2018 Annual Report
Town of Windsor
Mosquito Control Program

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Town of Windsor
Mosquito Management Operations

Annual Report For 2018

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Program Objectives

Vector Disease Control International, LLC (VDCI) completed its 16th year of cost-effective Integrated Mosquito Management (IMM) for the Town of Windsor in 2018. The primary objective of Windsor's IMM Program is to monitor and reduce mosquito populations through the use of specific, environmentally sound, control techniques in order to protect its residents from the threat of mosquito-borne diseases. VDCI prioritizes the detection and elimination of larval mosquitoes in aquatic habitats, in conjunction with the monitoring of adult mosquito populations through routine surveillance, in order to assess West Nile virus vector species abundance in the area.

Open communication is maintained by VDCI between the HOA Residents, Property Management Companies, the Weld and Larimer County Departments of Health & Environment and surrounding municipalities to ensure that the highest level of mosquito control and epizootic response is achieved. This diligent and cooperative communication is important to the Town of Windsor's mosquito management program and provides significant benefit to public health throughout the entire area.

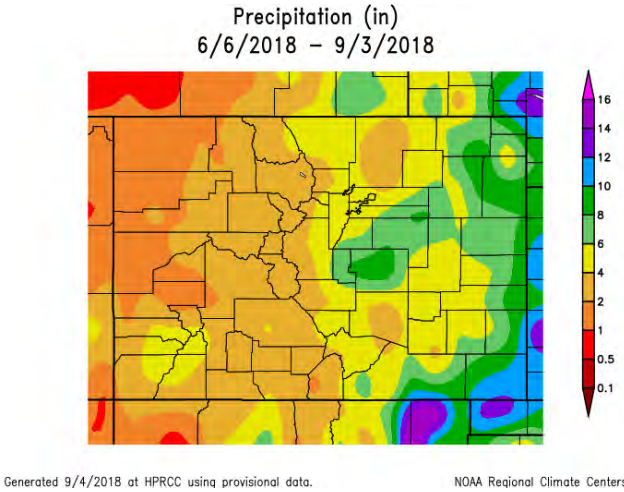
VDCI's Commitment

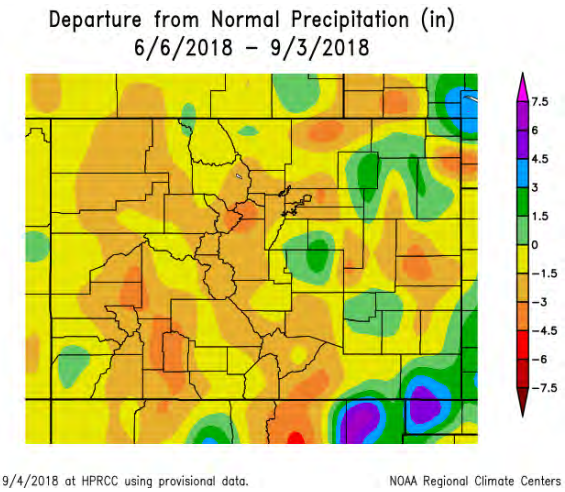
Vector Disease Control International is a company built on the foundations of public health, ethics, professionalism, and technical expertise. VDCI is committed to providing our customers with scientifically based, environmentally sensitive and technologically advanced Integrated Mosquito Management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

Vector Disease Control International, as the contractor for the Town of Windsor, 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 of the 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.

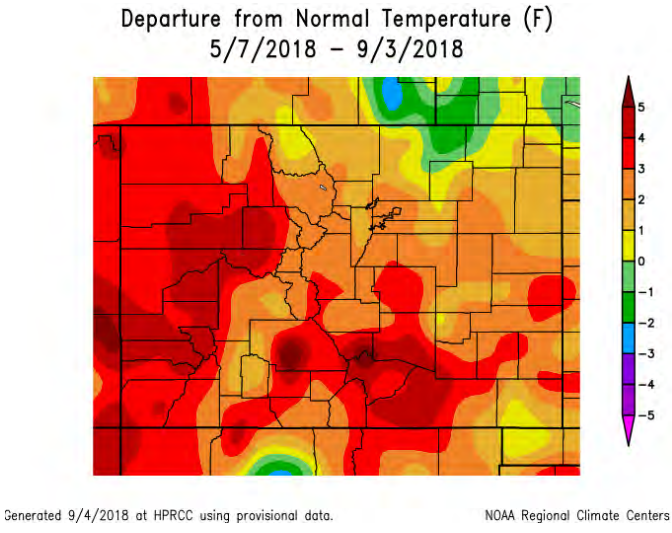
2018 Season Perspective

At VDCI we have come to expect each Colorado summer to present a unique set of temperature, precipitation, irrigation, and human interactions that combine to create new and different challenges in both mosquito control and mosquito-borne disease proliferation. The late-spring and early summer of 2018 started off with an earlier than normal peak runoff from snow melt. As the season started, precipitation was significantly lower than average throughout most of the state causing drought conditions with larval production concentrated along the river and permanent water sources. Rainfall throughout Larimer and Weld County was 1.5 inches below historical averages but came in significant bursts throughout the season creating significant flooding and altered landscape in some areas. Mosquito abundance remained above historical averages for most of the season. However, West Nile virus activity in both mosquito and human populations remained below average throughout the summer.





Temperatures throughout Northern Colorado seem to increase every summer and 2018 was no different. The High Plains Regional Climate Center reports temperatures 2-3 degrees higher than average throughout the 2018 summer months. As temperatures increase so does the rate of growth in larval mosquito populations.



West Nile Virus Season

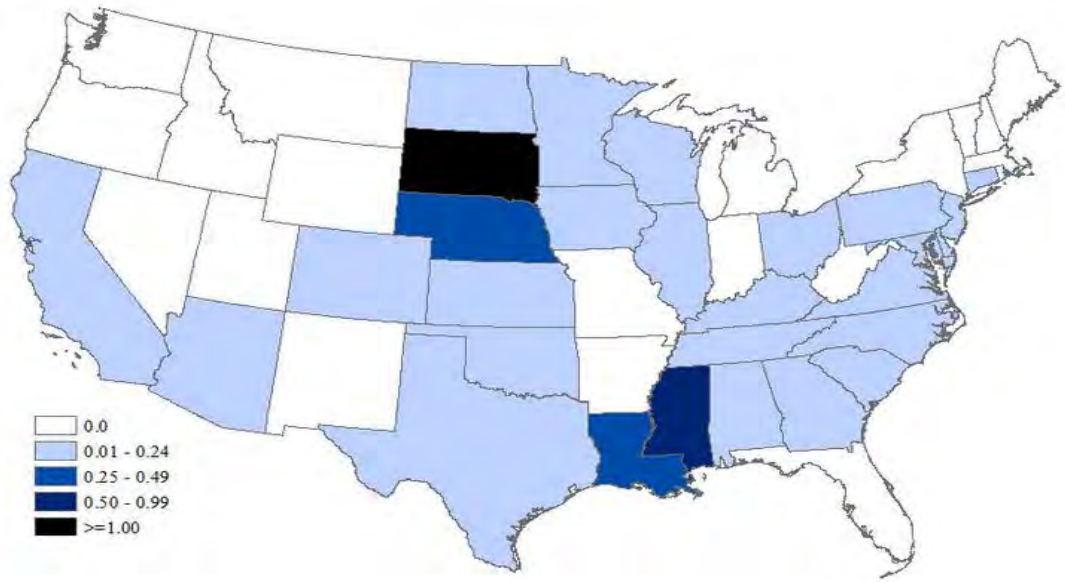
Since the introduction of West Nile virus to the United States in 1999, the virus has made a complete westward expansion to the West Coast. Starting in the Northeastern parts of the United States, the virus steadily spread through the South, the Midwest, the Rocky Mountain region, and to the Western States. This extensive distribution is due to the ability of WNv 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 (WNv Guidelines, CDC 2013). 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 since its introduction has produced two additional, large nationwide epidemics in 2003 and 2012 (WNv Guidelines, CDC 2013).

As of August 21, 2018, a total of 45 states and the District of Columbia have reported West Nile virus infections in people, birds, or mosquitoes. Overall, 231 cases of West Nile virus disease in people have been reported to CDC. Of these, 133 (58%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 98 (42%) were classified as non-neuroinvasive disease.

West Nile Virus Activity by State – United States, 2018 (as of August 21, 2018)

*WNV human disease cases or presumptive viremic blood donors. Presumptive viremic blood donors have a positive screening test which has not necessarily been confirmed.

West Nile Virus Neuroinvasive Disease Incidence by State – United States, 2018 (as of August 21, 2018)



This map shows the incidence of human West Nile virus neuroinvasive disease (e.g., meningitis, encephalitis, or acute flaccid paralysis) by state for 2018 with shading ranging from 0.01-0.24, 0.25-0.49, 0.50-0.99, and greater than 1.00 per 100,000 population.

Neuroinvasive disease cases have been reported to ArboNET from the following states for 2018: Alabama, Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Nebraska, New Jersey, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, and Wisconsin.

Colorado 2018

As of August 21st, the Centers for Disease Control have reported only 6 cases of human West Nile virus (WNv) infections from the state of Colorado. Two of these cases were neuroinvasive including symptoms of meningitis or encephalitis (including meningoencephalitis), and 4 were non-neuroinvasive which includes cases where individuals are non-symptomatic or present with fever and other minor symptoms. To date, there have been no deaths associated with West Nile virus infections from Colorado in 2018.

