BOULDER COUNTY MOSQUITO CONTROL DISTRICT

MOSQUITO CONTROL PROGRAM
2023 ANNUAL REPORT

October 2023

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Boulder County Mosquito Control District Integrated Mosquito Management Program
2023 Annual Report

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Program Objective

The primary objective of VDCI's Integrated Mosquito Management Program is to monitor and reduce mosquito populations using environmentally sound control techniques to protect residents from the threat of mosquito-borne diseases and suppress local populations of nuisance mosquitoes. VDCI's programs primarily focus on the detection and elimination of mosquito larvae in aquatic habitats by trained field technicians. VDCI also maintains a network of CDC light traps to monitor adult mosquito populations and disease risk, as well as to determine if adult mosquito control is necessary.

Open communication is maintained by VDCI between clients, residents, HOAs, Property Management Companies, County and State Departments of Health & Environment, and surrounding municipalities to ensure that the highest level of mosquito control and epizootic response is achieved. This cooperation is key to the success of mosquito management programs and provides significant benefit to public health throughout the region.

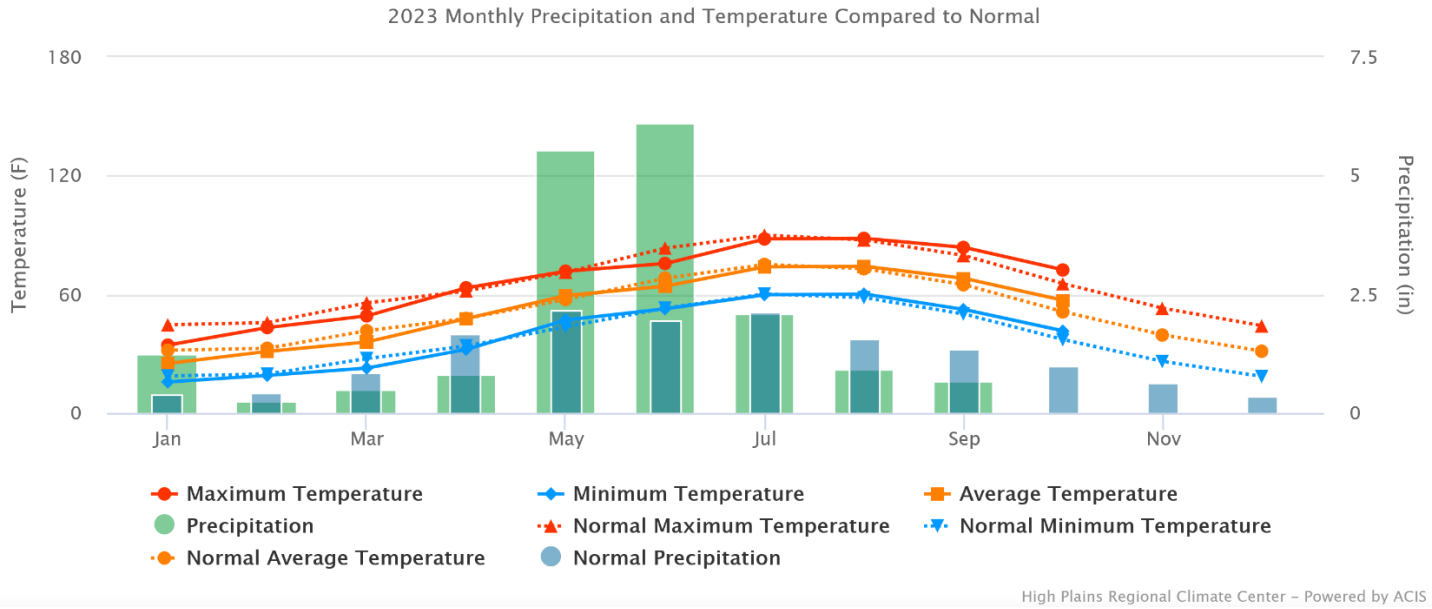
VDCI's Commitment

Vector Disease Control International is a company built on the foundations of public health, ethics, professionalism, and technical expertise. VDCI is committed to providing our customers with scientifically based, environmentally sensitive and technologically advanced Integrated Mosquito Management (IMM) programs of the highest quality. Our employees are committed to excellence in vector control and public health and strive to improve the quality of life in communities through public education and the control of mosquitoes and the diseases they can transmit. VDCI currently has seven year-round offices in Colorado with programs across the state providing services for towns, cities, counties, homeowners associations, and encephalitis surveillance monitoring programs for health departments.

Vector Disease Control International will continue to use proven scientific Integrated Mosquito Management techniques to survey and control local mosquito populations using biorational larval controls and limited low-toxicity insecticide applications. All methods and materials used have been reviewed and registered by the US Environmental Protection Agency, the Centers for Disease Control, the Colorado Department of Agriculture and the American Mosquito Control Association. VDCI maintains its commitment to provide top quality service to minimize the threat of West Nile Virus to citizens and to reduce mosquito annoyance in all the areas we serve.

2023 Season Perspective and Climate Data

Each Colorado summer presents a unique set of temperature, precipitation, irrigation, and human interactions that create new and different challenges in mosquito control and mosquito-borne disease proliferation. The typical mosquito season is from late April through September. Current and historical climate data from the National Oceanic Atmospheric Administration's (NOAA) High Plains Regional Climate Center (HPRCC) weather stations was used to monitor regional temperature and precipitation patterns throughout the season.



2023 Precipitation Data

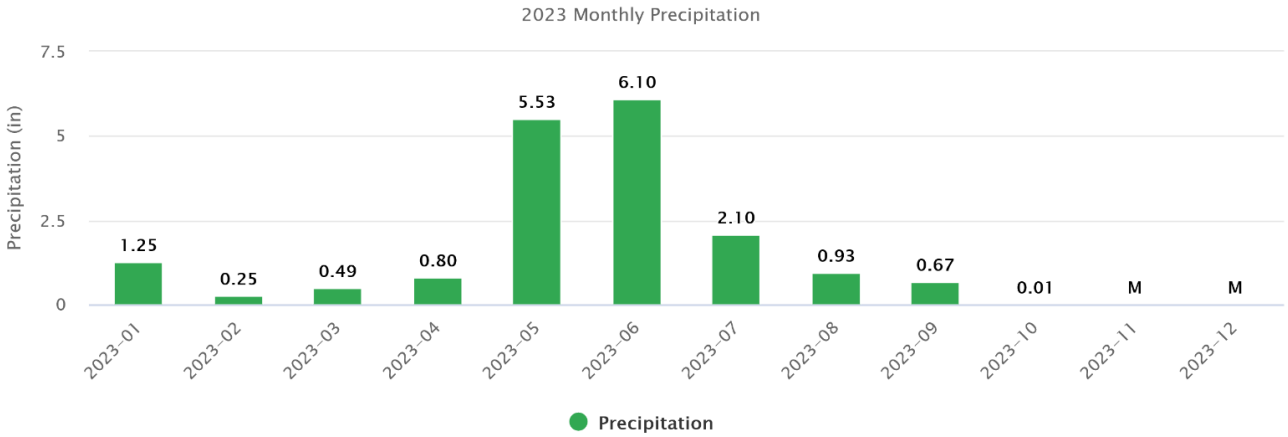
May was the 4th wettest on record for the Denver-Boulder area since 1872, with NWS recording 5.53 inches of precipitation, 2.31 inches above normal. A daily maximum of 2.92 inches was recorded on the 12th. May 2022 received 2.59 total inches.

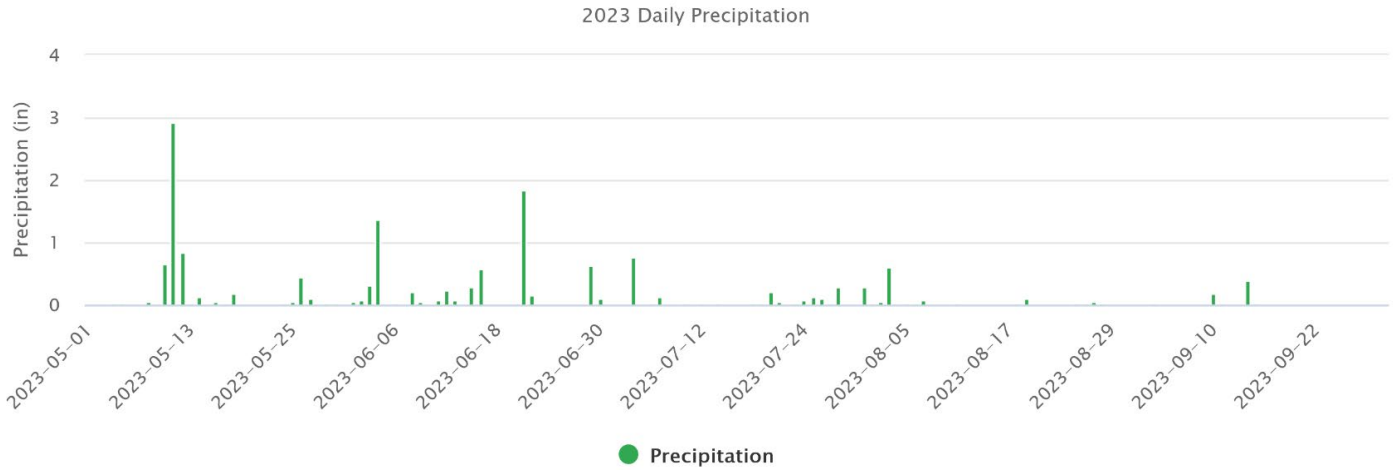
June was the wettest on record for the Denver-Boulder region. The National Weather Service recorded 6.10 inches of precipitation for June, which is 4.16 inches above normal. A daily maximum of 1.85 inches was recorded on the 21st. June 2022 received 0.58 total inches of rain.

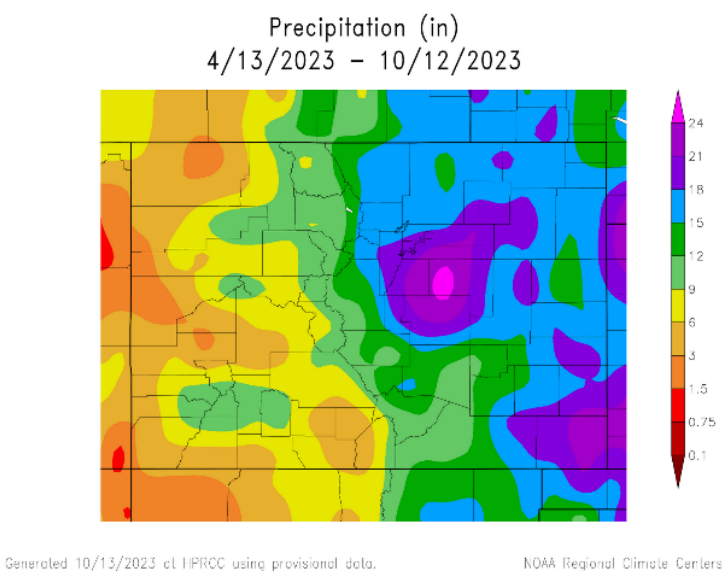
July was the driest month of the season. NWS recorded 2.10 inches of precipitation for July, 0.4 inches below normal. The daily maximum of 0.77 inches occurred on July 4th. In comparison, 0.99 total inches were recorded in July 2022.

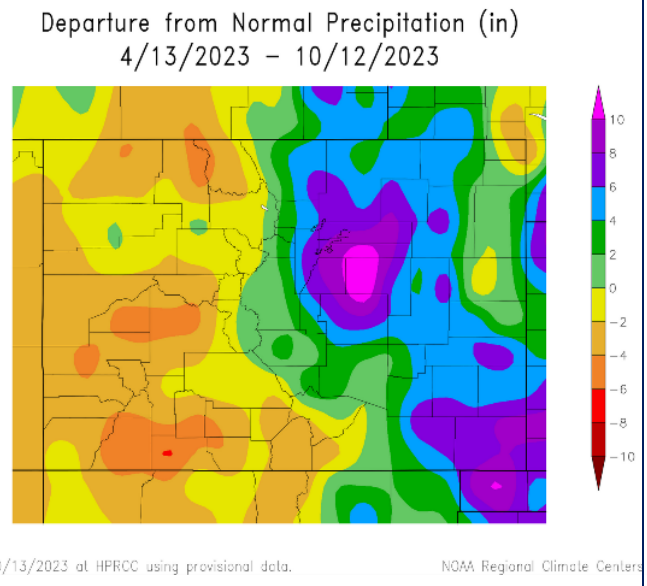
0.93 inches of precipitation were recorded by NWS in August, 0.65 inches below normal. On the 1st, 0.60 inches of precipitation were recorded, the most for the month. August 2022 received 1.46 total inches of rain.

In September 0.67 inches of rain were recorded, 0.68 beneath the average. On the 14th, 0.40 inches of rain fell, the recorded daily maximum for the month. September 2022 saw 1.25 inches of precipitation.









2023 Temperature Data

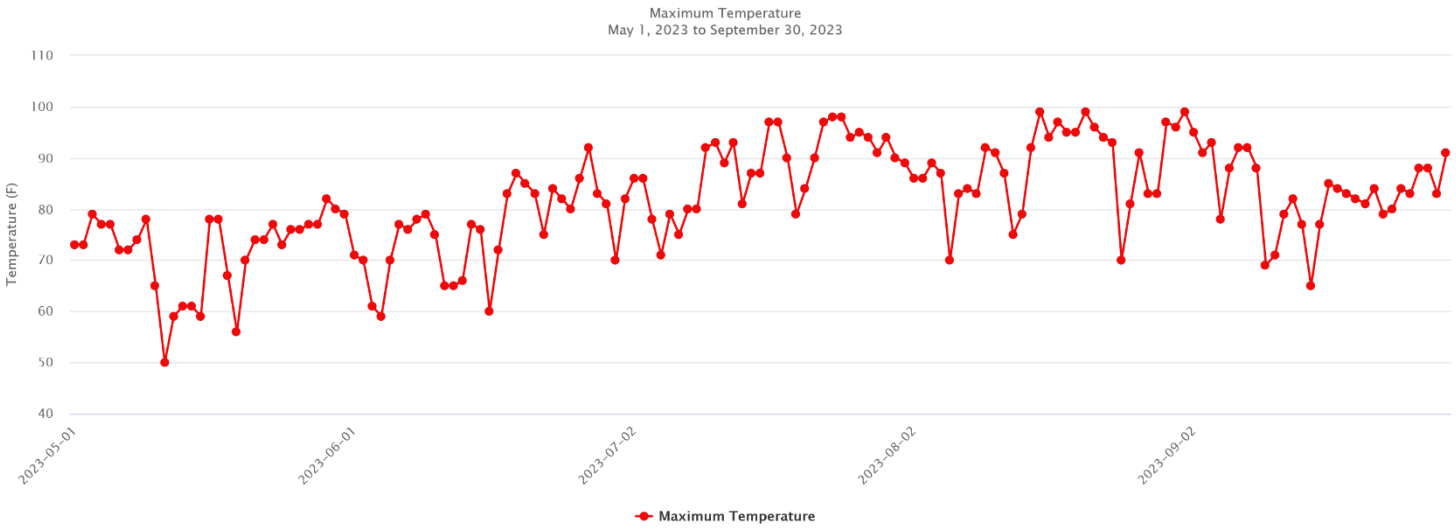
The warmest day in May was the 29th, when temperatures reached 82°F. The average temperature for the month was 59.4°F, 2.0° above average, making it the 35th warmest May on record. May 2022 was the 84th warmest.

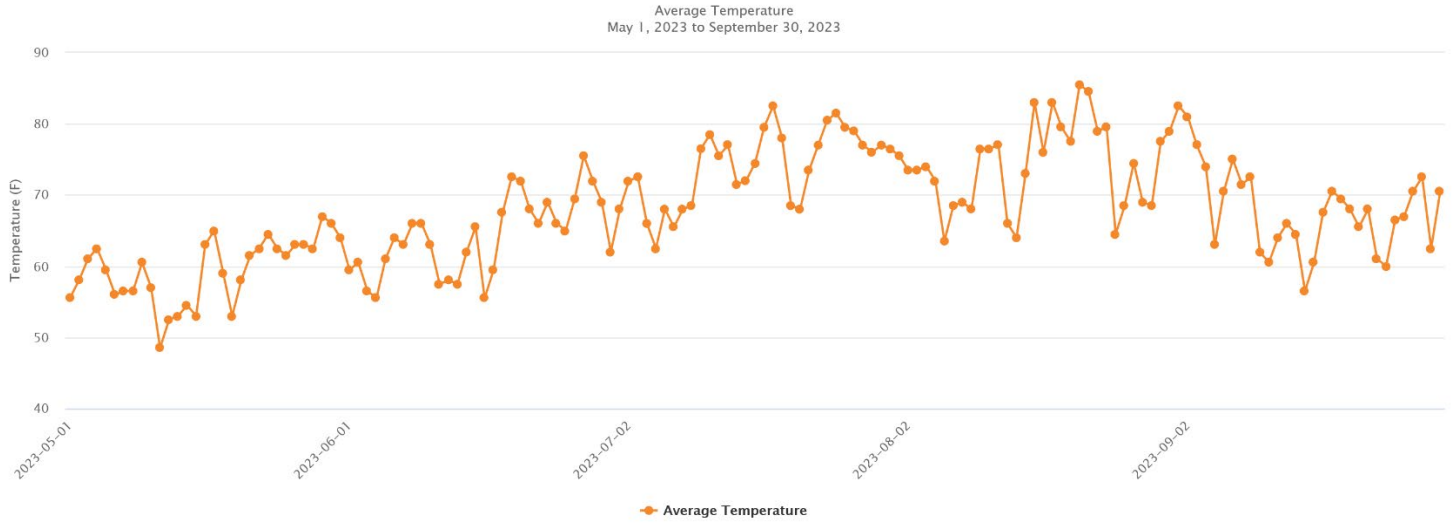
There was one day in June when temperatures reached 90°F, which was the maximum recorded temperature occurring on the 27th. The average temperature for the month was 64.2°F, 4.0°F below normal, the 127th warmest June on record. In comparison, June 2022 was the 28th warmest and had 13 days over 90°F.

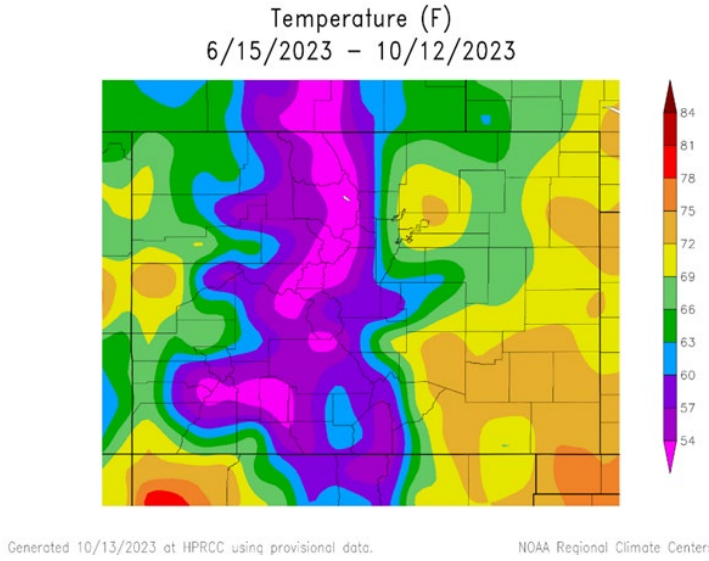
The average temperature in July was 73.9°F, the 67th warmest July and 1.2°F below normal. There were 16 days in July when the temperature exceeded 90°. The maximum recorded temperature was 98°F on the 23rd and 24th. July 2022 was not only the 2nd warmest July on record, but the 2nd warmest month in Denver history.

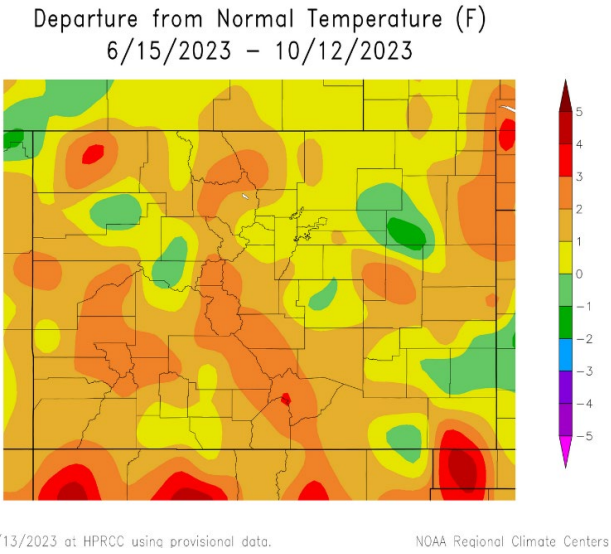
There were 15 days in August where the temperature exceeded 90°F. The maximum recorded temperature was 99°F on the 16th and 21st, the warmest recorded days of the season. The average temperature was 74.2°F, 1.3°F above normal, making 2023 the 18th warmest August for the region. August 2022 was the 4th warmest on record.

September 2023 was tied for the 8th warmest on record with an average temperature of 68°F, 3.2°F above normal. There were seven days with temperatures above 90°F, the warmest day being the 1st at 99°F. September 2022 was the 3rd warmest on record.









https://hprcc.unl.edu/onlinedataservices.php
https://www.noaa.gov/weather
https://www.weather.gov/

VDCI Adult Mosquito Surveillance and Laboratory

Information about mosquito abundance and species diversity is essential to any IMM program. Vector Disease Control International's most used adult mosquito surveillance tool is the CDC light trap which uses carbon-dioxide from dry ice as bait to attract female mosquitoes seeking a blood meal from a breathing animal. Once attracted by the CO_2, the mosquitoes are lured by a small light to a fan that pulls them into a net for collection. Traps are set overnight at carefully selected sites with abundant harborage. They are collected the following morning and returned to VDCI's laboratory, where the contents of the trap nets are counted and speciated by trained technicians.

Additionally, the VDCI Surveillance Laboratory conducts an intensive larval identification program with larval mosquito samples collected by field technicians. This information is now invaluable in targeting mosquito control efforts as we gain a greater understanding of the habitat types preferred by Colorado mosquito species and the seasonality of these habitats as sites for mosquito development.

