

Central Mass. Mosquito Control Project
Weekly Report- 9/25/16-10/1/16
EPI Week #39

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	75	524	33	103	674	1769
Total Specimens	1156	51025	577	4826	14031	77870
No. Pools WNV +	0	2 [†]	0	0	14 [†]	16 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Hopkinton on 8/5/16

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Chelmsford on 8/16/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/19/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 8/23/16

[†]Pool of WNV+ *Culex* species collected in Westborough on 8/24/16

[†]Pool of WNV+ *Culex* species collected in Boylston on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 9/1/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 9/7/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 9/8/16

[†]Pool of WNV+ *Culex* species collected in Berlin on 9/8/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 9/13/16

[†]Pool of WNV+ *Culex* species collected in Clinton on 9/15/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 54.79°F with a recorded high temperature of 72.30°F and a recorded low temperature of only 35.50°F. There was 0.65 inches of precipitation observed this week. Compared to the previous week, it was approximately 8.17°F cooler on average, and rained 0.57 inches less. There has been 0.22 inches of rain accumulated in October, after 2.09 inches for the month of September.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	-47.73%	+2200%	Leominster, Gardner
<i>Coquillettidia perturbans</i>	-50.00%	-50.00%	Webster
<i>Culiseta melanura</i>	-100.0%	-100.0%	N/A
<i>Ochlerotatus canadensis</i>	-66.67%	+00.00%	Webster
<i>Culex</i> Species	-90.00%	-87.50%	Millbury
All Species	-67.48%	+33.33%	Millbury

The predominant mosquito for the week was *Culex pipiens/restuans* followed by *Aedes vexans*

*Low late season numbers may contribute to these comparisons being not as significant as they appear.

The temperature for EPI week 39 averaged approximately 8.17 degrees cooler than the previous week, with 0.65 inches of precipitation observed. At the CMMCP historical surveillance trap sites, the overall collection numbers decreased (-67.48%) over EPI week 38. All target species experienced reductions in population this surveillance period. The long-term surveillance locations once again showed an overall increase when compared to the 2015 season. Elevated levels of *Aedes vexans* influenced this yearly change. *Culex species* are currently the most abundant target mosquito in the CMMCP service area, with *Ae. vexans* the second most abundant species once again. This was the final week of mosquito surveillance for the 2016 season. Thirty egg papers were collected from CMMCP ovitraps this week. These produced only 14 eggs which will help gauge the presence of *Aedes albopictus* in central Massachusetts. No identifications of *Ae. albopictus* have been confirmed in 2016.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
EPI Week #32	20	19	985
EPI Week #33	10	10	147
EPI Week #34	35	33	1929
EPI Week #35	30	20	263
EPI Week #36	20	20	27
EPI Week #37	30	28	896
EPI Week #38	20	20	181
EPI Week #39	30	30	14
2016 Totals	337	285	8021

No virus confirmations were confirmed in Epi week 38.

For the year we received 153% more service requests than average; 15,281 requests compared to the 13 year average of 9,962. Routine adulticiding ended Sept. 1 due to decreasing service requests from residents and declining mosquito populations, but CMMCP work crews will be ready for arbovirus interventions as needed until the season ends.

Standard catch basin treatments totaling 79,618 have ended in all member communities. Our tire program has come off hiatus and we have begun collecting tires. We have 2 large tire piles to remove along with local stakeholder assistance, plus numerous curbside pickups have been scheduled and/or completed. Standard ditch maintenance jobs are lined up in all districts and projects have begun in earnest; all scheduled low flow maintenance projects with the excavator have been completed by the ACOE deadline of October 1.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project
Weekly Report- 9/18/16-9/24/16
EPI Week #38

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	68	523	33	102	668	1741
Total Specimens	1104	51024	577	4825	13955	77691
No. Pools WNV +	0	2 [†]	0	0	14 [†]	16 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Hopkinton on 8/5/16

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Chelmsford on 8/16/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/19/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 8/23/16

[†]Pool of WNV+ *Culex* species collected in Westborough on 8/24/16

[†]Pool of WNV+ *Culex* species collected in Boylston on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 9/1/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 9/7/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 9/8/16

[†]Pool of WNV+ *Culex* species collected in Berlin on 9/8/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 9/13/16

[†]Pool of WNV+ *Culex* species collected in Clinton on 9/15/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 66.96°F with a recorded high temperature of 86.40°F and a recorded low temperature of only 46.60°F. There was 1.22 inches of precipitation observed this week. Compared to the previous week, it was approximately 2.30°F warmer on average, and rained 1.11 inches more. There has been 1.66 inches of rain accumulated in September, after 2.75 inches for the month of August.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	-55.10%	+4300%	Westford, Webster
<i>Coquilleltidia perturbans</i>	-71.43%	-33.33%	Webster
<i>Culiseta melanura</i>	-25.00%	-82.35%	Tewksbury
<i>Ochlerotatus canadensis</i>	+200.0%	+200.0%	Webster, Berlin
<i>Culex</i> Species	+900.0%	+66.67%	Auburn, Stow
All Species	+10.81%	+310.0%	Webster, Auburn

The predominant mosquito for the week was *Culex pipiens/restuans* followed by *Aedes vexans*

*Low late season numbers may contribute to these comparisons being not as significant as they appear

The temperature for EPI week 38 averaged approximately 2.30 degrees warmer than the previous week, with 1.22 inches of precipitation observed. The majority of this precipitation occurred in a single sustained rain event. At the CMMCP historical surveillance trap sites, the overall collection numbers increased (+10.81%) over EPI week 37. An increase of *Culex species* was primarily responsible for this slight growth in mosquito specimens. *Culex species* and *Ochlerotatus canadensis* were the only target mosquitoes to increase in population this surveillance period. The long-term surveillance locations once again showed an overall increase when compared to the 2015 season. Elevated levels of *Culex species* and *Aedes vexans* influenced this yearly change. *Culex species* are currently the most abundant target mosquito in the CMMCP service area, with *Ae. vexans* the second most abundant species once again. Cool evening temperatures will likely impact surveillance collections for EPI week 39. Ten egg papers were collected from CMMCP ovitraps this week. These produced 123 eggs which will help gauge the presence of *Aedes albopictus* in central Massachusetts. No confirmation of this invasive species have been detected in our service area in 2016.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
EPI Week #32	20	19	985
EPI Week #33	10	10	147
EPI Week #34	35	33	1929
EPI Week #35	30	20	263
EPI Week #36	20	20	27
EPI Week #37	25	25	874
EPI Week #38	10	10	123
2016 Totals	292	242	7927

Two virus confirmations (all WNV) were received from Epi week 37, resulting in ULV applications in Epi week 38 in Auburn & Clinton after consultation with the LBOH. Millbury was also sprayed in Epi week 38 from a WNV confirmation in Epi week 36; weather delayed our response. Catch basins were treated and/or retreated in the affected areas. Enhanced adult mosquito surveillance was performed.