West Nile Virus Disease Cases by State 2018

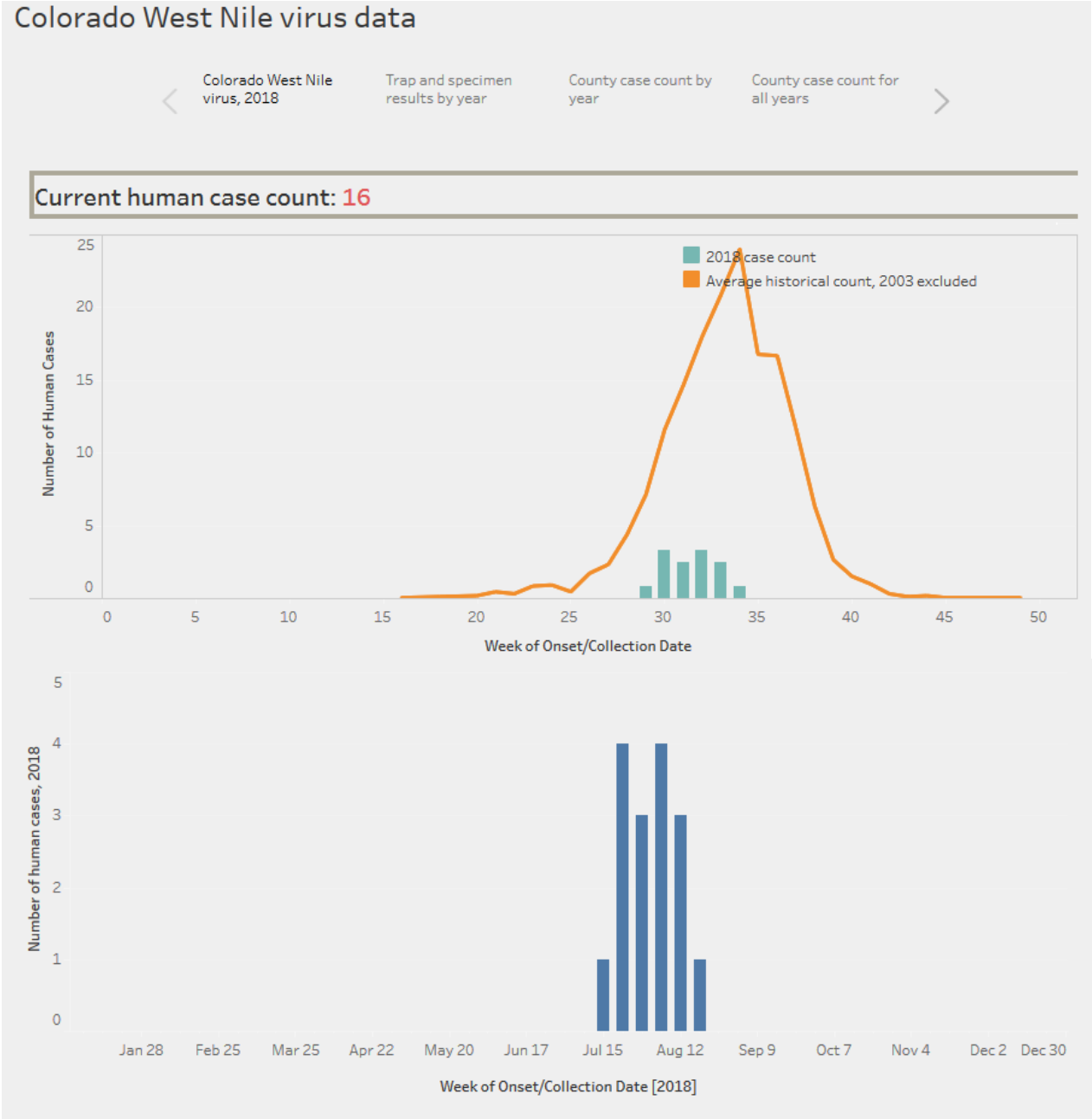
West Nile Virus Disease Cases* and Presumptive Viremic Blood Donors by State – United States, 2018 (as of August 21, 2018)

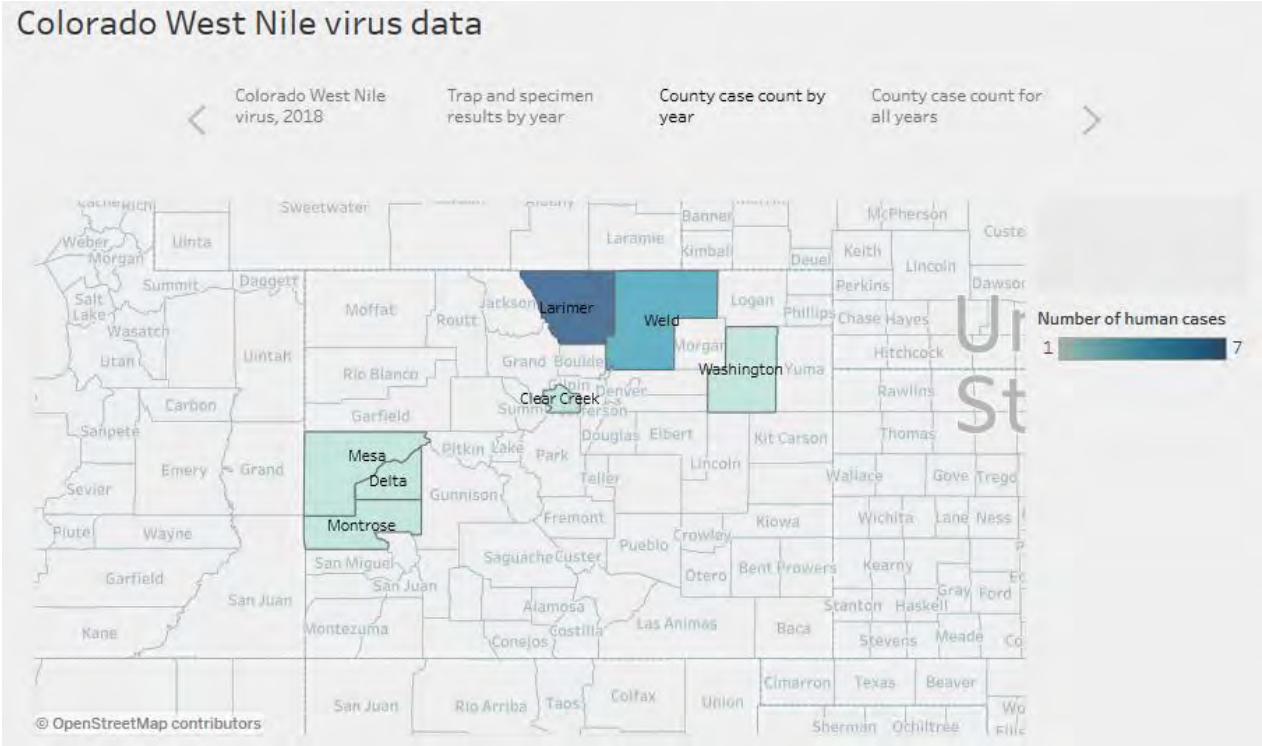
State	Neuroinvasive Disease Cases†	Non-neuroinvasive Disease Cases	Total cases	Deaths	Presumptive viremic blood donors‡
Colorado	2	4	6	0	1

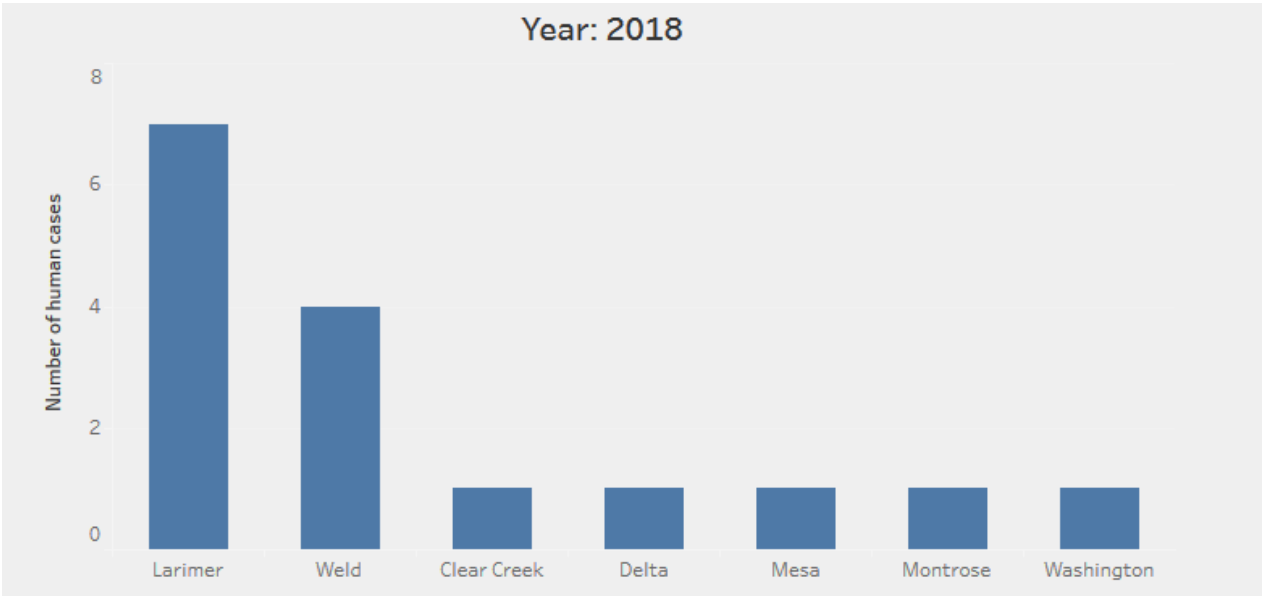
(https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata2018/disease-cases-state.html)

The Colorado Department of Health and Environment reports a total of 16 human cases of West Nile virus infection from the state of Colorado. Many of these human cases are concentrated in Northern Colorado with 7 human cases reported from Larimer County and 4 from Weld County. While we have passed the historical peak of WNv risk these numbers are expected to rise as there is often a delay in onset of symptoms, diagnosis and reporting. Please note that the additional cases reported by CDPHE will also be reported to the Centers for Disease Control.

Seven Counties across the state of Colorado have reported human West Nile virus infection. These include Larimer, Weld, Clear Creek, Delta, Mesa, Montrose and Washington.




Colorado West Nile virus data
Colorado West Nile virus, 2018
Trap and specimen results by year
County case count by year
County case count for all years
Number of human cases
1
7
Larimer
Weld
Clear Creek
Washington
Mesa
Delta
Montrose
© OpenStreetMap contributors


Year: 2018
Number of human cases
0
2
4
6
8
Larimer
Weld
Clear Creek
Delta
Mesa
Montrose
Washington

Larval Mosquito Control

Larval mosquito control is the foundation of the Town of Windsor's Mosquito Control program and can be an extremely effective way to manage mosquitoes, thereby reducing the number of potential disease vectors and annoyances associated with biting adults. Years of research and practical experience have shown that the most effective way to control mosquito populations is through an aggressive Integrated Mosquito Management (IMM) approach. This approach aims at using a variety of concepts, tools, and products to reduce a pest population to a tolerable level.

Pre-season larval control work involved ground truthing GIS maps and remapping areas where new development or flooding had altered the landscape. VDCI began larval site inspections in many areas mid-April. Hiring of seasonal field technicians began in March and continued into May. VDCI's Annual Field Technician Classroom Training Day took place on May 21st with over 50 new and returning field technicians in attendance. Field training by VDCI management and veteran employees lasted through May and full-time field activities were in force by mid-June.

In 2018 Vector Disease Control International performed 2,314 larval site inspections, of which 1,901 sites (82.2%) were wet upon inspection and 1,123 (59%) were producing mosquito larvae within the Town of Windsor. VDCI applied 5,571.8 lbs. of VectoBac (Bti) and 11.1 gallons of BVA mineral oil to 758.6 acres of lands in the Town of Windsor.

In 2017 Vector Disease Control International performed 1,954 larval site inspections, of which 1,528 sites (78.2%) were wet upon inspection and 923 (60.4%) were producing mosquito larvae within the Town of Windsor. VDCI applied 4,229 lbs. of VectoBac (Bti), 52.7 lbs of Vectolex (Bs) and 21.8 gallons of BVA mineral oil to 638.7 acres of lands in the Town of Windsor.