Specimens and data collected from these traps and larval identification are used in:

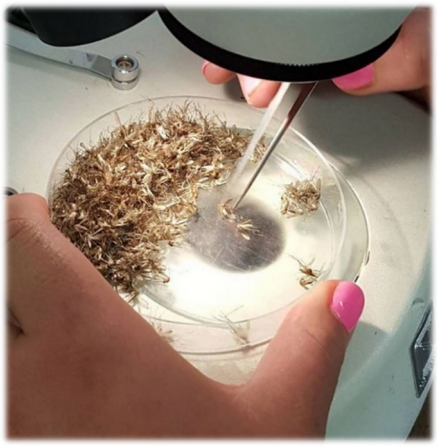
- Determining the effect of larval control efforts. Each mosquito species prefers specific types of habitats for larval development. If a trap includes large numbers, it could indicate the presence of an unknown larval habitat and, based on the species identification and known habitat preference for that species, direct field technicians as to possible sources of the mosquitoes collected.

- Determining larval and adult mosquito species. This helps to illustrate the threat of mosquito-borne disease amplification and transmission because different mosquito species can vector different diseases to people and animals.

- Determining where adult control efforts were necessary. While mosquito eradication is impossible, significant population reduction is achievable. In places where larval control is insufficient, such as neighborhoods where adult mosquitoes have migrated in from outside of the control area, it may be necessary to use adulticide methods, such as ULV truck fogging or barrier sprays of harborage areas. Trap counts that exceed an acceptable threshold for an area may trigger adult control measures.

- Surveillance for Mosquito-borne Disease. Historically, VDCI efforts were targeted primarily at controlling mosquito nuisance problems with limited disease surveillance. However, since the arrival of the West Nile virus in Colorado in August of 2002, the paradigm has shifted toward disease prevention and control. Accurate species identification of the mosquitoes in the traps is important when monitoring species population trends. It also is necessary for evaluating whether a population spike represents an actual increase in disease transmission potential or only an increased nuisance level.

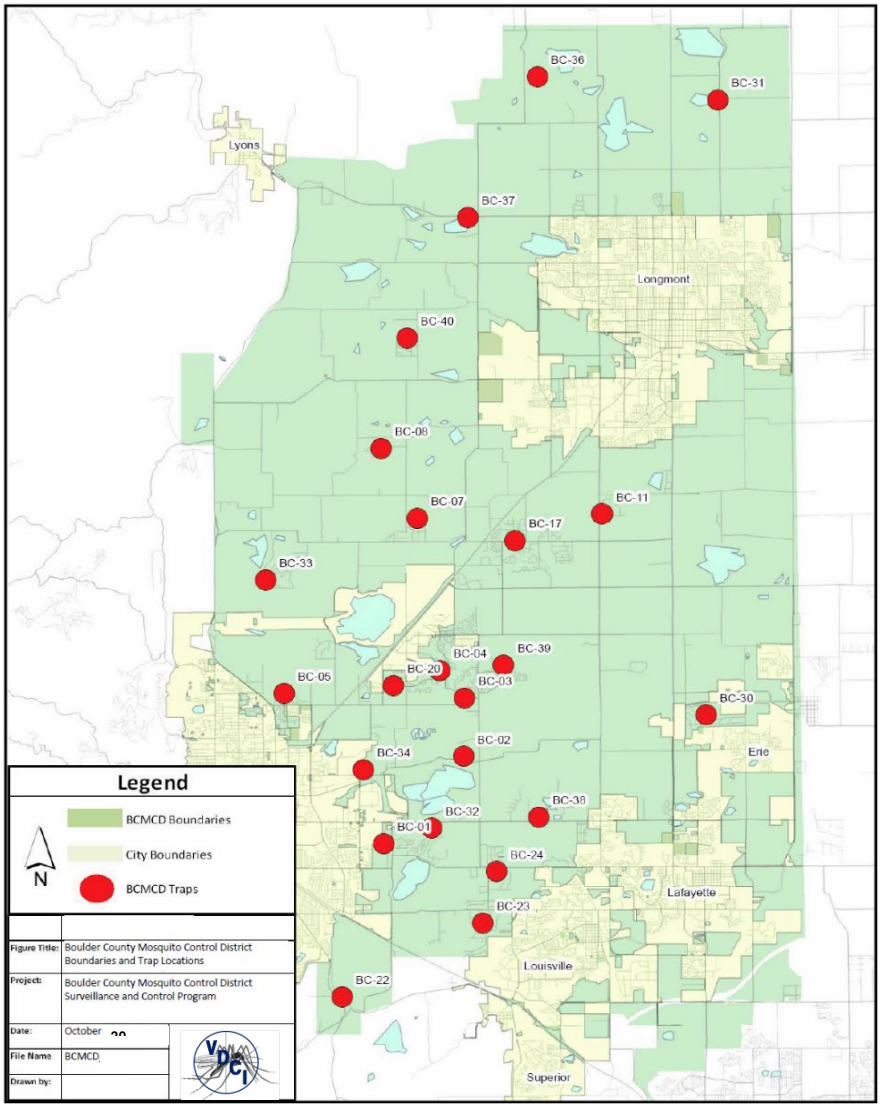
In 2023, Vector Disease Control International monitored a statewide network of hundreds of weekly trap sites, collecting 2,212,268 adult mosquitoes that were counted and identified by VDCI surveillance laboratories. An approximate 289.35% increase compared to 764,561 in 2022. A total of 435,751 adult mosquitoes were counted and identified in the entirety of Boulder County in 2023 compared to 202,476 in 2022 and 233,922 in 2021 (City of Boulder not included). While individual traps provide current seasonal information, trap data can be interpreted in the context of historical records for the same trap site if such data is available. Individual traps are also compared to other traps from around the region that were set on the same night and therefore exposed to similar weather conditions. Technicians working in the surveillance laboratories at Vector Disease Control International are trained to provide accurate species-level identification of both larval and adult mosquitoes.



Boulder County Surveillance Light Trap Data

In 2023, an average of 22 surveillance light traps monitored adult mosquito populations within the Boulder County Mosquito Control District on a weekly basis. VDCI began adult surveillance the week of June 5th and concluded the week of September 3rd corresponding with low adult mosquito activity.

2023 BCMCD Boundaries and Trap Locations



There were 294 CDC light surveillance trap nights set within Boulder County Mosquito Control District during the 2023 season. These traps collected a total of 178,674 mosquitoes. There was an average of 607.7 mosquitoes caught per trap per night and an average 304.5 *Culex spp.* mosquitoes per trap per night. A total of 16 species were represented in 2023 in BCMCD. The composition of mosquitoes collected was 82,652 (46.3%) *Aedes/Ochlerotatus spp.*, 1,496 (0.8%) *Anopheles spp.*, 973 (0.5%) *Coquillettidia spp.*, 89,514 (50.1%) *Culex spp.*, and 4,039 (2.3%) *Culiseta spp*.

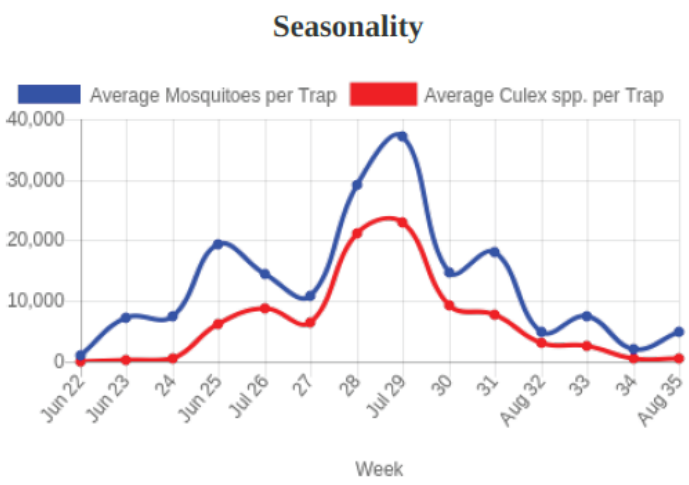
By comparison, in 2022 there were 325 CDC light surveillance traps set within Boulder County Mosquito Control District. These traps collected a total of 90,716 mosquitoes. There was an average of 279.1 mosquitoes caught per trap per night and an average 85.6 *Culex spp.* mosquitoes per trap per night. A total of 17 species were recorded in 2022. The composition of mosquitoes collected was 60,794 (67.0%) *Aedes/Ochlerotatus spp.*, 1,074 (1.2%) *Anopheles spp.*, 301 (0.3%) *Coquillettidia spp.*, 27,806 (30.7%) *Culex spp.*, and 741 (0.8%) *Culiseta spp*.

2023 Boulder County Mosquito Control District Light Trap Composite Data

Total number of trap/nights set:	294
Total number of mosquitoes collected:	178,674.0
Average mosquitoes per trap/night:	607.7
Average Culex per trap/night:	304.5

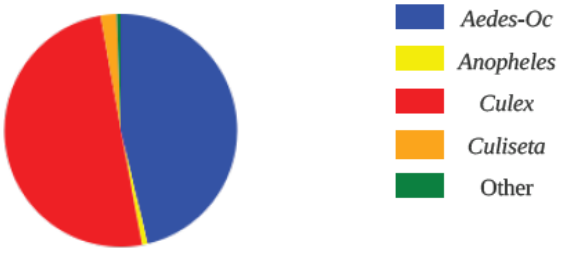
Species collected and abundance:

Aedes cinereus	76.0	0.0%
Aedes dorsalis	4,173.0	2.3%
Aedes fitchii	14.0	0.0%
Aedes hendersoni	316.0	0.2%
Aedes increpitus	12,504.0	7.0%
Aedes melanimon	1,773.0	1.0%
Aedes nigromaculis	115.0	0.1%
Aedes trivittatus	5,133.0	2.9%
Aedes vexans	58,548.0	32.8%
Anopheles freeborni	1,496.0	0.8%
Coquillettidia perturbans	973.0	0.5%
Culex pipiens	5,401.0	3.0%
Culex salinarius	969.0	0.5%
Culex tarsalis	83,144.0	46.5%
Culiseta incidens	1.0	0.0%
Culiseta inornata	4,038.0	2.3%



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	82,652	46.3%
Anopheles	1,496	0.8%
Culex	89,514	50.1%
Culiseta	4,039	2.3%
Other	973	0.5%



2023 West Nile Virus Season

Background

West Nile Virus (WNV) was first identified in Uganda in 1937. Since that time, activity has been documented throughout Africa, Europe, West and Central Asia, and areas of the Middle East. The virus made its first appearance to North America in 1999 when it was documented in New York City. WNV comes from a family of viruses known as Flaviviridae and is closely related to viruses which can have severe effects on both humans and animals such as Japanese Encephalitis and St. Louis encephalitis.

WNV has a wide range of symptoms which can range from mild flu like symptoms to death. Of humans affected, nearly 80% will show no symptoms at all. Most people who do show symptoms will usually suffer from flu like symptoms. However, approximately 1% of people will develop much more severe symptoms including meningitis (inflammation of the linings surrounding the brain and spinal cord), encephalitis (inflammation of the brain), or very rarely poliomyelitis which can cause paralysis in parts of the body.

Since the introduction of WNV to the United States, the virus has made a complete westward expansion to the West Coast. Starting in the Northeastern parts of the United States, the virus steadily progressed through the South, the Midwest, the Rocky Mountain region, and now the Western States. WNV activity has been documented in all US states except Alaska and Hawaii. This extensive distribution is due to the ability of the virus to establish and persist in the wide variety of ecosystems present across the country. WNV has been detected in 65 different mosquito species in the U.S., though it appears that only a few *Culex* species drive epizootic and epidemic transmission.

Although West Nile virus has been endemic to the United States since 1999, researchers continue to seek an understanding for some of the factors which contribute to region specific spikes in vector abundance and human risk. We still do not understand why some humans develop West Nile fever while other infections develop into more serious West Nile encephalitis or West Nile meningitis cases. Additionally, physicians and researchers continue to seek answers to the variable recovery times and occurrence of deaths that result with some infections. WNV has expanded to the point that it can now be found in all 48 contiguous states and has produced two additional, large nationwide epidemics in 2003 and 2012.

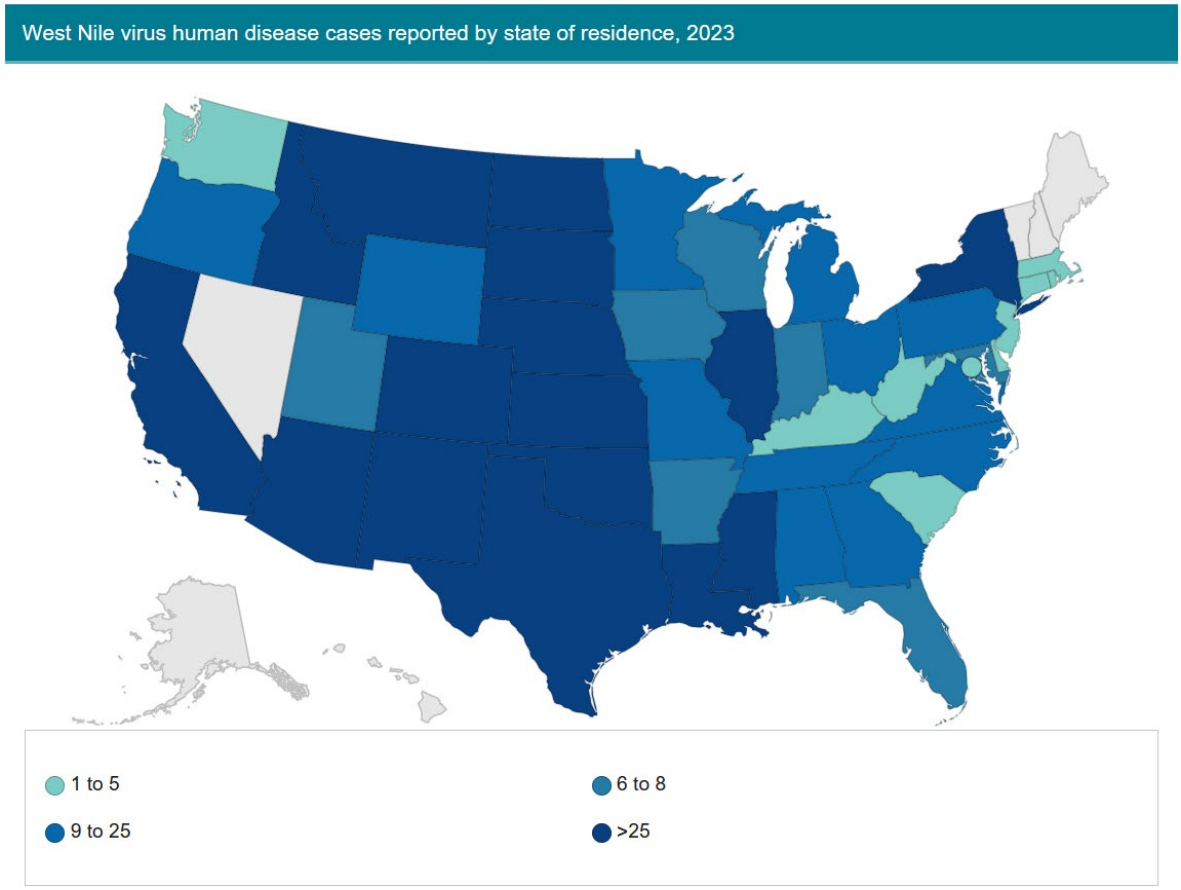
Colorado first saw activity of the virus late in the summer of 2002. In 2003 Colorado was the hardest hit state in the country, compiling 2,947 human cases and 63 deaths, most of which occurred along the Front Range. By 2004 most of the cases shifted to the Western Slope and the state totaled 291 cases with 4 deaths (Mesa County). West Nile Virus has been present in Colorado ever since.

As West Nile Virus is endemic to Colorado, all residents should always be encouraged to take personal protective measures during the season, such as draining water from properties, avoiding the outdoors at dawn and dusk when possible, and defending themselves by wearing repellant and dressing appropriately with pants and long sleeves.

2023 West Nile Virus Season - United States

As of October 13th, 2023, a total of 45 states and the District of Columbia have reported West Nile virus infections in people, birds, or mosquitoes in 2023. Overall, 1,776 human cases of West Nile virus disease across 45 states have been reported to the Centers for Disease Control and Prevention (CDC). 1,154 are reported to be neuroinvasive. Non-human West Nile virus activity (mosquitoes, birds, or sentinel animals) has been reported in 48 states.

As of the same day in 2022, a total of 41 states had reported 656 human cases of WNV and 46 deaths. Ultimately 42 states reported 1,132 human cases, 862 hospitalizations and 93 deaths in 2022. 827 cases were neuroinvasive. Last year ranked 15th in deaths and 16th in overall cases since WNV was first reported in the US in 1999.



https://www.cdc.gov/westnile/statsmaps/current-season-data.html

2023 West Nile Virus Season - Colorado

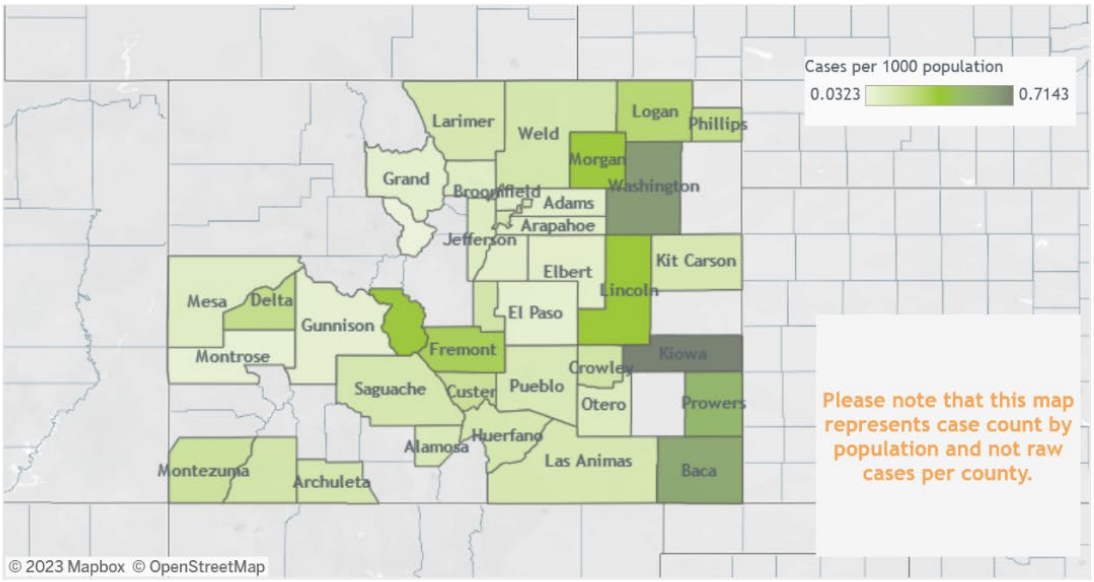
The Colorado Department of Public Health & Environment (CDPHE) began testing mosquito samples in early June. As of October 11th, there have been 192 West Nile virus positive mosquito pools across the Colorado counties of Adams (2), Arapahoe (7), Boulder (22), Delta (3), Denver (5), Jefferson (1), La Plata (1) Larimer (134), Pueblo (2), and Weld (15).

There have been 582 reported human cases in Adams (41), Alamosa, (2) Arapahoe (54), Archuleta (2), Baca (2), Boulder (29), Broomfield (4), Chaffee (7), Crowley (1), Custer (1), Delta (7), Denver (93), Douglas (26), El Paso (45), Elbert (2), Fremont (15), Grand (1), Gunnison (1), Huerfano (1), Jefferson (57), Kiowa (1), Kit Carson (1), La Plata (9), Larimer (50), Las Animas (2), Mesa (14), Montezuma (5), Montrose (2), Morgan (10), Otero (2), Philips (1), Prowers (6), Pueblo (22), Saguache (1), Summit (1), Teller (4), Washington (3), and Weld (49) counties. CDPHE currently reports 356 cases requiring hospitalization and 43 fatalities. 298 cases had neurological symptoms.

There were 206 cases and 20 deaths in 2022, placing it at 5th for overall cases, and 3rd in deaths since WNV first became reportable in Colorado in 2003. That year 66 deaths were reported. With 43 deaths currently, 2023 will rank at least 2nd.

