

SALT LAKE CITY MOSQUITO ABATEMENT DISTRICT

Executive Director's Report

August 2026

1. Personnel:

Personnel	
Staff	Seasonal
11	39

Adulticiding	55.00	18.58
Wetlands / Rural	1,147.75	847.17
Fish Culture	259.00	188.50
Catch Basins / Gutters	760.75	652.58
Treeholes	78.00	193.17
Prison	10.50	49.58
Service Request	16.75	25.83
Traps	491.50	412.58
Aerial Operations	17.00	0.00
Laboratory	940.50	1,101.33
Office / Administration	808.75	870.75
Equipment Maintenance	448.75	330.42
Facility Maintenance	372.75	354.17
Training	50.50	46.42
Education	367.75	257.92
Unmanned Aerial System	393.75	259.17
RaHP VEC	365.25	435.42
Eurofins	4.50	0.00
Central Life Sciences	171.50	0.00
Other / Errands	92.50	355.08
Compensation Time Used	14.75	95.33
Vacation	24.00	56.92
Additional Hours	0.00	0.00
Holidays	0.00	0.00
Sick Leave	47.25	40.58
TOTAL	6,938.75	6,591.50

2. Office/Lab/Shop Activities:

Ary Faraji, Executive Director

- The District hosted Thad Allen, PhD student from Utah State University in the dormitories on 2-4 August 2026 to work on larval insecticide resistance.
- The District hosted Dr. Brian Foy from Colorado State University on 3-7 August 2026 in the dormitories to work on mosquito age grading using wing pixelation methodologies.
- ED Faraji attended and presented a Keynote Address at the Asia Pacific Conference on Mosquito and Vector Control on 3 August 2026 on “Innovative Advances for Mosquito Surveillance and Control Surrounding the Great Salt Lake in Utah, USA”.
- ED Faraji attended the monthly managers meetings of the Utah Mosquito Abatement Association on 12 August 2026.
- ED Faraji attended the weekly construction meetings of the Owner/Architect/Contractor on 12 August 2026.
- ED Faraji attended a monthly meeting of the Entomological Society of America’s Pacific Branch on 14 August 2026.
- The District hosted Thad Allen, PhD student from Utah State University in the dormitories on 16-18 August 2026 to work on larval insecticide resistance.
- ED Faraji and staff attended a virtual video call with representatives from ArcGen and ISCA (biotech companies focused on developing strategies for agricultural pest and vector control utilizing semiochemical strategies that integrate environmental sustainability with high performance, cost-feasibility, and ease of use) to work on a collaborative project involving attractive-toxic sugar baits and autodissemination techniques around the Great Salt Lake on 17 August 2026.
- Dalton Manbeck-Mosig and Elora Robeck, PhD Students from UC Davis, departed from the District on 19 August 2026 after spending five weeks in the dormitories working on mosquito age grading methods.
- ED Faraji attended the weekly construction meetings of the Owner/Architect/Contractor on 19 August 2026.
- The District hosted Dr. Bob Aldridge, a candidate for our Assistant Director position, from the USDA in Gainesville on 19-21 August 2026.
- ED Faraji, Trustees Mooers and Vickers, and previous Assistant Director White conducted interviews for the vacant Assistant Director position on 20 August 2026.
- ED Faraji hosted the newly elected SLC Councilwoman Erica Carlsen from District 5 on 21 August 2026 to discuss our operations and future direction.
- The District hosted Sarah Kroening and Mark Leonard (Metropolitan Mosquito Control District in Minnesota) and Barbara Bayer (Lee County Mosquito Control District in Florida) as part of our newly created “Mosquito Worker Exchange Program” on 24-28 August 2026.
- ED Faraji attended the weekly construction meetings of the Owner/Architect/Contractor on 26 August 2026.
- ED Faraji and members of staff met with Dr. Ilia Rochlin, our remote Biostatistician, to discuss phragmites issues on 26 August 2026.

Aleta Fairbanks, CFO

- 24 August 2026 – Sent Jason Hardman the Initial Response to his HR complaint and requested his feedback prior to finalizing the complaint.
- 31 August 2026 – Sent Jason Hardman a second request for feedback on the Initial Response to his HR complaint.
- 31 August 2026 – Sent Nate Byers an ADA Response and Accommodation Form per his employee’s request.