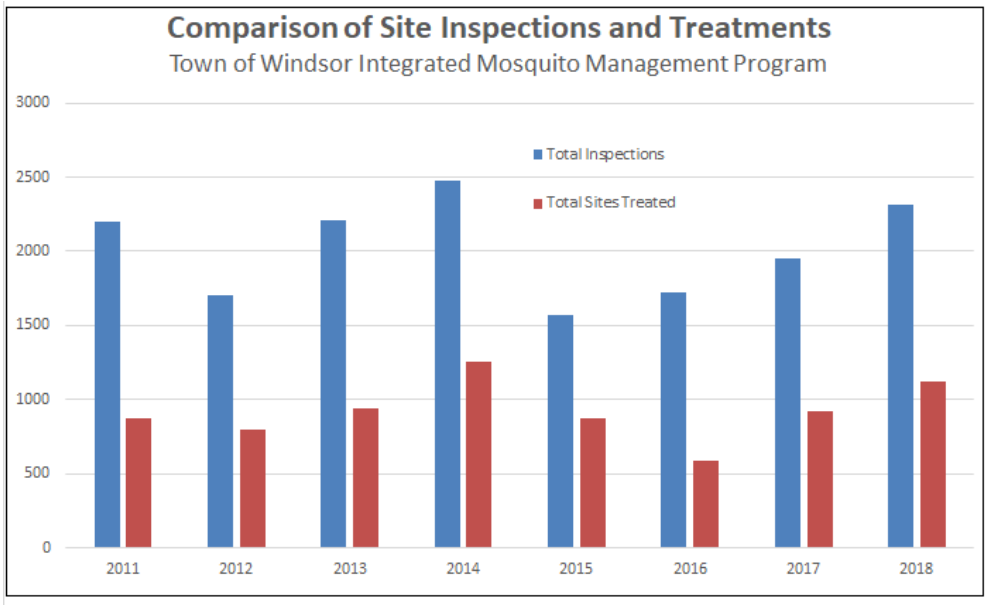
In 2016 Vector Disease Control International performed 1,724 larval site inspections, of which 1,395 sites (80.9%) were wet upon inspection and 592 (42.4%) were producing mosquito larvae within the Town of Windsor. VDCI applied 2,956 lbs. of VectoBac (Bti), and 15.6 gallons of BVA mineral oil to 558.8 acres of lands in the Town of Windsor.

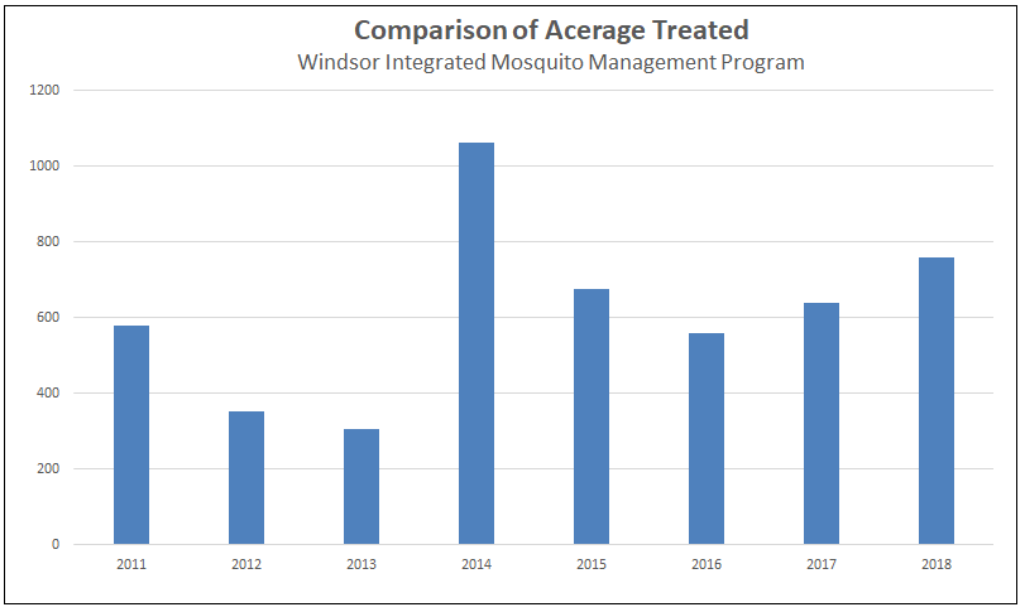
In 2015 Vector Disease Control International performed 1,587 larval site inspections, of which 1,401 sites (88.3%) were wet upon inspection and 878 (62%) were producing mosquito larvae within the Town of Windsor VDCI applied 5,112 lbs. of VectoBac (Bti), 278.1 lbs. of Vectolex (Bs), and 26.6 gallons of BVA mineral oil to 676 acres of lands in the Town of Windsor.

Larval mosquito control can be achieved in several ways including biological, biochemical, chemical, and mechanical means. No single larvicide product will work effectively in every habitat where mosquito larvae are found, so a variety of products and methods should be employed. Additionally, although there are a variety of methods for reducing larval populations, some may have negative consequences that outweigh their benefits. Mechanical or physical habitat modification is a technique which VDCI uses on relatively small scale projects, as the area to be modified must be carefully reviewed.

VDCI's favored method of larval mosquito control is through the use of bacterial bio-rational products. The main product used by VDCI 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 in accordance with its label, successful control of mosquito larvae can be achieved without impact to non-target species such as other aquatic invertebrates, birds, mammals, fish, amphibians, reptiles, or humans. A broad label allows for the use of the product in the majority of the habitats throughout the service area. Another bacterial product closely related to *Bti* is *Bacillus sphaericus (Bs)*. *BS* provides similar benefits to *Bti* while also providing residual control of certain species of mosquitoes. It is used specifically in difficult to treat areas where *Culex* are the predominant species due to its limitations and high cost.

Other larval control products include the insect growth regulator methoprene (Altosid), and light mineral oils (BVA 2 larvicide oil). Methoprene is a synthetic version of a juvenile growth hormone in larval mosquitoes. The hormone prevents the normal development of larval mosquitoes into pupae and adults, eventually causing death. VDCI limits the use of chemical larvicides to areas with little biodiversity, such as road side ditches, or areas that chronically produce high mosquito populations. They are only used after a thorough assessment has been made of any habitat where their use is being considered. Mineral oil is the only product effective in controlling mosquito pupae and therefore is an essential tool when pupae are present.





VDCI Surveillance Laboratory

Information about mosquito abundance and species diversity is essential to integrated program. Vector Disease Control International utilizes two kinds of traps to monitor mosquito populations. The most commonly used 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. The second type of trap VDCI uses is called a gravid trap. Gravid traps use a tub of highly-organic water as bait to attract female mosquitoes that are looking for a place to lay their eggs. A fan placed close to the water surface forces mosquitoes that come to the water into a collection net. Once back in the laboratory, the contents of the trap nets are counted and speciated by trained technicians.

In 2018, Vector Disease Control International monitored a statewide network of hundreds of weekly trap sites, collecting 687,368 adult mosquitoes that were counted and identified to species by the VDCI Surveillance Laboratories. While individual traps provide only limited information, trap data is interpreted in the context of historical records for the same trap site, going back in time more than a decade. 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.

Additionally, the VDCI Surveillance Laboratory conducts an intensive larval identification program with larval mosquito samples collected by I&L technicians prior to larviciding being identified to species. 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 kinds 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.

SURVEILLANCE LIGHT TRAP DATA

In 2018, there were 141 CDC light surveillance traps set within the Town of Windsor, which collected a total of 25,993 mosquitoes. There was an average of 184 mosquitoes caught per trap per night and an average 43 *Culex* mosquitoes per trap per night. The composition of mosquitoes trapped was 23.5% (6,118) *Culex spp*., 76% (19,758) *Aedes/Ochlerotatus spp*. and <1% (113) *Culiseta spp.* Please refer to the Light Trap Genus Summary for a weekly breakdown of mosquitoes collected by trap location.

In 2017, there were 130 CDC light surveillance traps set within the Town of Windsor, which collected a total of 23,313 mosquitoes. There was an average of 179 mosquitoes caught per trap per night and an average 24 *Culex* mosquitoes per trap per night. The composition of mosquitoes trapped was 13.2% (3,080) *Culex spp*., 86.6% (20,182) *Aedes/Ochlerotatus spp*. and 0.2% (50) *Culiseta spp.* Please refer to the Light Trap Genus Summary for a weekly breakdown of mosquitoes collected by trap location.

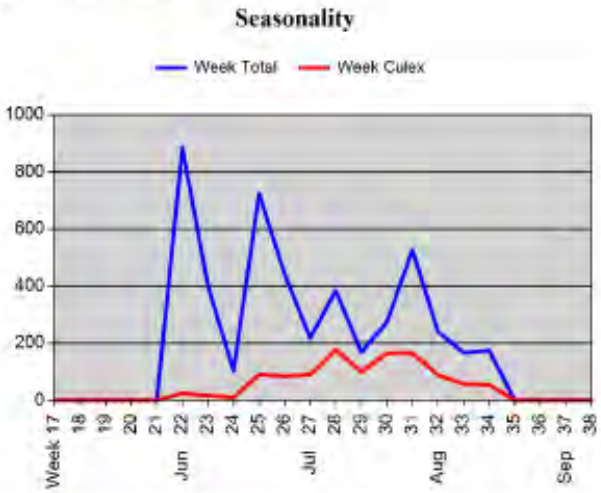
In 2016, 120 surveillance light traps were set within the Town of Windsor, which collected 22,045 total mosquitoes. The average number of mosquitoes collected per trap per night was 184 and the average number of *Culex spp.* mosquitoes collected per trap per night was 44. The percent composition of mosquitoes collected in 2016 included 23.8% (5,236) Culex spp., 76.2% (16,789) *Aedes/Ochlerotatus spp.,* and less than 1.0% (19) *Culiseta spp.* mosquitoes.

2018 Windsor Light Trap Composite Data

Total number of trap/nights set:	141
Total number of mosquitoes collected:	25,993
Average mosquitoes per trap/night:	184
Average Culex per trap/night:	43

Species collected and abundance:

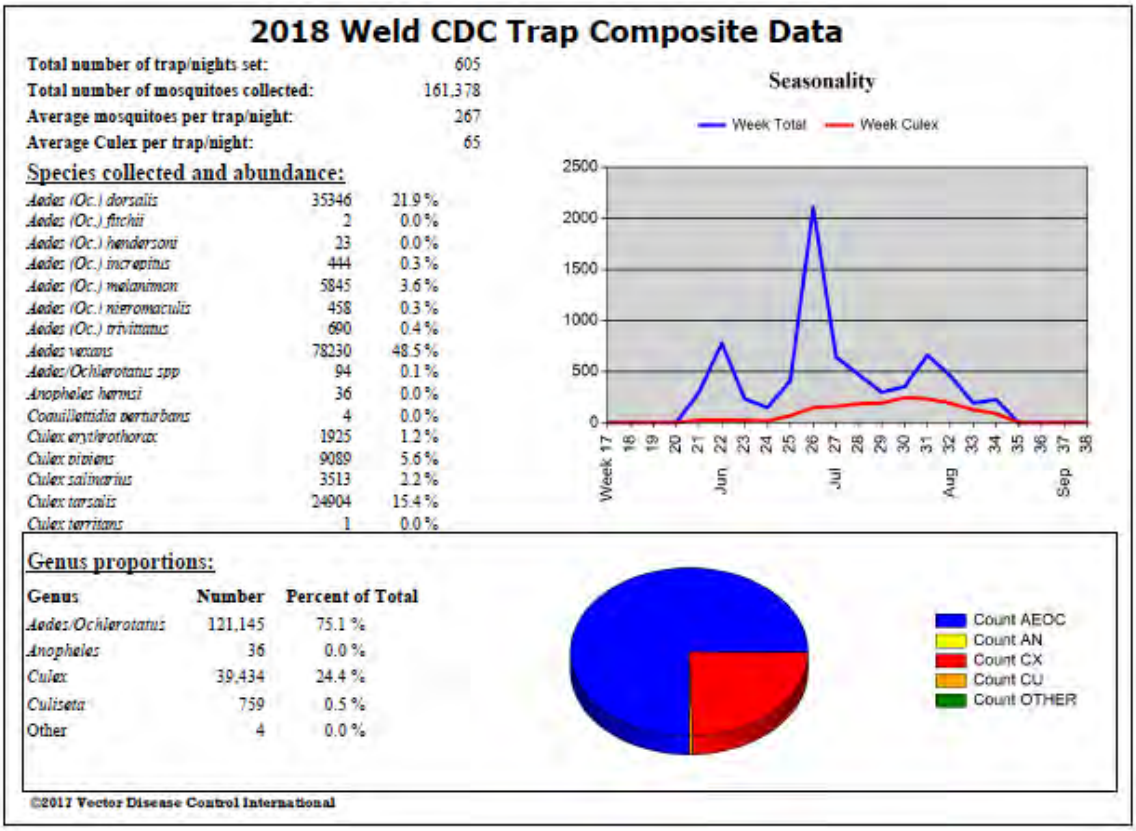
Aedes (Oc.) dorsalis	888	3.4 %
Aedes (Oc.) fitchii	4	0.0 %
Aedes (Oc.) hendersoni	2	0.0 %
Aedes (Oc.) increpitus	14	0.1 %
Aedes (Oc.) melanimon	777	3.0 %
Aedes (Oc.) nigromaculis	16	0.1 %
Aedes (Oc.) trivittatus	13	0.1 %
Aedes vexans	18023	69.3 %
Aedes (Oc.) sollicitans	8	0.0 %
Anopheles freeborni	2	0.0 %
Coquillettidia perturbans	2	0.0 %
Culex pipiens	793	3.1 %
Culex salinarius	198	0.8 %
Culex tarsalis	5125	19.7 %
Culiseta inornata	113	0.4 %



Genus proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	19,758	76.0 %
Anopheles	2	0.0 %
Culex	6,118	23.5 %
Culiseta	113	0.4 %
Other	2	0.0 %

By comparison, in 2018, there were a total of 605 surveillance light traps set within the entire Weld County area, which collected 161,378 total mosquitoes. The average number of mosquitoes collected per trap per night was 267 and the average number of *Culex spp.* mosquitoes collected per trap per night was 65. See image below for percent composition of mosquitoes collected in Weld County.



2018 Weld CDC Trap Composite Data

Total number of trap/nights set:	605
Total number of mosquitoes collected:	161,378
Average mosquitoes per trap/night:	267
Average Culex per trap/night:	65

Species collected and abundance:

Aedes (Oc.) dorsalis	35346	21.9 %
Aedes (Oc.) fitchii	2	0.0 %
Aedes (Oc.) hendersoni	23	0.0 %
Aedes (Oc.) increpitus	444	0.3 %
Aedes (Oc.) melanimon	5845	3.6 %
Aedes (Oc.) nigromaculis	458	0.3 %
Aedes (Oc.) trivittatus	690	0.4 %
Aedes vexans	78230	48.5 %
Aedes/Ochlerotatus spp	94	0.1 %
Anopheles harrisi	36	0.0 %
Coquillettidia perturbans	4	0.0 %
Culex erythrothorax	1925	1.2 %
Culex pipiens	9089	5.6 %
Culex salinarius	3513	2.2 %
Culex tarsalis	24904	15.4 %
Culex territans	1	0.0 %

Genus proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	121,145	75.1 %
Anopheles	36	0.0 %
Culex	39,434	24.4 %
Culiseta	759	0.5 %
Other	4	0.0 %

CSU West Nile Virus Mosquito Sample Testing Results - Larimer County

Many local health departments have moved towards 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 is 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 0.5, 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.

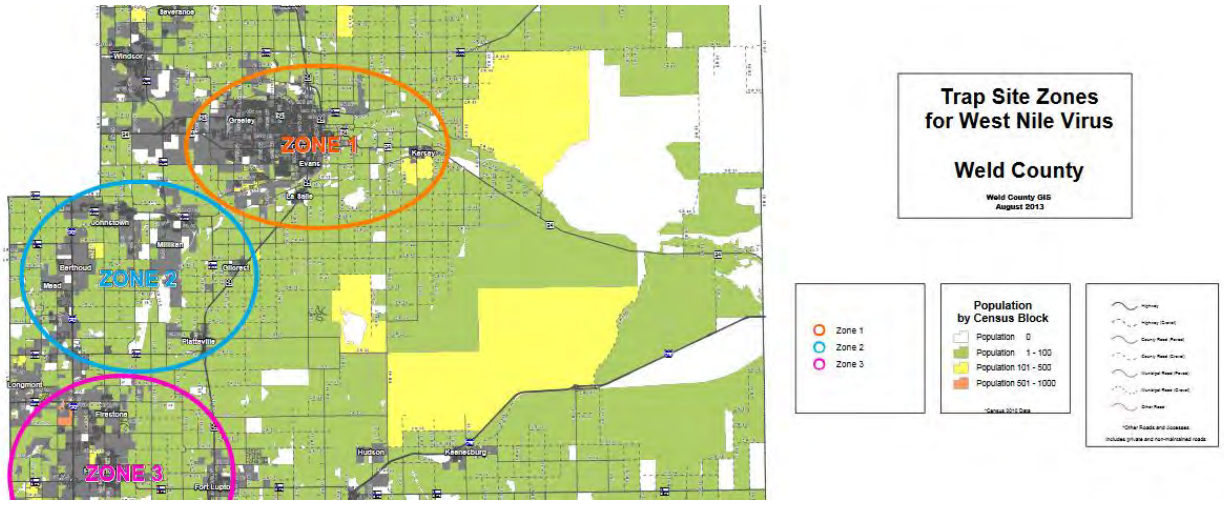
Due to budget cutbacks associated with West Nile virus surveillance in recent years, the CDPHE does not have the ability to test mosquitoes from across the state. As a result, there is very limited testing done within unincorporated Weld County and there were no traps tested from the Town of Windsor in 2018. As stated on the CDPHE website, the seasonal variation of West Nile virus risk can change throughout a summer and it is best to assume you have some risk for WNV if you have mosquitoes.

As of Sept 1st, 2018 Colorado State University's Department of Microbiology, Immunology and Pathology, has tested a total of 1,283 mosquito pools from Larimer County. A total of 85 mosquito pool samples have tested positive for WNv with 4 of those being collected from Berthoud, 5 from Loveland and 76 from the City of Fort Collins. Testing of these mosquitoes for West Nile virus is paid for by the City of Fort Collins, Loveland, and Berthoud. It's important to note that the large number of WNv positive sample pools reported from Fort Collins is highly correlated with the fact they test all mosquitoes with the potential for transmitting disease versus just a subset of the population.

CDPHE West Nile Virus Mosquito Sample Testing Results – Weld County

In 2018 there were a total of 164 mosquito pools samples submitted for West Nile virus testing from mosquitoes collected in Weld County from all three sentinel zones. There were 17 confirmed positive samples.

Vector Index Log			
Week	Zone 1	Zone 2	Zone 3
June 10-16	0	0	0
June 17-23	0	0	0
June 24-30	0	0	0
July 1-7	0	0	0
July 8-14	0	0	0.07
July 15-21	0	0	0
July 22-28	0.20	0.20	0.20
July 29-August 4	0.00	0.67	0.40
August 5-11	0.46	0.37	0.19
August 12-18	0.20	0.61	0
August 19-25	0	0.20	0.17

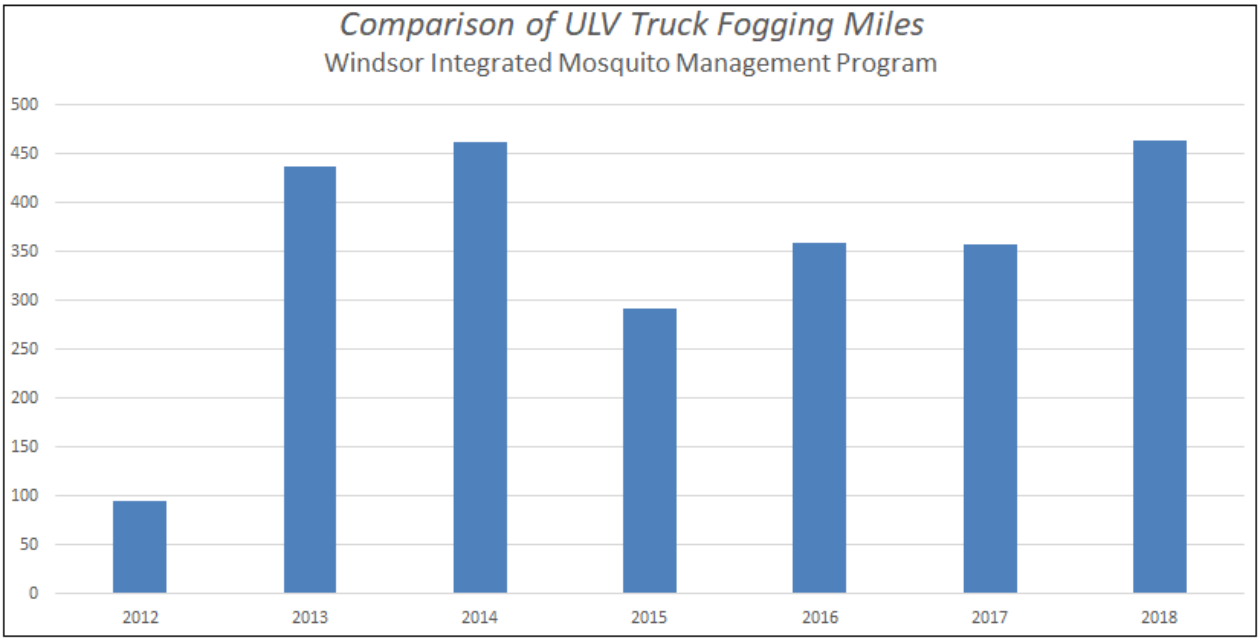


Adult Mosquito Control

The goal of Vector Disease Control International is to provide our customers with the best options for safe, effective, modern mosquito management. The primary emphasis of the Town of Windsor Mosquito Management Program is to control mosquitoes in the larval stage, using safe biological control products. When mosquito counts surpass nuisance or disease thresholds of 100 mosquitoes or 50 *Culex* mosquitoes respectively, VDCI uses EPA and CDC approved adulticides to reduce mosquito populations. During the 2018 season a total of 463 miles of roads and access paths within the Town of Windsor were fogged using AquaKontrol 3030.

Backpack barrier applications, utilizing long term residual mosquito control products (Talstar Professional), were performed on an as needed basis at Boardwalk and Eastman Park. Please reference Appendix 3 for specifics regarding individual adulticide applications.

