



Pioneer Valley Mosquito Control District Update: July 2023

Surveillance Update: The surveillance season is about a third of the way through with EPI weeks 23-27 complete. Things started off slow in terms of collection numbers but have been steadily climbing with each week (see chart on the second page). I am starting to see more of our summer vector species show up in the traps, such as Cq. perturbans (cattail mosquito) and Culex restuans/pipiens. Pioneer Valley Mosquito Control District (PVMCD) has not had any pools come back positive for arbovirus. However, the state reported on Friday (July 7th) that it had its first positive pool of West Nile virus (WNV) mosquitoes found in Brookline. The risk levels have not changed in and around the area where the mosquitoes were found. A complete summary of PVMCD’s surveillance totals can be found on the second page.

Spring Weather Impacts: The Spring was relatively dry with colder nighttime temperatures – both conditions had an impact on mosquito species across the state that typically emerge during this time. In addition to Pioneer Valley, other mosquito districts reported lower than usual mosquito activity for most of the spring.

NOAA Long-Term Weather outlook (June through August): 50-60% probability of above normal temperatures (see figure 1); and precipitation has equal chances of leaning above or below (see figure 2). However, the Farmer’s Almanac is predicting above normal precipitation for July.

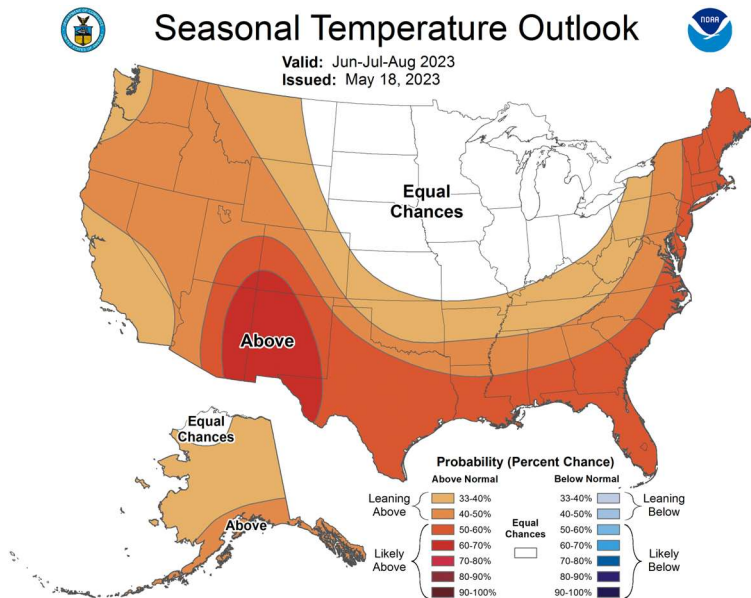


Figure 1. Seasonal Temperature Outlook. NOAA, 2023.

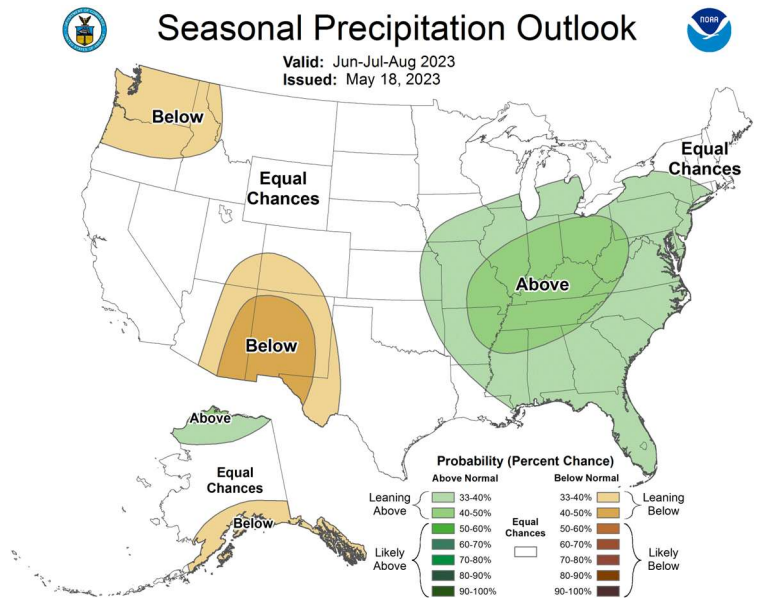


Figure 2. Seasonal Precipitation Outlook. NOAA, 2023.

