NEBRASKA ARBOVIRUS SURVEILLANCE AND MOSQUITO MONITORING PROGRAM 2018 UPDATE #1

Date: 06/15/2018. Please note that mosquito collection data covers dates 05/27/2018 to 06/09/2018 (CDC Weeks 22 and 23). Bird, human, and equine surveillance may include data from beyond these dates. All data is provisional and may change.

SUMMARY

- **Climate:** Over the past 30 days (dates 05/11/2018 to 06/09/2018), precipitation has ranged from 3 to >8 inches in most areas of the state. The heavier amounts were located in central, north central, and west central Nebraska. For the last 30 days (date ending 06/09/2018), rainfall was well above normal over much of central and western Nebraska and below normal in much of eastern Nebraska. Average temperatures for the last 30 days (date ending 06/09/2018) were above normal over most of the state. Additionally, areas in east central, south central, and southeast Nebraska have developed abnormally dry to moderate drought conditions per the U.S. drought monitor.
- **Three Month Forecast:** For June 2018 to August 2018, the NOAA outlook is predicting equal chances of below or above normal temperatures and precipitation over most of Nebraska.
- **Mosquito Numbers- Eastern Nebraska:** Individual county collections from the first two weeks of sampling ranged mostly from “low” to “moderate” based on historical county data. Only Gage county reported “very high” numbers compared to their historical data. Overall in the east region, activity was considered “low” due to the below average precipitation amounts seen in the last month. *Aedes vexans* (inland floodwater mosquito) was the most abundantly collected mosquito from CDC light traps (47.7%) in the region followed by *Ochlerotatus triseriatus* (eastern tree hole mosquito) (12.4%). *Culex* mosquito (primary vectors of West Nile virus) counts were “low” based upon historical regional data with individual county collections ranging counts from “low” to “moderate”. Only Gage and Wayne counties had “very high” and “high” counts respectively when compared to their historical data. *Culex tarsalis* (primary WNV vector species in Nebraska) made up the majority of captured *Culex*, accounting for 69.5% of collections over the two week sampling period. No invasive *Aedes albopictus* were collected from the region.
- **Mosquito Numbers- Central Nebraska:** Individual county collections from the first two weeks of collecting ranged from “low” to “very high” based on historical data. Buffalo and Garfield counties reported “very high” and “high” numbers with all other counties reporting “low” or “moderate” counts.

Overall, in the central region, activity was considered "moderate" with *Aedes vexans* being the most collected mosquito (89.1%) from region traps. *Culex* mosquito counts were "low" based upon historical regional data, and individual counties all reported "low" collections based upon their historical data. *Culex tarsalis* made up the majority of the collected *Culex*, accounting for 85.5% of collections over the sampling period. No invasive *Aedes albopictus* were collected from the region.

- **Mosquito Numbers- Western Nebraska:** Individual county collections from the first two weeks ranged from "low" to "very high" with Box Butte, Cherry, Dawes, and Scotts Bluff counties reporting "very high" total mosquito counts compared to their historical data. This is due to the above average precipitation that has fallen in these areas over the last month. Overall mosquito activity in the west was considered "high" with *Aedes vexans* being the most abundant mosquito in CDC light traps (79.9%) in the region with several traps collecting >2,500 individuals. *Culex* mosquito counts were "low" based upon historical regional data, and individual counts across counties in the west region were mostly "low" with only Cherry county reporting "very high" numbers based upon their historical data. *Culex tarsalis* made up the majority of captured *Culex* accounting for 99.8% of collections over the sampling period. No invasive *Aedes albopictus* were collected from the region.
- **Arboviral Detections:** Over the two weeks of mosquito surveillance covered in this report, one positive West Nile virus (WNV) *Culex* mosquito pool was detected from mosquitoes collected in Lancaster County. This is **the first WNV positive pool of the season** detected in Nebraska and demonstrates that WNV is circulating in the environment among mosquitoes. To date 156 *Culex* pools have been tested with one positive detected to date. The current WNV cumulative statewide minimum mosquito infection rate (0.54/1,000 *Culex*) is above the 10-year median (0.00/1,000 *Culex*) for this time of year. No positive pools for St. Louis Encephalitis (SLE) or Western Equine Encephalitis (WEE) viruses were detected over the two weeks.
- **Dead Bird Surveillance:** To date 13 birds have been reported. Of the 13 birds reported, one has been a corvid bird (bird group most heavily impacted by WNV and includes: blue jays, crows, and magpies). One bird reported has met criteria for testing of WNV and results are pending.
- **Equine Surveillance:** Currently no equine cases of WNV have been reported for the season.
- **Human Mosquito-borne Disease Cases:** To date no human clinical WNV cases or human blood donors have been reported in Nebraska residents. Additionally, a total of three travel-related mosquito-borne disease have occurred in state residents: three malaria cases.

Comment: ***Currently no human clinical (symptomatic) WNV or human WNV blood donors have been reported. However, the first positive WNV mosquito pool of the season has been detected from mosquitoes samples collected in Lancaster County. This indicates WNV is circulating in the environment and individuals should take proper mosquito prevention activities to reduce mosquito bites. As we get further into the summer season, risk of WNV will increase. Additionally, three travel-related malaria cases have been reported in Nebraska residents. Individuals are strongly encouraged to practice proper mosquito prevention anytime mosquitoes are present or likely to be present no matter where they are to decrease their chances of acquiring a mosquito-borne illness***. Statewide, mosquito collections were "moderate" when compared to historical data, averaging 155.15 total mosquitoes per trap night. The most abundant mosquito collected over the two week sampling period was Nebraska's most common mosquito, *Aedes vexans*, accounting for 76.4% of trap collections. Statewide *Culex* mosquito counts were "low" based on historical collection data, averaging 15.24 *Culex* per trap night. *Culex tarsalis* (primary WNV vector in Nebraska), was the most collected *Culex* mosquito (92.3%) and was the second most abundantly collected mosquito (9.1%) overall during the sampling period.

ENVIRONMENTAL CONDITIONS

Environmental and climate conditions can impact mosquito-borne diseases by influencing mosquito numbers and mosquito infection prevalence. For example, drought has been identified as a primary driver of WNV epidemics. This is why rainfall, temperature, and drought conditions are monitored closely during the mosquito surveillance season.

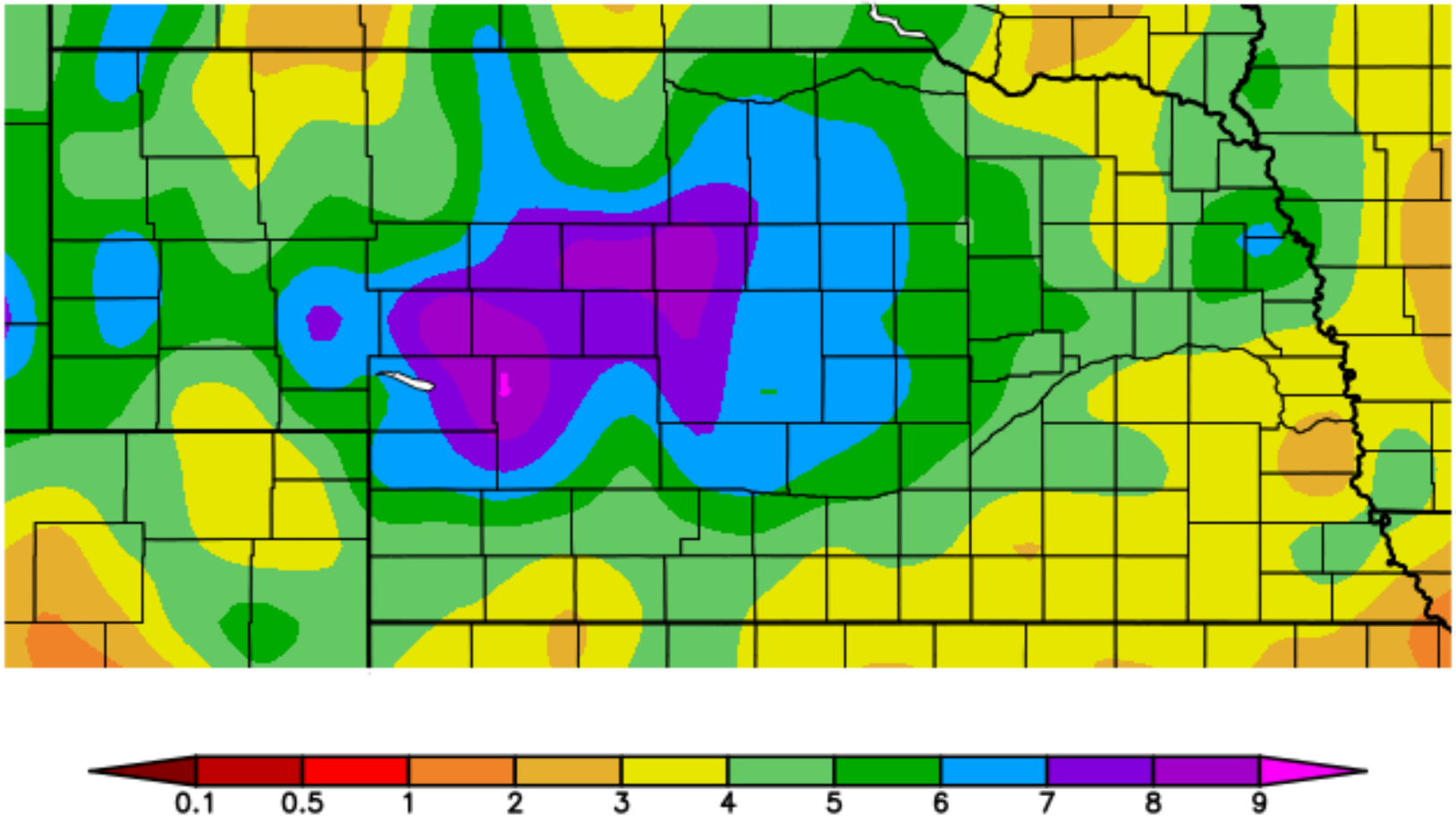
Rainfall and Temperature

Rainfall across Nebraska over the last 30 days (05/11/2018 to 06/09/2018) has ranged from 3 to >8 inches (pg. 4) in most areas of the state. The heavier amounts were located in central, north central, and west central Nebraska. For the last 30 days (date ending 06/09/2018), rainfall was well above normal over much of central and western Nebraska and below normal in much of eastern Nebraska (pg.5). Average temperatures (pg. 6) for the last 30 days were above normal over all of Nebraska with areas 2 to ≥6 degrees above normal. Over the next 8 to 14 days (as of 06/09/2018) the extended forecast is predicting normal temperatures for most of Nebraska and a slightly elevated probability of above normal temps in southeast Nebraska. Precipitation is predicted to have a slightly elevated probability of above normal precipitations over most of the state. More climate and forecast information can be found at:

