

Delta Mosquito & Vector Control District

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REPORT OF THE MANAGER

July 2023

I. Water and Weather

The weather was hot throughout most of July. The Delta Mosquito and Vector Control District (DMVCD) Weather Station reported an average high temperature of 100.6°F with an average low of 69.8°F and 0 inches of rainfall. The National Oceanic and Atmospheric Administration 1981-2010 seasonal averages for high and low temperatures in July were 93.8°F and 66.7°F respectively, with average rainfall of 0 inches.

Water storage at Pine Flat Reservoir increased to 966,575 acre-feet. Pine Flat Reservoir's water inflow decreased to 5,284 cubic feet per second (CFS) while its release decreased to 7,145 CFS. The Lake Kaweah Reservoir storage decreased to 159,528 acre-feet. Lake Kaweah's inflow also decreased to 1,072 CFS and its release decreased to 2,073 CFS.

II. Narrative

Field operations received 130 service requests in July which consisted of a Vector Control Technician inspecting the reported property for any standing water that mosquito larvae could breed in. During this time, the technician used an integrated vector management strategy to reduce any mosquito breeding found. In addition, technicians use this opportunity to educate residents on mosquito-breeding prevention and how to protect themselves from mosquito bites.

We have conducted ULV pesticide treatments throughout July in Visalia and outlying towns due to the positive West Nile virus (WNV) in mosquito samples.

Blair Aerial Services conducted an aerial treatment in Woodlake at the old rock plant now owned by Tulare Irrigation District on July 6, 2023.

We attended a Flood Response Town Hall Meeting with Assemblyman Devon Mathis from 33rd Assembly District in Corcoran at 6:00 pm on July 7, 2023 and Dr. Debboun gave a presentation on the activities of Delta Mosquito and Vector Control District.

We set up 94 In2Care Mosquito Traps in Visalia on July 12, 2023, as an additional tool to monitor the Yellow Fever Mosquito, *Aedes aegypti*. We will be checking the Traps and maintaining them every 4 weeks using refill sachets and monitoring the traps progress until October 2023. Due to the high temperature, the water evaporated, and most traps needed to be filled about half way back up with water and almost all traps had mosquito larvae in that were dead or alive as seen in Figure 1.



FIGURE 1. In2care Mosquito Trap with some dead and live mosquito larvae.

We conducted Wide Area Larviciding System (WALS) treatment in Visalia, in the neighborhood South of Whitendale and Akerson on July 27, 2023, using the WALS method as seen in Figure 2. We will continue to treat once a week for four weeks and then once every other week for four treatments.



Figure 2. Example of a Wide Area Larviciding System mounted on a truck.

In addition, we also conducted a Drone aerial treatment on July 26, 2023 at the Rock Plant in Woodlake and 21 ULV treatments in Exeter and around Visalia to reduce West Nile virus carrying mosquitoes as shown in Figures 3 and 4. Treatment maps and notifications for adulticide and larvicide treatments were sent out accordingly to the public and city officials as needed.