Chris Bibbs, Laboratory/Assistant Director

Aug 3	Saarman lab intern project call
Aug 5	Pestie meeting on protocol and summer testing; Thermal fogging night trial
Aug 6	CLS droplet analysis
Aug 7	Final paperwork and closing out CLS study
Aug 10	Tox/orthopodomyia experimentation
Aug 11	Tox/orthopodomyia experimentation; Eurofins GLP testing logistics
Aug 12	Tox/orthopodomyia experimentation; Eurofins revised quotes and scheduling late season work
Aug 13	Tox/orthopodomyia experimentation; CLS billing; KSL interview on WNV
Aug 14	Closing out Cliff Swallow project; project updates with lab members
Aug 17	ArcGen meeting on ATSB; compiling Tox/orthopodomyia data for analysis
Aug 18	JAMCA reviews; end of season/internship debrief with Thad Allen (Saarman lab)
Aug 19	Cross CoE Internship Webinar; Dalton and Elora project wrap-up and departures; Dr. Robert Aldridge arrival
Aug 21	Meetings w/ Dr. Aldridge; project finalizations and exits for Derek Bingham, Amy Jamison, and Daisy Roberts
Aug 24	Saarman lab final summer student internships meeting
Aug 25	Metropolitan and Lee County MCD ride-alongs and surveillance cross-training; Resistance bioassay troubleshooting meeting w/ Saarman lab (Thad Allen); Capgel manuscript revisions (Sci Reports)
Aug 26	SRI student meeting and project discussions (Daisy Roberts); Phragmites data review call w/ Ilia
Aug 27	WNV Air Sampler project support for Barbara Bayer (Lee Co MCD); Safety Meeting planning w/ Michele
Aug 28	Safety meeting; debrief with MMCD
Aug 31	Truck calibrations for Eurofins; meeting with Alina Moreno on RaHP VEC project; SRI project meeting (w/ Daisy Roberts)

Michele Rehbein, Education Specialist

- Dr. Rehbein attended a ULGT Prime Time safety webinar (on backing up) on 3 August.
- Dr. Rehbein attended part of a URS webinar on 4 August.
- Dr. Rehbein attended the ULGT monthly Legal Brief Series (water, sewer, and flood claims) on 4 August.
- Dr. Rehbein, Hannah Brennan, and Mitch Pruitt met with J.R. Martinez at Hartland Partnership Center on 5 August.
- Dr. Rehbein and Hannah Brennan tabled at the Marmalade Branch Library on 6 August.
- Dr. Rehbein and Andrew Dewsnap met with Clair Nebeker from Third Sun for website training on 6 August.
- Dr. Rehbein published the SLCMAD biweekly newsletter on 7 August.
- Dr. Rehbein published the SLCMAD biweekly newsletter on 21 August.

- Dr. Rehbein, Evelyn Acosta, Hannah Brennan, Mitch Pruitt, and Thomas Widmer tabled at the Natural History Museum of Utah's annual BUGfest on August 8 and 9.
- Dr. Rehbein met with Dr. Tim Burton from RaHP VEC to discuss social media on 12 August.
- Dr. Rehbein attended the UMAA Board of Director's meeting on 12 August.

- Dr. Rehbein and Evelyn Acosta tabled at the Healthy Start West Valley + Partners in the Park event on August 15.
- Dr. Rehbein and Dr. Byers spoke at a safety meeting on 17 August about WNV surveillance updates and prevention/protection measures.
- Dr. Rehbein and Dr. Byers gave Dr. Bob Aldridge a tour of the facility on 19 August.
- Dr. Rehbein attended the JRC TAC meeting on 20 August.
- Dr. Rehbein met with Kelsey Fairbanks on 27 August.
- Dr. Rehbein met with Aleta Fairbanks on 27 August.
- Dr. Rehbein met with Sarah and Mark from Metropolitan Mosquito Control District on 27 August.
- Dr. Rehbein conducted a safety meeting on 28 August.
- Dr. Rehbein attended a presentation from Sarah and Mark from MMCD on 28 August.

Nate Byers, Molecular Biologist

Provided support to Dalton Manbeck-Mosig and El Robeck (UC-Davis PhD students). July 20 – 19 Aug
 Provided training for Elizabeth Hart (MAD-Davis) on primer/probe preparation for virus testing. 7 Aug
 Demonstrated virus testing for EI (UC-Davis). 7 Aug
 Appeared on KSL news story warning public about abundant West Nile virus. 13 Aug
 Represented the district at the UT WNV Update Meeting. 13 and 27 Aug
 Lead the final night of CLS handheld Duovex trials. 5 Aug
 Provided support and information during exchange visit with members of Metro MCD (Sarah Kroening and Mark Leonard) and Lee County MCD (Barbie Bayer)
 Received promotion to Laboratory Director. 26 Aug

Met with Rajeev Vaidyanathan and others from ArcGen about autodisseminated larvicide attractive sugar baits with Ary and Chris. 17 Aug
 Provided parts of the tour and district background to Dr. Robert Aldridge, a candidate for Assistant Director. 19-21 Aug
 Met with Alina about fall project plans. 31 Aug

Brad Sorensen, Aerial Operations Supervisor

All of the UAS seasonals returned to USU for the start of School Semester. We have kept them on to work part-time though as their schedule permits and as needed on our end.
 Continued attending OAC Meetings and working with construction team.
 Went for a maintenance/training flight in helicopter.
 Showed Bob our UAS Operations and had him shadow UAS team during an application.
 Showed visiting supervisors from MMCD to see UAS Operations and had them shadow team during an application.