High Plains Regional Climate Center at: https://hprcc.unl.edu/index.php

National Weather Service 8 to 14 day outlooks: http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php

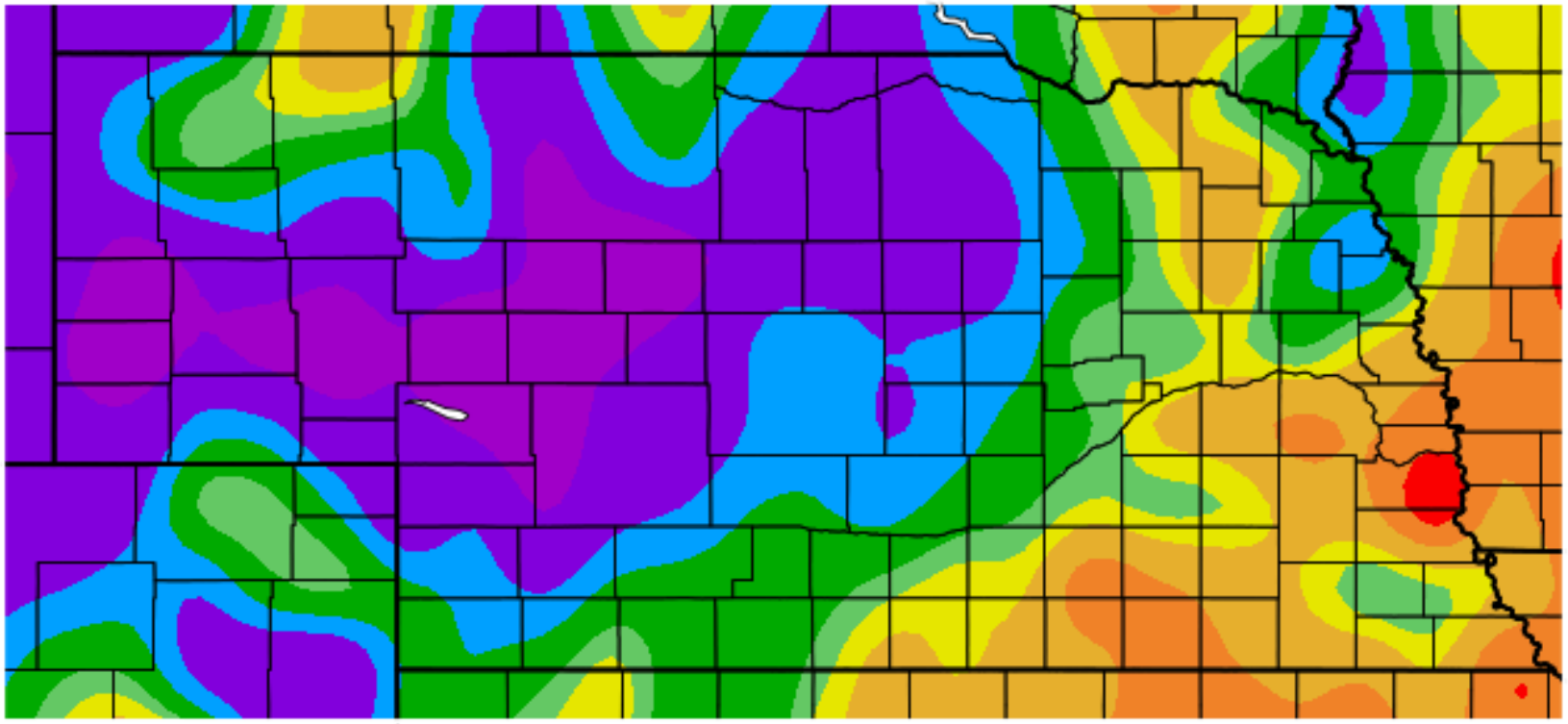
Precipitation (in)
5/11/2018 – 6/9/2018



Generated 6/10/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

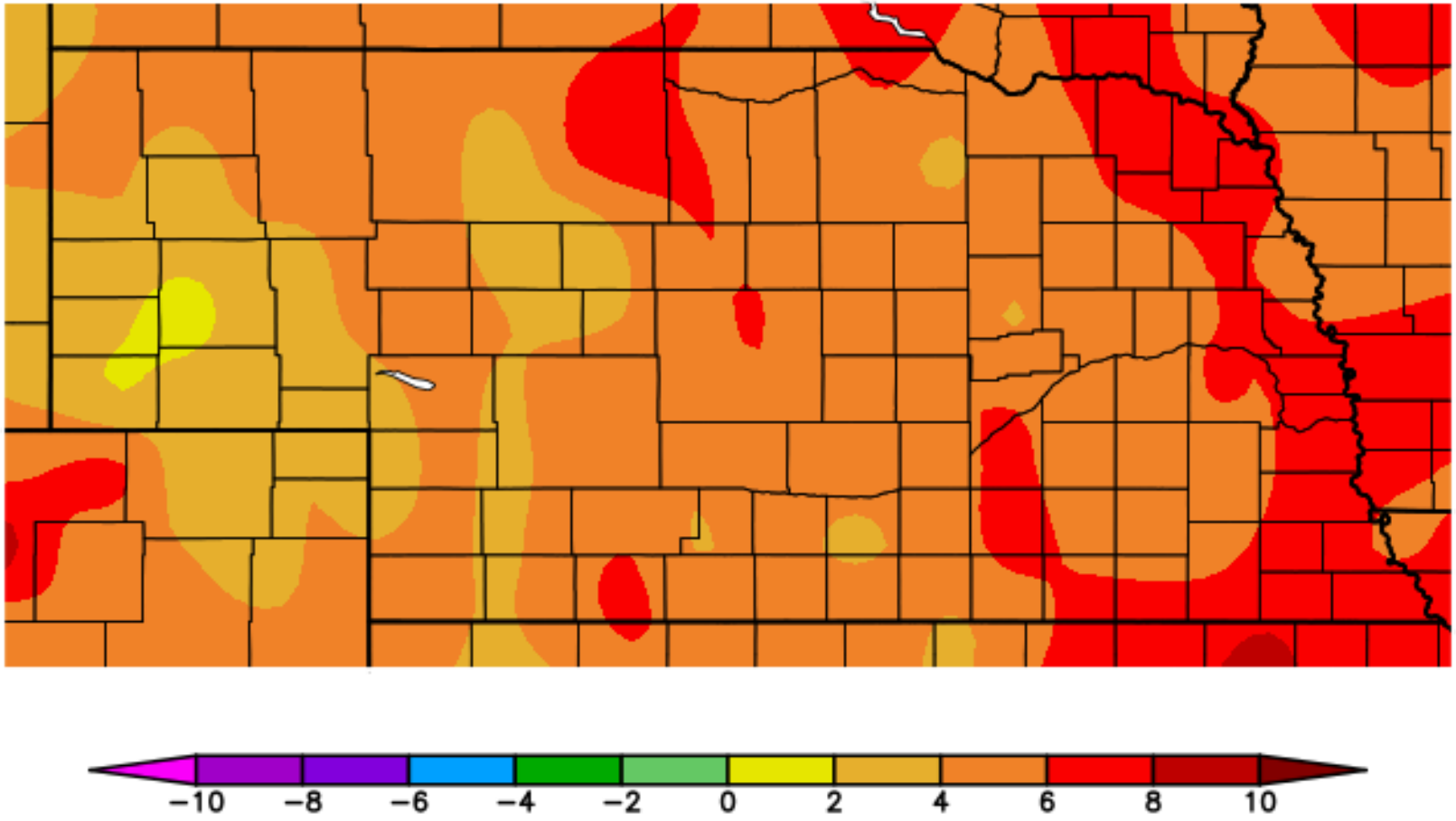
Percent of Normal Precipitation (%)
5/11/2018 – 6/9/2018



Generated 6/10/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Temperature (F)
5/11/2018 – 6/9/2018



Generated 6/10/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

Three Month Temperature and Rainfall Forecast

For June 2018 to August 2018, forecast predictions for Nebraska are for equal chances of above or below normal temperature and precipitation over most of the state. Links for the pages containing graphics of the long-term outlook can be found here:

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1 (Temperature and Rainfall Outlook).

Drought Outlook

The current drought monitor on page eight (through 06/05/2018) is reporting approximately 81.90% of the state with no drought or abnormally dry conditions. The monitor report also shows areas of abnormal dryness and moderate drought having developed in the state. Currently the land area in the state encompassing abnormal dryness is approximately 12.73% and moderate drought around 5.37% (2.5% last week) of the state area. Last year at this time, 100.00% of the state area reported no drought or abnormally dry conditions per the drought monitor. The current monthly drought outlook for June can be found on page nine. For more information please visit the links below:

http://droughtmonitor.unl.edu/ (U.S. Drought Monitor).

http://www.cpc.ncep.noaa.gov/products/expert_assessment/mdo_summary.php (U.S. Monthly Drought Outlook).

