

CMMCP WEEKLY SURVEILLANCE REPORT



EPI week #31
July 31 – Aug. 6, 2022

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**Central Mass. Mosquito Control Project
Weekly Report- 7/31/22-8/6/22
EPI Week #31**

Cumulative Surveillance Summary

| Target Species | <i>Ae. vex</i> | <i>Cq. per</i> | <i>Cs. mel</i> | <i>Oc. can</i> | <i>Culex</i> | All Species |
|-----------------|----------------|----------------|----------------|----------------|--------------|-------------|
| No. Pools | 37 | 553 | 112 | 109 | 395 | 1985 |
| Total Specimens | 74 | 28964 | 480 | 1119 | 2779 | 35957 |
| No. Pools WNV + | 0 | 0 | 0 | 0 | 0 | 0 |
| No. Pools EEE + | 0 | 0 | 0 | 0 | 0 | 0 |

Weather Summary (Northborough, MA): The weather for this particular week averaged 78.27°F with a recorded high temperature of 98.90°F and a recorded low temperature of only 58.50°F. For this week there was also a total of 0.65 inches of rain observed. Compared to the previous week, it was approximately 1.33°F warmer on average, and rained about 0.49 inches more. There has been 0.65 inches of rain accumulated in August, after 1.74 inches for the month of July.

CMMCP Mosquito Summary-

Target Species Δ From Δ From Predominant Trap Site(s)
Last Week Last Year

| Target Species | Δ From Last Week | Δ From Last Year | Predominant Trap Site(s) |
|----------------------------------|------------------|------------------|----------------------------------|
| <i>Aedes vexans</i> | -14.29% | -96.61% | Berlin, Devens |
| <i>Coquilleltidia perturbans</i> | -29.24% | -33.77% | Devens, Fitchburg |
| <i>Culiseta melanura</i> | +63.64% | +91.85% | Holliston, Millville, Sturbridge |
| <i>Ochlerotatus canadensis</i> | -25.00% | -62.60% | Hudson, Lunenburg |
| <i>Culex</i> Species | -21.02% | -31.15% | Millbury, Grafton |
| All Species | -26.51% | -39.58% | Devens, Fitchburg |

The predominant mosquito for the week was *Coquilleltidia perturbans* followed by *Anopheles quadrimaculatus*.

General narrative:

The temperatures for EPI week 31 averaged approximately 1.33°F warmer than the previous week, with 0.65 inches of precipitation observed. *Coquilleltidia perturbans* has resumed declining, with surveillance trap collections decreasing by 29.24% compared to EPI week 30. Despite this weekly decline, *Coquilleltidia perturbans* was again the most abundant mosquito species for the week, now followed by *Anopheles quadrimaculatus*. The only target species to increase this past week was *Culiseta melanura*. All mosquito pools submitted in EPI week 30 to MDPH for arbovirus testing were negative.

Ae. albopictus egg collections:

| Epi week# | # eggs Collected | Epi week# | # eggs Collected |
|----------------------------------|------------------|--------------|------------------|
| 23 | 0 | 31 | TBD |
| 24 | 1,016 | 32 | |
| 25 | 1,580 | 33 | |
| 26 | 621 | 34 | |
| 27 | 1,823 | 35 | |
| 28 | 1,177 | 36 | |
| 29 | 1,074 | 37 | |
| 30 | 1,349 | 38 | |
| | | | |
| | TOTAL | 8,640 | |
| | | | |
| No ATM detections to date | | | |