Treated 885 Acres with UAS this month

8/5 – OAC Meeting
 8/7 – Helicopter flight
 8/12 – OAC Meeting
 8/19 – 8/21 Bob Visit
 8/19 – OAC Meeting
 8/24 – 8/28 Visiting Supervisors from LCMCD and MMCD
 8/26 – OAC Meeting

Jason Hardman, Rural Field Supervisor

Fixing equipment
 Training
 Field work
 Field tour with guests

Quinten Salt, Urban Field Supervisor

Make barrier application at Tracy Aviary 8/27
 Meet with Julia from Tracy Aviary to plan spray 8/14
 MMCD Visit 8/24
 Meet Bob Aldridge 8/18

3. Field Data:**Control:****ACRES TREATED**

	Adulticide		Larvicide		Total
	Ground	Aerial	Ground	Aerial	
August's Total	1,528.00	40,960.00	1,009.00	3,216.00	46,713.00
August's 3 Year Avg.	417.98	39,549.33	965.28	1,869.00	42,801.59

Service Requests:**MOSQUITO SERVICE OPPORTUNITIES RECEIVED BY MONTH**

	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
2026	5	8	24	19	17	10				83
3-Year Avg.	3.67	14.00	35.00	42.67	34.00	19.00	13.33	3.33	0.67	165.67

Inspection and Surveillance:

Larval Collections		
Species	August	5-Year Average
<i>Ae. campestris</i>	0	0.0
<i>Ae. dorsalis</i>	55	70.4
<i>Ae. fitchii</i>	0	0.0
<i>Ae. increpitus</i>	0	0.4
<i>Ae. nigromaculis</i>	0	0.2
<i>Ae. nipadopsis</i>	0	0.0
<i>Ae. sierrensis</i>	0	0.0

<i>Ae. melanimon</i>	0	0.0
<i>Ae. varipalpus</i>	0	0.0
<i>Ae. vexans</i>	6	1.4
<i>Cx. erythrothorax</i>	6	6.8
<i>Cx. pipiens</i>	56	19.0
<i>Cx. tarsalis</i>	127	122.6
<i>Cx. salinarius</i>	1	0.0
<i>Cx. impatiens</i>	0	0.0
<i>Cs. incidens</i>	12	7.8
<i>Cs. inornata</i>	4	14.2
<i>An. freeborni</i>	6	0.6
Total	273	243.4

4. Weather:

August's weather was warmer (by 2.6°) and wetter (by 1.26") than normal.

Temperature:

	Monthly Avg.	Normal	High	Low
July	85.5°	81.1°	109°	62 °
August	81.7°	79.1°	105°	60 °

<https://www.weather.gov/wrh/Climate?wfo=slc>

Precipitation:

	Total for Month	Normal	Most in 24 hours	
July	0.62"	0.49"	0.35"	on 29 th
August	1.84"	0.58"	0.49"	on 14 th

<https://www.weather.gov/wrh/Climate?wfo=slc>

Great Salt Lake (elevation in feet above sea level):

	Jul 1	Aug 1	Sep 1
2025	4,192.7	4,192.0	4,190.2
2026	4,191.1	4,190.6	4,191.5

<https://waterdata.usgs.gov/monitoring-location/USGS-10010000/>

Salt Lake City Mosquito Abatement District

2026 Board Meeting Schedule

All Board meetings will be held on the third Thursday of each month (unless denoted by *) at the offices of the Salt Lake City Mosquito Abatement District, 2215 North 2200 West, Salt Lake City, UT 84116

January, Thursday 15 January 2026 at 12:30 pm

February, Thursday 19 February 2026 at 12:30 pm

March, Thursday 19 March 2026 at 12:30 pm

*April, Thursday 30 April 2026 at 12:30 pm

May, Thursday 21 May 2026 at 12:30 pm

June, Thursday 18 June 2026 at 5:00 pm (5:00 pm Board and 6:00 pm Public Hearing)

