Canyon County Mosquito Abatement District
9719 Booker Lane, Nampa, ID, 83686
Phone: 208-461-8633 | Fax: 208-461-4459
www.2cmad.org

2026 Work Plan & Prior Year Annual Report

Submitted to Canyon County Board of County Commissioners

2026 CCMAD Work Plan

Mission:

The mission of the Canyon County Mosquito Abatement District (CCMAD) is to protect its citizens, their pets, and livestock from the physical and economic harm caused by mosquitoes and the diseases they carry.

Integrated Mosquito Management:

Integrated Mosquito Management (IMM) is defined as "A comprehensive strategy that utilizes available mosquito control methods to exploit the vulnerabilities of mosquitoes to reduce their numbers, while maintaining a quality environment". By utilizing all seven of IMM's elements; public education, source reduction, cultural control, biological control, surveillance, larval control, and adult control in concert, CCMAD is able to utilize our limited resources in the most efficient manner possible.

Public Education: An informed public is extremely advantageous to our control program. The District uses numerous methods to reach the public with our message. These include presentations, fair/event booths, pamphlets, press releases, door hangers, and our website. This portion of the program can be particularly challenging as it requires an interested audience and is resource heavy.

Source Reduction: Removing litter/tires, modifying irrigation practices, drainage, removing harborage, etc., is an often permanent method of reducing mosquito populations. These actions are generally carried out by landowners as a result of our public education efforts. Source reduction typically has a large upfront cost but can provide a lasting solution in certain circumstances.

Cultural Control: Avoiding activities at dusk and dawn when mosquitoes are most active, wearing insect repellant and vaccinating horses for West Nile virus are all examples of

cultural control. These actions are extremely beneficial to the individual and are promoted through our public education program.

Biological Control: Natural predators including bats, dragonflies and swallows are a welcome addition to our other control activities however they do not play a significant role in controlling mosquito populations. The District began using mosquitofish during the 2022 season following consultation with Idaho Fish and Game.

Surveillance: A robust surveillance program informs all our control decisions. We utilize larval, adult and disease surveillance to identify potential issues so action can be taken before our citizens are impacted.

Larval Control: Controlling mosquitoes in their larval habitat before they become flying biting adults is the largest portion of the District's control effort. Larval habitats are extremely diverse varying from urban storm drains to rural flood irrigated pastures. This portion of the mosquito lifecycle is extremely short making these applications very time sensitive.

Adult Control: This is the most noticeable and most recognized portion of the program by the public. Adult Control serves as our last line of defense against mosquitoes and is the only way to stop a disease transmission cycle once it begins.

Program Details:

Jurisdictional Area: 578 square miles, the entirety of Canyon County, Idaho.

Population Served: 266,892 (2024 Estimate US Census Bureau)

Staff: 12 full-time and 18 seasonal employees when fully staffed.

Facility: 2-acre property located southeast of Lake Lowell. 11981 sq/ft building which includes offices, lab, conference room, 7 shop bays, and a chemical storage area.

Vehicles: 13 mid-sized & 7 full-sized pickups, 8 ATV's, & 3 ATV trailers.

Application Equipment: 4 larvicide drones, 8 truck and 1 ATV mounted ULV adulticide machines, 4 ATV mounted granular spreaders, 21 backpack granular blowers, & numerous liquid backpacks. The District also contracts 2 single engine aircraft for larvicide applications, and 1 twin engine aircraft for adulticide applications.

Lab/Surveillance Equipment: 1 thermocycler, 2 centrifuges,1 homogenizer, 2 RAMP readers, 2 microcentrifuges, 2 vortex machines, 40 EVS traps, 20 gravid traps, 3 BG counter traps, 1 bottle rotator trap, and other assorted lab equipment.

Control Zones:

CCMAD is divided into the following Control Zones for operational and management efficiency. Priority Control Zones are centered on population densities and where the interaction between mosquitoes and constituents are greatest. Zones are continually evaluated, and larval production sites are updated on continual bases.

- **Caldwell Zone:** The city limits of Caldwell. There are several main sources of mosquitoes for this zone: Boise River, Simplot Plant, Canyon Hill area east to Middleton. South of Middleton, south of the Boise River, north to Marble Front Road to the Boise River.

