



Nebraska Department of Health and Human Services

Division of Public Health

Epidemiology Unit

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Nebraska Vector-Borne Disease Surveillance Report, August 11, 2022



Acknowledgments

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1. Report Highlights

- Three WNV case have been reported in humans for the 2022 season (as of 06 August 2022)
- One WNV blood donor case of the season has also been reported (as of 06 August 2022)
- Three positive mosquito pools have been detected for the 2022 season through week 31 (week ending 06 August 2022)
- Currently, WNV activity in mosquitoes has continued to see below average detections of the virus in tested mosquitoes
- The number of tick related ED visits through week 31 continued to decrease but were still above the historic baseline for this time of year

2. Human Case Investigations

Nebraska statute mandates public health reporting of specified vector-borne diseases to prevent further disease spread.

Table 1. Human Cases ^a

Mosquito-borne Diseases			Tickborne Disease		
	2022^b	2021		2022^b	2021
Chikungunya	0	0	Anaplasmosis	1	1
Dengue	1	3	Babesiosis	0	0
Malaria	3	7	Ehrlichiosis	12	7
West Nile Clinical Cases	3	107	Lyme Disease	5	9
West Nile Blood Donors	1	18	Spotted Fever Group Rickettsioses	6	5
Zika	0	0	Tularemia	6	10

^a Data for 2022 reflect confirmed and probable cases that have been approved by the Nebraska Department of Health and Human Services. This does not include cases under investigation. All 2022 numbers are preliminary and subject to change.

^b Cumulative through MMWR week #31: July 31 – August 6, 2022.

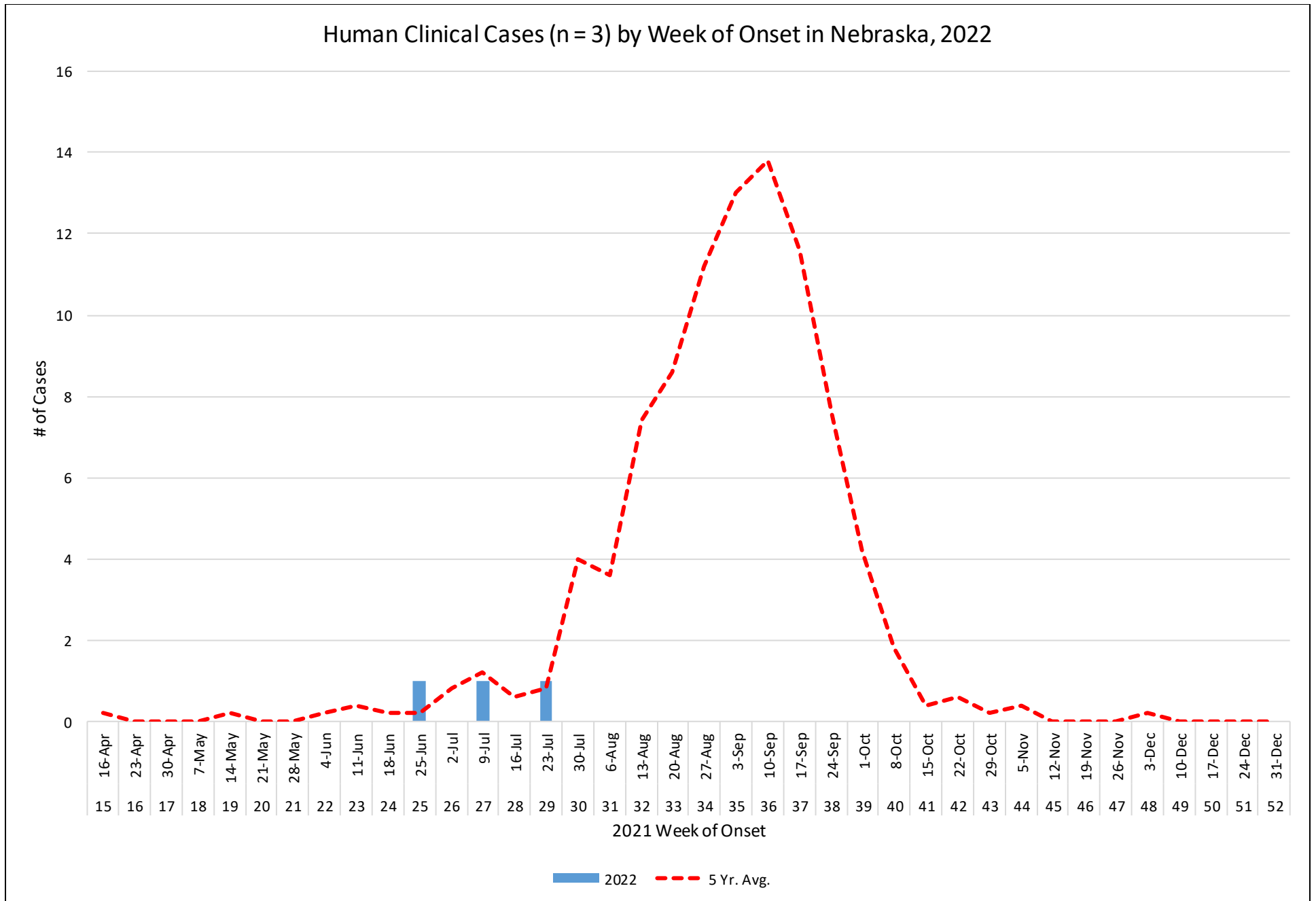


Figure 1. Epi-Curve of Human West Nile Virus Clinical Cases, 2022.