Case Map and Demographics

People affected by West Nile virus per 1000 population by county of residence, 2023



Age distribution of people affected by West Nile virus

Avg. Age	59
Median Age	62
Max. Age	94
Min. Age	0

Number of people affected by reported sex

Female	230
Male	352

Number of people affected per county

Adams	Alamosa	Arapahoe	Archuleta	Baca	Boulder	Broomfield	Chaffee	Crowley	Custer	Delta	Denver	Douglas	El Paso	Elbert	Fremont	Grand	Gunnison	Huerfano	Jefferson	Kiowa	Kit Carson	La Plata	Larimer	Las Animas	Lincoln	Logan	Mesa	Montezuma	Montrose	Morgan	Otero	Phillips	Prowers	Pueblo	Saguache	Summit	Teller	Washington	Weld
41	2	54	2	2	29	4	7	1	1	7	93	26	45	2	15	1	1	1	57	1	1	9	50	2	2	6	14	5	2	10	2	1	6	22	1	1	4	3	49
7%	0%	9%	0%	0%	5%	1%	1%	0%	0%	1%	###	4%	8%	0%	3%	0%	0%	0%	###	0%	0%	2%	9%	0%	0%	1%	2%	1%	0%	2%	0%	0%	1%	4%	0%	0%	1%	1%	8%

(Denver 16%, Jefferson 10%)

People affected by West Nile virus 2023

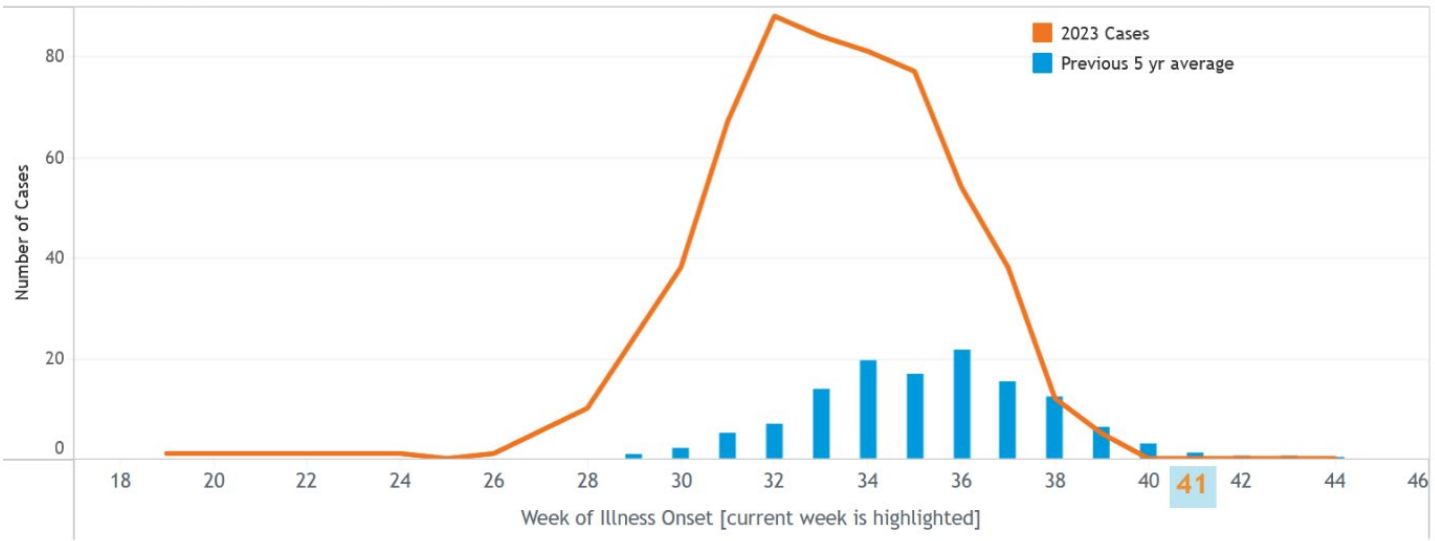
People affected: 582

Affected people who died: 43

Affected people with neurologic symptoms: 298

Affected people requiring hospitalization: 356

Number of people affected by West Nile virus in Colorado, 2023



https://cdphe.colorado.gov/animal-related-diseases/west-nile-virus/west-nile-virus-data

2023 West Nile Virus Season - Boulder County

VDCI and BCMCD use the adult mosquito data from weekly trap collections to help determine local areas of concern for public awareness and safety as well as to monitor the local vector mosquito populations. Many local health departments use mosquito-based surveillance indicators to assess the weekly risk of West Nile transmission and guide response decisions for adult mosquito control applications. The vector index and infection rate are derived by testing the mosquitoes VDCI collects for the presence of West Nile virus. This value is closely monitored by the CDPHE and local health departments to evaluate the risk posed by the vector mosquito population.

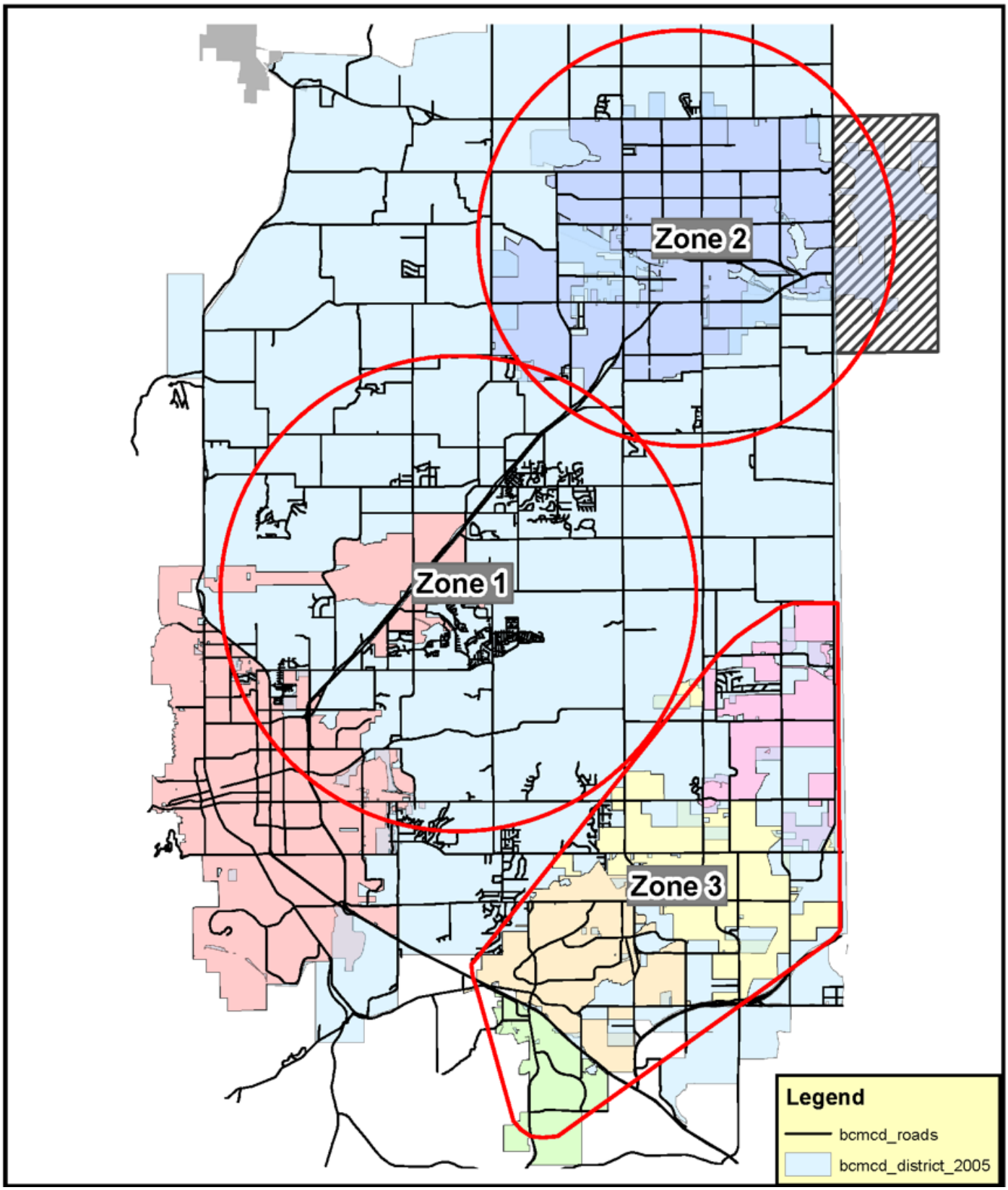
As defined in the CDC guidelines for West Nile virus surveillance, prevention and control, the vector index (VI) is an estimate of the number of West Nile virus infected mosquitoes in an area. This number can serve as a human health risk value. An operational value of 0.75, which was derived from the comparison of historical data for human infections, as well as relative abundance and infection in mosquitoes, serves as an indicator of high risk for West Nile virus transmission to humans in the corresponding area. As the value of the vector index increases there is a corresponding risk of human disease and this value can be used to offset epidemics. A VI of 0.00 or a negative test result does not indicate the absence of infected mosquitoes in the area.

Due to budget cutbacks associated with West Nile virus surveillance in recent years, the CDPHE does not have the ability to test mosquitoes from every trap set across the state. As a result, there is select testing done within three sentinel zones in Boulder County. *Culex species* mosquito samples are sent to CDPHE for WNV testing on a weekly basis as part of the state's Sentinel Encephalitis Surveillance program, which VDCI is contracted separately through BCPH to perform.

Boulder County Vector Index 2023			
Reported by BCPH as of 9/16/2023	Sentinel Zone 1	Sentinel Zone 2	Sentinel Zone 3
	Boulder County	Longmont	Louisville, Lafayette, Superior, Erie
Season Week	Vector Index	Vector Index	Vector Index
Week 23 (June 5)	0.00	0.00	0.00
Week 24 (June 12)	-	-	-
Week 25 (June 19)	0.00	0.00	0.00
Week 26 (June 26)	0.00	0.00	0.61
Week 27 (July 3)	0.00	4.35	0.00
Week 28 (July 10)	0.00	0.00	1.53
Week 29 (July 17)	3.31	16.08	5.44
Week 30 (July 24)	14.10	13.82	10.74
Week 31 (July 31)	5.95	14.12	1.72
Week 32 (Aug 7)	0.00	0.00	0.00
Week 33 (Aug 14)	0.97	3.20	0.81
Week 34 (Aug 21)	1.33	3.87	1.86
Week 35 (Aug 28)	0.19	0.50	0.40
Week 36 (September 4)	0.20	0.00	0.00

The actual 2023 weekly Vector Index rates, as calculated by BCPH, for sentinel zones 1, 2 and 3 are illustrated above. WNV was first detected in Boulder County in week 26. The next week saw a VI of 4.35 in Zone 2, well over the 0.75 indicator level. Weeks 29-31 saw unprecedented VI numbers, particularly in Zone 2, which triggered additional adulticide operations in the area. Activity in 2023 was higher compared to 2022 and 2021. 32.2% of submitted mosquito pools were positive, down from 42.4% in 2022. While a lower percentage of pools were positive in 2023, *Culex* abundance was much greater than 2022. 31.3% of pools were positive in 2021.

Boulder County WNV Sentinel Zones



2023 Larval Control Operations

Years of research and practical experience have shown that the most effective way to control mosquito populations is through an aggressive Integrated Pest Management (IPM) approach. This approach aims at using a variety of concepts, tools, and products to reduce a pest population to tolerable levels. Translating these ideas to mosquito control, VDCI has found the most environmentally and economically sound approach is through targeting the aquatic larval stage of the mosquito. Targeting this stage prevents the emergence of the adult mosquito and thus the inevitable result of disease and nuisance. In Colorado over 90% of VDCI operational efforts are focused on larval control.

Larval mosquito control can be achieved in several ways including biological, biochemical, chemical, and mechanical means. Although there are a variety of methods for reducing larval populations, some options may have greater consequences than benefits. Mechanical or habitat modification is a technique which may be used, but the area to be modified and the extent to which the work will affect the surrounding area must be carefully assessed. Permanent ecological damage may occur if extensive habitat change has taken place.

VDCI's favored method of larval mosquito control is through bacterial biological larvicide products. The main product used by VDCI has an active ingredient that is a variety of bacteria (Bacillus thuringiensis var. israeliensis). Bti as it is known has become the cornerstone of mosquito control programs throughout the world. The benefits include its efficacy and lack of environmental impacts. When used properly successful control without impact to aquatic invertebrates, birds, mammals, fish, amphibians, reptiles or humans can be achieved. A broad label allows for the use of the product in many natural and manmade habitats. Another bacterial product closely related to Bti is Bacillus sphaericus (Bs). In addition to the benefits of Bti, Bs is a true biological control agent in that it remains in the water column through multiple broods, or generations, of mosquitoes. Unfortunately, the residual benefit of the control comes at a cost in price and is only effective under very specific conditions and mosquito species.

Other larval control products include an insect growth regulator (methoprene) and a special mineral oil blend. Methoprene is a synthetic copy of a juvenile growth hormone in larval mosquitoes. The hormone prevents normal development of the adult mosquito in the pupal stage eventually causing death. While a good control product, the high cost makes it a poor candidate to be the predominant product in a large-scale program.

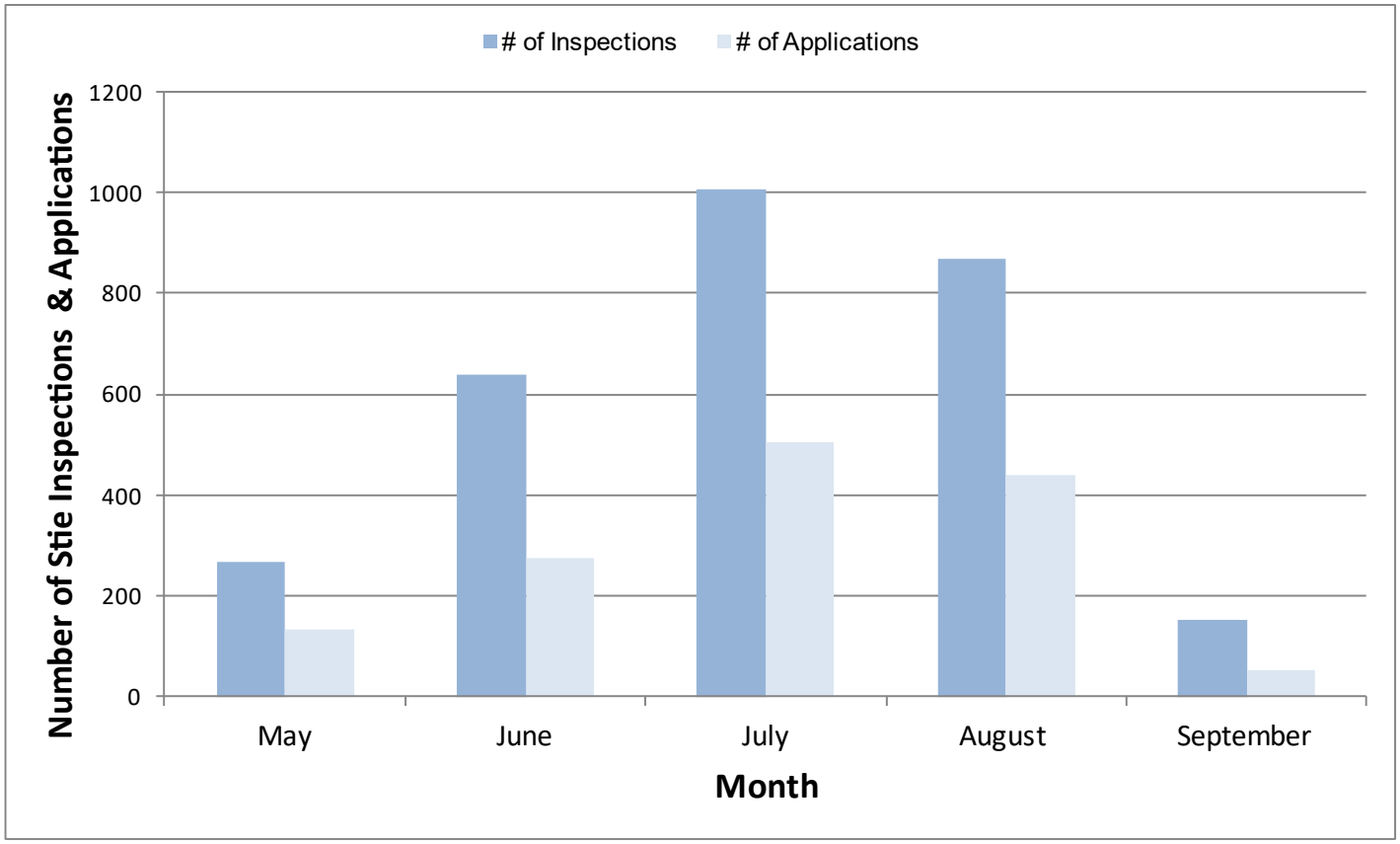
Pre-season larval control work involved ground truthing GIS maps as well as remapping areas where new development and altered landscapes occurred. The hiring of seasonal field technicians began in April and continued into July. VDCI began larval site inspections the first full week in May and VDCI's new technician classroom and field training was conducted during the week of May 21st. Additional field training by VDCI management and veteran employees lasted through May and full-time field activities were in effect by early June. Many sites were selected for monthly and/or residual larvicide treatments.

In 2023, Vector Disease Control International performed 2,933 larval site inspections at 1,871 active breeding sites throughout the district. Of these individual inspections, 2,436 sites (83.1%) were wet upon inspection and 1,406 (57.7%) were producing mosquito larvae. VDCI technicians applied 3,238.4 lbs. of VectoBac G *(Bti)*, 640.3 lbs. of Vectolex FG *(Bs),* 120.0 lbs. of Altosid XRG (S-Methoprene), and 21.7 gallons of BVA 2 larvicide oil to 709.8 acres of land within the Boulder County Mosquito Control District.

2023 Summary of Larval Control Product Applications by Type

Larval Control Product Types	2018	2019	2020	2021	2022	2023
Bacillus thuringiensis israelensis (Bti)						
Vectobac G (lbs) EPA Reg. #73049-10	2,129.5	5,201.8	4,193.7	4,111.0	4,838.8	3,238.4
Bacillus thuringiensis israelensis (Bti) +Bacillus sphaericus (Bs)						
Vectomax FG (lbs) EPA Reg. #73049-429	0.0	0.0	0.0	7,194.3	0.0	0.0
Bacillus sphaericus (Bs)						
Vectolex FG/WSP (lbs) EPA Reg. #73049-20	372.1	867.4	1,068.0	8.0	1,672.4	640.3
Vectolex WDG (lbs) EPA Reg. #73049-57	3.6	7.4	8.4	1.9	0.0	0.0
S-Methoprene						
Altosid Briquet (oz) EPA Reg. #2724-375	0.0	4.0	1.0	0.0	0.0	0.0
Altosid XRG (lbs) EPA Reg. #2724-451	1.1 oz	1 oz	14 oz	8.1	112.6	120.0
Mineral Oil						
BVA 2 Larvicide Oil (gal) EPA Reg. #70589-1	118.7	79.4	70.4	89.2	53.8	21.7

2023 Larval Site Inspections and Applications by Month



2023 Adult Mosquito Control Operations

VDCI's goal is to provide all residents with the best options for safe, effective, modern mosquito management. While the primary emphasis of our mosquito management program is to control mosquitoes in the larval stage, this environmentally focused program maintains adulticiding as a final resort when adult mosquito populations surpass nuisance or risk thresholds. Mosquito surveillance results are used to make data driven decisions regarding areas that need to be sprayed for adult mosquito control. Such spraying is targeted to specific sectors determined by said data thereby reducing the size and frequency of spraying a given area.

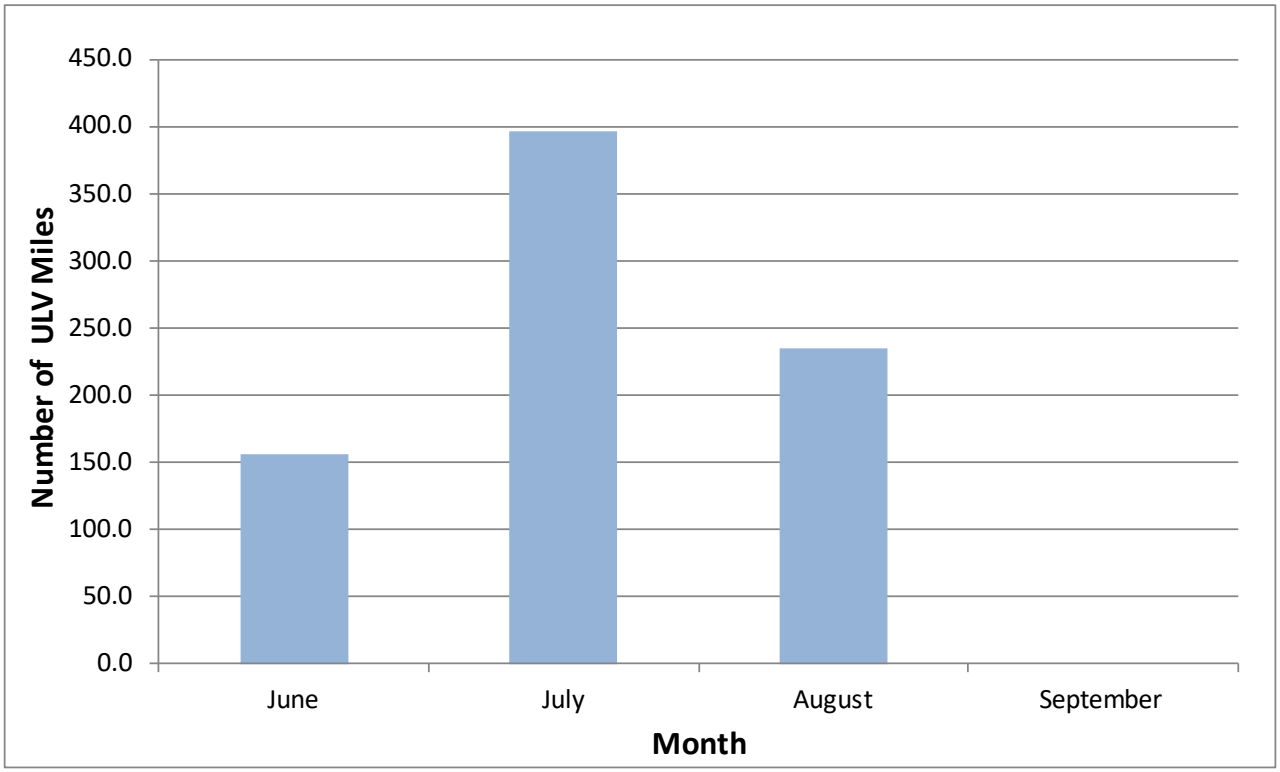
VDCI uses all available data from CDC light traps, Mosquito Hotline annoyance calls, and field technician reports to focus adult mosquito control efforts on specific, very limited "targeted" areas. In parts of the community where high numbers of mosquito annoyance calls are received, "floater" CDC light traps are set to evaluate adult population levels and species make-up. In most cases, a direct correlation is evident between areas with high complaint calls and high trap counts. While this correlation allows us to focus adult control in these areas, the emphasis is placed on finding the source of breeding and continued larval control measures.

VDCI uses state of the art technology, calibrated application timing, and least-toxic products to minimize all non-target impact. All adult mosquito control is accomplished using calibrated Ultra Low Volume (ULV) equipment and performed after dusk. This type of equipment produces droplets averaging 12 microns in diameter and allows for a minimal amount of product to be put into the environment. These treatments take place in the evening when mosquitoes are flying in greater numbers and non-target activity is greatly reduced. Using this application technique, the overall goal of minimal environmental impact and effective adult control is achieved in the targeted area. VDCI utilizes the water-based product Aqua Perm-X UL 30-30 for ULV adult mosquito control. This uses the highly effective pyrethroid Permethrin as the active ingredient, while the water-base provides a much more environmentally sound solution to traditional oil-based adulticides. Daytime backpack barrier applications using the product Talstar Pro and utilizing the pyrethroid Bifenthrin are also effective in controlling adult mosquitoes.