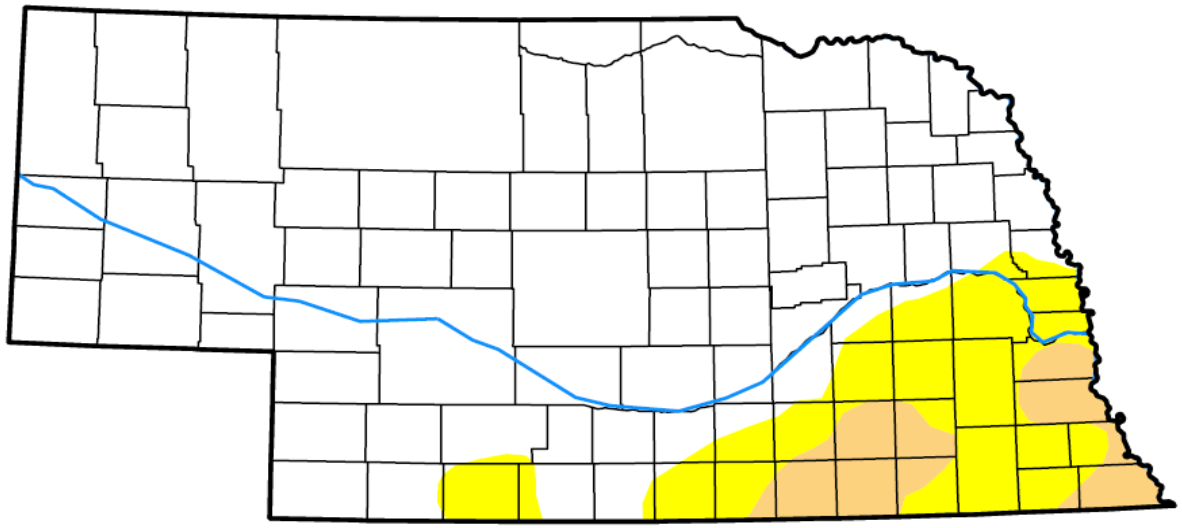
U.S. Drought Monitor

Nebraska

June 5, 2018

(Released Thursday, Jun. 7, 2018)

Valid 8 a.m. EDT



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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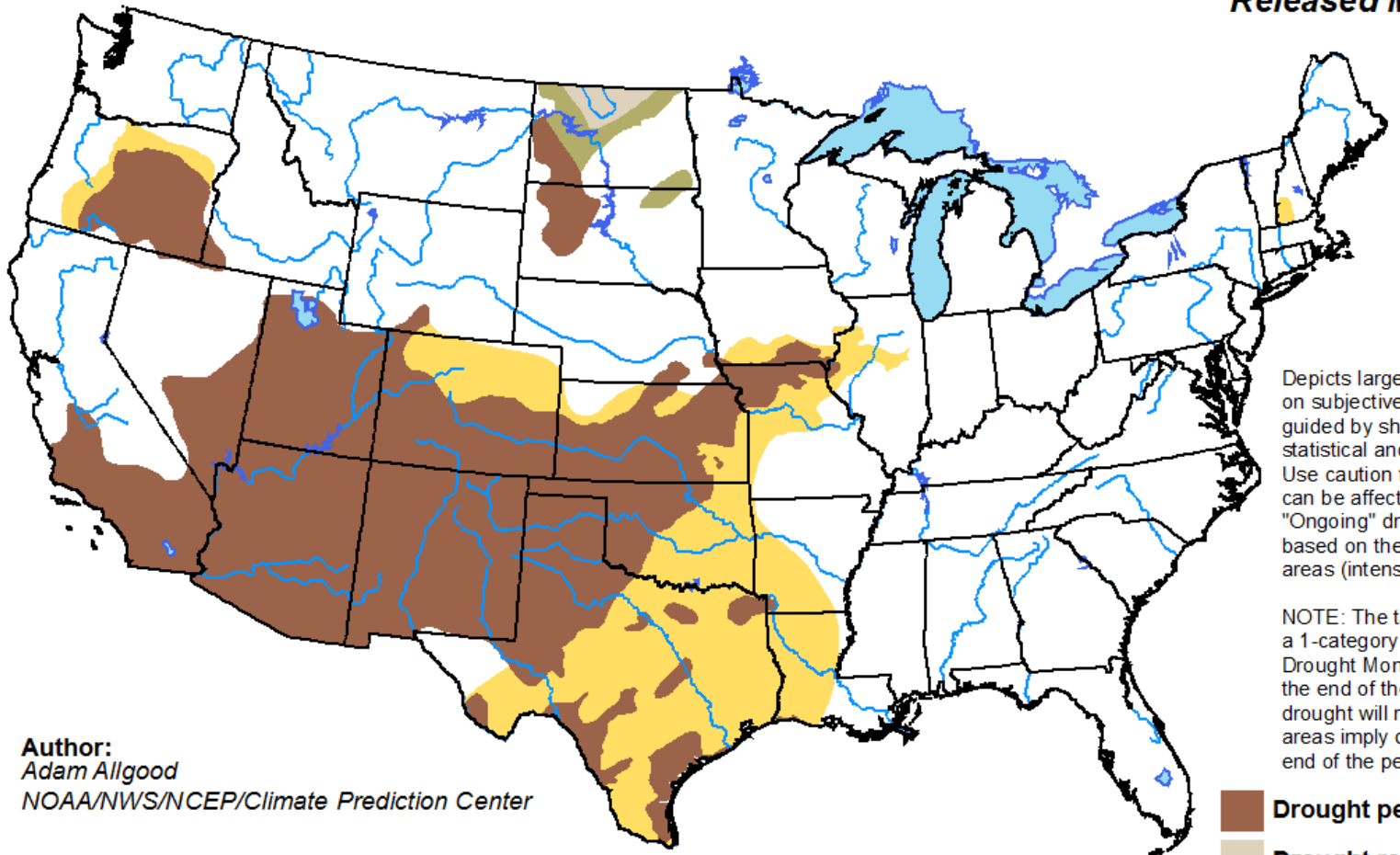
http://droughtmonitor.unl.edu/

U.S. Monthly Drought Outlook

Drought Tendency During the Valid Period

Valid for June 2018
Released May 31, 2018



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Drought persists

Drought remains but improves

Drought removal likely

Drought development likely

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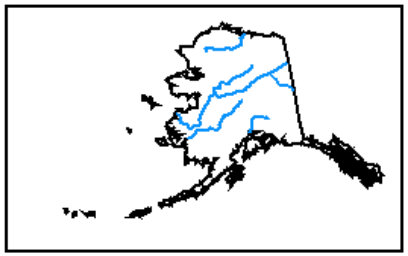

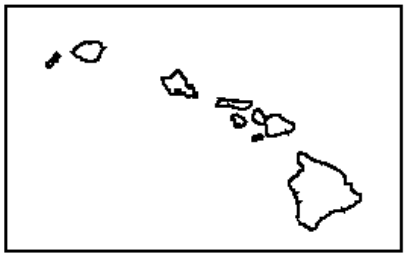

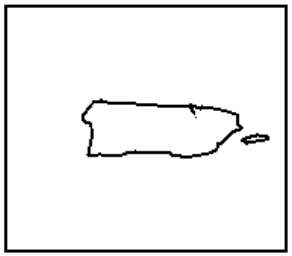

http://go.usa.gov/3eZGd

ARBOVIRAL DETECTIONS

Over the two weeks of mosquito surveillance covered in this report, the first positive WNV pool has been detected. For the two weeks, a total of 1 positive WNV pool from one county (Lancaster) and no SLE or WEE positive pools has been detected. To date, there has been one positive arbovirus positive mosquito pool detected in one county (Lancaster). The statewide WNV cumulative mosquito minimum infection rate (MIR) per 1,000 *Culex* is 0.54 which is above the 10-year median of 0.00 for this time of year.

Table 1. Arboviral Detections

Date Collected	County	Mosquito Species	Virus
6/7/2018	Lancaster	*Culex pipiens*	WNV

Table 2. Arboviral Detections Summary Table.

			Virus			
Date Collected	**County**	**Mosquito Species**	**WNV**	**SLE**	**WEE**	**Total**
6/7/2018	Lancaster	*Culex pipiens*	1	0	0	1
		Total	**1**	**0**	**0**	**1**