- **Greenleaf Zone:** Ustick Road to the south and Howe Road/Allendale Road, to the north, including the city of Greenleaf and along Simplot Blvd. (Hwy 19).

- **Lake Lowell Zone:** Constitutes areas around Lake Lowell including Deer Flat National Wildlife Refuge. The zones encompass parts of the city limits of Nampa south of Greenhurst Road. **Note: No adult mosquito control operations are performed on Deer Flat National Wildlife Refuge.**

- **Melba/Snake River Zone**: Map Rock Road to the west and Celebration Park to the east and includes the city of Melba and borders to the north at Belmont Road.

- **Middleton/Sand Hollow Zone** North to Gem County line. City of Middleton, to Boise River to Ada County line. West border: I84. North boarder; Oasis Road (Payette County/Gem County line). Purple Sage Golf Course and to the west to Stafford Lane. Farmway Village to Highway 20-26.

- **Nampa Zone:** City limits of Nampa. The main sources of mosquitoes are concentrated on the east side of the city and the boundary ends at McDermott Road /Ada County line.

- **Notus/Boise River Road Zone:** From Howe Road to the north to Boise River Road and east to Dixie River Road. To the west along the Boise River to the intersection of Boise River Road and Highway 95. North of Boise River along Hwy 20/26, city of Notus, north to Payette county line.

- **Parma Zone:** City limits of Parma, Parma Waste Water Treatment Facility, and University of Idaho Agricultural Experiment Station. Areas south and west of Parma, Hwy 16 to Oregon State Line, Roswell Marsh WMA. North to Payette County line along the Snake River and the Fort Boise WMA.

- **Wilder/Arena Valley Zone**: The city limits of Wilder, River Bend Golf Course, and Arena Valley area to the Snake River. The areas south of Wilder to Owyhee County line.

Products Intended For Use:

Product	EPA Registration #	Description
Short Term Larval Control Products		
VectoBac 12AS	73049-38	Liquid BTI
VectoBac GS	73049-10	Granular BTI
VectoBac GR	73049-486	Granular BTI
VectoPrime	73049-501	Granular BTI & Insect Growth Regulator
Altosid SPG II	75318-8-89459	Insect Growth Regulator
Residual Larval Control Products		
Altosid XR Briquets	2724-421	Insect Growth Regulator with ~150 Days Control
Altosid P-35	89459-95	Insect Growth Regulator ~35 Days Control
Altosid XR-G	2724-451	Insect Growth Regulator ~21 Days Control
MetoLarv SP-T	73049-475	Insect Growth Regulator ~42 Days Control
Natular G30	8329-83	Spinosad ~30 Days Control
Natular XRT	8329-84	Spinosad ~180 Days Control
VectoMax FG	73049-429	Organic BTI & B sphaericus ~28 days control
Pupal Control Products		
BVA2	70589-1	Mineral Oil Surface Film
Ground ULV Adult Control Products		
Anvil 10+10	1021-1688-8329	Sumithrin & PBO
Merus 3.0	8329-108	Organic Pyrethrin
Zenivex E4 RTU	2724-807	Etofenprox
Aerial Adult Control Products		
Dibrom	5481-480	Naled
Adult Control Barrier Products		
Suspend Polyzone	5481-480	Deltamethrin

2026 Budget:

Expenditure Category	Expenditure
Labor Expense	$ 1,939,758
Outside Services	$ 43,000
Field Operations, Supplies, & Tools	$ 68,000
Legal Expense	$ 11,000
Facilities	$ 73,000
Surveillance & Arbovirus Testing	$ 110,000
Management Expense	$ 112,000

Vehicle Expense	$ 87,500
Insurance Expense	$ 22,500
Pesticides & Contract Applications	$ 1,920,000
Information Technology	$ 39,500
Capital Outlay	$ 2,712,000
Unappropriated Ending Fund Balance	$ 480,888
Total	$ 7,619,146

Revenue	Revenue
Beginning Fund Balance	$ 3,264,065
Property Tax (levy rate 0.000093641)	$ 3,748,346
Ag Replacement Tax	$ 1,103
Personal Property Replacement Tax	$ 18,132
Unanticipated Revenue	$ 250,000
Sales Tax	$ 175,000
Grants	$ 10,000
Interest	$ 150,000
Miscellaneous	$ 2,500
Total	$ 7,619,146

Governance & Oversite:

Federal: Federal Insecticide, Fungicide & Rodenticide Act, National Pollution Discharge Elimination System Permit, Federal Aviation Administration (FAA) Part 107, FAA Conditional Operating Authorization, and United States Fish and Wildlife Services Special Use Permit.