July, Thursday 16 July 2026 at 12:30 pm

August, Thursday 20 August 2026 at 12:30 pm

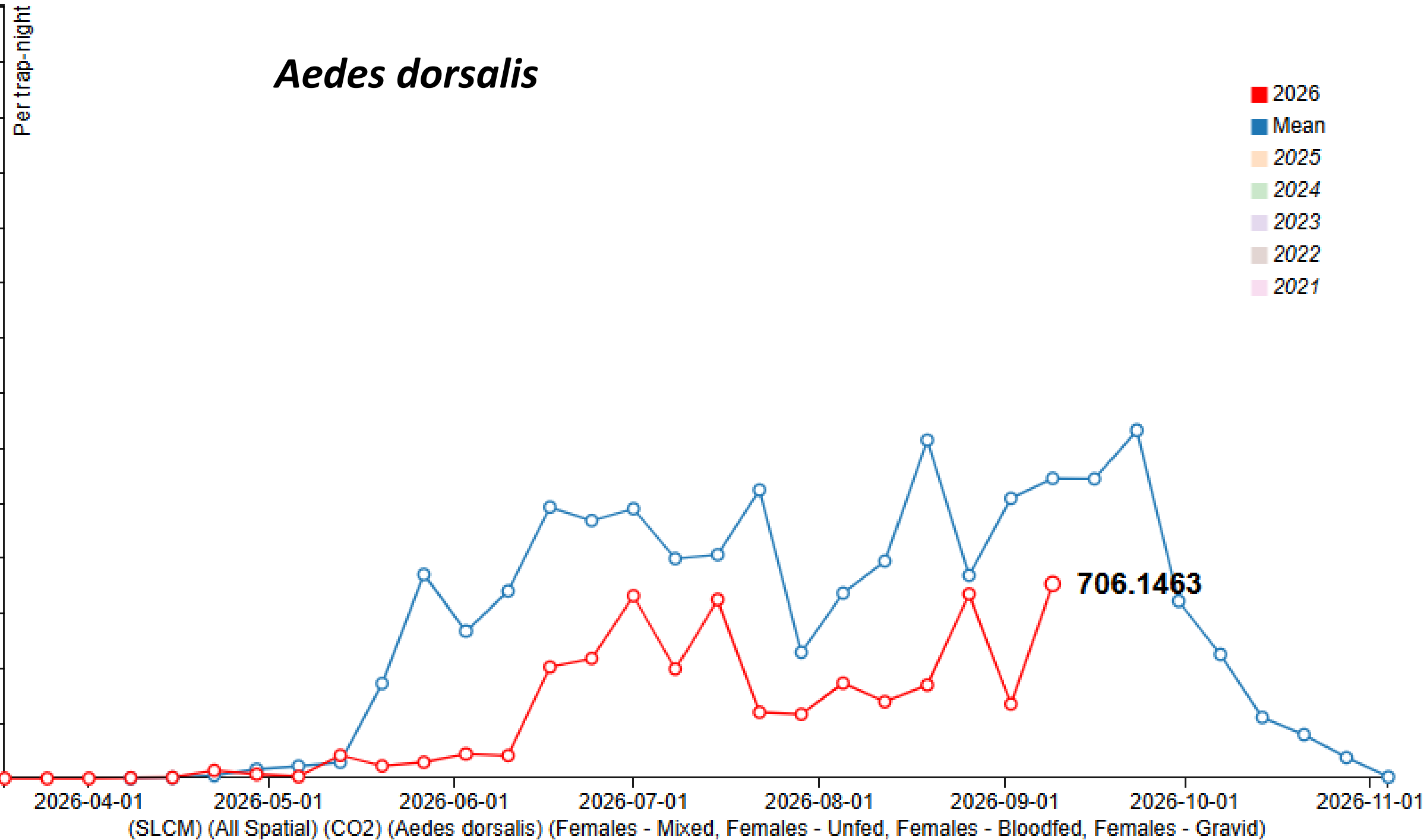
September, Thursday 17 September 2026 at 12:30 pm