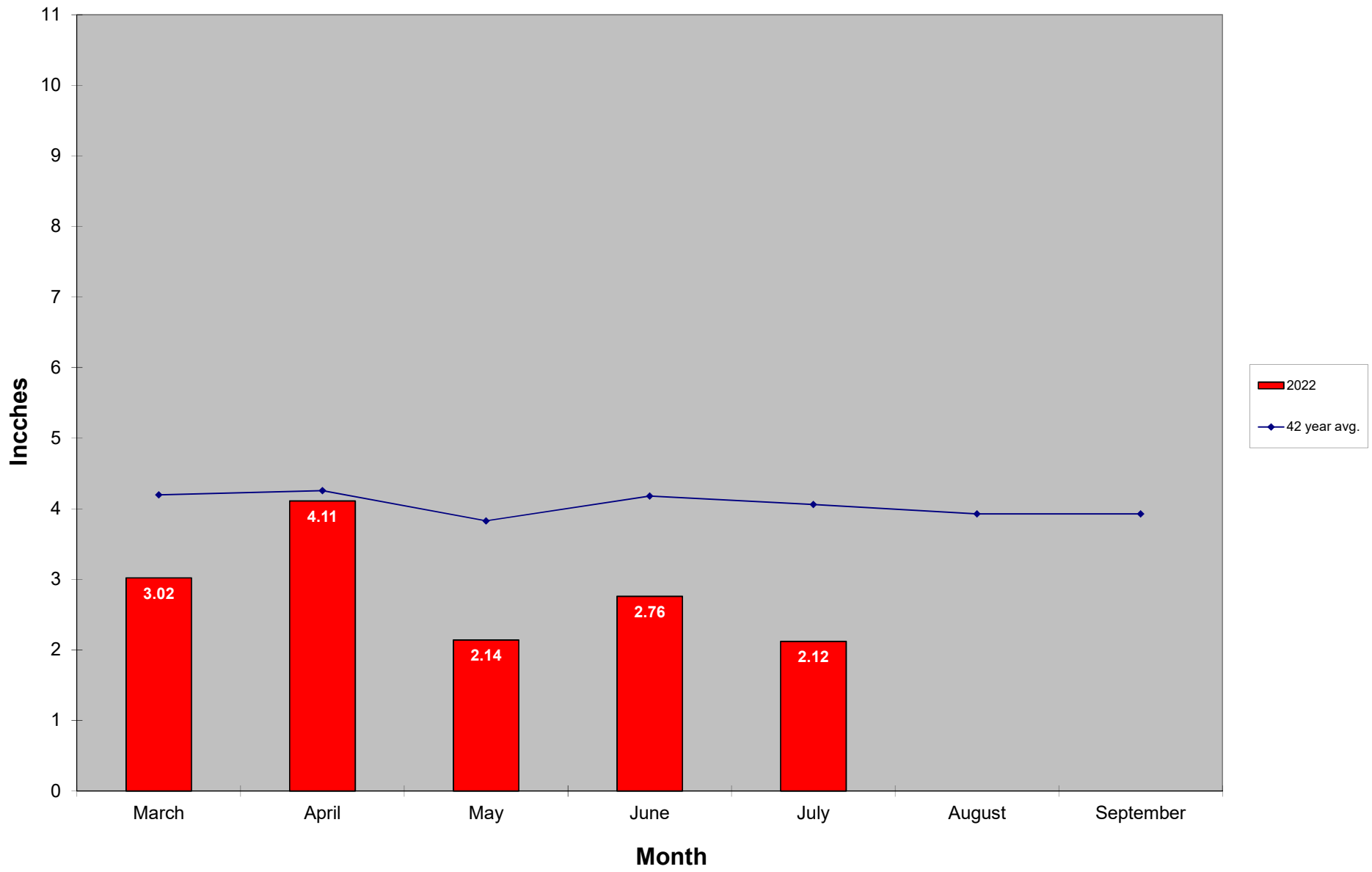
Operational notes:

Service requests are just slightly below the 19-year average but a 33.4% decrease over 2021 numbers to date. We began accepting service requests on May 31 and 10,021 requests have been closed from 10,425 total (4% open). Average temps have stabilized as have the *Cq. perturbans* populations so service calls have continued to drop off. Work crews began performing catch basins treatments for *Culex* control on May 16. 8,680 basins were treated in Epi week 31, with 79,037 catch basins treated to date intended to suppress *Culex* populations and lower risk of transmission from WNV by this species.

Enhanced larval control over 1,500 acres of *Cq. perturbans* habitat using Natular® G (spinosad) was done May 24 & 25 in 12-member communities designated as “Critical” risk from EEE in 2019. Adult and larval *Cq. perturbans* surveillance was conducted this season in these habitats in both treated and untreated areas. An advanced decrease was observed in the areas treated with Natular G, but all locations experienced gradual decreases in both larvae present and adult emergence. Between natural emergence and the drought conditions, new specimens have become near zero, and so these collections have ceased for 2022.