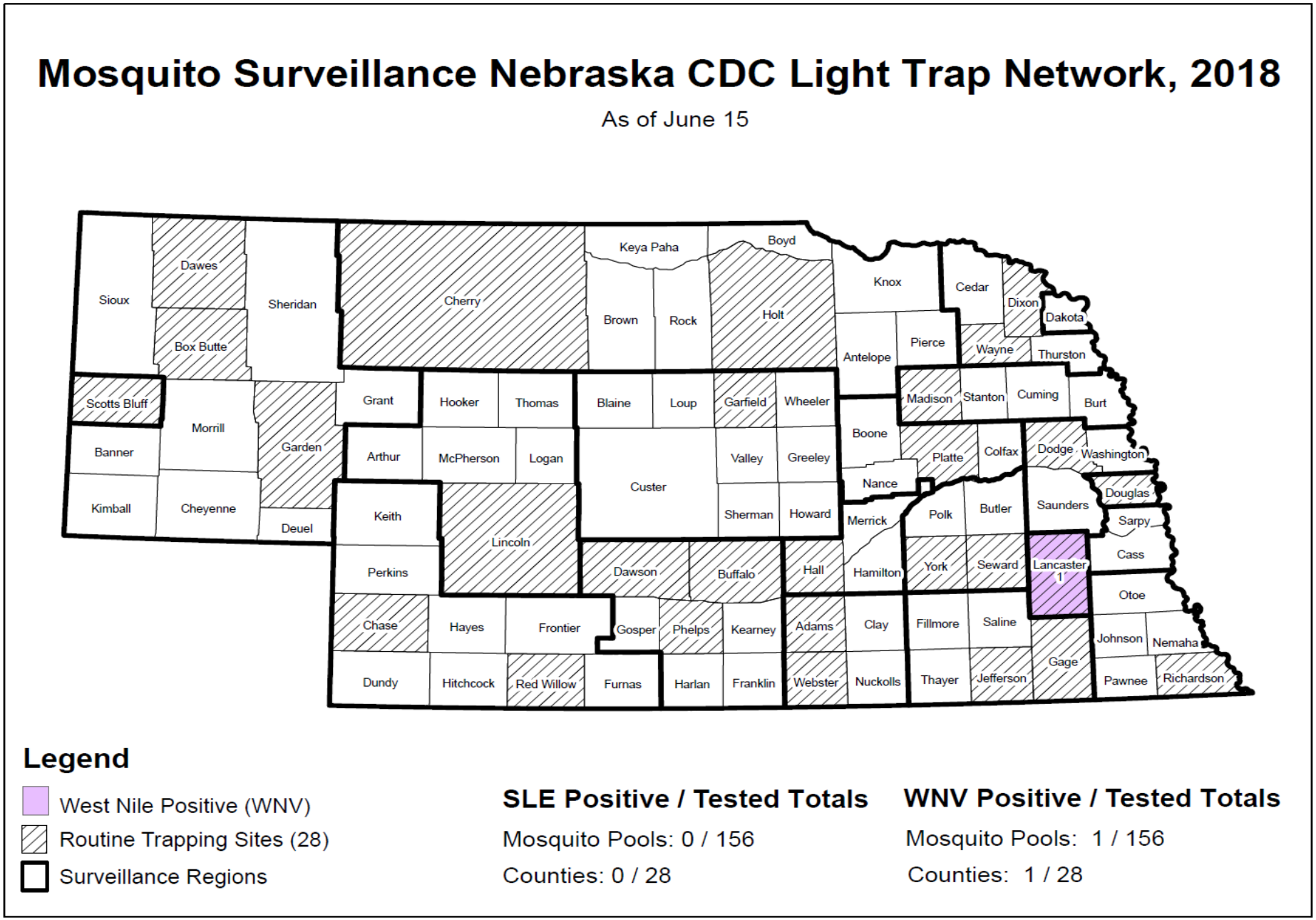

Figure 1. Positive mosquito pools in the Nebraska CDC light trap network, 2018.

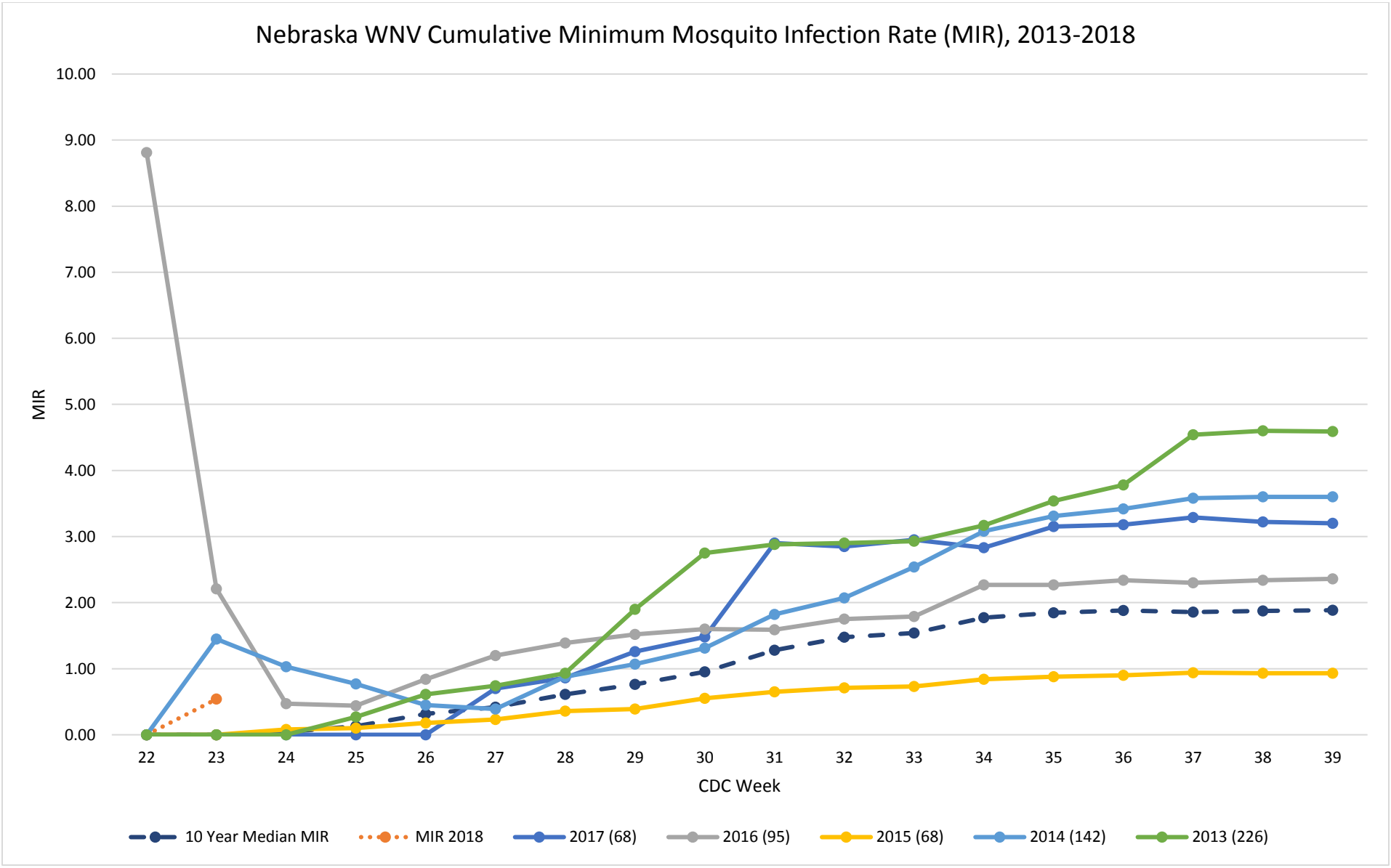

Figure 2. Weekly Nebraska WNV Mosquito Cumulative Mosquito Minimum Infection Rate, 2013-2018. At the state level, the calculated statewide MIR is strongly correlated with the number of human clinical WNV cases. As such, comparisons during the season of the weekly cumulative MIR with previous seasons' cumulative MIRs may give an indication as to how severe a WNV season might be. Please note 2018 data is shown as a dotted line and the 10-year median as a dashed line. Numbers in parentheses next to years indicate the number of human WNV clinical cases reported that year.

HUMAN MOSQUITO-BORNE DISEASE CASES

Weekly reported cases (confirmed and probable) of human clinical mosquito-borne disease infections in Nebraska residents is summarized in the table below (pg. 13 and 14). It includes human infections of West Nile virus (WNV), St. Louis Encephalitis virus (SLE), Western Equine Encephalitis virus (WEE), chikungunya (CHIKV), dengue (DENV), Zika, and malaria. Please note that cases are by earliest report date of infection not necessarily by date of onset. Table only includes reported cases that had exposure or onset of disease in 2018. All data is preliminary and may change as more information is received.

Table 3. Reports of Mosquito-Borne Disease in Nebraska, 2018

CDC Week	Week Ending Date	WNV^ (Clinical Cases)	WNV^ (Asymptomatic Blood Donors)	SLE^	WEE^	CHIKV*	DENV*	ZIKA*	Malaria*	Total
1	6-Jan-18	0	0	0	0	0	0	0	0	0
2	13-Jan-18	0	0	0	0	0	0	0	0	0
3	20-Jan-18	0	0	0	0	0	0	0	0	0
4	27-Jan-18	0	0	0	0	0	0	0	0	0
5	3-Feb-18	0	0	0	0	0	0	0	1	1
6	10-Feb-18	0	0	0	0	0	0	0	0	0
7	17-Feb-18	0	0	0	0	0	0	0	0	0
8	24-Feb-18	0	0	0	0	0	0	0	0	0
9	3-Mar-18	0	0	0	0	0	0	0	0	0
10	10-Mar-18	0	0	0	0	0	0	0	0	0
11	17-Mar-18	0	0	0	0	0	0	0	0	0
12	24-Mar-18	0	0	0	0	0	0	0	0	0
13	31-Mar-18	0	0	0	0	0	0	0	0	0
14	7-Apr-18	0	0	0	0	0	0	0	1	1
15	14-Apr-18	0	0	0	0	0	0	0	0	0
16	21-Apr-18	0	0	0	0	0	0	0	0	0
17	28-Apr-18	0	0	0	0	0	0	0	0	0

18	**5-May-18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
19	**12-May-18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
20	**19-May-18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
21	**26-May-18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
22	**2-Jun-18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
23	**9-Jun-18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
24	**16-Jun-18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**

^These are endemic viruses that have been historically transmitted by mosquitoes in Nebraska and maybe acquired within the state. It should be noted that reports are for Nebraska residents and that infection may have been acquired elsewhere. *These diseases are typically acquired via travel overseas to areas where the virus or parasite is endemic. Currently, Nebraska does not have local transmission via mosquitoes of these organisms and the probability of local transmission by local mosquitoes is thought to be very low and not expected. However, to further lower and prevent the chance of local transmission of these "travel-related" diseases, returning travelers or visitors from these areas should prevent mosquito bites for at least three weeks upon arrival to Nebraska. Additionally, although cases of CHIKV, DENV, and ZIKA are most often acquired via overseas travel, small areas of transmission and small, local outbreaks within the U.S. have occurred and may occur in the future. Examples of states that have seen local transmission include: Florida, (DENV, CHIKV, and ZIKA), Hawaii (DENV), and Texas (DENV, CHIKV, and ZIKA).