For the year we received 153% more service requests than average; 15,281 requests compared to the 13 year average of 9,962. Routine adulticiding ended Sept. 1 due to decreasing service requests from residents and declining mosquito populations, but CMMCP work crews will be ready for arbovirus interventions as needed until the season ends.

Standard catch basin treatments totaling 79,271 have ended in all member communities. Our tire program has come off hiatus and we have begun collecting tires. We have 2 large tire piles to remove along with local stakeholder assistance, plus numerous curbside pickups have been scheduled and/or completed. Standard ditch maintenance jobs are lined up in all districts and

projects have begun in earnest; all scheduled low flow maintenance projects with the excavator have been completed by the ACOE deadline of October 1.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 9/11/16-9/17/16 EPI Week #37

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	60	522	32	100	641	1680
Total Specimens	984	51022	574	4822	13715	77161
No. Pools WNV +	0	2 [†]	0	0	12 [†]	14 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Hopkinton on 8/5/16

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Chelmsford on 8/16/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/19/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 8/23/16

[†]Pool of WNV+ *Culex* species collected in Westborough on 8/24/16

[†]Pool of WNV+ *Culex* species collected in Boylston on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 9/1/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 9/7/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 9/8/16

[†]Pool of WNV+ *Culex* species collected in Berlin on 9/8/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 64.66°F with a recorded high temperature of 87.10°F and a recorded low temperature of only 44.90°F. There was 0.11 inches of precipitation observed this week. Compared to the previous week, it was approximately 4.98°F cooler on average, and rained 0.22 inches less. There has been 0.44 inches of rain accumulated in September, after 2.75 inches for the month of August.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	+292.0%	+9700%	Leominster, Chelmsford, Tewksbury
<i>Coquillettidia perturbans</i>	-41.67%	+75.00%	Webster, Littleton
<i>Culiseta melanura</i>	+00.00%	+100.0%	Tewksbury
<i>Ochlerotatus canadensis</i>	-100.0%	+00.00%	N/A
<i>Culex</i> Species	-96.00%	-75.00%	Tewksbury, Auburn
All Species	-3.480%	+909.1%	Tewksbury, Auburn

The predominant mosquito for the week was *Culex pipiens/restuans*. followed by *Aedes vexans*

*Low late season numbers may contribute to these comparisons being not as significant as they appear

The temperature for EPI week 37 averaged approximately 4.98 degrees cooler than the previous week, with only 0.11 inches of precipitation observed. At the CMMCP historical surveillance trap sites, the overall collection numbers decreased (-3.48%) over EPI week 36. A large decrease in *Culex* species was primarily responsible for this drop in mosquito specimens. The only target species to increase in population this surveillance period was *Aedes vexans*. The long-term surveillance locations once again showed an overall increase when compared to the 2015 season. Elevated levels of *Coquillettidia perturbans* and *Ae. vexans* influenced this yearly change. *Culex* species are currently the most abundant target mosquito in the CMMCP service area, with *Ae. vexans* the second most abundant species once again. Fifteen egg papers were collected from CMMCP ovitraps this week. These produced 557 eggs which will help gauge the presence of *Aedes albopictus* in central Massachusetts. No identifications of *Ae. albopictus* have been confirmed in 2016.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
EPI Week #32	20	19	985
EPI Week #33	10	10	147
EPI Week #34	35	33	1929
EPI Week #35	30	20	263
EPI Week #36	20	20	27
EPI Week #37	15	15	557
2016 Totals	272	222	7487

Three virus confirmations (all WNV) were received from Epi week 36, resulting in ULV application in Epi week 37 in Auburn & Berlin, with an application scheduled in Millbury in Epi week 38. The areas in Auburn & Berlin were sprayed September 15 after consultation with the LBOH. Catch basins were treated and/or retreated in the affected areas. Enhanced adult mosquito surveillance was performed.

For the year we received 153% more service requests than average; 15,281 requests compared to the 13 year average of 9,962. Routine adulticiding ended Sept. 1 due to decreasing service requests from residents and declining mosquito populations, but CMMCP work crews will be ready for arbovirus interventions as needed until the season ends.

Standard catch basin treatments (currently totaling 75,890) will continue in all member communities and will end this week. With scattered reports of rain in our region, we have been pushing the message through social media and other outlets to "Dump and Drain" to minimize larval populations that use these habitats to develop. Our tire program has come off hiatus and we have begun collecting tires. We have 2 large tire piles to remove along with local stakeholder assistance, plus numerous curbside pickups to be scheduled. Standard ditch maintenance jobs

are lined up in all districts and will begin in a few weeks, and we have begun some low flow maintenance projects with the excavator that will need to be completed by October 1 as per Army Corps regulations.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 9/4/16-9/10/16 EPI Week #36

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	48	520	31	100	612	1627
Total Specimens	705	51009	570	4822	13215	76321
No. Pools WNV +	0	2 [†]	0	0	9 [†]	11 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Hopkinton on 8/5/16

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Chelmsford on 8/16/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/19/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 8/23/16

[†]Pool of WNV+ *Culex* species collected in Westborough on 8/24/16

[†]Pool of WNV+ *Culex* species collected in Boylston on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 9/1/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 69.64°F with a recorded high temperature of 90.40°F and a recorded low temperature of only 50.80°F. There was 0.33 inches of precipitation observed this week. Compared to the previous week, it was approximately 0.37°F cooler on average, and rained 0.33 inches more. There has been 0.33 inches of rain accumulated in September, after 2.75 inches for the month of August.