October, Thursday 15 October 2026 at 12:30 pm

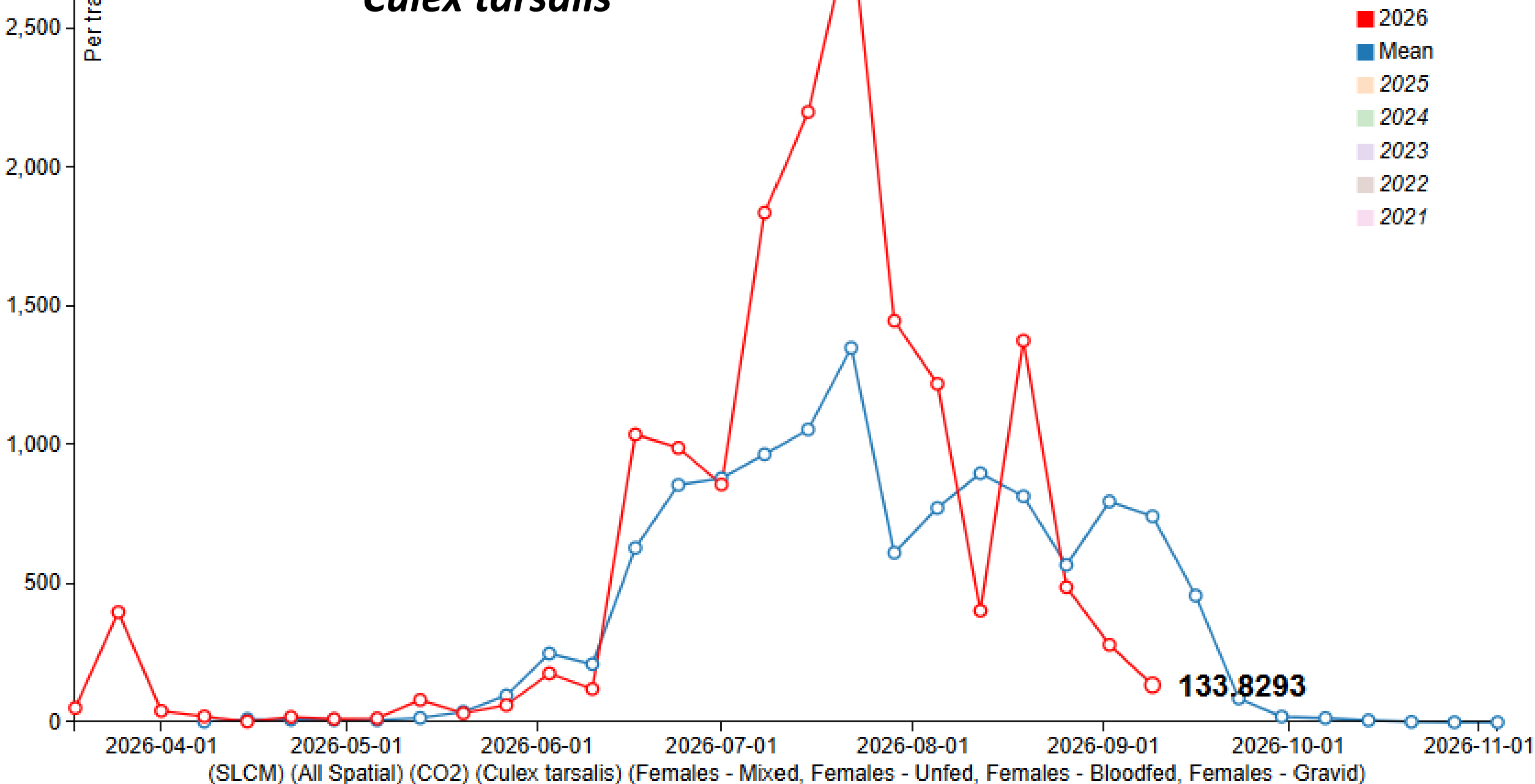
November, Thursday 19 November 2026 at 12:30 pm

December, Thursday 17 December 2026 at 5:00 pm (5:00 pm Board and 6:00 pm Public Hearing)