Table 4. Human WNV Clinical Case Information, Nebraska 2018

Age Range	Number
0 to 10	0
11 to 20	0
21 to 30	0
31 to 40	0
41 to 50	0
51 to 60	0
61 to 70	0
71+	0
Gender	
Male	0
Female	0
Diagnosis	
WNV Neuroinvasive Disease	0
WNV Non-Neuroinvasive Disease	0
Hospitalized	0
Death	0

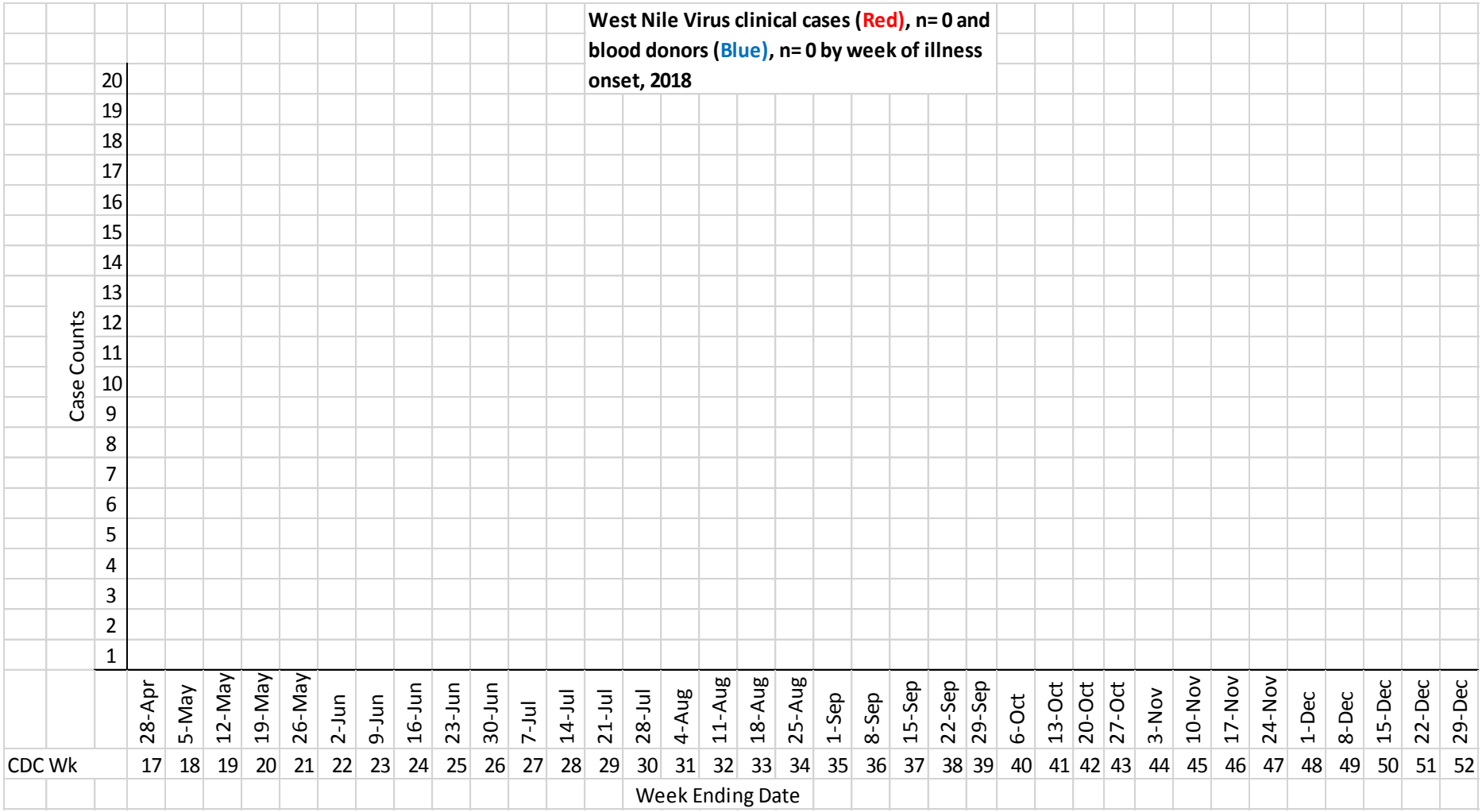

Figure 3. Epi-curve of human WNV infections (clinical and asymptomatic blood donors) by onset date, Nebraska 2018.

Figure 4. WNV human clinical cases by 10 year age groups, 2018.

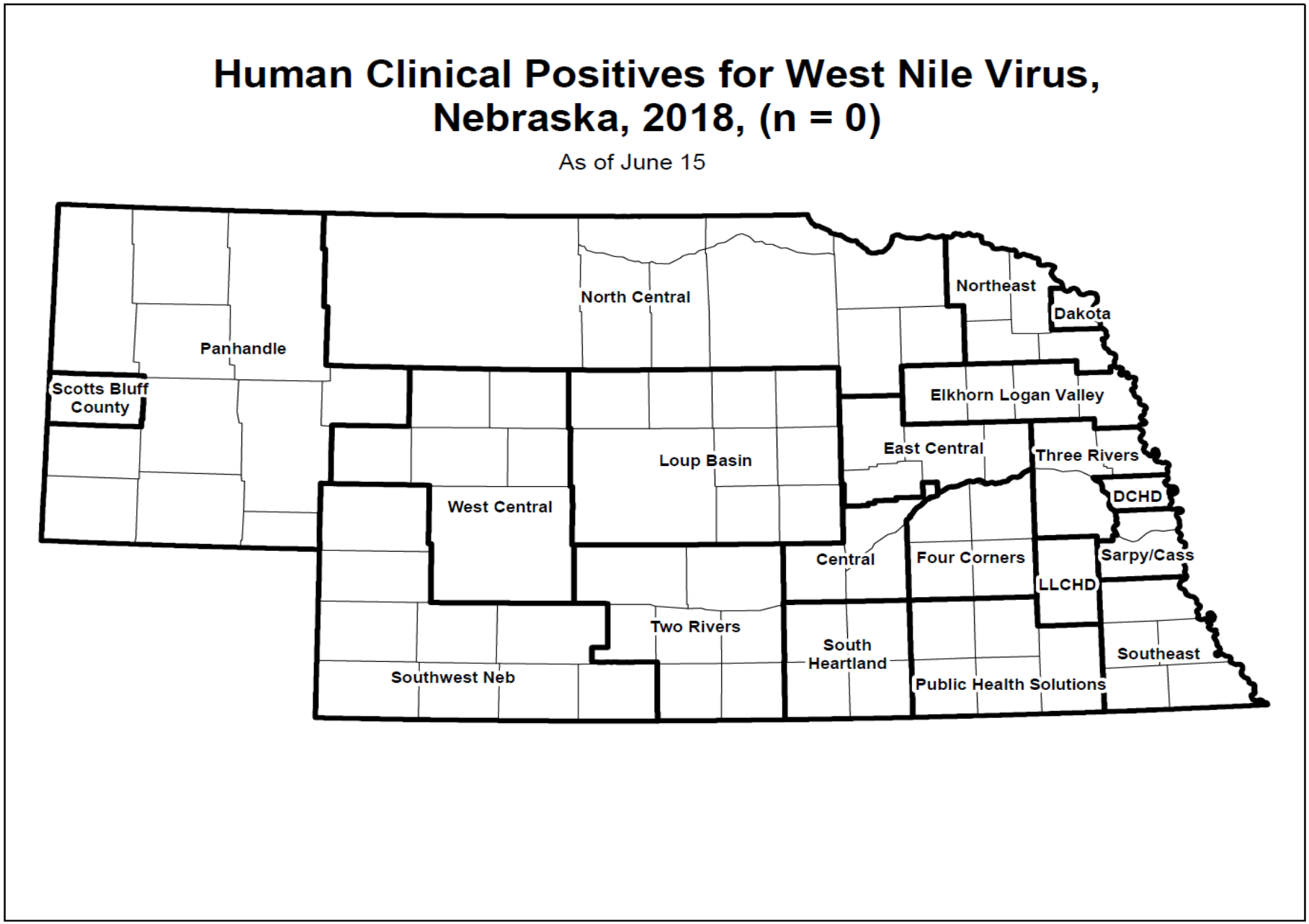

Figure 5. Nebraska human clinical WNV cases by local health jurisdiction, 2018.