CMMCP Mosquito Summary*-

Target Species	Δ From Last Week	Δ From Last Year	Predominant Trap Site(s)
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<i>Aedes vexans</i>	-87.05%	+56.25%	Webster, Shrewsbury, Blackstone
<i>Coquillettidia perturbans</i>	-90.16%	-70.73%	Sturbridge, Webster
<i>Culiseta melanura</i>	+300.0%	-42.86%	Tewksbury
<i>Ochlerotatus canadensis</i>	+00.00%	+00.00%	Webster
<i>Culex</i> Species	+00.00%	+38.89%	Hudson, Berlin, Tewksbury
All Species	-76.48%	+8.49%	Hudson, Webster

The predominant mosquito for the week was *Culex pipiens/restuans*. followed by *Aedes vexans*

*Low late season numbers may contribute to these comparisons being not as significant as they appear

The temperature for EPI week 36 averaged approximately 0.37 degrees cooler than the previous week, with only 0.33 inches of precipitation observed. At the CMMCP historical surveillance trap sites, the overall collection numbers decreased (-76.48%) over EPI week 35. A large decrease in *Aedes vexans* and *Coquilleltidia perturbans* largely accounted for this drop in mosquito specimens. The only target species to increase in population this surveillance period was *Culiseta melanura*, although this increase represented only a few individuals over a very low previous week for the species. The long-term surveillance locations once again showed an overall increase when compared to the 2015 season. The elevated levels of *Culex* species and *Ae. vexans* influenced this yearly change. *Culex* species are currently the most abundant target mosquito in the CMMCP service area, with *Ae. vexans* now the second most abundant species, replacing *Cq. perturbans*. Fifteen egg papers were collected from CMMCP ovitraps this week. These produced only 27 eggs which will help gauge the presence of *Aedes albopictus* in central Massachusetts. No *Ae. albopictus* eggs have been identified this season.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
EPI Week #32	20	19	985
EPI Week #33	10	10	147
EPI Week #34	35	33	1929
EPI Week #35	30	20	263
EPI Week #36	15	15	27
2016 Totals	252	202	6930

One virus confirmation (WNV) was received in Epi week 36 in Millbury. The area was sprayed September 8 after consultation with the LBOH. The Boylston WNV application was delayed by the LBOH to get the word out to the public. Impacts from TD Hermine delayed the application and it was done Sept. 8. Catch basins were treated or retreated in the affected areas. Enhanced adult mosquito surveillance was performed.

For the year we received 153% more service requests than average; 15,281 requests compared to the 13 year average of 9,962. Routine adulticiding ended Sept. 1 due to decreasing service requests from residents and declining mosquito populations, but CMMCP work crews will be ready for arbovirus interventions as needed until the season ends.

Standard catch basin treatments (currently totaling 72,907) will continue in all member communities and will wind down next week. With scattered reports of rain in our region, we have been pushing the message through social media and other outlets to "Dump and Drain" to minimize larval populations that use these habitats to develop. Our tire program has come off hiatus and we have begun collecting tires. We have 2 large tire piles to remove along with local stakeholder assistance, plus numerous curbside pickups to be scheduled. Standard ditch maintenance jobs are lined up in all districts and will begin in a few weeks, and we have begun

some low flow maintenance projects with the excavator that will need to be completed by October 1 as per Army Corps regulations.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 8/28/16-9/3/16 EPI Week #35

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	38	512	30	99	577	1554
Total Specimens	612	50959	566	4821	12761	75606
No. Pools WNV +	0	2 [†]	0	0	8 [†]	10 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Hopkinton on 8/5/16

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Chelmsford on 8/16/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/19/16

[†]Pool of WNV+ *Culex* species collected in Auburn on 8/23/16

[†]Pool of WNV+ *Culex* species collected in Westborough on 8/24/16

[†]Pool of WNV+ *Culex* species collected in Boylston on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/25/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 70.01°F with a recorded high temperature of 87.70°F and a recorded low temperature of only 51.90°F. There was no significant precipitation observed this week. Compared to the previous week, it was approximately 2.43°F cooler on average, and rained 0.92 inches less. There has been 0.00 inches of rain accumulated in September, after 2.75 inches for the month of August.

CMMCP Mosquito Summary*-

Target Species	Δ From Last Week	Δ From Last Year	Predominant Trap Site(s)
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<i>Aedes vexans</i>	+271.2%	+19200%	Webster, Gardner, Millbury
<i>Coquilleltidia perturbans</i>	+7.02%	+52.50%	Webster, Westford
<i>Culiseta melanura</i>	-66.67%	-83.33%	Tewksbury
<i>Ochlerotatus canadensis</i>	-80.00%	+100.0%	Webster
<i>Culex</i> Species	-39.02%	-48.98%	Boxborough, Millbury, Gardner
All Species	+58.25%	+256.9%	Webster, Boxborough, Millbury

The predominant mosquito for the week was *Culex pipiens/restuans*. followed by *Coquilleltidia perturbans*

The temperature for EPI week 35 averaged approximately 2.43 degrees cooler than the previous week, with zero significant precipitation observed. At the CMMCP historical surveillance trap sites, the overall collection numbers increased (+58.25%) over EPI week 34. This was due

primarily to an increase in *Aedes vexans* and *Coquilleltidia perturbans*, but additionally there was a large emergence of *Psorophora ferox*.

All other target species decreased in population this surveillance period. The long-term surveillance locations once again showed a significant overall increase when compared to the 2015 season. The elevated levels of *Cq. perturbans* and *Ae. vexans* influenced this yearly change. *Culex* species are currently the most abundant target mosquito in the CMMCP service area, with *Cq. perturbans* the second most abundant mosquito. Twenty-five egg papers were collected from CMMCP ovitraps this week. These produced 262 eggs which will help gauge the presence/absence of *Aedes albopictus* in central Massachusetts. No *Ae. albopictus* has been identified in our service area in 2016.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
EPI Week #32	20	19	985
EPI Week #33	10	10	147
EPI Week #34	35	33	1929
EPI Week #35	25	15	262
2016 Totals	232	182	6902

Four virus confirmations were received in Epi week 35, in Auburn, Boylston, Millbury and Westboro. Auburn and Westboro were sprayed September 1 after consultation with the LBOH, and the Millbury area was previously treated. Boylston asked to wait until Epi week 36 for an application to get the word out to the public. Impacts from TD Hermine may affect/delay the application. Catch basins were treated or retreated in the affected areas. Enhanced adult mosquito surveillance was performed.

For the year we received 153% more service requests than average; 15,281 requests compared to the 13 year average of 9,962. Service requests decreased 43.2% from the previous week; 261 in Epi week 35 compared to 374 in Epi week 34. Routine adulticiding ended Sept. 1 due to decreasing service requests from residents and declining mosquito populations, but CMMCP work crews will be ready for arbovirus interventions as needed until the season ends.

Standard catch basin treatments (currently totaling 67,687) will continue in all member communities and will wind down soon. With scattered reports of rain in our region, we have been pushing the message through social media and other outlets to "Dump and Drain" to minimize larval populations that use these habitats to develop. Our tire program has come off hiatus and we have begun collecting tires. We have 2 large tire piles to remove along with local stakeholder assistance, plus numerous curbside pickups to be scheduled. Standard ditch maintenance jobs are lined up in all districts and will begin in a few weeks, and we have begun some low flow maintenance projects with the excavator that will need to be completed by October 1 as per Army Corps regulations.