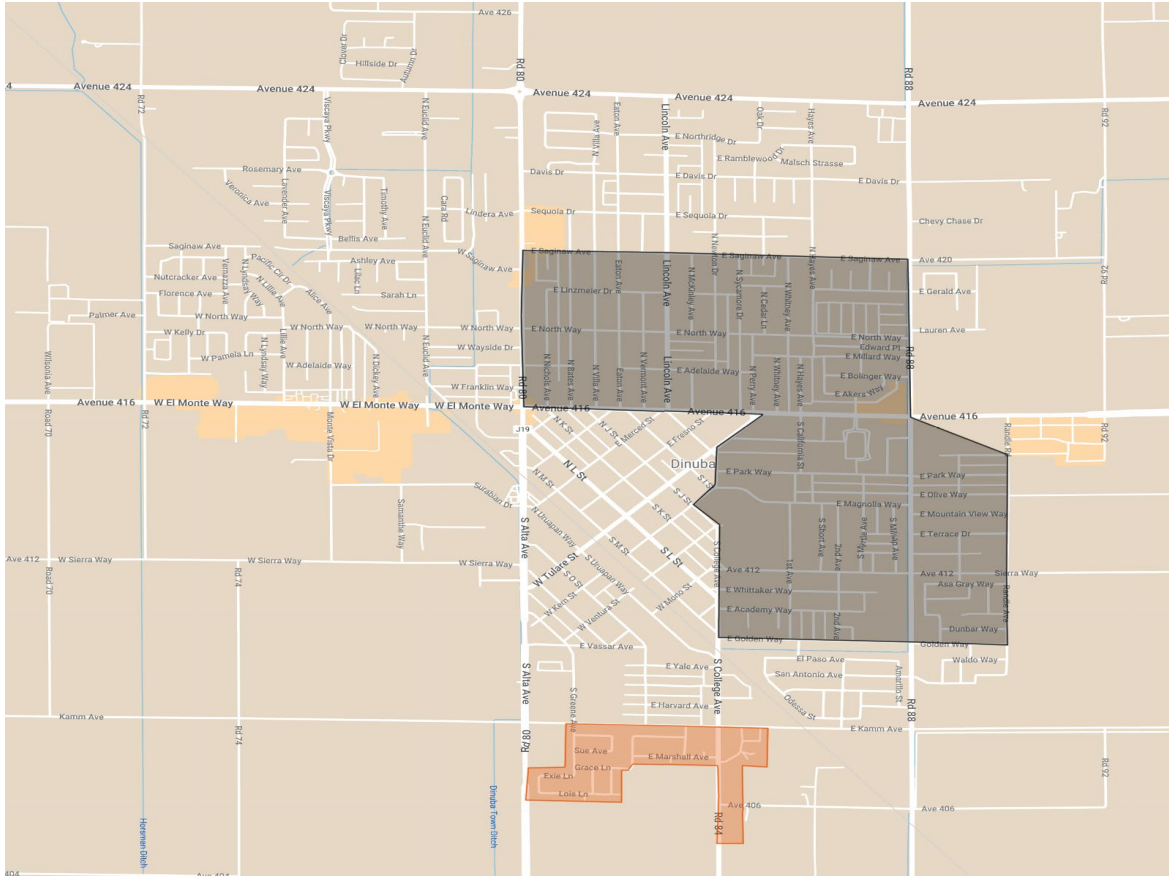


Figure 3. Areas treated in Exeter against the West Nile virus positive mosquito populations.