State: Idaho Code Title 39 Health and Safety Chapter 28 Abatement Districts, Idaho State Department of Agriculture, and Idaho State Department of Health.

Local: Canyon County Board of Commissioners, Southwest District Health, CCMAD Board of Trustees.

2025 Annual Report

Operational Challenges:

- Changing water management priorities decreasing the predictability of flooding.
- Increased intermingling of agricultural and residential areas has created a reduced tolerance level to mosquitoes. The species of mosquitoes occupying these areas has also shifted to those closely related to man made habitats which are more difficult to control.
- Fewer returning seasonals increasing the need for employee training.
- Aggressive and threatening actions by the public towards District staff has continued.
- Identification of invasive *Aedes aegypti* increasing the need for additional surveillance techniques.

Operational Highlights:

- The ability to do disease testing using RT-PCR in our lab has eliminated reliance on the Idaho State Lab and CDC ELC grants.
- Adult mosquito control operational changes have increased the number of acres each employee can treat per night.
- Drone operations have decreased the number of seasonal staff necessary to treat large flooded pastures and other habitat types.
- Vehicle and equipment modernization has reduced equipment down time and repair costs.

Public Relations and Public Outreach:

- CCMAD staff issued numerous press releases regarding West Nile virus horse vaccinations, how the public can protect themselves from mosquitoes, source reduction, and West Nile virus activity.
- Public information booths were manned at the Canyon County fair, schools and other public events with informational pamphlets and brochures regarding mosquitoes, the diseases they carry, control strategies, and personal protection information.

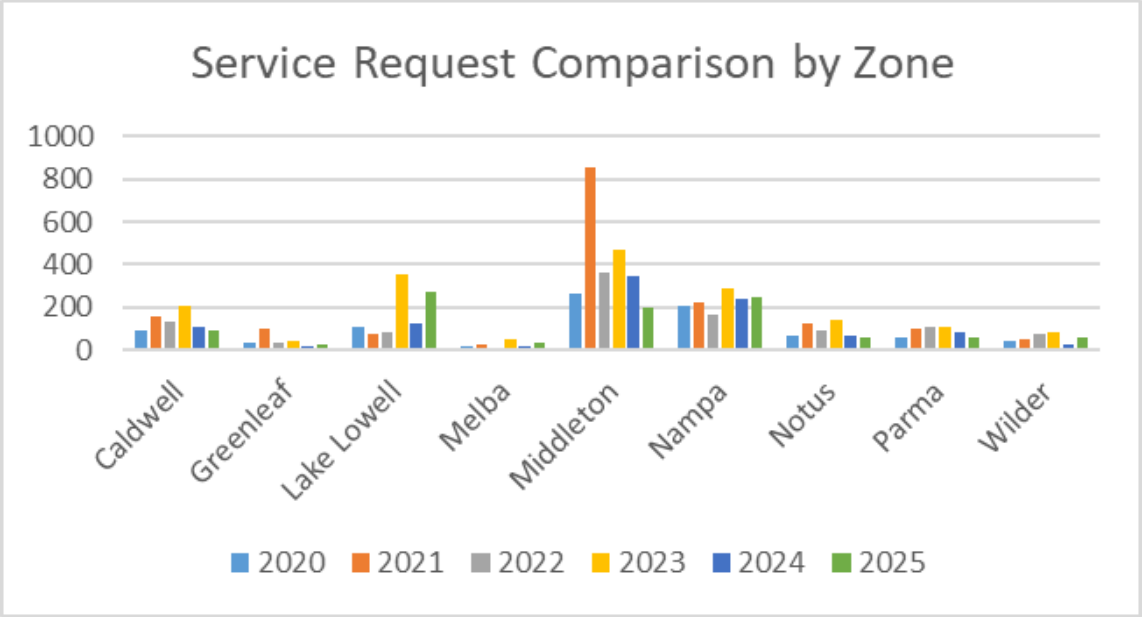
- The CCMAD webpage (www.2cmad.org) provides valuable information on mosquitoes, their control, and West Nile virus activity both locally and state-wide. Links to the Center of Disease Control and Prevention web page which tracks West Nile virus and other mosquito borne disease activity are also available.

