2024 ANNUAL REPORT

of the

South Salt Lake Valley Mosquito Abatement District

Silvia Catten
Chair of the Board of Trustees

Dan McBride
District Manager

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INTRODUCTION

Welcome to the 2024 Annual Report for the South Salt Lake Valley Mosquito Abatement District. This year has been one of significant change and progress, marked by new leadership, evolving environmental conditions, and a renewed commitment to community engagement. Our mission remains steadfast: "To serve the public by minimizing mosquito nuisance and disease with a priority on safety, ecological stewardship, and cost efficiency."

We were pleased this year to introduce our new Assistant Manager, Scott Sommer, who brings a wealth of experience and fresh perspectives to our team. His leadership has been instrumental in navigating the challenges and opportunities presented by changing weather patterns and shifting mosquito populations.

One of the most pressing issues we faced this year was the emergence of St. Louis Encephalitis as a new concern. Our team has been proactive in monitoring and addressing this threat to ensure the safety and well-being of our community. We have increased surveillance and implemented targeted interventions to mitigate the risk of this disease, all while maintaining our commitment to ecological stewardship.

In addition to our ongoing efforts, we launched a new internship program aimed at fostering the next generation of public health professionals. This initiative has not only provided valuable hands-on experience for students but has also enriched our district with innovative ideas and energy.
We have placed a greater emphasis on community engagement. 2024 marks a year of a new dedication to educating the public of mosquitoes. This program is only in its infancy, but we are beginning to see the fruits of our laborers.

Finally Data collection and analysis are fundamental components of our mosquito abatement strategy. Throughout 2024, we employed a variety of methods to gather comprehensive data on mosquito populations, breeding sites, and disease prevalence. Our team utilized advanced technologies such as geographic information systems (GIS) and remote sensing to map and monitor mosquito habitats. Additionally, we conducted regular field surveys and laboratory testing to identify and track mosquito species and potential disease vectors. This data-driven approach enabled us to make informed decisions, optimize resource allocation, and implement targeted interventions. By continuously analyzing the collected data, we were able to adapt our strategies in real-time, ensuring the effectiveness and efficiency of our mosquito control efforts..

We invite you to explore this report to learn more about our activities, achievements, and data that we have collected. Thank you for your continued support and collaboration in making our community a safer and healthier place.

Daniel McBride

District Manager/Director

South Salt Lake Valley Mosquito Abatement District

PERSONNEL

BOARD OF TRUSTEES

The District is governed by a Board of Trustees consisting of one Trustee appointed from the District at large by the legislative body of Salt Lake County and one Trustee appointed by each municipal legislative body within the District (Utah Code 17B-2a-704).

Name	Office	Board Meeting Attendance	Date Appointed	Expiration of Current Term	Municipality Represented
Jeff Bossard	Trustee	7	1/2020	12/2023	Brighton
Ty Brewer	Trustee	9	6/2022	06/2026	Holladay
Tish Buroker	Vice Chair	10	1/2018	12/2023	Riverton
Silvia Catten	Chair	11	1/2017	12/2024	Millcreek
Don Christensen	Trustee	12	1/2020	12/2023	West Valley City
Gene Drake	Trustee	10	1/1997	12/2024	West Jordan
Jeff Gaston	Trustee	11	1/2020	12/2023	Bluffdale
Brad Gilson	Trustee	10	6/2019	6/2023	Draper
Paul Glover	Trustee	10	1/2018	12/2025	Midvale
LeAnn Huff	Trustee	7	1/2020	12/2025	South Salt Lake
Kristie Overson	Trustee	11	1/2012	12/2023	Taylorsville
Doug Petersen	Trustee	3	1/2022	Passed during term	Cottonwood Heights
Linda Price	Trustee	12	2/2017	12/2024	White City
Florence Reynolds	Trustee	11	1/2020	12/2023	Sandy
Ilene Risk	Treasurer	11	1/2009	12/2019*	Salt Lake County
Steve Shields	Trustee	9	3/2020	12/2023	Herriman
Laverne Snow	Trustee	12	1/2006	12/2025	Murray
Tamara Zander	Trustee	6	2/2016	12/2023	South Jordan
Matt Holton	Trustee	5	5/2023	12/2023	Cottonwood Heights

** a new appointment letter was never received from the County; she remains appointed until superseded*

REGULAR EMPLOYEES

Name	Position	Dates of Full-Time Employment	Additional Years in Mos. Control
Devin Belnap	GIS Analyst / IT Administrator	August 2006 - Present	2 Seasonal
Kassie Draper	Finance Manager	March 2010 - Present	-
Eric Gardner	Biologist / Safety Supervisor	October 2014 - Present	4 Seasonal
Dan McBride	District Manager/Director	January 2018 - Present	3 Seasonal
Judd Mitchell	Fleet & Facilities Manager	November 2015 - Present	6 Seasonal
Scott Sommer	Assistant Manager/ Field Supervisor	January 2024-Present	20 Seasonal

SEASONAL EMPLOYEES

Name	Position	Original Hire Date	Total Summers Worked
Anthony Codella	B	June-2024	1
Owen Dattilo	B	June-2024	1
Hannah Davidson	R/I	May-2024	1
Natalyn Davies	B	June-2024	1
Linzey Gill	R/I, U	May-2024	1
Fisher Hurst	M	March-2024	1
Peter Jensen	M	March-2022	3
Sariah Marcum	M	May-2024	1
Zachary Mickelsen	U	May-2023	2
Brenna Miller	M,B	June-2024	1
Sean Risk	M	April-2024	1
Logan Robinson	M	March-2024	1
CJ Rubaclava	B	June-2023	2
Kaitlyn Seiter	B	June-2020	4
Isaac Skinner	M	May-2024	1
Sofia Skinner	B	June-2023	2
Thea Spigarelli	B	June-2021	3
Mara Spigarelli	B,	June-2024	1
Julia, Tateoka	R/I	April-2024	1
Ben Winkel	M	June-2018	5
Mylee Woffinden	U	April-2024	1

Position abbreviations and brief job descriptions:

B Bicycle Crew – Treats catch basins and gutters
BF Black Fly – Inspects, records data and treats black fly spots weekly
M Mosquito Crew – Inspects, records data and treats mosquito spots in the field weekly
O Office – Answer phones, takes service requests, helps with computers/GPS units
R/I Research/Intern- Deliver and collect CO_2 and Gravid traps, Identify, run genetic testing
U Urban Crew – Stock ornamental ponds with mosquito fish or briquets, maps and treats horse troughs and tree holes

FUNDING AND BUDGET ALLOCATION

Funding and Budget Allocation

Effective mosquito abatement requires careful financial planning and resource allocation. In 2024 the primary of our budget made up from property tax, with some other sources. These funds were strategically allocated to maximize our impact while adhering to our mission of cost efficiency.

- Operational Costs: *A significant portion of our budget was dedicated to operational costs, including the purchase and maintenance of equipment, insecticides, and other necessary supplies. Ensuring that our team has the best tools available is crucial for effective mosquito control.*
- Personnel: *Investment in our team is a top priority. This year, we allocated funds to hire additional staff, including our new Assistant Manager and interns. Training and professional development were also key areas of focus, ensuring our team remains knowledgeable and skilled.*
- Research and Surveillance: *To stay ahead of emerging threats like West Nile, St. Louis Encephalitis, and emerging non-native mosquito species, we allocated funds for research and enhanced surveillance activities. This included the use of advanced technologies and methodologies to monitor mosquito populations and disease prevalence.*
- Community Engagement: *A portion of our budget was dedicated to community engagement initiatives. These funds supported educational programs, public workshops, and collaborative projects aimed at raising awareness and fostering community involvement in mosquito control efforts.*
- Emergency Response: *We also set aside funds for emergency response to address unexpected outbreaks or environmental changes. This financial flexibility allows us to respond swiftly and effectively to any new challenges that arise.*

For detailed information on the budget, please see Appendix C.

WEATHER CONDITIONS

2024 Temperatures		
Month	Mean Monthly Temp (in degrees Fahrenheit)	Departure from Average (in degrees Fahrenheit)
January	34.8	4.1
February	40.9	5.4
March	44.9	0.1
April	54.1	3.3
May	58.8	-1.9
June	77.6	6.5
July	83.3	2.6
August	80	1.7
September	73	5.1
October	62.4	8.6
November	40.9	0
December	37.4	6

2024 Precipitation		
Month	Total for Month (in inches)	Departure from Average (in inches)
January	1.28	-0.14
February	3.37	2.09
March	2.08	0.31
April	1.51	-0.58
May	1.45	-0.29
June	0.31	-0.58
July	0.08	-0.39
August	1.15	0.44
September	0.42	-0.6
October	0.79	-0.54
November	1.22	-0.1
December	1.12	-0.31

(Source: National Weather Service, NOAA Data: https://www.weather.gov/wrh/Climate?wfo=slc)
(Averages compiled from 1991-2023)

Average monthly temperatures for 2023 were 3.4° F above normal.
Total annual precipitation for 2023 was .69 inches below normal.

SURVEILLANCE

LARVAL

Larval mosquito surveillance data come from information recorded by mosquito crew technicians as spots apparently capable of harboring larval mosquitoes are inspected each week. Inspection is accomplished using standard 350 mL dippers. At least three observations are made at each body of water inspected, with additional observations made based on the total area of suitable mosquito habitat. An average of one to seven observations are made for each 500 ft^2 of suitable larval mosquito habitat. The location, estimated density, and estimated age class of observed mosquito larvae are recorded by technicians in the field. A sample of larvae from each location in which mosquito larvae are found is collected and returned to the District laboratory for species identification.

Values in the following tables are counts of positive observations of mosquito larvae, and percentages and averages of those counts as indicated in individual tables.

Individual Species by Month

Aedes dorsalis							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	0	0	0	7
April	15	5	2	0	7	5.8	9
May	3	13	8	2	6	6.4	0
June	2	1	3	8	12	5.2	0
July	1	0	4	3	11	3.8	0
August	5	0	6	12	12	7	0
September	1	2	0	2	0	1	0
Total	27	21	23	27	48	29.2	16
% of Total	1.40%	1.47%	1.35%	1.34%	2.11%	1.56%	19.51%

Aedes increpitus							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	3	14	0	0	3.4	10
April	51	9	18	3	0	16.2	16
May	12	2	9	1	0	4.8	0
June	2	5	1	1	0	1.8	0
July	1	3	0	1	0	1	0
August	1	0	0	0	0	0.2	0
September	0	0	0	0	0	0	0
Total	67	22	42	6	0	27.4	26
% of Total	3.48%	1.54%	2.46%	0.30%	0.00%	1.46%	31.71%

Aedes nigromaculis							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	1	0	0	0.2	0
April	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0
August	0	0	1	0	0	0.2	0
September	0	0	0	0	0	0	0
Total	0	0	2	0	0	0.4	0
% of Total	0.00%	0.00%	0.12%	0.00%	0.00%	0.02%	0.00%

Aedes vexans							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	0	0	0	0
April	2	0	0	0	0	0.4	0
May	13	7	26	14	13	14.6	0
June	8	10	15	23	17	14.6	0
July	4	9	14	18	11	11.2	0
August	4	2	17	19	15	11.4	0
September	0	0	1	1	0	0.4	0
Total	31	28	73	75	56	52.6	0
% of Total	1.61%	1.97%	4.27%	3.71%	2.46%	2.81%	0.00%

Anopheles freeborni							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	0	0	0	0
April	0	1	0	0	0	0.2	1
May	4	10	26	4	13	11.4	0
June	19	3	48	13	30	22.6	0
July	17	10	60	34	35	31.2	0
August	13	9	33	44	26	25	0
September	0	3	7	20	2	6.4	0
Total	53	36	174	115	106	96.8	1
% of Total	2.75%	2.53%	10.18%	5.69%	4.66%	5.17%	1.22%

Culex erythrothorax							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0
May	0	0	1	0	0	0.2	0
June	0	0	0	1	0	0.2	0
July	0	0	0	7	0	1.4	0
August	0	0	0	10	0	2	0
September	0	0	0	1	0	0.2	0
Total	0	0	1	19	0	4	0
% of Total	0.00%	0.00%	0.06%	0.94%	0.00%	0.21%	0.00%

Culex pipiens							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	0	0	0	0
April	0	2	0	0	0	0.4	0
May	35	42	47	44	41	41.8	0
June	174	195	234	193	279	215	0
July	312	238	332	278	364	304.8	0
August	243	220	239	347	181	246	0
September	25	74	47	43	26	43	0
Total	789	771	899	905	891	851	0
% of Total	40.94%	54.14%	52.57%	44.80%	39.18%	45.48%	0.00%

Culex tarsalis							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	0	0	0	0
April	7	4	0	0	0	2.2	4
May	35	29	12	19	41	27.2	0
June	65	30	59	85	134	74.6	0
July	81	52	86	149	196	112.8	0
August	42	50	30	154	149	85	0
September	9	17	6	28	15	15	0
Total	239	182	193	435	535	316.8	4
% of Total	12.40%	12.78%	11.29%	21.53%	23.53%	16.93%	4.88%

Culiseta incidens							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	0	0	0	0
April	2	0	1	1	0	0.8	0
May	4	13	4	8	1	6	0
June	13	32	23	23	11	20.4	0
July	36	38	20	31	14	27.8	0
August	28	20	13	23	2	17.2	0
September	4	16	1	1	0	4.4	0
Total	87	119	62	87	28	76.6	0
% of Total	4.51%	8.36%	3.63%	4.31%	1.23%	4.09%	0.00%

Culiseta inornata							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	1	0	0.2	0
April	37	18	2	8	22	17.4	28
May	130	66	52	90	143	96.2	0
June	164	41	67	104	222	119.6	0
July	174	35	45	58	135	89.4	0
August	69	31	27	50	72	49.8	0
September	12	24	20	19	8	16.6	0
Total	586	215	213	330	602	389.2	28
% of Total	30.41%	15.10%	12.46%	16.34%	26.47%	20.80%	34.15%

Other species							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
March	0	0	0	1	0	0.2	1
April	9	0	0	1	0	2	6
May	12	0	4	1	1	3.6	0
June	10	29	24	18	4	17	0
July	16	1	0	0	3	4	0
August	1	0	0	0	0	0.2	0
September	0	0	0	0	0	0	0
Total	48	30	28	21	8	27	7
% of Total	2.49%	2.11%	1.64%	1.04%	0.35%	1.44%	8.54%

Individual Species by City

Alta							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	1	0	1	0	0	0.4	1
Culex tarsalis	1	0	0	0	0	0.2	3
Culiseta incidens	5	11	2	0	4	4.4	1
Culiseta inornata	2	3	2	0	2	1.8	3
Other	2	5	2	0	0	1.8	0
Total	11	19	7	0	6	8.6	8

Bluffdale							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	2	1	1	3	1.8	2
Aedes increpitus	1	0	0	0	0	0.2	1
Aedes nigromaculus	0	0	1	0	0	0.2	0
Aedes vexans	0	0	2	4	3	1.8	2
Anopheles freeborni	20	15	63	39	41	35.6	19
Culex erythrothorax	0	0	0	1	0	0.2	0
Culex pipiens	40	46	110	78	62	67.2	57
Culex tarsalis	22	19	40	99	92	54.4	58
Culiseta incidens	2	6	4	3	0	3	6
Culiseta inornata	45	18	38	64	69	46.8	66
Other	0	0	0	0	0	0	0
Total	132	106	259	289	270	211.2	211

Brighton (unincorporated)							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	0	0	0	0	0	0	1
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	1
Anopheles freeborni	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	0	0	0	0	1	0.2	1
Culex tarsalis	0	0	0	0	2	0.4	2
Culiseta incidens	2	7	1	0	1	2.2	0
Culiseta inornata	10	20	7	0	15	10.4	10
Other	13	25	26	18	0	16.4	0
Total	25	52	34	18	19	29.6	15

Cottonwood Heights							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	1	2	0	0	1	0.8	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	2	0	0	0	0.4	0
Anopheles freeborni	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	29	14	9	8	14	14.8	3
Culex tarsalis	1	1	0	1	3	1.2	1
Culiseta incidens	13	6	4	8	4	7	6
Culiseta inornata	12	1	3	2	7	5	10
Other	2	0	0	0	0	0.4	0
Total	58	26	16	19	29	29.6	20

Draper							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	5	9	15	13	8.8	16
Aedes increpitus	10	1	8	2	3	4.8	7
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	2	3	9	11	7	6.4	12
Anopheles freeborni	2	2	10	6	5	5	16
Culex erythrothorax	0	0	0	2	0	0.4	0
Culex pipiens	108	67	131	101	84	98.2	89
Culex tarsalis	42	19	38	77	72	49.6	84
Culiseta incidens	10	5	6	3	1	5	7
Culiseta inornata	98	20	21	32	93	52.8	103
Other	1	0	0	0	0	0.2	0
Total	275	122	232	249	278	231.2	334

Herriman							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	0	0	0	1	0	0.2	1
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	1	2	6	11	0	4	4
Culex tarsalis	0	3	0	3	1	1.4	0
Culiseta incidens	0	1	1	1	0	0.6	0
Culiseta inornata	1	4	2	4	1	2.4	3
Other	0	0	0	0	0	0	0
Total	2	10	9	20	2	8.6	8

Holladay							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	14	9	7	5	5	8	2
Culex tarsalis	0	2	2	3	0	1.4	1
Culiseta incidens	3	1	3	4	0	2.2	1
Culiseta inornata	1	2	4	0	1	1.6	0
Other	0	0	0	0	0	0	0
Total	18	14	16	12	6	13.2	4

Midvale							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	0	0	3	2	1	0
Anopheles freeborni	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	2	0	0.4	0
Culex pipiens	38	21	10	16	21	21.2	5
Culex tarsalis	8	3	1	6	16	6.8	4
Culiseta incidens	1	2	1	0	0	0.8	1
Culiseta inornata	4	4	1	2	12	4.6	4
Other	0	0	0	0	0	0	0
Total	51	30	13	29	51	34.8	14

Millcreek							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	0	1	0	0	0.6	0
Aedes increpitus	20	8	22	2	12	12.8	16
Aedes nigromaculus	0	0	1	0	0	0.2	0
Aedes vexans	0	0	0	1	0	0.2	0
Anopheles freeborni	3	3	4	0	2	2.4	0
Culex erythrothorax	0	0	0	1	0	0.2	0
Culex pipiens	60	94	65	85	35	67.8	43
Culex tarsalis	5	17	2	13	10	9.4	5
Culiseta incidens	10	31	3	19	4	13.4	12
Culiseta inornata	55	33	13	59	34	38.8	48
Other	0	0	0	0	0	0	0
Total	155	186	111	180	97	145.8	124

Murray							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	1	0	0	0	0.2	0
Aedes increpitus	0	1	0	0	0	0.2	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	6	6	2	14	8	7.2	4
Anopheles freeborni	1	3	4	0	2	2	4
Culex erythrothorax	0	0	0	3	0	0.6	0
Culex pipiens	67	66	60	95	72	72	74
Culex tarsalis	7	12	6	17	20	12.4	22
Culiseta incidens	9	15	10	9	2	9	19
Culiseta inornata	32	14	5	21	42	22.8	37
Other	3	0	0	0	0	0.6	0
Total	125	118	87	159	146	127	160

Riverton							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	0	1	1	4	1.4	5
Aedes increpitus	1	0	1	1	0	0.6	4
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	2	8	5	2	3.4	6
Anopheles freeborni	6	4	21	22	21	14.8	7
Culex erythrothorax	0	0	0	1	0	0.2	0
Culex pipiens	60	54	70	99	100	76.6	81
Culex tarsalis	21	21	25	66	69	40.4	45
Culiseta incidens	2	6	2	6	3	3.8	12
Culiseta inornata	51	17	23	22	81	38.8	64
Other	0	0	0	0	0	0	0
Total	142	104	151	223	280	180	224

Sandy							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	1	1	0	0	0	0.4	1
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	4	8	3	10	11	7.2	2
Anopheles freeborni	3	2	6	8	9	5.6	3
Culex erythrothorax	0	0	0	1	0	0.2	0
Culex pipiens	88	53	63	69	34	61.4	29
Culex tarsalis	16	7	5	19	18	13	14
Culiseta incidens	14	11	9	15	1	10	8
Culiseta inornata	41	17	8	34	27	25.4	19
Other	1	0	0	0	0	0.2	0
Total	168	99	94	156	100	123.4	76

South Jordan							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	2	1	4	5	2.6	2
Aedes increpitus	0	0	1	0	3	0.8	1
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	7	1	16	21	9	10.8	7
Anopheles freeborni	8	6	51	38	22	25	18
Culex erythrothorax	0	0	0	2	0	0.4	0
Culex pipiens	54	107	162	121	118	112.4	94
Culex tarsalis	16	30	42	70	76	46.8	71
Culiseta incidens	4	7	5	4	1	4.2	7
Culiseta inornata	55	14	33	31	64	39.4	73
Other	2	0	0	0	0	0.4	0
Total	147	167	311	291	298	242.8	273

South Salt Lake							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	3	1	0	5	1.8	3
Aedes increpitus	0	1	1	0	1	0.6	1
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	1	1	0	0	0.4	0
Anopheles freeborni	0	0	1	0	1	0.4	2
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	20	36	43	21	49	33.8	40
Culex tarsalis	9	12	8	10	21	12	17
Culiseta incidens	0	1	0	1	0	0.4	2
Culiseta inornata	13	3	4	6	16	8.4	18
Other	0	0	0	0	0	0	0
Total	42	57	59	38	93	57.8	83

Taylorsville							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	2	1	0	0	0.6	1
Aedes increpitus	19	6	5	0	2	6.4	1
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	1	2	1	2	1.2	1
Anopheles freeborni	2	0	2	1	0	1	1
Culex erythrothorax	0	0	0	3	0	0.6	0
Culex pipiens	48	50	31	62	95	57.2	65
Culex tarsalis	13	14	4	14	27	14.4	21
Culiseta incidens	2	4	2	5	1	2.8	5
Culiseta inornata	31	13	10	16	49	23.8	62
Other	1	0	0	0	0	0.2	0
Total	116	90	57	102	176	108.2	157

West Jordan							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	0	0	0	1	1	0.4	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	5	0	7	2	8	4.4	1
Anopheles freeborni	0	1	8	0	0	1.8	1
Culex erythrothorax	0	0	0	1	0	0.2	0
Culex pipiens	55	83	74	70	80	72.4	39
Culex tarsalis	8	6	6	6	19	9	9
Culiseta incidens	3	2	1	5	3	2.8	3
Culiseta inornata	30	10	10	5	26	16.2	39
Other	4	0	0	0	0	0.8	0
Total	105	102	106	90	137	108	92

West Valley City							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	19	6	8	6	18	11.4	18
Aedes increpitus	14	2	4	0	1	4.2	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	7	4	23	3	4	8.2	5
Anopheles freeborni	8	0	3	0	3	2.8	0
Culex erythrothorax	0	0	1	2	0	0.6	0
Culex pipiens	86	57	45	54	99	68.2	54
Culex tarsalis	69	15	9	31	78	40.4	37
Culiseta incidens	4	2	0	3	2	2.2	3
Culiseta inornata	102	22	23	30	58	47	42
Other	19	0	0	3	0	4.4	0
Total	328	108	116	132	263	189.4	159

White City							
Species	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	0	0	0	0
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculus	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	20	11	8	10	10	11.8	6
Culex tarsalis	1	0	1	0	1	0.6	0
Culiseta incidens	3	1	1	1	0	1.2	4
Culiseta inornata	3	0	2	2	3	2	3
Other	0	0	0	0	0	0	0
Total	27	12	12	13	14	15.6	13

ADULT

Surveillance of adult mosquitoes is conducted to collect information about the population size and distribution of mosquitoes and to monitor the mosquito population for disease agents.

Data obtained from surveillance of adult mosquitoes are used to make informed decisions regarding control efforts directed toward both larval and adult mosquitoes.

In 2024 the District utilized three types of traps in adult mosquito surveillance: an ABC Trap with CO_2 (dry ice) from Clarke, a Frommer Updraft Gravid Trap from the John W. Hock Company, and the Biogents Sentinel 2 trap. All traps were deployed weekly from May through September. Trapping sessions extended for a period of approximately 18 to 20 hours, including all hours between dusk and dawn.

ABC Traps with CO_2 (in the form of dry ice) as an attractant were placed at each of the 32 trapping stations throughout the area serviced by the District. CO_2-baited ABC traps attract host- seeking female mosquitoes and so can provide a useful comparison of the relative number of host-seeking nuisance or disease vector mosquitoes from a wide range of species among trapping stations and among trapping periods.

Frommer Updraft Gravid Traps were deployed at 16 locations in the area serviced by the District. Gravid traps use a water-based hay infusion to attract gravid female mosquitoes seeking an oviposition site. Because mosquitoes can become infected with disease organisms while blood feeding, sampling gravid females is useful in detecting the presence of disease organisms in the mosquito population. Gravid female mosquitoes have likely obtained at least one blood meal and thus, the incidence of disease may be higher in the gravid female demographic than among host-seeking females. Frommer Updraft Gravid Traps are biased towards container-breeding mosquitoes, primarily *Culex pipiens* L., in the area serviced by the District. As *Cx. pipiens* is a competent vector of West Nile virus (see West Nile Virus section, this report), and an abundant mosquito species within the boundaries of the District (see trap results below), sampling gravid females of this species provides relevant and useful information.

Surveillance for *Aedes albopictus* (Skuse) and *Aedes aegypti* (L.) was primarily conducted using Biogents Sentinel 2 Traps at 6 trapping locations. Range expansions have been observed in these mosquito species elsewhere in North America in recent years, and both are competent vectors of multiple diseases. Trapping locations were established in areas where the introduction or establishment of the target species seemed most likely, including locations near freight transportation and close to suitable habitats such as treeholes and artificial containers. These traps utilize multiple attractants, including CO_2 in the form of dry ice, a BG-Lure scent, and a visual pattern designed to attract some species of *Aedes* mosquitoes. No *Ae. albopictus* or *Ae. aegypti* were detected, but many other species were observed.

CO_2 Individual Species by Month

Aedes dorsalis							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	38	37	28	18	91	42.4	73
June	69	101	29	66	167	86.4	42
July	23	62	22	39	142	57.6	86
August	24	65	171	295	794	269.8	236
September	81	59	342	421	292	239	153
Total	235	324	592	839	1486	695.2	590
% of Total	0.50%	0.46%	1.33%	1.72%	1.53%	1.11%	0.94%

Aedes increpitus							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	17	50	6	2	14	17.8	42
June	84	76	47	14	106	65.4	218
July	8	31	6	11	33	17.8	21
August	0	6	1	1	3	2.2	1
September	0	0	1	0	0	0.2	0
Total	109	163	61	28	156	103.4	282
% of Total	0.23%	0.23%	0.14%	0.06%	0.16%	0.16%	0.45%

Aedes nigromaculis							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0
July	0	0	1	0	0	0.2	0
August	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0
Total	0	0	1	0	0	0.2	0
% of Total	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Aedes sierrensis							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	12	22	6	2	1	8.6	2
June	61	22	19	9	7	23.6	9
July	14	6	9	3	1	6.6	5
August	2	0	0	0	1	0.6	0
September	0	0	3	2	3	1.6	1
Total	**89**	**50**	**37**	**16**	**13**	**41**	**17**
% of Total	0.19%	0.07%	0.08%	0.03%	0.01%	0.08%	0.03%

Aedes vexans							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	3	5	9	0	66	16.6	11
June	196	135	153	457	167	221.6	159
July	198	168	419	1148	261	438.8	70
August	76	164	485	1096	802	524.6	60
September	26	1	129	181	193	106	76
Total	**499**	**473**	**1195**	**2882**	**1489**	**1307.6**	**376**
% of Total	1.06%	0.67%	2.69%	5.92%	1.54%	2.38%	0.60%

Anopheles freeborni							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	17	86	193	8	84	77.6	46
June	81	166	1792	159	156	470.8	468
July	254	805	1933	709	658	871.8	524
August	163	942	379	312	296	418.4	209
September	32	51	20	50	12	33	13
Total	**547**	**2050**	**4317**	**1238**	**1206**	**1871.6**	**1260**
% of Total	1.17%	2.91%	9.71%	2.54%	1.24%	3.51%	2.00%

Coquillettidia perturbans							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	0	0	0
June	16	26	46	16	10	22.8	67
July	282	202	467	453	141	309	21
August	33	29	2	28	22	22.8	3
September	3	0	0	0	0	0.6	2
Total	334	257	515	497	173	355.2	93
% of Total	0.71%	0.37%	1.16%	1.02%	0.18%	0.69%	0.15%

Culex erythrothorax							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	0	0	0
June	0	0	0	3	1	0.8	0
July	0	0	0	32	0	6.4	0
August	0	0	0	6	3	1.8	0
September	0	0	0	219	0	43.8	1
Total	0	0	0	260	4	52.8	1
% of Total	0.00%	0.00%	0.00%	0.53%	0.00%	0.11%	0.00%

Culex pipiens							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	289	213	77	104	173	171.2	156
June	957	956	1200	1255	2407	1355	2696
July	8208	4897	6518	4202	7502	6265.4	11353
August	5645	9914	7810	9559	11306	8846.8	5703
September	2478	2231	1664	2337	2068	2155.6	1615
Total	17577	18211	17269	17457	23456	18794	21523
% of Total	37.50%	25.86%	38.84%	35.84%	24.21%	32.45%	34.14%

Culex tarsalis							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	630	390	487	470	1619	719.2	921
June	3120	5525	4776	5459	23895	8555	5583
July	9860	20771	5857	7200	22608	13259.2	19212
August	9255	16191	5823	7496	16098	10972.6	6039
September	1827	3094	525	3290	1519	2051	1170
Total	24692	45971	17468	23915	65739	35557	32925
% of Total	52.67%	65.29%	39.29%	49.10%	67.85%	54.84%	52.23%

Culiseta incidens							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	5	17	13	4	1	8	40
June	20	73	44	108	9	50.8	117
July	172	163	272	163	19	157.8	309
August	88	167	96	102	16	93.8	119
September	89	126	74	99	30	83.6	78
Total	374	546	499	476	75	394	663
% of Total	0.80%	0.78%	1.12%	0.98%	0.08%	0.75%	1.05%

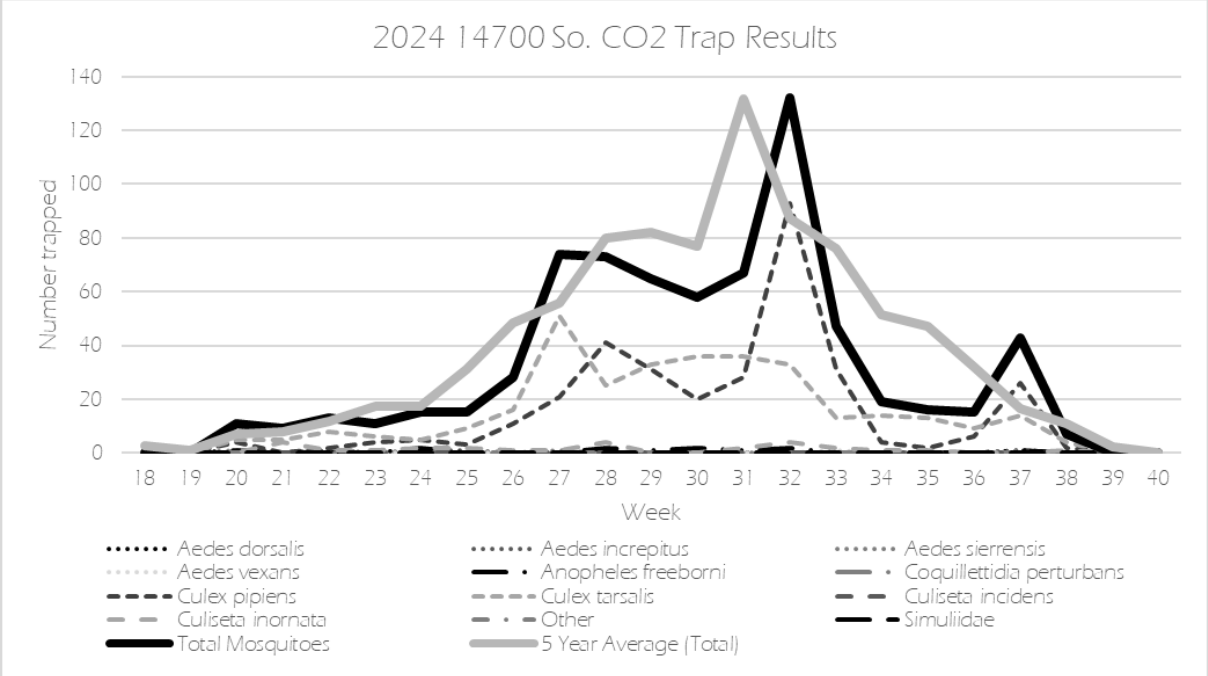
Culiseta inornata							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	66	122	42	35	123	77.6	531
June	259	226	199	251	384	263.8	2676
July	1351	763	990	276	710	818	1264
August	429	634	79	182	489	362.6	224
September	71	33	17	58	48	45.4	36
Total	2176	1778	1327	802	1754	1567.4	4731
% of Total	4.64%	2.53%	2.98%	1.65%	1.81%	2.72%	7.50%

Total							
Month	2019	2020	2021	2022	2023	5 Year Average	2024
May	1088	954	865	647	2187	1148.2	1826
June	4909	7611	9339	7948	27454	11452.2	12199
July	20462	28136	16630	14353	33063	22528.8	33051
August	15761	28113	14851	19105	30021	21570.2	12629
September	4610	5595	2775	6657	4165	4760.4	3144
Total	**46830**	**70409**	**44460**	**48710**	**96890**	**61459.8**	**62849**