VDCI uses state of the art technology, calibrated application timing, and least-toxic products to minimize non-target impacts. All adult mosquito control is accomplished using Ultra Low Volume (ULV) fogging equipment and performed after dusk when the majority of mosquito species are most active. 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 insect activity (for example, day-flying pollinators like bees) is greatly reduced. Using this application technique, the overall goal of minimal environmental impact and effective adult control is achieved in the targeted area.



Public Relations and Education

VDCI is dedicated to providing strong Public Outreach and Education Programs to residents in all of our communities. 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 in order to increase the effectiveness of our programs. We have clearly demonstrated that commitment and belief by proactively serving the Town of Windsor (and all of our contracted communities) with numerous innovative programs, activities and services.

Customer service is always a high priority for VDCI. We take pride in training each and 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 line (877-276-4306) and local line to the Northern Colorado Office (970-962-2582) at no cost to the customer. This service can be utilized to accept calls from the public concerning:

- Information about mosquito biology and source reduction of mosquito habitats
- information on program components, operations and monitoring
- Information on program components, operations, and monitoring
- Seasonal West Nile virus activity
- Personal protection options for mosquito annoyances and West Nile virus risk
- Reports about mosquitoes and possible larval mosquito habitats
- Requests to perform larvicide applications and/or opt-out of any adulticide spraying via a shut-off list
- Request notification when adulticide spraying is planned in their neighborhood
- Request health and safety information about mosquito control operations and pesticide products used

VDCI has provided Mosquito Hotlines to the residents in communities which we are contracted to also reduce workload by municipal personnel. This enables direct communication and response by mosquito control employees to resident's 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.

VDCI received 48 phone calls from the residents of Windsor during the month of June 2018. There were 33 mosquito annoyance calls and requests for information from the Eastman Park, River Ranch and Downtown areas. There were 8 requests from residents to be added to the call notification program. VDCI received 4 information requests from individuals wanting to know how the Town of Windsor's mosquito control program worked and when fogging operations would begin. There were only 3 reports of standing water and a site inspection for larval production was performed and the site was treated or modified as necessary.

On May 22nd, 2018 VDCI Participated in the Windsor's Public Safety Fair and Awareness (shown right) to help educated residents of mosquito control activities within the town and how to prevent mosquito bites using the 4 D's (Drain, Dress, Dawn/Dusk and DEET).

CALL NOTIFICATION & SHUTOFF SYSTEM

VDCI continues to maintain a comprehensive Call Notification & Shutoff database and will notify residents on the list when conducting ULV adulticide spray applications within the Town of Windsor.

DAILY POSTING OF ULV SPRAY ZONES are maintained and updated online daily at http://www.vdci.net/colorado

Appendix 1: Town of Windsor Individual Light Trap Summaries

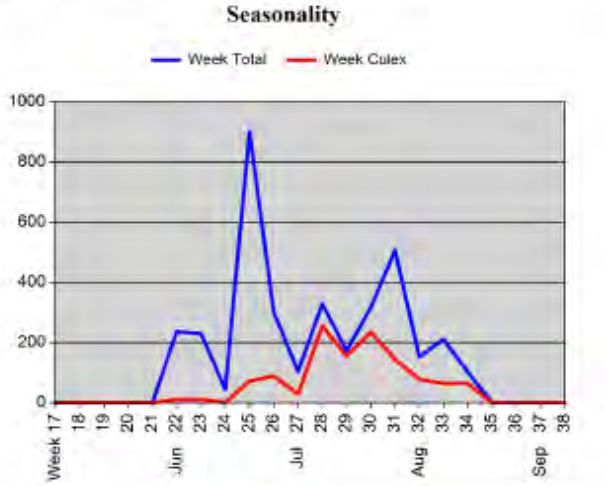
WR-02: Windsor - Lake Osterhout

Season: 2018
Trap Type: Light/CO2
Location: west side of Lake Osterhout
GPS: N40° 29.320' W104° 54.675'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	3,606
Average mosquitoes per trap/night:	277
Average Culex per trap/night:	93

Species collected and abundance:

Aedes (Oc.) dorsalis	274	7.6 %
Aedes (Oc.) increpitus	4	0.1 %
Aedes (Oc.) melanimon	151	4.2 %
Aedes (Oc.) nigromaculis	1	0.0 %
Aedes vexans	1961	54.4 %
Coquillettidia perturbans	1	0.0 %
Culex pipiens	33	0.9 %
Culex salinarius	12	0.3 %
Culex tarsalis	1165	32.3 %
Culiseta inornata	4	0.1 %



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,391	66.3 %
Anopheles	0	0.0 %
Culex	1,210	33.6 %
Culiseta	4	0.1 %
Other	1	0.0 %

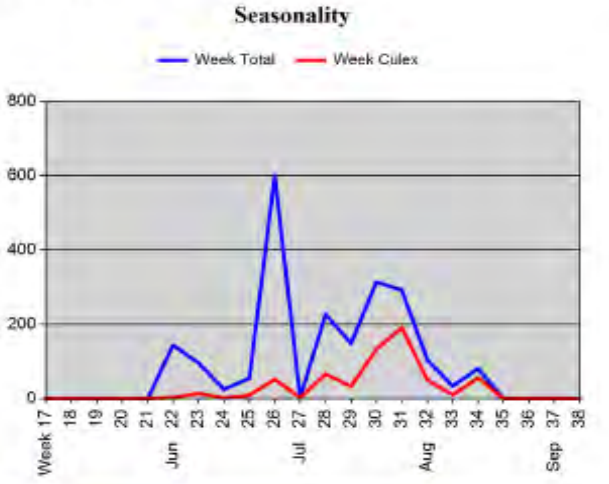
WR-06: Windsor Lee Lake Area

Season: 2018
Trap Type: Light/CO2
Location: 6771 Stevens Street in North Windsor
GPS: N40° 32.165' W104° 55.835'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	2,125
Average mosquitoes per trap/night:	163
Average Culex per trap/night:	48

Species collected and abundance:

Aedes (Oc.) dorsalis	69	3.2 %
Aedes (Oc.) increpitus	2	0.1 %
Aedes (Oc.) melanimon	95	4.5 %
Aedes vexans	1306	61.5 %
Culex pipiens	30	1.4 %
Culex salinarius	4	0.2 %
Culex tarsalis	589	27.7 %
Culiseta inornata	30	1.4 %



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	1,472	69.3 %
Anopheles	0	0.0 %
Culex	623	29.3 %
Culiseta	30	1.4 %
Other	0	0.0 %

WR-11: Windsor River Ridge

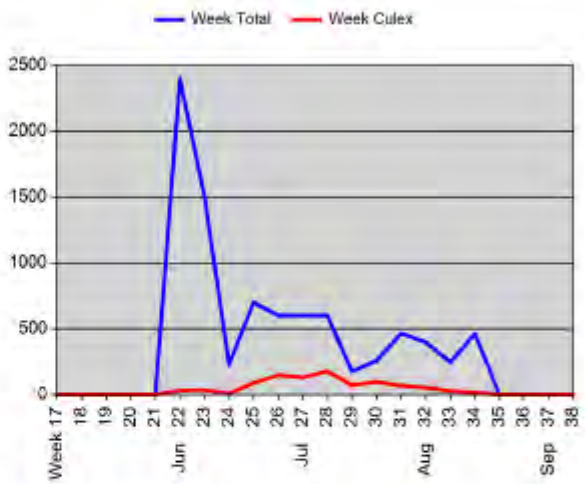
Season: 2018
Trap Type: Light/CO2
Location: off River Ridge Drive along drainage in River West
GPS: N40° 28.465', W104° 56.785'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	8,637
Average mosquitoes per trap/night:	664
Average Culex per trap/night:	74

Species collected and abundance:

Aedes (Oc.) dorsalis	21	0.2 %
Aedes (Oc.) fitchii	4	0.0 %
Aedes (Oc.) hendersoni	1	0.0 %
Aedes (Oc.) increpitus	1	0.0 %
Aedes (Oc.) melanimon	116	1.3 %
Aedes vexans	7525	87.1 %
Culex pipiens	36	0.4 %
Culex salinarius	7	0.1 %
Culex tarsalis	914	10.6 %
Culiseta inornata	12	0.1 %

Seasonality



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	7,668	88.8 %
Anopheles	0	0.0 %
Culex	957	11.1 %
Culiseta	12	0.1 %
Other	0	0.0 %

WR-12: Windsor Eastman Park

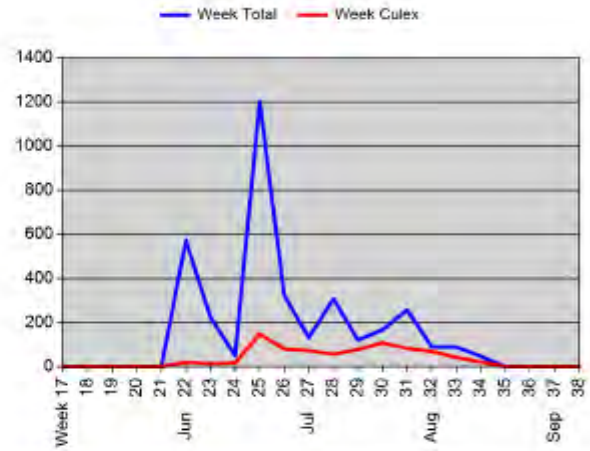
Season: 2018
Trap Type: Light/CO2
Location: west end of Eastman Park Drive
GPS: N40° 27.920' W104° 54.740'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	3,577
Average mosquitoes per trap/night:	275
Average Culex per trap/night:	62

Species collected and abundance:

Aedes (Oc.) dorsalis	17	0.5 %
Aedes (Oc.) hendersoni	1	0.0 %
Aedes (Oc.) increpitus	1	0.0 %
Aedes (Oc.) melanimon	58	1.6 %
Aedes (Oc.) trivittatus	2	0.1 %
Aedes vexans	2673	74.7 %
Culex pipiens	318	8.9 %
Culex salinarius	83	2.3 %
Culex tarsalis	408	11.4 %
Culiseta inornata	16	0.4 %

Seasonality



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,752	76.9 %
Anopheles	0	0.0 %
Culex	809	22.6 %
Culiseta	16	0.4 %
Other	0	0.0 %

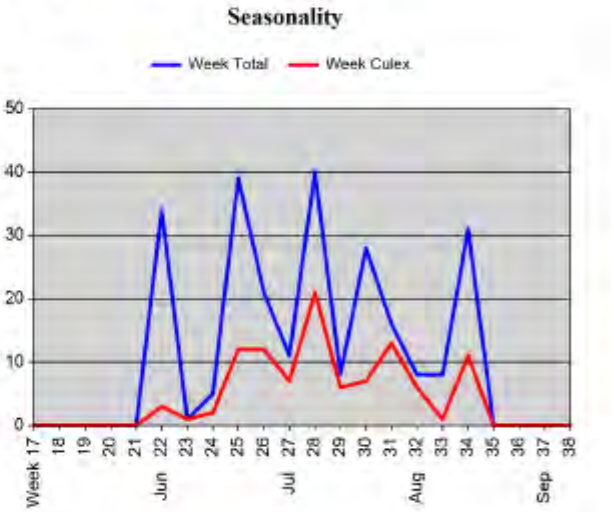
WR-14: Windsor Highland Meadows

Season: 2018
Trap Type: Light/CO2
Location: 5316 Regatta Ct.
GPS: N40° 28.360', W104° 58.690'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	250
Average mosquitoes per trap/night:	19
Average Culex per trap/night:	8