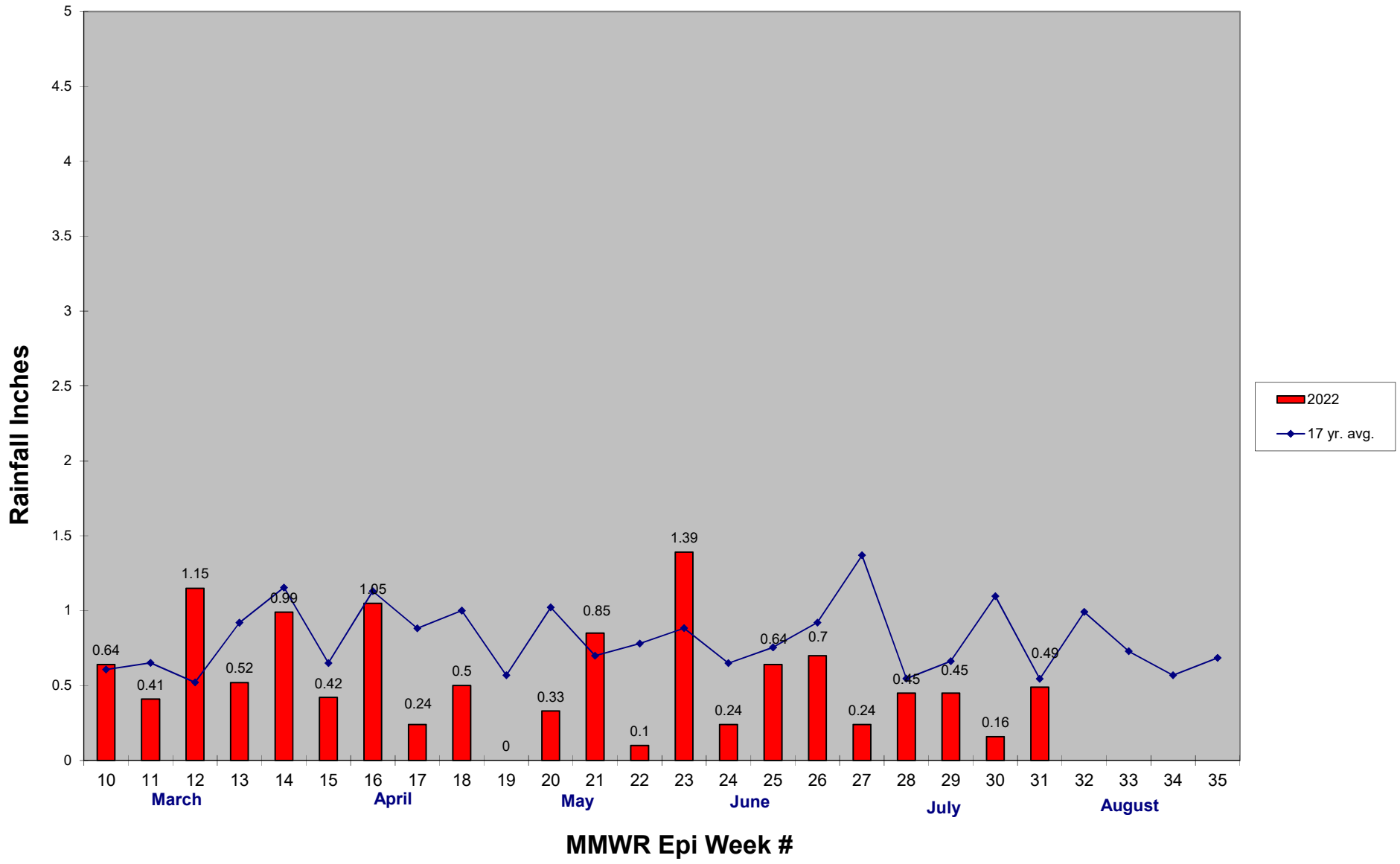
Recently conducted ULV efficacy trials in conjunction with Tufts School of Veterinary Medicine using CDC and BG-Counter traps indicate over 70% control following an application of Zenivex® E4. Specimens are currently being age-graded which could help identify whether mosquitoes collected post-spray are newly emerged and not present at the time of treatment. The results of this analysis could increase the degree of control achieved in the application. Initial comparisons of the BG-Counter traps with the CDC traps were very favorable. Additional ULV efficacy trials are scheduled for this season.