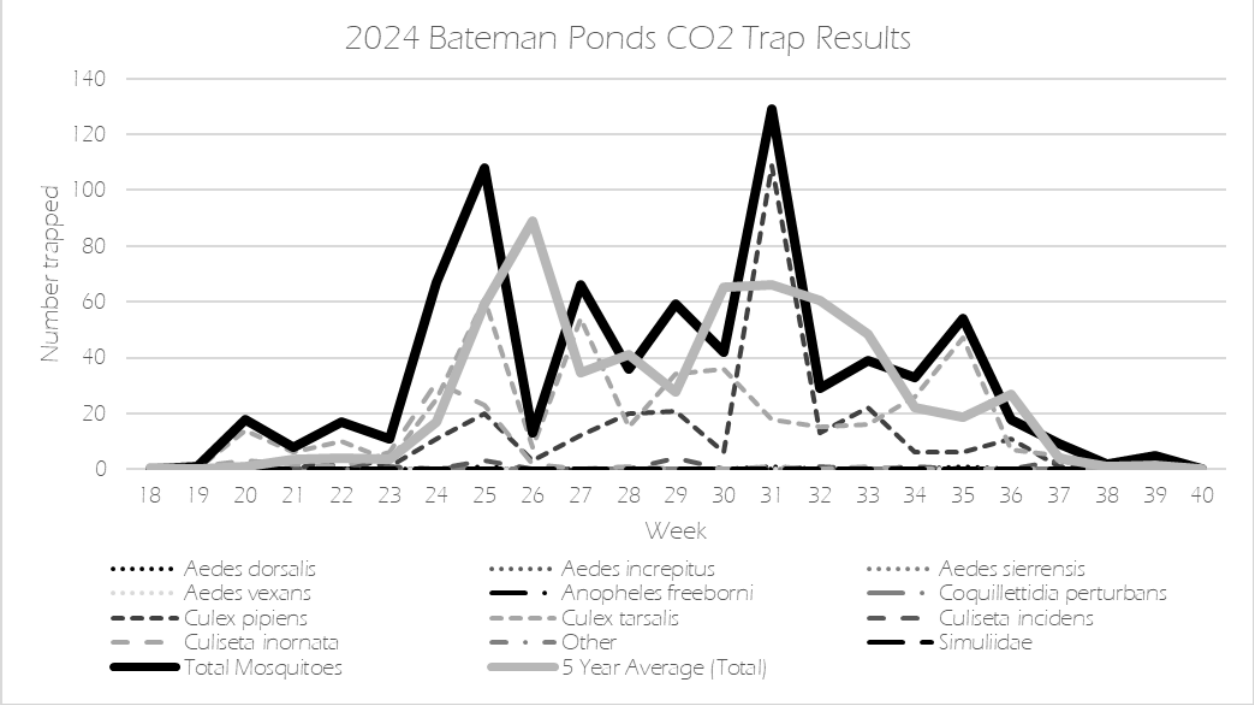
CO_2 Individual Species by Trap Location

* Indicates a change in trap location from the previous year

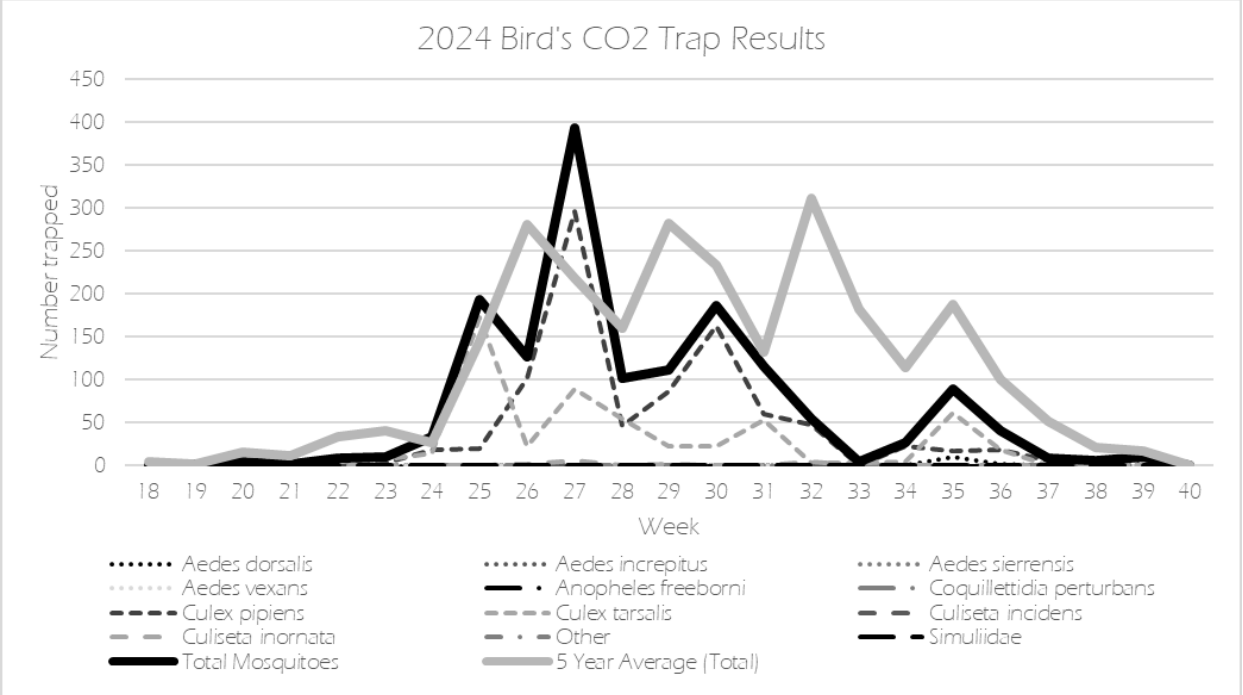
14700 South 14700 South 1463 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	0	3	5	5	3	1
Aedes increpitus	2	0	1	0	1	0.8	3
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	2	8	13	8	10	8.2	3
Aedes vexans	1	1	2	2	6	2.4	2
Anopheles freeborni	15	13	37	4	6	15	12
Coquillettidia perturbans	8	2	0	1	2	2.6	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	229	151	329	249	576	306.8	334
Culex tarsalis	840	453	235	337	768	526.6	335
Culiseta incidens	0	0	0	0	0	0	1
Culiseta inornata	51	13	11	28	39	28.4	27
Total # trapped	1150	641	631	634	1413	893.8	718
Total nights trapped	20	18	21	21	22	20.4	22
Average # trapped per night	57.50	35.61	30.05	30.19	64.23	43.51529582	32.64
Max # trapped on one night	381	78	114	116	215	180.8	132
Min # trapped on one night	0	0	0	0	1	0.2	0



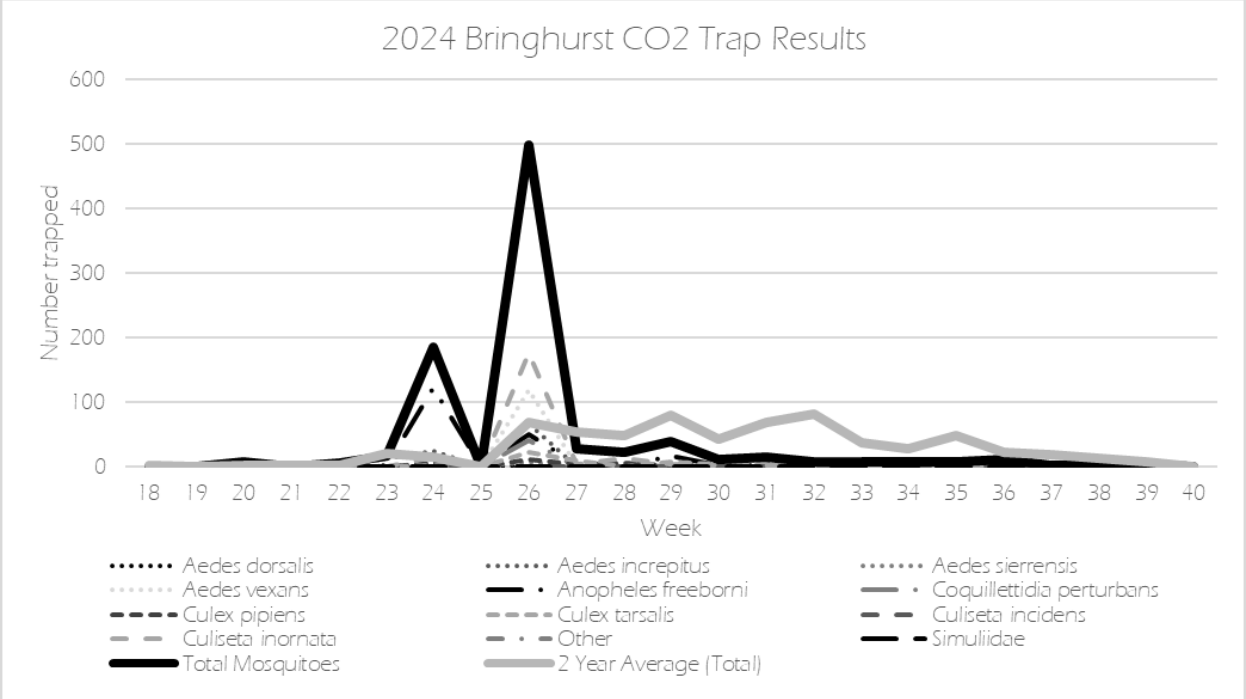
Bateman's Ponds 6900 South 1200 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	1	1	2	1	1.4	4
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	2	4	0	3	3	2.4	1
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	117	44	83	48	100	78.4	268
Culex tarsalis	312	681	162	244	1141	508	403
Culiseta incidens	4	2	1	1	0	1.6	15
Culiseta inornata	1	3	0	0	4	1.6	73
Total # trapped	438	735	247	298	1249	593.4	764
Total nights trapped	21	20	22	22	22	21.4	21
Average # trapped per night	20.86	36.75	11.23	13.55	56.77	27.83051948	36.38
Max # trapped on one night	132	170	60	65	404	166.2	129
Min # trapped on one night	0	0	0	0	0	0	1



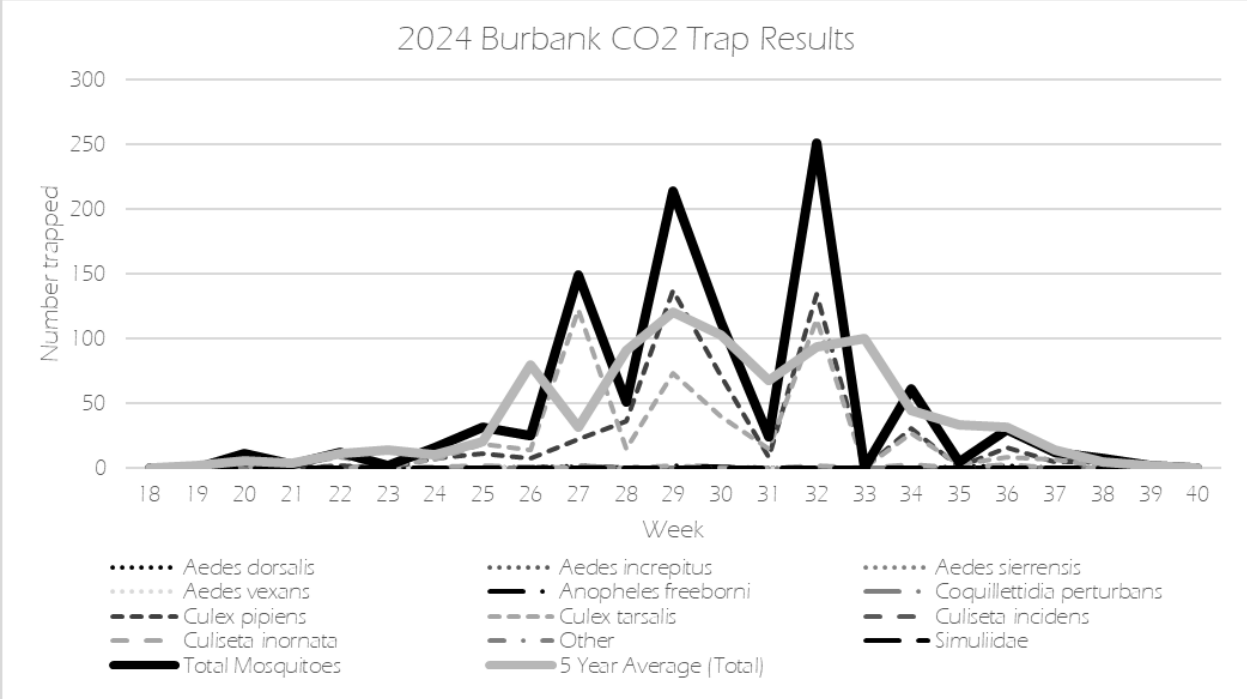
Bird's 3300 South 2055 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	4	28	26	37	19.4	19
Aedes increpitus	0	0	1	0	0	0.2	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	1	2	2	1	1	1.4	0
Aedes vexans	1	2	1	0	0	0.8	0
Anopheles freeborni	1	3	4	3	0	2.2	1
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	2189	782	788	1250	1504	1302.6	918
Culex tarsalis	571	2457	394	821	1865	1221.6	566
Culiseta incidens	16	17	7	4	0	8.8	5
Culiseta inornata	33	2	4	3	8	10	20
Total # trapped	2814	3269	1229	2108	3415	2567	1529
Total nights trapped	22	20	20	22	22	21.2	22
Average # trapped per night	127.91	163.45	61.45	95.82	155.23	120.7709091	69.50
Max # trapped on one night	538	674	209	327	736	496.8	393
Min # trapped on one night	3	0	3	0	0	1.2	0



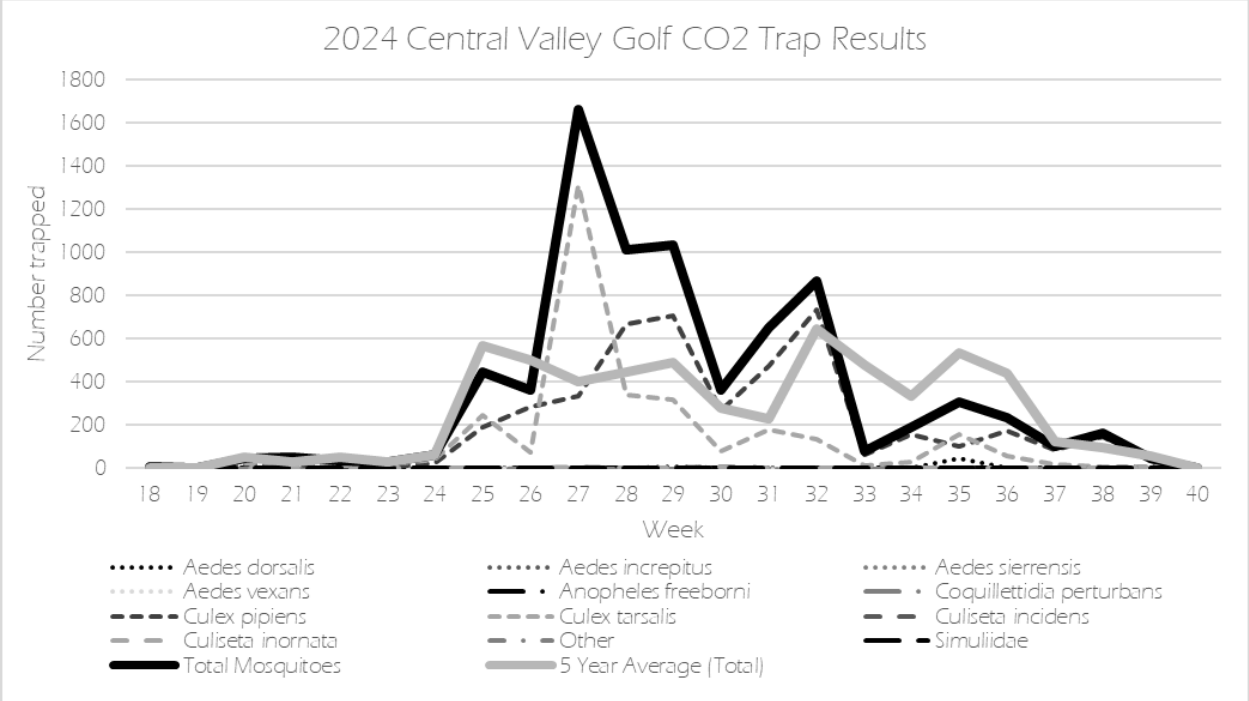
Bringhurst 16470 So 1800 W							
	2019	2020	2021	2022	2023	2 Year Average	2024
Aedes dorsalis				4	10	7	6
Aedes increpitus				0	14	7	114
Aedes nigromaculis				0	0	0	0
Aedes sierrensis				0	0	0	7
Aedes vexans				7	85	46	135
Anopheles freeborni				25	42	33.5	210
Coquillettidia perturbans				55	24	39.5	51
Culex erythrothorax				1	0	0.5	0
Culex pipiens				98	270	184	66
Culex tarsalis				87	464	275.5	74
Culiseta incidens				0	0	0	0
Culiseta inornata				42	104	73	223
Total # trapped				319	1013	666	886
Total nights trapped				20	22	21	21
Average # trapped per night				15.95	46.05	30.99772727	42.19
Max # trapped on one night				65	146	105.5	498
Min # trapped on one night				0	0	0	0



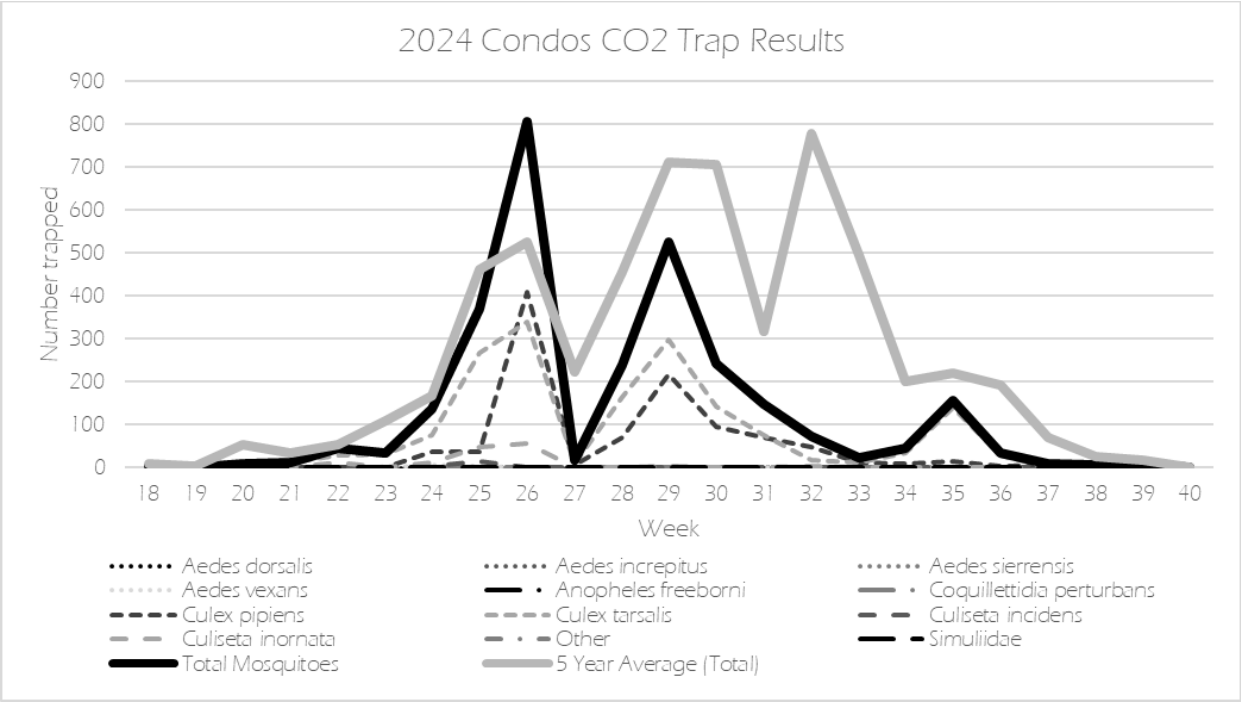
Burbank 13717 South 1100 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	1	19	26	129	35	8
Aedes increpitus	12	26	0	0	0	7.6	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	41	24	0	0	0	13	0
Aedes vexans	0	26	22	5	103	31.2	2
Anopheles freeborni	23	38	78	9	15	32.6	5
Coquillettidia perturbans	0	0	0	0	0	0	2
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	78	68	153	105	527	186.2	499
Culex tarsalis	617	547	268	221	1138	558.2	488
Culiseta incidens	3	1	0	4	0	1.6	2
Culiseta inornata	17	4	6	4	48	15.8	15
Total # trapped	791	735	546	374	1960	881.2	1021
Total nights trapped	18	20	22	20	22	20.4	21
Average # trapped per night	43.94	36.75	24.82	18.70	89.09	42.66070707	48.62
Max # trapped on one night	172	132	95	68	367	166.8	251
Min # trapped on one night	0	0	0	0	1	0.2	0



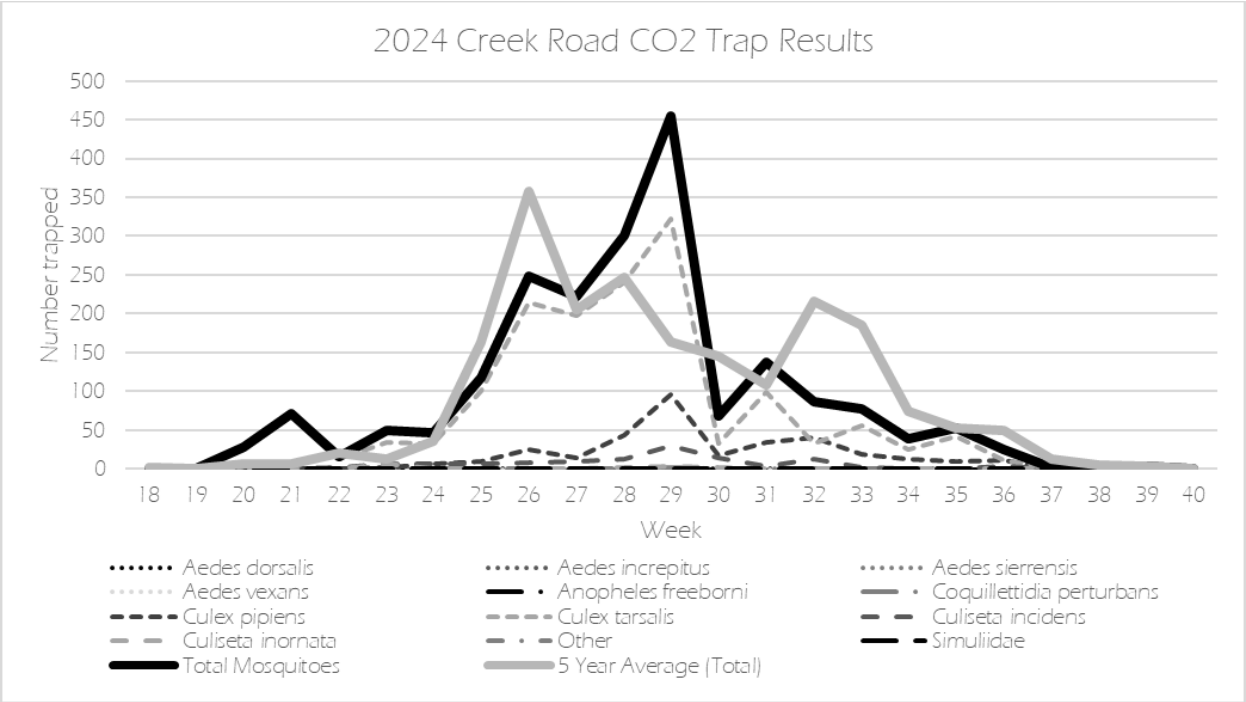
Central Valley Golf 3300 South 500 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	25	33	23	70	116	53.4	78
Aedes increpitus	7	3	0	0	7	3.4	5
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	1	0	0	1	0	0.4	0
Aedes vexans	8	2	23	5	2	8	6
Anopheles freeborni	5	1	6	1	2	3	0
Coquillettidia perturbans	0	0	0	0	0	0	3
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	3792	4494	1905	1855	3793	3167.8	4494
Culex tarsalis	1176	4811	1120	1087	4761	2591	3107
Culiseta incidens	8	2	4	1	0	3	17
Culiseta inornata	33	5	6	8	6	11.6	26
Total # trapped	5055	9351	3087	3028	8687	5841.6	7736
Total nights trapped	22	20	22	21	22	21.4	23
Average # trapped per night	229.8	467.6	140.3	144.2	394.9	275.34	336.4
Max # trapped on one night	1232	1704	583	484	2069	1214.4	1660
Min # trapped on one night	2	3	0	0	2	1.4	3



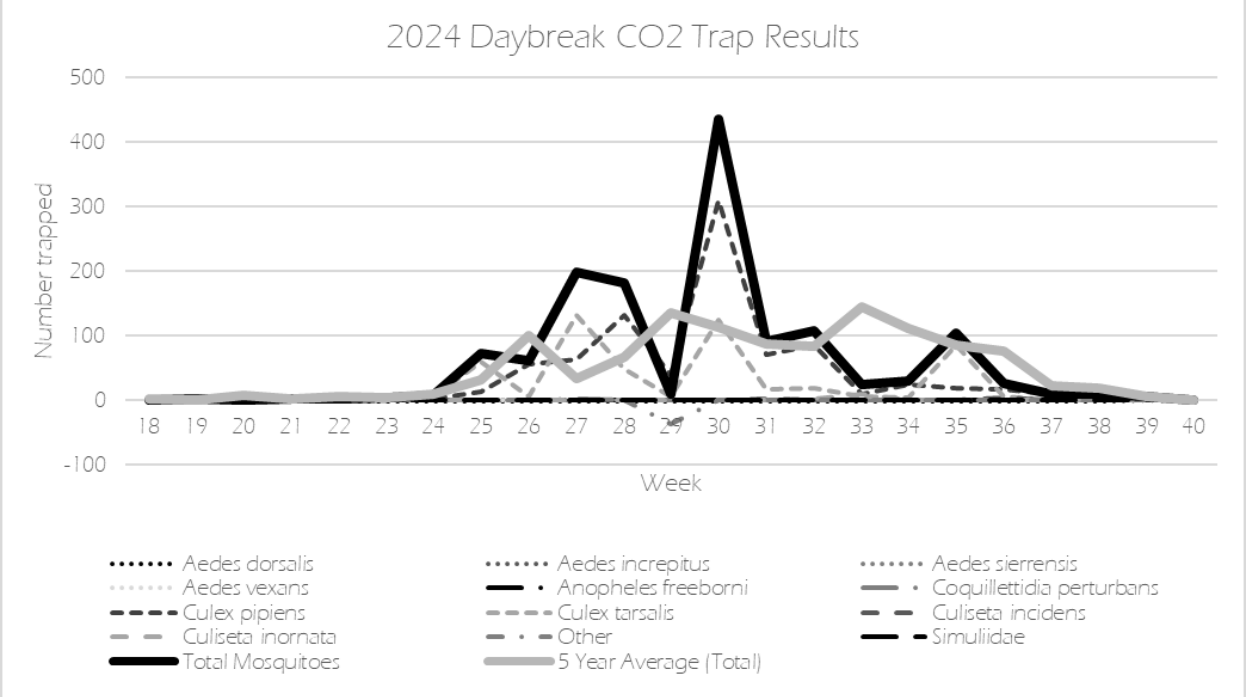
Condos 2900 South 1407 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	19	17	27	60	7	26	18
Aedes increpitus	0	2	0	0	0	0.4	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	1	0	0.2	0
Aedes vexans	13	5	0	3	10	6.2	15
Anopheles freeborni	38	18	25	8	0	17.8	5
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	3588	1135	518	855	658	1350.8	1041
Culex tarsalis	3069	10051	2142	3954	2313	4305.8	1689
Culiseta incidens	1	1	1	8	0	2.2	23
Culiseta inornata	523	15	7	10	5	112	147
Total # trapped	7251	11244	2720	4899	2993	5821.4	2938
Total nights trapped	22	20	22	20	20	20.8	22
Average # trapped per night	329.59	562.20	123.64	244.95	149.7	282.01	133.6
Max # trapped on one night	1232	2511	558	902	724	1185.4	804
Min # trapped on one night	5	0	5	0	1	2.2	1



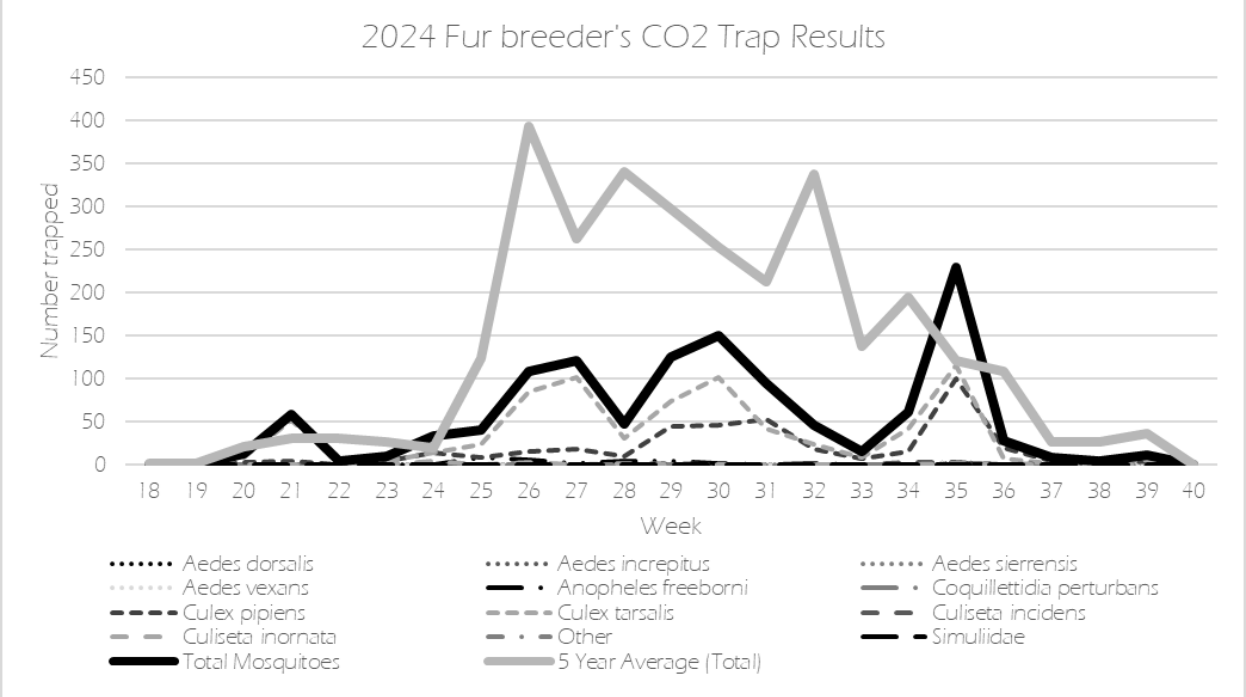
Creek Road 1700 East 7800 South							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	3	3	1	1	1	1.8	0
Aedes increpitus	0	0	0	0	1	0.2	1
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	24	6	18	1	1	10	1
Aedes vexans	0	1	0	8	1	2	1
Anopheles freeborni	0	0	0	1	0	0.2	1
Coquillettidia perturbans	0	0	0	0	0	0	2
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	233	260	123	128	696	288	350
Culex tarsalis	1142	1549	422	533	4727	1674.6	1552
Culiseta incidens	28	91	196	125	11	90.2	122
Culiseta inornata	9	0	5	5	19	7.6	18
Total # trapped	1439	1910	765	802	5457	2074.6	2048
Total nights trapped	22	20	22	22	21	21.4	22
Average # trapped per night	65.41	95.50	34.77	36.45	259.86	98.3987013	93.09
Max # trapped on one night	268	353	107	95	1512	467	455
Min # trapped on one night	0	1	1	0	0	0.4	0



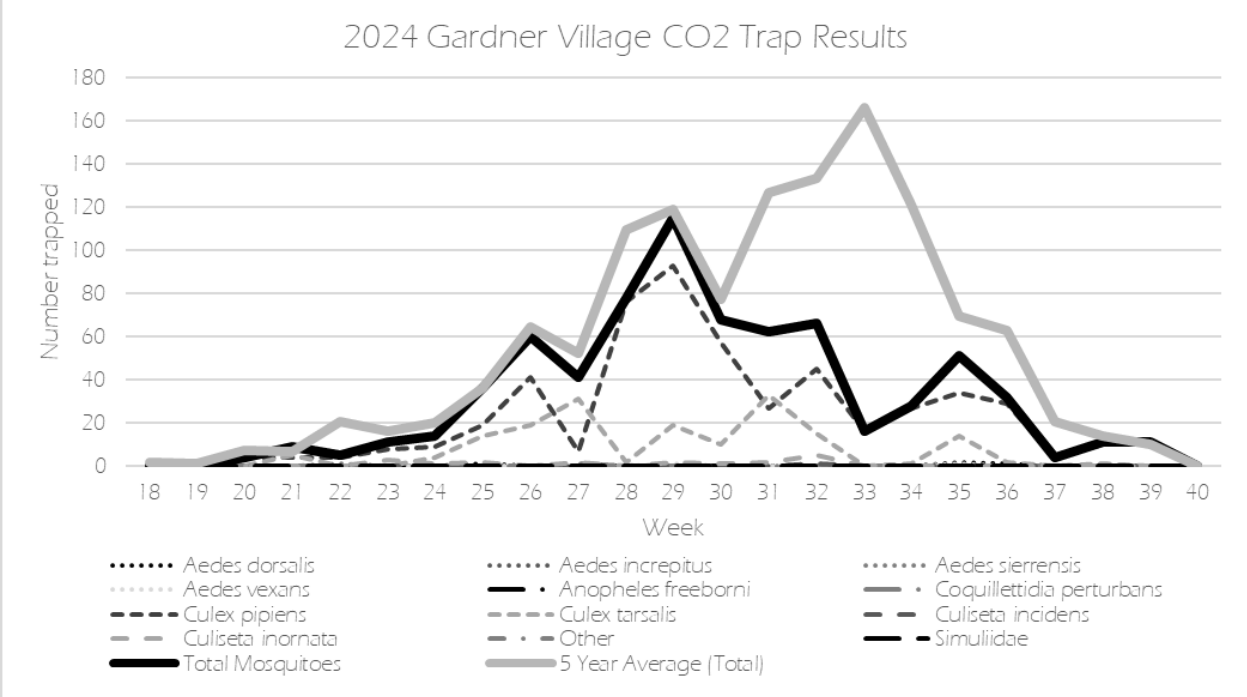
Daybreak 11410 South 4280 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	1	3	0	6	2.2	1
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	2	0	0	0	0	0.4	0
Coquillettidia perturbans	0	0	0	0	0	0	3
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	832	293	619	283	917	588.8	857
Culex tarsalis	625	940	291	201	679	547.2	526
Culiseta incidens	0	1	3	1	0	1	19
Culiseta inornata	6	0	2	2	3	2.6	12
Total # trapped	1466	1235	918	487	1605	1142.2	1418
Total nights trapped	22	20	22	22	22	21.6	22
Average # trapped per night	66.64	61.75	41.73	22.14	72.95	53.04090909	64.45
Max # trapped on one night	196	265	121	136	302	204	434
Min # trapped on one night	0	0	1	0	0	0.2	0