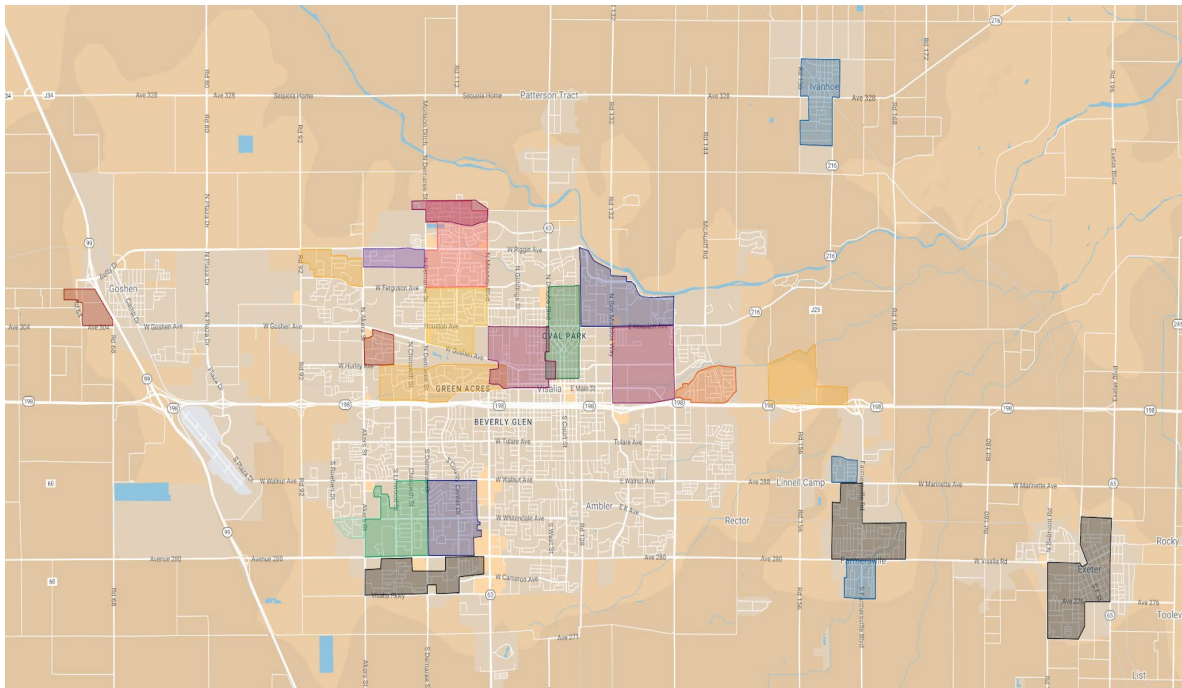


Figure 4. Areas of the District where we treated against mosquitoes that were positive with West Nile Virus.

We hired three additional seasonal Employees to assist with ULV and WALS treatments as needed.

Bryan Ferguson, our Foreman has been very busy treating with ULV and WALS, training a new Vector Control Technician in Zone 4 and working on vehicle maintenance and other equipment, i.e., repairing overheating trucks, batteries, electrical issues with AC, and upgrading three of the old thermostats to new more energy efficient ones. He also upgraded the Quad with a new tank and boomless sprayer to get a better spray application in the Kiwis as shown in Figure 5.



Figure 5. A photo showing the upgraded Quad with a new pesticide tank and boomless spray.

We auctioned and sold two old Chevy S10 trucks of which one was sold for \$3,500 and the other for \$3,350.

Routine mosquito surveillance continued through July. A total of 31,023 mosquitoes were collected across 1,268 trap nights. The district-wide average of 24.5 mosquitoes per trap night for July was 11.2% lower than the previous 5-year average of 27.5 and 22.0% lower than the 2022 average of 31.4 mosquitoes per trap night. The top 3 mosquito species caught in July were *Culex quinquefasciatus* at 63.4%, followed by *Aedes aegypti* at 27.5% and *Cx. tarsalis* at 5.7%. Compared to July of 2022, the top 3 mosquito species caught were *Cx. quinquefasciatus* at 72.2%, followed by *Ae. aegypti* at 20.7% and *Cx. tarsalis* at 64.0%. Arbovirus testing for West Nile virus (WNV), St. Louis Encephalitis virus (SLEV), and Western equine encephalitis virus (WEEV) continued in July. Laboratory staff tested 675 of the 675 mosquito samples collected in July. A total of 148 mosquito samples collected in July have tested positive for WNV, 2 for SLEV, and 3 for SLEV and WNV combined. Positive mosquito samples were collected from Calgro, Cutler, Dinuba, Exeter, Farmersville, Goshen, Ivanhoe, Orosi, Peral, Traver, Visalia, and Woodlake. Additionally, the Tulare County Public Health Department reported 3 human cases of WNV from Visalia. In July 2022, there were 230 WNV positive mosquito samples out of 844 tested.

There were 40 technician and homeowner mosquitofish requests in July and distributed 1,783 fish as of July 28, 2023. In July 2022, there were 12 technician and homeowner mosquitofish requests and a total of 389 mosquitofish were distributed. A total of 17,788 mosquitofish fry were produced in July 2023. In July 2022, 534 mosquitofish fry were produced.

