

# **DELTA MOSQUITO & VECTOR CONTROL DISTRICT**

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## **REPORT OF THE MANAGER AUGUST 2021**

### **I. Water and Weather**

There were several heat waves throughout the month of August. The Delta Mosquito and Vector Control District (DMVCD) Weather Station reported an average high temperature of 97.9°F with an average low of 68.0°F and 0 inches of rainfall. The National Oceanic and Atmospheric Administration 1981-2010 seasonal averages for high and low temperatures in August were 92.8°F and 65.0°F respectively, with an average rainfall of 0.01 inches.

Water storage at Pine Flat Reservoir decreased to 197,968 acre-feet by the end of the month. By August 31, 2021, Pine Flat Reservoir's inflow had decreased to 391 cubic feet per second (CFS) and its release decreased dramatically to 254 CFS. The Lake Kaweah Reservoir ended the month with less water than the previous month, with 26,452 acre-feet on August 31, 2021. Lake Kaweah's inflow fluctuated dramatically at the end of the month, with the reading from August 31, 2021, showing 17 CFS and its release was decreased significantly to 51 CFS.

### **II. Narrative**

Continuous treatment of the storm drain systems continued during the month of August throughout the District's jurisdiction. Approximately 11,824 storm drains were treated with an insect growth hormone regulator product, methoprene. Sites include street drains, parking lots, parks, apartment complexes, and schools.

Aerial larviciding treatment for the Kaweah River Rock Plant Continued for the month of August, with the fifth treatment taking place on August 17, 2021. During the application 8 acres were treated with an insect growth hormone regulator.

Due to high mosquito counts in the rural portion of the District, we continued large *Bacillus thuringiensis* serotype *israelensis* (Bti) applications to reduce the mosquito populations near dense corn crops in the north region of Visalia. On August 24, 2021, the District conducted an adult mosquito application to reduce the viral transmission and high abundance of mosquitoes.

Due to high West Nile virus activity, operations conducted adult mosquito treatments on August 18<sup>th</sup>, 2021. The treatment was conducted on the NW section of Visalia covering approximately 1.13 square miles area. On August 19<sup>th</sup>, the District conducted an adult mosquito treatment on the SW side of Visalia and various locations in the city of Dinuba covering approximately 819 acres in total. On August 25<sup>th</sup>, Operations conducted an adult mosquito treatment in a rural portion of Exeter to reduce high abundance of mosquitoes due to a flooded walnut grove.

Due to high *Aedes aegypti* mosquito abundance the District decided to conduct a trial application technique called Wide Area Larvicide (WAL). WAL’s is a technique to target *Aedes aegypti* and its cryptic breeding locations. The application technique consists of roughly 6-8 applications. The first 4 applications are conducted on a weekly period, and the following 2-4 applications bi-weekly. The first WAL application was conducted on August 5<sup>th</sup> in the SE area of Visalia between Tulare Ave and E. Walnut Ave. covering over a 40-acre area. Typical applications take place between the hours of 12:00 a.m. and 3:00 a.m. The District will continue to conduct applications in the month of September and monitor mosquito traps for abundance of *Aedes aegypti* for application efficacy.

During the week starting with August 23, 2021, a Lab Technician I and a Vector Control Technician I joined the team to fill vacant seasonal staff positions.

Routine mosquito surveillance continued throughout August. A total of 30,751 mosquitoes were collected across 1,132 trap nights. The District-wide average of 27.2 mosquitoes per trap night for the month of August is 32.4% higher than the previous 5-year average of 20.5 but only 15.1% higher than the 2020 average of 23.6 mosquitoes per trap night. The top 3 mosquito species caught in August were *Culex quinquefasciatus* at 71.1%, followed by *Aedes aegypti* at 15.3% and *Culex tarsalis* at 8.7%.

Mosquito-borne disease testing for West Nile virus (WNV), St. Louis Encephalitis virus (SLEV), and Western Equine Encephalitis virus (WEEV) continued throughout August. Arbovirus activity in mosquitoes increased dramatically in August compared to the previous month. The DMVCD tested 594 mosquito samples in August with 120 samples positive for WNV. One dead bird carcass was also tested for WNV, SLEV, and WEEV but was not positive. The WNV positive mosquito samples were collected from Visalia, Exeter, Farmersville, Dinuba, Peral, Traver, south Kings River, and west of Sequoia Fields.

<b>2021 YTD Arbovirus Detections</b>					
<b>SAMPLE</b>	<b>WNV</b>	<b>SLEV</b>	<b>WNV &amp; SLEV</b>	<b>WEEV</b>	<b>TOTAL</b>
Mosquitoes	166	0	0	0	166
Dead Birds	5	0	0	0	5
<b>TOTAL</b>	<b>171</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>171</b>

<b>2021 YTD Arbovirus Detections by City</b>					
<b>CITY</b>	<b>WNV</b>	<b>SLEV</b>	<b>WNV &amp; SLEV</b>	<b>WEEV</b>	<b>TOTAL</b>
Cutler	0	0	0	0	0
Dinuba	14	0	0	0	14
Exeter	1	0	0	0	1
Farmersville	2	0	0	0	2
Goshen	0	0	0	0	0
Ivanhoe	0	0	0	0	0
Kingsburg*	0	0	0	0	0
London	0	0	0	0	0

Orosi	0	0	0	0	0
Peral	5	0	0	0	5
Sequoia Fields	12	0	0	0	12
S Kings River	12	0	0	0	12
Traver	1	0	0	0	1
Visalia	124	0	0	0	124
Woodlake	0	0	0	0	0
<b>TOTAL</b>	<b>171</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>171</b>
* DMVCD only serves the eastern, southeastern outside city limit area of Kingsburg. Consolidated MAD serves the city of Kingsburg.					