Table 5. Number of Human WNV Clinical Cases by Onset Week and Nebraska Local Health Jurisdiction, 2018

CDC Wk.	17	18	19	20	21	22	23	24	
Local Health Dept. Jurisdiction									**Total**
Central District Health Dept.	0	0	0	0	0	0	0	0	0
Dakota County Health Dept.	0	0	0	0	0	0	0	0	0
Douglas County Health Dept.	0	0	0	0	0	0	0	0	0
East Central District Health Dept.	0	0	0	0	0	0	0	0	0
Elkhorn-Logan Valley Health Dept.	0	0	0	0	0	0	0	0	0
Four Corners Health Dept.	0	0	0	0	0	0	0	0	0
Lincoln-Lancaster County Health Dept.	0	0	0	0	0	0	0	0	0
Loup Basin Public Health Dept.	0	0	0	0	0	0	0	0	0
North Central District Health Dept.	0	0	0	0	0	0	0	0	0
Northeast Nebraska Public Health Dept.	0	0	0	0	0	0	0	0	0
Panhandle Public Health Dept.	0	0	0	0	0	0	0	0	0
Public Health Solutions	0	0	0	0	0	0	0	0	0
Sarpy-Cass Dept. of Health and Wellness	0	0	0	0	0	0	0	0	0
Scotts Bluff County Health Dept.	0	0	0	0	0	0	0	0	0
South Heartland District Health Dept.	0	0	0	0	0	0	0	0	0
Southeast District Health Dept.	0	0	0	0	0	0	0	0	0
Southwest Nebraska Public Health Dept.	0	0	0	0	0	0	0	0	0
Three Rivers Public Health Dept.	0	0	0	0	0	0	0	0	0
Two Rivers Public Health Dept.	0	0	0	0	0	0	0	0	0
West Central District Health Dept.	0	0	0	0	0	0	0	0	0
Statewide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

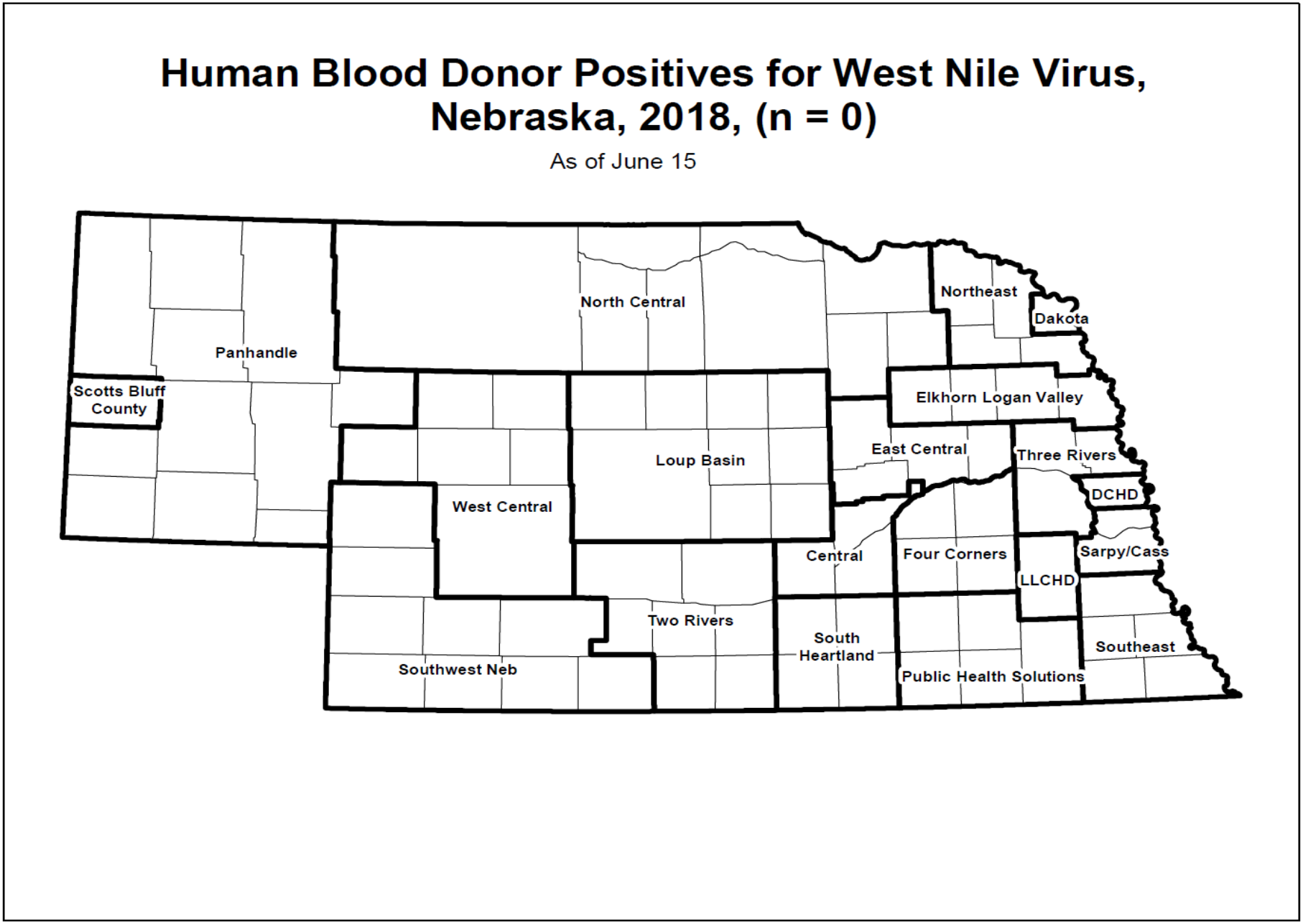

Figure 6. Nebraska asymptomatic WNV blood donors by local health jurisdiction, 2018.

Table 6. Number of Human WNV Blood Donors by Onset Week and Nebraska Local Health Jurisdiction, 2018

CDC Wk. Reported	17	18	19	20	21	22	23	24	
Local Health Dept. Jurisdiction									**Total**
Central District Health Dept.	0	0	0	0	0	0	0	0	0
Dakota County Health Dept.	0	0	0	0	0	0	0	0	0
Douglas County Health Dept.	0	0	0	0	0	0	0	0	0
East Central District Health Dept.	0	0	0	0	0	0	0	0	0
Elkhorn-Logan Valley Health Dept.	0	0	0	0	0	0	0	0	0
Four Corners Health Dept.	0	0	0	0	0	0	0	0	0
Lincoln-Lancaster County Health Dept.	0	0	0	0	0	0	0	0	0
Loup Basin Public Health Dept.	0	0	0	0	0	0	0	0	0
North Central District Health Dept.	0	0	0	0	0	0	0	0	0
Northeast Nebraska Public Health Dept.	0	0	0	0	0	0	0	0	0
Panhandle Public Health Dept.	0	0	0	0	0	0	0	0	0
Public Health Solutions	0	0	0	0	0	0	0	0	0
Sarpy-Cass Dept. of Health and Wellness	0	0	0	0	0	0	0	0	0
Scotts Bluff County Health Dept.	0	0	0	0	0	0	0	0	0
South Heartland District Health Dept.	0	0	0	0	0	0	0	0	0
Southeast District Health Dept.	0	0	0	0	0	0	0	0	0
Southwest Nebraska Public Health Dept.	0	0	0	0	0	0	0	0	0
Three Rivers Public Health Dept.	0	0	0	0	0	0	0	0	0
Two Rivers Public Health Dept.	0	0	0	0	0	0	0	0	0
West Central District Health Dept.	0	0	0	0	0	0	0	0	0
Statewide Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Comment: WNV is the most widespread, locally acquired mosquito-borne disease in Nebraska. The state has one of the highest incidences of WNV in the U.S. and the virus is highly endemic to the state. For the season, **no WNV human clinical cases or WNV asymptomatic blood donors have been reported in Nebraska residents**. **One positive WNV mosquito pool has been detected indicating WNV is circulating in the** environment. Overall WNV risk will continue to increase as we move through the summer months. It is important to note that there are many factors that come into play in determining an individual person's risk of acquiring WNV and other mosquito-borne diseases. **Low WNV activity or no WNV activity detected DOES NOT mean NO RISK!** For travel related mosquito-borne diseases, three cases of malaria (Countries of exposure: South Sudan= 1 and Togo= 2) have been reported this year. Anytime mosquitoes are active there is always the possibility of acquiring WNV or another mosquito-borne arbovirus and proper mosquito prevention methods should be utilized both here at home and when traveling abroad. Examples include:

- Applying an EPA approved mosquito repellant (DEET, picaridin, oil of lemon eucalyptus, or IR3535).
- Limiting exposure when outdoors by wearing long sleeve shirts and pants.
- Limiting time spent outdoors when mosquitoes are most active, typically dusk to midnight.
- Getting rid of standing water that mosquitoes may breed in at least once a week. Remember to change water in outdoor pet watering dishes along with bird baths and dump out water in flower pots, garden containers, or other objects that may hold water.

For more information on mosquito-borne diseases and prevention information please visit the following websites:

http://dhhs.ne.gov/wnv (Nebraska Department of Health and Human Services WNV Surveillance Program web site).

http://dhhs.ne.gov/publichealth/EPI/Pages/Mosquito-borne.aspx (Nebraska Department of Health and Human Services Mosquito-Borne Disease web site and links to downloadable educational pamphlets).

https://www.cdc.gov/westnile/ (CDC West Nile Virus web site).

https://www.cdc.gov/sle/ (CDC St. Louis Encephalitis Virus web site).

https://www.cdc.gov/chikungunya/index.html (CDC Chikungunya Virus web site).

https://www.cdc.gov/dengue/index.html (CDC Dengue Virus web site).

https://www.cdc.gov/zika/index.html (CDC Zika Virus web site).

https://www.cdc.gov/parasites/malaria/index.html (CDC Malaria web site).

https://www.cdc.gov/features/stopmosquitoes/index.html (CDC Avoid Mosquito Bites web site).

MOSQUITO RESULTS

The Nebraska CDC light trap network consists of 143 traps set across the state to monitor mosquito populations and test for the presence of arboviruses circulating in the state's mosquito populations.