- CCMAD Facebook page provided updates on local mosquito abatement treatments as well as national news regarding mosquitoes and virus transmission.

Service Requests:

Citizen reports of adult mosquitoes, standing water, green pools and other potential indications of a mosquito problem are extremely helpful in minimizing their impact on our citizens. These reports are particularly useful in areas where other types of surveillance are not currently in place or where an unexpected event (a broken pipe for instance) causes a new mosquito production site. The District received 1045 requests for service during the 2025 season.

The following table is a comparison of mosquito requests received by area over the previous six seasons.

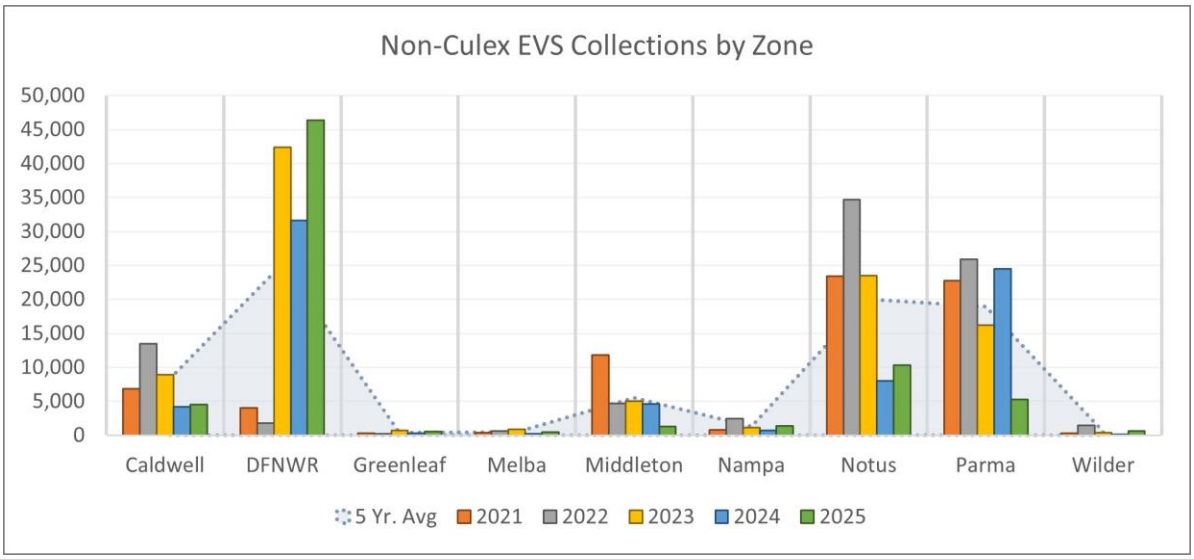


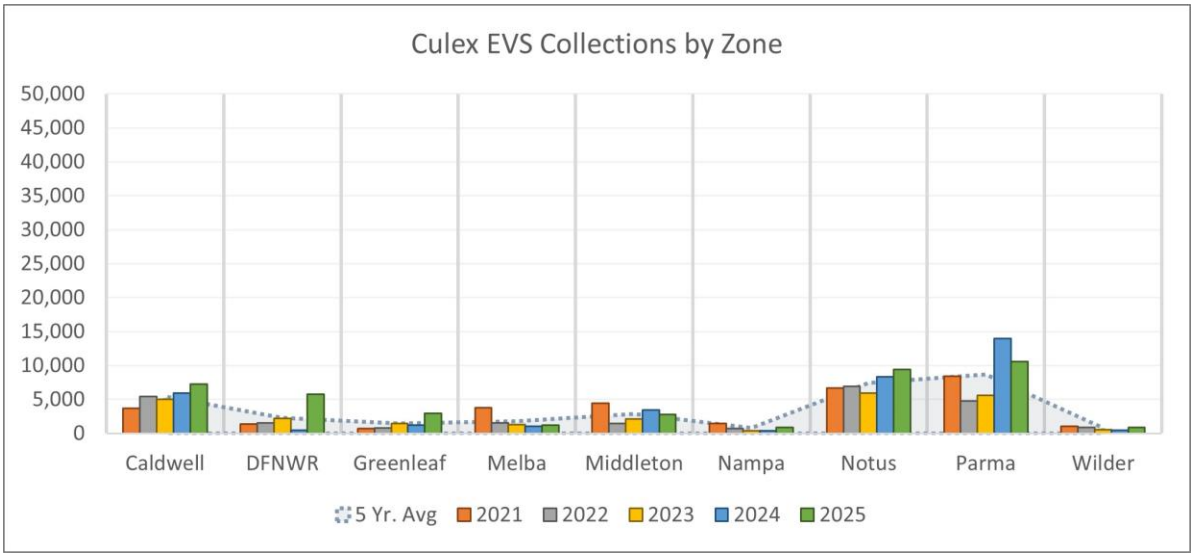
Surveillance and Arbovirus Testing:

CCMAD deployed approximately 79 EVS and 13 gravid mosquito traps each week throughout the county to monitor mosquito activity and track arbovirus activity. Eight additional BG-Sentinel traps were deployed