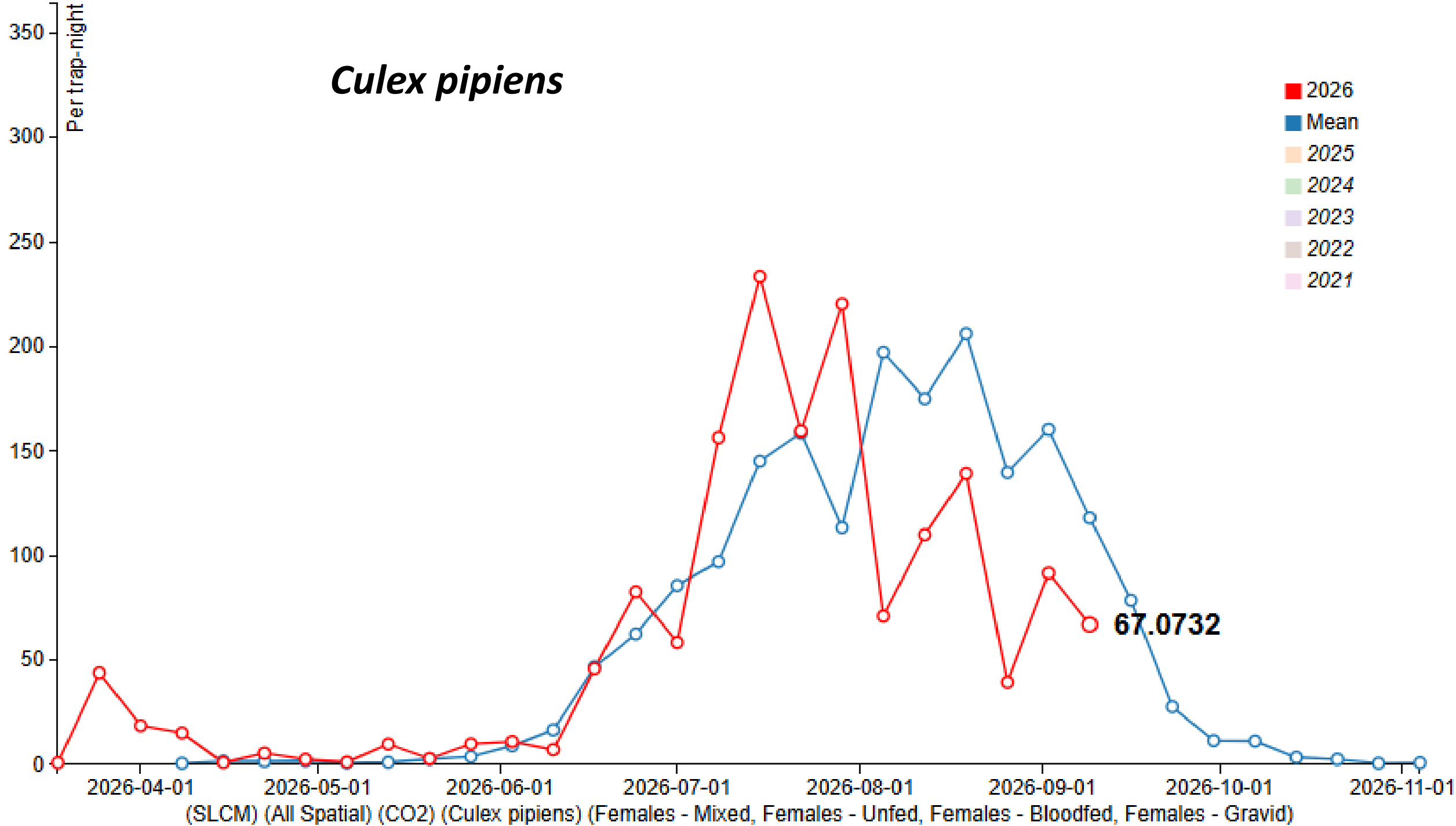
Aedes dorsalis



Culex tarsalis



Culex pipiens



Current Date: 10Sept2026	Location	# of Human WNV Cases	# of Equine WNV Cases	# of Mosquito WNV Samples
	SLCMAD	10	1	261
	Utah	31	17	1,010
	USA	504	58	8,208

Top Five States with WNV Activity	California	86	10	3,384
	Arizona	82	1	201
	Texas	50	0	176
	Colorado	27	4	30
	Illinois	24	0	N/A

1 WNV death, cancer immunosupressed.
SL County Health Dept doesn't yet know how many of the 10 are in Salt Lake City.

Rocky Mountain Fly: Characterizing Colorado's Mosquito Surveillance Landscape

by Charlotte Haslett, Natalie Wickenkamp, Christopher M. Roundy, Ary Faraji, Greg White, Rebekah C. Kading

As environmental changes, globalization, and human travel drive range shifts of endemic and invasive mosquito species, high quality mosquito surveillance and data reporting structures play an increasingly important role in protecting the public from arboviruses like West Nile virus (WNV) and Dengue virus (DENV)(Abbasi, 2025a; Nie and Feng, 2023). In 2023, Colorado reported the highest number of WNV cases in the United States with 634 human cases and 51 deaths (CDPHE, 2025). As of late September 2025, the Colorado Department of Public Health and Environment (CDPHE) reported 235 cases with 12 fatalities and 121 hospitalizations from WNV (CDPHE, 2025). Additionally in 2024, the Grand River Mosquito Control District reported detection of the DENV vector, *Aedes aegypti*, in their surveillance traps (Grand River Mosquito Control District, 2025). Previously thought of as a tropical and subtropical mosquito, *Ae. aegypti* potentially establishing a population in Grand Junction, Colorado, demonstrates how warming temperatures and increased trade and travel expand habitable ranges for mosquitoes (Abbasi, 2025b; Lozano et al., 2025). Geographic shifts in suitable habitat for mosquito vectors pose a public health threat due to increased risk of human arbovirus infections in new regions (Moise et al., 2018).

Surveillance and data reporting serve an essential role in informing public health departments and integrated pest management groups about where and when mosquito populations are transmitting infections to humans

(Moise et al., 2018). Since there is no human vaccine for WNV (CDC, 2026) and Sanofi will soon cease production of Dengvaxia® (the only DENV vaccine approved in the United States) (CDC, 2025), mosquito surveillance and control is the primary modality available to prevent spread of arboviruses in Colorado.