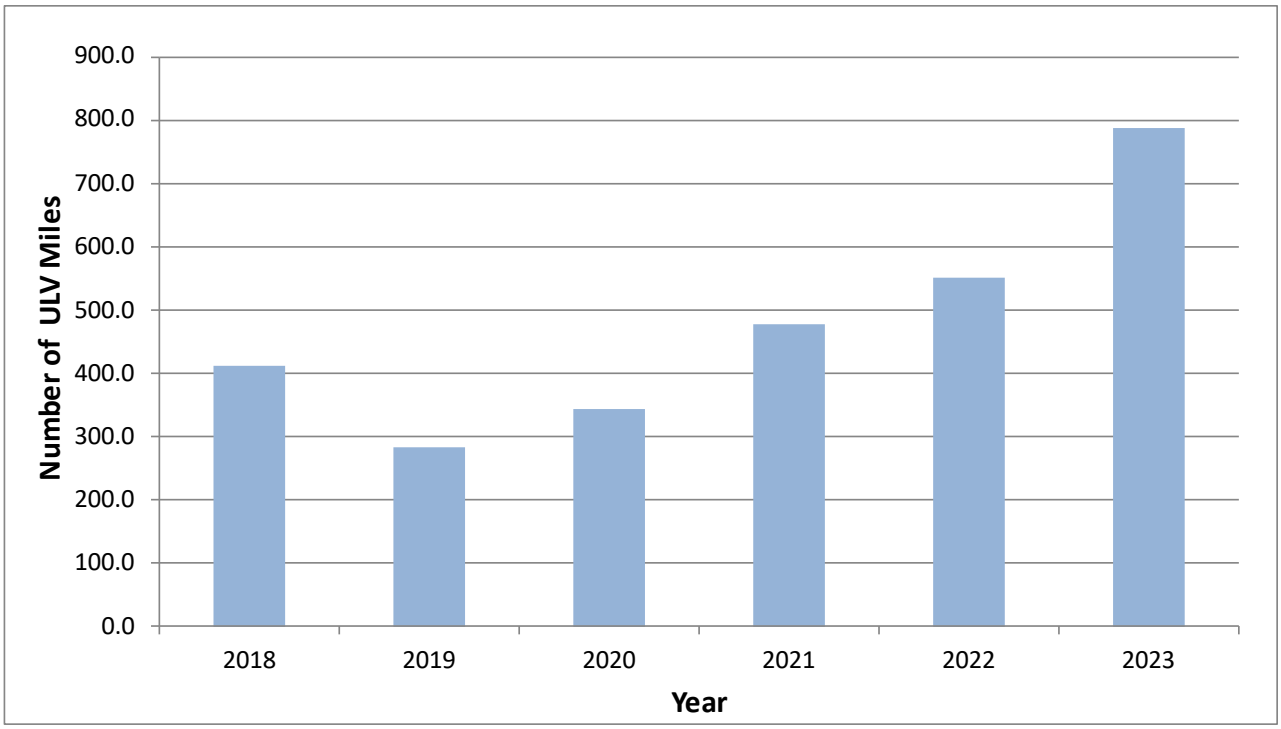
In 2023, the program continued to use a week-to-week evaluation of the adult mosquito populations and utilized approximately 250 as a threshold for nuisance mosquitoes and 50 for vector-disease mosquitoes. Additionally, a continuing weekly evaluation of several factors was utilized to determine if a neighborhood or spray zone were to have ULV adult control operations conducted June through September. These factors include: current weekly trap species diversity and abundance (*Aedes vs. Culex spp*.), previous weekly trap species diversity and abundance (*Aedes vs. Culex spp*.), declining or increasing trap diversity and abundance (*Aedes vs. Culex spp*.), the volume of resident annoyance calls from a given area, human population density in the trap vicinity, and WNV activity in the area.

During the 2023 season a total of 796.1 linear miles (231.8 gallons) of roads and access paths within BCMCD were sprayed using the adulticide AquaPerm-X UL 30-30 (Active Ingredient – Permethrin). In addition, a total of 6 gallons of Wisdom TC (Active Ingredient – Bifenthrin) were applied as a daytime adult barrier application.

Adulticide Miles By Month, 2023



Adulticide Miles Comparison by Year



Public Relations and Education

VDCI provides strong Public Outreach and Education Programs to residents in all communities we service. Citizen complaints, inquiry, information and satisfaction surveys can aid in evaluating the effectiveness of a program. VDCI constantly looks for ways to better serve the communities we work with and encourages both the citizen and local media involvement to increase the effectiveness of our programs. We have clearly demonstrated that commitment and belief by proactively serving our contracted communities with numerous innovative programs, activities and services.

Customer service is always a high priority for VDCI. We take pride in training every technician so that they have the knowledge to provide residents with the correct answers to their questions. Each field technician spends part of their day responding to resident concerns in their work area. This in-field customer service personalizes the mosquito control program, provides VDCI with local information on mosquito activity and presents a valuable opportunity to educate our residents about mosquito biology and control.

MosquitoLine™

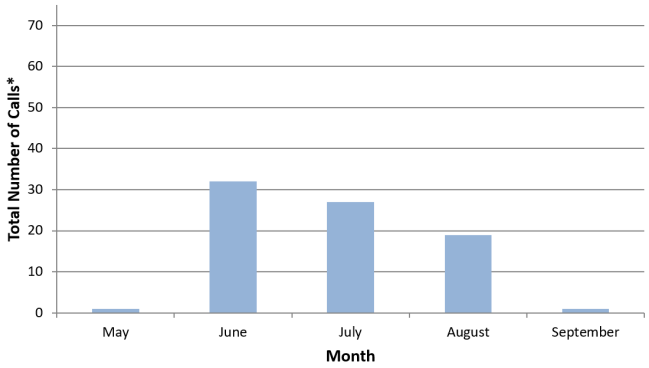
VDCI maintains a toll-free telephone for Colorado, (877) 276-4306 as well as two local lines, (303) 428-5908 and (303) 466-1892 to accept calls from the public concerning:

- Information requests about mosquito biology and source reduction of mosquito habitats
- Information on program components, operations and monitoring
- Personal protection options for mosquito annoyances and West Nile virus risk and activity
- Reports about mosquitoes, possible larval mosquito habitats and larviciding requests
- Request notification or ULV shut-off when adulticide spraying is planned in their neighborhood
- Request health and safety information about mosquito control operations and pesticide products used

VDCI provides the Mosquito Hotline to residents to reduce workload by municipal personnel. This enables direct communication and response by mosquito control employees to resident concerns about West Nile virus and larval site activity and treatment. VDCI maintains a log of calls received and will summarize call activity in monthly and annual reports.

In 2023 Vector Disease Control International received approximately 189 phone calls or website submissions from residents of BCMCD. 40 of these requests were general adult mosquito complaints, 15 were for habitat assessment, 16 were requests for general information or other reasons, and 118 were for ULV adult control shut off and/or email notification.

2023 Mosquito Control Calls by Month



2023 Mosquito Control Calls by Category

Call Category	2023	
	Number of Calls	Percentage
Adult Complaint	40	21.2%
Habitat Assessment	15	7.9%
General Info/Other	16	8.5%
ULV Shutoff/Notification*	79	41.8%
ULV Notification*	39	20.6%
Total	**189**	100.0%
*Includes VDCI website submissions		

Call Notification & Shutoff System

VDCI acknowledges that adult mosquito control can be a sensitive matter to many residents; therefore, a Spray Shutoff and/or Notification request option is available to the public. Residents can call VDCI's MosquitoLine™ or submit a website request to be notified before adult control applications are performed and/or request that the ULV sprayer be shut off in front of their address.

The 2023 season concluded with 314 households on the Shutoff/Notification list, 156 were shutoff requests and 158 were notification only. Residents on the notification list were notified 24-48 hours in advance when their community was scheduled for ULV adulticide applications. VDCI used an automated service to contact residents by phone or text message and listed weekly ULV adult control operations on VDCI's website, www.vdci.net/colorado-schedules, which utilized Google Calendar and Maps.

VDCI
A Rentokil Company

Appendix A: Individual Light Trap Summaries

BC-02

Season: 05/01/2023 - 10/31/2023

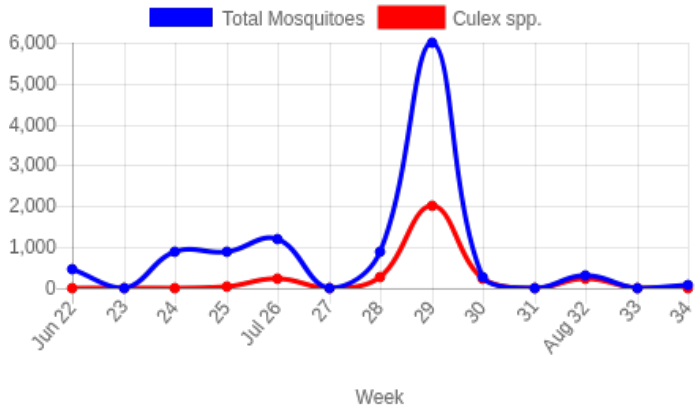
Trap Type: CDC Light Trap

Location: Cottonwood Kennels

GPS: 40.034715289245845, -105.18327008932829

Total number of trap/nights set:	11.0
Total number of mosquitoes collected:	10,990.0
Average mosquitoes per trap/night:	999.1
Average Culex per trap/night:	273.7

Seasonality

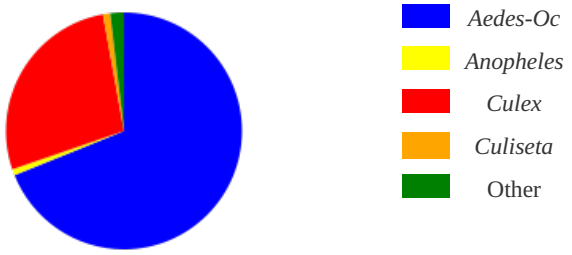


Species collected and abundance:

Aedes cinereus	18.0	0.2%
Aedes dorsalis	4.0	0.0%
Aedes hendersoni	68.0	0.6%
Aedes increpitus	4,573.0	41.6%
Aedes melanimon	27.0	0.2%
Aedes trivittatus	30.0	0.3%
Aedes vexans	2,853.0	26.0%
Anopheles freeborni	93.0	0.8%
Coquillettidia perturbans	204.0	1.9%
Culex pipiens	58.0	0.5%
Culex salinarius	36.0	0.3%
Culex tarsalis	2,917.0	26.5%
Culiseta inornata	109.0	1.0%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	7,573.0	68.9%
Anopheles	93.0	0.8%
Culex	3,011.0	27.4%
Culiseta	109.0	1.0%
Other	204.0	1.9%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-03

Season: 05/01/2023 - 10/31/2023

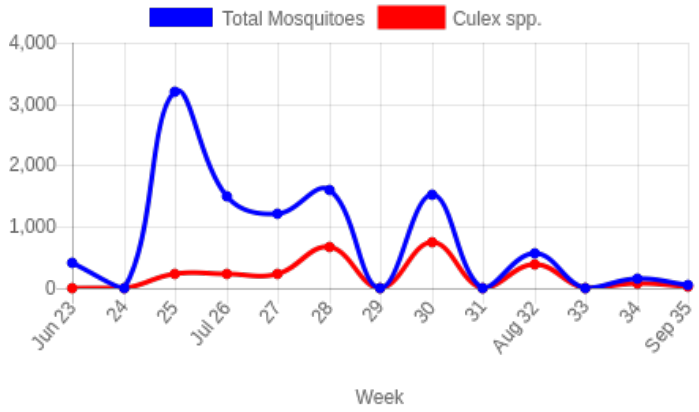
Trap Type: CDC Light Trap

Location: Gunbarrel SE - Pali Way

GPS: 40.0528576106867, -105.18391013145447

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	10,184.0
Average mosquitoes per trap/night:	727.4
Average Culex per trap/night:	185.6

Seasonality

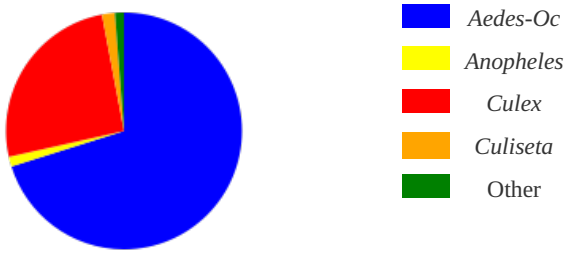


Species collected and abundance:

Aedes cinereus	4.0	0.0%
Aedes dorsalis	27.0	0.3%
Aedes hendersoni	20.0	0.2%
Aedes increpitus	3,891.0	38.2%
Aedes melanimon	120.0	1.2%
Aedes trivittatus	115.0	1.1%
Aedes vexans	2,967.0	29.1%
Anopheles freeborni	138.0	1.4%
Coquillettidia perturbans	124.0	1.2%
Culex pipiens	336.0	3.3%
Culex salinarius	104.0	1.0%
Culex tarsalis	2,158.0	21.2%
Culiseta inornata	180.0	1.8%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	7,144.0	70.1%
Anopheles	138.0	1.4%
Culex	2,598.0	25.5%
Culiseta	180.0	1.8%
Other	124.0	1.2%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-04

Season: 05/01/2023 - 10/31/2023

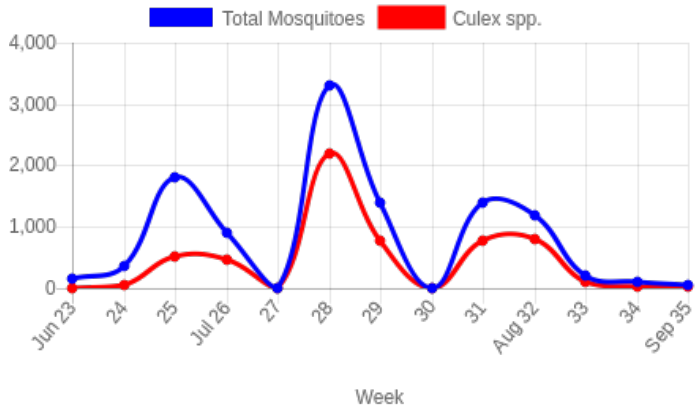
Trap Type: CDC Light Trap

Location: Gunbarrel NW - Red Fox Hills

GPS: 40.06165765517988, -105.19396003335714

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	10,869.0
Average mosquitoes per trap/night:	776.4
Average Culex per trap/night:	407.9

Seasonality

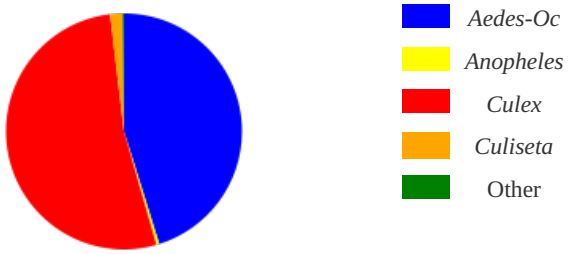


Species collected and abundance:

Aedes cinereus	2.0	0.0%
Aedes dorsalis	186.0	1.7%
Aedes increpitus	951.0	8.7%
Aedes melanimon	72.0	0.7%
Aedes trivittatus	35.0	0.3%
Aedes vexans	3,664.0	33.7%
Anopheles freeborni	44.0	0.4%
Coquillettidia perturbans	19.0	0.2%
Culex pipiens	1,889.0	17.4%
Culex salinarius	206.0	1.9%
Culex tarsalis	3,616.0	33.3%
Culiseta inornata	185.0	1.7%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	4,910.0	45.2%
Anopheles	44.0	0.4%
Culex	5,711.0	52.5%
Culiseta	185.0	1.7%
Other	19.0	0.2%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-05

Season: 05/01/2023 - 10/31/2023

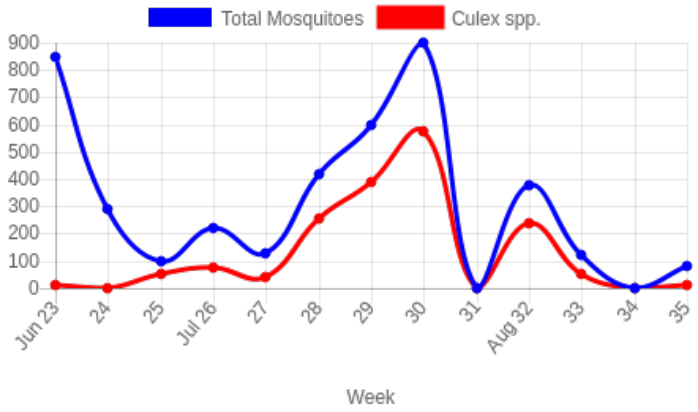
Trap Type: CDC Light Trap

Location: Orange Orchard

GPS: 40.05410768042116, -105.2548099681735

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	4,079.0
Average mosquitoes per trap/night:	291.4
Average Culex per trap/night:	120.4

Seasonality

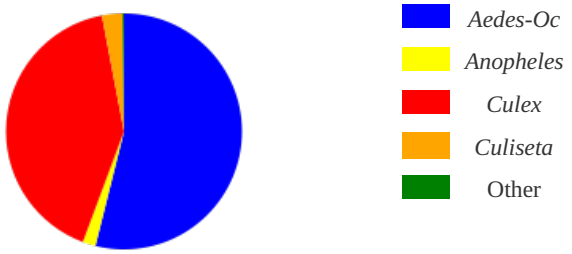


Species collected and abundance:

Aedes dorsalis	5.0	0.1%
Aedes increpitus	62.0	1.5%
Aedes melanimon	3.0	0.1%
Aedes trivittatus	34.0	0.8%
Aedes vexans	2,094.0	51.3%
Anopheles freeborni	73.0	1.8%
Coquillettidia perturbans	8.0	0.2%
Culex pipiens	125.0	3.1%
Culex salinarius	34.0	0.8%
Culex tarsalis	1,527.0	37.4%
Culiseta inornata	114.0	2.8%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,198.0	53.9%
Anopheles	73.0	1.8%
Culex	1,686.0	41.3%
Culiseta	114.0	2.8%
Other	8.0	0.2%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-07

Season: 05/01/2023 - 10/31/2023

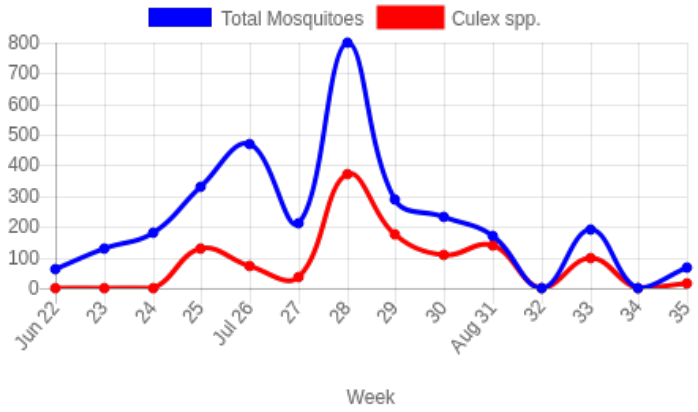
Trap Type: CDC Light Trap

Location: Brigadoon Glen/Left Hand Creek

GPS: 40.10856544917228, -105.20237009972334

Total number of trap/nights set:	13.0
Total number of mosquitoes collected:	3,135.0
Average mosquitoes per trap/night:	241.2
Average Culex per trap/night:	88.0

Seasonality

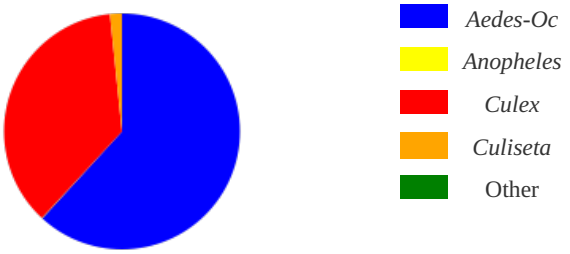


Species collected and abundance:

Aedes dorsalis	24.0	0.8%
Aedes hendersoni	10.0	0.3%
Aedes increpitus	56.0	1.8%
Aedes melanimon	14.0	0.4%
Aedes trivittatus	548.0	17.5%
Aedes vexans	1,286.0	41.0%
Anopheles freeborni	2.0	0.1%
Culex pipiens	34.0	1.1%
Culex salinarius	5.0	0.2%
Culex tarsalis	1,105.0	35.2%
Culiseta inornata	51.0	1.6%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	1,938.0	61.8%
Anopheles	2.0	0.1%
Culex	1,144.0	36.5%
Culiseta	51.0	1.6%
Other	0.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-08

Season: 05/01/2023 - 10/31/2023

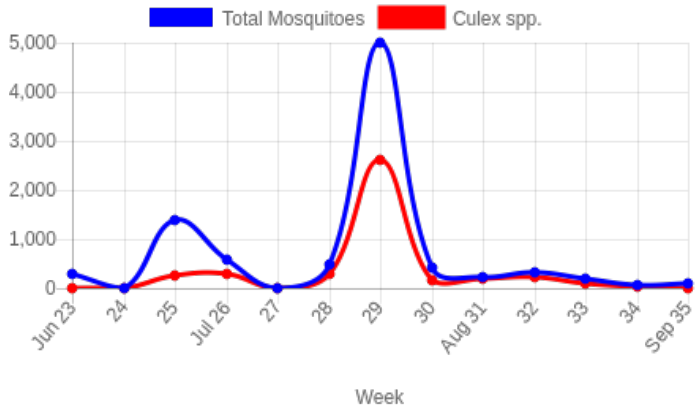
Trap Type: CDC Light Trap

Location: Boulder Hills

GPS: 40.13067309400645, -105.21678026765585

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	9,000.0
Average mosquitoes per trap/night:	642.9
Average Culex per trap/night:	296.1

Seasonality

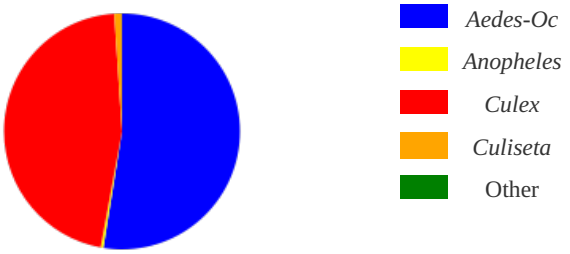


Species collected and abundance:

Aedes dorsalis	49.0	0.5%
Aedes increpitus	238.0	2.6%
Aedes melanimon	215.0	2.4%
Aedes trivittatus	1,104.0	12.3%
Aedes vexans	3,121.0	34.7%
Anopheles freeborni	34.0	0.4%
Coquillettidia perturbans	2.0	0.0%
Culex pipiens	112.0	1.2%
Culex salinarius	41.0	0.5%
Culex tarsalis	3,992.0	44.4%
Culiseta inornata	92.0	1.0%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	4,727.0	52.5%
Anopheles	34.0	0.4%
Culex	4,145.0	46.1%
Culiseta	92.0	1.0%
Other	2.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-11

Season: 05/01/2023 - 10/31/2023

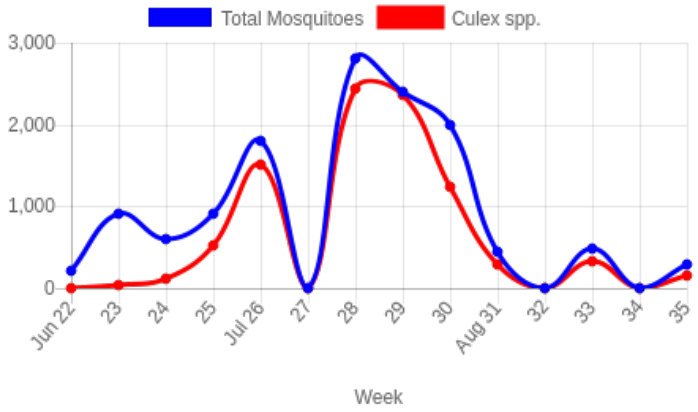
Trap Type: CDC Light Trap

Location: Niwot East - Majestic Road

GPS: 40.11000758268912, -105.13031020760536

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	12,822.0
Average mosquitoes per trap/night:	915.9
Average Culex per trap/night:	642.4

Seasonality

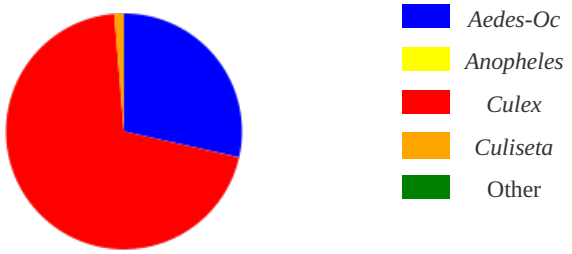


Species collected and abundance:

Aedes dorsalis	466.0	3.6%
Aedes increpitus	55.0	0.4%
Aedes melanimon	15.0	0.1%
Aedes nigromaculis	4.0	0.0%
Aedes trivittatus	13.0	0.1%
Aedes vexans	3,105.0	24.2%
Anopheles freeborni	3.0	0.0%
Culex pipiens	292.0	2.3%
Culex salinarius	60.0	0.5%
Culex tarsalis	8,641.0	67.4%
Culiseta inornata	168.0	1.3%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	3,658.0	28.5%
Anopheles	3.0	0.0%
Culex	8,993.0	70.1%
Culiseta	168.0	1.3%
Other	0.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-17

Season: 05/01/2023 - 10/31/2023

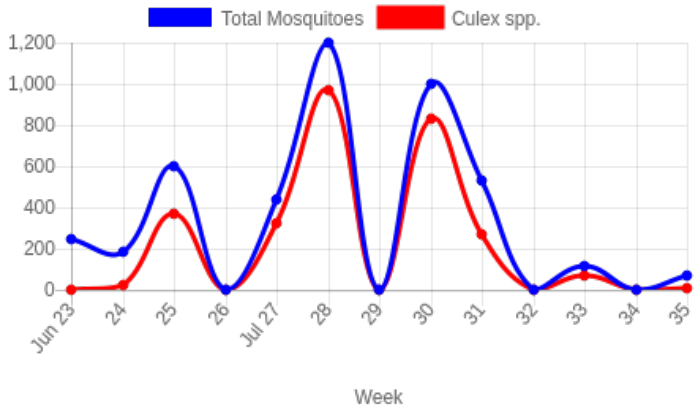
Trap Type: CDC Light Trap

Location: Niwot Central

GPS: 40.10181542708397, -105.16407016664743

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	4,404.0
Average mosquitoes per trap/night:	314.6
Average Culex per trap/night:	205.6

Seasonality

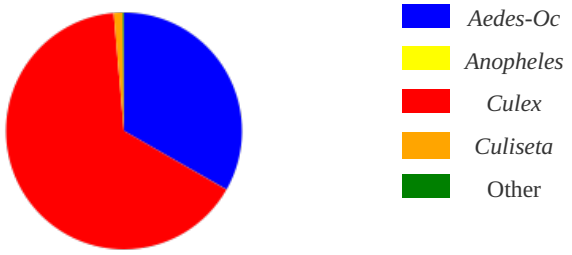


Species collected and abundance:

Aedes dorsalis	15.0	0.3%
Aedes fitchii	1.0	0.0%
Aedes hendersoni	6.0	0.1%
Aedes increpitus	93.0	2.1%
Aedes melanimon	8.0	0.2%
Aedes trivittatus	24.0	0.5%
Aedes vexans	1,317.0	29.9%
Anopheles freeborni	1.0	0.0%
Coquillettidia perturbans	6.0	0.1%
Culex pipiens	47.0	1.1%
Culex salinarius	11.0	0.2%
Culex tarsalis	2,820.0	64.0%
Culiseta inornata	55.0	1.2%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	1,464.0	33.2%
Anopheles	1.0	0.0%
Culex	2,878.0	65.3%
Culiseta	55.0	1.2%
Other	6.0	0.1%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-20

Season: 05/01/2023 - 10/31/2023

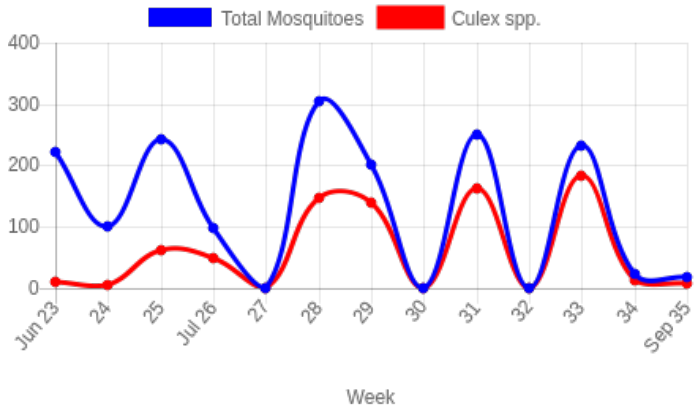
Trap Type: CDC Light Trap

Location: Willows/Gunbarrel Commons

GPS: 40.05680766041129, -105.21200995892286

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	1,692.0
Average mosquitoes per trap/night:	120.9
Average Culex per trap/night:	55.4

Seasonality

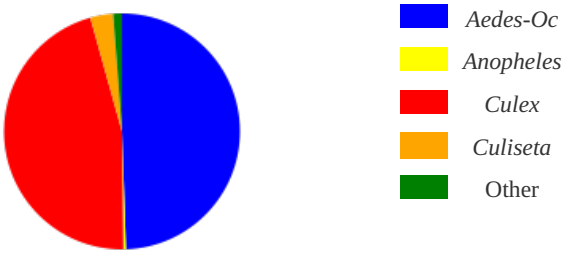


Species collected and abundance:

Aedes dorsalis	3.0	0.2%
Aedes increpitus	231.0	13.7%
Aedes melanimon	1.0	0.1%
Aedes trivittatus	2.0	0.1%
Aedes vexans	600.0	35.5%
Anopheles freeborni	6.0	0.4%
Coquillettidia perturbans	20.0	1.2%
Culex pipiens	280.0	16.5%
Culex salinarius	96.0	5.7%
Culex tarsalis	400.0	23.6%
Culiseta inornata	53.0	3.1%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	837.0	49.5%
Anopheles	6.0	0.4%
Culex	776.0	45.9%
Culiseta	53.0	3.1%
Other	20.0	1.2%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-22

Season: 05/01/2023 - 10/31/2023

Trap Type: CDC Light Trap

Location: South Boulder Creek at Marshall Rd

GPS: 39.959464162673235, -105.23229919373989

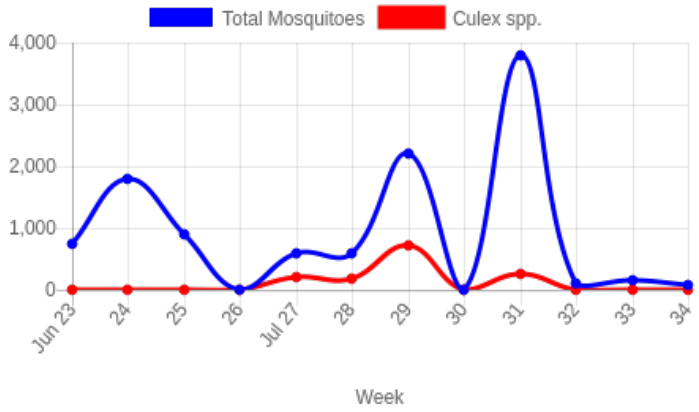
Total number of trap/nights set: 13.0

Total number of mosquitoes collected: 11,012.0

Average mosquitoes per trap/night: 847.1

Average Culex per trap/night: 112.1

Seasonality

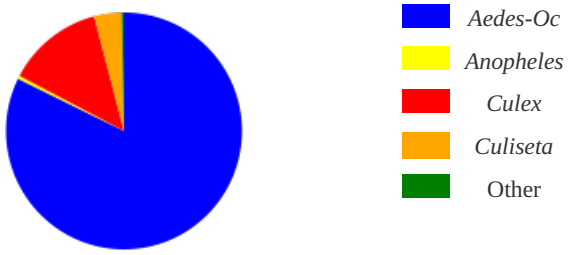


Species collected and abundance:

Aedes cinereus	1.0	0.0%
Aedes dorsalis	1.0	0.0%
Aedes hendersoni	94.0	0.9%
Aedes increpitus	879.0	8.0%
Aedes melanimon	74.0	0.7%
Aedes trivittatus	154.0	1.4%
Aedes vexans	7,856.0	71.3%
Anopheles freeborni	48.0	0.4%
Coquillettidia perturbans	35.0	0.3%
Culex pipiens	31.0	0.3%
Culex salinarius	1.0	0.0%
Culex tarsalis	1,425.0	12.9%
Culiseta inornata	413.0	3.8%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	9,059.0	82.3%
Anopheles	48.0	0.4%
Culex	1,457.0	13.2%
Culiseta	413.0	3.8%
Other	35.0	0.3%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-23

Season: 05/01/2023 - 10/31/2023

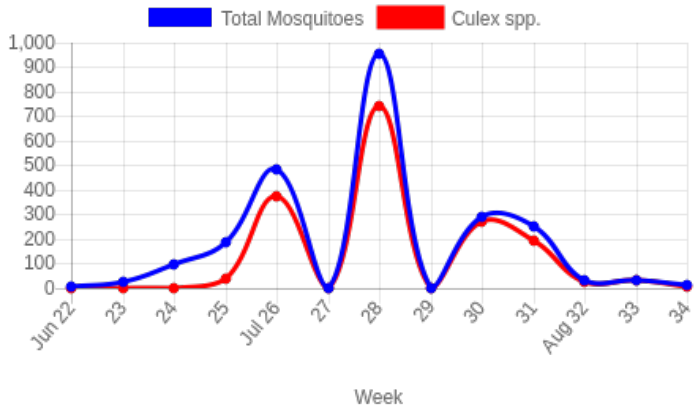
Trap Type: CDC Light Trap

Location: Louisville - Spanish Hills

GPS: 39.98265758062728, -105.17716001719236

Total number of trap/nights set:	12.0
Total number of mosquitoes collected:	2,370.0
Average mosquitoes per trap/night:	197.5
Average Culex per trap/night:	140.1

Seasonality

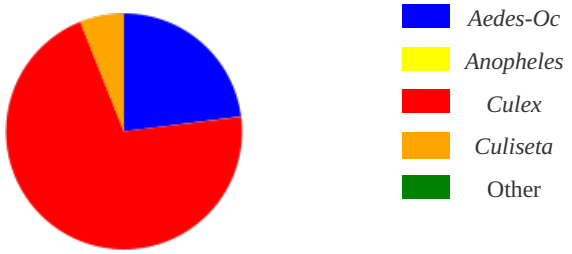


Species collected and abundance:

Aedes cinereus	1.0	0.0%
Aedes dorsalis	47.0	2.0%
Aedes increpitus	3.0	0.1%
Aedes melanimon	37.0	1.6%
Aedes nigromaculis	6.0	0.3%
Aedes trivittatus	2.0	0.1%
Aedes vexans	449.0	18.9%
Anopheles freeborni	1.0	0.0%
Culex pipiens	47.0	2.0%
Culex salinarius	9.0	0.4%
Culex tarsalis	1,625.0	68.6%
Culiseta inornata	143.0	6.0%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	545.0	23.0%
Anopheles	1.0	0.0%
Culex	1,681.0	70.9%
Culiseta	143.0	6.0%
Other	0.0	0.0%



BC-24

Season: 05/01/2023 - 10/31/2023

Trap Type: CDC Light Trap

Location: Louisville - Wewoka Dr

GPS: 39.99875776375939, -105.17176005989313

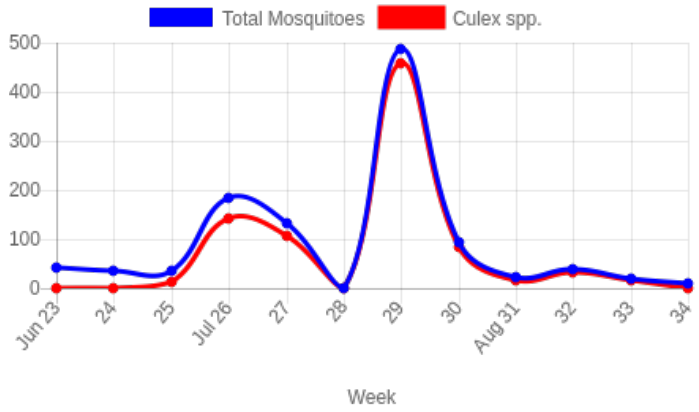
Total number of trap/nights set: 13.0

Total number of mosquitoes collected: 1,091.0

Average mosquitoes per trap/night: 83.9

Average Culex per trap/night: 66.7

Seasonality

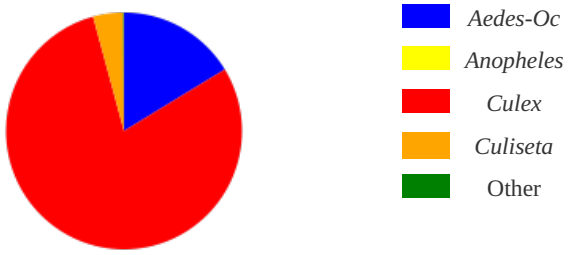


Species collected and abundance:

Aedes dorsalis	12.0	1.1%
Aedes melanimon	10.0	0.9%
Aedes trivittatus	1.0	0.1%
Aedes vexans	155.0	14.2%
Coquillettidia perturbans	1.0	0.1%
Culex pipiens	9.0	0.8%
Culex tarsalis	858.0	78.6%
Culiseta inornata	45.0	4.1%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	178.0	16.3%
Anopheles	0.0	0.0%
Culex	867.0	79.5%
Culiseta	45.0	4.1%
Other	1.0	0.1%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-30

Season: 05/01/2023 - 10/31/2023

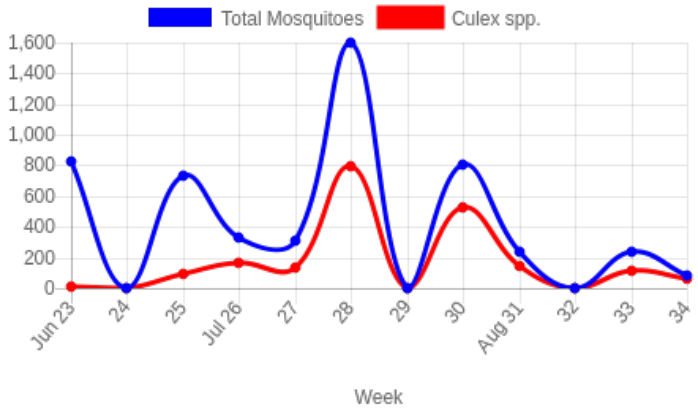
Trap Type: CDC Light Trap

Location: Brownsville - Random Court

GPS: 40.04735764744326, -105.08965998888016

Total number of trap/nights set:	13.0
Total number of mosquitoes collected:	5,152.0
Average mosquitoes per trap/night:	396.3
Average Culex per trap/night:	155.5

Seasonality

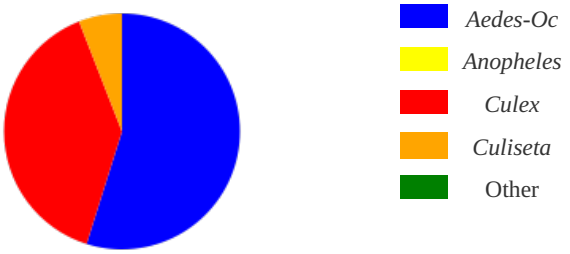


Species collected and abundance:

Aedes dorsalis	531.0	10.3%
Aedes hendersoni	2.0	0.0%
Aedes increpitus	37.0	0.7%
Aedes melanimon	56.0	1.1%
Aedes nigromaculis	4.0	0.1%
Aedes trivittatus	38.0	0.7%
Aedes vexans	2,158.0	41.9%
Culex pipiens	125.0	2.4%
Culex salinarius	3.0	0.1%
Culex tarsalis	1,893.0	36.7%
Culiseta inornata	305.0	5.9%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,826.0	54.9%
Anopheles	0.0	0.0%
Culex	2,021.0	39.2%
Culiseta	305.0	5.9%
Other	0.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-31

Season: 05/01/2023 - 10/31/2023

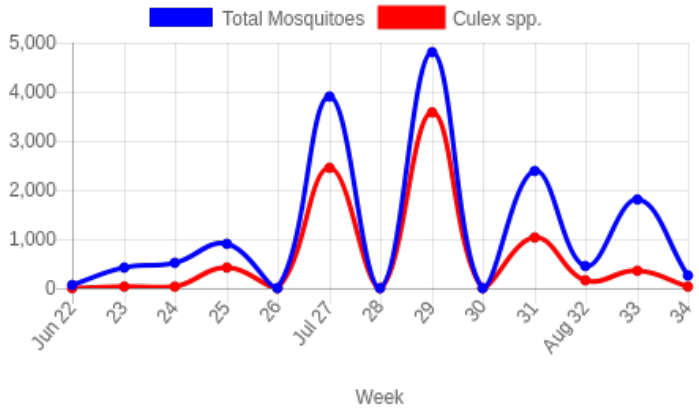
Trap Type: CDC Light Trap

Location: Divide Reservoir

GPS: 40.239015327282374, -105.08392006158829

Total number of trap/nights set:	13.0
Total number of mosquitoes collected:	15,459.0
Average mosquitoes per trap/night:	1,189.2
Average Culex per trap/night:	621.9

Seasonality

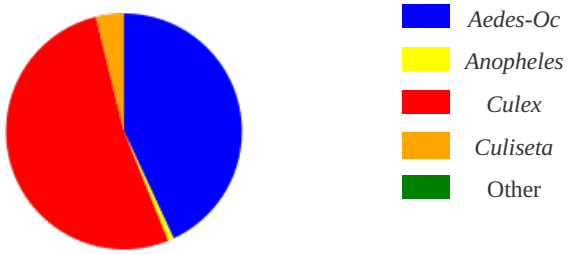


Species collected and abundance:

Aedes dorsalis	789.0	5.1%
Aedes melanimon	229.0	1.5%
Aedes nigromaculis	80.0	0.5%
Aedes trivittatus	211.0	1.4%
Aedes vexans	5,353.0	34.6%
Anopheles freeborni	122.0	0.8%
Culex pipiens	158.0	1.0%
Culex salinarius	42.0	0.3%
Culex tarsalis	7,885.0	51.0%
Culiseta incidens	1.0	0.0%
Culiseta inornata	589.0	3.8%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	6,662.0	43.1%
Anopheles	122.0	0.8%
Culex	8,085.0	52.3%
Culiseta	590.0	3.8%
Other	0.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-33

Season: 05/01/2023 - 10/31/2023

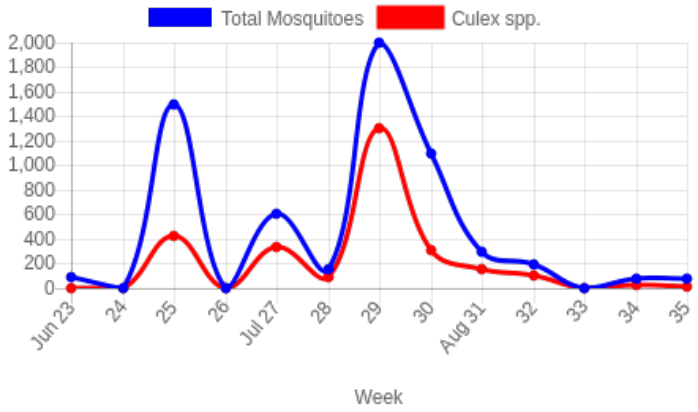
Trap Type: CDC Light Trap

Location: Lake Valley Estates

GPS: 40.08965769750612, -105.262509919703

Total number of trap/nights set:	13.0
Total number of mosquitoes collected:	6,080.0
Average mosquitoes per trap/night:	467.7
Average Culex per trap/night:	211.2

Seasonality

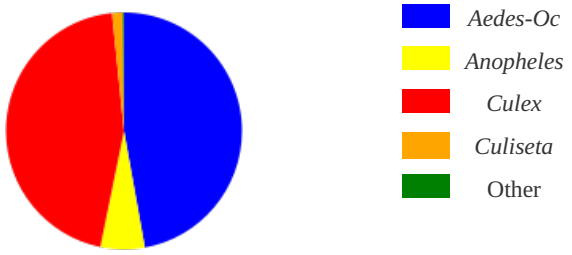


Species collected and abundance:

Aedes cinereus	43.0	0.7%
Aedes dorsalis	21.0	0.3%
Aedes hendersoni	12.0	0.2%
Aedes increpitus	246.0	4.0%
Aedes melanimon	34.0	0.6%
Aedes trivittatus	120.0	2.0%
Aedes vexans	2,392.0	39.3%
Anopheles freeborni	368.0	6.1%
Coquillettidia perturbans	9.0	0.1%
Culex pipiens	123.0	2.0%
Culex salinarius	17.0	0.3%
Culex tarsalis	2,606.0	42.9%
Culiseta inornata	89.0	1.5%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,868.0	47.2%
Anopheles	368.0	6.1%
Culex	2,746.0	45.2%
Culiseta	89.0	1.5%
Other	9.0	0.1%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-34

Season: 05/01/2023 - 10/31/2023

Trap Type: CDC Light Trap

Location: Cline Trout Farm

GPS: 40.033007660957466, -105.22270996123552

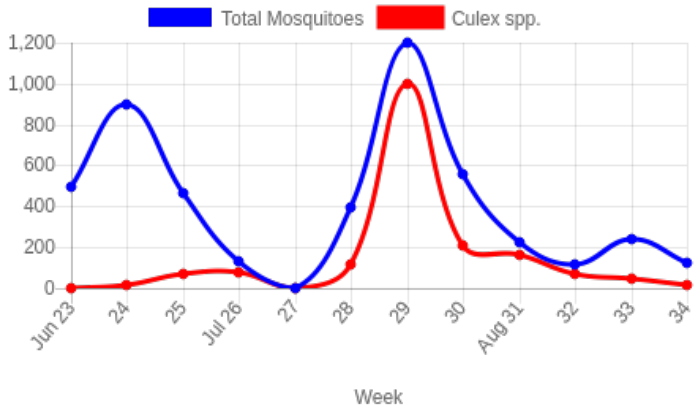
Total number of trap/nights set: 13.0

Total number of mosquitoes collected: 4,844.0

Average mosquitoes per trap/night: 372.6

Average Culex per trap/night: 137.1

Seasonality

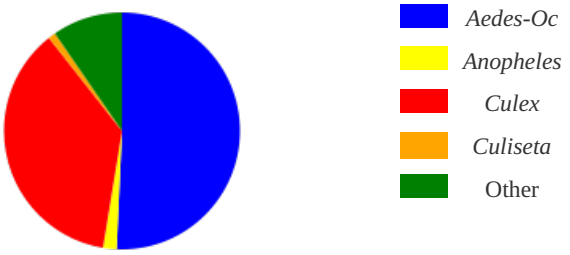


Species collected and abundance:

Aedes cinereus	1.0	0.0%
Aedes dorsalis	9.0	0.2%
Aedes hendersoni	10.0	0.2%
Aedes increpitus	416.0	8.6%
Aedes melanimon	49.0	1.0%
Aedes trivittatus	77.0	1.6%
Aedes vexans	1,895.0	39.1%
Anopheles freeborni	90.0	1.9%
Coquillettidia perturbans	466.0	9.6%
Culex pipiens	458.0	9.5%
Culex salinarius	46.0	0.9%
Culex tarsalis	1,278.0	26.4%
Culiseta inornata	49.0	1.0%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,457.0	50.7%
Anopheles	90.0	1.9%
Culex	1,782.0	36.8%
Culiseta	49.0	1.0%
Other	466.0	9.6%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-36

Season: 05/01/2023 - 10/31/2023

Trap Type: CDC Light Trap

Location: Yellowstone Road

GPS: 40.24681526955406, -105.15227012336254

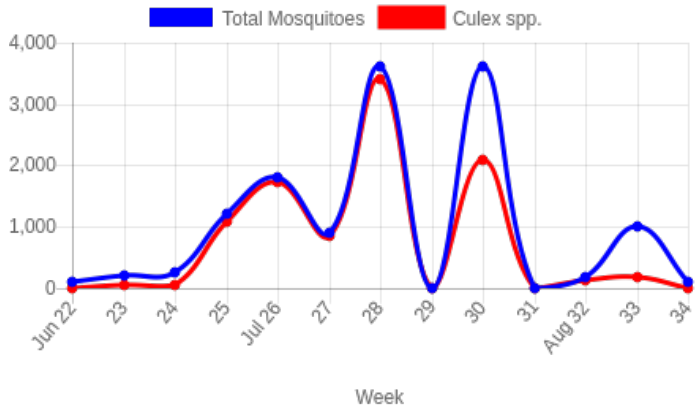
Total number of trap/nights set: 13.0

Total number of mosquitoes collected: 12,936.0

Average mosquitoes per trap/night: 995.1

Average Culex per trap/night: 735.5

Seasonality

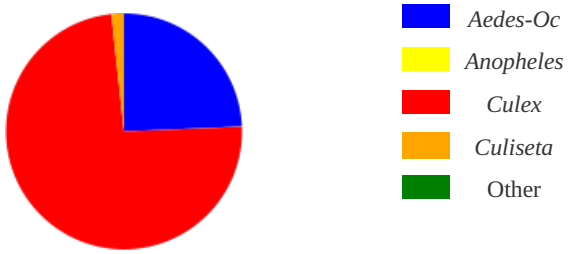


Species collected and abundance:

Aedes dorsalis	62.0	0.5%
Aedes hendersoni	1.0	0.0%
Aedes increpitus	46.0	0.4%
Aedes melanimon	50.0	0.4%
Aedes trivittatus	1,276.0	9.9%
Aedes vexans	1,715.0	13.3%
Anopheles freeborni	4.0	0.0%
Culex pipiens	189.0	1.5%
Culex salinarius	1.0	0.0%
Culex tarsalis	9,372.0	72.4%
Culiseta inornata	220.0	1.7%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	3,150.0	24.4%
Anopheles	4.0	0.0%
Culex	9,562.0	73.9%
Culiseta	220.0	1.7%
Other	0.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-37

Season: 05/01/2023 - 10/31/2023

Trap Type: CDC Light Trap

Location: Burch Reservoir

GPS: 40.20255779253474, -105.18225990235806

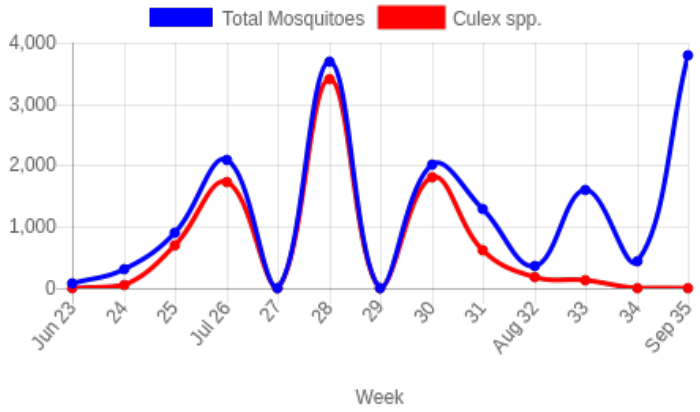
Total number of trap/nights set: 14.0

Total number of mosquitoes collected: 16,584.0

Average mosquitoes per trap/night: 1,184.6

Average Culex per trap/night: 613.0

Seasonality

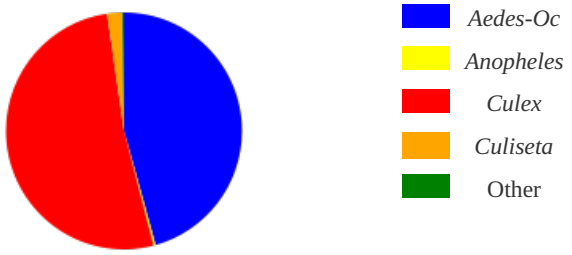


Species collected and abundance:

Aedes dorsalis	7.0	0.0%
Aedes fitchii	13.0	0.1%
Aedes hendersoni	15.0	0.1%
Aedes increpitus	164.0	1.0%
Aedes melanimon	14.0	0.1%
Aedes trivittatus	525.0	3.2%
Aedes vexans	6,841.0	41.3%
Anopheles freeborni	45.0	0.3%
Coquillettidia perturbans	40.0	0.2%
Culex pipiens	176.0	1.1%
Culex salinarius	29.0	0.2%
Culex tarsalis	8,377.0	50.5%
Culiseta inornata	338.0	2.0%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	7,579.0	45.7%
Anopheles	45.0	0.3%
Culex	8,582.0	51.7%
Culiseta	338.0	2.0%
Other	40.0	0.2%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-39

Season: 05/01/2023 - 10/31/2023

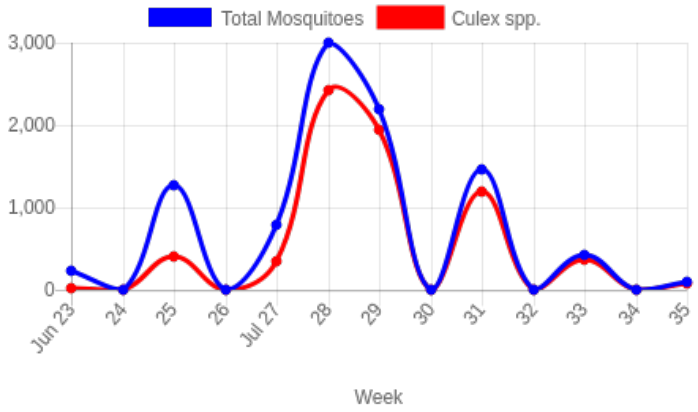
Trap Type: CDC Light Trap

Location: Heatherwood

GPS: 40.06215777521703, -105.16925990581512

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	9,501.0
Average mosquitoes per trap/night:	678.6
Average Culex per trap/night:	485.8

Seasonality

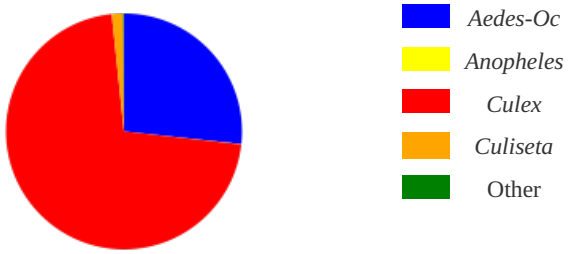


Species collected and abundance:

Aedes dorsalis	666.0	7.0%
Aedes increpitus	230.0	2.4%
Aedes melanimon	375.0	3.9%
Aedes nigromaculis	13.0	0.1%
Aedes trivittatus	21.0	0.2%
Aedes vexans	1,234.0	13.0%
Anopheles freeborni	4.0	0.0%
Coquillettidia perturbans	9.0	0.1%
Culex pipiens	374.0	3.9%
Culex salinarius	70.0	0.7%
Culex tarsalis	6,357.0	66.9%
Culiseta inornata	148.0	1.6%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,539.0	26.7%
Anopheles	4.0	0.0%
Culex	6,801.0	71.6%
Culiseta	148.0	1.6%
Other	9.0	0.1%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-40

Season: 05/01/2023 - 10/31/2023

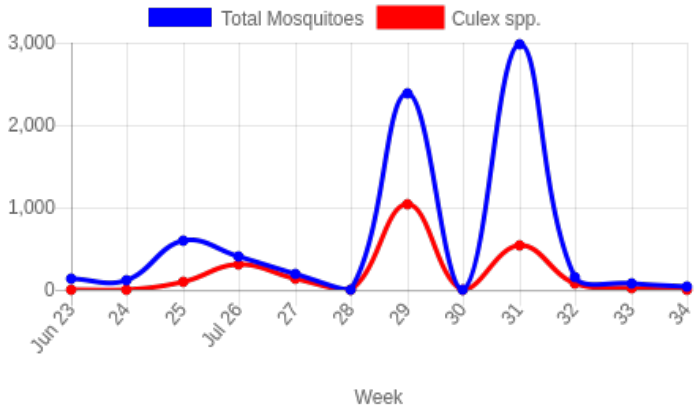
Trap Type: CDC Light Trap

Location: Chance Acres

GPS: 40.15967302342349, -105.20593006163836

Total number of trap/nights set:	13.0
Total number of mosquitoes collected:	7,122.0
Average mosquitoes per trap/night:	547.8
Average Culex per trap/night:	176.4

Seasonality

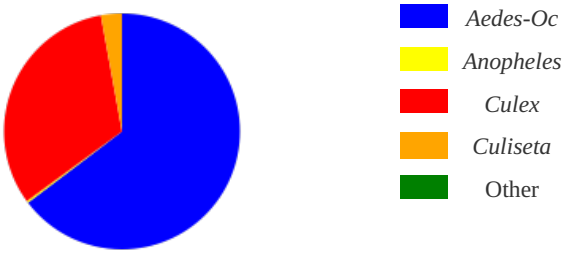


Species collected and abundance:

Aedes cinereus	6.0	0.1%
Aedes dorsalis	167.0	2.3%
Aedes hendersoni	1.0	0.0%
Aedes increpitus	12.0	0.2%
Aedes melanimon	42.0	0.6%
Aedes trivittatus	764.0	10.7%
Aedes vexans	3,614.0	50.7%
Anopheles freeborni	19.0	0.3%
Culex pipiens	23.0	0.3%
Culex salinarius	2.0	0.0%
Culex tarsalis	2,268.0	31.8%
Culiseta inornata	204.0	2.9%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	4,606.0	64.7%
Anopheles	19.0	0.3%
Culex	2,293.0	32.2%
Culiseta	204.0	2.9%
Other	0.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-47

Season: 05/01/2023 - 10/31/2023

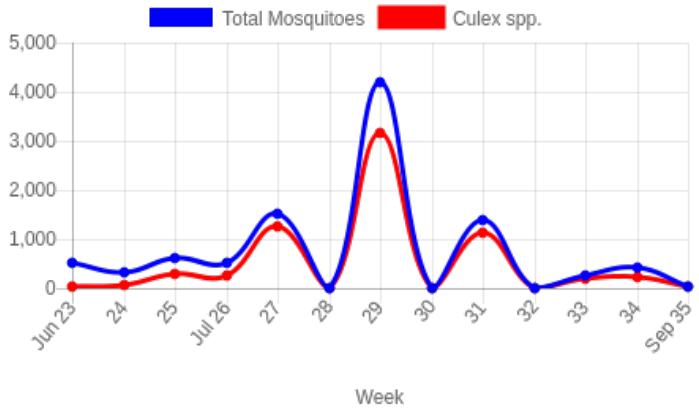
Trap Type: CDC Light Trap

Location: Baseline Heights - Chinook Way

GPS: 40.00951984125632, -105.19708715379238

Total number of trap/nights set:	14.0
Total number of mosquitoes collected:	9,775.0
Average mosquitoes per trap/night:	698.2
Average Culex per trap/night:	472.7

Seasonality

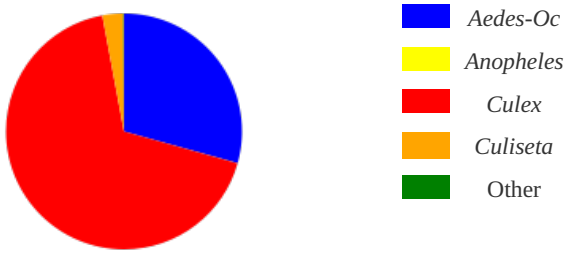


Species collected and abundance:

Aedes dorsalis	1,002.0	10.3%
Aedes increpitus	29.0	0.3%
Aedes melanimon	169.0	1.7%
Aedes nigromaculis	8.0	0.1%
Aedes trivittatus	3.0	0.0%
Aedes vexans	1,657.0	17.0%
Anopheles freeborni	2.0	0.0%
Coquillettidia perturbans	7.0	0.1%
Culex pipiens	360.0	3.7%
Culex salinarius	90.0	0.9%
Culex tarsalis	6,168.0	63.1%
Culiseta inornata	280.0	2.9%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,868.0	29.3%
Anopheles	2.0	0.0%
Culex	6,618.0	67.7%
Culiseta	280.0	2.9%
Other	7.0	0.1%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-49

Season: 05/01/2023 - 10/31/2023

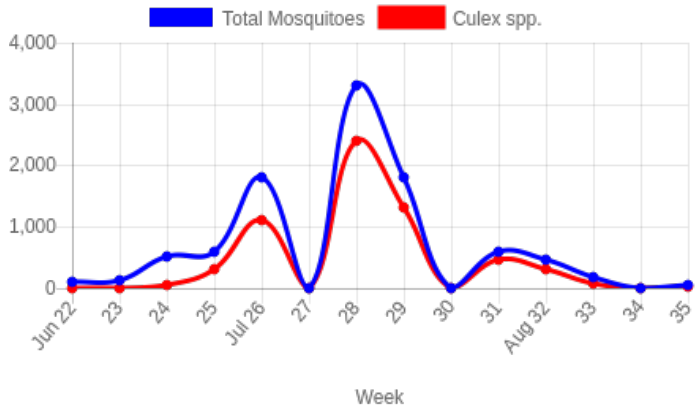
Trap Type: CDC Light Trap

Location: Burke Lake

GPS: 40.01635167936205, -105.14926739037037

Total number of trap/nights set:	13.0
Total number of mosquitoes collected:	9,523.0
Average mosquitoes per trap/night:	732.5
Average Culex per trap/night:	465.2

Seasonality

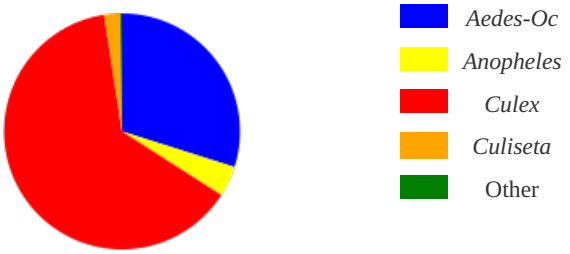


Species collected and abundance:

Aedes dorsalis	79.0	0.8%
Aedes hendersoni	77.0	0.8%
Aedes increpitus	292.0	3.1%
Aedes melanimon	158.0	1.7%
Aedes trivittatus	36.0	0.4%
Aedes vexans	2,204.0	23.1%
Anopheles freeborni	399.0	4.2%
Coquillettidia perturbans	23.0	0.2%
Culex pipiens	148.0	1.6%
Culex salinarius	62.0	0.7%
Culex tarsalis	5,837.0	61.3%
Culiseta inornata	208.0	2.2%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,846.0	29.9%
Anopheles	399.0	4.2%
Culex	6,047.0	63.5%
Culiseta	208.0	2.2%
Other	23.0	0.2%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

BC-53

Season: 05/01/2023 - 10/31/2023

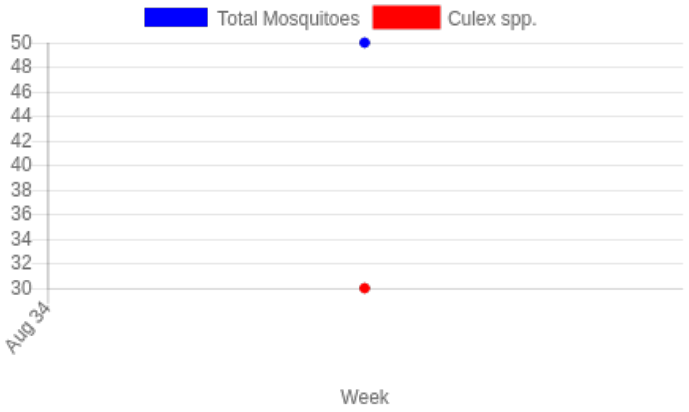
Trap Type: CDC Light Trap

Location: Stonehenge

GPS: 40.015233929075194, -105.10455094277859

Total number of trap/nights set:	1.0
Total number of mosquitoes collected:	50.0
Average mosquitoes per trap/night:	50.0
Average Culex per trap/night:	30.0

Seasonality

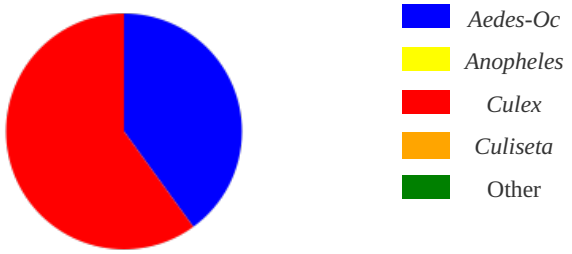


Species collected and abundance:

Aedes dorsalis	1.0	2.0%
Aedes melanimon	1.0	2.0%
Aedes vexans	18.0	36.0%
Culex pipiens	7.0	14.0%
Culex salinarius	4.0	8.0%
Culex tarsalis	19.0	38.0%

Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	20.0	40.0%
Anopheles	0.0	0.0%
Culex	30.0	60.0%
Culiseta	0.0	0.0%
Other	0.0	0.0%



Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

Appendix B: Arboviral Surveillance Results

Arboviral Surveillance Results

Start Date: 05/01/2023 **End Date:** 10/31/2023

Lafayette, CO

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
Treatment Area LA-01 City of Lafayette Test Results								
LA-11	06/05/2023	CDC Light Trap	06/06/2023	BC03291	*Culex tarsalis*	3	Negative	RT-PCR
LA-11	06/25/2023	CDC Light Trap	06/28/2023	BC03306	*Culex tarsalis*	65	Negative	RT-PCR
LA-11	07/02/2023	CDC Light Trap	07/06/2023	BC03321	*Culex tarsalis*	65	Negative	RT-PCR
LA-11	07/10/2023	CDC Light Trap	07/11/2023	BC03336	*Culex tarsalis*	65	Negative	RT-PCR
LA-11	07/16/2023	CDC Light Trap	07/17/2023	BC03351	*Culex tarsalis*	65	WNV+	RT-PCR
LA-11	07/23/2023	CDC Light Trap	07/24/2023	BC03366	*Culex tarsalis*	65	Negative	RT-PCR
LA-11	07/30/2023	CDC Light Trap	08/01/2023	BC03381	*Culex tarsalis*	65	WNV+	RT-PCR
LA-11	08/07/2023	CDC Light Trap	08/08/2023	BC03396	*Culex tarsalis*	65	Negative	RT-PCR
LA-11	08/14/2023	CDC Light Trap	08/16/2023	BC03411	*Culex tarsalis*	65	Negative	RT-PCR
LA-11	08/20/2023	CDC Light Trap	08/22/2023	BC03423	*Culex tarsalis*	65	WNV+	RT-PCR
LA-11	08/20/2023	CDC Light Trap	08/22/2023	BC03424	*Culex tarsalis*	65	WNV+	RT-PCR
LA-11	08/28/2023	CDC Light Trap	08/29/2023	BC03433	*Culex tarsalis*	25	WNV+	RT-PCR
LA-11	09/03/2023	CDC Light Trap	09/05/2023	BC03436	*Culex tarsalis*	7	WNV+	RT-PCR