In August 2021, 63 larval mosquito samples were collected from the field for species identification and larvicide resistance monitoring. No larvicide resistance was observed. Potential adulticide resistance was detected in *Culex quinquefasciatus* mosquitoes from an area west of Sequoia Fields, and, to a lesser extent, just north of Visalia. Further tests are planned to confirm and identify the mechanism of resistance.

Mosquitofish requests decreased for the month of August. A total of 459 mosquitofish were distributed through 11 technician and 9 homeowner requests. Fry, or young mosquitofish, production has also decreased to 244.

Erick Arriaga joined the DMVCD team as the Community Education and Outreach Coordinator on August 16, 2021.

On August 25, 2021, a seasonal technician was in a vehicle accident while driving truck T-2. Following insurance protocol, the truck will be scrapped, and the district reimbursed for a replacement truck after \$1,000 deductible. The driver of the truck is not seriously injured.

On August 27, 2021, the District held a meeting for all full-time staff to better facilitate communication between all staff members. The intention is to continue these meetings on a quarterly basis.

Throughout July, employees who were not fully vaccinated continued to complete the online screening of COVID-19 survey and take paid time off to seek test results when required. The District will continue to be proactive in keeping employees and the public safe. Staff are encouraged to be fully vaccinated and allowed to take work time to do so.

There were 174 service requests in August:

2021 Service Request Summary

2021	Fish	Inspection	Mosquito	Source	Other	Total
January	0	0	1	2	0	3
February	0	0	0	2	0	2

<b>March</b>	0	0	7	17	3	<b>27</b>
<b>April</b>	19	9	11	26	3	<b>68</b>
<b>May</b>	31	51	4	27	2	<b>115</b>
<b>June</b>	23	88	36	34	1	<b>182</b>
<b>July</b>	14	33	64	46	2	<b>159</b>
<b>August</b>	10	14	94	56	0	<b>174</b>
<b>Total</b>	<b>97</b>	<b>195</b>	<b>217</b>	<b>210</b>	<b>11</b>	<b>730</b>

**III. Vector and Disease Surveillance**

**Delta MVCD Summaries**

Humans: There was 1 confirmed and 1 probable human case of WNV reported by the local public health department in the month of August. These are the first cases in the District.

Birds: There was 1 dead bird reported to the District in August, with 0 positive for WNV. In 2021, a total of 5 dead birds were positive for WNV out of 12 dead birds tested.

Mosquitoes: There were 120 new WNV positive mosquito samples out of 594 tested in August. In 2021, a total of 166 mosquito samples were positive for WNV out of 1,642 tested.

**State Surveillance:**

Humans: A total of 22 human cases have been reported as of August 27, 2021. So far in 2021, 26 human cases of WNV were reported in 12 counties across the state.

Birds: As of August 27, 2021, 61 dead birds have tested positive for WNV. So far, 155 dead birds from 16 counties have tested positive for WNV out of 1,229 tested in 2021.

Mosquitoes: As of August 27, 2021, 919 mosquito samples were positive for WNV. In 2021, a total of 24,658 mosquito samples were tested for WNV, SLEV, and WEEV with 1,482 samples from 24 counties positive for WNV. An additional 19 mosquito samples were positive for SLEV as well.

**IV. Expenditures & Revenues – 2021/22**

TOTAL BUDGET \$3,974,072.78

EXPENDITURES – July 1, 2021 – August 31, 2021

Salaries	\$665,207.51
Services & Supplies	\$220,439.43
Tax Admin Fee	\$0.00
Capital	\$72,259.27
Building Improvements	\$0.00
<b>TOTAL EXPENDITURES</b>	<b>\$957,906.21</b>

REVENUE RECEIVED – July 1, 2021 – August 31, 2021

July	\$137.48
August*	
<b>TOTAL REVENUE TO DATE</b>	<b>\$137.48</b>

**V. Time Sheet Summary**

Month	Available Work Hrs	Sick Hrs Used	Total Hrs Available for Work	Pct. Of Hrs Avail for Work
July	5,376	119.25	5,256.75	97.79
August	5,808	210.00	5,598.00	96.40

The District has a vacation policy that requires 24-hour notice in order to ensure the operational integrity of the workforce. Sick leave for doctor, dentist and/ or family medical necessity also requires advance notice- in so much as it is possible. Illness is unplanned and therefore unscheduled. Attendance records for the current year are shown in the table.

*\*August Revenue not available from Tulare County as of 9/3/21.*