Central Mass. Mosquito Control Project Weekly Report- 8/21/16-8/27/16 EPI Week #34

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	26	494	29	98	533	1458
Total Specimens	330	50670	565	4820	11850	73939
No. Pools WNV +	0	2 [†]	0	0	3 [†]	5 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquillettidia perturbans* collected in Hopkinton on 8/5/16

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Chelmsford on 8/16/16

[†]Pool of WNV+ *Culex* species collected in Millbury on 8/19/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 72.44°F with a recorded high temperature of 89.00°F and a recorded low temperature of only 50.90°F. There was 0.92 inches of precipitation observed this week. Compared to the previous week, it was approximately 3.20°F cooler on average, and rained 0.48 inches more. There has been 2.75 inches of rain accumulated in August, after 1.62 inches for the month of July.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	+642.9%	+5100%	Millbury, Webster, Leominster
<i>Coquillettidia perturbans</i>	-59.29%	+93.22%	Westford, Webster, Boxborough
<i>Culiseta melanura</i>	-57.14%	-40.00%	Tewksbury
<i>Ochlerotatus canadensis</i>	-50.00%	+400.0%	Webster
<i>Culex</i> Species	-78.07%	+46.43%	Northbridge, Westford, Westborough
All Species	-48.07%	+225.3%	Northbridge, Westford, Webster

The predominant mosquito for the week was *Culex pipiens/restuans*. followed by *Coquillettidia perturbans*

The temperature for EPI week 34 averaged approximately 3.20 degrees cooler than the previous week, with almost 0.92 inches of precipitation observed. At the CMMCP historical surveillance trap sites, the overall collection numbers continued to decrease (-48.07%) over EPI week 33. This was due primarily to a decrease in *Coquillettidia perturbans* and *Culex* mosquitoes. Of the target species, only *Aedes vexans* increased in population this surveillance period. Despite the decrease from EPI week 33, the long-term surveillance locations once again showed a significant overall increase when compared to the 2015 season. The elevated levels of *Cq. perturbans* and *Ae. vexans* influenced this yearly change. *Culex* species are currently the most abundant target mosquito in the CMMCP service area, with *Cq. perturbans* the second most abundant mosquito. Thirty-five egg papers were collected from CMMCP ovitraps this week. These produced 1,929

eggs which will help gauge the presence of *Aedes albopictus* in central Massachusetts. This was the largest weekly collection of eggs from ovitraps this year.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
EPI Week #32	20	19	985
EPI Week #33	10	10	147
EPI Week #34	35	33	1929
2016 Totals	207	167	6640

Two virus confirmations were received in Epi week 34, in Chelmsford and Millbury. Chelmsford was sprayed August 24, and Millbury August 25 after consultation with both LBOH. Catch basins were treated in the Chelmsford area, and in Millbury we retreated the catch basins. Enhanced adult mosquito surveillance was performed.

For the year we received 154% more service requests than average; 15,020 requests compared to the 13 year average of 9,705. Service requests increased 2.2% from the previous week; 374 in Epi week 34 compared to 306 in Epi week 33. Routine adulticiding will end Sept. 1 due to decreasing service requests from residents and declining mosquito populations, but CMMCP work crews will be ready for arbovirus interventions as needed until the season ends.

Standard catch basin treatments (currently totaling 63,353) will continue in all member communities and will wind down soon. With scattered reports of rain in our region, we have been pushing the message through social media and other outlets to "Dump and Drain" to minimize larval populations that use these habitats to develop. Our tire program has come off hiatus and we have again begun collecting tires. We have 2 large tire piles to remove along with local stakeholder assistance, plus numerous curbside pickups to be scheduled. Standard ditch maintenance jobs are lined up in all districts and will begin in a few weeks, and we have begun some low flow maintenance projects with the excavator that will need to be completed by October 1 as per Army Corps regulations.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 8/14/16-8/20/16 EPI Week #33

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	17	106	28	97	467	1339
Total Specimens	181	474	562	4815	10387	71672
No. Pools WNV +	0	2 [†]	0	0	1 [†]	3 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Hopkinton on 8/5/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 75.64°F with a recorded high temperature of 93.10°F and a recorded low temperature of only 60.20°F. There was 0.44 inches of precipitation observed this week. Compared to the previous week, it was approximately 0.15°F cooler on average, and rained 0.31 inches less. There has been 1.83 inches of rain accumulated in August, after 1.62 inches for the month of July.

CMMCP Mosquito Summary*-

Target Species	Δ From Last Week	Δ From Last Year	Predominant Trap Site(s)
<i>Aedes vexans</i>	+75.00%	+40.00%	Millbury, Chelmsford, Shrewsbury
<i>Coquillettidia perturbans</i>	-67.33%	+169.2%	Webster, Millbury, Sturbridge
<i>Culiseta melanura</i>	+250.0%	-12.50%	Tewksbury
<i>Ochlerotatus canadensis</i>	-78.72%	+900.0%	Webster, Berlin, Leominster
<i>Culex</i> Species	+163.4%	+325.0%	Holliston, Milford
All Species	-47.72%	+254.2%	Holliston, Millbury, Webster

The predominant mosquito for the week was *Culex pipiens/restuans*. followed by *Coquilleltidia perturbans*

The temperature for EPI week 33 averaged approximately 0.15 degrees cooler than the previous week, with almost 0.44 inches of precipitation observed. At the CMMCP historical surveillance trap sites, the overall collection numbers continued to decrease (-47.72%) over EPI week 32. This was due primarily to another decrease in *Coquillettidia perturbans*. Of the target species, *Aedes vexans*, *Culiseta melanura*, and *Culex* increased in population, while *Cq. perturbans* and *Ochlerotatus canadensis* decreased this surveillance period. Despite the decrease from EPI week 32, the long-term surveillance locations once again showed a significant overall increase when compared to the 2015 season. The elevated levels of *Cq. perturbans* influenced this yearly change. *Culex* species are currently the most abundant target mosquito in the CMMCP service area, with *Cq. perturbans* the second most abundant mosquito. Five egg papers were collected from CMMCP ovitraps this week. These produced 147 eggs which will help gauge the presence of *Aedes albopictus* in central Massachusetts.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524

EPI Week #32	20	19	985
EPI Week #33	5	5	147
2016 Totals	167	129	4711

No virus confirmation were received for Epi week 33.

For the year we received 156% more service requests than average; 14,646 requests compared to the 13 year average of 9,368. Service requests decreased 5.3% from the previous week; 306 in Epi week 33 compared to 470 in Epi week 32.

