



***Northeast Massachusetts Mosquito Control and Wetlands Management District
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As you know all-to-well, we have had plenty of rain the past month. And the ground, which has been parched due to the spring drought, is now more than saturated leaving plenty of standing water in floodplains, meadows, and woodlands. And with temperatures staying on the “cooler side of warm” (i.e., daily highs barely reaching 80° F.), together with scatters showers and thunderstorms on the average of every other day, all the standing water around will remain abundant. All this means is that floodwater mosquito larvae are developing and will mature since there will be abundant freshwater present for the foreseeable future. Do not be surprised if there is a massive emergence of adult mosquitoes within the next week or so; most of these will be *Aedes vexans*, the principal floodwater mosquito (said to be the most cosmopolitan mosquito species on earth). They are primarily mammal-biting mosquitoes, which means they will readily **bite humans**, both in the day as well as in the evenings, and may often come indoors to bite; they can travel great distances (for a mosquito anyway) for a bloodmeal, up to 15 miles! Fortunately for now, these mosquitoes are not primary vectors of West Nile and Eastern Equine Encephalitis viruses and the risk to human infection from bites of these mosquitoes remains low. The key word in that last sentence is “**now**”. If these mosquitoes remain in large numbers throughout the month of August, the risk of human infection will increase. We will continue to monitor these populations and inform our subscribing communities of their status.

Species taking advantage of the excessive rainfall also include salt marsh mosquitoes. These mosquitoes hatch into larvae usually at the highest high tide of the month (i.e., “Spring tide”) when the highest reaches of the salt marsh are flooded. However, if these areas are flooded by excessive rainfall in between Spring tides, larvae will hatch and develop into adults two weeks later. Our field technicians are constantly monitoring designated locations in and along the periphery of the salt marsh and unusual larval populations are treated, but it is impossible to inspect every single breeding location. It’s from these obscure, concealed, hidden locations where most of the current salt marsh mosquitoes are developing. We are currently seeing major emergences of these mosquitoes, especially the Brown Salt Marsh mosquito *Aedes cantator*. This species is less aggressive than the major salt marsh mosquito *Aedes sollicitans* but can be as persistent and annoying a human biter as *Aë. sollicitans*. It can also breed in freshwater pools that border salt marshes which may also explain the current abundance of this species.

Another species that is emerging in greater numbers is the Japanese Rock Pool mosquito, *Aedes japonicus*. These are large black mosquitoes, with silvery-white stripes on the legs; it also has a

preference for feeding off mammals, **including humans**. This species, as the name implies, breeds in rock pools, which are currently very abundant, but also breeds in tree holes and in any artificial container on your property. It is always prudent to inspect your property for any containers holding water which may be harboring the larvae of this species. This species is a recent immigrant being that there were none in all of Massachusetts as recently as ten years ago, it is now the principal tree hole mosquito in the state. Although it has been determined to be a most efficient vector of West Nile virus, it is rarely infected with this virus since birds are not a preferential source of blood. Nonetheless, we will continue to monitor this species and report its status to District Boards of Health.

Numbers of the principal West Nile virus vectors, *Culex pipiens* and *Culex restuans*, remain generally low, but we are starting to see increases in these species in the more urbanized areas of our District. One major source of breeding for these species are catch basins so District personnel are currently engaged in treating the basins with either an artificial mosquito hormone that keeps the larvae “forever young” or bacteria (*Bacillus. thuringiensis* or *B. sphaericus*) which upon being eaten by the larvae will kill them.

One species quite abundant at this time is the Cattail Swamp mosquito (aka. “Salt and Pepper” mosquito) *Coquillettidia perturbans*; this species was discussed in the 11 June Bulletin. Their emergence is independent of all the recent rains; they take almost a year to develop, hatching inside freshwater swamps in the fall and surviving the winter as larvae and emerging as adults only at this time of the year. At peak abundance, they are present in “astronomical” numbers, until the end of July, although many may still be active until mid-September; they are probably the most abundant freshwater mosquito species in our District. These are large mosquitoes light-brown (to dull olive, for those of you with great eyesight) in color, with lighter-colored bands especially on their legs; they are aggressive, have an extended flight ranges, and can be active (and bite most animals) even in daylight hours. As stated in our 11 June Bulletin, this species can transmit EEE virus although the risk to humans from this species is low. They may be of great concern if their numbers remain high into late August/early September which then increases the possibility of infection to residents. Older specimens (these have a greater probability of being infected) will be sent to the State Labs for testing of both WNV and EEEV.

On the subject of EEEV, the numbers of the principal vector, *Culiseta melanura*, continue to increase (although it still forms a small percentage of all local mosquitoes); it is assumed that the spreading of EEEV to birds and back to mosquitoes is increasing as well. Now these increases and amplifications occur deep in the forests away from most residential areas but, as more and more people are moving deeper and deeper into wooded habitats, the risk for human infection also increases. If we record unusual increases in their population in towns with recent EEEV history (or adjacent to NH towns with recent activity), we may recommend to the Boards of Health of the these towns that a limited local adulticide operation (truck-based spraying) be activated to reduce these populations to lower more “normal” levels for that time of the year.

As residents spend more time outdoors, they must become more vigilant of protecting themselves from mosquito bites. Residents should also be reminded that our District’s operations are geared primarily towards “vector management”; i.e., our surveillance and control strategy is designed to identify, monitor, and control vectors or WNV and EEEV. We are not strictly a nuisance control or mosquito eradication outfit; if residents live next to huge tracts of freshwater wetlands or forest swamps that are releasing thousands of mosquitoes by the second, there is very little we can do about that! Therefore, the Northeast Massachusetts Mosquito Control & Wetlands Management District strongly encourages you to continue to follow the recommendations outlined below to reduce your risk to exposure to mosquitoes and the viruses they can transmit:

- 1) WNV-carrier mosquito species are most active in late afternoons through the middle of the evening. If you are outdoors during this period, protect yourselves from potential mosquito bites. Apply insect repellents containing DEET to yourselves and your children; DEET is the only repellent that has been scientifically shown to be most effective in keeping mosquitoes away from you. However, it doesn't keep every single mosquito away and it must be repeatedly applied if you spend long periods of time outdoors. Follow **FAITHFULLY** the manufacturer's recommendations. If you do not want to use repellent, then keep your skin covered as much as possible while you are out. For more information on mosquito repellents, it is recommended you consult the Centers for Disease Control website (www.cdc.gov), enter "Mosquito Repellent" in the "Search box" and follow the links or you can click on the accompanying web address link (www.cdc.gov/ncidod/dvbid/westnile/mosquitorepellent.htm).
- 2) Periodically inspect your property for any structures that are holding water. These include containers, but also inspect uncovered garbage barrels, swimming pool covers, and discarded tires. An area NEVER inspected and a great breeding site is your rain gutter which when filled with leaves not only holds back water but becomes a wonderful nursery for raising mosquitoes. Check and clean those gutters on a regular basis. Also, place screens (and check for gaps!) on your windows and doors to keep mosquitoes from entering your homes. For more information about searching your property for mosquito breeding, check the New York State Department of Health website for the fact sheet entitled "Do Mosquitoes Love Your Home and Yard?" (www.health.state.ny.us/nysdoh/westnile/education/2747.htm)
- 3) If you live next door to abandoned property (especially if there is an unused swimming pool) that you suspect may be a source of mosquitoes, contact your town's Board of Health. They will contact the District and inspectors will be sent to see and deal with any potential/actual breeding.

Coquillettidia perturbans



(<http://bugguide.net>; Photo#26972)



Aedes japonicus