week 28 had an increase in Culex species (WNV vectors) by 97%. This increase in Culex species has steadily remained relatively high through EPI week 31. The substantial rainfall has most certainly had in impact Culex species.

WNV Update: To date Pioneer Valley surveillance traps have detected WNV positive mosquitoes in West Springfield (2x), Hadley, South Hadley, Holyoke, and Granby. Culex *pipiens/restuans* have made up all of the WNV positive pools. This particular species will utilize catch basins, stagnant/bacteria rich water, artificial containers such as buckets, kiddy pools, green swimming pools, wheelbarrows, etc. The recent rainfall has added water to many artificial containers, and as a result, they have become ideal habitat for Culex *pipiens/restuans*. Culex lay their eggs in rafts consisting of 100-300 eggs (figure 1). Just one female mosquito can produce up to 300 larvae. This is why it is imperative to get the word out to residents to empty any standing water on their property. Please see the links on page 2 for public education materials created by the MA Department of Public Health, which may be used for distribution. Additionally, two MA DPH fliers are included in the newsletter on pages 3 and 4.

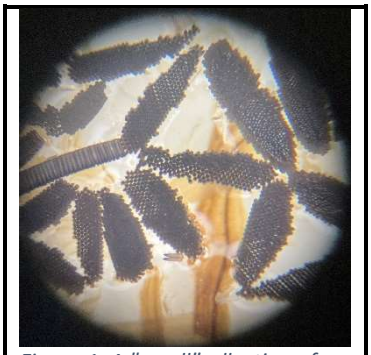


Figure 1: A "small"collection of Culex eggs taken from a 5-gallon bucket. Each egg raft can produce up to 300 mosquito larvae.

Surveillance Strategy: Upon confirming a WNV positive collection of mosquitoes, I create a 1-mile radius around the trap site (figure 2). This is based on Culex *pipiens/restuans* flight range which is rarely over a mile. Most of their blood meals are close by and do not require much distance to travel to. Supplemental Gravid traps that specifically target Culex *pipiens/restuans*) are rotated weekly and placed around the perimeter of the 1-mile flight radius to determine the extent of the virus. This strategy is also implanted in bordering member communities where the flight radius overlaps.

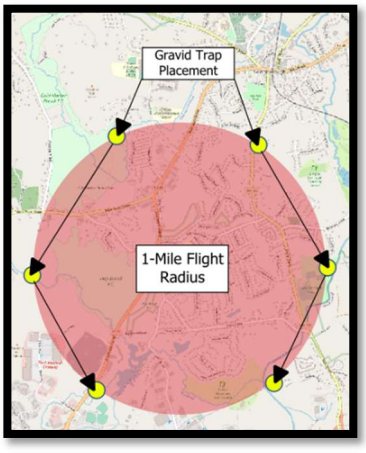


Figure 2: Example of a flight radius drawn around a trap site using GIS software. Additional Gravid traps are placed around the perimeter to determine the extent of the virus. Note: this is not an example of an actual WNV+ location.

NOAA Long-Term Weather outlook (August through September): NOAA predicts equal chances of leaning above or below normal temperatures (figure 3); and precipitation has equal chances of leaning above or below (figure 4). The Farmer's Almanac is predicting a drier September and cooler temperatures.

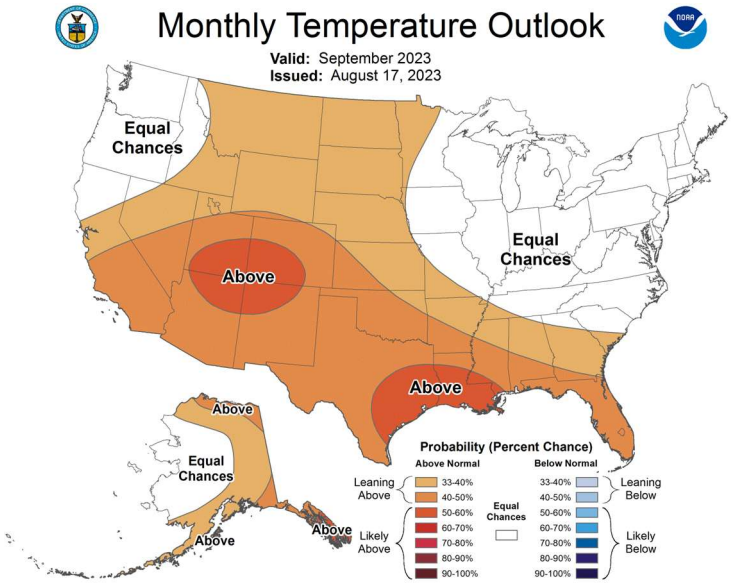


Figure 3: Seasonal Temperature Outlook. NOAA, 2023.