Standard catch basin treatments continue in all member towns. With scattered reports of rain, some heavy, in our region, we have been pushing the message through social media and other outlets to "Dump and Drain" to minimize larval populations that use these habitats to develop.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 8/7/16-8/13/16 EPI Week #32

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	12	433	27	94	393	1197
Total Specimens	95	48853	555	4805	8442	68132
No. Pools WNV +	0	2 [†]	0	0	1 [†]	3 [†]
No. Pools EEE +	0	0	0	0	0	0

[†]Pool of WNV+ *Culex pipiens/restuans* complex collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Auburn on 8/2/16

[†]Pool of WNV+ *Coquilleltidia perturbans* collected in Hopkinton on 8/5/16

Weather Summary (Northborough, MA): The weather for this particular week averaged 75.79°F with a recorded high temperature of 94.70°F and a recorded low temperature of only 56.30°F. There was 0.75 inches of precipitation observed this week. Compared to the previous week, it was approximately 5.12°F warmer on average, and rained 0.04 inches more. There has been 1.39 inches of rain accumulated in August, after 1.62 inches for the month of July.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	-66.67%	+300.0%	Shrewsbury, Gardner
<i>Coquilleltidia perturbans</i>	-71.25%	+260.1%	Webster, Westford
<i>Culiseta melanura</i>	-92.59%	-66.67%	Berlin
<i>Ochlerotatus canadensis</i>	-41.25%	+4600%	Webster
<i>Culex</i> Species	-55.35%	+77.50%	Westford, Holliston
All Species	-67.31%	+280.6%	Webster, Westford

The predominant mosquito for the week was *Coquilleltidia perturbans* followed by *Culex pipiens/restuans*.

The temperature for EPI week 32 averaged approximately 5.12 degrees warmer than the previous week, with only almost 0.75 inches of precipitation observed. At historical surveillance

trap sites, the overall collection numbers decreased by 67.31% over EPI week 31, primarily due to a decrease in *Coquillettidia perturbans*. All target species decreased for EPI week 32. Despite the decrease from EPI week 31, the long-term surveillance locations showed a significant overall increase when compared to the 2015 season, due again primarily because of the change in the *Cq. perturbans* population. This species was once again the most abundant target mosquito in the CMMCP service area, with *Cx. pipiens/restuans* the second most abundant mosquito. *Cq. perturbans* will likely remain the predominant species for EPI week 33. Fourteen egg papers were collected from fifteen CMMCP ovitraps this week. These produced 941 eggs which will help monitor for the presence of *Aedes albopictus* in central Massachusetts.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
EPI Week #32	15	14	941
2016 Totals	157	119	4520

Our first confirmation of West Nile Virus were in the towns of Auburn & Hopkinton on August 10. After consultation with the local Boards of Health, spraying was done in the affected areas August 11. Catch basins treatments were performed in these areas as necessary. Confirmation of WNV in nearby Grafton (a non-member town) on August 12 has prompted our surveillance team to determine if additional trapping is necessary in the bordering towns of Millbury & Shrewsbury.

For the year we received 159% more service requests than average; 14,340 requests compared to the 13 year average of 9,012. Service requests increased 5.3% from the previous week; 470 in Epi week 32 compared to 446 in Epi week 31.

Standard catch basin treatments continue in all member towns. With scattered reports of rain, some heavy, in our region, we have been pushing the message through social media and other outlets to "Dump and Drain" to minimize larval populations that use these habitats to develop.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 7/31/16-8/6/16 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	7	383	26	91	355	1078
Total Specimens	54	46475	553	4758	7739	64725

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 70.67°F with a recorded high temperature of 88.30°F and a recorded low temperature of only 53.80°F. There was 0.71 inches of precipitation observed this week. Compared to the previous week, it was approximately 7.00°F cooler on average, and rained 0.51 inches more. There has been 0.64 inches of rain accumulated in August, after 1.62 inches for the month of July.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	+1100%	+1100%	Chelmsford, Webster
<i>Coquillettidia perturbans</i>	+19.00%	+1391%	Webster, Berlin
<i>Culiseta melanura</i>	+575.0%	-28.95%	Tewksbury, Millville
<i>Ochlerotatus canadensis</i>	+3.900%	+7900%	Webster, Leominster
<i>Culex</i> Species	-37.40%	+189.1%	Berlin, Holliston
All Species	+10.02%	+1088%	Webster, Berlin

The predominant mosquito for the week was *Coquillettidia perturbans* followed by *Culex pipiens/restuans*.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
EPI Week #31	15	10	524
2016 Totals	142	105	3579

The temperature for EPI week 31 averaged approximately 7.00 degrees cooler than the previous week, with only almost 0.71 inches of precipitation observed. At historical surveillance trap sites, the overall collection numbers increased by 10.02% over EPI week 30, primarily due to an increase of *Coquillettidia perturbans*. The only target species to experience a decrease for EPI week 31 was *Culex pipiens/restuans*. The long-term surveillance locations showed a significant overall increase when compared to the 2015 season, due again primarily because of the change in the *Cq. perturbans* population. This species was once again the most abundant target mosquito in the CMMCP service area, with *Cx. pipiens/restuans* the second most abundant mosquito. *Cq. perturbans* will likely remain the predominant species for EPI week 32. Ten egg papers were collected from fifteen CMMCP ovitraps this week. These produced 524 eggs which will help monitor for the presence of *Aedes albopictus* in central Massachusetts.

For the year we received 160% more service requests than average; 13,870 requests compared to the 13 year average of 8,648. Service requests decreased 31.3% from the previous week; 586 in Epi week 30 compared to 446 in Epi week 31.