A total of 35 mosquito larvae samples were brought to the laboratory for processing. In July of 2022, 44 larvae samples were collected. Cleaning and reorganizing of the Insectary began at the end of July.

Routine maintenance continued during the month of July. Air filters were replaced on the BSL-2/3 HVAC systems and mosquitofish hatchery dehumidifiers. The BSL-2³ HVAC underwent routine cleaning. Monthly safety checks for fire extinguishers and emergency lights were performed as well as weekly safety showers and eyewash inspections.

Juan Pablo Ortega was promoted to a Biologist and Alejandra Gill to a Laboratory Technician II. Laboratory staff attended the virtual Mosquito and Vector Control Association of California (MVCAC) Summer Board of Directors meeting, MVCAC Integrated Vector Management Committee meeting, a Laboratory Chemical Storage webinar, and an Oxitec webinar in July.

The laboratory also tested 196 mosquito samples collected from Kings Mosquito Abatement District (MAD), 30 samples from Tulare MAD, and 52 samples collected from Tulare and Kings Counties by Vector Disease Control International in July.

In July, DMVCD Community and Outreach attended 12 events: three Farmers Markets in Visalia and Dinuba, two Rawhide baseball games in Visalia, five Senior Centers in Woodlake, Farmersville, Cutler/Orosi, and Dr. Debboun gave a presentation to the Exeter Lions Club during their monthly breakfast meeting. In addition, Delta MVCD was also featured in three local television news segments, i.e., Telemundo, ABC30, and Univision.

There were 140 service requests in July

2023 Service Request Summary

2023	Mosquito -Fish	Inspection	Mosquito	Source	Other	Total
January	0	0	5	0	0	5
February	1	0	4	0	0	5
March	3	0	7	0	1	11
April	12	0	83	0	0	95
May	25	0	122	0	0	147
June	9	0	147	0	0	156
July	10	0	130	0	0	140
Total	60	0	498	0	1	559

III. Vector and Disease Surveillance

Humans: Three human cases of WNV have been reported so far in 2023. Reports are still being processed for two of these cases.

Birds: 2 dead birds collected from Visalia and Exeter have tested positive for West Nile virus. Test results for one dead bird are pending. So far, 7 dead birds have been tested with 4 positive for WNV in 2023.

Mosquitoes: A total of 675 mosquito samples were tested in July of which 148 samples were positive for WNV, 2 positive for SLEV, and 3 positive for WNV and SLEV. So far this year,

4,807 mosquito samples have been tested with 232 samples positive for WNV, 3 positive for SLEV, and 4 positive for both WNV and SLEV.

State Surveillance:

Humans: 2 human cases of WNV and 1 case of SLEV have been reported so far in 2023. County submissions to the state are still pending for some cases.

Birds: As of 7/28/2023, 147 dead birds from 17 counties have tested positive for WNV in July. So far, 459 dead birds have been tested in 2023.

Mosquitoes: As of 7/28/2023, 1,225 mosquito samples from 25 counties have tested positive for WNV. Also, 137 samples from 8 counties have tested positive for SLEV. So far, 26,685 mosquito samples have been tested for WNV and 23,874 samples for SLEV in 2023.

IV. Expenditures & Revenues – 2023/24

TOTAL BUDGET \$5,068,115.26

EXPENDITURES – July 1, 2023 – July 31, 2023

Salaries	\$418,204.14
Services & Supplies	\$283,901.27
Tax Admin Fee	\$0.00
Capital	\$0.00
Long-Term Debt	\$0.00
TOTAL EXPENDITURES	\$702,105.41

REVENUE RECEIVED – July 1, 2023 – July 31, 2023

July	\$0.00
TOTAL REVENUE TO DATE	\$0.00

V. Timesheet Summary

Month	Available Work Hrs	Sick Hrs Used	Total Hrs Available for Work	Pct. Of Hrs Avail for Work
July	6,048	129	5,919	97.86

The District has a vacation policy that requires 24-hour notice 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.

*** July expenditures and revenue are not available as of 8/4/2023*