Mosquito and arbovirus surveillance in Colorado is highly heterogeneous, similar to many other states (Hamer, 2016). The lack of centralized data collection and communication for mosquito abundance and infection status across Colorado and the greater mountain west area underlines the challenges faced by public health officials and researchers aiming to model and monitor infectious disease populations for mitigation purposes (Sedda et al., 2025). In conjunction with shortfalls of data reporting on mosquito populations, the inconsistent funding sources for mosquito surveillance in the United States make it difficult to collect abundance data and stay ahead of the curve for responding to invasive species monitoring and arbovirus activity (Dye-Braumuller et al., 2022). Therefore, the goal of this study was to

use mapping approaches to evaluate congruence of WNV incidence, *Ae. aegypti* detection, and vector surveillance capacity across the state. Characterizing where Colorado has successfully implemented high quality surveillance and reporting systems and where there are opportunities for improved monitoring at the county level is an important step in mitigating disease outbreaks from arboviruses.

Information gathering and mapping

We searched each Colorado county's public health or environmental health page sequentially for "mosquito control," "mosquito abatement," "vector control," "West Nile virus", and finally "mosquito" if no page was available with the prior iterations. Information on vector surveillance and control posted for each county was collected to assign a "surveillance score" based on the comprehensiveness of the surveillance practices in place (Table 1). One point was assigned per scored feature, so that higher scores indicate greater investment by the county in mosquito surveillance and control. These parameters were based on research and preparedness from the

Table 1. Vector surveillance and control posted for each county was collected to assign a "surveillance score" based on the comprehensiveness of their surveillance practices.

Point	Criteria
1	Information was posted on WNV and mosquito-borne diseases
1	The county or municipality makes an effort to spray and control mosquitoes
1	The county collects mosquito abundance data and uses that to inform control measures
1	The county tests mosquito pools for WNV infection
1	The county publishes the mosquito abundance data publicly

National Association of County and City Health Officials (NACCHO, 2019).

Information was also collected on WNV incidence across Colorado from the CDPHE (CDPHE, 2025). Census numbers from the 2020 US Census were used to find the WNV incidence rate per 100,000 people based on the county population. Current information on surveillance capacity and practices that would not necessarily be in citable publication was gained through interviews directly with CDPHE and Vector Disease Control International (VDCI), a for-profit company providing contractual work in some areas.

County surveillance scores and average annual incidence of WNV were visualized using a bivalent choropleth map, a map where each county is colored with a unique shade that represents two pieces of information combined, generated using ArcGIS Pro (version 3.5.0). Location of *Ae. aegypti* invasion into Colorado and Denver were added manually.

Visualizing the convergence of WNV incidence and surveillance

Mosquito surveillance practices varied widely across the state, with counties utilizing a variety of avenues for mosquito collection, identification, testing, and reporting. Counties shaded a deeper blue color have a high surveillance capacity, and those shaded a darker red have a higher WNV incidence; transitional colors indicate intermediate levels of WNV incidence and surveillance capacity. Those with both robust surveillance practices and a high WNV incidence are dark purple (Fig 1). Across the state, 16/64 counties in Colorado have robust mosquito surveillance, control, and reporting systems, as indicated by a surveillance score of at least 4. In contrast, 31/64 counties had no information about mosquito-borne diseases on their department of health websites. Most counties in north-central and western Colorado where WNV incidence has

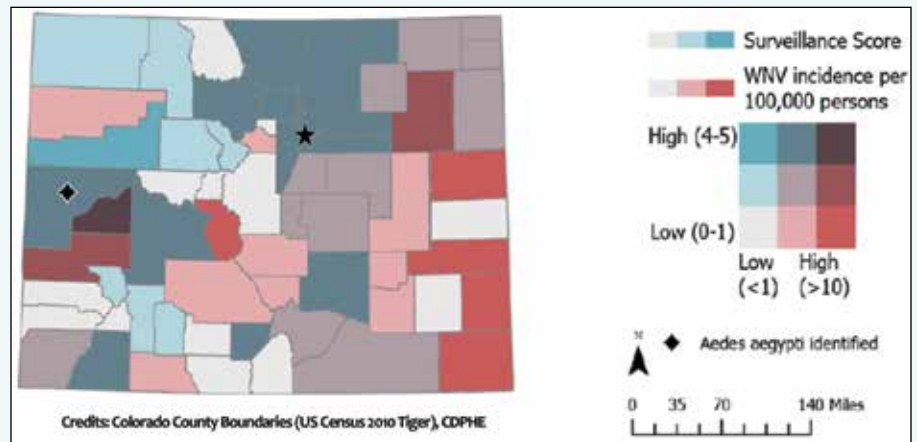


Fig 1. Bivariate choropleth map of Colorado counties indicating 1) surveillance score in blue and 2) average annual incidence of human WNV cases from 2020-2024 in red. Location of invasive *Aedes aegypti* found overwintering in Grand Junction is denoted with a black diamond. Denver is indicated by a black star.