Total mosquito and *Culex* mosquito counts from CDC light traps are described in relative terms based on individual historical county data and are depicted in the tables below:

0 to 40th percentile	41st to 60th percentile	61st to 80th percentile	81st to 97th percentile	>97th percentile
Low	Mod.	High	Very High	Extremely High

The individual county mosquito trapping data for the final trap period can be found on pg. 27

Table 7. Nebraska CDC Light Trap Network Mosquito Results, 2017

	CDC Weeks 22/23	
Region/County	**Total Mosquito**	**Total Culex**
West Region	**304.87**	**29.54**
Box Butte	102.00	0.00
Chase	31.17	2.17
Cherry	526.83	216.17
Dawes	698.33	2.50
Garden	49.40	1.40
Lincoln	102.80	4.20
Red Willow	13.50	0.50
Scotts Bluff	838.67	0.50

	CDC Weeks 22/23	
Region/County	**Total Mosquito**	**Total Culex**

Central Region	**77.89**	**2.04**
Adams	38.00	3.67
Buffalo	57.33	3.50
Dawson	ND	ND
Garfield	229.50	1.33
Hall	39.33	1.67
Holt	ND	ND
Phelps	ND	ND
Webster	5.33	0.83
	CDC Weeks 22/23	
Region/County	**Total Mosquito**	**Total Culex**
East Region	**55.13**	**8.96**
Dixon	11.33	9.67
Dodge	36.80	7.20
Douglas	69.44	2.56
Gage	71.50	6.00
Jefferson	35.67	3.67
Lancaster	95.17	14.33
Madison	92.00	5.00
Platte	52.00	6.80
Richardson	25.60	18.20
Seward	5.00	3.00
Wayne	39.00	23.33
York	12.00	10.00

Note: Each county or region represents the average for all CDC light trapping sites in that county or region. ND= No Data.

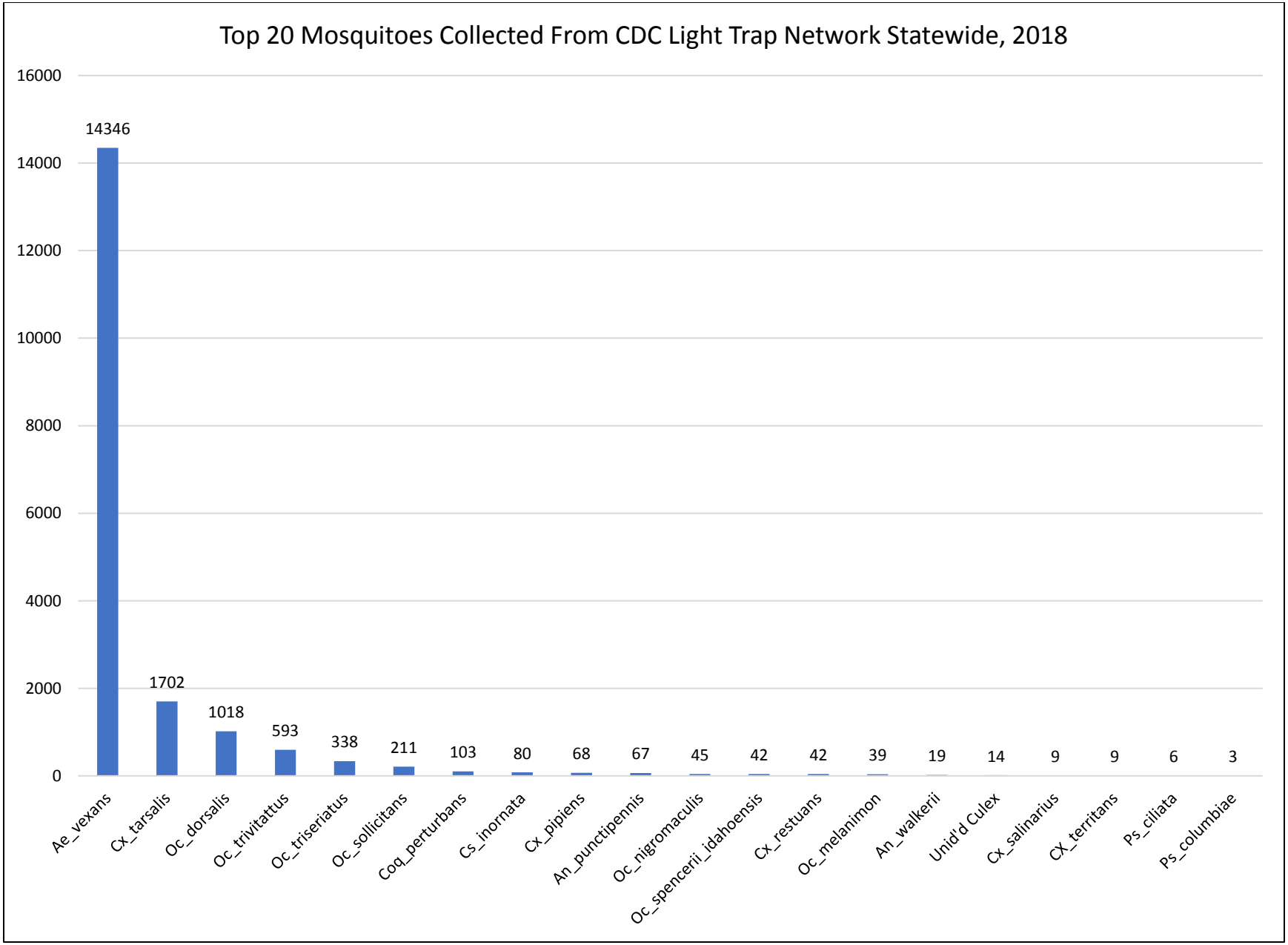

Figure 7. Top 20 cumulative mosquitoes collected statewide from CDC light trap network, 2018. Note that the first part of the mosquito species name has been abbreviated. Ae= *Aedes*, An= *Anopheles*, Cs= *Culesita*, Cx= *Culex*, Oc= *Ochlerotatus*, Ps= *Psorophora*, Unid'd= Unidentified.

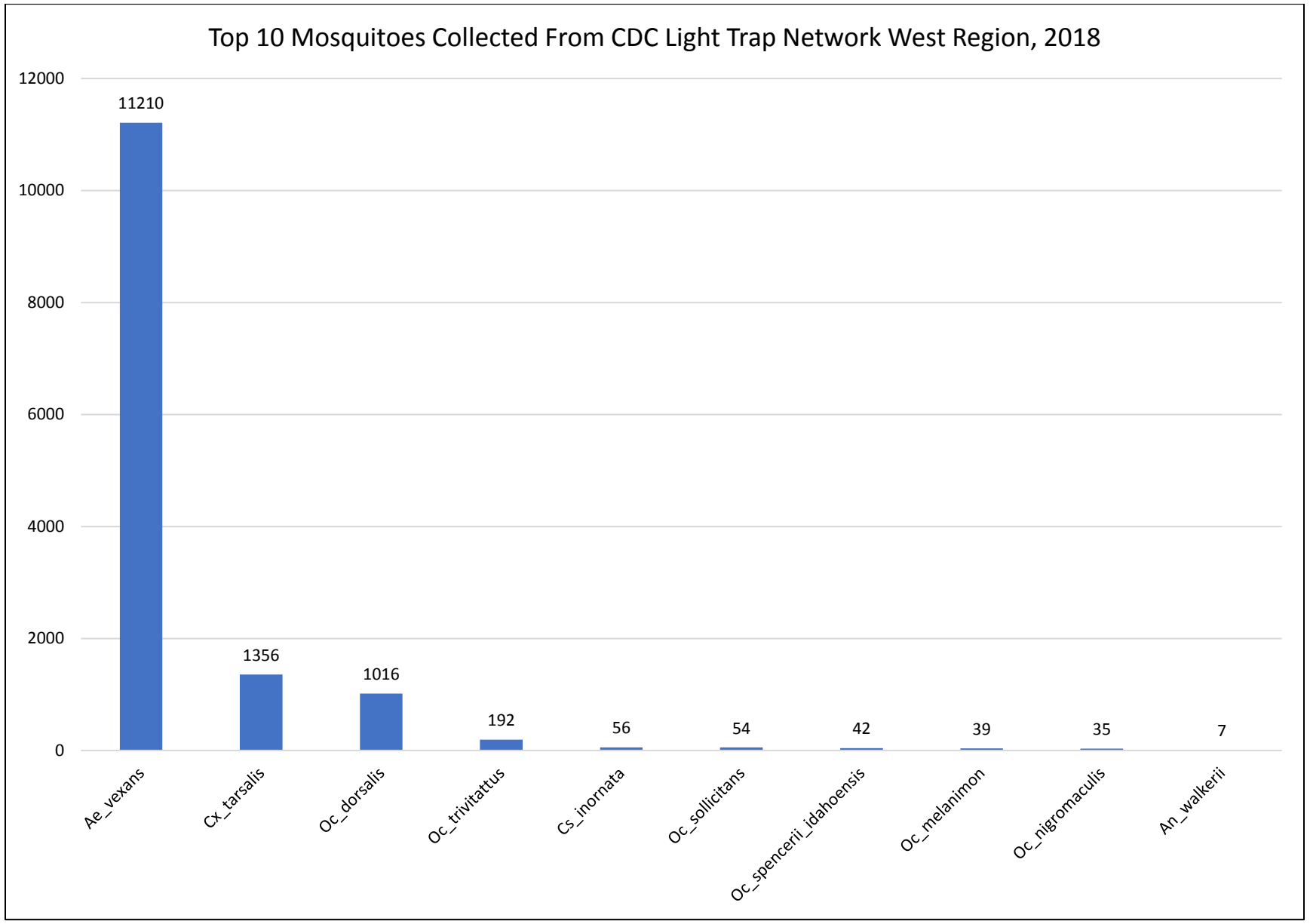

Figure 8. Top 10 cumulative mosquitoes collected in West region of the state from CDC light trap network, 2017. Note that the first part of the mosquito species name has been abbreviated. Ae= *Aedes*, An= *Anopheles*, Cs= *Culesita*, Cx= *Culex*, Oc= *Ochlerotatus*, Ps= *Psorophora*, and Unid'd= Unidentified.