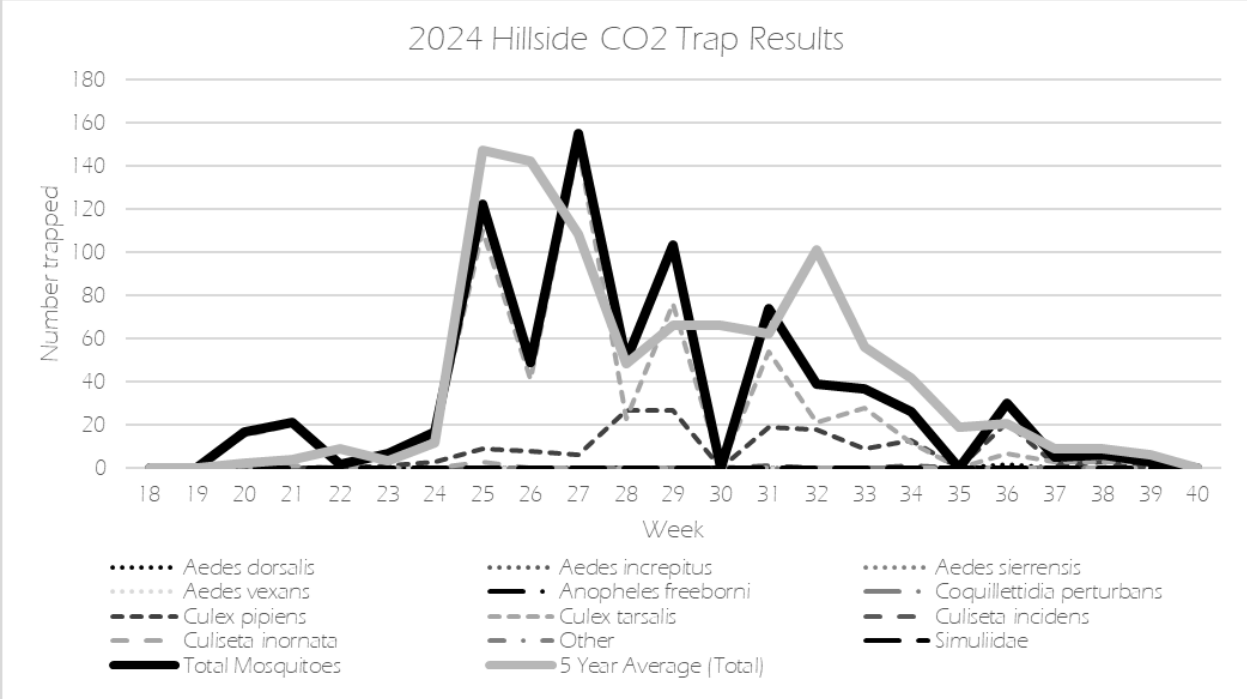
Fur Breeders 8540 South 700 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	3	0	3	7	7	4	4
Aedes increpitus	2	1	2	0	0	1	2
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	15	5	190	898	227	267	5
Anopheles freeborni	55	44	124	47	22	58.4	32
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	394	556	1565	1199	555	853.8	391
Culex tarsalis	1904	1106	808	926	2991	1547	749
Culiseta incidens	62	9	36	42	2	30.2	14
Culiseta inornata	265	79	713	87	49	238.6	17
Total # trapped	2700	1800	3441	3206	3853	3000	1214
Total nights trapped	22	21	21	20	19	20.6	22
Average # trapped per night	122.73	85.71	163.86	160.30	202.79	147.077635	55.18
Max # trapped on one night	430	282	979	905	648	648.8	229
Min # trapped on one night	0	0	0	2	1	0.6	0



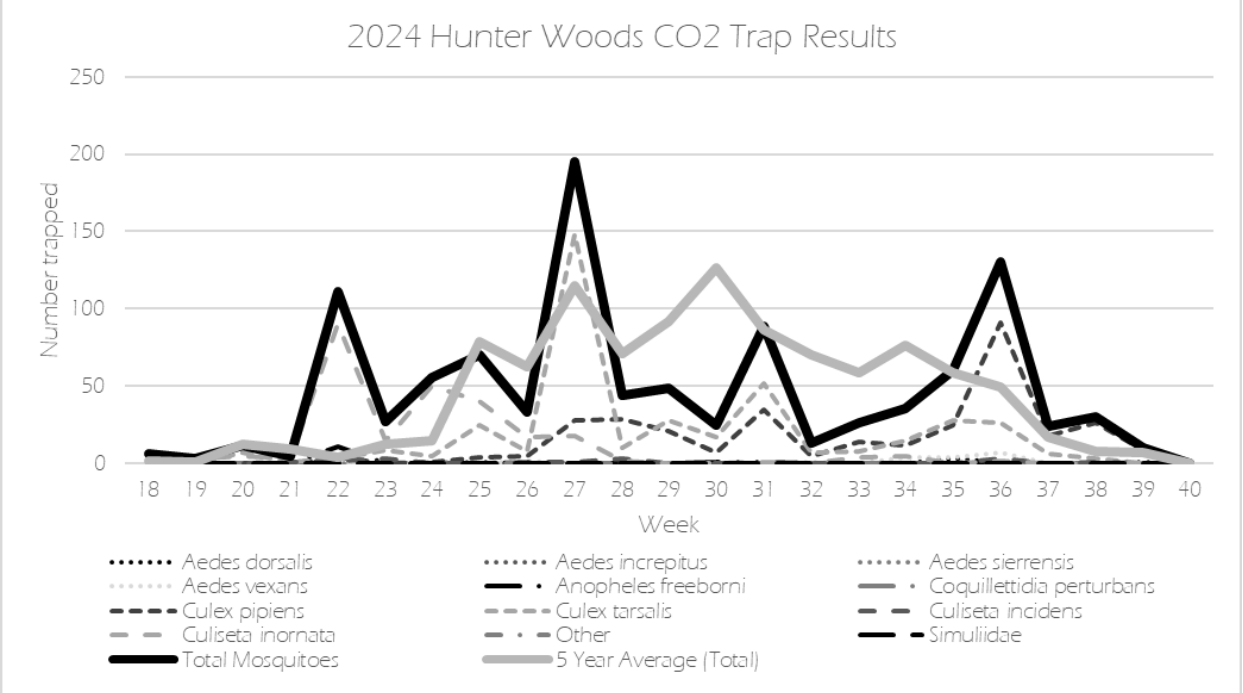
Gardner Village 7700 South 1100 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	2	2	3	10	3.8	4
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	1	0	0	0	0.2	1
Aedes vexans	1	0	1	12	3	3.4	2
Anopheles freeborni	4	15	20	6	1	9.2	0
Coquillettidia perturbans	0	0	0	0	0	0	1
Culex erythrothorax	0	0	0	34	0	6.8	0
Culex pipiens	412	772	2161	629	680	930.8	525
Culex tarsalis	199	464	236	127	371	279.4	170
Culiseta incidens	2	4	2	6	0	2.8	1
Culiseta inornata	17	11	51	10	9	19.6	18
Total # trapped	637	1269	2473	827	1074	1256	722
Total nights trapped	20	21	21	20	22	20.8	22
Average # trapped per night	31.85	60.43	117.76	41.35	48.82	60.0417316	32.82
Max # trapped on one night	111	221	401	130	219	216.4	115
Min # trapped on one night	1	0	0	0	1	0.4	0



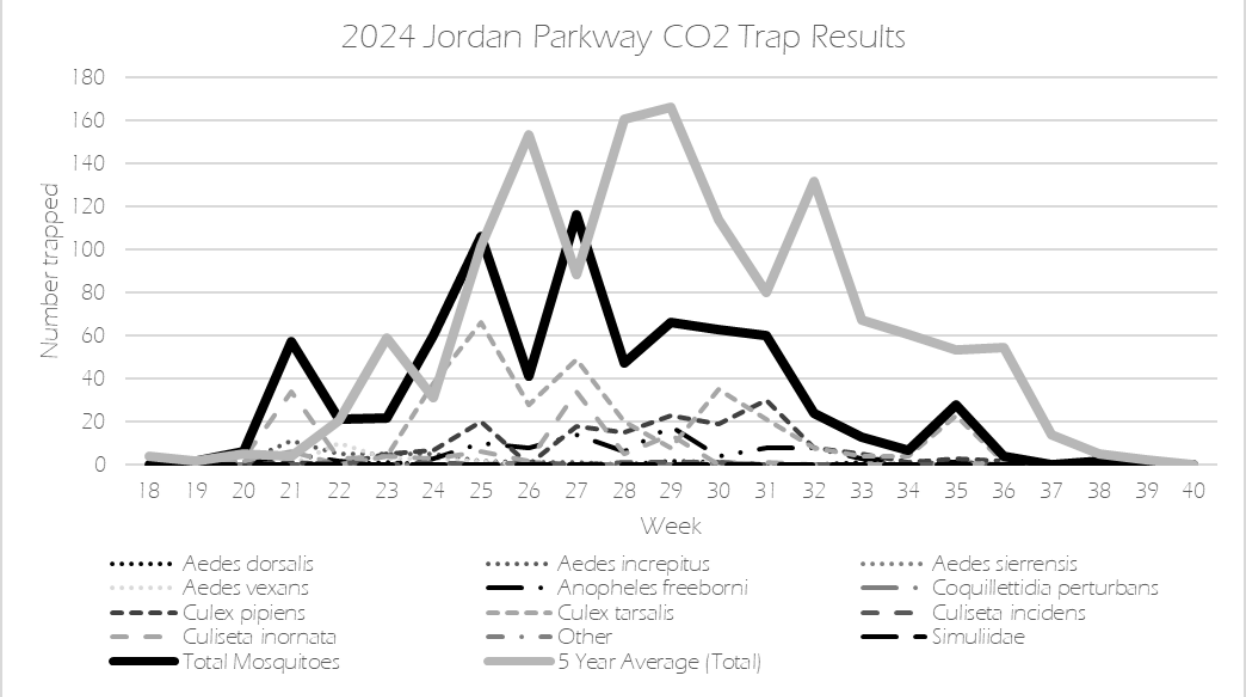
Hillside 4060 South 1045 East							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	3	0	3	1	3	2	3
Aedes increpitus	1	1	0	0	0	0.4	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	1	0	0	0.2	0
Aedes vexans	0	0	1	0	0	0.2	0
Anopheles freeborni	1	4	7	3	2	3.4	0
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	128	345	84	90	352	199.8	167
Culex tarsalis	533	637	92	120	2068	690	587
Culiseta incidens	7	31	9	7	0	10.8	2
Culiseta inornata	25	31	9	71	3	27.8	4
Total # trapped	698	1049	206	292	2428	934.6	763
Total nights trapped	21	20	21	22	22	21.2	21
Average # trapped per night	33.24	52.45	9.81	13.27	110.36	43.82679654	36.33
Max # trapped on one night	180	262	34	40	668	236.8	155
Min # trapped on one night	0	0	0	0	0	0	0



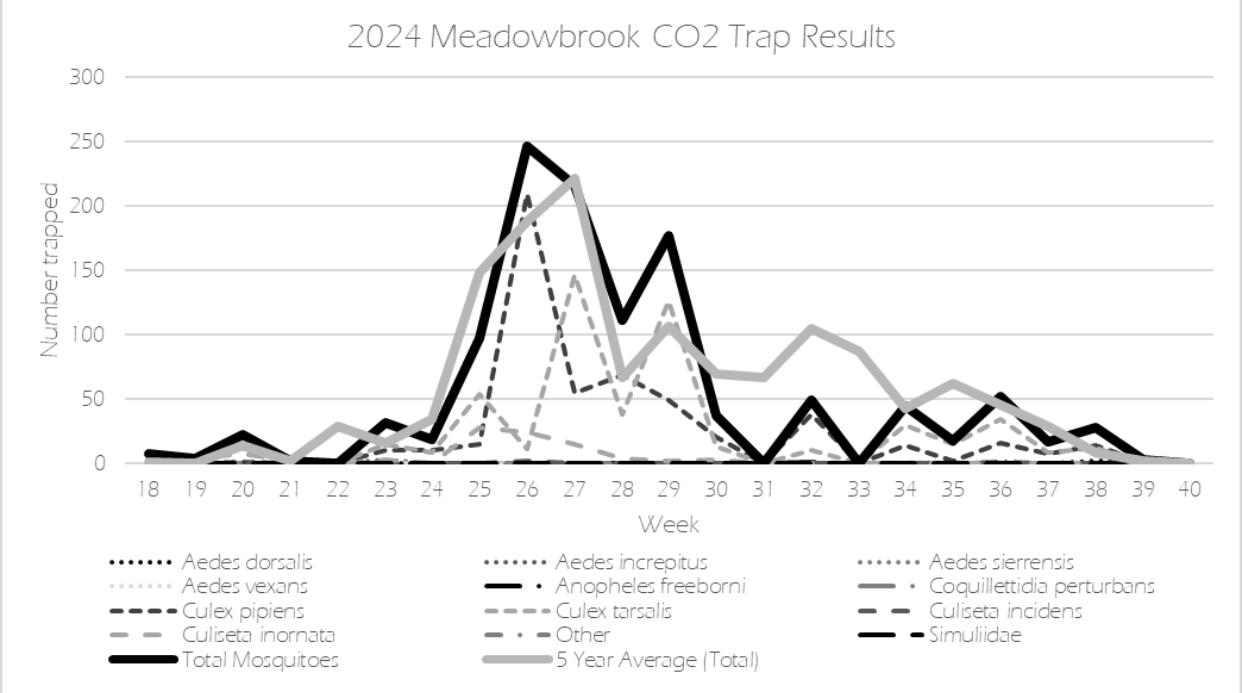
Hunter Woods 4900 South 700 West (4940 South 550 West before 2016)							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	1	3	2	0	1.2	6
Aedes increpitus	5	0	0	1	8	2.8	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	1	1	0	0	0	0.4	0
Aedes vexans	14	5	14	161	99	58.6	18
Anopheles freeborni	18	7	18	3	22	13.6	14
Coquillettidia perturbans	0	0	0	0	3	0.6	0
Culex erythrothorax	0	0	0	0	1	0.2	0
Culex pipiens	241	136	103	89	475	208.8	335
Culex tarsalis	375	845	190	169	1687	653.2	410
Culiseta incidens	33	41	27	35	7	28.6	15
Culiseta inornata	65	2	13	13	238	66.2	256
Total # trapped	752	1038	368	473	2540	1034.2	1054
Total nights trapped	21	20	21	21	21	20.8	23
Average # trapped per night	35.81	51.90	17.52	22.52	120.95	49.74190476	45.83
Max # trapped on one night	101	201	90	63	540	199	195
Min # trapped on one night	2	0	0	1	1	0.8	3



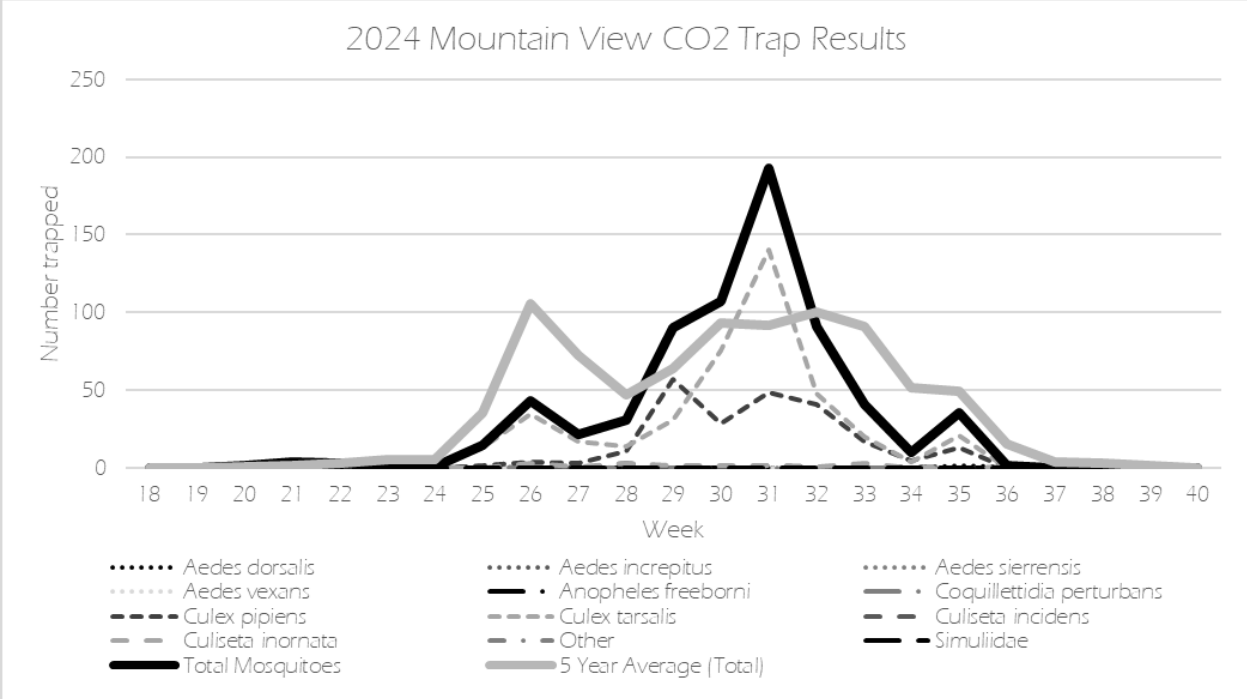
Jordan Parkway 10100 South Jordan River							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	0	2	3	1	1.4	6
Aedes increpitus	0	14	0	2	7	4.6	31
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	2	1	0	1	0	0.8	0
Aedes vexans	105	37	270	199	84	139	20
Anopheles freeborni	68	459	569	126	112	266.8	93
Coquillettidia perturbans	0	0	0	0	0	0	2
Culex erythrothorax	0	0	0	0	1	0.2	0
Culex pipiens	122	149	478	379	309	287.4	159
Culex tarsalis	602	505	468	488	1086	629.8	330
Culiseta incidens	2	13	0	2	0	3.4	6
Culiseta inornata	24	115	14	20	39	42.4	111
Total # trapped	926	1293	1801	1220	1639	1375.8	758
Total nights trapped	22	20	22	21	22	21.4	23
Average # trapped per night	42.09	64.65	81.86	58.10	74.50	64.23995671	32.96
Max # trapped on one night	149	284	292	238	356	263.8	116
Min # trapped on one night	0	0	1	1	0	0.4	0



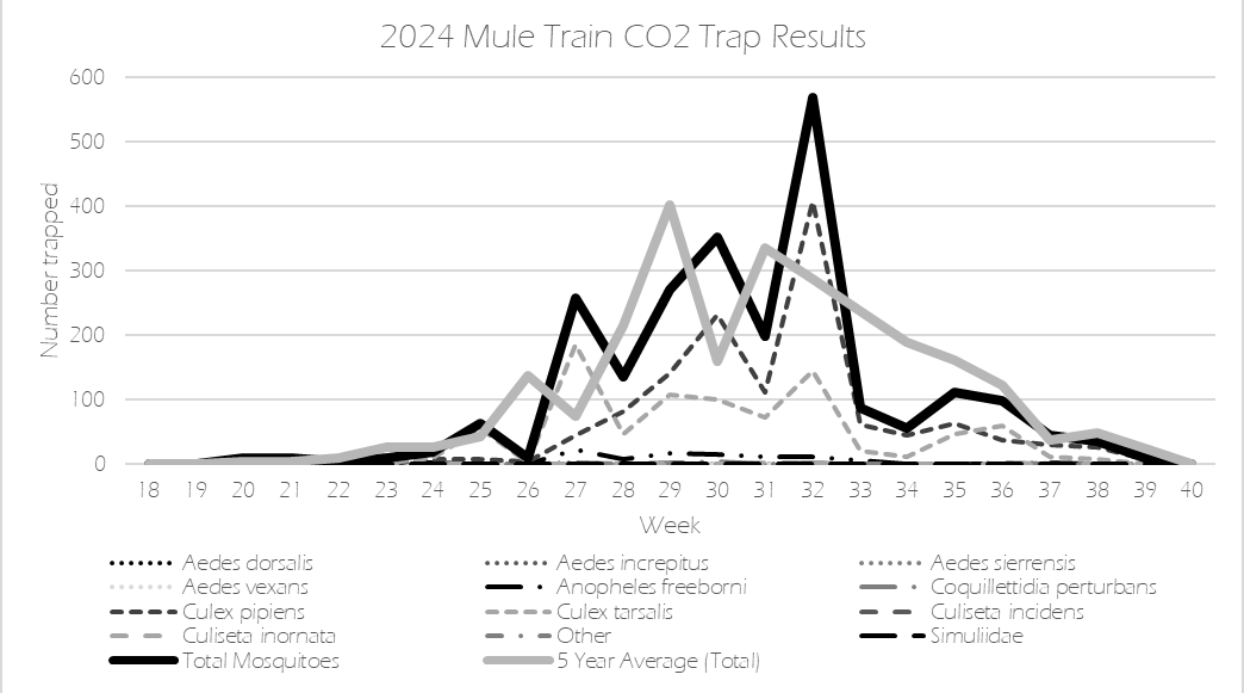
Meadowbrook 4197 South 1300 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	2	11	14	19	9.6	6
Aedes increpitus	34	3	1	0	2	8	4
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	5	3	19	9	7	8.6	3
Anopheles freeborni	33	4	6	9	9	12.2	1
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	71	70	48	137	250	115.2	532
Culex tarsalis	399	1068	380	657	3262	1153.2	538
Culiseta incidens	2	4	5	5	1	3.4	3
Culiseta inornata	23	12	15	56	65	34.2	96
Total # trapped	569	1166	485	887	3615	1344.4	1183
Total nights trapped	21	20	22	22	21	21.2	19
Average # trapped per night	27.10	58.30	22.05	40.32	172.14	63.98034632	62.26
Max # trapped on one night	78	316	98	144	1008	328.8	246
Min # trapped on one night	1	0	0	0	0	0.2	2



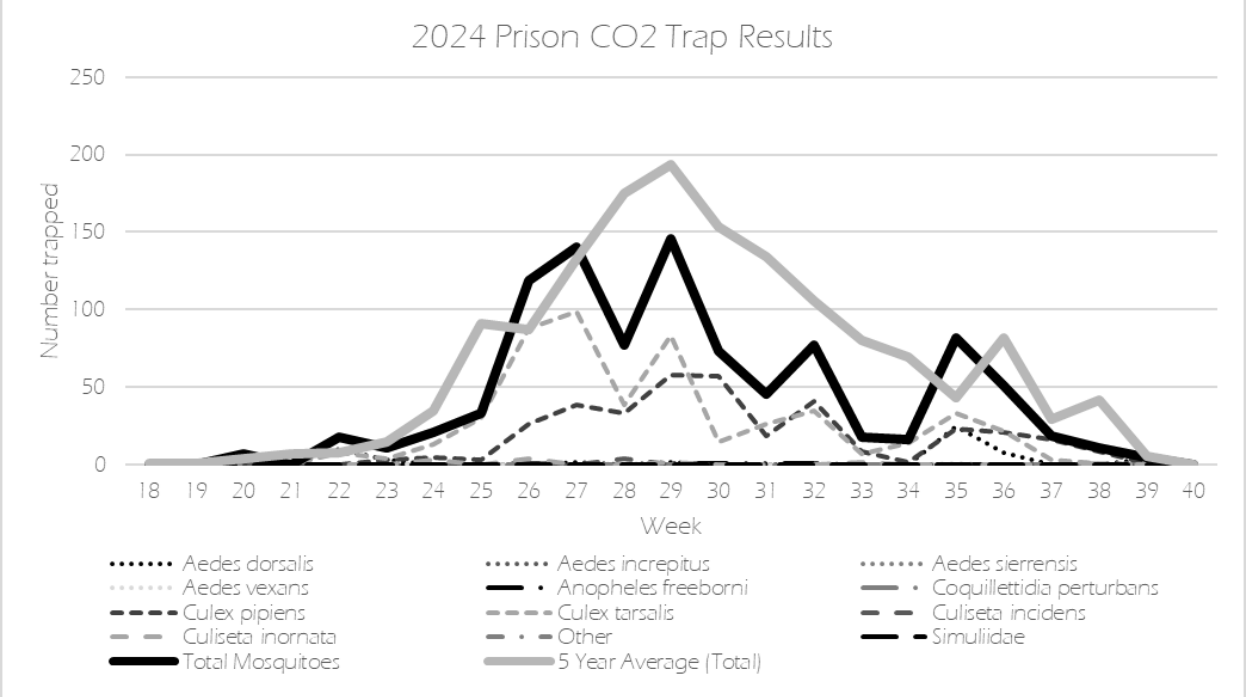
Mountain View 8440 So 2380 W							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	2	2	6	23	6.8	8
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	1	0	5	0	0	1.2	0
Coquillettidia perturbans	0	0	0	0	0	0	1
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	105	292	227	137	662	284.6	232
Culex tarsalis	225	597	112	120	1584	527.6	424
Culiseta incidens	4	6	4	6	2	4.4	9
Culiseta inornata	20	28	27	6	19	20	20
Total # trapped	356	925	377	275	2290	844.6	694
Total nights trapped	21	21	21	22	22	21.4	21
Average # trapped per night	16.95	44.05	17.95	12.50	104.09	39.10865801	33.05
Max # trapped on one night	88	173	87	57	478	176.6	193
Min # trapped on one night	0	0	0	0	0	0	0



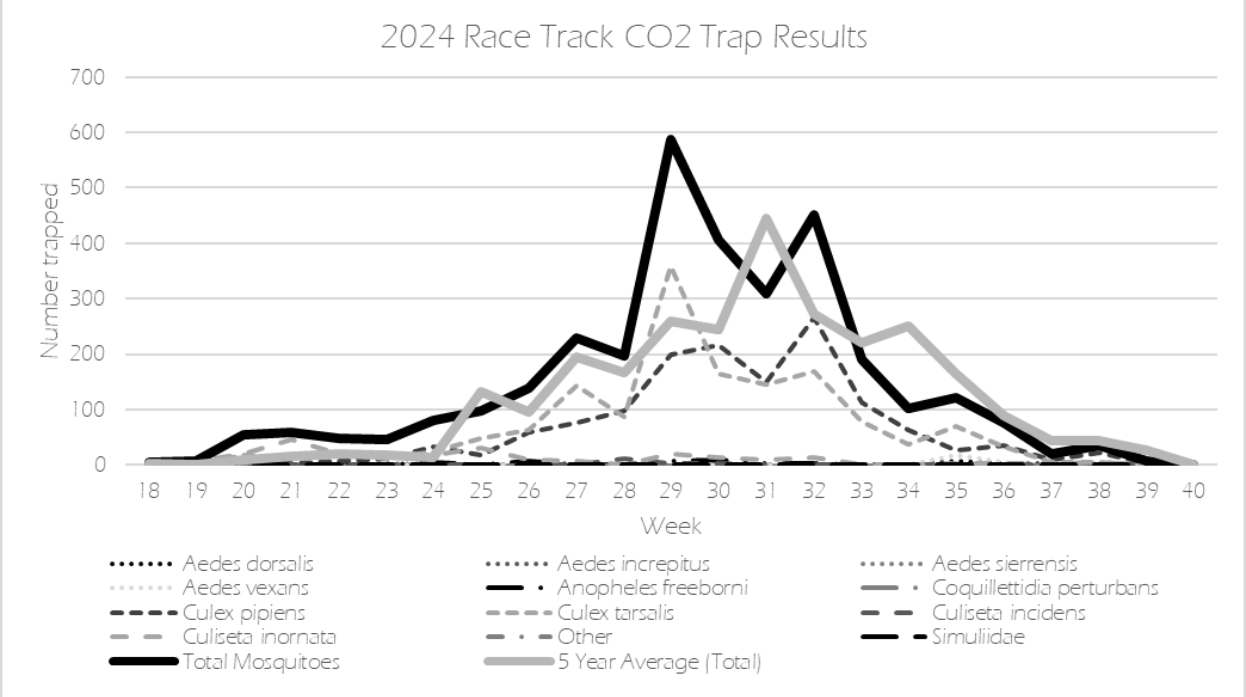
Mule Train 15010 South 1690 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	6	0	1	3	4	2.8	1
Aedes increpitus	2	2	0	0	7	2.2	9
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	4	9	3	0	35	10.2	8
Anopheles freeborni	52	318	932	145	82	305.8	101
Coquillettidia perturbans	234	102	154	98	82	134	14
Culex erythrothorax	0	0	0	24	1	5	0
Culex pipiens	799	1673	998	582	1917	1193.8	1312
Culex tarsalis	1133	838	412	478	1531	878.4	897
Culiseta incidens	0	0	0	0	0	0	0
Culiseta inornata	6	10	20	3	11	10	9
Total # trapped	2236	2952	2520	1333	3670	2542.2	2351
Total nights trapped	22	20	22	20	21	21	22
Average # trapped per night	101.64	147.60	114.55	66.65	174.8	121.0387446	106.86
Max # trapped on one night	310	528	607	271	876	518.4	568
Min # trapped on one night	0	0	0	0	0	0	0



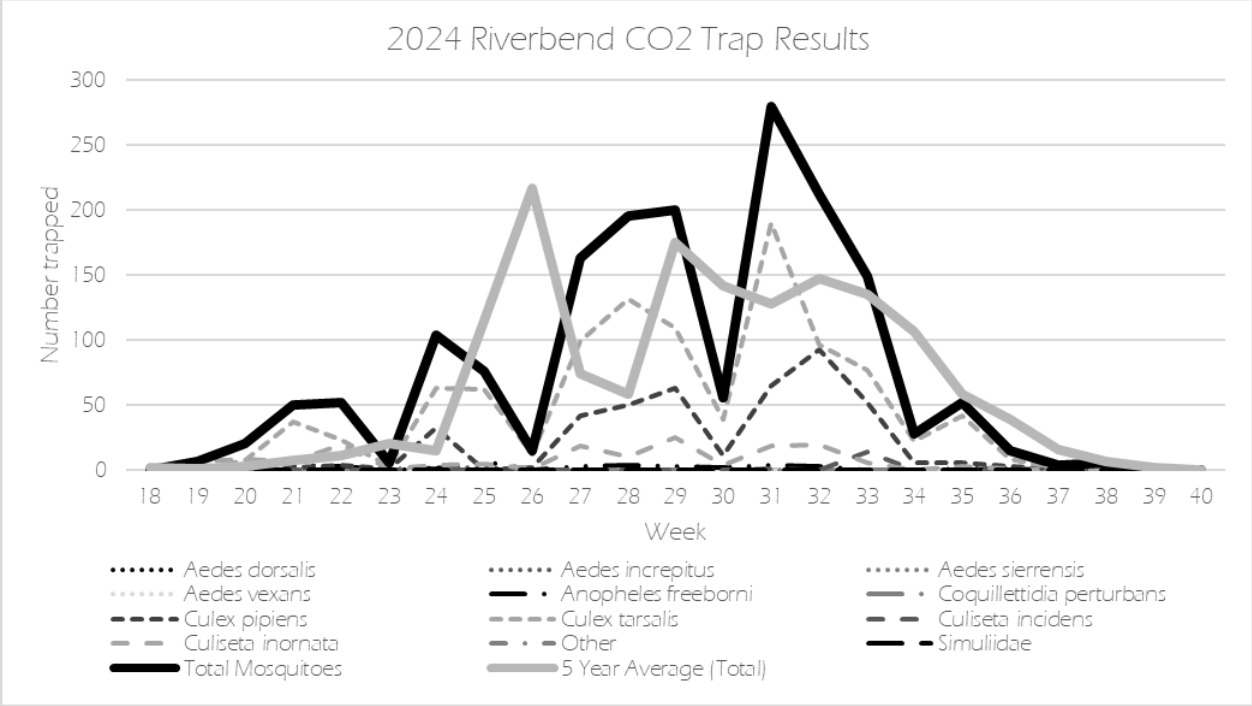
Prison 13800 South 490 West (13775 South 635 West before 2017)							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	16	86	36	50	217	81	54
Aedes increpitus	0	2	0	0	0	0.4	0
Aedes nigromaculis	0	0	1	0	0	0.2	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	1	0	5	24	54	16.8	3
Anopheles freeborni	2	4	15	4	2	5.4	5
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	370	154	131	120	843	323.6	365
Culex tarsalis	1508	436	496	507	2239	1037.2	523
Culiseta incidens	0	0	0	0	0	0	4
Culiseta inornata	68	7	11	10	44	28	16
Total # trapped	1965	689	695	715	3399	1492.6	970
Total nights trapped	22	19	22	21	22	21.2	22
Average # trapped per night	89.32	36.26	31.59	34.05	154.50	69.14397357	44.09
Max # trapped on one night	378	231	134	193	572	301.6	146
Min # trapped on one night	0	0	0	0	1	0.2	0