Species collected and abundance:

Aedes (Oc.) dorsalis	5	2.0 %
Aedes (Oc.) melanimon	3	1.2 %
Aedes vexans	141	56.4 %
Culex pipiens	7	2.8 %
Culex salinarius	1	0.4 %
Culex tarsalis	93	37.2 %



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	149	59.6 %
Anopheles	0	0.0 %
Culex	101	40.4 %
Culiseta	0	0.0 %
Other	0	0.0 %

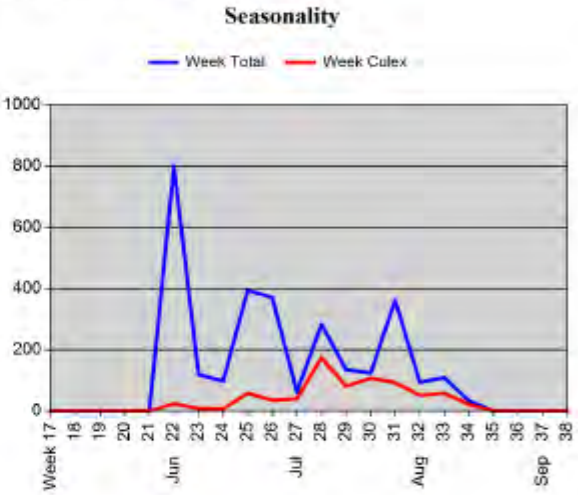
WR-15: Windsor North Shores

Season: 2018
Trap Type: Light/CO2
Location: 225 Madera Way, Windsor
GPS: N40° 30.190' W104° 53.880'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	2,984
Average mosquitoes per trap/night:	230
Average Culex per trap/night:	58

Species collected and abundance:

Aedes (Oc.) dorsalis	164	5.5 %
Aedes (Oc.) melanimon	133	4.5 %
Aedes (Oc.) nigromaculis	3	0.1 %
Aedes (Oc.) trivittatus	6	0.2 %
Aedes vexans	1886	63.2 %
Aedes (Oc.) sollicitans	4	0.1 %
Coquillettidia perturbans	1	0.0 %
Culex pipiens	30	1.0 %
Culex salinarius	3	0.1 %
Culex tarsalis	725	24.3 %
Culiseta inornata	29	1.0 %



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	2,196	73.6 %
Anopheles	0	0.0 %
Culex	758	25.4 %
Culiseta	29	1.0 %
Other	1	0.0 %

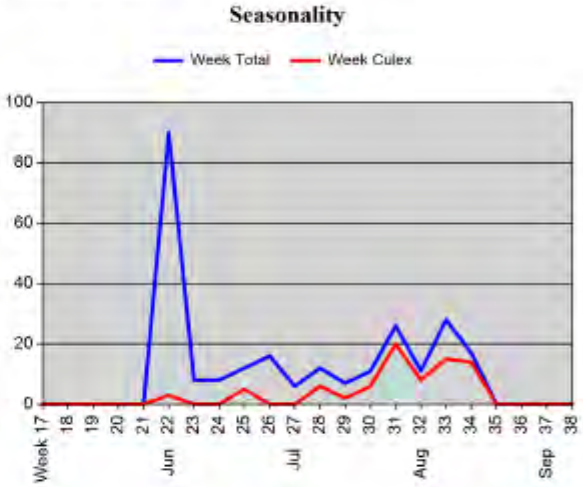
WR-16: Steeplechase

Season: 2018
Trap Type: Light/CO2
Location: Drainage So. of 8632 Steeplechase Dr.
GPS: N40° 26.715', W104° 56.890'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	252
Average mosquitoes per trap/night:	19
Average Culex per trap/night:	6

Species collected and abundance:

Aedes (Oc.) dorsalis	52	20.6 %
Aedes (Oc.) melanimon	3	1.2 %
Aedes (Oc.) nigromaculis	1	0.4 %
Aedes vexans	117	46.4 %
Culex pipiens	7	2.8 %
Culex salinarius	1	0.4 %
Culex tarsalis	71	28.2 %



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	173	68.7 %
Anopheles	0	0.0 %
Culex	79	31.3 %
Culiseta	0	0.0 %
Other	0	0.0 %

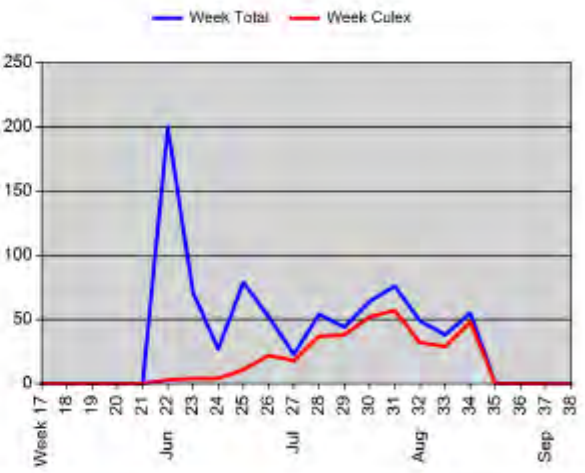
WR-17: Windsor Water Valley North

Season: 2018
Trap Type: Light/CO2
Location: drainage west of Bayside Circle townhomes
GPS: N40° 27.625' W104° 53.865'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	832
Average mosquitoes per trap/night:	64
Average Culex per trap/night:	27

Species collected and abundance:

Aedes (Oc.) dorsalis	9	1.1 %
Aedes (Oc.) increpitus	4	0.5 %
Aedes (Oc.) melanimon	23	2.8 %
Aedes vexans	432	51.9 %
Culex pipiens	201	24.2 %
Culex salinarius	23	2.8 %
Culex tarsalis	131	15.7 %
Culiseta inornata	9	1.1 %



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	468	56.3 %
Anopheles	0	0.0 %
Culex	355	42.7 %
Culiseta	9	1.1 %
Other	0	0.0 %

WR-18: Windsor Water Valley South

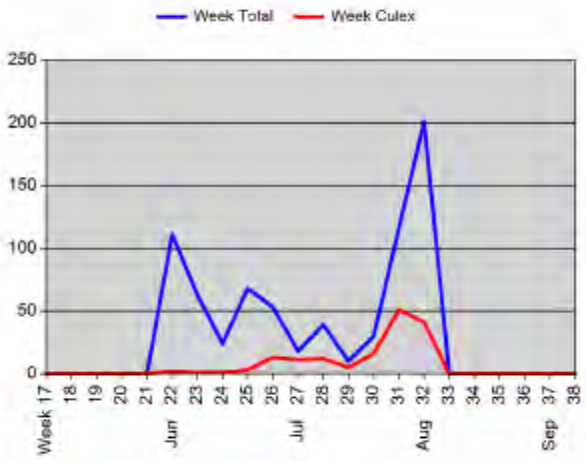
Season: 2018
Trap Type: Light/CO2
Location: playground near 1859 Seadrift Dr.
GPS: N40° 26.835' W104° 53.725'

Total number of trap/nights set:	11
Total number of mosquitoes collected:	733
Average mosquitoes per trap/night:	67
Average Culex per trap/night:	14

Species collected and abundance:

Aedes (Oc.) dorsalis	46	6.3 %
Aedes (Oc.) melanimon	85	11.6 %
Aedes (Oc.) trivittatus	1	0.1 %
Aedes vexans	444	60.6 %
Culex pipiens	15	2.0 %
Culex tarsalis	140	19.1 %
Culiseta inornata	2	0.3 %

Seasonality



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	576	78.6 %
Anopheles	0	0.0 %
Culex	155	21.1 %
Culiseta	2	0.3 %
Other	0	0.0 %

WR-20: Windsor Chimney Park

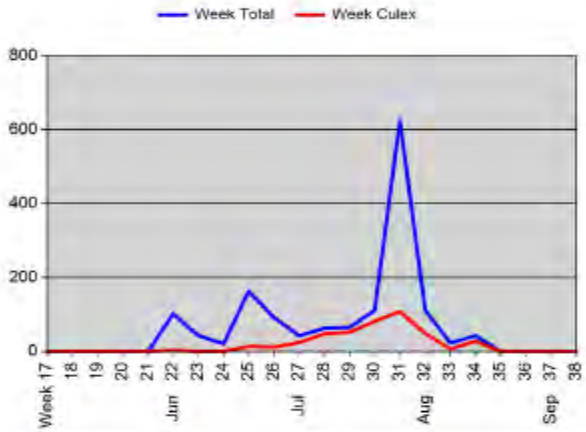
Season: 2018
Trap Type: Light/CO2
Location: Chestnut Street at Chimney Park Drive
GPS: N40° 28.420' W104° 53.695'

Total number of trap/nights set:	13
Total number of mosquitoes collected:	1,508
Average mosquitoes per trap/night:	116
Average Culex per trap/night:	33

Species collected and abundance:

Aedes (Oc.) dorsalis	179	11.9 %
Aedes (Oc.) increpitus	1	0.1 %
Aedes (Oc.) melanimon	52	3.4 %
Aedes (Oc.) nigromaculis	9	0.6 %
Aedes (Oc.) trivittatus	4	0.3 %
Aedes vexans	828	54.9 %
Aedes (Oc.) sollicitans	3	0.2 %
Culex pipiens	45	3.0 %
Culex salinarius	43	2.9 %
Culex tarsalis	339	22.5 %
Culiseta inornata	5	0.3 %

Seasonality



Genus Proportions:

Genus	Number	Percent of Total
Aedes/Ochlerotatus	1,076	71.4 %
Anopheles	0	0.0 %
Culex	427	28.3 %
Culiseta	5	0.3 %
Other	0	0.0 %