Standard catch basin treatments continue in all member towns. With scattered reports of rain, some heavy, in our region, we have been pushing the message through social media and other outlets to “Dump and Drain” to minimize larval populations that use these habitats to develop.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 7/24/16-7/30/16 EPI Week #30

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	4	344	24	88	310	968
Total Specimens	21	42341	521	4678	6881	59327
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 77.67°F with a recorded high temperature of 94.90°F and a recorded low temperature of only 60.10°F. There was 0.20 inches of precipitation observed this week. Compared to the previous week, it was approximately 1.90°F warmer on average, and rained 0.26 inches less. There has been 1.55 inches of rain accumulated in July, after 1.32 inches for the month of June.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	+00.00%	+00.00%	N/A
<i>Coquillettidia perturbans</i>	-51.03%	+390.2%	Leominster, Berlin
<i>Culiseta melanura</i>	-55.56%	-85.19%	Holliston
<i>Ochlerotatus canadensis</i>	-33.04%	+3750%	Berlin
<i>Culex</i> Species	+40.33%	+273.5%	Holliston, Boylston
All Species	-43.54%	+395.2%	Leominster, Berlin

The predominant mosquito for the week was *Coquillettidia perturbans* followed by *Culex pipiens/restuans*.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #22	15	7	0
EPI Week #23	-	-	-
EPI Week #24	5	2	49
EPI Week #25	15	6	93
EPI Week #26	17	17	19
EPI Week #27	25	19	1180
EPI Week #28	25	25	1020
EPI Week #29	10	7	62
EPI Week #30	15	12	632
2016 Totals	127	95	3055

The temperatures for EPI week 30 averaged approximately 1.90 degrees warmer than the previous week, with only almost 0.20 inches of precipitation observed. At historical surveillance trap sites, the overall collection numbers decreased by 43.54% over EPI week 29, primarily due to a significant reduction in *Coquillettidia perturbans*. The only target species to experience an increase for EPI week 30 was *Culex pipiens/restuans*. Although collection numbers decreased from the previous week, these long-term surveillance locations showed an overall increase when compared to the 2015 season. *Cq. perturbans* was once again the most abundant species in the CMMCP service area, with *Cx. pipiens/restuans* the second most abundant mosquito. *Cq. perturbans* will likely remain the predominant species for EPI week 31. Twelve egg papers were collected from fifteen CMMCP ovitraps this week. These produced 632 eggs which will help monitor for the presence of *Aedes albopictus* in central Massachusetts.

For the year we received 164% more service requests than average; 13,424 requests compared to the 13 year average of 8,169. Service requests decreased 21.3% from the previous week; 711 in Epi week 29 compared to 586 in Epi week 30.

Standard catch basin treatments continue in all member towns. With scattered reports of rain, some heavy, in our region, we have been pushing the message through social media and other outlets to “Dump and Drain” to minimize larval populations that use these habitats to develop.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 7/17/16-7/23/16 EPI Week #29

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	3	283	23	87	265	837
Total Specimens	14	37351	517	4601	5746	52714
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 75.77°F with a recorded high temperature of 95.20°F and a recorded low temperature of only 52.20°F. There was 0.46 inches of precipitation observed this week. Compared to the previous week, it was approximately 2.74°F warmer on average, and rained 0.14 inches more. There has been 1.35 inches of rain accumulated in July, after 1.32 inches for the month of June.

CMMCP Mosquito Summary-

Target Species	Δ From Last Week	Predominant Trap Site(s)
<i>Aedes vexans</i>	+00.00%	N/A
<i>Coquillettidia perturbans</i>	+82.94%	Leominster, Webster, Holliston
<i>Culiseta melanura</i>	-30.77%	Tewksbury, Boylston
<i>Ochlerotatus canadensis</i>	-76.34%	Webster, Holliston, Berlin
<i>Culex</i> Species	+432.4%	Milford, Millbury, Auburn
All Species	+58.89%	Leominster, Webster, Holliston

The predominant mosquito for the week was *Coquillettidia perturbans* followed by *Culex pipiens/restuans*.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #29	5	2	0
2016 Totals	107	78	2361

The temperatures for EPI Week 29 averaged 2.74 degrees warmer than the previous week, with approximately 0.46 inches of observed precipitation. At historical surveillance trap sites, the overall collection numbers increased by 58.89% from EPI week 28. The changes in target species varied this week, with *Coquilleltidia perturbans* and *Culex pipiens/restuans* having experienced increases, while *Culiseta melanura* and *Ochlerotatus canadensis* were observed in lower numbers. *Coquilleltidia perturbans* was once again the most abundant species in the CMMCP service area, with *Cx. pipiens/restuans* the second most abundant mosquito. *Cq. perturbans* will likely remain the predominant species for EPI week 30.

Although CMMCP collected 5 ovitraps this week, the egg papers did not produce any eggs for enhanced surveillance of *Aedes albopictus*.

For the year we received 166% more service requests than average; 12,838 requests compared to the 13 year average of 7,703. Service requests increased 15.47% from last week; 614 in Epi week 28 compared to 711 in Epi week 29.

With the isolations of WNV in the city of Worcester, catch basins were treated (or retreated) in all member communities that border the city; Auburn, Millbury and Shrewsbury. Adult mosquito surveillance was enhanced in these bordering communities and results from Epi week 29 were negative. Standard catch basin treatments have begun in all member towns.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project Weekly Report- 7/10/16-7/16/16 EPI Week #28

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	3	235	20	80	215	708
Total Specimens	14	30565	503	4463	4621	44427
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 73.03°F with a recorded high temperature of 93.40°F and a recorded low temperature of only 55.00°F. There was 0.32 inches of precipitation observed this week. Compared to the previous week, it was approximately 1.83°F warmer on average, and rained 0.18 inches less. There has been 0.89 inches of rain accumulated in July, after 1.32 inches for the month of June.

CMMCP Mosquito Summary*-

Target Species	Δ From Last Week	Δ From Last Year	Predominant Trap Site(s)
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<i>Aedes vexans</i>	-100.0%	-100.0%	N/A
<i>Coquillettidia perturbans</i>	-45.50%	+254.4%	Webster, Berlin
<i>Culiseta melanura</i>	-23.53%	+160.0%	Millville, Webster
<i>Ochlerotatus canadensis</i>	-28.32%	+3371%	Webster, Leominster
<i>Culex</i> Species	-15.00%	-38.18%	Shrewsbury, Auburn, Chelmsford
All Species	-41.58%	+259.2%	Webster

The predominant mosquito for the week was *Coquillettidia perturbans* followed by *Culex pipiens/restuans*.

Enhanced Surveillance for *Aedes albopictus* - Ovitrap Collections

	# Ovitrap	# Egg Papers	# Eggs
EPI Week #28	15	15	1017
2016 Totals	87	63	2278

The temperatures for EPI Week 28 averaged 1.83 degrees warmer than the previous week, with approximately 0.32 inches of observed precipitation. At historical surveillance trap sites, the overall collection numbers decreased by 41.58% from EPI week 27. All target species were observed in lower numbers this week. Despite this decrease from the previous week, the long-term surveillance locations experienced a significant overall increase compared to the 2015 season. *Coquillettidia perturbans* was once again the most abundant species in the CMMCP service area, with *Culex pipiens/restuans* the second most abundant mosquito. *Cq. perturbans* will likely remain the predominant species for EPI week 29. This week CMMCP collected 15 ovitraps, which produced 1017 eggs for *Aedes albopictus* surveillance.