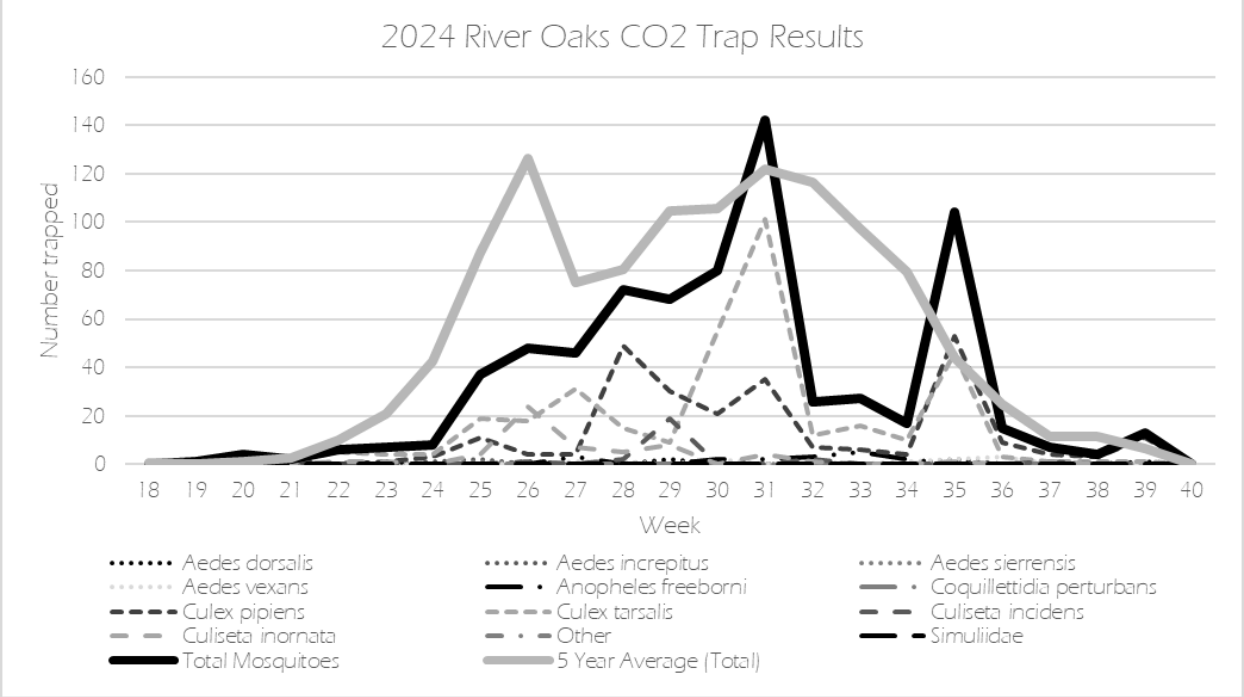
Race Track 13240 South 700 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	36	26	84	70	101	63.4	23
Aedes increpitus	8	13	30	1	5	11.4	5
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	4	0	0	0	0	0.8	0
Aedes vexans	13	14	30	10	356	84.6	31
Anopheles freeborni	4	20	40	17	10	18.2	35
Coquillettidia perturbans	0	0	0	0	0	0	1
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	994	548	1046	488	1449	905	1423
Culex tarsalis	1587	840	1276	745	3608	1611.2	1490
Culiseta incidens	0	0	0	0	0	0	17
Culiseta inornata	49	4	9	5	72	27.8	243
Total # trapped	2695	1465	2515	1336	5601	2722.4	3268
Total nights trapped	21	19	22	21	21	20.8	23
Average # trapped per night	128.33	77.11	114.32	63.62	266.71	130.0180223	142.09
Max # trapped on one night	464	259	407	202	1028	472	588
Min # trapped on one night	0	0	0	0	2	0.4	3



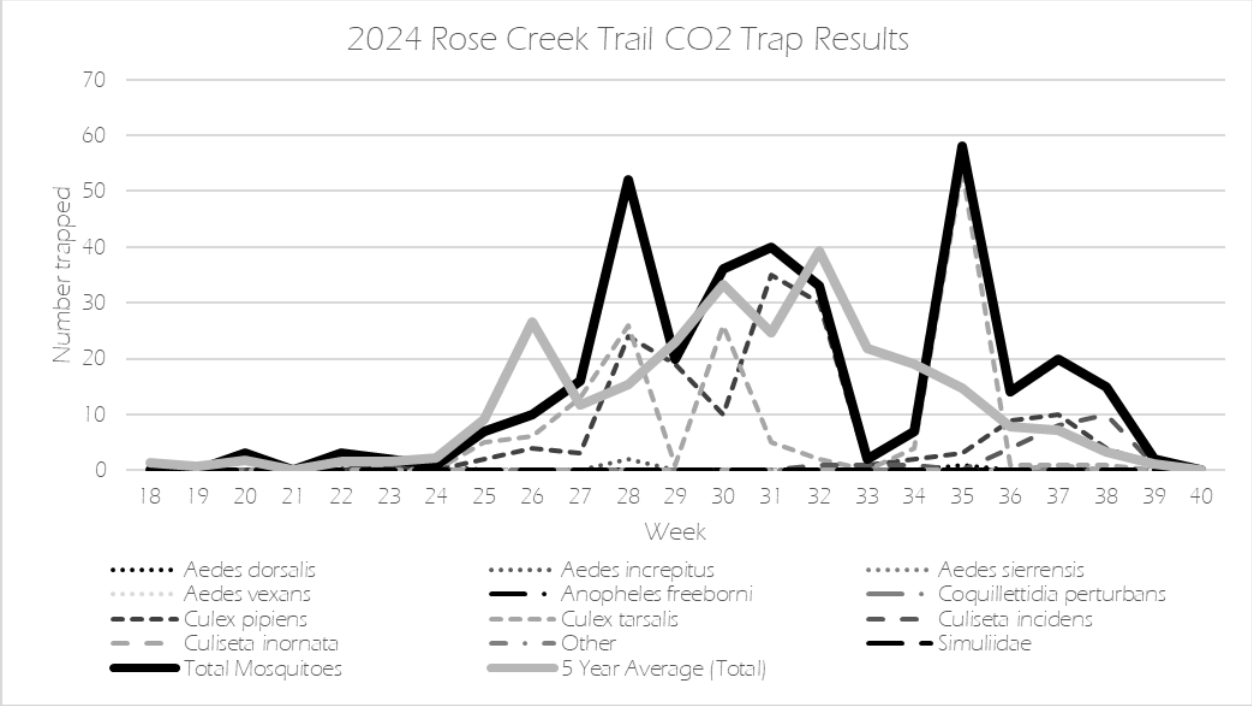
Riverbend 12800 South 1040 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	1	1	2	17	4.2	7
Aedes increpitus	10	9	0	0	0	3.8	5
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	1	1	0	0	1	0.6	0
Aedes vexans	9	19	1	1	43	14.6	0
Anopheles freeborni	6	11	18	9	15	11.8	35
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	127	137	472	110	244	218	436
Culex tarsalis	1456	1203	993	380	1954	1197.2	1028
Culiseta incidens	2	1	1	0	0	0.8	17
Culiseta inornata	62	10	2	9	65	29.6	161
Total # trapped	1673	1392	1488	511	2339	1480.6	1689
Total nights trapped	21	20	20	20	21	20.4	21
Average # trapped per night	79.67	69.60	74.40	25.55	111.38	72.11952381	80.43
Max # trapped on one night	309	277	253	82	798	343.8	279
Min # trapped on one night	0	1	0	1	2	0.8	0



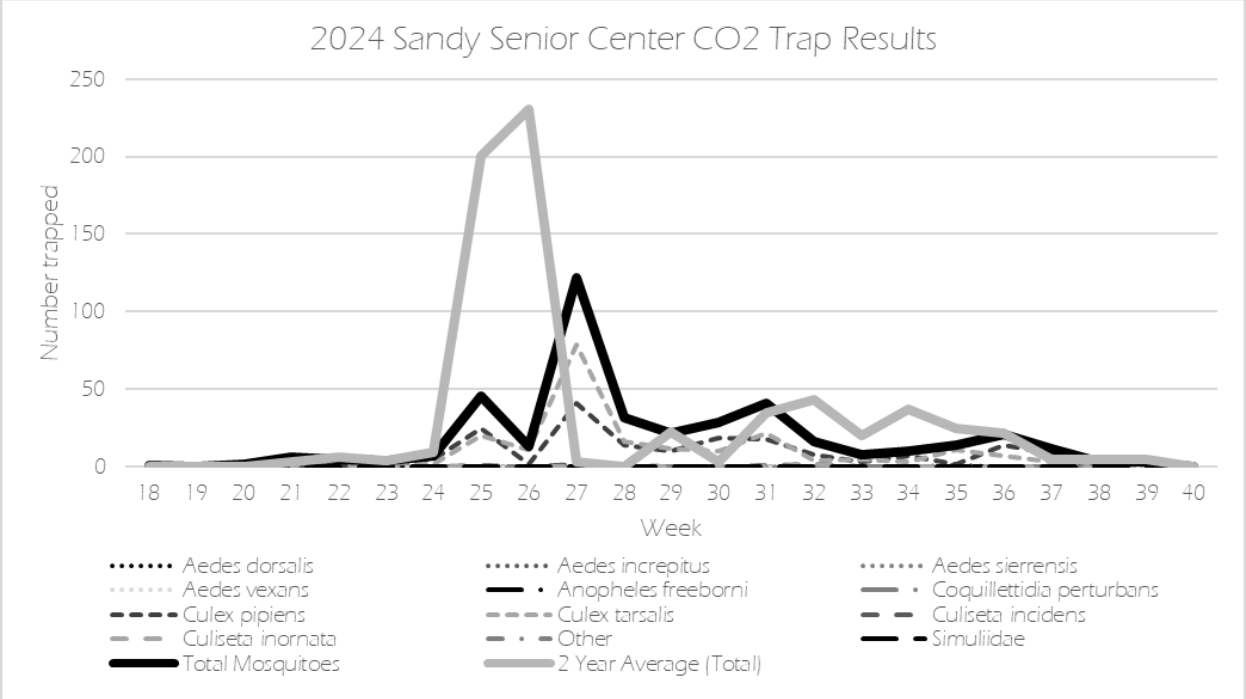
River Oaks 9300 South 800 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	2	0	1	3	1.6	6
Aedes increpitus	2	4	0	0	0	1.2	3
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	1
Aedes vexans	210	55	59	351	54	145.8	11
Anopheles freeborni	11	97	47	36	24	43	18
Coquillettidia perturbans	1	0	0	0	0	0.2	0
Culex erythrothorax	0	0	0	2	0	0.4	0
Culex pipiens	197	441	195	82	289	240.8	256
Culex tarsalis	561	847	186	319	1456	673.8	355
Culiseta incidens	10	12	8	9	0	7.8	25
Culiseta inornata	87	41	18	10	97	50.6	60
Total # trapped	1081	1499	513	810	1923	1165.2	735
Total nights trapped	21	18	21	21	21	20.4	23
Average # trapped per night	51.48	83.28	24.43	38.57	91.57	57.86507937	31.96
Max # trapped on one night	184	274	113	121	306	199.6	142
Min # trapped on one night	0	0	0	0	0	0	0



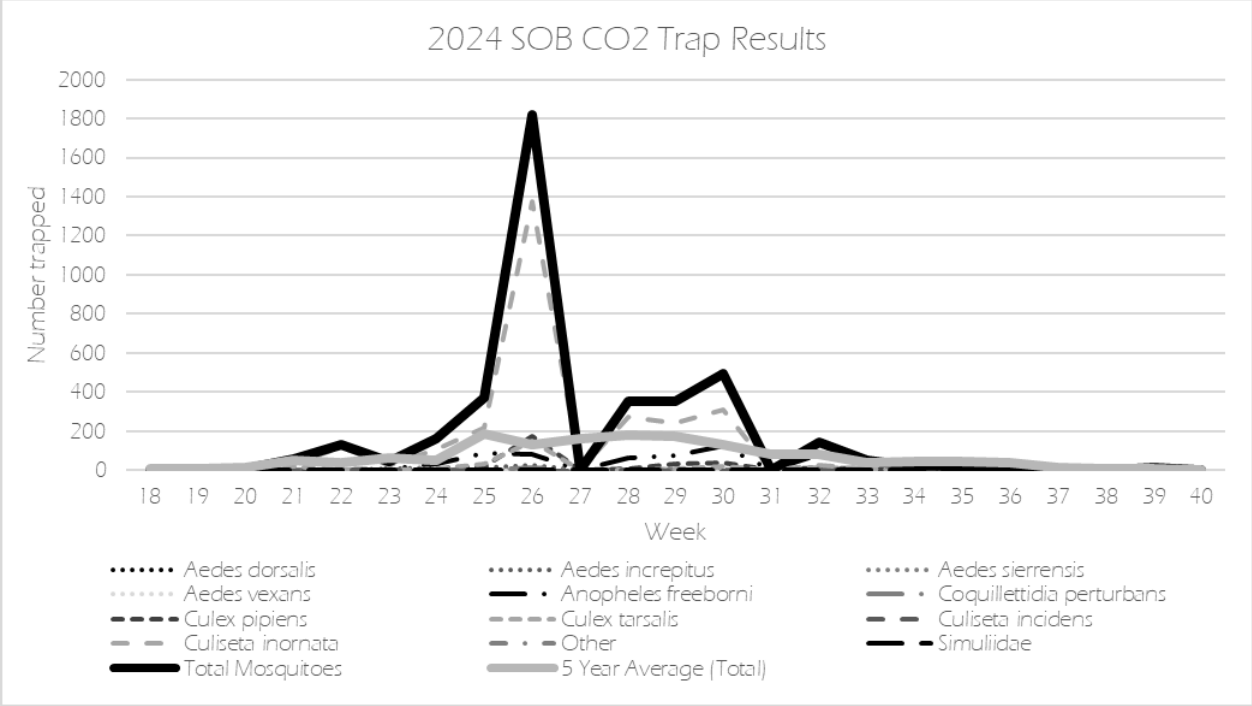
Rose Creek Trail 13825 So. 5500 W							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	2	0	1	0	0	0.6	1
Aedes increpitus	3	1	0	0	0	0.8	4
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	0	1	0	0	0	0.2	0
Anopheles freeborni	0	0	0	0	0	0	0
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	95	34	56	37	183	81	158
Culex tarsalis	221	257	70	54	267	173.8	150
Culiseta incidens	6	0	3	9	1	3.8	27
Culiseta inornata	23	0	2	4	7	7.2	1
Total # trapped	350	293	132	104	458	267.4	341
Total nights trapped	17	18	22	22	20	19.8	22
Average # trapped per night	20.59	16.28	6.00	4.73	22.90	14.09865716	15.50
Max # trapped on one night	112	84	21	15	67	59.8	58
Min # trapped on one night	0	0	0	0	0	0	0



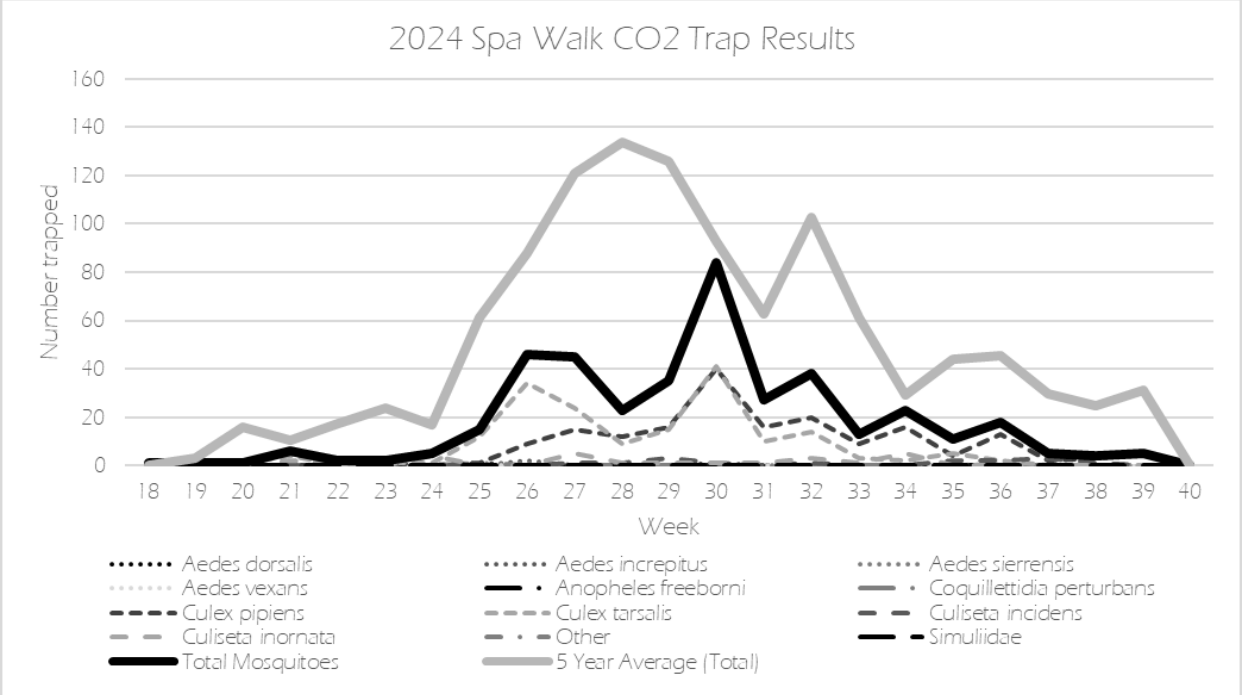
Sandy Senior Center 9310 S 1300 E							
	2019	2020	2021	2022	2023	2 Year Average	2024
Aedes dorsalis				0	1	0.5	1
Aedes increpitus				0	0	0	0
Aedes nigromaculis				0	0	0	0
Aedes sierrensis				0	0	0	0
Aedes vexans				0	0	0	0
Anopheles freeborni				0	0	0	0
Coquillettidia perturbans				0	0	0	0
Culex erythrothorax				0	0	0	0
Culex pipiens				70	203	136.5	185
Culex tarsalis				95	983	539	219
Culiseta incidens				4	0	2	7
Culiseta inornata				2	1	1.5	5
Total # trapped				171	1188	679.5	417
Total nights trapped				20	20	20	22
Average # trapped per night				8.55	59.40	33.975	18.95
Max # trapped on one night				32	454	243	122
Min # trapped on one night				0	0	0	0



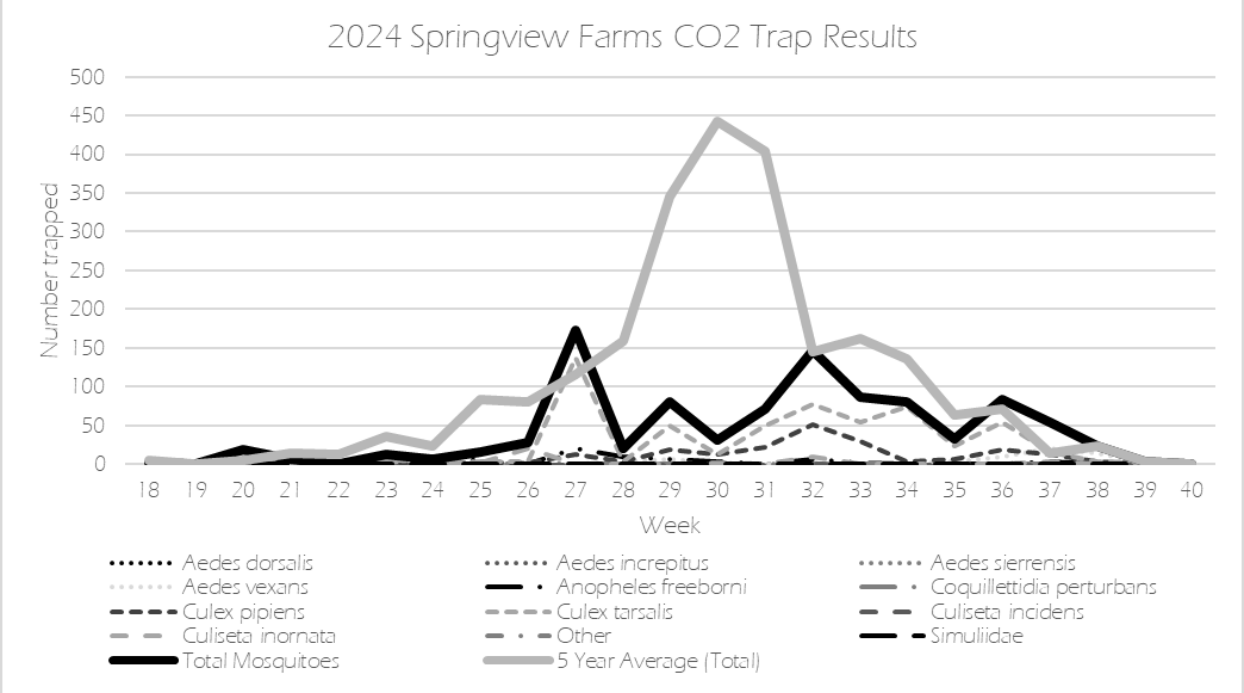
S.O.B. 10810 South 500 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	1	0	3	0.8	0
Aedes increpitus	0	1	19	11	8	7.8	61
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	1	1	1	0	0	0.6	0
Aedes vexans	8	3	19	17	9	11.2	3
Anopheles freeborni	156	603	1574	661	608	720.4	614
Coquillettidia perturbans	2	13	3	2	12	6.4	12
Culex erythrothorax	0	0	0	19	0	3.8	0
Culex pipiens	70	377	568	258	247	304	326
Culex tarsalis	335	153	396	231	657	354.4	285
Culiseta incidens	23	0	1	3	0	5.4	10
Culiseta inornata	46	169	75	141	276	141.4	2743
Total # trapped	641	1320	2657	1343	1820	1556.2	4054
Total nights trapped	21	21	22	21	21	21.2	20
Average # trapped per night	30.52	62.86	120.77	63.95	86.67	72.95454545	202.70
Max # trapped on one night	106	175	610	310	376	315.4	1816
Min # trapped on one night	0	16	1	1	1	3.8	2



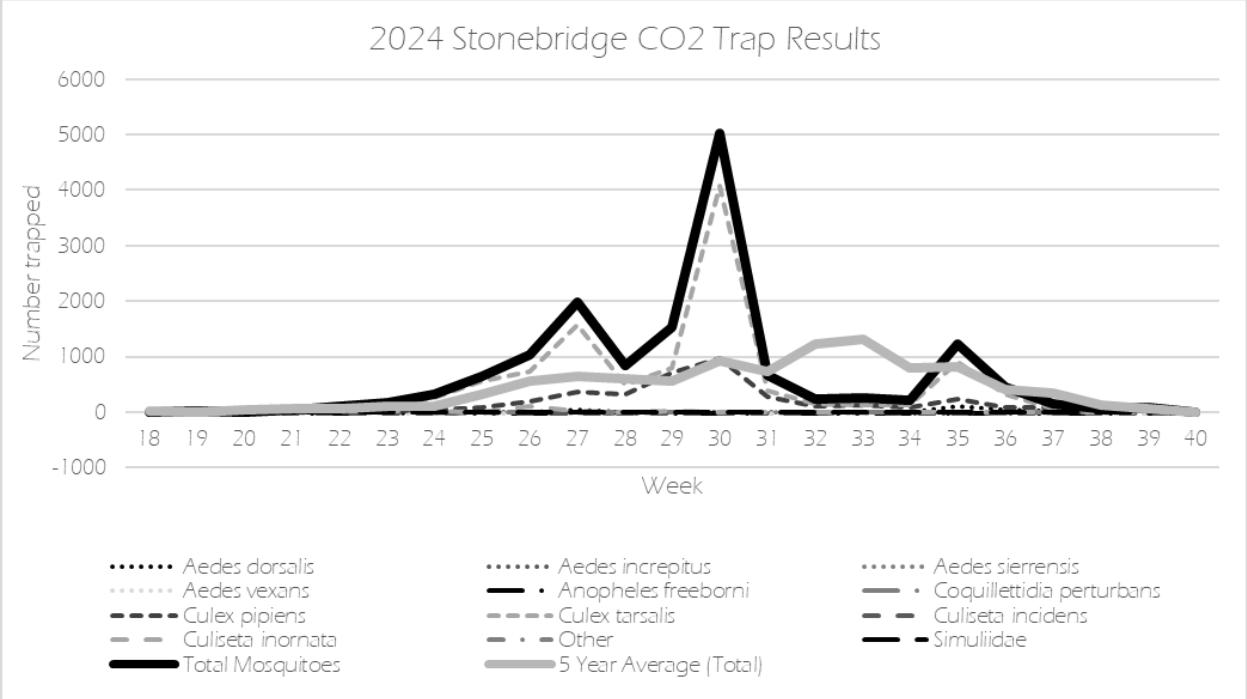
Spa Walk 4750 South 1600 East							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	2	3	1	1
Aedes increpitus	13	31	1	3	10	11.6	3
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	7	5	1	3	0	3.2	1
Aedes vexans	1	0	0	8	5	2.8	1
Anopheles freeborni	1	23	114	14	7	31.8	0
Coquillettidia perturbans	88	139	356	340	50	194.6	1
Culex erythrothorax	0	0	0	151	0	30.2	0
Culex pipiens	317	553	176	305	245	319.2	182
Culex tarsalis	191	333	147	116	597	276.8	206
Culiseta incidens	63	141	28	26	11	53.8	16
Culiseta inornata	489	331	73	79	112	216.8	26
Total # trapped	1170	1556	896	1047	1040	1141.8	437
Total nights trapped	22	21	22	22	22	21.8	24
Average # trapped per night	53.18	74.10	40.73	47.59	47.27	52.57359307	18.21
Max # trapped on one night	202	154	248	253	171	205.6	84
Min # trapped on one night	0	9	0	0	0	1.8	0



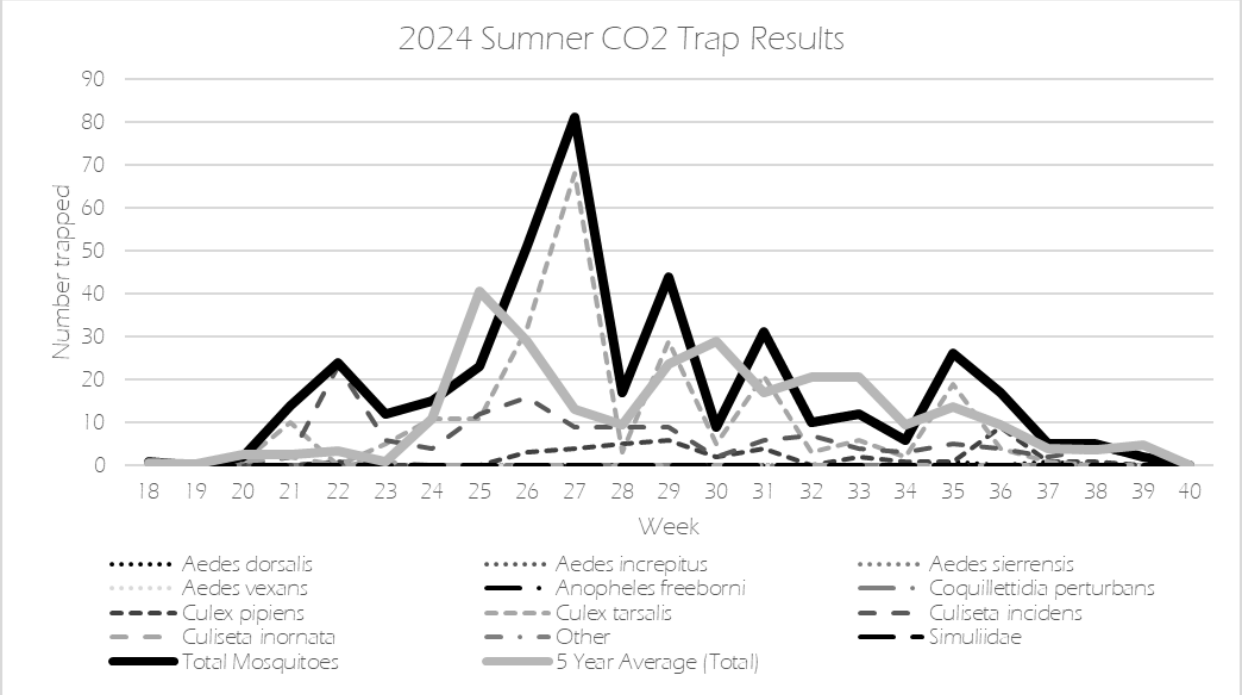
Springview Farms 14400 South 1160 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	1	3	3	14	4.4	2
Aedes increpitus	3	26	2	2	6	7.8	4
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	1	0	0	0	0	0.2	0
Aedes vexans	12	45	9	9	188	52.6	66
Anopheles freeborni	40	300	470	86	210	221.2	63
Coquillettidia perturbans	0	1	2	1	0	0.8	0
Culex erythrothorax	0	0	0	29	0	5.8	0
Culex pipiens	152	374	275	111	1566	495.6	201
Culex tarsalis	903	1053	723	348	4623	1530	586
Culiseta incidens	0	2	0	0	1	0.6	1
Culiseta inornata	21	17	9	9	80	27.2	54
Total # trapped	1133	1819	1493	598	6688	2346.2	977
Total nights trapped	21	18	22	21	22	20.8	22
Average # trapped per night	53.95	101.06	67.86	28.48	304.00	111.0695527	44.41
Max # trapped on one night	219	521	179	91	1708	543.6	173
Min # trapped on one night	0	0	0	0	0	0	0



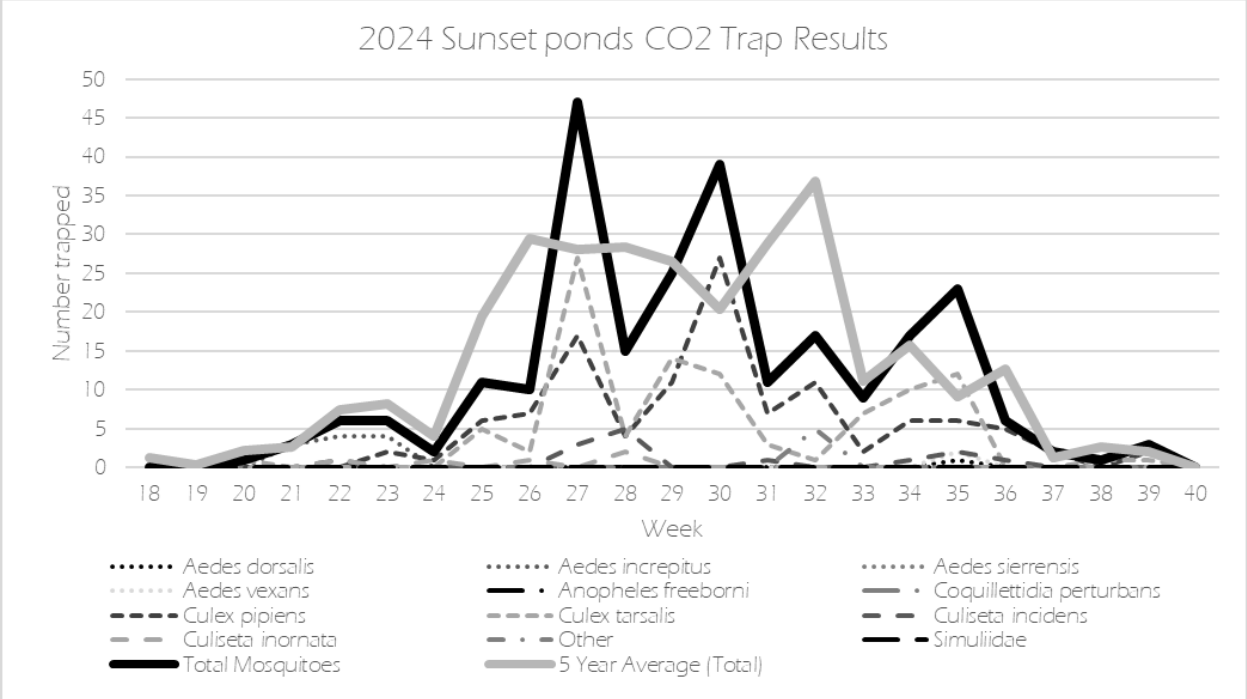
Stonebridge 2400 South 4300 West							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	109	137	276	437	699	331.6	277
Aedes increpitus	0	5	1	0	5	2.2	4
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	19	11	6	3	3	8.4	5
Anopheles freeborni	3	2	0	1	2	1.6	4
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	1
Culex pipiens	1206	3605	2992	6448	1989	3248	3714
Culex tarsalis	2276	9527	2852	8070	7316	6008.2	10861
Culiseta incidens	1	4	1	0	0	1.2	3
Culiseta inornata	34	613	4	56	117	164.8	228
Total # trapped	3648	13904	6132	15015	10131	9766	15097
Total nights trapped	22	20	22	22	22	21.6	23
Average # trapped per night	165.8	695.2	278.7	682.5	460.5	456.5490909	656.39
Max # trapped on one night	605	2454	932	1870	1572	1486.6	5030
Min # trapped on one night	3	1	0	2	5	2.2	3



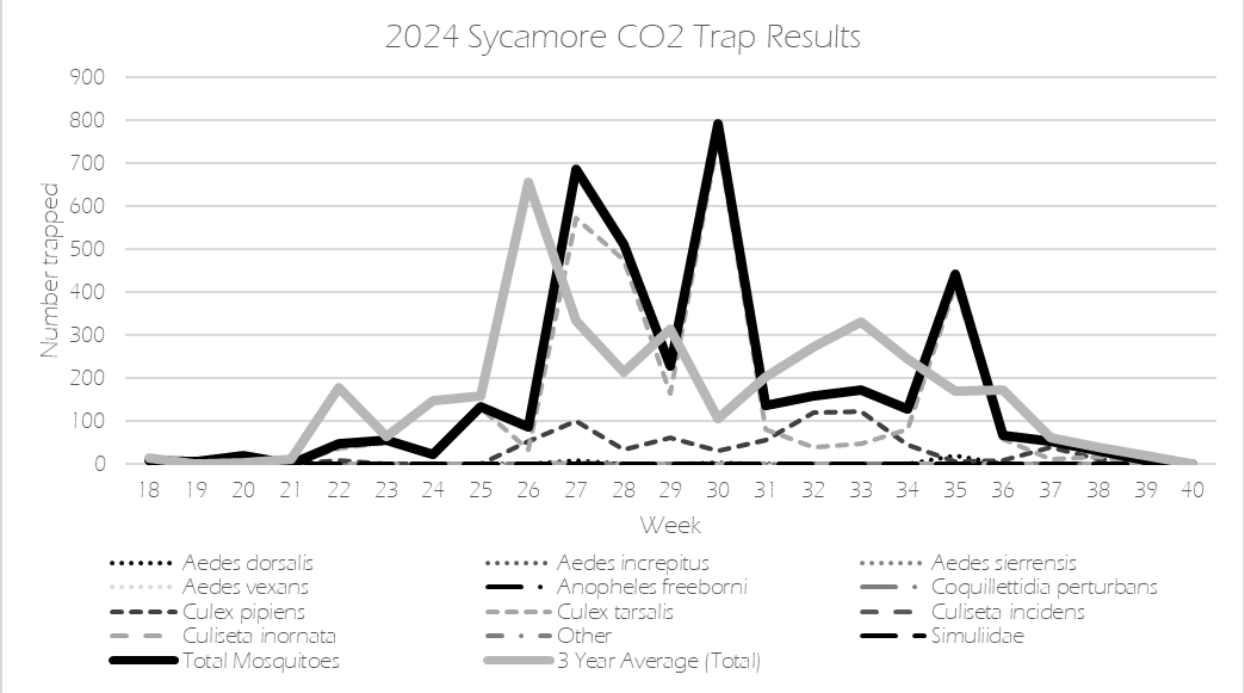
Sumner's 2660 Walker Lane							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	0	1	0	1	0.6	2
Aedes increpitus	0	1	0	0	0	0.2	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	2	0	0	0	0	0.4	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	0	0	0	0	0	0	0
Coquillettidia perturbans	1	0	0	0	0	0.2	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	17	12	30	20	55	26.8	40
Culex tarsalis	159	171	67	75	450	184.4	231
Culiseta incidens	45	50	75	84	22	55.2	129
Culiseta inornata	1	0	1	1	3	1.2	5
Total # trapped	226	234	174	180	531	269	407
Total nights trapped	21	20	22	20	21	20.8	22
Average # trapped per night	10.76	11.70	7.91	9.00	25.29	12.93134199	18.50
Max # trapped on one night	38	45	28	24	179	62.8	81
Min # trapped on one night	0	0	0	0	0	0	0