2022 Mass. Rainfall Data vs. 42 Year Average*



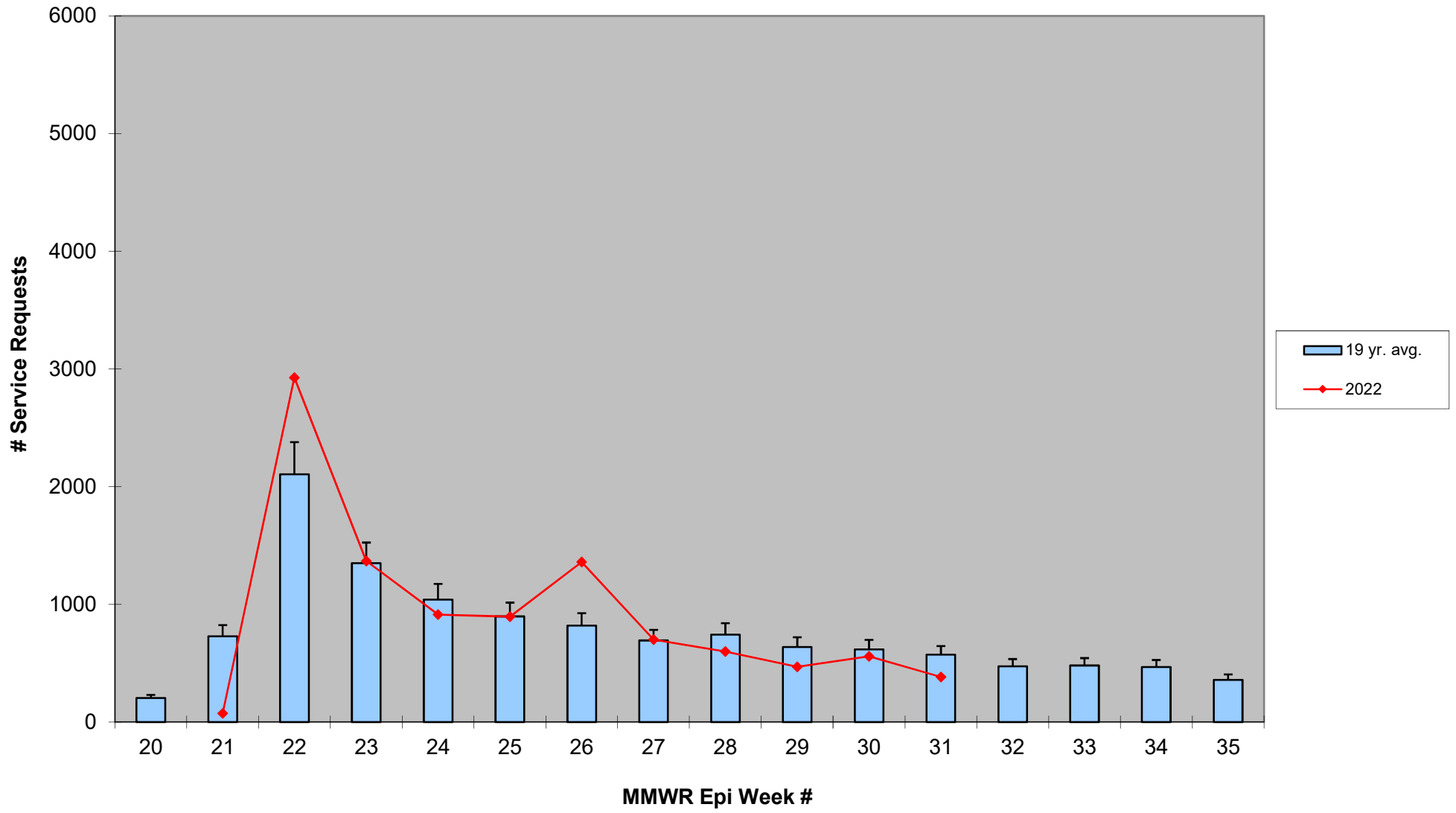
*source: <http://www.nrcc.cornell.edu/regional/tables/tables.html>