Total Pools Tested: 13 **Total Mosquitoes Tested: 685** **Total Negative: 7** **Total Positive: 6**

Vector Disease Control International
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Little Rock, AR 72202

Arboviral Surveillance Results

Start Date: 05/01/2023 **End Date:** 10/31/2023

Louisville, CO

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
Treatment Area LO-01 City of Louisville Test Results								
LO-01	06/25/2023	CDC Light Trap	06/28/2023	BC03307	*Culex tarsalis*	65	Negative	RT-PCR
LO-01	07/02/2023	CDC Light Trap	07/06/2023	BC03322	*Culex tarsalis*	65	Negative	RT-PCR
LO-01	07/09/2023	CDC Light Trap	07/11/2023	BC03337	*Culex tarsalis*	65	Negative	RT-PCR
LO-01	07/16/2023	CDC Light Trap	07/17/2023	BC03352	*Culex tarsalis*	65	Negative	RT-PCR
LO-01	07/23/2023	CDC Light Trap	07/24/2023	BC03367	*Culex tarsalis*	65	WNV+	RT-PCR
LO-01	07/30/2023	CDC Light Trap	08/01/2023	BC03382	*Culex tarsalis*	65	Negative	RT-PCR
LO-01	08/13/2023	CDC Light Trap	08/16/2023	BC03412	*Culex tarsalis*	23	WNV+	RT-PCR
LO-01	08/20/2023	CDC Light Trap	08/22/2023	BC03425	*Culex tarsalis*	16	WNV+	RT-PCR
LO-01	08/27/2023	CDC Light Trap	08/29/2023	BC03433	*Culex tarsalis*	2	WNV+	RT-PCR
LO-01	09/03/2023	CDC Light Trap	09/05/2023	BC03436	*Culex tarsalis*	2	WNV+	RT-PCR
LO-08	06/04/2023	CDC Light Trap	06/06/2023	BC03291	*Culex tarsalis*	1	Negative	RT-PCR
LO-08	06/25/2023	CDC Light Trap	06/28/2023	BC03308	*Culex tarsalis*	65	Negative	RT-PCR
LO-08	07/02/2023	CDC Light Trap	07/06/2023	BC03323	*Culex tarsalis*	65	Negative	RT-PCR
LO-08	07/09/2023	CDC Light Trap	07/11/2023	BC03338	*Culex tarsalis*	65	WNV+	RT-PCR
LO-08	07/16/2023	CDC Light Trap	07/17/2023	BC03353	*Culex tarsalis*	65	Negative	RT-PCR
LO-08	07/23/2023	CDC Light Trap	07/24/2023	BC03368	*Culex tarsalis*	65	WNV+	RT-PCR
LO-08	07/31/2023	CDC Light Trap	08/01/2023	BC03383	*Culex tarsalis*	65	Negative	RT-PCR
LO-08	08/06/2023	CDC Light Trap	08/08/2023	BC03397	*Culex tarsalis*	55	Negative	RT-PCR
LO-08	08/13/2023	CDC Light Trap	08/16/2023	BC03412	*Culex tarsalis*	38	WNV+	RT-PCR
LO-08	08/20/2023	CDC Light Trap	08/22/2023	BC03425	*Culex tarsalis*	34	WNV+	RT-PCR
LO-08	08/27/2023	CDC Light Trap	08/29/2023	BC03433	*Culex tarsalis*	12	WNV+	RT-PCR
LO-08	09/03/2023	CDC Light Trap	09/05/2023	BC03436	*Culex tarsalis*	8	WNV+	RT-PCR

Total Pools Tested: 22 **Total Mosquitoes Tested: 971** **Total Negative: 11** **Total Positive: 11**

Vector Disease Control International
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Little Rock, AR 72202

Arboviral Surveillance Results

Start Date: 05/01/2023 **End Date:** 10/31/2023

Erie, CO

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
Treatment Area ER-02 Town of Erie Test Results								
ER-03	06/05/2023	CDC Light Trap	06/06/2023	BC03291	*Culex tarsalis*	6	Negative	RT-PCR
ER-03	06/25/2023	CDC Light Trap	06/28/2023	BC03305	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	06/25/2023	CDC Light Trap	06/28/2023	BC03309	*Culex tarsalis*	50	WNV+	RT-PCR
ER-03	07/03/2023	CDC Light Trap	07/06/2023	BC03320	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	07/09/2023	CDC Light Trap	07/11/2023	BC03335	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	07/17/2023	CDC Light Trap	07/17/2023	BC03350	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	07/23/2023	CDC Light Trap	07/24/2023	BC03365	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	07/30/2023	CDC Light Trap	08/01/2023	BC03380	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	07/30/2023	CDC Light Trap	08/01/2023	BC03384	*Culex tarsalis*	3	Negative	RT-PCR
ER-03	08/07/2023	CDC Light Trap	08/08/2023	BC03395	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	08/13/2023	CDC Light Trap	08/16/2023	BC03410	*Culex tarsalis*	65	WNV+	RT-PCR
ER-03	08/20/2023	CDC Light Trap	08/22/2023	BC03422	*Culex tarsalis*	65	Negative	RT-PCR
ER-03	08/27/2023	CDC Light Trap	08/29/2023	BC03432	*Culex tarsalis*	57	WNV+	RT-PCR
ER-03	09/03/2023	CDC Light Trap	09/05/2023	BC03436	*Culex tarsalis*	5	WNV+	RT-PCR

Total Pools Tested: 14 **Total Mosquitoes Tested: 706** **Total Negative: 10** **Total Positive: 4**

Vector Disease Control International
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Little Rock, AR 72202

Arboviral Surveillance Results

Start Date: 05/01/2023 **End Date:** 10/31/2023

Longmont, CO

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
Treatment Area LM-01 City of Longmont Test Results								
LM-03	06/04/2023	CDC Light Trap	06/06/2023	BC02290	*Culex tarsalis*	3	Negative	RT-PCR
LM-03	06/18/2023	CDC Light Trap	06/22/2023	BC02292	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	06/25/2023	CDC Light Trap	06/28/2023	BC02300	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	07/02/2023	CDC Light Trap	07/06/2023	BC02315	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	07/02/2023	CDC Light Trap	07/06/2023	BC02316	*Culex tarsalis*	65	WNV+	RT-PCR
LM-03	07/10/2023	CDC Light Trap	07/11/2023	BC02330	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	07/16/2023	CDC Light Trap	07/17/2023	BC02345	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	07/23/2023	CDC Light Trap	07/24/2023	BC02360	*Culex tarsalis*	65	WNV+	RT-PCR
LM-03	07/31/2023	CDC Light Trap	08/01/2023	BC02375	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	08/07/2023	CDC Light Trap	08/08/2023	BC02390	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	08/13/2023	CDC Light Trap	08/16/2023	BC02403	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	08/13/2023	CDC Light Trap	08/16/2023	BC02404	*Culex tarsalis*	65	Negative	RT-PCR
LM-03	08/20/2023	CDC Light Trap	08/22/2023	BC02417	*Culex tarsalis*	65	WNV+	RT-PCR
LM-03	08/20/2023	CDC Light Trap	08/22/2023	BC02418	*Culex tarsalis*	65	WNV+	RT-PCR
LM-03	08/27/2023	CDC Light Trap	08/29/2023	BC02429	*Culex tarsalis*	47	WNV+	RT-PCR
LM-03	09/03/2023	CDC Light Trap	09/05/2023	BC02435	*Culex tarsalis*	14	Negative	RT-PCR
LM-17	06/04/2023	CDC Light Trap	06/06/2023	BC02290	*Culex tarsalis*	2	Negative	RT-PCR
LM-17	06/18/2023	CDC Light Trap	06/22/2023	BC02293	*Culex tarsalis*	35	Negative	RT-PCR
LM-17	06/25/2023	CDC Light Trap	06/28/2023	BC02301	*Culex tarsalis*	65	Negative	RT-PCR
LM-17	07/02/2023	CDC Light Trap	07/06/2023	BC02317	*Culex tarsalis*	65	Negative	RT-PCR
LM-17	07/09/2023	CDC Light Trap	07/11/2023	BC02331	*Culex tarsalis*	65	Negative	RT-PCR
LM-17	07/17/2023	CDC Light Trap	07/17/2023	BC02346	*Culex tarsalis*	65	WNV+	RT-PCR
LM-17	07/23/2023	CDC Light Trap	07/24/2023	BC02361	*Culex tarsalis*	65	WNV+	RT-PCR
LM-17	07/30/2023	CDC Light Trap	08/01/2023	BC02376	*Culex tarsalis*	65	Negative	RT-PCR

Vector Disease Control International
1320 Brookwood Drive Suite H
Little Rock, AR 72202

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
LM-17	08/06/2023	CDC Light Trap	08/08/2023	BC02391	*Culex tarsalis*	34	Negative	RT-PCR
LM-17	08/13/2023	CDC Light Trap	08/16/2023	BC02405	*Culex tarsalis*	51	WNV+	RT-PCR
LM-17	08/20/2023	CDC Light Trap	08/22/2023	BC02419	*Culex tarsalis*	65	WNV+	RT-PCR
LM-17	08/27/2023	CDC Light Trap	08/29/2023	BC02430	*Culex tarsalis*	19	WNV+	RT-PCR
LM-17	09/03/2023	CDC Light Trap	09/05/2023	BC02435	*Culex tarsalis*	9	Negative	RT-PCR
LM-28	06/05/2023	CDC Light Trap	06/06/2023	BC02290	*Culex tarsalis*	12	Negative	RT-PCR
LM-28	06/18/2023	CDC Light Trap	06/22/2023	BC02293	*Culex tarsalis*	30	Negative	RT-PCR
LM-28	06/18/2023	CDC Light Trap	06/22/2023	BC02294	*Culex tarsalis*	65	Negative	RT-PCR
LM-28	06/25/2023	CDC Light Trap	06/28/2023	BC01302	*Culex tarsalis*	65	Negative	RT-PCR
LM-28	07/09/2023	CDC Light Trap	07/11/2023	BC02332	*Culex tarsalis*	65	Negative	RT-PCR
LM-28	07/16/2023	CDC Light Trap	07/17/2023	BC02347	*Culex tarsalis*	65	Negative	RT-PCR
LM-28	07/23/2023	CDC Light Trap	07/24/2023	BC02362	*Culex tarsalis*	65	Negative	RT-PCR
LM-28	07/31/2023	CDC Light Trap	08/01/2023	BC02377	*Culex tarsalis*	65	WNV+	RT-PCR
LM-28	08/06/2023	CDC Light Trap	08/08/2023	BC02391	*Culex tarsalis*	31	Negative	RT-PCR
LM-28	08/06/2023	CDC Light Trap	08/08/2023	BC02392	*Culex tarsalis*	65	Negative	RT-PCR
LM-28	08/21/2023	CDC Light Trap	08/22/2023	BC02420	*Culex tarsalis*	65	Negative	RT-PCR
LM-28	08/27/2023	CDC Light Trap	08/29/2023	BC02430	*Culex tarsalis*	24	WNV+	RT-PCR
LM-28	09/03/2023	CDC Light Trap	09/05/2023	BC02435	*Culex tarsalis*	17	Negative	RT-PCR
LM-34	06/04/2023	CDC Light Trap	06/06/2023	BC02290	*Culex tarsalis*	3	Negative	RT-PCR
LM-34	06/25/2023	CDC Light Trap	06/28/2023	BC02303	*Culex tarsalis*	65	Negative	RT-PCR
LM-34	07/02/2023	CDC Light Trap	07/06/2023	BC02318	*Culex tarsalis*	65	Negative	RT-PCR
LM-34	07/09/2023	CDC Light Trap	07/11/2023	BC02333	*Culex tarsalis*	65	Negative	RT-PCR
LM-34	07/17/2023	CDC Light Trap	07/17/2023	BC02348	*Culex tarsalis*	65	Negative	RT-PCR
LM-34	07/23/2023	CDC Light Trap	07/24/2023	BC02363	*Culex tarsalis*	65	Negative	RT-PCR
LM-34	07/30/2023	CDC Light Trap	08/01/2023	BC02378	*Culex tarsalis*	65	WNV+	RT-PCR
LM-34	08/06/2023	CDC Light Trap	08/08/2023	BC02393	*Culex tarsalis*	65	Negative	RT-PCR
LM-34	08/14/2023	CDC Light Trap	08/16/2023	BC02406	*Culex tarsalis*	65	WNV+	RT-PCR
LM-34	08/14/2023	CDC Light Trap	08/16/2023	BC02407	*Culex tarsalis*	65	Negative	RT-PCR
LM-34	08/20/2023	CDC Light Trap	08/22/2023	BC02421	*Culex tarsalis*	65	WNV+	RT-PCR
LM-34	08/28/2023	CDC Light Trap	08/29/2023	BC02430	*Culex tarsalis*	19	WNV+	RT-PCR
LM-34	09/03/2023	CDC Light Trap	09/05/2023	BC02435	*Culex tarsalis*	11	Negative	RT-PCR

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Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
LM-42	06/25/2023	CDC Light Trap	06/28/2023	BC02304	*Culex tarsalis*	65	Negative	RT-PCR
LM-42	07/02/2023	CDC Light Trap	07/06/2023	BC02319	*Culex tarsalis*	65	Negative	RT-PCR
LM-42	07/09/2023	CDC Light Trap	07/11/2023	BC02334	*Culex tarsalis*	65	Negative	RT-PCR
LM-42	07/17/2023	CDC Light Trap	07/17/2023	BC02349	*Culex tarsalis*	65	WNV+	RT-PCR
LM-42	07/24/2023	CDC Light Trap	07/24/2023	BC02364	*Culex tarsalis*	65	Negative	RT-PCR
LM-42	07/30/2023	CDC Light Trap	08/01/2023	BC02379	*Culex tarsalis*	65	WNV+	RT-PCR
LM-42	08/06/2023	CDC Light Trap	08/08/2023	BC02394	*Culex tarsalis*	65	Negative	RT-PCR
LM-42	08/13/2023	CDC Light Trap	08/16/2023	BC02405	*Culex tarsalis*	14	WNV+	RT-PCR
LM-42	08/13/2023	CDC Light Trap	08/16/2023	BC02408	*Culex tarsalis*	65	Negative	RT-PCR
LM-42	08/13/2023	CDC Light Trap	08/16/2023	BC02409	*Culex tarsalis*	65	WNV+	RT-PCR
LM-42	08/28/2023	CDC Light Trap	08/29/2023	BC02431	*Culex tarsalis*	33	Negative	RT-PCR
LM-42	09/03/2023	CDC Light Trap	09/05/2023	BC02435	*Culex tarsalis*	11	Negative	RT-PCR

Total Pools Tested: 67 Total Mosquitoes Tested: 3474 Total Negative: 47 Total Positive: 20

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Arboviral Surveillance Results

Start Date: 05/01/2023 **End Date:** 10/31/2023

Boulder County Mosquito Control District

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
Treatment Area BC-06 Test Results								
BC-08	06/25/2023	CDC Light Trap	06/28/2023	BC01297	*Culex tarsalis*	65	Negative	RT-PCR
BC-08	07/02/2023	CDC Light Trap	07/06/2023	BC01312	*Culex tarsalis*	65	Negative	RT-PCR
BC-08	07/10/2023	CDC Light Trap	07/11/2023	BC01327	*Culex tarsalis*	65	Negative	RT-PCR
BC-08	07/17/2023	CDC Light Trap	07/17/2023	BC01342	*Culex tarsalis*	65	Negative	RT-PCR
BC-08	07/23/2023	CDC Light Trap	07/24/2023	BC01357	*Culex tarsalis*	65	WNV+	RT-PCR
BC-08	07/30/2023	CDC Light Trap	08/01/2023	BC01372	*Culex tarsalis*	65	WNV+	RT-PCR
BC-08	08/06/2023	CDC Light Trap	08/08/2023	BC01387	*Culex tarsalis*	65	Negative	RT-PCR
BC-08	08/13/2023	CDC Light Trap	08/15/2023	BC01400	*Culex tarsalis*	65	WNV+	RT-PCR
BC-08	08/20/2023	CDC Light Trap	08/22/2023	BC01414	*Culex tarsalis*	65	WNV+	RT-PCR
BC-08	08/27/2023	CDC Light Trap	08/29/2023	BC01426	*Culex tarsalis*	16	Negative	RT-PCR
BC-08	09/03/2023	CDC Light Trap	09/05/2023	BC01434	*Culex tarsalis*	7	WNV+	RT-PCR
Treatment Area BC-08 Test Results								
BC-11	06/04/2023	CDC Light Trap	06/06/2023	BC01289	*Culex tarsalis*	6	Negative	RT-PCR
BC-11	06/25/2023	CDC Light Trap	06/28/2023	BC01656	*Culex tarsalis*	13	Negative	RT-PCR
BC-11	06/25/2023	CDC Light Trap	06/28/2023	BC01658	*Culex tarsalis*	65	Negative	RT-PCR
BC-11	07/02/2023	CDC Light Trap	07/06/2023	BC01313	*Culex tarsalis*	65	Negative	RT-PCR
BC-11	07/10/2023	CDC Light Trap	07/11/2023	BC01328	*Culex tarsalis*	65	Negative	RT-PCR
BC-11	07/16/2023	CDC Light Trap	07/17/2023	BC01343	*Culex tarsalis*	65	Negative	RT-PCR
BC-11	07/23/2023	CDC Light Trap	07/24/2023	BC01358	*Culex tarsalis*	65	WNV+	RT-PCR
BC-11	07/30/2023	CDC Light Trap	08/01/2023	BC01373	*Culex tarsalis*	65	Negative	RT-PCR
BC-11	08/06/2023	CDC Light Trap	08/08/2023	BC01388	*Culex tarsalis*	65	Negative	RT-PCR
BC-11	08/14/2023	CDC Light Trap	08/15/2023	BC01401	*Culex tarsalis*	65	WNV+	RT-PCR
BC-11	08/20/2023	CDC Light Trap	08/22/2023	BC01415	*Culex tarsalis*	65	WNV+	RT-PCR

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Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
BC-11	08/28/2023	CDC Light Trap	08/29/2023	BC01427	*Culex tarsalis*	65	Negative	RT-PCR
BC-11	08/28/2023	CDC Light Trap	08/29/2023	BC01428	*Culex tarsalis*	14	WNV+	RT-PCR
BC-11	09/03/2023	CDC Light Trap	09/05/2023	BC01434	*Culex tarsalis*	21	WNV+	RT-PCR
Treatment Area BC-11 Test Results								
BC-03	06/05/2023	CDC Light Trap	06/06/2023	BC01289	*Culex tarsalis*	2	Negative	RT-PCR
BC-03	06/25/2023	CDC Light Trap	06/28/2023	BC01295	*Culex tarsalis*	65	Negative	RT-PCR
BC-03	07/02/2023	CDC Light Trap	07/06/2023	BC01310	*Culex tarsalis*	65	Negative	RT-PCR
BC-03	07/09/2023	CDC Light Trap	07/11/2023	BC01325	*Culex tarsalis*	65	Negative	RT-PCR
BC-03	07/16/2023	CDC Light Trap	07/17/2023	BC01340	*Culex tarsalis*	65	WNV+	RT-PCR
BC-03	07/24/2023	CDC Light Trap	07/24/2023	BC01355	*Culex tarsalis*	65	Negative	RT-PCR
BC-03	07/30/2023	CDC Light Trap	08/01/2023	BC01370	*Culex tarsalis*	65	WNV+	RT-PCR
BC-03	08/07/2023	CDC Light Trap	08/08/2023	BC01385	*Culex tarsalis*	65	Negative	RT-PCR
BC-03	08/13/2023	CDC Light Trap	08/16/2023	BC01398	*Culex tarsalis*	65	Negative	RT-PCR
BC-03	08/21/2023	CDC Light Trap	08/22/2023	BC01413	*Culex tarsalis*	29	Negative	RT-PCR
BC-03	08/27/2023	CDC Light Trap	08/29/2023	BC01426	*Culex tarsalis*	10	Negative	RT-PCR
BC-03	09/03/2023	CDC Light Trap	09/05/2023	BC01434	*Culex tarsalis*	7	WNV+	RT-PCR
BC-05	06/05/2023	CDC Light Trap	06/06/2023	BC01289	*Culex tarsalis*	1	Negative	RT-PCR
BC-05	06/25/2023	CDC Light Trap	06/28/2023	BC01296	*Culex tarsalis*	52	Negative	RT-PCR
BC-05	07/02/2023	CDC Light Trap	07/06/2023	BC01311	*Culex tarsalis*	65	Negative	RT-PCR
BC-05	07/09/2023	CDC Light Trap	07/11/2023	BC01326	*Culex tarsalis*	36	Negative	RT-PCR
BC-05	07/16/2023	CDC Light Trap	07/17/2023	BC01341	*Culex tarsalis*	65	Negative	RT-PCR
BC-05	07/23/2023	CDC Light Trap	07/24/2023	BC01356	*Culex tarsalis*	65	Negative	RT-PCR
BC-05	07/30/2023	CDC Light Trap	08/01/2023	BC01371	*Culex tarsalis*	65	Negative	RT-PCR
BC-05	08/07/2023	CDC Light Trap	08/08/2023	BC01386	*Culex tarsalis*	65	Negative	RT-PCR
BC-05	08/13/2023	CDC Light Trap	08/16/2023	BC01399	*Culex tarsalis*	65	Negative	RT-PCR
BC-05	08/20/2023	CDC Light Trap	08/22/2023	BC01413	*Culex tarsalis*	36	Negative	RT-PCR
BC-05	08/28/2023	CDC Light Trap	08/29/2023	BC01426	*Culex tarsalis*	1	Negative	RT-PCR
BC-05	09/03/2023	CDC Light Trap	09/05/2023	BC01434	*Culex tarsalis*	2	WNV+	RT-PCR
Treatment Area BC-13 Test Results								
BC-47	06/05/2023	CDC Light Trap	06/06/2023	BC01289	*Culex tarsalis*	3	Negative	RT-PCR
BC-47	06/25/2023	CDC Light Trap	06/28/2023	BC01299	*Culex tarsalis*	65	Negative	RT-PCR
BC-47	07/02/2023	CDC Light Trap	07/06/2023	BC01314	*Culex tarsalis*	65	Negative	RT-PCR