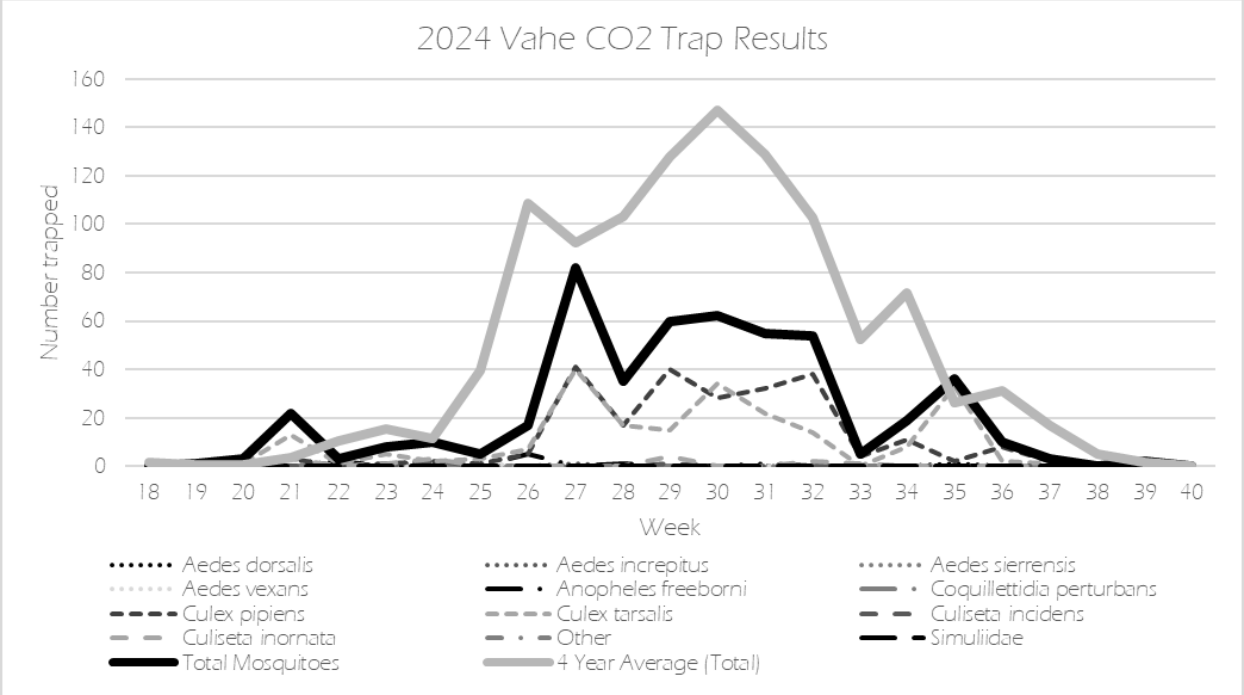
Sunset Ponds 11746 South 860 East							
	2019	2020	2021	2022	2023	4 Year Average	2024
Aedes dorsalis		0	0	0	0	0	1
Aedes increpitus		2	0	3	13	4.5	11
Aedes nigromaculis		0	0	0	0	0	0
Aedes sierrensis		0	0	0	0	0	0
Aedes vexans		0	0	0	1	0.25	2
Anopheles freeborni		1	1	0	0	0.5	0
Coquillettidia perturbans		0	0	0	0	0	0
Culex erythrothorax		0	0	0	0	0	0
Culex pipiens		89	39	87	113	82	116
Culex tarsalis		74	41	96	413	156	100
Culiseta incidens		8	4	13	2	6.75	14
Culiseta inornata		15	8	23	7	13.25	5
Total # trapped		189	93	222	549	263.25	249
Total nights trapped		21	21	22	21	21.25	22
Average # trapped per night		9.00	4.43	10.09	26.14	12.41558442	11.32
Max # trapped on one night		31	15	37	84	41.75	47
Min # trapped on one night		0	0	0	0	0	0



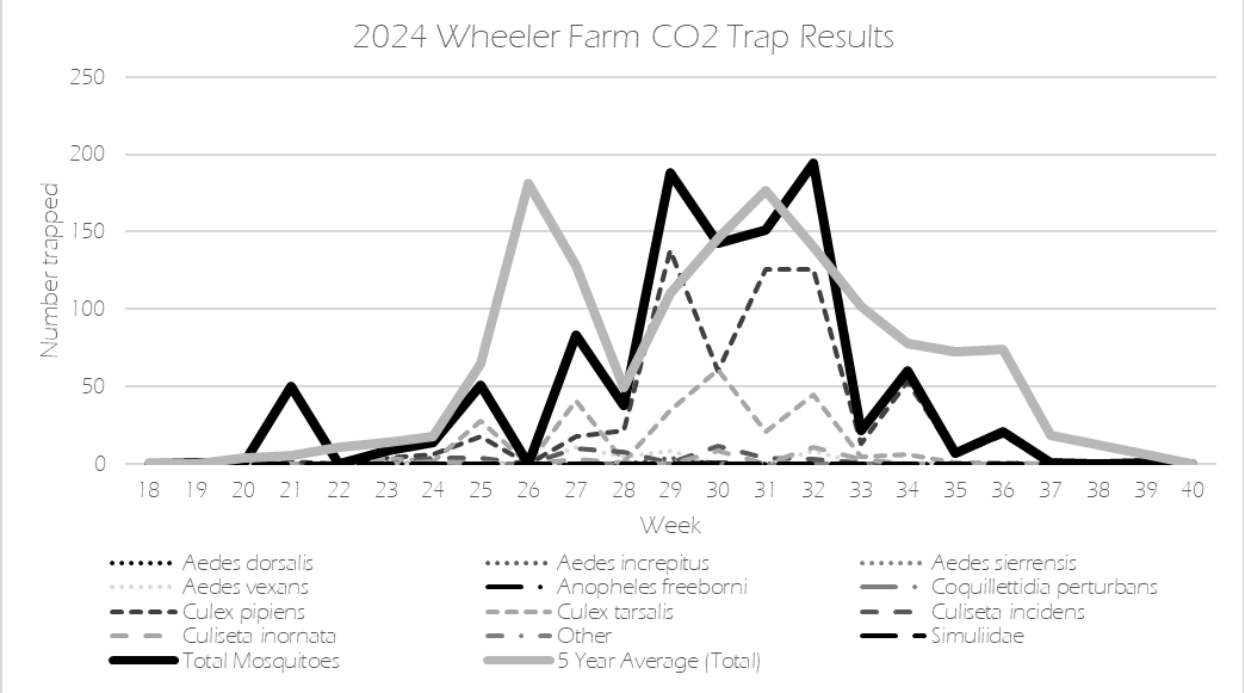
Sycamore 7855 South 7025 West							
	2019	2020	2021	2022	2023	3 Year Average	2024
Aedes dorsalis			53	33	34	40	44
Aedes increpitus			1	0	0	0.333333333	3
Aedes nigromaculis			0	0	0	0	0
Aedes sierrensis			0	0	0	0	2
Aedes vexans			1	0	0	0.333333333	1
Anopheles freeborni			0	0	1	0.333333333	0
Coquillettidia perturbans			0	0	0	0	0
Culex erythrothorax			0	0	0	0	0
Culex pipiens			440	692	1014	715.3333333	702
Culex tarsalis			1421	1674	5753	2949.333333	3067
Culiseta incidens			4	5	1	3.333333333	6
Culiseta inornata			4	7	9	6.666666667	14
Total # trapped			1924	2411	6812	3715.666667	3839
Total nights trapped			17	21	22	20	24
Average # trapped per night			113.18	114.81	309.64	179.2074527	159.96
Max # trapped on one night			427	366	1672	821.6666667	790
Min # trapped on one night			0	0	1	0.333333333	0



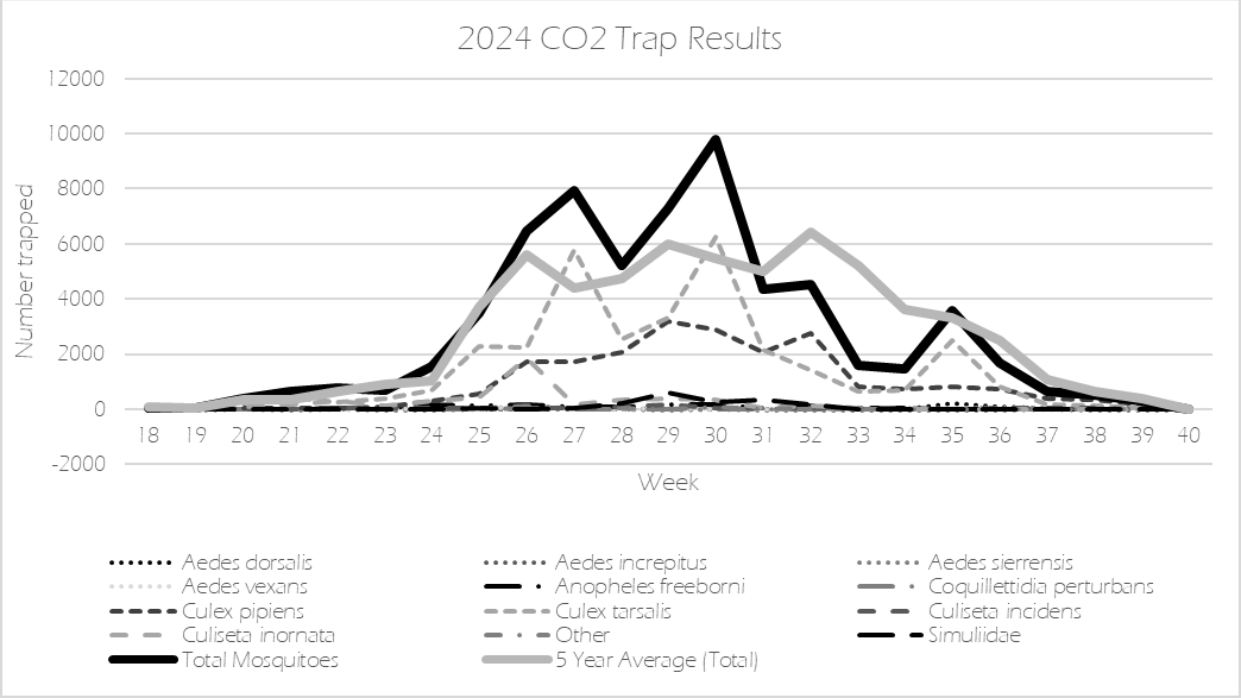
Vahe 12100 South 1000 West							
	2019	2020	2021	2022	2023	4 Year Average	2024
Aedes dorsalis		1	0	3	10	3.5	4
Aedes increpitus		14	2	2	58	19	3
Aedes nigromaculis		0	0	0	0	0	0
Aedes sierrensis		0	0	0	0	0	0
Aedes vexans		46	6	41	49	35.5	1
Anopheles freeborni		58	200	15	9	70.5	10
Coquillettidia perturbans		0	0	0	0	0	0
Culex erythrothorax		0	0	0	0	0	0
Culex pipiens		216	388	333	438	343.75	236
Culex tarsalis		510	238	251	1138	534.25	219
Culiseta incidens		9	1	3	4	4.25	3
Culiseta inornata		140	126	51	35	88	16
Total # trapped		994	961	699	1741	1098.75	492
Total nights trapped		14	22	22	22	20	22
Average # trapped per night		71.00	43.68	31.77	79.14	56.39772727	22.36
Max # trapped on one night		170	307	134	255	216.5	82
Min # trapped on one night		1	0	0	0	0.25	0



Wheeler Farm 6300 South 900 East							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	1	3	5	4	2.6	2
Aedes increpitus	1	1	0	0	0	0.4	5
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	56	183	513	1109	65	385.2	35
Anopheles freeborni	1	1	5	1	0	1.6	1
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	1	0.2	0
Culex pipiens	372	401	255	182	286	299.2	613
Culex tarsalis	447	1125	335	228	1123	651.6	301
Culiseta incidens	32	83	50	64	5	46.8	47
Culiseta inornata	80	5	23	10	4	24.4	30
Total # trapped	989	1800	1184	1599	1488	1412	1034
Total nights trapped	21	21	22	22	22	21.6	21
Average # trapped per night	47.10	85.71	53.82	72.68	67.64	65.38917749	49.24
Max # trapped on one night	212	310	289	465	660	387.2	194
Min # trapped on one night	0	0	0	0	0	0	0

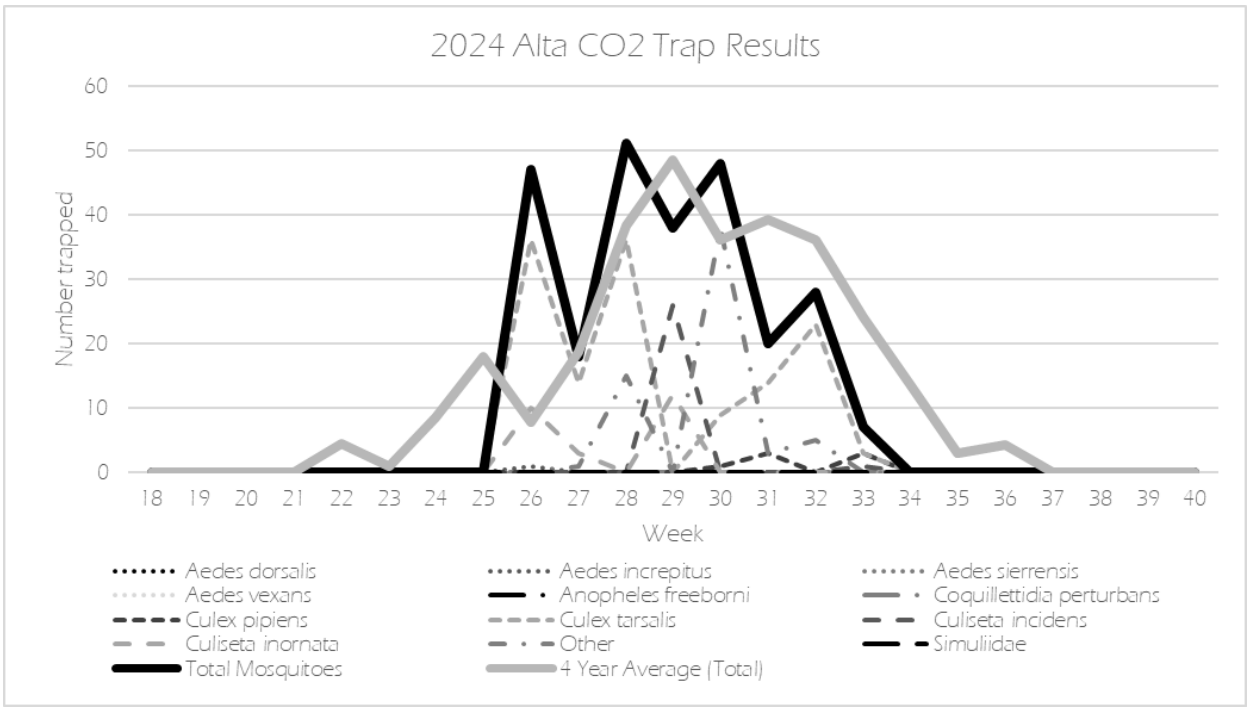


Total							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	239	324	592	839	1486	696	599
Aedes increpitus	109	163	61	28	156	103.4	282
Aedes nigromaculis	0	0	1	0	0	0.2	0
Aedes sierrensis	89	50	37	16	13	41	17
Aedes vexans	499	473	1195	2882	1489	1307.6	376
Anopheles freeborni	547	2050	4317	1238	1206	1871.6	1261
Coquillettidia perturbans	334	257	515	497	173	355.2	93
Culex erythrothorax	0	0	0	260	4	52.8	1
Culex pipiens	17591	18211	17269	17457	23456	18796.8	21534
Culex tarsalis	24716	45971	17468	23915	65739	35561.8	33067
Culiseta incidens	374	546	499	476	75	394	663
Culiseta inornata	2177	1778	1327	802	1754	1567.6	4758
Total # trapped	46675	69823	43281	48410	95551	60748	62651
Total nights trapped	633	661	700	712	720	685.2	743
Average # trapped per night	73.74	105.63	61.83	67.99	132.71	88.38	84.32
Max # trapped on one night	5536	10856	4391	6606	15166	8511	9788
Min # trapped on one night	47	70	27	23	36	40.6	48

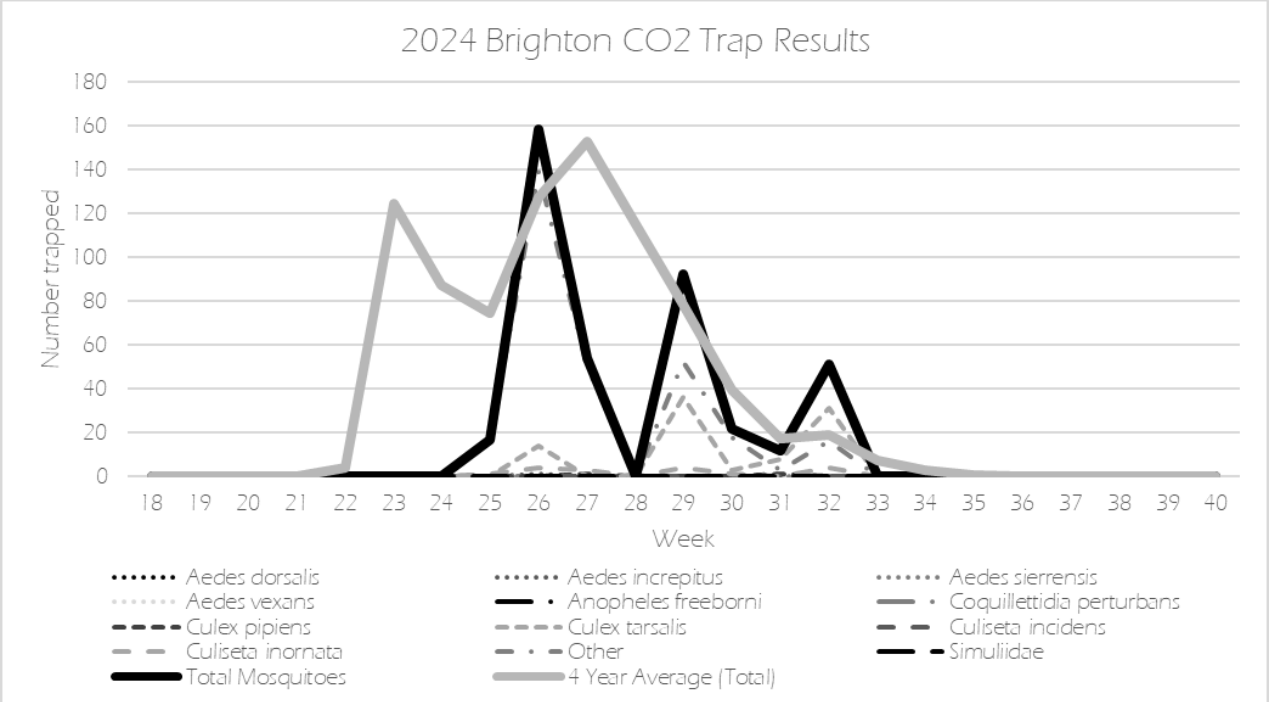


In addition to regular surveillance traps, 2 CO_2-baited traps were placed in Big Cottonwood Canyon and 2 in Little Cottonwood Canyon. These traps were active once per week starting in early June and extending through early August. Mosquitoes categorized as "Other" were of the genus *Aedes* and primarily included *Ae. implicatus*, *Ae. hexodontus, Ae. intrudens*, and *Ae. cataphylla*.

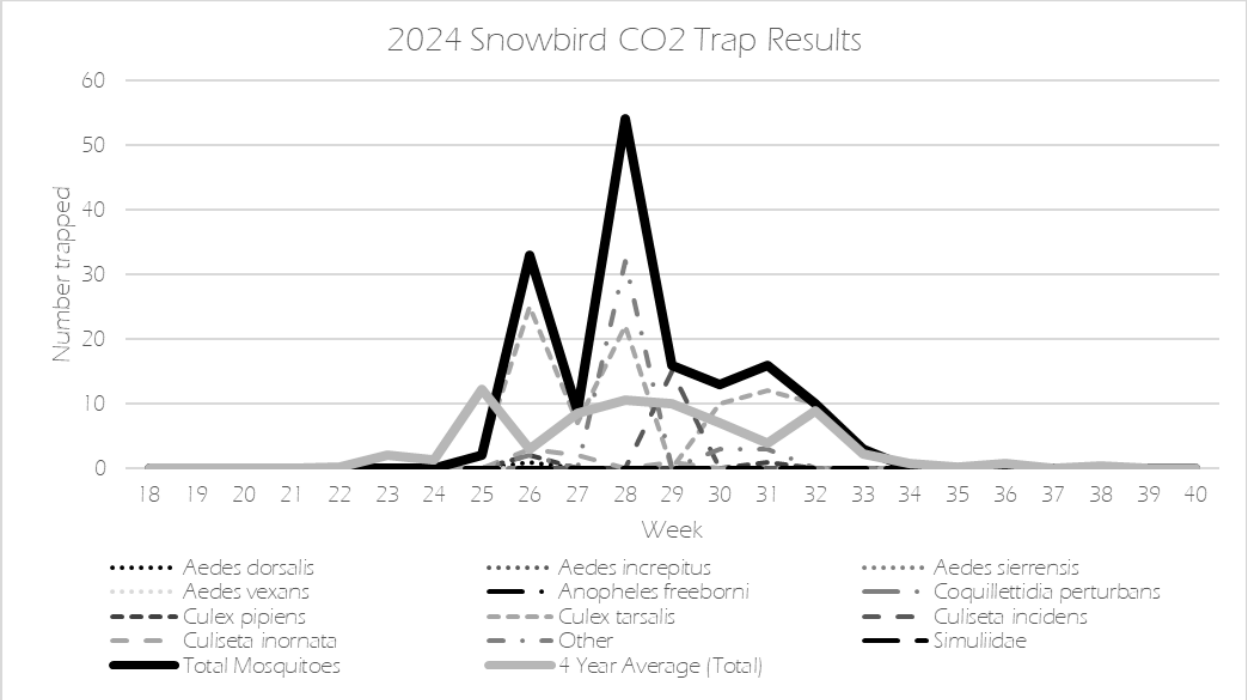
Alta 10520 E Day Lodge Rd							
	2019	2020	2021	2022	2023	4 Year Average	2024
Aedes dorsalis		1	0	0	0	0.25	0
Aedes increpitus		0	0	0	0	0	1
Aedes nigromaculis		0	0	0	0	0	0
Aedes sierrensis		0	0	0	0	0	0
Aedes vexans		0	0	0	0	0	0
Anopheles freeborni		0	0	0	0	0	0
Coquillettidia perturbans		0	0	0	0	0	0
Culex erythrothorax		0	0	0	0	0	0
Culex pipiens		5	3	0	10	4.5	7
Culex tarsalis		468	148	37	195	212	135
Culiseta incidens		1	2	6	4	3.25	27
Culiseta inornata		11	21	3	70	26.25	25
Other		566	252	128	481	356.75	319
Total # trapped		1052	426	174	760	603	514
Total nights trapped		14	9	9	8	10	9
Average # trapped per night		75.14	47.33	19.33	95.00	59.20238095	57.11
Max # trapped on one night		131	71	19	99	80	51
Min # trapped on one night		0	2	1	12	3	0


2024 Alta CO2 Trap Results
Number trapped
60
50
40
30
20
10
0
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
Week
Aedes dorsalis
Aedes increpitus
Aedes sierrensis
Aedes vexans
Anopheles freeborni
Coquillettidia perturbans
Culex pipiens
Culex tarsalis
Culiseta incidens
Culiseta inornata
Other
Simuliidae
Total Mosquitoes
4 Year Average (Total)

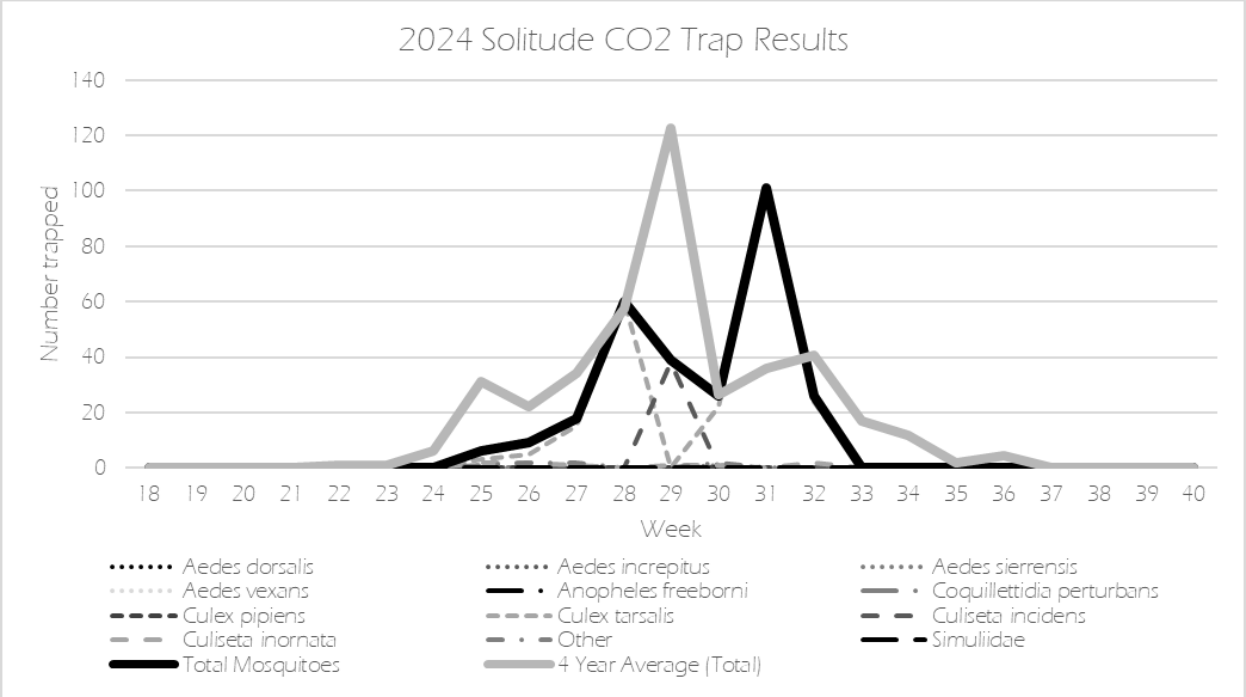
Brighton							
	2019	2020	2021	2022	2023	4 Year Average	2024
Aedes dorsalis		0	0	0	0	0	0
Aedes increpitus		0	0	1	3	1	1
Aedes nigromaculis		0	0	0	0	0	0
Aedes sierrensis		0	0	0	0	0	0
Aedes vexans		0	0	0	0	0	0
Anopheles freeborni		0	0	0	0	0	0
Coquillettidia perturbans		0	0	0	0	0	0
Culex erythrothorax		0	0	0	0	0	0
Culex pipiens		1	0	1	1	0.75	2
Culex tarsalis		161	42	21	34	64.5	92
Culiseta incidens		0	0	3	0	0.75	0
Culiseta inornata		73	29	11	42	38.75	17
Other		1217	2289	509	2354	1592.25	700
Total # trapped		1452	2360	546	2434	1698	812
Total nights trapped		16	9	9	8	10.5	8
Average # trapped per night		90.75	262.22	60.67	304.25	179.4722222	101.50
Max # trapped on one night		193	494	122	510	329.75	158
Min # trapped on one night		0	4	5	14	5.75	0



Snowbird 9200 E Snowbid Center Dr							
	2019	2020	2021	2022	2023	4 Year Average	2024
Aedes dorsalis		0	0	0	0	0	1
Aedes increpitus		1	0	0	0	0.25	0
Aedes nigromaculis		0	0	0	0	0	0
Aedes sierrensis		0	0	0	0	0	0
Aedes vexans		0	0	0	0	0	0
Anopheles freeborni		0	0	0	0	0	0
Coquillettidia perturbans		0	0	0	0	0	0
Culex erythrothorax		0	0	0	0	0	0
Culex pipiens		19	0	0	3	5.5	3
Culex tarsalis		33	52	15	81	45.25	91
Culiseta incidens		4	2	0	1	1.75	15
Culiseta inornata		7	1	2	17	6.75	6
Other		78	69	23	170	85	196
Total # trapped		142	124	40	272	144.5	312
Total nights trapped		16	9	9	8	10.5	9
Average # trapped per night		8.88	13.78	4.44	34.00	15.27430556	34.67
Max # trapped on one night		21	46	6	35	27	54
Min # trapped on one night		0	0	1	6	1.75	2



Solitude 12000 Big Cottonwood Canyon Rd							
	2019	2020	2021	2022	2023	4 Year Average	2024
Aedes dorsalis		0	0	0	0	0	0
Aedes increpitus		0	0	2	1	0.75	0
Aedes nigromaculis		0	0	0	0	0	0
Aedes sierrensis		0	1	0	0	0.25	1
Aedes vexans		0	0	0	0	0	0
Anopheles freeborni		0	0	1	0	0.25	0
Coquillettidia perturbans		0	0	0	0	0	0
Culex erythrothorax		0	0	0	0	0	0
Culex pipiens		3	0	0	2	1.25	0
Culex tarsalis		869	178	83	374	376	230
Culiseta incidens		0	1	0	0	0.25	38
Culiseta inornata		4	4	1	26	8.75	9
Other		924	214	117	501	439	292
Total # trapped		1800	398	204	904	826.5	570
Total nights trapped		16	8	9	8	10.25	8
Average # trapped per night		112.50	49.75	22.67	113.00	74.47916667	71.25
Max # trapped on one night		450	123	30	151	188.5	101
Min # trapped on one night		0	4	1	12	4.25	6



Gravid Traps Monthly Totals by Trap Location

* Indicates a change in trap location from the previous year

Bluffdale (14350 South 2200 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	2	0.4	0
June	4	15	33	6	10	13.6	51
July	64	53	134	23	36	62.0	87
August	31	90	67	42	59	57.8	34
September	29	44	43	28	33	35.4	12
October	#N/A	#N/A	5	#N/A	#N/A	5.0	6
Total	128	202	282	99	140	170.2	190

Cottonwood Heights (7635 South 3125 East)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	1	1	1	1	0.8	0
June	1	3	10	10	3	5.4	1
July	29	241	12	27	24	66.6	15
August	49	96	12	8	55	44.0	14
September	18	39	31	46	28	32.4	93
October	#N/A	#N/A	4	#N/A	#N/A	4.0	7
Total	97	380	70	92	111	150	130

Draper (13200 South 1285 East)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	2	0	0	0.4	1
June	11	7	12	5	2	7.4	30
July	96	45	27	23	135	65.2	80
August	106	66	24	41	65	60.4	36
September	20	41	45	43	13	32.4	55
October	#N/A	#N/A	20	#N/A	#N/A	20.0	5
Total	233	159	130	112	215	169.8	207

Glenmoor (9756 South 4420 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	1	0	1	0.4	1
June	3	2	6	4	7	4.4	26
July	50	33	19	28	17	29.4	70
August	15	25	28	34	52	30.8	42
September	16	9	19	15	21	16.0	45
October	#N/A	#N/A	11	#N/A	#N/A	11.0	7
Total	84	69	84	81	98	83.2	191

Herriman Library (5380 W Main St.) (14200 South 6400 West before 2022)							
	2019	2020	2021	2022*	2023	5 Year Average	2024
May	1	0	0	0	0	0.2	0
June	1	0	28	4	2	7.0	12
July	5	4	20	10	19	11.6	60
August	5	21	13	20	26	17.0	18
September	12	11	13	11	50	19.4	65
October	#N/A	#N/A	13	#N/A	#N/A	13.0	26
Total	24	36	87	45	97	57.8	181

Holladay (4580 South 2300 East)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	0	0.0	0
June	0	0	9	2	9	4.0	0
July	5	47	0	2	9	12.6	5
August	8	15	1	6	44	14.8	15
September	2	7	8	21	14	10.4	32
October	#N/A	#N/A	10	#N/A	#N/A	10.0	7
Total	15	69	28	31	76	43.8	59

Midvale (7700 South 750 West)							
	2019	2020	2021	2022	2023*	5 Year Average	2024
May	4	0	1	0	0	1.0	0
June	70	29	9	16	24	29.6	0
July	167	213	38	50	2	94.0	3
August	207	68	88	80	5	89.6	9
September	63	83	170	163	2	96.2	16
October	#N/A	#N/A	89	#N/A	#N/A	89.0	8
Total	511	393	395	309	33	328.2	36

Murray (5025 South State Street)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	1	0.2	0
June	0	4	18	11	7	8.0	18
July	10	25	22	7	12	15.2	12
August	6	13	27	16	11	14.6	10
September	20	25	75	25	57	40.4	148
October	#N/A	#N/A	8	#N/A	#N/A	8.0	27
Total	36	67	150	59	88	80	215