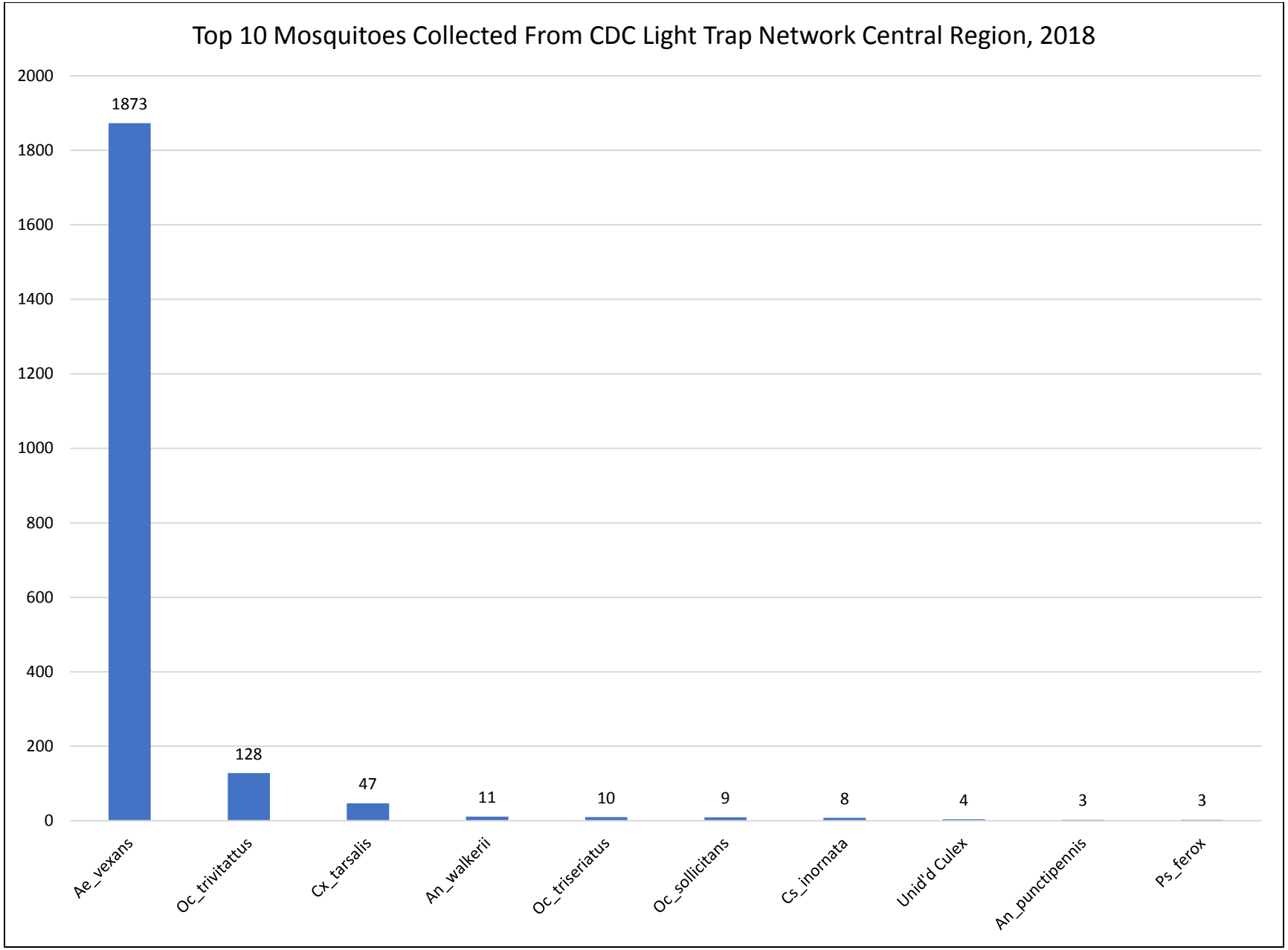

Figure 9. Top 10 cumulative mosquitoes collected in Central region of the state from CDC light trap network, 2017. Note that the first part of the mosquito species name has been abbreviated. Ae= *Aedes*, An= *Anopheles*, Cs= *Culesita*, Cx= *Culex*, Oc= *Ochlerotatus*, Ps= *Psorophora*, and Unid'd= Unidentified.

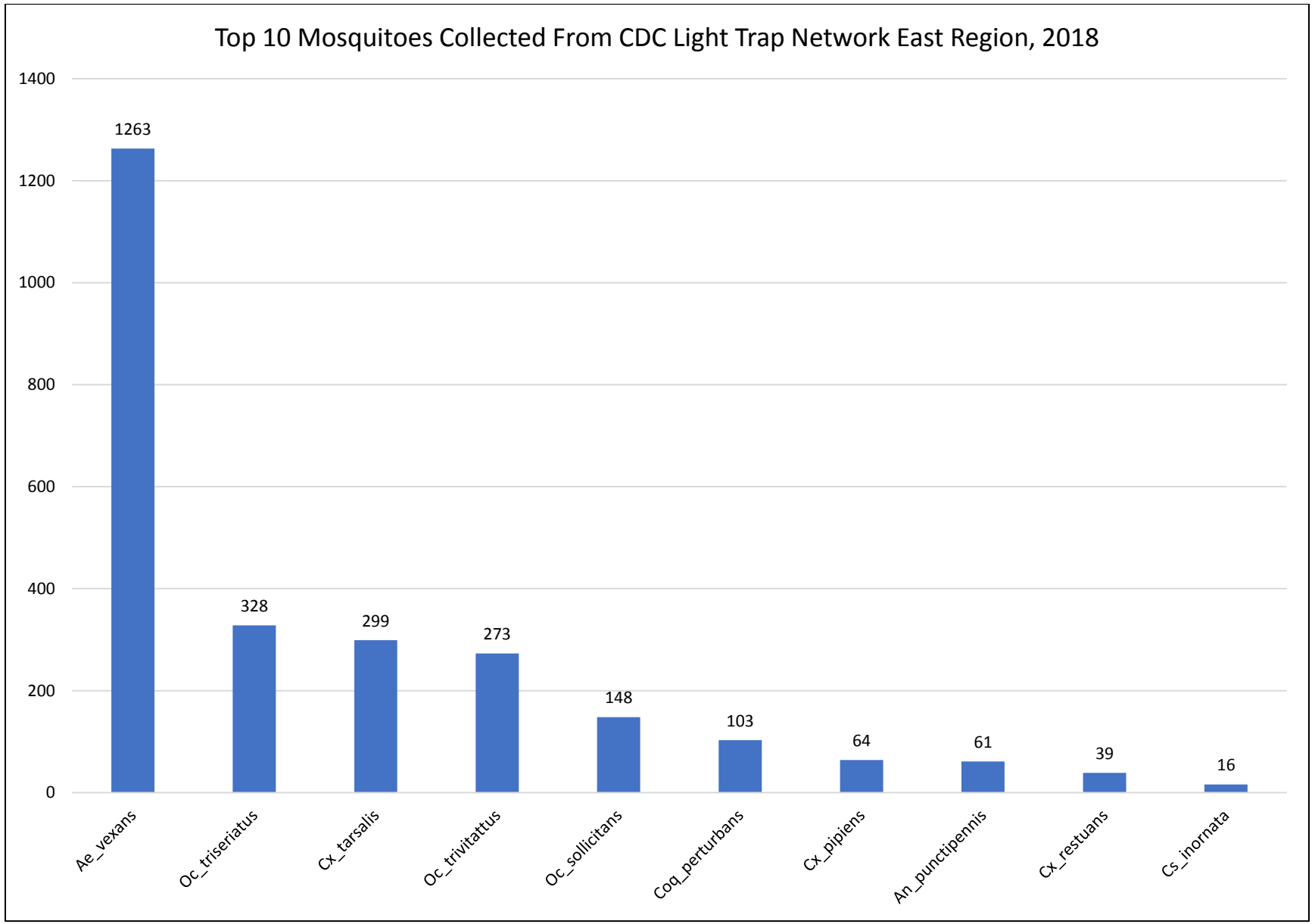

Figure 10. Top 10 cumulative mosquitoes collected in East region of the state from CDC light trap network, 2017. Note that the first part of the mosquito species name has been abbreviated. Ae= *Aedes*, An= *Anopheles*, Cs= *Culesita*, Cx= *Culex*, Oc= *Ochlerotatus*, Ps= *Psorophora*, and Unid'd= Unidentified.

The Nebraska BG Sentinel 2 trap network was established this season to better survey areas of eastern and southeastern Nebraska for the presence of the invasive *Aedes albopictus* (Asian tiger) mosquito. During the mosquito surveillance season, four local health departments participated in this trap network. This included: Douglas County Health Department, Lincoln-Lancaster Health Department, Sarpy-Cass Department of Health and Wellness, and Southeast District Health Department. For the season, counting all trap sites and types (CDC light and BG sentinel 2) from across the state, a total of 18,796 mosquitoes were captured with zero (0.0%) *Aedes albopictus* collected.

Table 8. Cumulative Trap Collections in Counties Performing BG Sentinel 2 Trapping, 2018.

County	Trap Type	Total Mosquitoes	Total Culex	Total Ae_albopictus
Douglas	CDC Light	625	23	0
	BG Sentinel 2	12	0	0
Douglas Co. Overall Total		**637**	**23**	**0**
Lancaster	CDC Light	571	86	0
	BG Sentinel 2	ND	ND	0
Lancaster Co. Overall Total		**571**	**86**	**0**
Richardson	CDC Light	128	91	0
	BG Sentinel 2	0	0	0
Richardson Co. Overall Total		**128**	**91**	**0**
Sarpy	CDC Light	NA	NA	0
	BG Sentinel 2	11	11	0
Sarpy Co. Overall Total		**11**	**11**	**0**
Overall Total		**1347**	**211**	**0**

Note: ND= No data, NA = Not applicable.

Bird and Equine Surveillance

Dead bird reporting: For the season, 13 dead birds have been reported to the Nebraska DHHS dead bird database. Of these, one has met the established criteria for WNV testing, results are pending.

Equine surveillance: For the season no equine WNV case has been reported to the Nebraska DHHS.

Fight the Bite!!