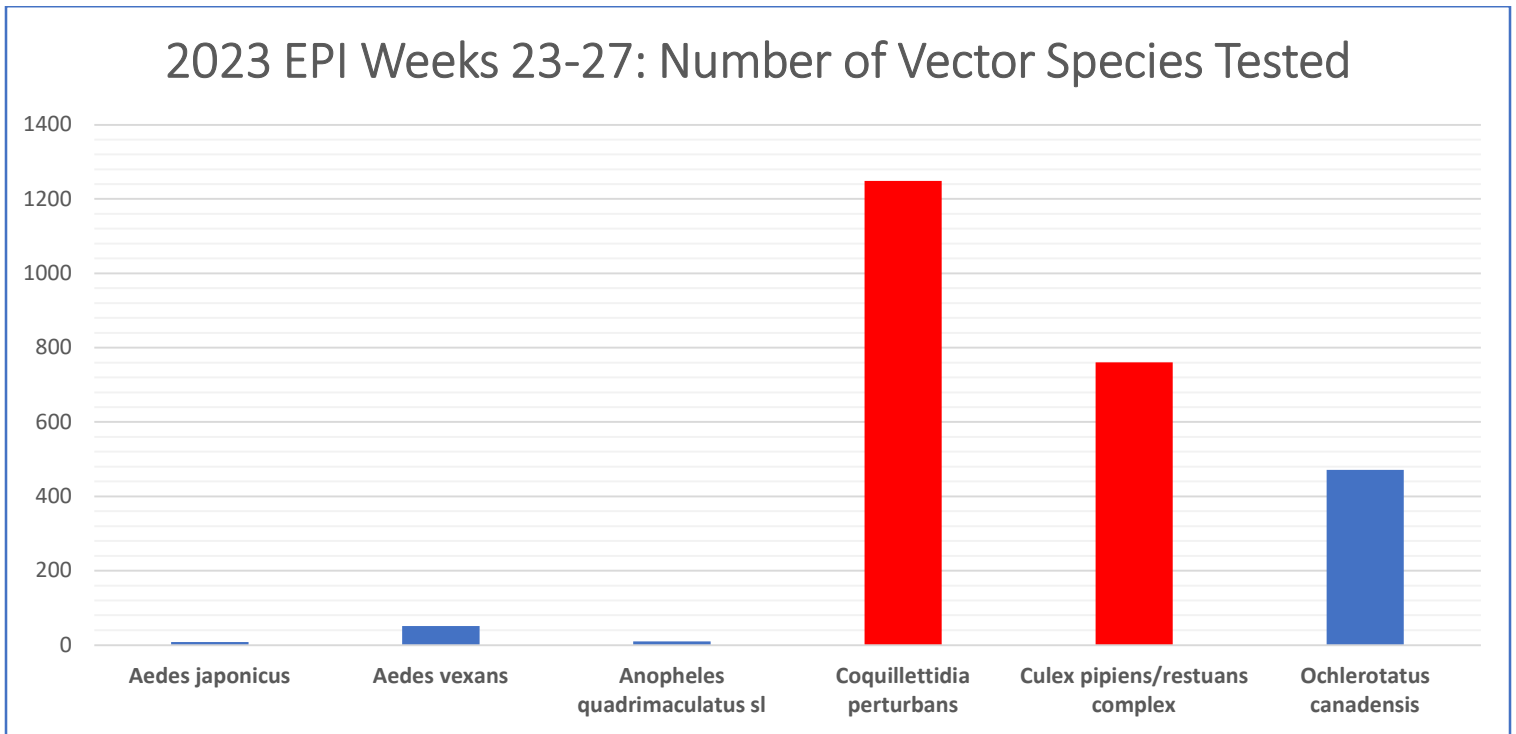
Weather Impacts on Mosquito Vectors: There are two mosquito vector species (melanura and perturbans) that play a significant role in the spread of Eastern Equine Encephalitis (EEEV). Both species rely on permanent water sources for breeding. The extreme drought we experienced the year prior is likely to affect population densities of both mosquito species, resulting in lower numbers for the season. Culex mosquito species (restuans/pipiens), responsible for transmitting West Nile Virus, typically do very well during a drought and normal summer conditions. Culex mosquitoes will breed in catch basins and other artificial containers such as buckets, wheelbarrows, kiddie pools, “green” swimming pools, and tires.



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Surveillance Summary:

| EPI Week | Number of Pools Submitted (Across all member communities) | Results |
|----------|--|--------------|
| 23 | 3 | All Negative |
| 24 | 15 | All Negative |
| 25 | 17 | All Negative |
| 26 | 31 | All Negative |
| 27 | 49 | All Negative |



Personal Protection: It is important to emphasize the use of bug repellants (EPA approved) that contain DEET, picaridin or eucalyptus oil, wearing long sleeves and pants, and avoiding outdoor activities at dusk and dawn. PVMCD is in the process of creating public education materials and will hopefully have everything approved soon for distributing.

Reducing Habitat: As mentioned before, Culex mosquitoes thrive living alongside humans by utilizing many water-containing items found in most yards. All it takes is about a week for standing water to become acceptable breeding conditions for mosquitoes that are capable of transmitting WNV. Emptying yard containers will most certainly make a big difference in decreasing the population of Culex mosquitoes.

Looking Ahead: The recent rainfall will most likely increase collection numbers in most areas throughout July. The next update will be sent in early to mid-August. Please feel free to contact me via phone (401-580-6397) or email (john.c.briggs@mass.gov) if you have any questions throughout the season.