Riverton (13000 South 2700 West)							
	2019	2020	2021	2022*	2023*	5 Year Average	2024
May	1	1	0	0	0	0.4	0
June	6	20	76	3	7	22.4	38
July	420	237	185	3	50	179.0	130
August	182	523	231	20	64	204.0	60
September	88	109	161	31	43	86.4	42
October	#N/A	#N/A	7	#N/A	#N/A	7.0	4
Total	697	890	660	57	164	493.6	274

Sandy (10340 South 1472 East)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	1	1	0	0	1	0.6	2
June	3	2	69	34	23	26.2	16
July	18	201	63	121	156	111.8	23
August	31	105	14	105	80	67.0	46
September	15	20	82	47	54	43.6	90
October	#N/A	#N/A	14	#N/A	#N/A	14.0	14
Total	68	329	242	307	314	252	191

South Jordan (11010 South 1700 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	1	0	0	3	4	1.6	3
June	27	16	23	55	42	32.6	76
July	259	156	87	131	230	172.6	623
August	188	161	68	96	87	120.0	124
September	78	99	84	131	109	100.2	74
October	#N/A	#N/A	32	#N/A	#N/A	32.0	18
Total	553	432	294	416	472	433.4	918

South Salt Lake (2475 South 195 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	0	0.0	0
June	1	3	49	8	8	13.8	13
July	11	29	17	26	61	28.8	45
August	13	22	26	29	11	20.2	9
September	39	13	86	25	38	40.2	26
October	#N/A	#N/A	30	#N/A	#N/A	30.0	18
Total	64	67	208	88	118	109	111

SSLVMAD (7308 South Airport Road)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	2	0	1	0	0.6	0
June	2	0	3	3	3	2.2	11
July	15	15	2	8	10	10.0	38
August	20	8	10	8	29	15.0	38
September	3	11	36	11	13	14.8	18
October	#N/A	#N/A	5	#N/A	#N/A	5.0	11
Total	40	36	56	31	55	43.6	116

Taylorsville (5350 South 2600 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0	0	0	0	0	0.0	0
June	0	2	83	8	11	20.8	25
July	56	81	27	15	28	41.4	14
August	2	43	44	24	35	29.6	6
September	14	30	69	13	49	35.0	44
October	#N/A	#N/A	6	#N/A	#N/A	6.0	15
Total	72	156	229	60	123	128	104

West Jordan (8000 South 1700 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	2	1	2	5	0	2.0	0
June	12	26	10	24	17	17.8	9
July	68	72	29	29	89	57.4	61
August	59	46	25	32	65	45.4	26
September	7	21	32	27	21	21.6	16
October	#N/A	#N/A	19	#N/A	#N/A	19.0	1
Total	148	166	117	117	192	148	113

West Valley (2855 South 3600 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	4	1	1	0	1	1.4	2
June	26	6	10	16	26	16.8	8
July	224	36	15	22	25	64.4	77
August	103	69	108	40	59	75.8	31
September	134	42	73	49	91	77.8	66
October	#N/A	#N/A	26	#N/A	#N/A	26.0	16
Total	491	154	233	127	202	241.4	200

Average per trap night							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	0.21	0.11	0.13	0.16	0.16	0.15	0.13
June	2.69	1.96	6.49	2.68	2.87	3.34	5.66
July	21.39	20.67	11.24	8.47	14.98	15.35	19.19
August	14.44	21.76	11.07	8.59	9.83	13.14	7.40
September	8.72	11.62	15.33	9.53	10.43	11.12	13.37
October			6.50			6.50	11.88
Total	9.59	11.37	8.66	5.87	7.45	8.59	9.09

Biogents Sentinel 2 Traps Monthly Totals by Month

Holladay (4750 South 1980 East)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	4	2	8	3	8	5	4
June	36	19	14	56	693	163.6	41
July	71	36	42	35	234	83.6	123
August	97	63	34	87	154	87	73
September	19	14	32	33	6	20.8	14
Total	227	134	130	214	1095	360	255

Murray Cemetery (5490 South 725 East)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	13	8	11	25	15	14.4	71
June	170	49	124	192	1779	462.8	271
July	167	287	80	78	444	211.2	193
August	252	234	101	169	247	200.6	123
September	65	51	47	81	54	59.6	33
Total	667	629	363	545	2539	948.6	691

Roper North (2775 South 900 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	104	29	125	85	16	71.8	47
June	270	352	413	549	484	413.6	613
July	817	760	920	836	751	816.8	1161
August	1058	958	745	803	442	801.2	171
September	299	199	494	286	101	275.8	109
Total	2548	2298	2697	2559	1794	2379.2	2101

South Jordan Cemetery (10601 South 1055 West)							
	2019	2020	2021	2022	2023	4 Year Average	2024
May	2	0	0	2	3	1.75	5
June	28	0	21	37	668	188.5	261
July	419	0	95	56	478	262	386
August	1052	0	121	101	168	360.5	191
September	74	0	25	96	17	53	22
Total	1575	0	262	292	1334	865.75	865

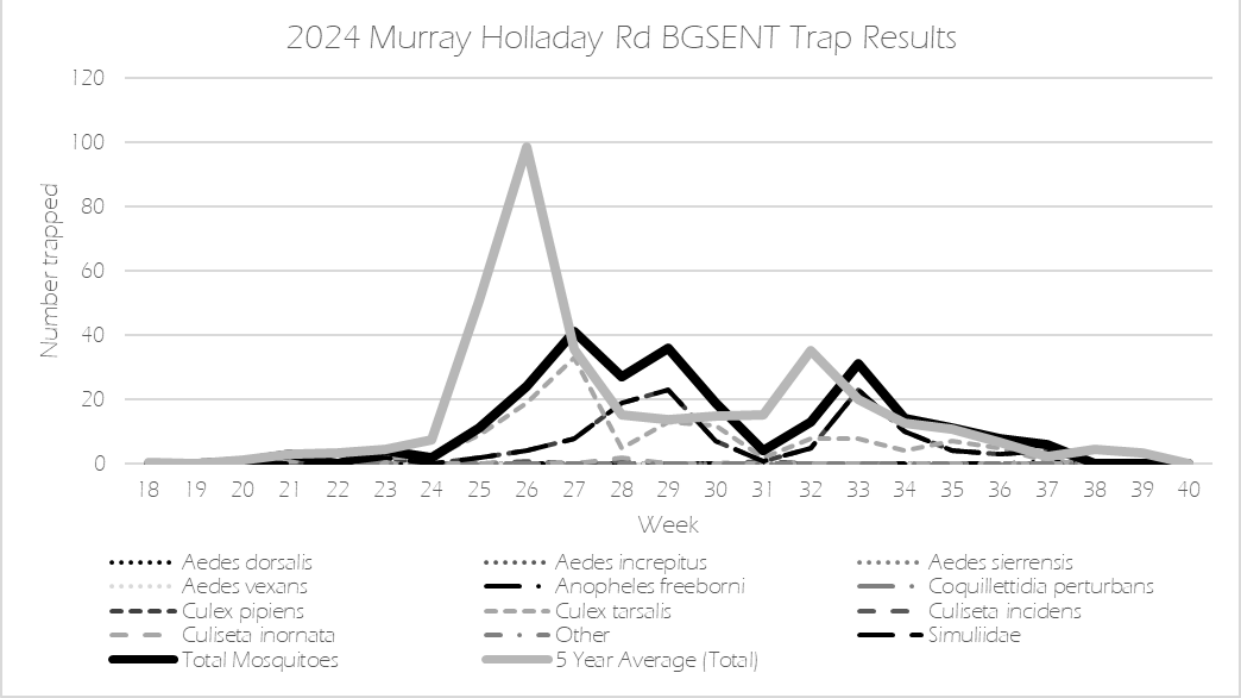
Truckers North (2900 South 2255 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	136	28	107	52	150	94.6	75
June	690	476	229	279	943	523.4	351
July	830	1739	513	434	424	788	2039
August	2344	1526	1005	1766	2087	1745.6	635
September	249	236	338	526	338	337.4	176
Total	4249	4005	2192	3057	3942	3489	3276

UPS (2555 South 2140 West)							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	18	8	8	9	17	12	0
June	27	75	13	34	83	46.4	30
July	39	76	13	53	53	46.8	67
August	29	129	105	797	330	278	66
September	24	31	99	186	53	78.6	42
Total	137	319	238	1079	536	461.8	205

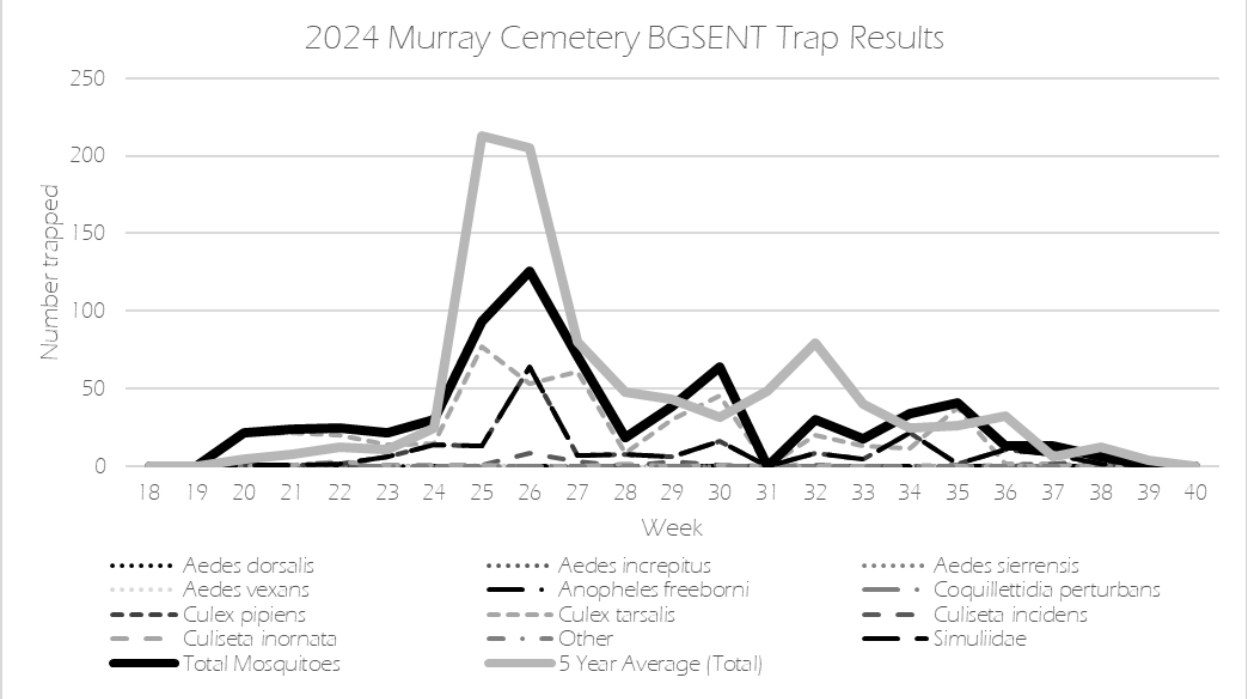
Total							
	2019	2020	2021	2022	2023	5 Year Average	2024
May	277	75	259	176	209	199.2	202
June	1221	971	814	1147	4650	1760.6	1567
July	2343	2898	1663	1492	2384	2156	3969
August	4832	2910	2111	3723	3428	3400.8	1259
September	730	531	1035	1208	569	814.6	396
Total	9403	7385	5882	7746	11240	8331.2	7393

Biogents Sentinel 2 Traps Individual Species by Trap Location

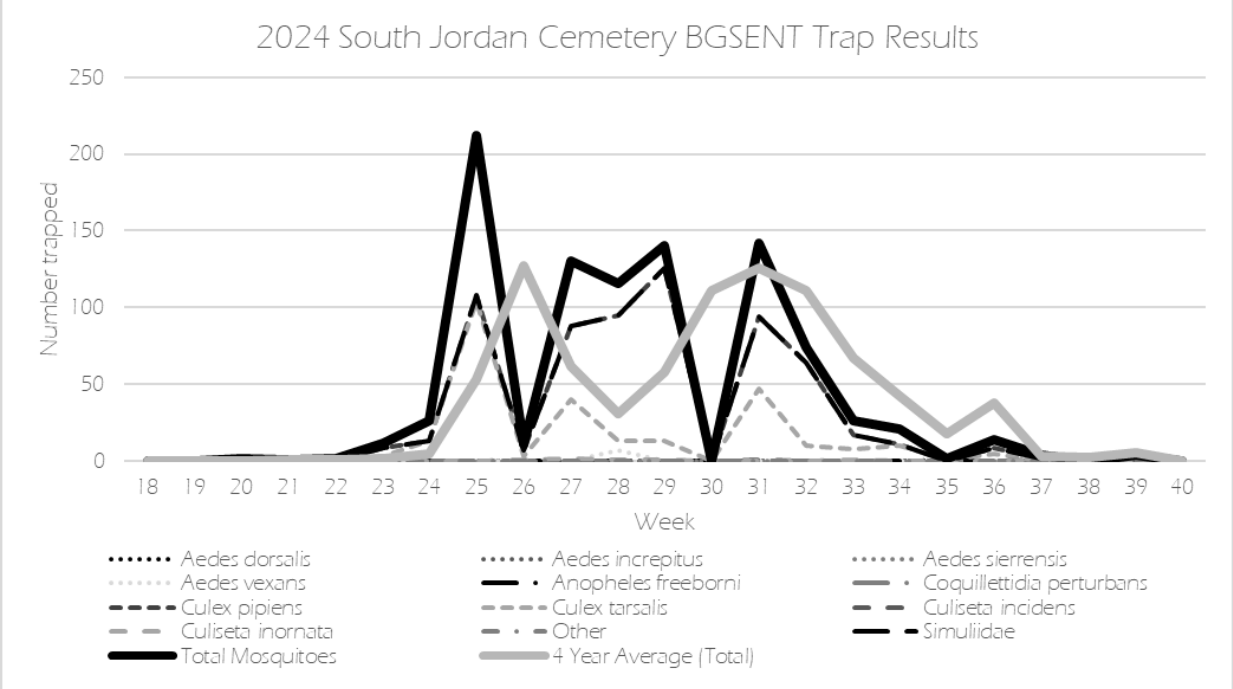
Holladay							
1980 E 4750 So.							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	2	0	0.4	0
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	6	0	1	3	0	2	0
Aedes vexans	0	0	0	0	0	0	0
Anopheles freeborni	1	0	1	0	0	0.4	1
Coquillettidia perturbans	1	0	2	0	0	0.6	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	94	60	84	133	158	105.8	115
Culex tarsalis	109	63	35	68	934	241.8	133
Culiseta incidens	6	8	7	7	2	6	3
Culiseta inornata	8	3	0	1	1	2.6	3
Black Fly	1	0	0	3	0	0.8	0
Total # trapped	226	134	130	217	1095	360.4	255
Total nights trapped	20	21	21	21	22	21	21
Average # trapped per night	11.3	6.38	6.19	10.33	49.77	16.80	12.14
Max # trapped on one night	39	19	16	35	435	108.8	41
Min # trapped on one night	0	0	0	0	0	0	0



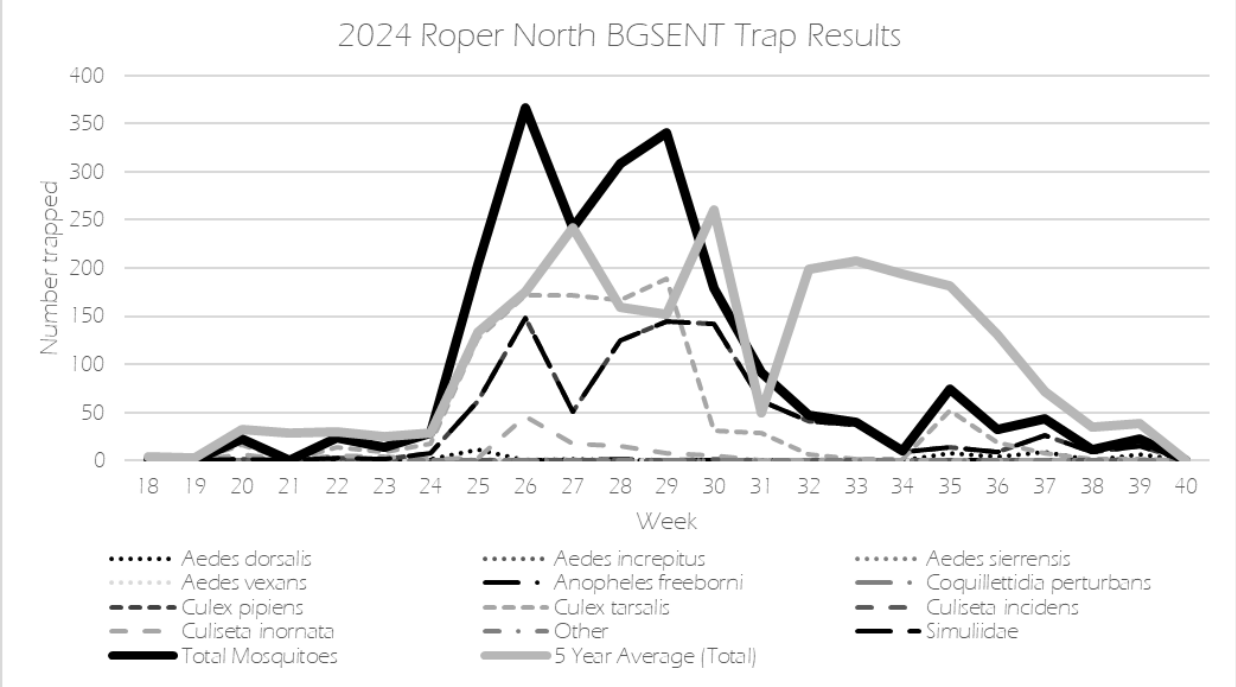
Murray Cemetery							
725 E 5490 So.							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	1	1	2	0	1	1	0
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	0	0	1	5	2	1.6	1
Anopheles freeborni	0	0	0	0	0	0	0
Coquillettidia perturbans	0	0	0	1	0	0.2	0
Culex erythrothorax	0	0	0	0	0	0	1
Culex pipiens	161	99	185	206	289	188	198
Culex tarsalis	444	551	155	316	2226	738.4	455
Culiseta incidens	37	21	20	12	2	18.4	26
Culiseta inornata	10	2	0	5	19	7.2	10
Black Fly	4	0	0	1	0	1	0
Total # trapped	657	674	363	546	2539	955.8	691
Total nights trapped	20	21	22	22	20	21	21
Average # trapped per night	32.85	32.10	16.5	24.82	126.95	46.64	32.90
Max # trapped on one night	135	103	56	72	914	256	126
Min # trapped on one night	0	0	0	1	0	0.2	0



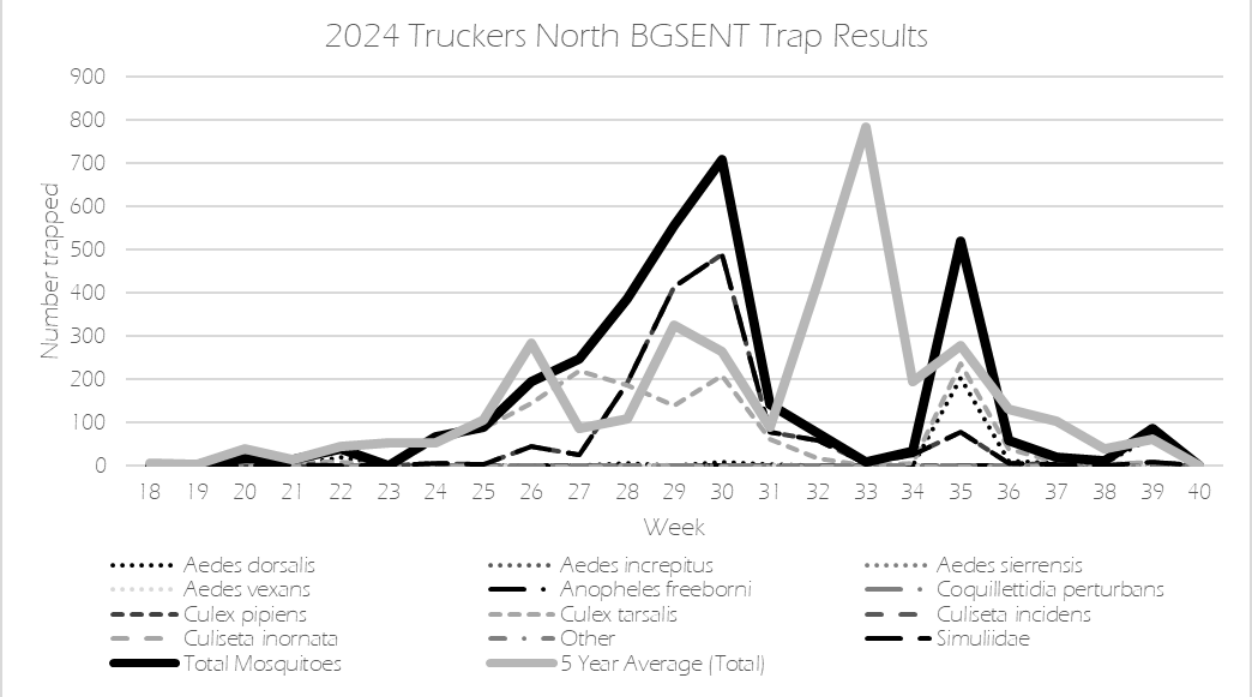
South Jordan Cemetery							
1055 W 10601 So.							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	0	0	0	4	3	1.75	1
Aedes increpitus	0	0	0	0	0	0	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	6	0	0	0	0	1.5	0
Aedes vexans	0	0	1	1	0	0.5	7
Anopheles freeborni	0	0	2	1	0	0.75	0
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	590	0	175	151	349	316.25	647
Culex tarsalis	919	0	83	128	966	524	274
Culiseta incidens	9	0	0	0	0	2.25	2
Culiseta inornata	16	0	1	7	16	10	8
Black Fly	17	0	2	0	0	4.75	1
Total # trapped	1557	0	264	292	1334	861.75	940
Total nights trapped	20	2	21	21	17	19.75	21
Average # trapped per night	77.85	0	12.57	13.90	78.47	45.70	44.76
Max # trapped on one night	383	0	68	77	478	251.5	212
Min # trapped on one night	0	0	0	0	0	0	0



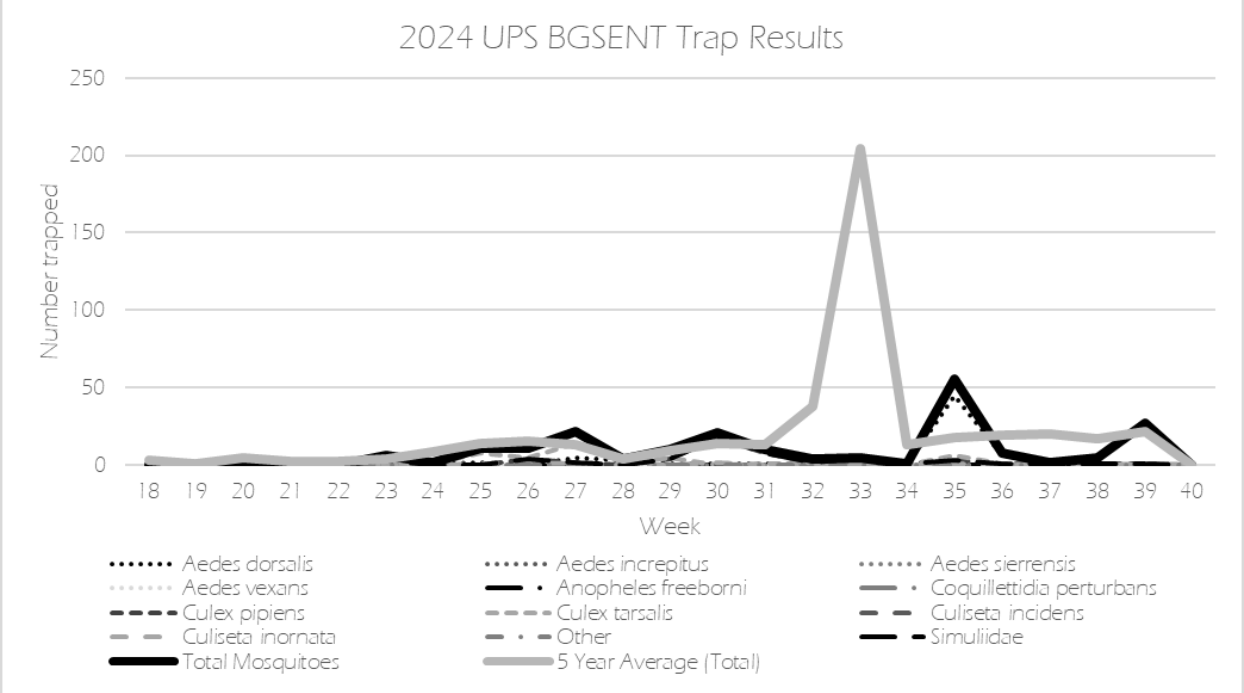
Roper North							
900 W 2775 So.							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	30	44	98	47	51	54	44
Aedes increpitus	3	1	2	1	0	1.4	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	7	306	58	13	4	77.6	3
Anopheles freeborni	16	9	5	5	2	7.4	1
Coquillettidia perturbans	0	3	1	0	0	0.8	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	1499	1089	1778	1535	475	1275.2	907
Culex tarsalis	961	770	746	949	1258	936.8	1033
Culiseta incidens	2	16	2	0	0	4	1
Culiseta inornata	26	49	6	9	4	18.8	113
Black Fly	1	4	2	1	4	2.4	1
Total # trapped	2545	2291	2698	2560	1798	2378.4	2103
Total nights trapped	21	19	21	22	20	20.6	21
Average # trapped per night	121.2	120.58	128.48	116.36	89.9	115.30	100.14
Max # trapped on one night	364	347	346	391	512	392	366
Min # trapped on one night	4	2	2	0	0	1.6	0



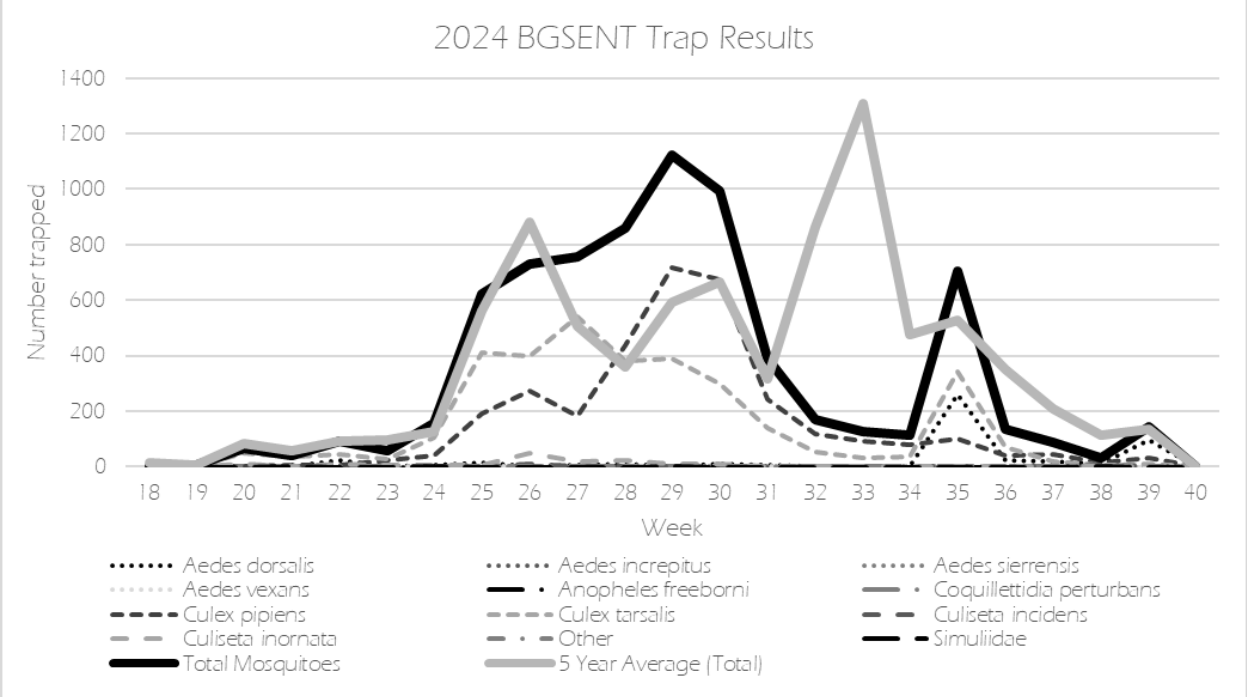
Truckers North							
2900 W 2255 So.							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	97	99	244	353	549	268.4	343
Aedes increpitus	0	0	0	0	1	0.2	0
Aedes nigromaculis	0	0	0	0	1	0.2	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	1	3	1	2	1	1.6	0
Anopheles freeborni	3	1	1	0	0	1	0
Coquillettidia perturbans	0	5	0	0	0	1	0
Culex erythrothorax	0	0	0	0	3	0.6	0
Culex pipiens	2702	991	1273	1768	1320	1610.8	1449
Culex tarsalis	1257	2868	662	929	2051	1553.4	1458
Culiseta incidens	2	1	0	0	2	1	0
Culiseta inornata	124	2	2	3	14	29	14
Black Fly	12	14	2	4	22	10.8	0
Total # trapped	4198	3984	2185	3059	3964	3478	3264
Total nights trapped	22	19	21	22	20	20.8	21
Average # trapped per night	190.82	209.7	104.05	139.05	198.2	168.36	155.43
Max # trapped on one night	1359	893	400	733	1002	877.4	708
Min # trapped on one night	2	0	2	0	1	1	1



UPS							
2555 So. 2100 W							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	49	45	182	955	339	314	98
Aedes increpitus	0	1	0	0	0	0.2	0
Aedes nigromaculis	0	0	0	0	0	0	0
Aedes sierrensis	0	0	0	0	0	0	0
Aedes vexans	1	0	2	3	0	1.2	1
Anopheles freeborni	2	2	0	0	0	0.8	0
Coquillettidia perturbans	0	0	0	0	0	0	0
Culex erythrothorax	0	0	0	0	0	0	0
Culex pipiens	34	148	34	49	22	57.4	54
Culex tarsalis	22	83	17	68	161	70.2	44
Culiseta incidens	3	0	0	0	0	0.6	0
Culiseta inornata	13	3	2	4	11	6.6	8
Black Fly	0	0	0	0	2	0.4	2
Total # trapped	124	282	237	1079	535	451.4	207
Total nights trapped	22	18	22	22	18	20.4	20
Average # trapped per night	5.64	15.67	10.77	49.05	29.72	22.17	10.35
Max # trapped on one night	28	84	46	751	240	229.8	56
Min # trapped on one night	0	1	0	0	1	0.4	0



Total							
2555 So. 2100 W							
	2019	2020	2021	2022	2023	5 Year Average	2024
Aedes dorsalis	177	189	526	1361	943	639.2	486
Aedes increpitus	3	2	2	1	1	1.8	0
Aedes nigromaculis	0	0	0	0	1	0.2	0
Aedes sierrensis	12	0	1	3	0	3.2	0
Aedes vexans	9	309	63	24	7	82.4	12
Anopheles freeborni	22	12	9	6	2	10.2	2
Coquillettidia perturbans	1	8	3	1	0	2.6	0
Culex erythrothorax	0	0	0	0	3	0.6	1
Culex pipiens	5080	2381	3529	3842	2613	3489	3306
Culex tarsalis	3712	4296	1698	2458	7596	3952	3387
Culiseta incidens	59	46	29	19	6	31.8	32
Culiseta inornata	197	59	11	29	65	72.2	156
Black Fly	35	18	6	9	28	19.2	4
Total # trapped	9307	7320	5877	7753	11265	8304.4	7386
Total nights trapped	125	99	128	130	117	119.8	124
Average # trapped per night	74.46	73.94	45.91	59.64	96.28	70.05	59.56
Max # trapped on one night	1359	893	400	751	1002	881	708
Min # trapped on one night	0	0	0	0	0	0	0



LARVAL CONTROL

GENERAL MOSQUITO SOURCES

Controlling mosquito larvae is an essential part of the mosquito control program at the South Salt Lake Valley Mosquito Abatement District. In 2024 surveillance and treatment of the District's general larval mosquito sources were accomplished by two two-person crews, and two additional seasonal employees working individually, and the Assistant Manager/Field Supervisor, with additional support from other staff, urban crew seasonal employees and surveillance interns. More significant sites were assigned to one employee and a multi-person crew, while smaller sites were handled by one technician working individually. The Assistant Manager/Field Supervisor assisted the crews and individual technicians or worked alone as needed. Most large spots were inspected weekly, while smaller sites were checked bi-weekly. Sites were treated when mosquito larvae or pupae were observed.
Due to the above average precipitation from the previous two years, there was a significantly more ground water and mosquito breeding sources (far more than most years) within the District in 2024. In addition, most of the seasonal employees comprising the crew were very inexperienced. However, despite the difficulties and challenges that these conditions presented, many of the overall surveillance and performance metrics in 2024 were exceptional compared to previous seasonal data and averages. Special recognition needs to be given to the seasonal employess and staff who were able to perform at a very efficient level due to exceptional work ethic, thoroughness and conscientious attention to detail even despite a lack of previous experience. Their efforts were the major contributing factor in attaining the successful control of mosqsuito populations and disease transmission that was achieved within the District in 2024.

Inspections, Treatments, and Acres Treated by City			
City	Inspections	Treatments	Acres Treated in 2024
Alta	18	6	.48
Bluffdale	827	202	89.28
Brighton	52	27	19.97
Copperton	0	0	0
Cottonwood Heights	133	24	1.57
Draper	1572	262	107.26
Herriman	146	7	1.57
Holladay	85	2	.04
Kearns	2	0	0
Midvale	129	12	1.56
Millcreek	1261	104	18.09
Murray	1004	147	62.92
Riverton	914	168	51.3
Sandy	416	60	10.54

South Jordan	1316	209	84.92
South Salt Lake	542	66	15.51
Taylorsville	917	157	44.16
West Jordan	794	84	27.97
West Valley	1741	171	76.54
White City	15	10	.18
Total	11884	1718	613.86

TREE HOLE PROGRAM

In the early nineteen nineties, *Aedes sierrensis* was found in the Salt Lake Valley. This species lays its eggs in water trapped within various tree cavities. Thus, its common name is the Western Tree Hole Mosquito. This mosquito is significant for two reasons. First, *Aedes sierrensis* is a very aggressive biting mosquito that stays near where it hatched, usually near human habitations. Second, it is a vector of *Dirofilaria immitis*, dog heartworm – a disease that can kill dogs if left untreated.