2022 CMMCP Weekly Rainfall vs. 17 Year Average*

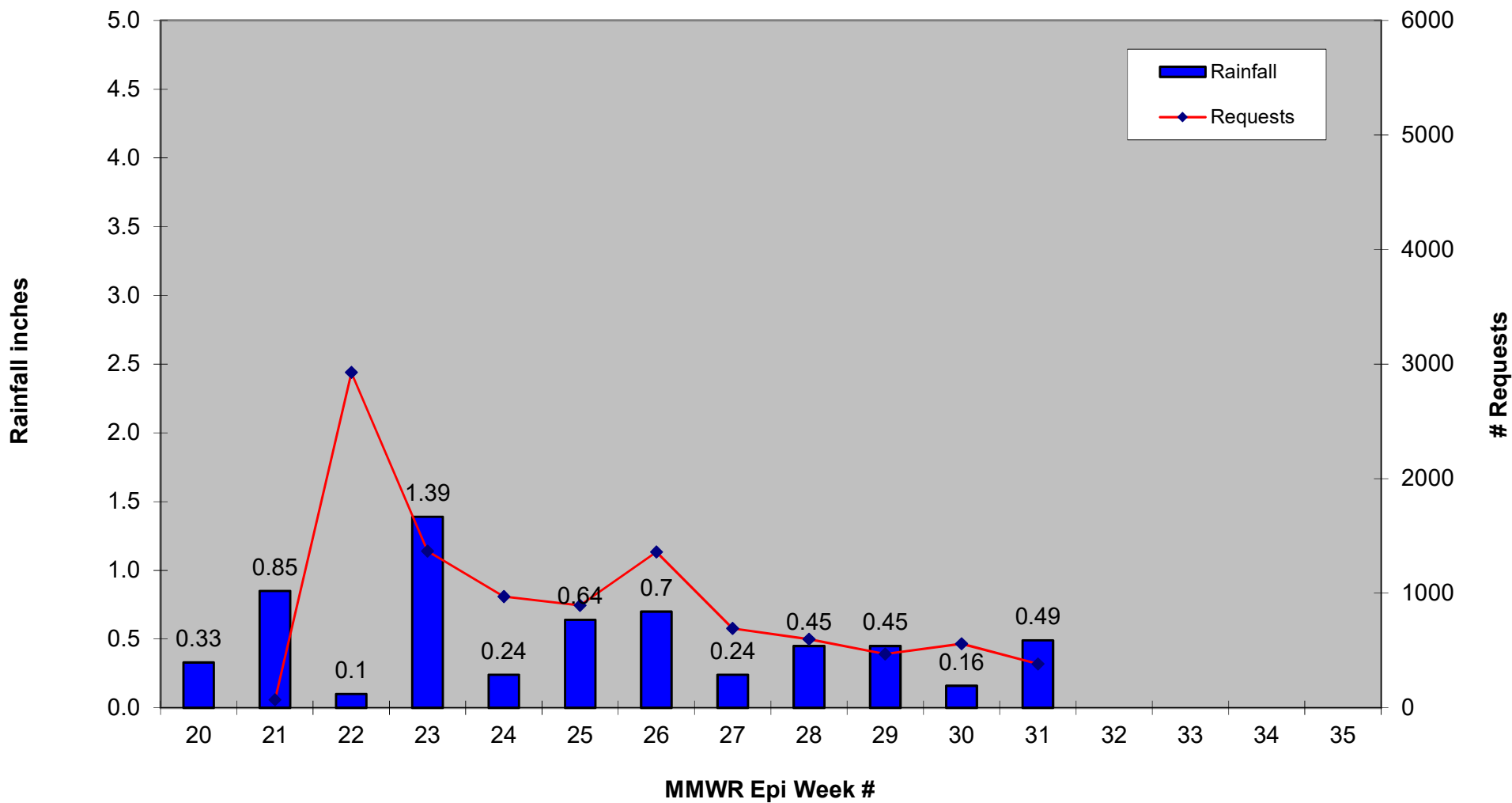


*source: CMMCP weather station Northborough, MA

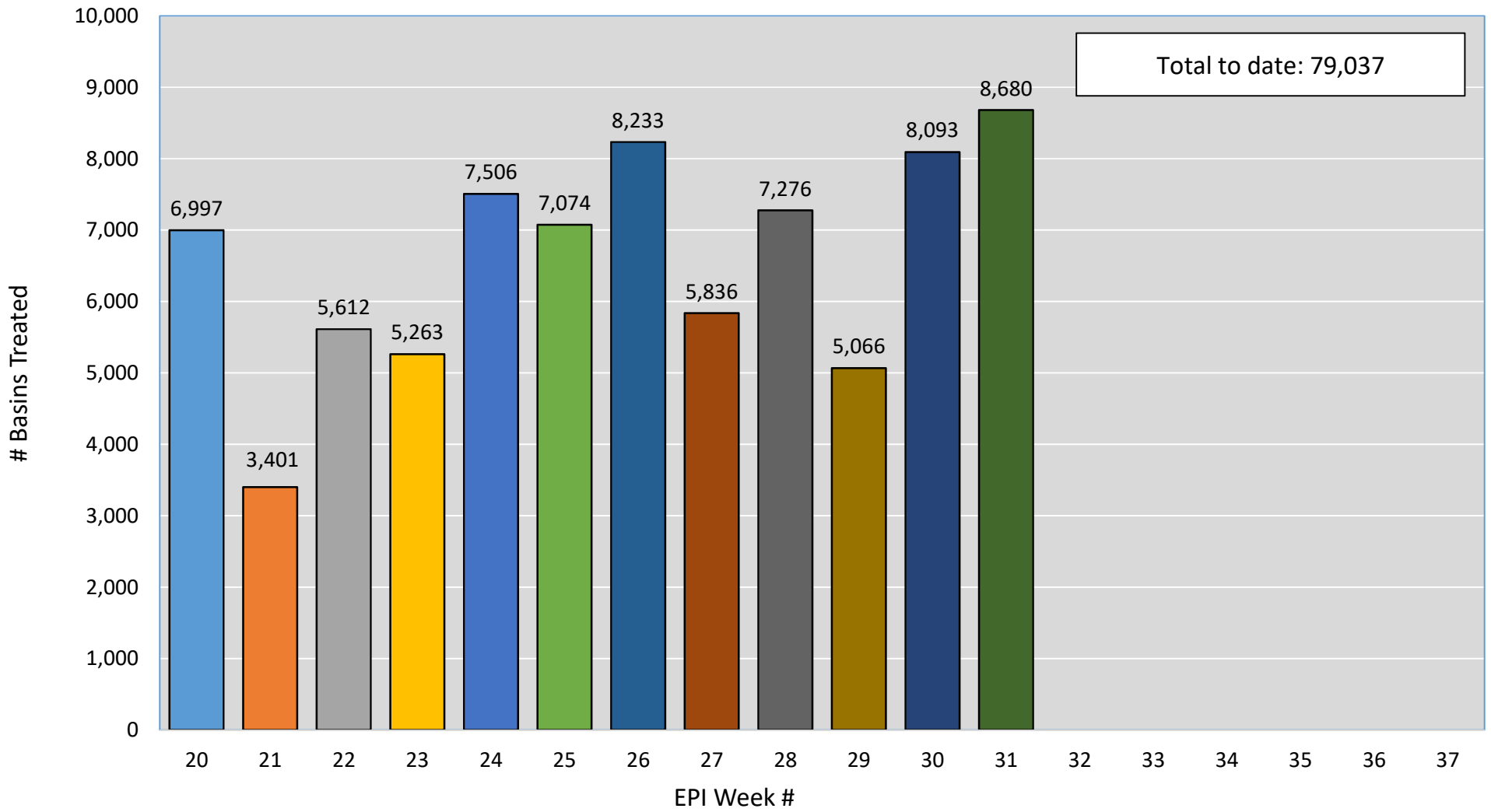
ULV Service Request History 2003-2022



2022 Rainfall vs. Requests



2022 Catch Basins Treated



2022 Mosquito Pools Submitted for Virus Testing