historically been high also have WNV surveillance and control practices in place. This includes Mesa County where *Ae. aegypti* has been detected in Grand Junction (Fig 1). Incidence of WNV was also relatively high across much of Eastern Colorado; however, several of these counties had very low surveillance scores, identifying a need and opportunity for expanding surveillance capacity.

Fourteen of 64 counties submit *Culex* mosquito samples to the state public health lab for WNV testing. Mosquitoes in these counties are collected either by the local public health departments or contracted out to VDCI. Eight counties conduct some form of in-house testing and provide data to CDPHE. The counties in which surveillance is conducted by the local health department provide data on *Culex* species (*Culex tarsalis* and *Culex pipiens*). All counties that use VDCI for surveillance identify mosquitoes to species and provide that full data to CDPHE. Counties in which mosquito control districts identify mosquitoes to species do not regularly provide the full data to CDPHE but do report unusual findings such as a significant increase in overall vector abundance or the detection of an invasive species like *Ae. aegypti*.

Capacity building in the Rockies and High Plains region

Arbovirus and mosquito surveillance in Colorado is driven by WNV and monitoring *Culex* mosquito populations. A current challenge now faced is the potential range expansion of *Ae. aegypti* into Colorado, and the need to expand the surveillance focus to account for this new threat. Standard surveillance practices for *Culex* vectors of WNV are not necessarily effective for detection of *Ae. aegypti*. This task will be especially challenging given the patchwork nature of surveillance capacity and data management across the state that is already stretched to meet the needs of WNV surveillance. Currently mosquito surveillance data (especially species abundance) are managed by CDPHE, VDCI, local public health departments, and mosquito control districts. These data are also typically only partially available on each respective agency's website, making it difficult to access and analyze. A future goal to help centralize these data is for all partners to use VectorSurv (re3data.org, 2025), such that all WNV testing and species abundance data are maintained and accessible in one place. It will also be important to maintain regional communication with neighboring

states also experiencing invasion of *Ae. aegypti* including Utah (2019) (Gloria-Soria et al., 2022), New Mexico (2018) (NM Health, 2018), and Nevada (2017) (Lozano et al., 2025). Understanding the invasion ecology of *Ae. aegypti* in the mountain west, arbovirus vector competence, insecticide resistance profiles, and overwintering capability are timely and important investigations to undertake.

Historical trends in responding to arbovirus outbreaks have been driven by the boom-and-bust funding cycles, and left significant gaps in maintaining resource capacity and expertise in medical entomology (Hamer, 2016; Kading et al., 2020). Programmatic initiatives such as the establishment of Centers of Excellence and Training and Evaluation Centers in Vector-borne Diseases, funded by the US Centers for Disease Control and Prevention, have filled this need in recent years (CDC, 2024a, 2024b). Expansion of vector-borne disease surveillance capacity and invasive species monitoring in Colorado and neighboring states is being championed by the Rockies and High Plains Vector-borne Disease Training and Evaluation Center (RaHP VEC). RaHP VEC is one of the CDC-funded Training and Evaluation Centers with a goal to build workforce capacity to address established and future vector-borne disease threats in our uniquely at-risk region. The core institutions funded by the CDC in RaHP VEC are Colorado State University (CSU), CDPHE, Texas Tech University (TTU), and the Salt Lake City Mosquito Abatement District (SLCMAD). RaHP VEC has launched public health entomology certificate programs at both CSU and TTU, hosted multiple training workshops in our region over the past few years focused on vector identification and insecticide resistance monitoring, conducted various evaluation of field surveillance and control measures, and assisted local vector surveillance districts in the evaluation of *Ae. aegypti*

establishment on the western slope of the Rocky Mountains. Moreover, an active summer internship program has placed interns in areas most in need of staffing and resources for surveillance. This initiative is particularly impactful for states such as Colorado, that experience relatively high levels of arbovirus transmission on an annual basis but surveillance does not necessarily encompass all areas of highest disease risk.

Expanded training opportunities in the mountain west and collaborative efforts across the CDC-funded centers are addressing critical workforce and surveillance needs in Colorado and surrounding mountain states as we face new and emerging vector-borne disease threats. It is only through these collaborative partnerships that we can all better serve our communities for enhanced quality of life and public health protection.

Acknowledgements

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