The District uses three methods to control *Aedes sierrensis*. First, tree hole sources in problem areas are found and treated with a slow-release briquet containing Methoprene (a larval growth regulator). These briquets usually last up to 150 days. However, it appears that a single treatment in the small, confined area of a tree hole will last an entire year. The other two methods control adult tree hole mosquitoes in areas where tree hole mosquito sources cannot be found. A yard barrier spray is used in areas where many adult mosquitoes have been found in previous years. The other method of controlling adults is to use an Ultra-Low Volume spray or fog in the yard. This method is used when large quantities of adult mosquitoes have already hatched.

In 2024, tree hole mosquito inspections and treatments were done by the urban crew, who were also tasked to inspect and treat ornamental ponds and horse troughs. Due to a warm and dry Spring, adult tree-hole mosquito numbers were below average. A total of 53 tree hole larval spots were treated with 10 containing water and none containing mosquito larvae. (tree holes containing water, as well as tree holes with larvae, can vary depending on the time of the summer tree hole treatments were made)

No fogging was done in 2024 for tree hole mosquitoes.

2024 Tree Hole Summary by City			
City	Number Treated	Number Wet	Number with Larvae
Bluffdale	0	0	0
Copperton	27	6	0
Cottonwood	0	0	0
Draper	7	0	0
Holladay	0	0	0
Midvale	0	0	0
Millcreek	8	1	0
Murray	0	0	0
Riverton	1	0	0
Sandy	0	0	0
South Jordan	2	0	0
South Salt Lake	4	2	0
West Valley	4	1	0
Total	53	10	0

MOSQUITO FISH

The District has a Memorandum of Agreement with the Division of Wildlife Resources and the Utah Department of Agriculture and Food, allowing the District to raise and distribute mosquito fish (*Gambusia affinis*). This memorandum explains the responsibilities of mosquito abatement districts to ensure responsible and environmentally safe placement of these fish in ornamental ponds found in homeowners' yards.

Each year, the District applies for a Certificate of Registration and submits data to the Division of Wildlife Resources concerning the number of fish raised, sources for obtaining fish, distribution locations, and the number of fish distributed. Also, each year, a fish disease lab in Washington State tests the fish. This testing ensures that the planted fish do not introduce disease into the environment.

In 2024, 497 ponds were stocked with mosquito fish, and 772 ponds were treated with Altosid. There were 224 ponds where mosquito larvae were present.

2024 Fish Distribution by City									
City	Total # of ponds	Total # of ponds delivered fish		# of fish delivered	# of ponds containing larva	Total # of Altosid- treated ponds		Total # of Altosid Briquet	Total # of over-wintered ponds
		1st	2nd			1st	2nd		
Bluffdale	62	12	0	106	11	31	0	42	5
Brighton	1	1		20	1				
Copperton	7	5	0	36	0	1	0	1	1
Cottonwood	159	49	0	251	18	74	0	155	7
Draper	124	22	0	137	15	48	0	72	5
Herriman	33	7	0	27	2	10	0	11	5
Holladay	218	37	0	308	27	110	0	333	9
Kearns	15	3	0	34	4	6	0	9	0
Midvale	48	14	0	109	3	13	0	17	8
Millcreek	161	31	0	221	15	62	0	155	14
Murray	211	52	0	338	17	76	0	148	18
Riverton	71	19	0	101	12	31	0	42	7
Sandy	417	111	0	657	49	145	0	167	35
South Jordan	144	32	0	205	17	59	0	80	9
South Salt Lake	34	6	0	33	2	11	0	19	6
Taylorsville	99	36	0	214	11	42	0	48	10
West Jordan	124	36	12	252	15	29	1	49	20
West Valley City	65	21	0	138	1	15	0	16	9
White City	19	3	0	16	4	9	0	19	5
Total	2012	497	0	3203	224	772	1	1383	173

Note: Certain ornamental ponds fall into other categories not listed above. Examples: the pond is dry, the pond has running water going through it, the pond is chlorinated by the pond owner.

HORSE TROUGHS

One of the treatment programs in the District deals with mosquito larvae found in horse (livestock) watering troughs. Locations of watering troughs are mapped, and assigned employees visit with livestock owners, asking them to dump their watering troughs weekly or allow us to use treatment materials to control the larvae. Each location often has more than one trough.

In 2024, 264 troughs were treated with Altosid, with 37 having larvae present.

2024 Horse Troughs Checked							
City	Total # of Locations	Locations Maintained Weekly	Locations Access Denied	Locations Checked	Locations Treated	# Troughs Treated with Altosid	# Troughs with Larvae
Bluffdale	341	155	8	330	17	90	9
Cottonwood	13	11	1	13	2	3	0
Draper	250	184	9	246	15	27	6
Herriman	122	106	1	117	13	26	3
Holladay	11	6	0	10	1	1	2
Midvale	6	5	3	6	0	0	0
Millcreek	9	2	0	8	1	5	0
Murray	15	11	2	12	2	11	4
Riverton	235	156	7	223	12	22	1
Sandy	125	96	10	123	10	15	2
South Jordan	224	137	14	214	3	5	4
South Salt Lake	2	1	1	2	0	0	0
Taylorsville	24	19	2	22	2	2	0
West Jordan	168	99	7	166	8	31	6
West Valley City	66	49	11	61	7	22	0
White City	6	5	0	6	1	4	0
Total	1,617	1,042	76	1,559	94	264	37

Note: Certain watering troughs fall into other categories not listed above. Some examples are troughs may have fish, they may have an automatic watering system, or they may have flowing water.

CATCH BASIN PROGRAM

Treatment of catch basins within the South Salt Lake Valley Mosquito Abatement District is undertaken primarily to control the container-breeding mosquito species *Culex pipiens* L. *Cx. pipiens* has been determined to be a competent vector of West Nile virus (see West Nile Virus section, this report), is often the most abundant mosquito in the District (see Surveillance section, Adult subsection, this report), and has been observed inhabiting catch basins during larval and pupal stages.

Control of *Cx. pipiens* (and other species) completing the early stages of their life cycle in catch basins is undertaken by technicians mounted on bicycles. In 2023, technicians were directed to traverse streets in the District that were safe and accessible to bicycles and where catch basins were likely to be located. As catch basins were encountered, technicians visually inspected each for water. The pesticide was applied to catch basins containing water at the time of inspection and to other small water impoundments but not to dry catch basins. As in previous years, each treatment was recorded by technicians using GPS on smartphones.

Total Number of Treatments by City					
City	Catch Basin Treatments	Other Treatments	Total treatments	Times treated	% of Total
Bluffdale	2705	24	2729	2	3.94%
Copperton	12	0	12	1	0.02%
Cottonwood	1305	13	1318	1	1.90%
Draper	4928	38	4966	1	7.18%
Herriman	4541	28	4569	1	6.61%
Holladay	995	3	998	1	1.45%
Kearns	258	3	261	2	0.38%
Midvale	3298	26	3324	2	4.80%
Millcreek	1775	13	1788	1	2.59%
Murray	2771	26	2797	2	4.04%
Riverton	5572	76	5648	2	8.12%
Sandy	3890	8	3898	1	5.67%
South Jordan	12335	49	12384	2	17.97%
South Salt Lake	3317	94	3411	2	4.83%
Taylorsville	1858	45	1903	2	2.71%
West Jordan	12535	83	12618	2	18.26%
West Valley	6486	55	6541	2	9.45%
White City	69	0	69	2	0.10%
TOTAL	68650	584	69234		100.00%

Catch basins in Millcreek,Cottonwood Heights, and Sandy were treated once with Natular XRT, a product designed to be effective for 180 days. The remaining catch basins within each of the mentioned cities and all other cities were treated with Altosid Pellets WSP, Sumilarv WSP or Natular WSP. Because these products are not designed to provide mosquito control for as long as Natular XRT, catch basins were treated multiple times through the season.

PRODUCTIVITY

Productivity, measured as actions (inspections or treatments) per employee per day, has been monitored since 2016, with more frequent monitoring and feedback provided to employees in 2017 and continuing through the present calendar year. Monitoring these data points daily helps inform management and technicians about the status of mosquito control work in the District, identifies areas needing inspection, and provides a measure of accountability regarding how well the District is meeting inspection goals.

Productivity (actions per employee per day)							
Crew	2018	2019	2020	2021	2022	2023	2024
Catch Basin	245.71	239.84	361.66	368.48	317.77	326.24	318.83
Mosquito	20.53	20.06	37.71	34.67	35.31	23.93	20.78
Black Fly	15.84	17.25	24.22	18.24	10.99	12.28	0 (see section — Blackfly Report)
Urban Crew	20.03	22.49	29.46	20.95	23.58	17.07	20.14

ADULT CONTROL

Adulticiding (fogging) is essential for our integrated mosquito control program. Adult mosquitoes will always be present during summer since larval control is seldom 100 percent effective. Whenever carbon dioxide trap catches or service requests reach a minimum tolerance level, or an emergency health condition arises, ground or aerial adulticiding may be implemented. This implementation is done using ultra-low volume (ULV) spray equipment. This process forces a low volume of pesticide (between one-half and twelve ounces per acre) through a small opening where it is sheared into tiny droplets. These droplets remain suspended in the air for short periods. If a droplet attaches to the body of a mosquito, it causes death.

Adulticiding is done between sunset and midnight. High mosquito activity, cooler temperatures, and reduced human and non-target species activity justify this time. Adulticiding is done when conditions dictate its use. Because insecticides may drift over large areas and are not specific to mosquitoes, this procedure is used only when other methods cannot be used. In 2024, there were perhaps half a dozen instances in which treatments could not be applied due to lack of wind. In order to be compliant with Federal and State law, pesticide label instructions must be fully adhered to and a minimum amount of wind is required as this is how the pesticide is engineered to work. So, it is worth noting that while population and disease reduction thresholds were met and an application was desired, there were several instances in 2024 where District staff could not make applications due to the lack of appropriate environmental conditions.

Most fogging is done with a ULV machine mounted in the back of a pick-up truck. This unit treats large areas, such as marshes and wetlands along the Jordan River, and sprays neighborhoods where West Nile virus is detected. The table below shows the city locations where truck fogging was used for adult control in 2024. A handheld ULV machine is sometimes used for smaller areas, like backyards. Treating with the hand foggers mainly targets tree-hole mosquitoes. In 2024 hand-held fogging was not utilized.

2024 Truck Fogging Applications by City and Month							
	April	May	June	July	Aug.	Sept.	Total
Bluffdale	0	0	4	0	3	0	7
Cottonwood	0	0	0	0	0	0	0
Draper	0	0	0	1	2	0	3
Herriman	0	0	0	0	0	0	0
Holladay	0	0	0	0	0	0	0
Midvale	0	0	0	0	0	0	0
Millcreek	0	0	0	0	0	0	0
Murray	0	0	0	0	0	0	0
Riverton	0	0	0	0	1	0	1
Sandy	0	0	0	0	0	0	0
South Jordan	0	0	0	0	1	0	1
South Salt Lake	0	0	0	1	1	0	2
Taylorsville	0	0	0	0	0	0	0
West Jordan	0	0	0	0	0	0	0
West Valley City	0	0	0	6	3	1	10
Total	0	0	4	8	11	1	24

SERVICE REQUESTS

The District puts a major emphasis on the prompt handling of service requests. Our goal is to investigate each request within 24 hours of the original call. An investigation is considered complete after a solution to the request is determined and the individual making the request is contacted.

2024 Service Requests by City										
City	Feb.	March	April	May	June	July	August	Sept.	Oct.	Total
Alta	0	0	0	0	0	0	0	0	0	0
Bluffdale	0	0	0	0	2	1	1	0	0	4
Brighton	0	0	0	0	0	0	0	0	0	0
Copperton	0	0	0	0	0	0	0	0	0	0
Cottonwood	0	0	0	0	0	1	0	0	0	1
Draper	0	0	0	2	0	0	1	0	0	3
Herriman	0	0	0	1	0	0	0	0	0	1
Holladay	0	0	0	0	2	0	0	0	0	2
Kearns	0	0	0	0	0	0	0	1	0	1
Midvale	0	0	0	1	0	0	0	0	0	1
Millcreek	0	0	2	0	0	0	0	0	0	2
Murray	0	0	1	1	0	0	2	0	0	4
Riverton	0	0	0	0	2	1	1	1	0	5
Sandy	0	0	0	1	1	2	0	0	0	4
South Jordan	0	0	0	3	12	0	0	0	0	15
South Salt Lake	0	0	0	1	0	1	1	0	0	3
Taylorsville	0	0	0	1	1	0	0	0	1	3
West Jordan	0	0	0	1	1	0	1	0	0	3
West Valley	0	0	0	1	1	0	0	1	0	3
White City	0	0	0	0	0	0	0	0	0	0
Total	0	0	3	13	22	6	7	3	1	55

History of Service Requests by City							
City	2019	2020	2021	2022	2023	5 Year Average	2024
Alta	1	0	0	0	0	0.2	0
Bluffdale	12	19	14	7	17	13.8	4
Brighton	0	0	0	0	0	0	0
Copperton	0	1	0	0	0	0.2	0
Cottonwood	4	9	4	1	5	4.6	1
Draper	11	14	5	9	8	9.4	3
Herriman	3	5	3	4	5	4	1
Holladay	13	15	9	4	9	10	2
Kearns	1	0	0	0	1	0.4	1
Midvale	5	1	3	2	3	2.8	1
Millcreek	13	19	7	2	13	10.8	2
Murray	7	22	11	6	14	12	4
Riverton	7	24	4	6	12	10.6	5
Sandy	14	11	3	2	13	8.6	4
South Jordan	21	25	15	9	14	16.8	15
South Salt Lake	2	2	2	2	5	2.6	3
Taylorsville	5	9	1	0	4	3.8	3
West Jordan	12	21	12	6	6	11.4	3
West Valley City	13	10	3	5	5	7.2	3
White City	0	2	0	0	0	0.4	0
Total	144	209	96	65	134	129.6	55

ARBOVIRUS ACTIVITY

Mosquito species in the genus *Culex* that occur within the boundaries of the South Salt Lake Valley Mosquito Abatement District are competent vectors of West Nile virus, Western Equine Encephalitis virus, and St. Louis Encephalitis virus. Western Equine Encephalitis and St. Louis Encephalitis* have not been observed in the District in recent years, but, as displayed in the tables below, West Nile virus has been detected in the District and in other areas of the state several times since its introduction in 2003.

Mosquitoes may acquire West Nile virus from infected birds through blood feeding and can transfer the virus to birds or other animals at subsequent blood meals. In addition to birds, horses and humans are susceptible to West Nile virus, thus surveillance for the virus may include laboratory testing of birds, horses, humans, or pools of mosquito specimens. Mosquito pools consist of a group (usually 10-50) of adult female mosquitoes of a single species from a single trapping event (one trap at one location for one night).

2024 West Nile Virus Activity						
Types of Surveillance	South Salt Lake Valley Mosquito Abatement	District as % of the County	District as % of the State	Salt Lake County	County as % of the State	State of Utah
Humans	0	0%	0%	0	0%	14
Animals	0	0%	0%	0	0%	21
Mosquito Pools	24	19.5%	7.6%	123	34%	314

State History of West Nile Virus Activity							
	2019	2020	2021	2022	2023	5 Year	2024
Human	21	5	28	5	7	13.2	14
Animals	9	3	12	7	16	9.4	21
Mosquito Pools	272	44	654	144	300	282.8	314
Counties with Activity	15	8	11	8	15	11.4	9

At the South Salt Lake Valley Mosquito Abatement District, *Culex* mosquitoes observed in surveillance traps are pooled and tested for West Nile virus, Western Equine Encephalitis virus, and St. Louis Encephalitis virus using polymerase chain reaction tests conducted in the District laboratory. A summary of these tests is presented in the following tables.

SSLVMAD West Nile Virus Testing Summary							
	2019	2020	2021	2022	2023	5 year average	2024
Mosquitoes tested	42,076	44,672	38,880	45,780	59,659	46,213.40	44,200
Pools tested	809	1146	1101	1243	1515	1162.8	1251
Positive pools	18	7	49	36	46	31.2	24
Percent positive	2.22%	0.61%	4.45%	2.90%	3.04%	2.64%	1.92%

*One mosquito pool conaining 50 Culex pipiens mosquitoes captured in a CO2 trap at the Mule Train surveillance location on 6 August, 2024 tested positive for both West Nile virus (WNV) and St. Loius Encephalitis (SLE) virus at the SSLVMAD laboratory. The sample was retested at Utah Public Health Laboratory (UPHL), and at the Salt Lake City Mosquito Abatement District (SLCMAD) and U.S. Centers for Disease Control and Prevention (CDC) laboratories. Results similar to those obtained at SSLVMAD were reported by SLCMAD. Laboratories at UPHL and CDC confirmed the presence of WNV, but not SLE. Speculations about an explanation of disparate results include sample degradation before testing at UPHL and CDC and cross-reactivity at SSLVMAD and SLCMAD, but questions remain as to whether the sample was actually positive for SLE or not.

2024 Pools Positive for West Nile Virus by Date				
Location	Date Trapped	Trap Type	Mosquito species	# of mosquitoes
South Jordan Cemetery	1-Aug	BGSENT	*Culex pipiens*	43
Mule Train	6-Aug	CO2	*Culex pipiens*	50
Summit Academy	8-Aug	GRVD	*Culex pipiens*	26
14700 So.	13-Aug	CO2	*Culex pipiens*	31
Race Track	13-Aug	CO2	*Culex pipiens*	50
Central Valley Golf	13-Aug	CO2	*Culex pipiens*	50
Bateman Ponds	15-Aug	CO2	*Culex pipiens*	22
Creek Road	15-Aug	CO2	*Culex pipiens*	19
Stonebridge	20-Aug	CO2	*Culex pipiens*	50
Springview Farms	20-Aug	CO2	*Culex tarsalis*	50
Bird's	20-Aug	CO2	*Culex pipiens*	23
Hunter Woods	20-Aug	CO2	*Culex tarsalis*	15
South Jordan Cemetery	22-Aug	BGSENT	*Culex tarsalis*	10
Mule Train	27-Aug	CO2	*Culex tarsalis*	47
Springview Farms	27-Aug	CO2	*Culex tarsalis*	23
Mountain View	29-Aug	CO2	*Culex pipiens*	13
Springview Farms	11-Sep	CO2	*Culex tarsalis*	16
Murray City Hall	11-Sep	GRVD	*Culex pipiens*	20
Sego Lily Gardens	13-Sep	GRVD	*Culex pipiens*	13
Sego Lily Gardens	19-Sep	GRVD	*Culex pipiens*	14
West Valley Utility Building	24-Sep	GRVD	*Culex pipiens*	23
Sego Lily Gardens	26-Sep	GRVD	*Culex pipiens*	12
Memorial Mountain View	26-Sep	GRVD	*Culex pipiens*	24
Murray City Hall	2-Oct	GRVD	*Culex pipiens*	18

BLACK FLY REPORT

The Black Fly Crew is responsible for the inspection and treatment, when needed, of about 210 miles of rivers, canals, streams, and ditches. Inspection and treatment occur at 190 monitoring locations in the District.

No treatments were made in 2024 as the number of seasonal employees that the District was able to hire did not allow for the operation of the program this year. Vectobac 12AS has a cost of $34.37 per gallon. The total cost for Black Fly treatments this season was $0. (The cost of VectoBac 12AS has increased. However, pesticide purchased in and left over from a previous season is still in inventory and available for use.)

No black fly work was accomplished in 2024 as crew members were not assigned this task in favor of assigning them to additional tasks that took precedence over black fly inspections and treatments. However, several service requests were received in 2024 about Black Fly concerns.

Black Fly Treatment							
	2019	2020	2021	2022	2023	5 Year Average (4 year Average on Surveillance Data including Canyon Traps)	2024
Number of Spots Treated	156	380	53	31	52	134.4	0
Gallons of Pesticide Used	115	255.3	29.41	35.9	77.5	102.62	0
Total Cost of Pesticide	$3,953	$8,777	$1,011	$1,233.88	$2,663.68	$3,527.71	$0.00
Black Flies In Surveillance Traps Excluding Canyon Traps	222	309	117	239	239	225.2	98
Black Flies In Surveillance Traps Including Canyon Traps*	-	447	394	479	2100	855	1,692

*In 2024, surveillance data was amended to include Black Flies caught in Canyon Traps (Brighton, Solitude, Alta, and Snowbird CO_2-baited traps). A 4-year average was calculated for accurate data analysis, coinciding with the initial data and trapping of Black Flies in Canyon Traps, which started in 2020. Please note that no control measures were taken for Black Flies in Big or Little Cottonwood Canyon and that surveillance data is included for informational purposes only.

EDUCATION PROGRAM

Following the District's Pesticide Discharge Management Plan (PDMP), the District operates under the Integrated Pest Management (IPM) model. One of the control measures utilized under the IPM model is educational control, which the District applies by maintaining a robust education program.

The District education program in 2024 was focused on two primary areas: educational materials and information provided to the general public and employee training. In both focus areas, broad objectives included providing information to promote the public and District employees' health, safety, and welfare. However, much additional time was spent planning for the resumption of visits to community festivals and fairs and library branch locations in 2025. In connection with these efforts, an application for a monetary grant program administrerd by the Western IPM Center of the USDA was prepared and submitted by the District at the end of 2024. It is hoped that additional funds can be secured through the grant that will bolster the community outreach campaign that is being planned for 2025.

Educational material provided to the general public covered various mosquito-related topics, including life cycle and biology, source recognition and reduction, disease transmission, and bite prevention. Additionally, information was presented about the purpose of the District and the services provided.

In 2024, the District provided educational material to several thousand elementary school students, support staff, administration and teachers. Staff delivered 69 in-class presentations, each approximately one hour in duration, in 33 schools to approximately 3,325 students. With changes in the administration of the District, a partial hold on the program was instituted at the end of 2023 to mid February 2024, when the program resumed with presentations in schools, as well as, planning for additional educational outreach efforts that will take place in 2025. In addition, the school presentation part of the program was reconfigured to include interactive gamification through the use of technologies like Blooket and Kahoot and white board Jeopardy. Also, an interactive stations activity was designed and created for use in presentations as well. These new additions to the program were designed to increase the interactive nature of presentations and hopefully infuse some additional engagement and excitement for students. As an example, the stations activity was successfully utilized in a STEM classroom of Oak Hollow Elementary School for an entire week of instruction with all the 3rd, 4th and 5th grade students at the school attending. The activity was seemingly well-received and enjoyed by all students, teachers and SSLVMAD staff that were involved.

In 2023, the District continued a program aiming to provide educational material to people over the age of 55 (chosen because of the increased danger West Nile virus poses to the age group). The District provided educational material to approximately 800 individuals over 55, distributed at Salt Lake County Active Aging Senior Centers. With changes in personnel in 2024, this component of the program was not continued, but it is hoped to be resumed in 2025.

In 2024 training was provided for 20 seasonal employees and 2 surveillance interns before fieldwork commenced. Utilization of technology allowed the employees to complete their safety-related training online before some additional in-person training took place within the

first few days that employees reported for work for the season. This training was designed to enable seasonal employees to safely, efficiently, and effectively perform tasks associated with their hired position. The online training included an emphasis on the District Safety Manual, Employee Handbook, Pesticide Discharge Management Plan, proper use of specific pesticides, specific training for each seasonal position, general characteristics of good employees, and mosquito-borne diseases. This instruction was intended to benefit and protect seasonal employees and provide practical information regarding interactions with the general public. Online training for dog bite prevention, safe driving, avoiding distracted driving, sun/heat protection, personal protective equipment, vehicle backing, and public relation were also completed. Per the District Respiratory Protection Program, respiratory protection training was provided for all employees required to wear respirators.

Plans are being made for 2025 to reconfigure the seasonal employee training program and will likely utilize both virtual and in-person facets with more emphasis on an interactive component to increase engagement and retention of information vital to safety, compliance to policy and federal and state law, as well as, successful performance of job duties.

RESEARCH

Efficacy and Resistance Monitoring

To ensure effective mosquito control and efficient use of funds, SSLVMAD monitors the efficacy of mosquito control products against mosquitoes in the District including through bioassays conducted in a laboratory setting. Trends that may emerge when bioassays are compared among mosquito populations separated by space or time may suggest development of insecticide resistance in mosquito populations. Knowledge of insecticide resistance status can inform decisions about active ingredient use to increase the likelihood of effective applications and of continued efficacy of active ingredients.

Five locations associated with regular surveillance traps were identified for resistance monitoring (Figure 1, Table 1), and mosquitoes from each location were tested against active ingredients from one adulticide, two larvicides, and two insect growth regulators. Additional larval bioassays using products utilized to control mosquitoes in catch basins were conducted to compare concentrations of active ingredients lethal to 50% and 90% (LC50 and LC90) of mosquitoes from areas with different treatment histories. Finally, a field trial was conducted comparing performance of two insect growth regulators in catch basins.

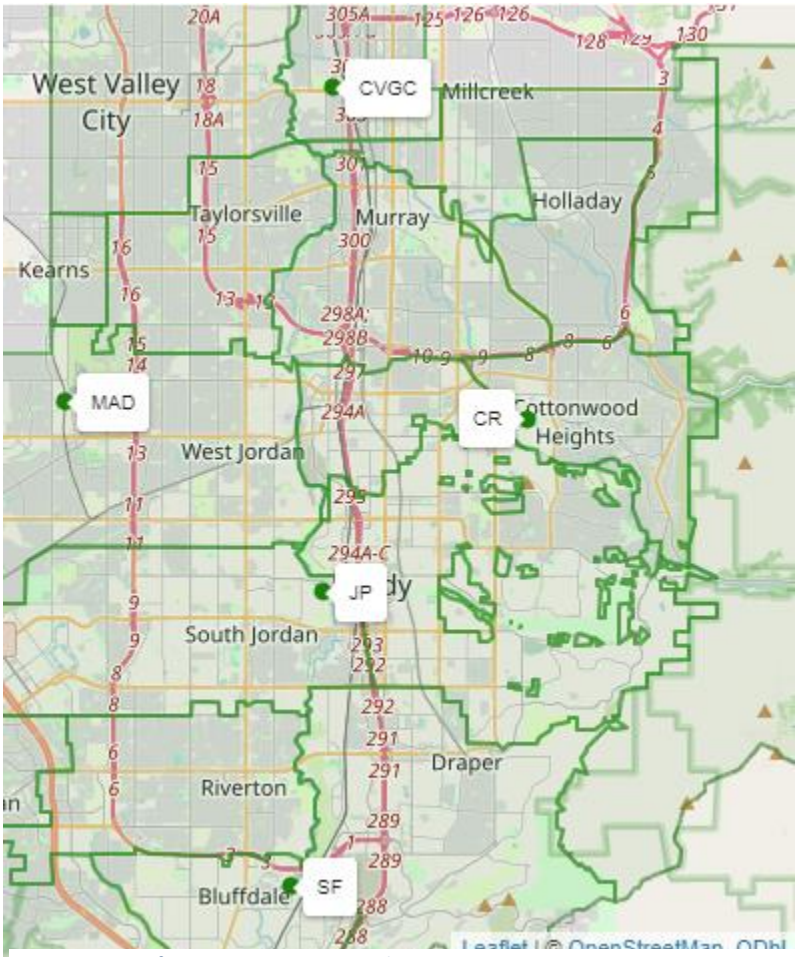


Figure 1 Map of resistance monitoring locations

Table 1 Description of monitoring locations

Monitoring locations				
Surveillance location	Abbreviation	City	Latitude	Longitude
Central Valley Golf	CVGC	South Salt Lake	40.7002	-111.9086
Creek Road	CR	Cottonwood Heights	40.6140	-111.8420
Jordan Parkway	JP	South Jordan	40.5693	-111.9119
SSLVMAD Shop	MAD	West Jordan	40.6188	-112.0007
Springview Farms	SF	Bluffdale	40.4922	-111.9233

Adult bioassays

The susceptibility of adult mosquitoes to permethrin, the active ingredient in the mosquito adulticide used by the District in 2024 was assessed in the laboratory using bottle bioassay methods and reagents from the Centers for Disease Control and Prevention (CDC). In addition, variations of the bottle bioassay to include an enzyme inhibitor were performed to determine possible mechanisms of resistance among the mosquitoes in the district (CDC 2024).

Methods

Mosquitoes from five different locations across the district were reared from egg rafts or collected as adults and introduced into bottles coated with pesticide (Figure 2). Mosquito mortality was recorded and corrected by comparison with mortality from mosquitoes introduced to uncoated bottles. When the available number of mosquitoes was adequate, additional bioassays were performed using synergists to attempt to identify mechanisms of resistance.

Figure 2 Photograph of mosquitoes in test bottles

Results

Though high mortality in some control bottles suggests that results should be interpreted with caution, some resistance to permethrin was observed among all mosquito populations tested. Mortality following the duration of exposure that should kill all susceptible mosquitoes ranged from 18.81% to 50%, well below the 90% threshold defining the presence of resistance. By the end of the test a greater percentage of mosquitoes had succumbed with mortality ranging from 63% to 95% (Figure 3). However, twenty-four hours later, mortality decreased for all population tested, suggesting the presence of knockdown resistance by which mosquitoes can recover from initial effects of exposure to pesticide.

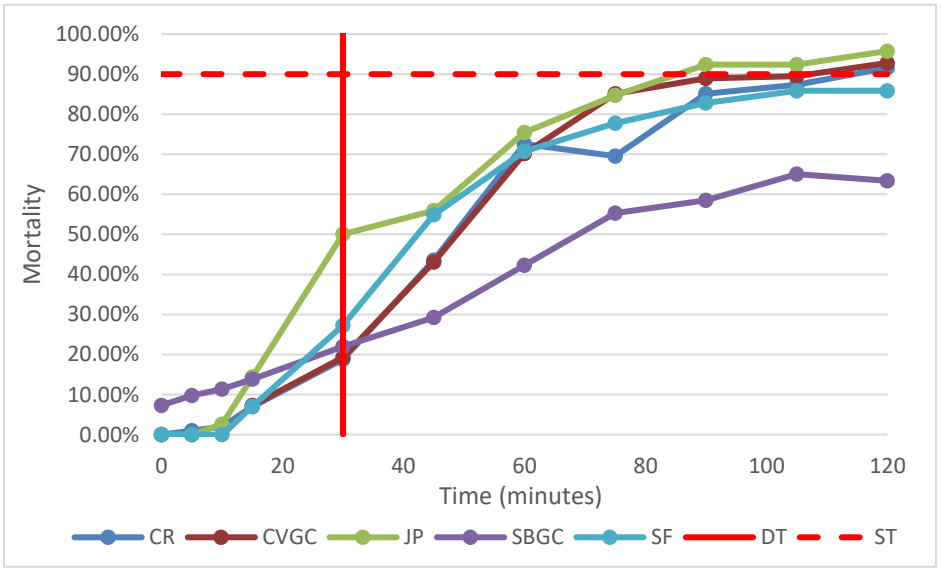


Figure 3 Time-mortality curves by location relative to diagnostic time (DT) and susceptibility threshold (ST)

Mosquitoes exposed to a synergist that inhibits glutathione transferase

exhibited similar mortality to unexposed mosquitoes suggesting that glutathione transferase activity is not responsible for observed resistance. Mosquitoes exposed to a synergist that inhibits oxidase activity exhibited higher mortality than unexposed mosquitoes, thus oxidase activity may be playing a role in resistance to pesticide, but high mortality among mosquitoes exposed to the synergist but not pesticide complicated conclusions.

Discussion

Resistance to permethrin was observed at all tested locations and remains a concern. As mortality in bottle bioassays was lower in 2023 than in 2024, however, resistance may not be increasing rapidly. Nevertheless, monitoring resistance to permethrin should continue, and exploring alternative active ingredients seems prudent.

Larval bioassays

Larval bioassays were conducted to evaluate the effectiveness of or resistance to mosquito larvicides including VectoBac WDG (Valent BioSciences, LLC, Libertyville, IL) with active ingredient *Bacillus thuringiensis subspecies israelensis* (Bti), Natular G30 (Clarke Mosquito Control Products, INC., Roselle, IL) with active ingredient Spinosad, Altosid Liquid Larvicide Mosquito Growth Regulator (Wellmark International, Schaumburg, IL)with active ingredient (S)-Methoprene, and Sumilarv 0.5G Sachets (WSP) (MGK, Minneapolis MN) with active ingredient pyriproxyfen.

Methods

Larval bioassays were conducted following a protocol recommended by the Pacific Southwest Center of Excellence in Vector-borne Diseases (PacVec 2019). Mosquito larvae reared from egg rafts collected from the resistance monitoring locations described above were introduced into cups of water treated with a known concentration of mosquito larvicide (Figure 4). Mortality was assessed 24 or 48 hours later for mosquitoes exposed to products containing Bti or Spinosad. To assess efficacy of insect growth regulators pyriproxyfen and (S)-Methoprene, mortality was assessed after all mosquitoes had died or successfully emerged as adults.

Figure 4 Photographs of larval bioassay cups

Results

Most mosquitoes evaluated were *Culex pipiens*, though *Culiseta* species were represented from some locations. Non-overlapping 95% confidence intervals within groups with common active ingredients

presented in Figure 5 suggest some differences in degree of resistance or susceptibility among mosquito populations. *Culex pipiens* mosquitoes from CVGC may be somewhat less susceptible to Bti than populations from CR, MAD, and JP, and perhaps less susceptible to Spinosad than populations from CR, MAD, JP, and SF. *Culex pipiens* from JP may be less susceptible to Spinosad than populations from CR, MAD, and SF. *Culex pipiens* from CR may be more susceptible to (S)-Methoprene than populations from CVGC, MAD, and JP.