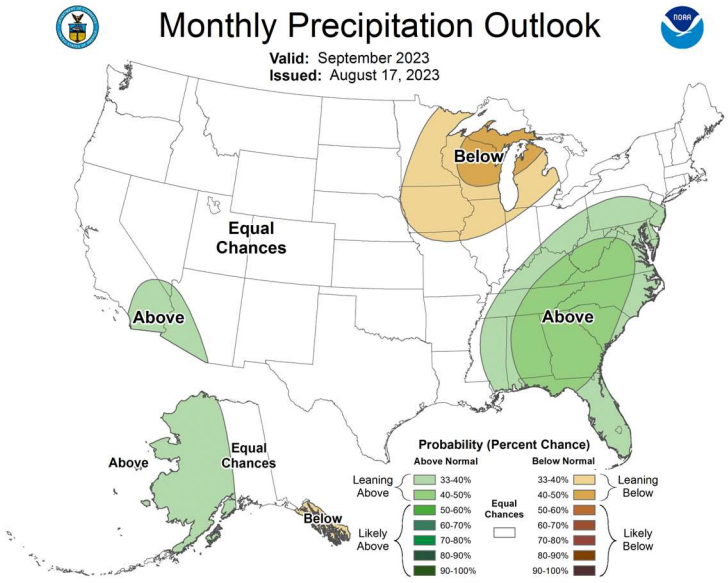


Figure 4: Seasonal Precipitation Outlook. NOAA, 2023.

Getting the Message Out: Now that West Nile Virus has been confirmed in several communities within Pioneer Valley, it is especially important to emphasize the use of bug repellants (EPA approved) that contain DEET or eucalyptus oil, wearing long sleeves and pants, and avoiding outdoor activities around dusk and dawn.

Ticks and Rainfall: Like mosquitoes, ticks also benefit from increased rainfall and humid conditions. The following link from UMass can be used as a valuable resource for anything tick-related: https://ag.umass.edu/landscape/fact-sheets/information-regarding-ticks-tick-borne-diseases. A second peak wave of ticks can be expected in the Fall.

Looking Ahead: This will most likely be the last update of the season. I plan to start working on the end of season surveillance reports in late September and should have them ready to be delivered by mid-October. Any communities with WNV positives will receive a map, showing the general area where virus was found. Additionally, a map will be provided to member communities, showing the general area that each trap site covers and its proximity to specific mosquito habitat.

Public Education materials from MA Department of Public Health:	**MA DPH West Nile Virus Fact Sheet** https://www.mass.gov/info-details/west-nile-virus-wnv
	MA DPH Bug Spray Posters for Kids (includes ticks) https://www.mass.gov/doc/four-poster-set-mosquitos-and-ticks/download
	MA DPH Mosquito Prevention Poster (multiple languages available) https://massclearinghouse.ehs.state.ma.us/PROG-BID/TM3939kit.html

Please feel free contact me via email john.c.briggs@mass.gov or phone (401)580-6397 with any questions.