Appendix 2: Adult Mosquito Surveillance Light Trap Genus Summaries

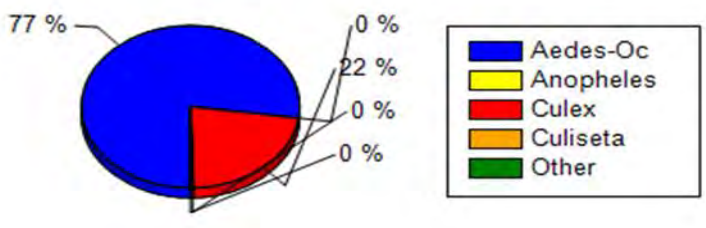
Vector Disease Control International

Adult Trap Data - Genus Summary

Trap #	Type	County	Date		Ae/Oc	An	Cx	Cs	Other	TOTAL
WR-02	LIGHT	Weld	06/07/2018	Windsor - Lake Osterhout	225	0	11	0	0	**236**
WR-02	LIGHT	Weld	06/14/2018	Windsor - Lake Osterhout	219	0	11	0	0	**230**
WR-02	LIGHT	Weld	06/21/2018	Windsor - Lake Osterhout	43	0	1	1	0	**45**
WR-02	LIGHT	Weld	06/28/2018	Windsor - Lake Osterhout	828	0	72	0	0	**900**
WR-02	LIGHT	Weld	07/03/2018	Windsor - Lake Osterhout	212	0	89	0	0	**301**
WR-02	LIGHT	Weld	07/12/2018	Windsor - Lake Osterhout	75	0	29	0	0	**104**
WR-02	LIGHT	Weld	07/19/2018	Windsor - Lake Osterhout	72	0	255	1	1	**329**
WR-02	LIGHT	Weld	07/26/2018	Windsor - Lake Osterhout	17	0	156	0	0	**173**
WR-02	LIGHT	Weld	08/02/2018	Windsor - Lake Osterhout	82	0	234	0	0	**316**
WR-02	LIGHT	Weld	08/09/2018	Windsor - Lake Osterhout	362	0	145	0	0	**507**
WR-02	LIGHT	Weld	08/16/2018	Windsor - Lake Osterhout	74	0	78	0	0	**152**
WR-02	LIGHT	Weld	08/23/2018	Windsor - Lake Osterhout	146	0	64	1	0	**211**
WR-02	LIGHT	Weld	08/30/2018	Windsor - Lake Osterhout	36	0	65	1	0	**102**
WR-06	LIGHT	Weld	06/07/2018	Windsor Lee Lake Area	136	0	3	5	0	**144**
WR-06	LIGHT	Weld	06/14/2018	Windsor Lee Lake Area	76	0	14	6	0	**96**
WR-06	LIGHT	Weld	06/21/2018	Windsor Lee Lake Area	23	0	2	0	0	**25**
WR-06	LIGHT	Weld	06/28/2018	Windsor Lee Lake Area	46	0	9	0	0	**55**
WR-06	LIGHT	Weld	07/03/2018	Windsor Lee Lake Area	544	0	52	4	0	**600**
WR-06	LIGHT	Weld	07/12/2018	Windsor Lee Lake Area	1	0	3	0	0	**4**
WR-06	LIGHT	Weld	07/19/2018	Windsor Lee Lake Area	161	0	66	0	0	**227**
WR-06	LIGHT	Weld	07/26/2018	Windsor Lee Lake Area	115	0	33	1	0	**149**
WR-06	LIGHT	Weld	08/02/2018	Windsor Lee Lake Area	178	0	134	2	0	**314**
WR-06	LIGHT	Weld	08/09/2018	Windsor Lee Lake Area	98	0	191	3	0	**292**
WR-06	LIGHT	Weld	08/16/2018	Windsor Lee Lake Area	52	0	50	2	0	**104**
WR-06	LIGHT	Weld	08/23/2018	Windsor Lee Lake Area	19	0	10	5	0	**34**
WR-06	LIGHT	Weld	08/30/2018	Windsor Lee Lake Area	23	0	56	2	0	**81**
WR-11	LIGHT	Larimer	06/07/2018	Windsor River Ridge	2360	0	32	8	0	**2,400**
WR-11	LIGHT	Larimer	06/14/2018	Windsor River Ridge	1465	0	35	0	0	**1,500**
WR-11	LIGHT	Larimer	06/21/2018	Windsor River Ridge	223	0	8	0	0	**231**
WR-11	LIGHT	Larimer	06/28/2018	Windsor River Ridge	609	0	89	2	0	**700**
WR-11	LIGHT	Larimer	07/03/2018	Windsor River Ridge	452	0	148	0	0	**600**
WR-11	LIGHT	Larimer	07/12/2018	Windsor River Ridge	468	0	132	0	0	**600**
WR-11	LIGHT	Larimer	07/19/2018	Windsor River Ridge	422	0	178	0	0	**600**
WR-11	LIGHT	Larimer	07/26/2018	Windsor River Ridge	105	0	72	0	0	**177**
WR-11	LIGHT	Larimer	08/02/2018	Windsor River Ridge	161	0	97	0	0	**258**
WR-11	LIGHT	Larimer	08/09/2018	Windsor River Ridge	397	0	68	0	0	**465**
WR-11	LIGHT	Larimer	08/16/2018	Windsor River Ridge	344	0	54	0	0	**398**
WR-11	LIGHT	Larimer	08/23/2018	Windsor River Ridge	217	0	28	2	0	**247**
WR-11	LIGHT	Larimer	08/30/2018	Windsor River Ridge	445	0	16	0	0	**461**
WR-12	LIGHT	Weld	06/07/2018	Windsor Eastman Park	552	0	20	0	0	**572**
WR-12	LIGHT	Weld	06/14/2018	Windsor Eastman Park	207	0	14	1	0	**222**
WR-12	LIGHT	Weld	06/21/2018	Windsor Eastman Park	34	0	17	0	0	**51**
WR-12	LIGHT	Weld	06/28/2018	Windsor Eastman Park	1048	0	148	4	0	**1,200**

WR-12	LIGHT	Weld	07/03/2018	Windsor Eastman Park	240	0	80	2	0	**322**
WR-12	LIGHT	Weld	07/12/2018	Windsor Eastman Park	58	0	73	0	0	**131**
WR-12	LIGHT	Weld	07/19/2018	Windsor Eastman Park	246	0	56	6	0	**308**
WR-12	LIGHT	Weld	07/26/2018	Windsor Eastman Park	42	0	78	1	0	**121**
WR-12	LIGHT	Weld	08/02/2018	Windsor Eastman Park	59	0	108	0	0	**167**
WR-12	LIGHT	Weld	08/09/2018	Windsor Eastman Park	174	0	83	0	0	**257**
WR-12	LIGHT	Weld	08/16/2018	Windsor Eastman Park	19	0	69	2	0	**90**
WR-12	LIGHT	Weld	08/23/2018	Windsor Eastman Park	47	0	42	0	0	**89**
WR-12	LIGHT	Weld	08/30/2018	Windsor Eastman Park	26	0	21	0	0	**47**
WR-14	LIGHT	Larimer	06/07/2018	Windsor Highland Meadows	31	0	3	0	0	**34**
WR-14	LIGHT	Larimer	06/14/2018	Windsor Highland Meadows	1	0	0	0	0	**1**
WR-14	LIGHT	Larimer	06/21/2018	Windsor Highland Meadows	3	0	2	0	0	**5**
WR-14	LIGHT	Larimer	06/28/2018	Windsor Highland Meadows	27	0	12	0	0	**39**
WR-14	LIGHT	Larimer	07/03/2018	Windsor Highland Meadows	9	0	12	0	0	**21**
WR-14	LIGHT	Larimer	07/12/2018	Windsor Highland Meadows	4	0	7	0	0	**11**
WR-14	LIGHT	Larimer	07/19/2018	Windsor Highland Meadows	19	0	21	0	0	**40**
WR-14	LIGHT	Larimer	07/26/2018	Windsor Highland Meadows	2	0	6	0	0	**8**
WR-14	LIGHT	Larimer	08/02/2018	Windsor Highland Meadows	21	0	7	0	0	**28**
WR-14	LIGHT	Larimer	08/09/2018	Windsor Highland Meadows	3	0	13	0	0	**16**
WR-14	LIGHT	Larimer	08/16/2018	Windsor Highland Meadows	2	0	6	0	0	**8**
WR-14	LIGHT	Larimer	08/23/2018	Windsor Highland Meadows	7	0	1	0	0	**8**
WR-14	LIGHT	Larimer	08/30/2018	Windsor Highland Meadows	20	0	11	0	0	**31**
WR-15	LIGHT	Weld	06/07/2018	Windsor North Shores	760	0	24	16	0	**800**
WR-15	LIGHT	Weld	06/14/2018	Windsor North Shores	110	0	8	1	0	**119**
WR-15	LIGHT	Weld	06/21/2018	Windsor North Shores	88	0	7	3	0	**98**
WR-15	LIGHT	Weld	06/28/2018	Windsor North Shores	333	0	58	3	0	**394**
WR-15	LIGHT	Weld	07/03/2018	Windsor North Shores	336	0	35	0	0	**371**
WR-15	LIGHT	Weld	07/12/2018	Windsor North Shores	22	0	40	0	0	**62**
WR-15	LIGHT	Weld	07/19/2018	Windsor North Shores	106	0	174	3	0	**283**
WR-15	LIGHT	Weld	07/26/2018	Windsor North Shores	53	0	81	0	1	**135**
WR-15	LIGHT	Weld	08/02/2018	Windsor North Shores	16	0	107	1	0	**124**
WR-15	LIGHT	Weld	08/09/2018	Windsor North Shores	268	0	93	1	0	**362**
WR-15	LIGHT	Weld	08/16/2018	Windsor North Shores	43	0	51	0	0	**94**
WR-15	LIGHT	Weld	08/23/2018	Windsor North Shores	50	0	58	1	0	**109**
WR-15	LIGHT	Weld	08/30/2018	Windsor North Shores	11	0	22	0	0	**33**
WR-16	LIGHT	Larimer	06/07/2018	Steeplechase	87	0	3	0	0	**90**
WR-16	LIGHT	Larimer	06/14/2018	Steeplechase	8	0	0	0	0	**8**
WR-16	LIGHT	Larimer	06/21/2018	Steeplechase	8	0	0	0	0	**8**
WR-16	LIGHT	Larimer	06/28/2018	Steeplechase	7	0	5	0	0	**12**
WR-16	LIGHT	Larimer	07/03/2018	Steeplechase	16	0	0	0	0	**16**
WR-16	LIGHT	Larimer	07/12/2018	Steeplechase	6	0	0	0	0	**6**
WR-16	LIGHT	Larimer	07/19/2018	Steeplechase	6	0	6	0	0	**12**
WR-16	LIGHT	Larimer	07/26/2018	Steeplechase	5	0	2	0	0	**7**
WR-16	LIGHT	Larimer	08/02/2018	Steeplechase	5	0	6	0	0	**11**
WR-16	LIGHT	Larimer	08/09/2018	Steeplechase	6	0	20	0	0	**26**
WR-16	LIGHT	Larimer	08/16/2018	Steeplechase	3	0	8	0	0	**11**
WR-16	LIGHT	Larimer	08/23/2018	Steeplechase	13	0	15	0	0	**28**
WR-16	LIGHT	Larimer	08/30/2018	Steeplechase	3	0	14	0	0	**17**
WR-17	LIGHT	Weld	06/07/2018	Windsor Water Valley North	196	0	3	1	0	**200**
WR-17	LIGHT	Weld	06/14/2018	Windsor Water Valley North	67	0	4	0	0	**71**
WR-17	LIGHT	Weld	06/21/2018	Windsor Water Valley North	22	0	4	1	0	**27**