For the year we received 170% more service requests than average; 12,127 requests compared to the 13 year average of 7,614. Service requests decreased 14.4% from last week; 703 in Epi week 27 compared to 614 in Epi week 28.

With the isolations of WNV in the city of Worcester, catch basins were treated (or retreated) in all member communities that border the city; Auburn, Millbury and Shrewsbury. Adult mosquito surveillance has been enhanced in these bordering communities and results are expected this week. Standard catch basin treatments have begun in all member towns.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

**Central Mass. Mosquito Control Project
Weekly Report- 7/3/16-7/9/16
EPI Week #27**

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	3	194	16	73	165	583
Total Specimens	14	26294	455	3936	3523	38252

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 71.20°F with a recorded high temperature of 93.30°F and a recorded low temperature of only 53.10°F. There was 0.50 inches of precipitation observed this week. Compared to the previous week, it was approximately 0.89°F cooler on average, and rained 0.38 inches more. There has been 0.57 inches of rain accumulated in July, after 1.32 inches for the month of June.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	+900.0%	+800.0%	Tewksbury, Leominster
<i>Coquillettidia perturbans</i>	-52.25%	+1687%	Webster, Leominster
<i>Culiseta melanura</i>	-92.74%	+41.67%	Tewksbury, Holliston
<i>Ochlerotatus canadensis</i>	+23.05%	+2981%	Webster, Leominster
<i>Culex</i> Species	-50.62%	-25.93%	Berlin, Millville, Clinton
All Species	-50.80%	+1398%	Webster, Leominster

The predominant mosquito for the week was *Coquillettidia perturbans* followed by *Ochlerotatus canadensis*.

*Low early season numbers may contribute to these comparisons being not as significant as they appear.

The temperatures for EPI week 27 averaged approximately 0.89 degrees cooler than the previous week, with only almost 0.50 inches of precipitation observed. At historical surveillance trap sites, the overall collection numbers decreased by 50.80% over EPI week 26, primarily due to a significant reduction in *Coquillettidia perturbans*. The only target species to experience increases for EPI week 27 were *Aedes vexans* and *Ochlerotatus canadensis*. Despite the overall decrease from EPI week 26, the long-term surveillance locations showed an overall increase compared to the 2015 season. *Cq. perturbans* was once again the most abundant species in the CMMCP service area, with *Oc. canadensis* the second most abundant mosquito. *Cq. perturbans* will likely remain the predominant species for EPI week 28. The CMMCP service area did receive precipitation which may contribute to the emergence of some floodwater/container species.

For the year we received 178% more service requests than average; 11,513 requests compared to the 13 year average of 6,468. Service requests decreased 45.9% from last week; 1,026 in Epi week 26 compared to 703 in Epi week 27. With the isolations of WNV in the city of Worcester, catch basins were treated (or retreated) in all member communities that border the city; Auburn, Millbury and Shrewsbury. Adult mosquito surveillance will be enhanced in these bordering communities. Catch basin treatments will continue in all member towns shortly.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project

Weekly Report- 6/26/16-7/2/16

EPI Week #26

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
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No. Pools	1	153	14	57	127	464
Total Specimens	5	19761	438	3025	2605	29661
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 72.09°F with a recorded high temperature of 89.20°F and a recorded low temperature of only 54.90°F. There was only 0.12 inches of precipitation observed this week. Compared to the previous week, it was approximately 2.99°F warmer on average, and rained 0.05 inches more. There has been 0.07 inches of rain accumulated in July, after 1.32 inches for the month of June.

CMMCP Mosquito Summary*-

Target Species	Δ From Last Week	Δ From Last Year	Predominant Trap Site(s)
<i>Aedes vexans</i>	-100.0%	-100.0%	N/A
<i>Coquilleltidia perturbans</i>	+210.1%	+3954%	Webster, Berlin, Leominster
<i>Culiseta melanura</i>	+165.9%	+4580%	Tewksbury, Holliston
<i>Ochlerotatus canadensis</i>	+8.250%	+1622%	Webster, Berlin
<i>Culex</i> Species	-38.17%	+376.5%	Holliston, Hopedale, Millville
All Species	+156.8%	+3289%	Webster, Berlin, Leominster

The predominant mosquito for the week was *Coquilleltidia perturbans* followed by *Ochlerotatus canadensis*.

*Low early season numbers may contribute to these comparisons being not as significant as they appear.

The temperatures for EPI week 26 averaged approximately 2.99 degrees warmer than the previous week, with only 0.12 inches of precipitation observed. Overall collection numbers increased by 156.8% from EPI week 25. All target species displayed increases from the prior collection period except for *Culex spp.* and *Aedes vexans*. *Culiseta melanura* and *Coquillettidia perturbans* experienced the largest weekly increases. *Cq. perturbans* remains the most abundant species in the CMMCP service area, with *Ochlerotatus canadensis* now becoming the second most abundant. *Cq. perturbans* will likely remain the predominant species for the majority of the season. Despite the large population currently, this species may still experience further emergence. After observing the first *Aedes vexans* specimens of the season last week, none were found this collection period. The CMMCP service area has still not recently experienced any significant rain events.

For the year we received 186% more service requests than average; 10,810 requests compared to the 13 year average of 5,804. Service requests decreased slightly (1.9%) from last week 1,046 in Epi week 25 compared to 1,026 in Epi week 26. Early season catch basin treatments were performed in 2015 WNV virus areas, as well as in our inner cities, totaling 23,538. Basin treatments will continue in a few weeks. Our tire collection and ditch maintenance programs are currently on hiatus.

*Submitted by **Frank Cornine**, CMMCP Staff Biologist*

**Central Mass. Mosquito Control Project
Weekly Report- 6/19/16-6/25/16
EPI Week #25**

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	1	113	10	49	96	361
Total Specimens	5	7557	154	2394	2073	15336
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 69.10°F with a recorded high temperature of 87.70°F and a recorded low temperature of only 49.60°F. There was only 0.07 inches of precipitation observed this week. Compared to the previous week, it was approximately 2.27°F warmer on average, and rained 0.07 inches more. There has been 1.27 inches of rain accumulated in June, after 2.25 inches for the month of May.

CMMCP Mosquito Summary*-

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

<i>Aedes vexans</i>	+500.0%	-37.50%	Holliston
<i>Coquillettidia perturbans</i>	+884.4%	+1146%	Webster, Leominster, Berlin
<i>Culiseta melanura</i>	+1660%	+252.0%	Tewksbury, Wilmington, Holliston
<i>Ochlerotatus canadensis</i>	+114.8%	+544.3%	Webster, Berlin, Hopedale
<i>Culex</i> Species	+13000%	+351.7%	Leominster, Westborough, Holliston
All Species	+326.3%	+893.6%	Webster, Berlin, Leominster

The predominant mosquito for the week was *Coquillettidia perturbans* followed by *Culex*.