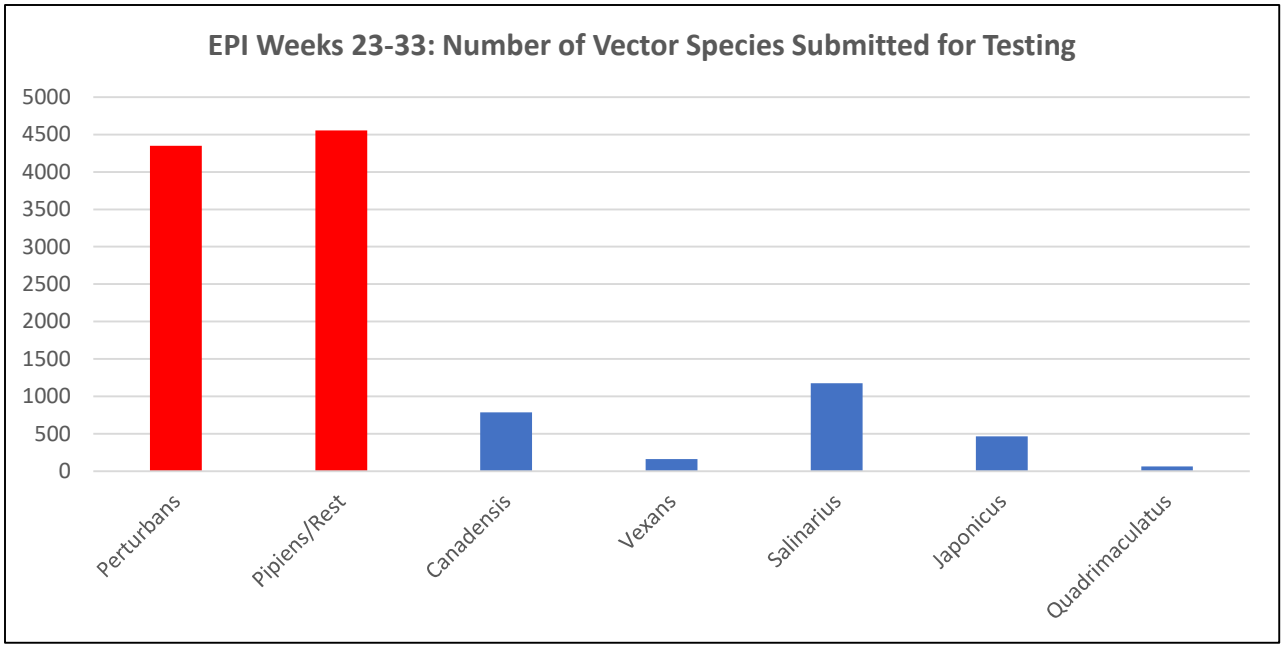
Sincerely,

John Briggs, District Director

Pioneer Valley MCD 2023 Surveillance Summary

EPI Week	Number of Pools Submitted	Results
23	3	All Negative
24	15	All Negative
25	17	All Negative
26	31	All Negative
27	49	All Negative
28	58	1 WNV+
29	63	1 WNV+
30	62	2 WNV+
31	58	1 WNV+
32	50	1 WNV+
33	53	TBD
Total	**459**	**6 WNV+**

County	Number of WNV+ Pools
Franklin	0
Hampshire	3
Hampden	3




Protect Yourself from
Mosquitoes
Mosquitoes can spread diseases that make you very sick.
Take steps to prevent mosquito bites.
Use an EPA-approved repellent anytime you're outdoors.
Wear long pants, long sleeves and socks to reduce exposed skin outdoors.
Repair torn screens early in the season to keep mosquitoes outdoors.
Remove standing water around the house to prevent mosquitoes from breeding.
Dusk to dawn is peak biting time for mosquitoes that carry disease.
Know your risk: stay informed throughout mosquito season.
For more information about each of these important steps, go to:
www.mass.gov/MosquitoesAndTicks
Massachusetts Department of Public Health
Bureau of Infectious Disease, Division of Epidemiology and Immunization

Protéjase de los Mosquitos

Los mosquitos pueden propagar enfermedades muy graves.
Tome precauciones para evitar las picaduras de mosquitos.

Use un repelente aprobado por la Agencia de Protección Ambiental Estadounidense (EPA) cuando se encuentre al aire libre.

Al salir, vista pantalones largos, mangas largas y medias para reducir la piel expuesta.

Repare las mallas de puertas y ventanas apenas comienza la temporada para mantener a los mosquitos afuera.

Quite el agua estancada que esté alrededor de su casa para evitar que los mosquitos se reproduzcan.

El momento de mayor actividad de los mosquitos que transmiten enfermedades es desde el atardecer hasta el amanecer.

Conozca los riesgos: permanezca informado durante la temporada de mosquitos.

Para obtener más información sobre estas importantes precauciones, visite:
www.mass.gov/MosquitoesAndTicks

Departamento de Salud Pública de Massachusetts
Oficina de Enfermedades Infecciosas, División de Epidemiología e Inmunización