in August and September for targeted surveillance of invasive *Aedes* species. The three traps utilized by CCMAD catch a range of both nuisance and vector species of mosquitoes, providing the district real time data on mosquito populations and virus activity within the county. Of the three traps used, EVS traps collected 79.60% of mosquitoes collected in 2025, gravid traps collected 18.98%, and

BG-Sentinel traps 1.41% of the 141,321 total mosquitoes collected during surveillance activities.

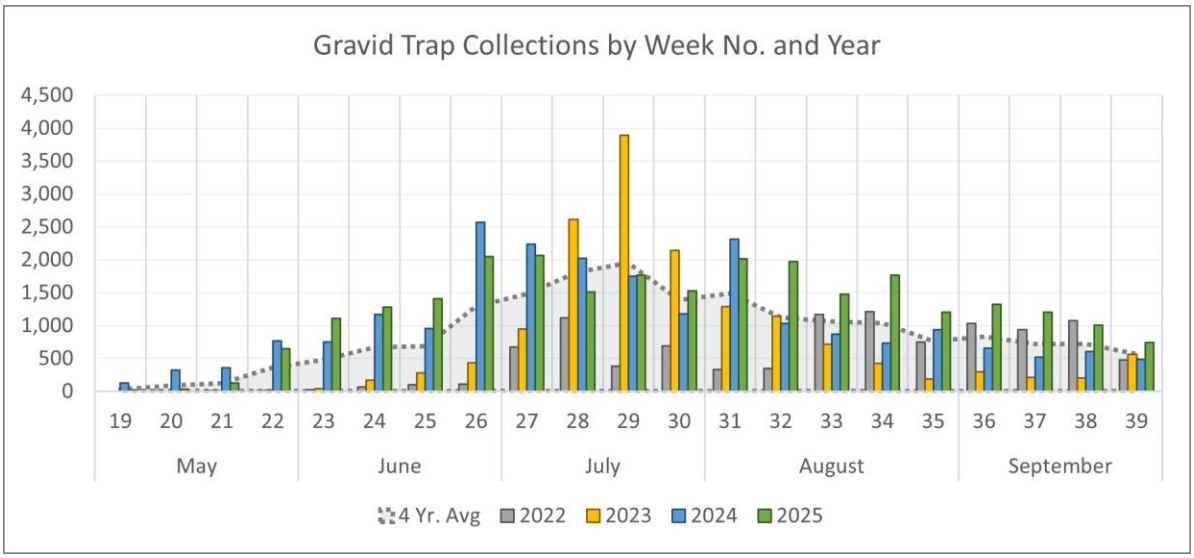
The following tables show the total pestiferous non-*Culex* genera of mosquitoes collected with EVS traps, and the total of vectoring *Culex* mosquitoes collected from EVS traps for the past five mosquito seasons. In total 112,498 mosquitoes were collected from EVS traps and identified to the species level in 2025. The mosquitoes collected represented eighteen species across five genera with 53.93% *Aedes* (8), 7.33% *Anopheles* (1), 0.01% *Coquillettidia* (1), 37.11 % *Culex* (4), and 1.61% *Culiseta* (3).