*Low early season numbers may contribute to these comparisons being not as significant as they appear.

The temperatures for EPI week 25 averaged approximately 2.27 degrees warmer than the previous week, with only 0.07 inches of precipitation observed. Overall collection numbers increased by 326% from EPI week 24, with all target species displaying increases from the prior collection period. Those targets with the largest weekly increases were *Culiseta melanura*, *Coquillettidia perturbans*, and *Culex*. *Cq. perturbans* remains the most abundant species in the CMMCP service area, with *Culex* species now becoming the second most abundant. *Cq. perturbans* will likely remain the predominant species for the greater part of the season. Continued emergence of *Cq. perturbans* should also cause the overall collections numbers to increase. A small number of *Aedes vexans* were collected in EPI week 25, marking the first observation of this species this season. Floodwater species of mosquitoes will remain suppressed until the area experiences a significant precipitation event.

For the year we received 192% more service requests than average; 9,784 requests compared to the 13 year average of 5,084. Service requests decreased slightly (7.7%) from last week 1,127 in Epi week 24 compared to 1,046 in Epi week 25. Early season catch basin treatments were performed in 2015 WNV virus areas, as well as in our inner cities, totaling 23,538. Basin treatments will continue in a few weeks. Our tire collection and ditch maintenance programs are currently on hiatus.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Weekly Report- 6/12/16-6/18/16

EPI Week #24

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	0	61	6	33	61	223
Total Specimens	0	2298	22	1523	1160	7539
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 66.83°F with a recorded high temperature of 85.50°F and a recorded low temperature of only 51.00°F. There was no significant precipitation observed this week. Compared to the previous week, it was approximately 3.24°F warmer on average, and rained about 1.20 inches less. There has been 1.20 inches of rain accumulated in June, after 2.25 inches for the month of May.

CMMCP Mosquito Summary*-

Target Species	Δ From Last Week	Δ From Last Year	Predominant Trap Site(s)
<i>Aedes vexans</i>	+00.00%	-100.0%	N/A
<i>Coquilleltidia perturbans</i>	+4.450%	+334.6%	Dracut, Milford, Shrewsbury
<i>Culiseta melanura</i>	-61.54%	-95.50%	Berlin, Tewksbury
<i>Ochlerotatus canadensis</i>	-50.93%	+109.7%	Webster, Westborough
<i>Culex</i> Species	-100.0%	-100.0%	Berlin, Clinton, Northbridge
All Species	-15.59%	+193.5%	Webster, Leominster, Berlin

The predominant mosquito for the week was *Coquilleltidia perturbans* followed by *Ochlerotatus canadensis*.

*Low early season numbers may contribute to these comparisons being not as significant as they appear

The temperatures for EPI week 24 averaged approximately 3.25 degrees warmer than the previous week, with no significant precipitation observed. Overall collection numbers were lower than EPI week 23, with only *Coquilleltidia perturbans* displaying increases from the prior collection period. *Culiseta melanura*, *Ochlerotatus canadensis*, and *Culex spp.* were all present in lower numbers from the previous week. *Cq. perturbans* has overtaken *Oc. canadensis* as the most abundant species in the CMMCP service area, with *Oc. canadensis* now becoming the second most abundant species. With additional emergence, *Cq. perturbans* should remain a predominant species for the majority of the season. Overall collections numbers will likely increase with further emergence of this species as well. *Aedes vexans* has yet to be collected by the CMMCP surveillance program this season.

Submitted by **Frank Cornine**, CMMCP Staff Biologist

Central Mass. Mosquito Control Project
Weekly Report- 6/5/16-6/11/16
EPI Week #23

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	0	18	4	16	26	105
Total Specimens	0	535	17	888	501	3890
No. Pools WNV +	0	0	0	0	0	0
No. Pools EEE +	0	0	0	0	0	0

<i>Aedes vexans</i>	+00.00%	+00.00%	N/A
<i>Coquillettidia perturbans</i>	+2708%	+4714%	Webster, Chelmsford
<i>Culiseta melanura</i>	+225.0%	+160.0%	Holliston, Webster
<i>Ochlerotatus canadensis</i>	+135.6%	+705.0%	Webster, Tewksbury
<i>Culex</i> Species	+16.67%	+100.0%	Northbridge, Chelmsford
All Species	-21.09%	+773.7%	Webster, Tewksbury

*Submitted by **Frank Cornine**, CMMCP Staff Biologist*

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	0	2	1	3	2	31
Total Specimens	0	12	4	205	12	1683

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 66.9°F with a recorded high temperature of 86.6°F and a recorded low temperature of only 50.9°F. For this week there was also a total of 0.41 inches of rain observed. Compared to the previous week, it was approximately 0.86°F cooler on average, and rained about 0.11 inches more. There has been 0.00 inches of rain accumulated in June, after 2.25 inches for the month of May.

CMMCP Mosquito Summary*-

Target Species	Δ From Last Year	Predominant Trap Site(s)
<i>Aedes vexans</i>	+00.00%	N/A
<i>Coquillettidia perturbans</i>	+1100%	Webster, Holliston
<i>Culiseta melanura</i>	-95.83%	Holliston
<i>Ochlerotatus canadensis</i>	+ ∞	Webster, Leominster
<i>Culex</i> Species	-33.33%	Leominster, Holliston
All Species	+705.3%	Holliston, Leominster

The predominant mosquito for the week was *Ochlerotatus excrucians* followed by *Ochlerotatus aurifer*.

*Low early season numbers may contribute to these comparisons being not as significant as they appear

This was the first week of the 2016 CMMCP Mosquito Surveillance Program. The temperatures for EPI week 22 averaged 66.9°F, which was approximately one degree cooler than the previous week. It also rained 0.41 inches, putting the final precipitation total for the month of May at 2.25 inches. The vast majority of specimens collected were from early season species such as *Ochlerotatus excrucians*, *Oc. abserratus*, and *Oc. aurifer*. These three species accounted for almost 65% of all mosquitoes collected. Currently *Oc. excrucians* is the predominant species in the CMMCP service area, with *Oc. aurifer* second. Increases in temperature coupled with additional emergence will likely cause surveillance collection numbers to rise as the season continues. Specimens collected in EPI week 23 will be pooled for arbovirus testing by the MDPH.

Submitted by **Frank Cornine**, CMMCP Staff Biologist