WR-17	LIGHT	Weld	06/28/2018	Windsor Water Valley North	65	0	11	3	0	**79**
WR-17	LIGHT	Weld	07/03/2018	Windsor Water Valley North	30	0	22	0	0	**52**
WR-17	LIGHT	Weld	07/12/2018	Windsor Water Valley North	4	0	18	1	0	**23**
WR-17	LIGHT	Weld	07/19/2018	Windsor Water Valley North	16	0	37	1	0	**54**
WR-17	LIGHT	Weld	07/26/2018	Windsor Water Valley North	6	0	38	0	0	**44**
WR-17	LIGHT	Weld	08/02/2018	Windsor Water Valley North	12	0	52	0	0	**64**
WR-17	LIGHT	Weld	08/09/2018	Windsor Water Valley North	18	0	57	1	0	**76**
WR-17	LIGHT	Weld	08/16/2018	Windsor Water Valley North	17	0	32	0	0	**49**
WR-17	LIGHT	Weld	08/23/2018	Windsor Water Valley North	8	0	29	1	0	**38**
WR-17	LIGHT	Weld	08/30/2018	Windsor Water Valley North	7	0	48	0	0	**55**
WR-18	LIGHT	Weld	06/07/2018	Windsor Water Valley South	109	0	2	0	0	**111**
WR-18	LIGHT	Weld	06/14/2018	Windsor Water Valley South	62	0	1	0	0	**63**
WR-18	LIGHT	Weld	06/21/2018	Windsor Water Valley South	22	0	0	2	0	**24**
WR-18	LIGHT	Weld	06/28/2018	Windsor Water Valley South	65	0	3	0	0	**68**
WR-18	LIGHT	Weld	07/03/2018	Windsor Water Valley South	40	0	13	0	0	**53**
WR-18	LIGHT	Weld	07/12/2018	Windsor Water Valley South	7	0	11	0	0	**18**
WR-18	LIGHT	Weld	07/19/2018	Windsor Water Valley South	27	0	12	0	0	**39**
WR-18	LIGHT	Weld	07/26/2018	Windsor Water Valley South	5	0	5	0	0	**10**
WR-18	LIGHT	Weld	08/02/2018	Windsor Water Valley South	14	0	16	0	0	**30**
WR-18	LIGHT	Weld	08/09/2018	Windsor Water Valley South	65	0	51	0	0	**116**
WR-18	LIGHT	Weld	08/16/2018	Windsor Water Valley South	160	0	41	0	0	**201**
WR-18	LIGHT	Weld	08/30/2018	Windsor Water Valley South	0	0	0	0	0	**0**
WR-20	LIGHT	Weld	06/07/2018	Windsor Chimney Park	99	0	3	0	0	**102**
WR-20	LIGHT	Weld	06/14/2018	Windsor Chimney Park	43	0	0	0	0	**43**
WR-20	LIGHT	Weld	06/21/2018	Windsor Chimney Park	21	0	0	0	0	**21**
WR-20	LIGHT	Weld	06/28/2018	Windsor Chimney Park	149	0	14	0	0	**163**
WR-20	LIGHT	Weld	07/03/2018	Windsor Chimney Park	80	0	12	0	0	**92**
WR-20	LIGHT	Weld	07/12/2018	Windsor Chimney Park	18	0	24	1	0	**43**
WR-20	LIGHT	Weld	07/19/2018	Windsor Chimney Park	15	0	48	0	0	**63**
WR-20	LIGHT	Weld	07/26/2018	Windsor Chimney Park	13	0	52	0	0	**65**
WR-20	LIGHT	Weld	08/02/2018	Windsor Chimney Park	30	0	82	0	0	**112**
WR-20	LIGHT	Weld	08/09/2018	Windsor Chimney Park	514	0	108	4	0	**626**
WR-20	LIGHT	Weld	08/16/2018	Windsor Chimney Park	63	0	49	0	0	**112**
WR-20	LIGHT	Weld	08/23/2018	Windsor Chimney Park	16	0	7	0	0	**23**
WR-20	LIGHT	Weld	08/30/2018	Windsor Chimney Park	15	0	28	0	0	**43**
WR-FLOAT	LIGHT	Weld	06/12/2018	OBSOLETE	13	0	2	0	0	**15**
WR-FLOAT	LIGHT	Weld	06/12/2018		13	0	2	0	0	**15**
					18,947	**0**	**5,478**	**107**	**2**	**24,534**



TOTAL	%
18,947	**77%**
0	**0%**
5,478	**22%**
107	**0%**
2	**0%**

Appendix 3: Town of Windsor Adulticide Application Data

Vector Disease Control International

Adulticide Data

Customer	Subdiv/Area	Material	Start Time	End Time	Miles
Windsor, Town of					
Backpack					
06/01/2018	EASTMAN PARK	Talstar	11:30:00	12:45:00	0
07/02/2018	FOUNDERS PARK	Talstar	10:34:00	10:47:00	0
07/02/2018	EASTMAN PARK	Talstar	08:20:00	09:50:00	0
07/02/2018	BRUNNER FARM	Talstar	10:05:00	10:30:00	0
		Backpack		**Sum**	**0.0**
				Avg	**0.0**
				Min	**0.0**
				Max	**0.0**
Truck					
06/07/2018	WATER VALLEY SOUTH	Aqua Kontrol 30 30	22:29:00	23:04:00	8
06/07/2018	WATER VALLEY NORTH	Aqua Kontrol 30 30	21:46:00	22:22:00	8
06/07/2018	RIVER RIDGE	Aqua Kontrol 30 30	23:00:00	23:30:00	7
06/07/2018	NORTH SHORES / VENATANA	Aqua Kontrol 30 30	20:45:00	21:00:00	4
06/07/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	21:06:00	21:35:00	12
06/07/2018	EASTMAN PARK	Aqua Kontrol 30 30	22:45:00	22:48:00	0
06/07/2018	EAST OF 7TH	Aqua Kontrol 30 30	20:41:00	21:39:00	12
06/07/2018	WEST OF 7TH	Aqua Kontrol 30 30	21:40:00	22:39:00	12
06/14/2018	WEST OF 7TH	Aqua Kontrol 30 30	21:21:00	22:16:00	11
06/14/2018	RIVER RIDGE	Aqua Kontrol 30 30	22:35:00	23:03:00	7
06/14/2018	NORTH SHORES / VENATANA / WIND	Aqua Kontrol 30 30	20:49:00	21:13:00	7
06/14/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	20:47:00	21:16:00	7
06/14/2018	GREENSPIRE	Aqua Kontrol 30 30	21:24:00	21:37:00	2
06/14/2018	EASTMAN PARK	Aqua Kontrol 30 30	22:23:00	22:25:00	0
06/14/2018	WINTER FARMS	Aqua Kontrol 30 30	21:47:00	22:23:00	9
06/21/2018	RIVER RIDGE	Aqua Kontrol 30 30	20:35:00	21:11:00	7
06/28/2018	WINTER FARMS	Aqua Kontrol 30 30	21:25:00	22:03:00	8
06/28/2018	WEST OF 7TH	Aqua Kontrol 30 30	22:46:00	23:36:00	12
06/28/2018	RIVER RIDGE	Aqua Kontrol 30 30	21:17:00	21:52:00	7
06/28/2018	NORTH SHORES / VENATANA / WIND	Aqua Kontrol 30 30	20:47:00	21:17:00	9

06/28/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	22:13:00	22:40:00	7
06/28/2018	EASTMAN PARK	Aqua Kontrol 30 30	23:44:00	23:46:00	0
06/28/2018	EAST OF 7TH	Aqua Kontrol 30 30	23:50:00	12:50:00	12
07/03/2018	WINTER FARMS	Aqua Kontrol 30 30	22:16:00	22:56:00	7
07/03/2018	RIVER RIDGE	Aqua Kontrol 30 30	12:21:00	01:00:00	7
07/03/2018	NORTH SHORES/VENTANA/WINDSOR E	Aqua Kontrol 30 30	20:58:00	21:35:00	2
07/03/2018	LEE LAKE	Aqua Kontrol 30 30	20:31:00	20:48:00	4
07/03/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	23:17:00	23:52:00	6
07/03/2018	EASTMAN PARK	Aqua Kontrol 30 30	23:59:00	12:11:00	1
07/12/2018	RIVER RIDGE	Aqua Kontrol 30 30	12:33:00	01:09:00	7
07/12/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	23:41:00	12:11:00	6
07/12/2018	EASTMAN PARK	Aqua Kontrol 30 30	12:19:00	12:21:00	1
07/19/2018	WINTER FARMS	Aqua Kontrol 30 30	22:25:00	23:08:00	10
07/19/2018	NORTH SHORES/VENTANA/WINDSOR E	Aqua Kontrol 30 30	21:31:00	22:13:00	10
07/19/2018	LEE LAKE	Aqua Kontrol 30 30	20:33:00	21:17:00	9
07/19/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	23:32:00	12:03:00	7
07/26/2018	WINTER FARMS	Aqua Kontrol 30 30	22:29:00	23:01:00	8
07/26/2018	RIVER RIDGE	Aqua Kontrol 30 30	21:09:00	21:35:00	8
07/26/2018	NORTH SHORES / VENATANA / WIND	Aqua Kontrol 30 30	23:13:00	23:50:00	9
07/26/2018	LEE LAKE	Aqua Kontrol 30 30	12:05:00	12:37:00	8
07/26/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	21:47:00	22:14:00	6
07/26/2018	EASTMAN PARK	Aqua Kontrol 30 30	20:44:00	20:57:00	2
08/02/2018	RIVER RIDGE	Aqua Kontrol 30 30	20:59:00	21:32:00	7
08/02/2018	NORTH SHORES/VENTANA/WINDSOR E	Aqua Kontrol 30 30	22:46:00	23:07:00	9
08/02/2018	LEE LAKE	Aqua Kontrol 30 30	23:15:00	23:45:00	10
08/02/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	12:02:00	12:25:00	7
08/02/2018	EASTMAN PARK	Aqua Kontrol 30 30	20:38:00	20:44:00	1
08/02/2018	EAST OF 7TH	Aqua Kontrol 30 30	20:51:00	21:54:00	11
08/02/2018	WINTER FARMS	Aqua Kontrol 30 30	22:00:00	22:36:00	8
08/09/2018	RIVER RIDGE	Aqua Kontrol 30 30	21:58:00	22:29:00	7
08/09/2018	NORTH SHORES / VENATANA / WIND	Aqua Kontrol 30 30	21:47:00	22:08:00	8
08/09/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	21:19:00	21:43:00	6
08/09/2018	EASTMAN PARK	Aqua Kontrol 30 30	21:45:00	21:48:00	1

08/09/2018	EAST OF 7TH	Aqua Kontrol 30 30	20:31:00	21:32:00	13
08/09/2018	LEE LAKE	Aqua Kontrol 30 30	23:06:00	23:36:00	8
08/09/2018	WINTER FARMS	Aqua Kontrol 30 30	21:47:00	22:08:00	8
08/16/2018	LEE LAKE	Aqua Kontrol 30 30	20:51:00	21:30:00	9
08/16/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	21:55:00	22:28:00	7
08/16/2018	EAST OF 7TH	Aqua Kontrol 30 30	22:37:00	23:55:00	14
08/23/2018	RIVER RIDGE	Aqua Kontrol 30 30	22:43:00	23:14:00	7
08/23/2018	NORTH SHORES / VENATANA / WIND	Aqua Kontrol 30 30	20:41:00	21:05:00	7
08/23/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	22:06:00	22:34:00	7
08/23/2018	WINTER FARMS	Aqua Kontrol 30 30	21:12:00	21:50:00	9
08/30/2018	LAKE OSTERHOUT	Aqua Kontrol 30 30	21:03:00	21:38:00	7
08/30/2018	RIVER RIDGE	Aqua Kontrol 30 30	21:46:00	22:21:00	6
		Truck		**Sum**	**463.0**
				Avg	**7.1**
				Min	**0.0**
				Max	**14.0**
				Grand Total	**463.0**