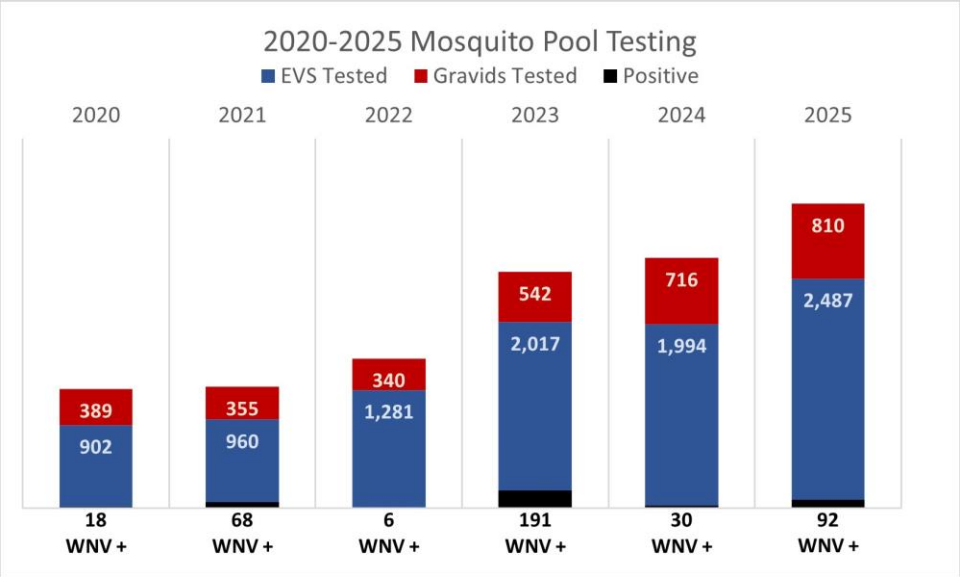
Surveillance utilizing gravid traps continued with thirteen traps placed in urban areas throughout the county. Gravid traps ran continuously throughout the season and mosquitoes were collected twice a week from each trap. 26,828 mosquitoes were captured in gravid traps in 2025. Eight species across four genera were collected, with

Culex pipiens accounting for 97.95% of gravid trap collections. *Aedes*(2) represented 0.02%, *Anopheles*(1) 0.03%, *Culex* (3) 98.07%, and *Culiseta*(2) 1.88%. Gravid trap mosquito collection totals increased in 2025 by 19.9% from 2024. Weekly collections in 2025 remained relatively stable throughout the season, with peaks in July and August similar to peaks observed in 2024.



Additional surveillance was conducted for invasive *Aedes* species after the first detection of *Aedes aegypti*. Eight additional BG-Sentinel traps, which target invasive *Aedes* species, were set in and around the area where the first and only *Ae. aegypti* was collected from a gravid trap. No additional *Ae. aegypti* were collected during the 2025 season, suggesting a local population has not established within Canyon County. Mosquitoes collected from BG-Sentinel traps resulted in an additional 1,995 mosquitoes collected, and 49 additional mosquito pools consisting primarily of *Cx. pipiens*. The mosquitoes collected represented eight species from four genera with 8.57% *Aedes* (2), 1.70% *Anopheles* (1), 0.85% *Culiseta* (2), and 88.87% *Culex* (3).