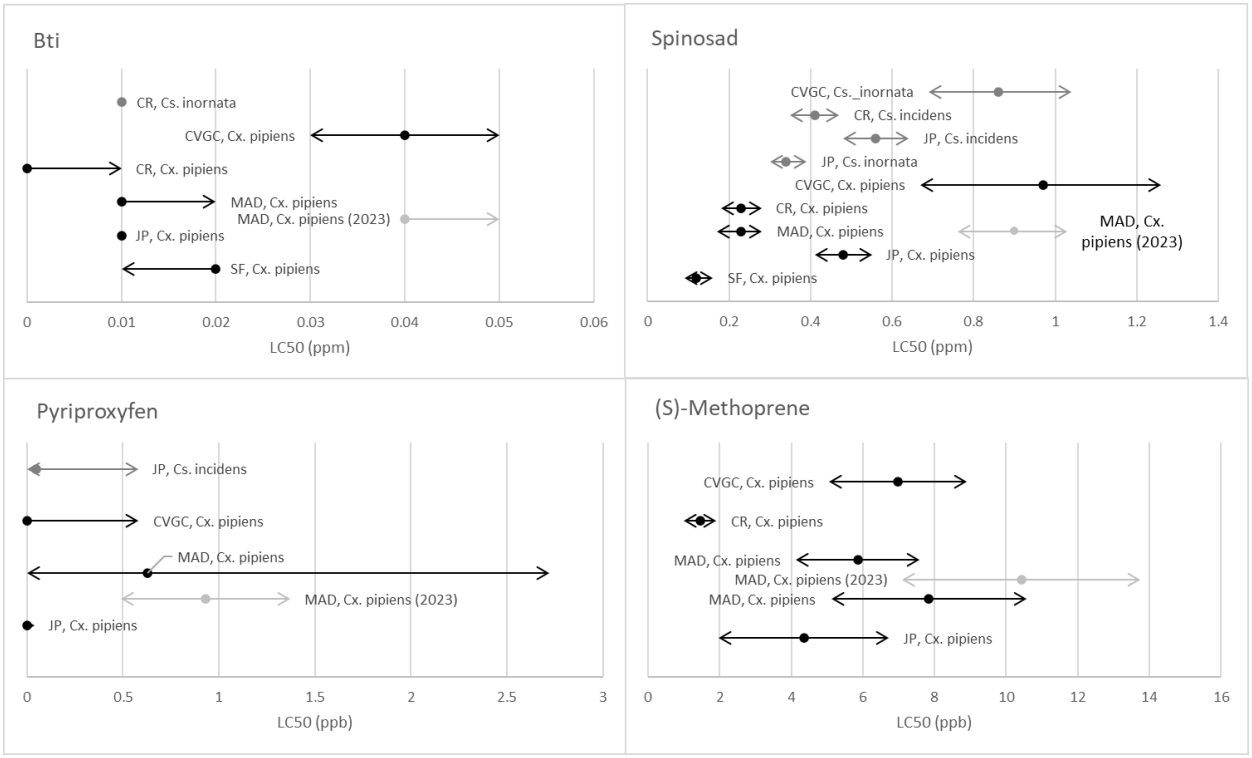


Figure 5 Charts displaying observed LC50 values for mosquito larvicides with arrows indicating 95% confidence intervals. Units are product ppm for Bti and Spinosad and active ingredient ppb for Pyriproxyfen and (S)-Methoprene.

Discussion

Bioassays completed in 2024 generally resulted in lower LC50 values than observed in 2023, suggesting that resistance is not progressing extremely rapidly, however, continued monitoring at locations established in 2024 is intended to better identify temporal trends and spatial patterns in mosquito resistance/susceptibility to larvicide active ingredients.

Additional larval bioassays

For several years, the mosquito larvicides Natular XRT (Clarke Mosquito Control Products, Inc., Roselle, IL) with active ingredient Spinosad and Altosid Pellets WSP (Wellmark International, Schaumburg, IL) with active ingredient (S)-Methoprene have been used to treat stormwater catch basins in SSLVMAD. Catch basins in approximately one quarter of the District have been treated once with Natular XRT each year and the remaining basins treated 2 (or more) times with Altosid Pellets WSP. Areas treated with each product have changed each year such that basins in the District have been treated with Natular XRT approximately once every four years and with Altosid Pellets WSP in the three intervening years. This rotation schedule has been utilized to reduce the likelihood of mosquitoes developing resistance to either active ingredient, to balance expenses, and to make efficient use of available

personnel resources. To evaluate the resistance/susceptibility status of mosquito populations exposed to this rotation regimen, larval bioassays were conducted on mosquitoes obtained from areas with varying histories of catch basin treatment with Spinosad and (S)-Methoprene.

Methods

Larval bioassays as described above were conducted on *Culex pipiens* mosquitoes reared from egg rafts collected from locations with different treatment histories (Table 2).

Table 2 (S)-Methoprene/Spinosad resistance/susceptibility study sites and treatment history.

Location	Abbreviation	City	Latitude	Longitude	Years since Spinosad
Creek Road	CR	Cottonwood Heights	40.6140	-111.8420	4
Bird's	B	West Valley	40.7004	-111.9462	4
MAD Shop	MAD	West Jordan	40.6188	-112.0007	3
Central Valley Golf	CVGC	South Salt Lake	40.7002	-111.9086	3
SSL Public Works	SSL	South Salt Lake	40.7165	-111.8968	3
Sandy Senior Center	SSC	Sandy	40.5823	-111.8549	2
Murray Cemetery	MC	Murray	40.6526	-111.8733	2
Bluffdale Fire Station	BFS	Bluffdale	40.4911	-111.9496	1
Springview Farms	SF	Bluffdale	40.4922	-111.9233	1
Jordan Parkway	JP	South Jordan	40.5693	-111.9119	1

Results

Larval bioassays with (S)-Methoprene were complicated at times by low adult emergence even from cups without pesticide, but successful bioassays resulted in LC50 values ranging from 1.45 to 8.12 parts per billion (active ingredient), and LC90 values ranging from 4.83 to 28.79 ppb. Bioassays using Spinosad were hampered by failure to achieve sufficient mortality at the highest concentrations included, but successful bioassays resulted in LC50 values ranging from 0.12 to 2.12 parts per million (product) and LC90 values ranging from 0.4 to 3.54 ppm (Figure 6).

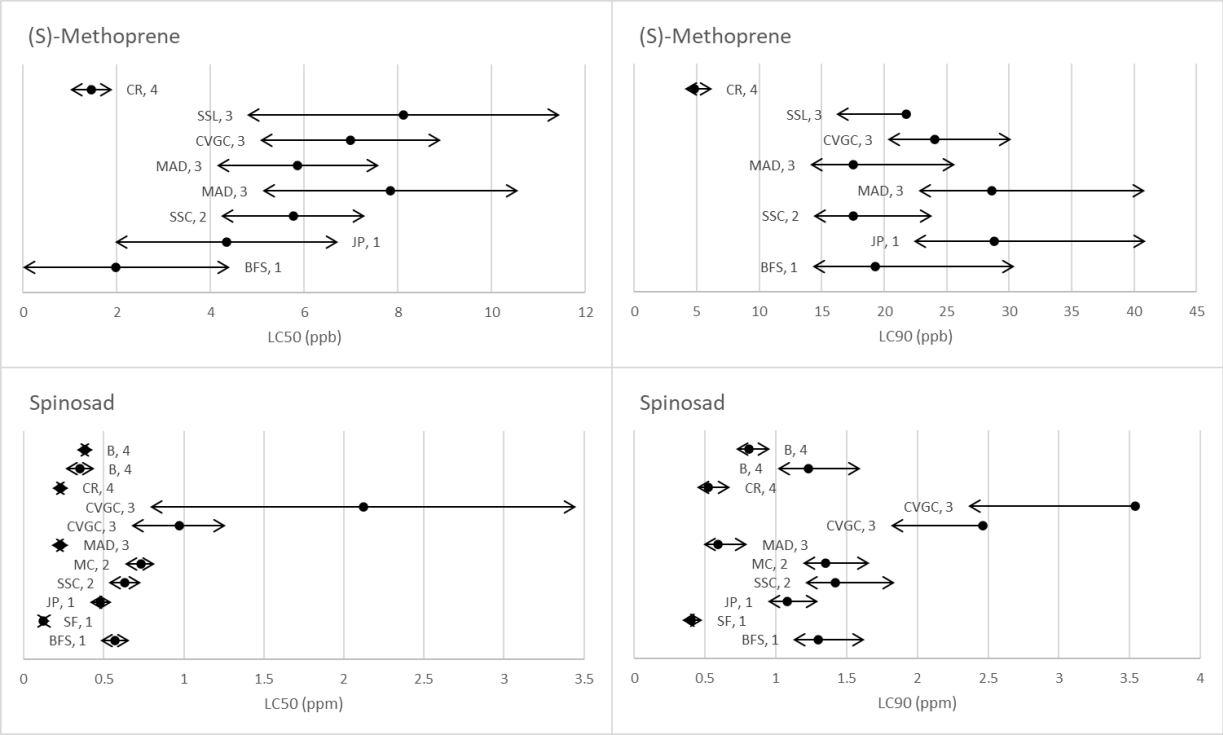


Figure 6 Charts displaying observed LC50 and LC90 values for mosquito larvicides with arrows indicating 95% confidence intervals. Units are product ppm for Spinosad and active ingredient ppb for (S)-Methoprene.

Little correlation was observed between LC50 or LC90 values and treatment history. Results do not strongly indicate that resistance to (S)-Methoprene increased as the number of consecutive years of exposure increased, nor is there strong evidence that susceptibility to Spinosad was greater following years of reduced or no exposure.

Discussion

That strong evidence of correlation between treatment history and resistance status was not observed may suggest that current mosquito larvicide rotation practices are not demonstrably contributing to development of resistance in the *Culex pipiens* population at large. Though some localized resistance may be present, for example to Spinosad at CVGC. Continued or expanded resistance monitoring may help identify local populations experiencing resistance not represented in the current study.

Field trial

A field trial was conducted to compare two products used to control mosquito production in catch basins, Sumilarv® 0.5G Sachets (WSP) (MGK, Minneapolis, MN), and Altosid Pellets WSP (Wellmark International, Schaumburg, IL). Though active ingredients differ between Sumilarv and Altosid (pyriproxyfen and (S)-Methoprene respectively), the products have other similarities. Both active ingredients are insect growth regulators intended to prevent successful maturation of adult mosquitoes while not killing mosquito larvae directly. Both require application to larval mosquito habitat before immature mosquitoes progress to the pupal stage to effectively prevent adult mosquito emergence. Altosid Pellets WSP may offer effective mosquito control in catch basins following application of a single pouch for up to 30 days (Zoecon 2022) and has been used extensively at SSLVMAD in most years since at least 2006. While up to 3 Sumilarv WSP sachets may be applied to catch basins for expected control as long as 150 days, application of a single sachet in similar

conditions may be expected to offer effective control for 4 weeks (MGK 2020). Sumilarv was first used in SSLVMAD in 2023.

Methods

Thirty catch basins located in South Salt Lake City (40.7092, -111.8955) that had been observed in previous years to hold water but that had not been treated with pesticide in 2024 were selected as a study site. Three clusters of 10 basins were identified and on 15 July 2024 basins in 2 clusters were treated with either 1 Sumilarv WSP sachet or 1 Altosid Pellets WSP pouch. Ten additional basins in the remaining cluster were left untreated. Efficacy was assessed by introducing 4th instar *Culex pipiens* larvae into samples returned to the SSLVMAD laboratory from each basin in the trial. Sampling began one week after treatment and continued for 4 weeks.

Immediately following retrieval from the field, water samples from catch basins were transferred to foam cups and 20 4th instar *Culex pipiens* mosquito larvae were added to each sample. A small amount of fish food was added to each sample to sustain the larvae to pupation. Foam cups were covered with 6-ounce plastic cups to contain any emerging adult mosquitoes and held at a temperature between 26° C and 28° C and photoperiod of 16 hours light, 8 hours dark until all larvae had died or successfully emerged as adults.

Figure 7 Water samples with mosquito larvae and emerging adult mosquitoes

The number of successfully emerging mosquitoes was recorded from each sample and used to determine mosquito control status of each sample. Control status of samples from which adult mosquitoes successfully emerged was categorized as not effective, while samples that inhibited adult mosquito emergence were categorized as having effective control. The proportion of samples with effective control was compared among treatments for each week using Fisher's Exact test.

Results

One week after treatment, the percentage of samples effectively inhibiting adult mosquito emergence was 80% and 70% for basins treated with Sumilarv and Altosid respectively, both values were significantly higher than the 0% observed in samples from untreated basins. The percentage of samples with effective control continued to be significantly greater among Sumilarv than untreated control samples through the third week following treatment but no significant difference was observed between samples from Altosid treated basins and those from untreated control basins beginning two weeks after treatment. By the fourth week after treatment no samples from basins treated with either Sumilarv or Altosid effectively inhibited all adult mosquito emergence.

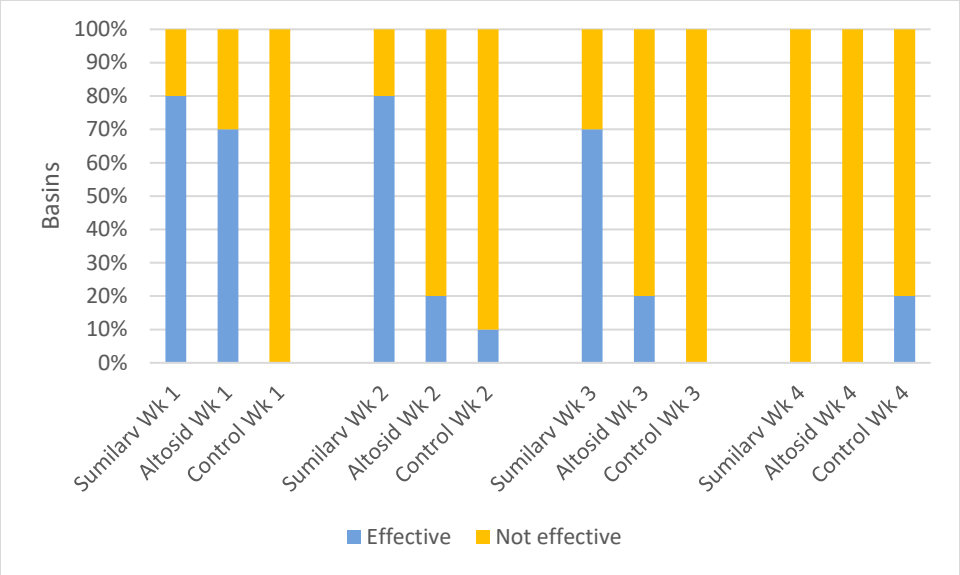


Figure 8 Stacked bar chart depicting the percentage of water samples effectively or not effectively inhibiting adult mosquito emergence.

Discussion

Results of the trial support the suggestion that a single sachet of Sumilarv may be expected to control mosquitoes in a limited habitat area with about a 4-week retreatment interval. That expectation of effective control was not supported for Altosid treatments. Further research to better validate the modified monitoring procedure would help strengthen those suggestions as the various active ingredients may respond differently to the protocol. Additional investigation to further explore the efficacy of these mosquito control products in the field is highly recommended.

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A comparison of four mosquito surveillance trap configurations

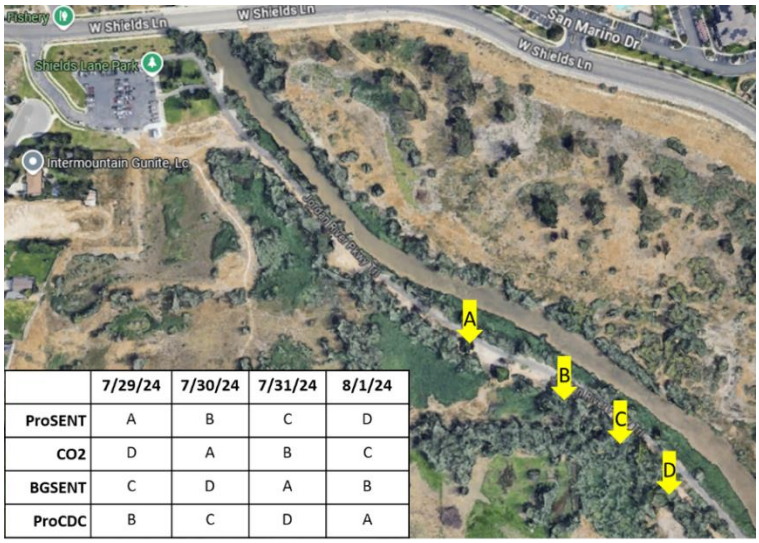
Various mosquito surveillance traps are employed at the South Salt Lake Valley Mosquito Abatement District to characterize the adult mosquito population. Variation in the composition of mosquitoes sampled by different trap types is expected, and the District deliberately selects traps to target certain species or demographics, but such variation in composition of sampled mosquitoes has not been well described at the District. This report details a comparison among four trap configurations: two traps currently in use at the District and two configurations of a recently introduced trap type. It was conducted to improve understanding of mosquitoes targeted by each trap type and to determine potential interchangeability or suitableness of each trap type for specific surveillance goals.

Materials and Methods

Four trap/configurations were investigated (Figure 1). The ABC (Clarke, St. Charles, IL), or CDC Light Trap (CDC) baited with CO2 in the form of dry ice and without the use of a light attractant is used widely at the District to sample host-seeking female mosquitoes and obtain specimens of vector species for disease testing. Regular use of the BG-Sentinel 2 (BGSENT) (Biogents AG, Regensburg, Germany) trap at the District began in 2017. Baited with BG-Lure and CO2 in the form of dry ice, the BGSENT trap is intended to target potentially invasive *Aedes* mosquitoes and host-seeking adults of many established species. The BG-Pro trap (Biogents AG, Regensburg, Germany) has a modular design facilitating multiple configurations. Configurations examined here, CDC-style (ProCDC) baited with CO2 in the form of dry ice and Sentinel-style (ProSENT) baited with BG-Lure and CO2 in the form of dry ice, are intended to offer functionality similar to the CDC and BGSENT traps respectively.

Figure 9 (a) CDC, (b) BGSENT, (c) ProCDC, and (d) ProSENT trap configurations under field conditions.

Traps were deployed for four consecutive nights beginning 29 July, 2024 near the Jordan River in South Jordan (40.5698, -111.9131), and were placed with at least 50 meters of separation between traps (Figure 2). Traps were rotated among trapping locations such that each trap/configuration was placed at each location once. Mosquito abundance and richness were noted for each trapping event to compare composition and species contribution to differences among traps.



	7/29/24	7/30/24	7/31/24	8/1/24
ProSENT	A	B	C	D
CO2	D	A	B	C
BGSENT	C	D	A	B
ProCDC	B	C	D	A

Figure 10 Trap deployment schedule and photograph of study site labeling trap locations.

Results

Of the 16 potential trapping events, 15 ran successfully. A ProCDC trap malfunctioned one night yielding no results. The number of mosquitoes per trapping event ranged from 22 to 226 and richness ranged from 2 to 9, with overall richness also equal to 9 (Figure 11). The greatest abundance was observed in the BGSENT trap and greatest richness in the ProSENT trap. Variability was greatest for abundance among BGSENT trap results and greatest for richness among ProSENT trap results.

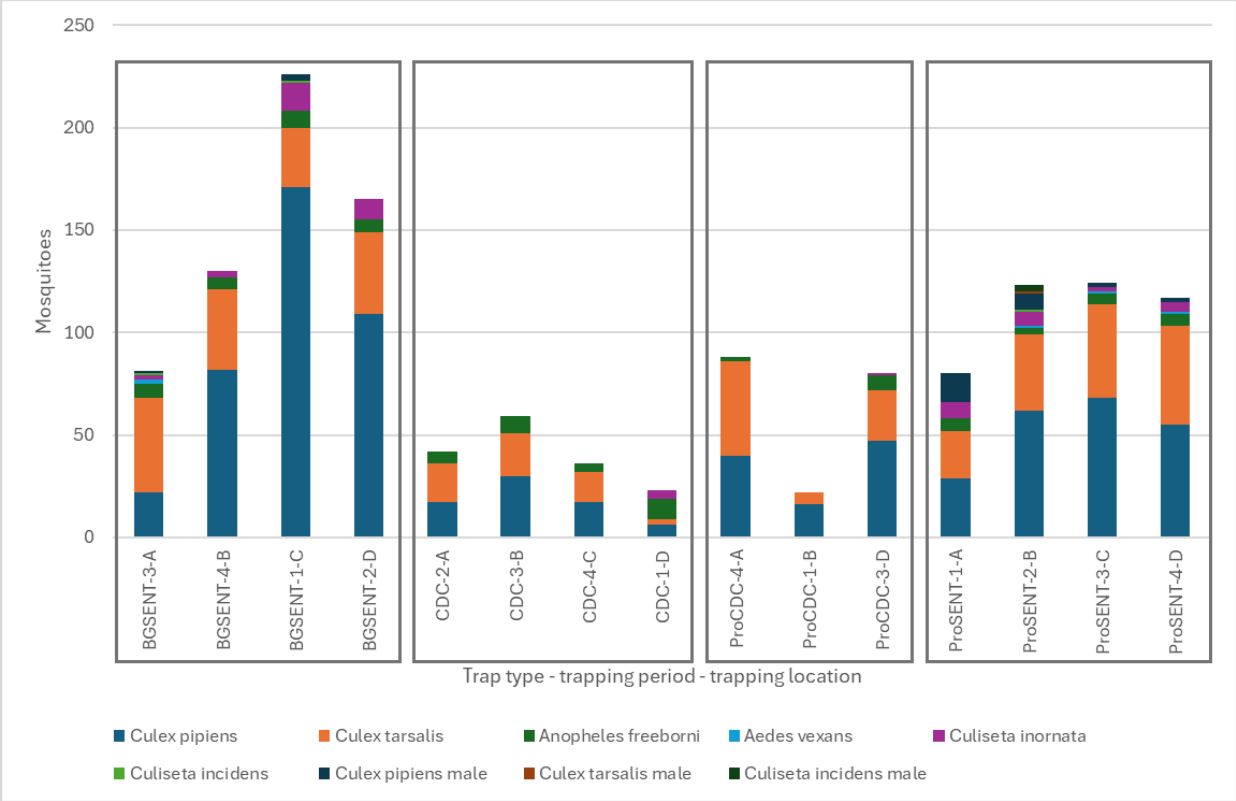


Figure 11 Stacked bar chart displaying abundance by species for each trapping event grouped by trap type.

Composition did not differ significantly among trap dates or trap locations, but did differ significantly among trap types. Pairwise comparisons suggest that differences in composition among trap types are most likely between ProSENT and CDC, between ProSENT and ProCDC, and between CDC and BGSENT trap types. Composition appears not to differ significantly between ProSENT and BGSENT, between CDC and ProCDC, and between BGSENT and ProCDC.

As expected, variation in observed abundance of the most abundant mosquito species contributed most to differences among trap types. However, abundance patterns of each species contributed either more or less to dissimilarity within at least one pairwise comparison than would be expected by chance.

Discussion

Observed species abundance and richness varied among trap types with the greatest average abundance occurring in BGSENT traps, followed by ProSENT, ProCDC, and CDC, and greatest average richness from ProSENT traps, followed by BGSENT, CDC, and ProCDC. These results suggest that ProSENT traps may offer the most complete representation of the mosquito community.

Observed mosquito community composition differed between ProSENT and CDC traps, between ProSENT and ProCDC traps, and between CDC and BGSENT traps suggesting that using these traps interchangeably may not yield comparable results, or that a change in trap type from one of each pair to the other may compromise comparisons with historical data. Comparisons between BGSENT and ProCDC, between CDC and ProCDC, and especially between ProSENT and BGSENT trap types may be less problematic.

An examination of the species observed from each trap type and of the contribution of each species to dissimilarity between trap types suggests that ProSENT traps may be more effective at detecting male mosquitoes than are the other trap types investigated. Additionally, ProSENT and BGSENT traps may be more effective at detecting *Aedes vexans*, *Culiseta inornata*, and *Culiseta incidens* than are CDC or ProCDC traps. Practical significance of observed differences depends on the goals of surveillance. Though *Aedes vexans*, *Culiseta inornata*, and *Culiseta incidens* may at times be a nuisance, at the time of this study they are not among species considered primary vectors of arboviruses occurring within SSLVMAD boundaries. Detection of male mosquitoes may provide a more complete picture of the mosquito community and may provide useful information about species populations, however the importance of detecting male mosquitoes may be debatable as male mosquitoes do not directly contribute to mosquito nuisance or disease burden.

Thus, CDC or ProCDC traps may be adequate for surveillance of vectors of West Nile virus, Western Equine Encephalitis virus, and St. Louis Encephalitis virus, and may provide comparable results. ProSENT or BGSENT traps likely yield comparable results and, in comparison with CDC and ProCDC traps, may provide superior vector and nuisance species surveillance. Comparisons of contemporary or historical surveillance data may be complicated between either CDC or ProCDC and either BGSENT or ProSENT traps, though methods to normalize data to facilitate comparisons could potentially be productively explored. Additionally, further research comparing trap performance in different locations or different habitat types could provide important information about the applicability of these results.

APPENDIX A: PESTICIDE INFORMATION

2024 Pesticide Use				
Pesticide	Price 2024	Total Pesticide Used	Total Price	Qty Type
Larvacides				
Agnique (gal)	$41.70	0	0	Gallon
Altosid Briquets (30 Day)	$1.34	46	$61.64	Briquet
Altosid XR Briquets (150 Day)	$ 3.83	1959	$7,502.97	Briquet
Altosid WSP (packets)	$1.00	20510	$20,468.98	Packets
Altosid P35 (lbs.)	$20.05	398.45	$7,988.92	LBS.
Fourstar MBG (lbs.)	$9.62	0	-	LBS.
Natular G30 (lbs.)	$ 19.73	277.5	$5,475.08	LBS.
Natular G (lbs.)	$ 7.03	0	-	LBS.
Natular XRT (tablets)	$ 5.40	3014	$16,275.60	Briquet
Natular G30 WSP	$ 1.16	1020	$1,183.20	Packets
Natular DT (tablets)	$ 0.56	262	$146.72	LBS.
Vectobac 12 AS (gal)	$40.10	0	0	Gallon
Vectobac GS (lbs.)	$ 2.65	1790.5	$4,744.83	LBS.
Vectobac GR lbs.)	$ 2.78	0	-	LBS.
Vectobac WDG (lbs.)	$ 40.25	1	$40.25	LBS.
VectoMax FG (lbs.)	$ 9.50	1066.33	$10,130.14	LBS.
Vectolex WSP (lbs.)	$ 1.08	0	-	LBS.
COCOBEAR (gal.)	$ 27.74	0	-	Gallon
Sumilarv	$1.33	35180	$46,789.40	Packets
BVA Oil (gallon)	$15.82	65	$1,028.30	Gallon
Censor	$3.83	548.31	$2,100.03	LBS.
Adulticides				
Zenivex E4 (gal)	$	0	-	Gallon
Duet (gal)	$	0	-	Gallon
Kontrol 4-4 (gal)	$18.49	105	$1,941.45	Gallon
Maverik (oz)	$ -	0	-	Gallon
2024 Total Pesticide Usage Cost				$125,877.50

APPENDIX B: DISTRICT POPULATION & SIZE

2024 Population and Areas		
Region	Population	Size (square miles)
State of Utah	3,503,613	82,376.85
Salt Lake County	1,185,813	742.07
District	977,344	561
Alta	225	4.5
Bluffdale	19,090	11.14
Brighton	451	15.8
Copperton	860	0.32
Cottonwood Heights	32,204	9.23
Draper	49,602	29.95
Herriman	60,049	21.63
Holladay	30,298	8.5
Kearns*	37,767	4.63
Midvale	35,561	5.91
Millcreek	62,205	12.77
Murray	49,553	12.32
Riverton	44,854	12.58
Sandy	91,943	24.15
South Jordan	84,528	22.19
South Salt Lake	26,122	6.94
Taylorsville	57,098	10.85
West Jordan	114,908	32.33
West Valley City*	134,470	35.83
White City	5,676	0.87
Unincorporated*	10,756	296.4

* Not all of Kearns, West Valley City, or Unincorporated Salt Lake County is served by SSLVMAD
(All populations are approximate)
U.S. Census Bureau QuickFacts: https://www.census.gov/quickfacts/fact/table/
World Population Review: https://worldpopulationreview.com/us-cities/
Census Reporter: https://censusreporter.org/profiles/
Greater Salt Lake Municipal Services District: https://www.msd.utah.gov/

APPENDIX C: DISTRICT 2024 BUDGET

GENERAL	2024 PROPOSED	2024 Actual 12/6/24	Amendments	FINAL
APPROPRIATION OF GENERAL FUND BALANCE	$ 176,500.00	$ 841,471.94	$ (59,000.00)	$ 117,500.00
APPROPRIATION OF RESERVE FUND BALANCE	$ 600,000.00	$ 604,354.28		$ 600,000.00
OPERATING FUND INTEREST	$ 25,000.00	$ 26,010.06	$ 3,000.00	$ 28,000.00
OTHER INCOME	$ -	$ 1,144.63		$ -
RESERVE FUND INTEREST	$ 30,000.00	$ 30,060.26	$ 2,000.00	$ 32,000.00
SALE OF FIXED ASSETS	$ 10,000.00		$ (10,000.00)	$ -
TAXES - GENERAL PROPERTY TAXES	$ 1,100,000.00	$ 223,811.86		$ 1,100,000.00
TAXES - MISCELLANEOUS	$ 4,000.00	$ 16,139.05	$ 10,000.00	$ 14,000.00
TAXES - MOTOR VEHICLE IN LIEU OF FEES	$ 50,000.00	$ 43,167.38	$ (5,000.00)	$ 45,000.00
TAXES - PERSONAL PROPERTY	$ 55,000.00	$ 55,977.64	$ 1,000.00	$ 56,000.00
TAXES - PRIOR YEAR DELINQUENT	$ 16,000.00	$ 13,338.96	$ (3,000.00)	$ 13,000.00
TAXES - RDA WITHHOLDING	$ (60,000.00)	$ -		$ (60,000.00)
TRANSFER FROM CAPITAL PROJECTS	$ -	$ 40,000.00		$ -
TOTAL REVENUES	$ 2,006,500.00	$ 1,895,476.06	$ (61,000.00)	$ 1,945,500.00
TRANSFER TO CAPITAL PROJECTS	$ 47,000.00	$ 72,242.48	$ (25,000.00)	$ 22,000.00
ACCOUNTING SERVICES	$ 6,500.00	$ 6,500.00		$ 6,500.00
AUTOMOBILE MAINTENANCE	$ 8,000.00	$ 7,067.18		$ 8,000.00
BOARD MEETING	$ 2,000.00	$ 1,701.84		$ 2,000.00
CONFERENCES	$ 30,000.00	$ 25,993.50		$ 30,000.00
DEDICATED RESERVES	$ 600,000.00	$ 607,354.28		$ 600,000.00
DUES & PERMITS	$ 6,000.00	$ 2,131.28	$ (1,000.00)	$ 5,000.00
EDUCATION	$ 5,000.00	$ 4,248.67		$ 5,000.00
FACILITIES MAINTENANCE	$ 7,000.00	$ 9,158.10	$ 2,500.00	$ 9,500.00
FIELD EQUIPMENT & MAINTENANCE	$ 7,500.00	$ 6,083.27	$ (500.00)	$ 7,000.00
FUEL	$ 17,500.00	$ 9,069.76		$ 17,500.00
INSECTICIDES	$ 185,000.00	$ 169,903.05	$ (15,000.00)	$ 170,000.00
INSURANCE & BONDS	$ 35,000.00	$ 28,037.08		$ 35,000.00
LEGAL NOTICES	$ 500.00	$ -		$ 500.00
MISCELLANEOUS	$ 2,500.00	$ 3,275.44	$ 1,000.00	$ 3,500.00
OFFICE SUPPLIES	$ 6,000.00	$ 5,443.12		$ 6,000.00
OPERATING SUPPLIES	$ 8,000.00	$ 2,534.75	$ (3,000.00)	$ 5,000.00
PAYROLL	$ 900,000.00	$ 807,825.34	$ (20,000.00)	$ 880,000.00
PROFESSIONAL SERVICES	$ 10,000.00	$ 12,075.60	$ 2,500.00	$ 12,500.00
RESEARCH	$ 1,000.00	$ 1,060.24	$ 500.00	$ 1,500.00
SAFETY SUPPLIES	$ 2,000.00	$ (133.32)	$ (1,500.00)	$ 500.00
SERVICE CHARGE	$ 1,000.00	$ 1,729.54	$ 1,000.00	$ 2,000.00
SLCMAD	$ 10,000.00	$ 7,469.56	$ (2,500.00)	$ 7,500.00
SURVEILLANCE	$ 6,000.00	$ 5,583.32		$ 6,000.00
TECHNOLOGY	$ 35,000.00	$ 29,832.26	$ (5,000.00)	$ 30,000.00
TESTING	$ 10,000.00	$ 8,027.49	$ (1,500.00)	$ 8,500.00
UNIFORMS	$ 3,000.00	$ 3,267.46	$ 500.00	$ 3,500.00
UTILITIES	$ 55,000.00	$ 57,994.77	$ 6,000.00	$ 61,000.00
TOTAL EXPENDITURES	$ 2,006,500.00	$ 1,895,476.06	$ (61,000.00)	$ 1,945,500.00
NET REVENUES OVER/(UNDER) EXPENDITURES	$ -	$ -	$ -	$ -

CAPITAL PROJECTS	2024 PROPOSED	2024 Actual 11/14/2024	Amendments	FINAL
APPROPRIATION CAP FUND BALANCE	$ 586,000.00	$ 578,621.53		$ 586,000.00
CAPITAL PROJECT FUND INTEREST	$ 25,000.00	$ 29,317.49	$ 7,000.00	$ 32,000.00
TRANSFER IN - GENERAL FUND	$ 47,000.00	$ 72,242.48	$ (25,000.00)	$ 22,000.00
TOTAL REVENUES	$ 658,000.00	$ 680,181.50	$ (18,000.00)	$ 640,000.00
BUILDING IMPROVEMENTS	$ 23,000.00	$ 13,849.50	$ (8,000.00)	$ 15,000.00
COMPUTER EQUIPMENT	$ 60,000.00	$ 47,710.47	$ (10,000.00)	$ 50,000.00
FACILITIES & EQUIPMENT				$ -
OFFICE EQUIPMENT				$ -
VEHICLE				$ -
DEDICATED CAPITAL RESERVES	$ 575,000.00	$ 578,621.53		$ 575,000.00
TRANSFER TO GENERAL		$ 40,000.00		$ -
TOTAL EXPENDITURES	$ 658,000.00	$ 680,181.50	$ (18,000.00)	$ 640,000.00
NET REVENUES OVER/(UNDER) EXPENDITURES	$ -	$ -	$ -	$ -