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
BC-47	07/09/2023	CDC Light Trap	07/11/2023	BC01326	*Culex tarsalis*	29	Negative	RT-PCR
BC-47	07/09/2023	CDC Light Trap	07/11/2023	BC01329	*Culex tarsalis*	65	Negative	RT-PCR
BC-47	07/17/2023	CDC Light Trap	07/17/2023	BC01344	*Culex tarsalis*	65	Negative	RT-PCR
BC-47	07/23/2023	CDC Light Trap	07/24/2023	BC01359	*Culex tarsalis*	65	WNV+	RT-PCR
BC-47	07/31/2023	CDC Light Trap	08/01/2023	BC01374	*Culex tarsalis*	65	WNV+	RT-PCR
BC-47	08/06/2023	CDC Light Trap	08/08/2023	BC01389	*Culex tarsalis*	65	Negative	RT-PCR
BC-47	08/14/2023	CDC Light Trap	08/16/2023	BC01402	*Culex tarsalis*	65	Negative	RT-PCR
BC-47	08/21/2023	CDC Light Trap	08/22/2023	BC01416	*Culex tarsalis*	65	WNV+	RT-PCR
BC-47	08/27/2023	CDC Light Trap	08/29/2023	BC01428	*Culex tarsalis*	30	WNV+	RT-PCR
BC-47	09/03/2023	CDC Light Trap	09/05/2023	BC01434	*Culex tarsalis*	14	WNV+	RT-PCR

Total Pools Tested: 62 Total Mosquitoes Tested: 3059 Total Negative: 43 Total Positive: 19

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Arboviral Surveillance Results

Start Date: 05/01/2023 **End Date:** 10/31/2023

Superior, CO

Trap Location	Trap Date	Trap Type	Date Tested	Pool No.	Mosquito Species	Pool Size	Results	Assay
Treatment Area SU-01 Town of Superior Test Results								
SU-05	06/25/2023	CDC Light Trap	06/28/2023	BC03309	*Culex tarsalis*	15	WNV+	RT-PCR
SU-05	07/02/2023	CDC Light Trap	07/06/2023	BC03324	*Culex tarsalis*	65	Negative	RT-PCR
SU-05	07/09/2023	CDC Light Trap	07/11/2023	BC03339	*Culex tarsalis*	65	Negative	RT-PCR
SU-05	07/16/2023	CDC Light Trap	07/17/2023	BC03354	*Culex tarsalis*	65	WNV+	RT-PCR
SU-05	07/23/2023	CDC Light Trap	07/24/2023	BC03369	*Culex tarsalis*	65	WNV+	RT-PCR
SU-05	07/31/2023	CDC Light Trap	08/01/2023	BC03384	*Culex tarsalis*	62	Negative	RT-PCR
SU-05	08/07/2023	CDC Light Trap	08/08/2023	BC03397	*Culex tarsalis*	10	Negative	RT-PCR
SU-05	08/13/2023	CDC Light Trap	08/16/2023	BC03412	*Culex tarsalis*	4	WNV+	RT-PCR
SU-05	08/20/2023	CDC Light Trap	08/22/2023	BC03425	*Culex tarsalis*	15	WNV+	RT-PCR
SU-05	09/03/2023	CDC Light Trap	09/05/2023	BC03436	*Culex tarsalis*	3	WNV+	RT-PCR

Total Pools Tested: 10 **Total Mosquitoes Tested: 369** **Total Negative: 4** **Total Positive: 6**

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Appendix C: Adulticide Application Data

Ground Adulticide Applications

Start Date: 05/01/2023 **End Date:** 10/31/2023

Boulder County Mosquito Control District

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
BC ULV 61st to 75th & Valmont Rd Applications								
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.3	2.3	84.7	0.9
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.5	5.2	187.6	1.4
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.9	5.4	194.9	1.5
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.4	5.0	180.4	1.4
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.0	4.9	177.4	1.4
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*6.6*
				BC ULV 61st to 75th & Valmont Rd Totals:	***30.1***	***22.7***	***825.0***	***6.6***
BC ULV 75th & Valmont Rd Applications								
June 2023	06/07/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.3	2.1	77.1	0.6
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.7	2.2	81.5	0.6
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.6	2.4	85.8	0.7
August 2023	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.3	2.1	77.1	0.6
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*2.5*

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Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
			BC ULV 75th & Valmont Rd Totals:		***13.9***	***8.8***	***321.4***	***2.5***
BC ULV Anhawa - float Applications								
July 2023	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.3	2.1	75.3	0.6
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.3	2.1	74.9	0.6
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.3	2.0	73.1	0.6
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*1.7*
			BC ULV Anhawa - float Totals:		***6.9***	***6.1***	***223.3***	***1.7***
BC ULV Boulder Hills Applications								
June 2023	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	5.0	3.3	120.0	0.9
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	5.8	3.5	126.2	1.0
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	3.9	3.3	120.7	0.9
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	4.1	3.2	114.5	0.9
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	4.2	3.4	125.1	1.0
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	4.2	3.2	117.1	0.9
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	4.0	3.3	121.1	1.0
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	4.2	3.4	124.7	1.0
	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.8	3.2	114.5	0.9

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*8.3*
			BC ULV Boulder Hills Totals:		***39.3***	***29.8***	***1,083.9***	***8.3***
BC ULV Brigadoon Glen/Rangeview/Oriole Applications								
June 2023	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	11.2	4.8	174.9	1.3
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	7.2	3.5	127.3	1.0
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.2	3.5	128.4	1.0
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.2	3.4	123.6	0.9
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.1	3.4	125.1	1.0
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	10.2	4.1	149.8	1.2
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*6.4*
			BC ULV Brigadoon Glen/Rangeview/Oriole Totals:		***50.2***	***22.8***	***829.0***	***6.4***
BC ULV Brownsville/Canfield Applications								
June 2023	06/07/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	9.4	5.9	214.9	1.6
	06/14/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	9.4	5.9	214.9	1.6
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	9.9	5.6	202.5	1.6
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	9.5	5.0	183.3	1.4
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	10.5	6.6	240.3	1.9

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	9.4	6.3	228.0	1.7
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	9.3	6.3	229.4	1.7
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	12.1	6.9	252.3	1.9
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	9.7	6.6	241.1	1.9
	08/10/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	9.3	6.2	223.6	1.7
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*17.1*
				BC ULV Brownsville/Canfield Totals:	***98.6***	***61.3***	***2,230.3***	***17.1***
BC ULV Chance Acres Applications								
June 2023	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.3	1.8	66.2	1.3
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.3	1.8	64.7	0.5
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.3	1.8	66.2	0.5
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.3	1.8	64.0	0.5
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.4	1.8	64.4	0.5
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.3	1.8	64.0	0.5
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.3	1.7	63.3	0.5
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*4.3*
				BC ULV Chance Acres Totals:	***16.2***	***12.5***	***452.7***	***4.3***

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
BC ULV Divide Reservoir Applications								
June 2023	06/14/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.4	1.3	46.9	0.4
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.4	1.3	45.8	0.4
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	1.1	1.1	38.5	0.8
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	1.1	1.1	38.9	0.3
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.1	1.0	37.5	0.3
	07/20/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.2	1.1	41.5	0.3
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.1	1.1	39.6	0.3
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.1	1.1	39.3	0.3
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.1	1.1	39.3	0.3
	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	0.5	0.5	18.2	0.1
	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	0.5	0.5	17.8	0.1
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*3.7*
				BC ULV Divide Reservoir Totals:	***13.4***	***11.1***	***403.2***	***3.7***
BC ULV Fairview Estates/Indian Hills Applications								
July 2023	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.0	5.4	197.8	1.5
	07/27/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.4	4.9	178.5	1.4

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Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
August 2023	08/03/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.2	5.4	195.6	1.5
						Total Aqua Perm-X UL 30-30 (General Use) Applied:		*4.4*
					BC ULV Fairview Estates/Indian Hills Totals:	***20.5***	***15.7***	***572.0***	***4.4***
BC ULV Fairview Estates/Indian Hills/Spanish Hills/Paragon Estates Applications								
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.7	4.9	179.3	1.7
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.9	5.4	196.3	1.5
						Total Aqua Perm-X UL 30-30 (General Use) Applied:		*3.2*
					BC ULV Fairview Estates/Indian Hills/Spanish Hills/Paragon Estates Totals:	***13.6***	***10.3***	***375.6***	***3.2***
BC ULV Gunbarrel Estates - float Applications								
July 2023	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.5	4.1	149.8	1.2
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.1	4.2	153.1	1.2
						Total Aqua Perm-X UL 30-30 (General Use) Applied:		*2.3*
					BC ULV Gunbarrel Estates - float Totals:	***12.6***	***8.3***	***302.9***	***2.3***
BC ULV Gunbarrel Green Applications								
June 2023	06/07/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.0	4.7	172.4	1.3
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.6	4.6	168.7	1.3
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	7.1	5.3	191.6	1.5
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.7	5.2	188.0	2.3

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.6	3.9	143.3	1.1
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.7	4.3	157.8	1.2
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.7	4.7	171.6	1.3
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.6	5.0	180.7	1.4
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.7	4.9	179.6	1.4
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.6	4.2	151.6	1.2
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*13.9*
				BC ULV Gunbarrel Green Totals:	***66.3***	***46.9***	***1,705.3***	***13.9***
BC ULV Heatherwood Applications								
June 2023	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	5.0	3.9	140.0	1.1
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.2	4.7	172.4	1.3
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.4	5.2	189.4	1.9
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.4	4.5	164.7	1.3
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.3	4.6	166.9	1.3
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.2	4.6	166.2	1.3
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	5.8	4.7	171.3	1.3

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Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	5.9	4.6	167.3	1.3
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.3	2.6	94.9	0.8
	08/24/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	5.9	4.5	162.5	1.2
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*12.7*
				BC ULV Heatherwood Totals:	***60.3***	***43.9***	***1,595.5***	***12.7***
BC ULV Hillcrest Heights Applications								
June 2023	06/14/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	4.6	3.0	107.3	0.9
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	4.6	2.8	103.3	0.8
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	8.4	5.6	202.9	1.6
July 2023	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.2	5.1	184.7	1.4
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.8	1.8	64.0	0.5
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*5.1*
				BC ULV Hillcrest Heights Totals:	***26.5***	***18.2***	***662.1***	***5.1***
BC ULV Hillcrest Heights/Gaynor Lake Applications								
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.5	5.2	190.5	1.5
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.3	4.6	168.7	1.3

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.6	4.9	178.5	1.4
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.3	4.8	174.9	1.3
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.0	4.7	170.5	1.3
	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.3	5.0	182.5	1.4
	08/30/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.3	5.0	180.4	1.4
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*9.6*
				BC ULV Hillcrest Heights/Gaynor Lake Totals:	***45.2***	***34.3***	***1,246.1***	***9.6***
BC ULV Hygiene/Hygiene Heights Applications								
June 2023	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	5.1	3.3	120.0	0.9
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	4.5	3.3	120.4	2.2
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.6	4.8	174.9	1.3
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.8	5.3	190.9	1.5
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*5.9*
				BC ULV Hygiene/Hygiene Heights Totals:	***23.0***	***16.7***	***606.1***	***5.9***
BC ULV Longmont Buffer North Applications								
July 2023	07/24/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	27.4	16.8	609.0	4.7
	07/27/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	26.1	15.3	556.3	4.3

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*9.0*
			BC ULV Longmont Buffer North Totals:		***53.5***	***32.1***	***1,165.3***	***9.0***
BC ULV Longmont Buffer Southeast Applications								
July 2023	07/24/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	16.8	12.8	465.4	4.4
	07/27/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	17.2	12.8	465.4	3.6
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*8.0*
			BC ULV Longmont Buffer Southeast Totals:		***34.0***	***25.6***	***930.8***	***8.0***
BC ULV Longmont Buffer West Applications								
July 2023	07/24/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	25.9	15.2	553.0	4.2
	07/27/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	21.3	13.7	498.5	3.8
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*8.1*
			BC ULV Longmont Buffer West Totals:		***47.1***	***28.9***	***1,051.5***	***8.1***
BC ULV Marshall Road Applications								
June 2023	06/22/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	1.3	1.1	40.0	0.3
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	1.0	0.9	33.5	0.3
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	0.9	0.9	33.1	0.3
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.0	0.9	33.8	0.3
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.0	0.9	32.4	0.2

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.0	0.9	34.2	0.3
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*1.6*
				BC ULV Marshall Road Totals:	***6.0***	***5.7***	***206.9***	***1.6***
BC ULV McCall Lake/Hygiene Heights Applications								
June 2023	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	1.4	1.3	48.0	0.9
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.3	4.8	174.5	1.3
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.5	4.9	176.4	1.4
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	5.9	4.3	156.7	1.2
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.5	5.0	182.9	1.4
August 2023	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	5.2	4.3	154.5	1.2
	08/30/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.2	4.7	170.5	1.3
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*8.7*
				BC ULV McCall Lake/Hygiene Heights Totals:	***37.9***	***29.3***	***1,063.5***	***8.7***
BC ULV Niwot North Applications								
June 2023	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	8.4	5.8	210.2	1.6
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	8.3	5.7	208.0	1.6

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.0	5.4	195.3	1.5
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	8.0	5.2	188.3	1.4
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.6	5.7	208.7	1.6
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.9	5.7	206.9	1.6
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.7	4.8	173.8	1.3
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*10.6*
				BC ULV Niwot North Totals:	***54.7***	***38.3***	***1,391.1***	***10.6***
BC ULV Niwot South Applications								
June 2023	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	9.2	6.4	232.7	1.8
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	9.3	6.5	236.7	1.8
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	8.7	6.4	231.6	1.8
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	9.5	6.0	216.7	1.6
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	10.9	7.7	278.2	2.2
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	10.0	7.0	254.5	1.9
	08/10/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	10.2	6.7	244.3	1.9
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*13.0*
				BC ULV Niwot South Totals:	***67.7***	***46.6***	***1,694.7***	***13.0***

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
BC ULV North Rim/Lake Valley Estates Applications								
June 2023	06/14/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	8.5	5.5	201.1	1.6
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	8.4	3.9	142.5	1.1
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	7.7	3.7	134.5	1.0
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	7.9	3.2	115.3	0.9
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.7	3.3	118.2	0.9
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.7	2.7	99.3	0.7
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.6	3.1	112.7	0.8
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.5	4.1	150.5	1.1
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*8.2*
				BC ULV North Rim/Lake Valley Estates Totals:	***63.0***	***29.5***	***1,074.1***	***8.2***
BC ULV Orange Orchard/Pleasant Ridge Applications								
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.6	1.7	62.9	0.5
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.6	1.5	55.3	0.4
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.6	1.7	62.2	0.5
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.6	1.8	64.0	0.5
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.5	1.8	66.5	0.5

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*2.3*
			BC ULV Orange Orchard/Pleasant Ridge Totals:		***12.8***	***8.6***	***310.9***	***2.3***
BC ULV Park Lake Applications								
June 2023	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.2	2.2	78.5	0.6
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.6	2.0	73.1	0.6
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.3	1.6	58.2	0.6
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.3	1.5	54.2	0.4
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.3	1.4	52.4	0.4
	07/27/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.3	1.6	57.5	0.4
August 2023	08/03/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.5	1.6	57.5	0.4
			Total Aqua Perm-X UL 30-30 (General Use) Applied:					*3.4*
			BC ULV Park Lake Totals:		***18.4***	***11.9***	***431.2***	***3.4***
BC ULV Red Fox Hills/Twin Lakes Applications								
June 2023	06/14/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	8.3	3.7	133.8	1.0
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	4.3	2.5	92.0	0.7
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	4.1	2.2	78.9	0.6
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.6	2.4	88.7	0.9

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	4.0	2.4	85.8	0.7
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	4.1	2.4	86.2	0.7
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	4.1	2.4	88.7	0.7
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.4	2.2	78.9	0.6
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.7	2.1	77.5	0.6
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.9	1.1	39.6	0.3
	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.8	2.2	78.2	0.6
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*7.4*
				BC ULV Red Fox Hills/Twin Lakes Totals:	***46.2***	***25.5***	***928.3***	***7.4***
BC ULV Ridglea Hills/Crestmoor/Baseline Heights Applications								
June 2023	06/14/2023	Elms at Meadow Vale HOA	Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.2	4.5	161.8	1.3
	06/21/2023	Elms at Meadow Vale HOA	Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.2	4.2	152.7	1.2
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*2.5*
				BC ULV Ridglea Hills/Crestmoor/Baseline Heights Totals:	***12.4***	***8.7***	***314.5***	***2.5***
BC ULV Sombrero Ranch/Ridglea Hills/Crestmoor Applications								
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.5	5.7	205.8	2.0
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.2	5.9	215.3	1.6

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	7.1	5.4	197.8	1.5
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.1	5.4	197.4	1.5
August 2023	08/03/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.3	5.8	211.6	1.6
	08/10/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.1	5.9	214.5	1.6
	08/17/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.1	5.5	198.5	1.5
	08/24/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.2	5.9	214.9	1.6
	08/30/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	7.1	5.8	210.9	1.6
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*14.6*
				BC ULV Sombrero Ranch/Ridglea Hills/Crestmoor Totals:	***63.6***	***51.3***	***1,866.7***	***14.6***
BC ULV South Meadows Applications								
June 2023	06/07/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.6	2.0	71.3	0.5
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.0	2.1	74.9	0.6
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.7	1.9	67.6	0.5
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.0	2.1	77.1	0.9
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.0	1.7	60.0	0.5
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	3.0	1.8	66.9	0.5
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.0	1.8	64.0	0.5

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.9	2.0	70.9	0.5
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.0	1.9	67.3	0.5
	08/16/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	3.2	1.5	53.1	0.4
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*5.5*
				BC ULV South Meadows Totals:	***29.5***	***18.5***	***673.0***	***5.5***
BC ULV Stonehenge - float Applications								
July 2023	07/27/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.1	1.0	36.7	0.3
August 2023	08/03/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.1	1.0	35.3	0.3
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*0.6*
				BC ULV Stonehenge - float Totals:	***2.2***	***2.0***	***72.0***	***0.6***
BC ULV Willis Heights Applications								
July 2023	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.2	1.6	58.2	0.4
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.1	1.8	63.6	0.5
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.1	1.7	61.5	0.5
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*1.4*
				BC ULV Willis Heights Totals:	***6.4***	***5.0***	***183.3***	***1.4***
BC ULV Willow Glen/Fox Run Applications								

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
June 2023	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.8	1.4	49.8	0.4
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	1.8	1.3	47.3	0.4
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	1.9	1.3	48.0	0.5
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.7	1.2	43.6	0.3
	07/20/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.6	1.1	40.7	0.3
	07/27/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.8	1.2	44.4	0.3
August 2023	08/03/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.8	1.2	41.8	0.3
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*2.6*
				BC ULV Willow Glen/Fox Run Totals:	***12.4***	***8.7***	***315.6***	***2.6***
BC ULV Willows Applications								
June 2023	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.6	0.8	30.2	0.2
July 2023	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	2.6	0.9	32.4	0.2
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.9	1.1	38.2	0.3
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.9	1.0	36.4	0.3
	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	2.6	1.0	35.3	0.3
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*1.3*
				BC ULV Willows Totals:	***13.5***	***4.7***	***172.4***	***1.3***

Vector Disease Control International
7230 W 118th Pl. Unit E
Broomfield, CO 80020

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
BC ULV Woodbourne Hollow/Rustic Knolls - float Applications								
July 2023	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	0.8	0.7	26.2	0.2
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	1.1	0.7	26.2	0.2
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*0.4*
			BC ULV Woodbourne Hollow/Rustic Knolls - float Totals:		***1.9***	***1.4***	***52.4***	***0.4***
BC ULV Yellowstone Road Applications								
June 2023	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	3.7	2.9	104.7	0.8
	06/21/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	2.5	1.9	70.2	0.5
	06/28/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	7.1	5.0	180.7	3.7
July 2023	07/05/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:5	6.1	4.7	169.4	1.3
	07/12/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.0	4.6	167.6	1.3
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	6.6	4.8	173.8	1.3
	07/19/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:3	1.7	1.7	62.9	0.6
	07/26/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	5.9	4.6	167.3	1.3
August 2023	08/02/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.4	4.9	178.2	1.4
	08/09/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.4	4.9	176.7	1.4

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
	08/23/2023		Aqua Perm-X UL 30-30 (General Use) (89459-76)	1:4	6.7	5.2	190.2	1.5
				Total Aqua Perm-X UL 30-30 (General Use) Applied:				*15.0*
				BC ULV Yellowstone Road Totals:	***59.0***	***45.2***	***1,641.7***	***15.0***
				Grand Totals:	***1,178.9***	***796.9***	***28,974.3***	***231.8***

Ground Adulticide Applications

Start Date: 05/01/2023 **End Date:** 10/31/2023

Boulder County Mosquito Control District

Month	Date	Municipality	Chemical	Mix Ratio	Trip Miles	Spray Miles	Spray Acres	Gallons Sprayed
BC Cline Trout Farm - Barrier Applications								
June 2023	06/29/2023		Talstar Pro (General Use) (279-3206)	1:128	0.0	0.3	9.1	4.0
July 2023	07/13/2023		Talstar Pro (General Use) (279-3206)	1:128	0.0	0.3	9.1	2.0
				Total Talstar Pro (General Use) Applied:				*6.0*
				BC Cline Trout Farm - Barrier Totals:	***0.0***	***0.5***	***18.2***	***6.0***
				Grand Totals:	***0.0***	***0.5***	***18.2***	***6.0***

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