In 2025 a total of 3,297 pools were tested for West Nile virus, Western equine encephalitis virus, and St. Louis encephalitis virus with a multiplex RT-qPCR assay. Of the pools tested, 92 pools were positive for West Nile virus in 2025, with 56 collected from the EVS traps, 30 from gravid traps, and 6 from BG-Sentinel traps. 89 pools were detected by the District's in house RT-qPCR testing, and 3 pools of less than 5 mosquitoes were detected by the Idaho Bureau of Laboratories. 81 pools were tested for Payette and Ada counties, resulting in 6 additional West Nile virus Positives detected by the District in 2025. The chart below shows the historical data of the number of pools tested by trap type, and the total number of West Nile virus positive pools, which were detected over the last six years for mosquitoes collected in Canyon County.



Biological Control:

Following consultation with the Idaho Fish and Game Department the District added mosquitofish (*Gambusia affinis*) to our control program in 2022. Canyon County Mosquito Abatement District is currently the only Idaho program to utilize this method of control. Mosquitofish are only used in aquaria such as stock troughs, abandoned swimming pools and ornamental ponds. Mosquitofish were placed in 32 sites this season. We expect this program to continiue to expand as the agricultural community learns of this new tool.

Larval Control:

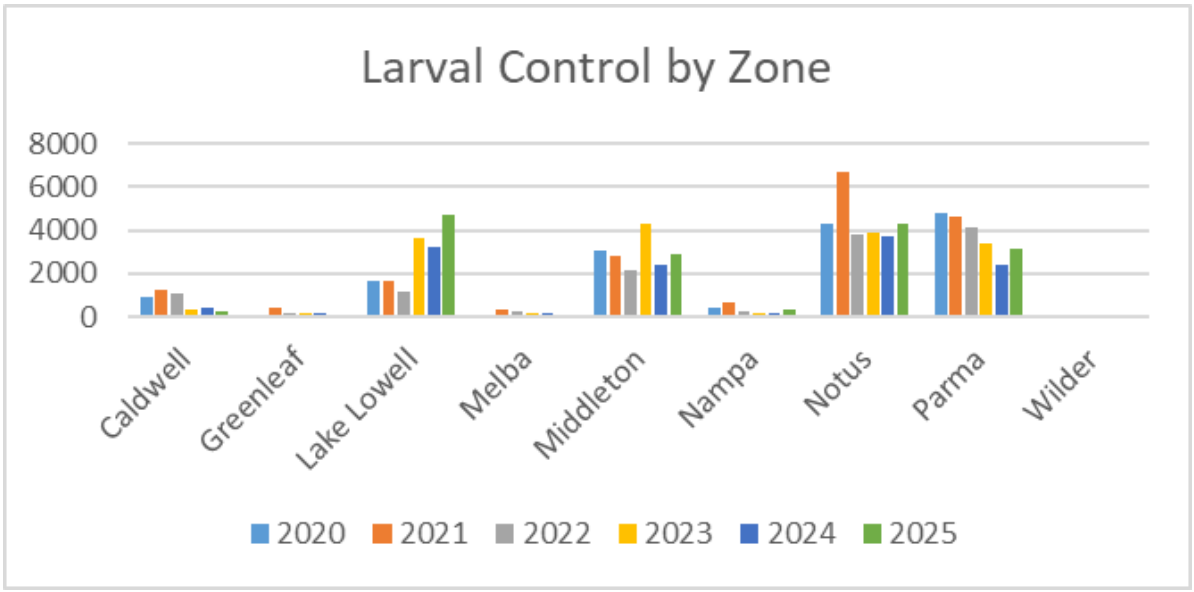
As hiring seasonal staff has become more difficult, our larval control program has increasingly relied on aerial applications to quickly and efficiently control mosquito populations. A drone program was added in 2021 to fill the gap between fixed wing applications and ATV treatments which comprised 37% of the 15822 acres treated in 2025. We expect these treatments to continue to increase in 2026.

The following table shows the amount and acres treated of each larval control product used in 2026.

Product	Total Amount	Acres Treated	EPA Reg. No.
Altosid SBG II	20.0 lbs.	4.0	75318-8-89459
Altosid XR Briquet	16,751 ea.	38.51	2724-421
Altosid XR-G	7,396.59 lbs.	1,479.32	2724-451
Altosid XR-G Ultra	1,661.00	482.31	89459-104
BVA 2	82.9 gal.	27.78	70589-1
MetoLarv S-PT	13,978 lbs.	4,632.41	73049-475
Natular G30	10,758.80 lbs.	2,196.83	8329-83
Vectobac 12 AS	12.86 gal.	51.44	73049-38

Vectobac GR	8,102.83 lbs.	1,684.19	73049-486
Vectobac GS	30,341.21 lbs.	3,907.92	73049-10
VectoMax FG	9,291.18 lbs.	1,317.10	73049-429

The following table shows a comparison of larval control acres by zone for the previous six years.



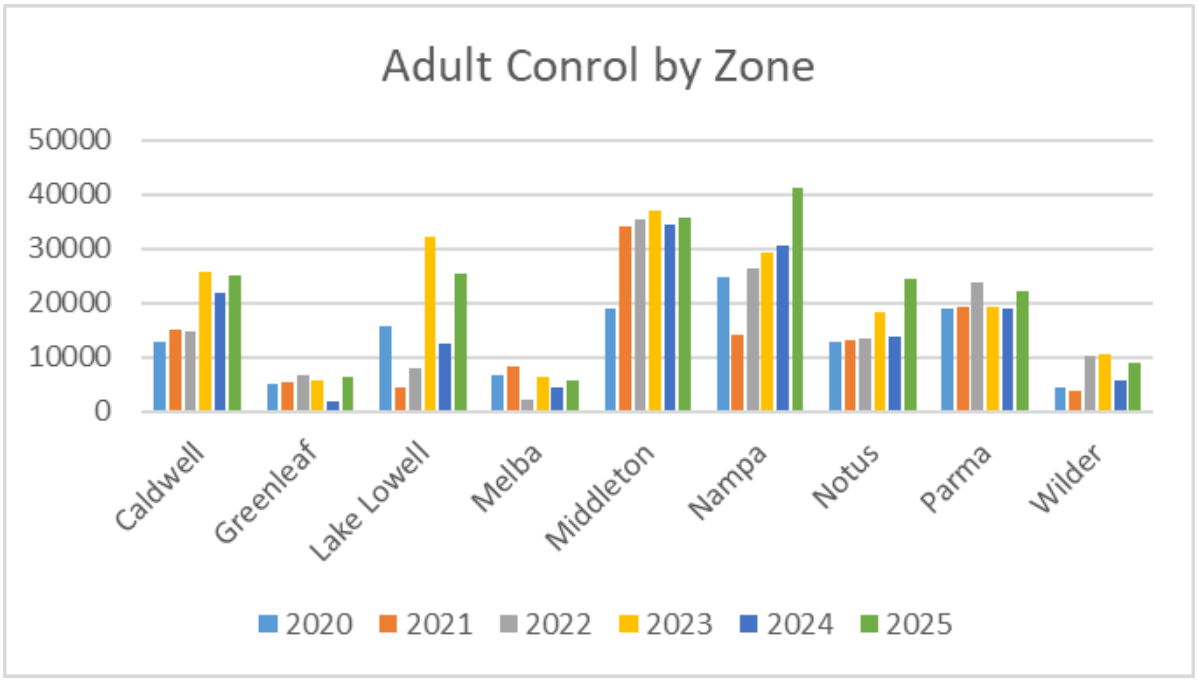
Adult Mosquito Control:

Adult mosquito control applications are conducted primarily by truck mounted ultra-low volume (ULV) machines. Applications were also made using an ATV mounted machine in areas inaccessible by larger vehicles. During large scale emergence events, or during peak virus transmission, applications can be made via fixed wing aircraft however all 195,760 acres treated this past season were by ground applications.

The following table shows the amount and acres treated of each adult control product used in 2025.

Adult Mosquito Control Product	Gallons Used	Acres Treated	EPA Reg No.
Anvil 10+10	459.07	94,898.75	1021-1688-8329
Zenivex E4	614.74	100,861.42	2724-807

The following table shows a comparison of adult control acres by zone for the previous six years.



Respectfully submitted,

James J. Lunders, District Director