Data current as of 06 August 2022 and are subject to change

2022 West Nile Virus Human Clinical Cases

by Local Health Department, Updated 6 August 2022

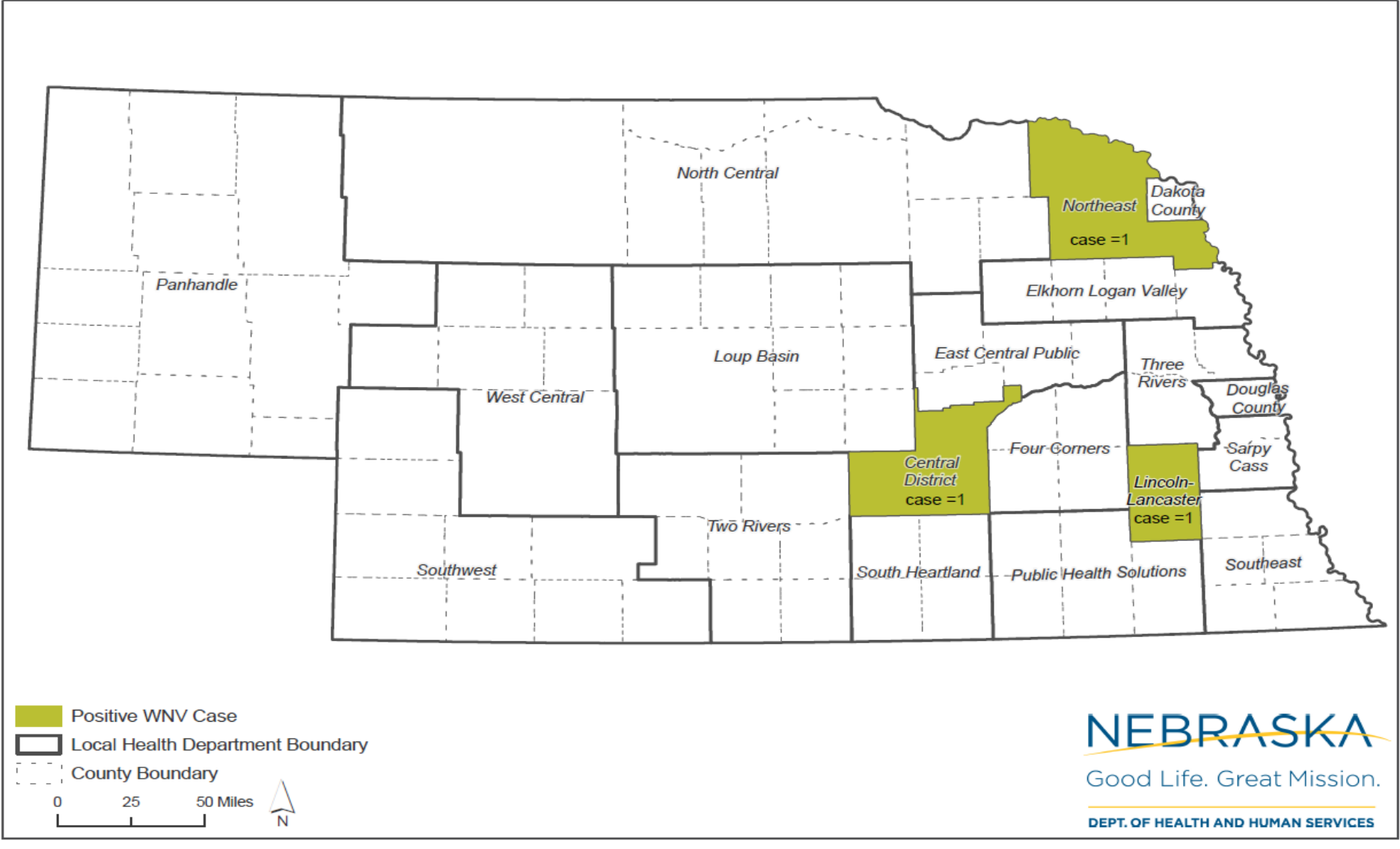


Figure 2. Nebraska Human West Nile Virus Clinical Cases by Local Health Department, 2022.

Data current as of 06 August 2022 and are subject to change

2022 West Nile Virus Blood Donation Cases

by Local Health Department, Updated 6 August 2022

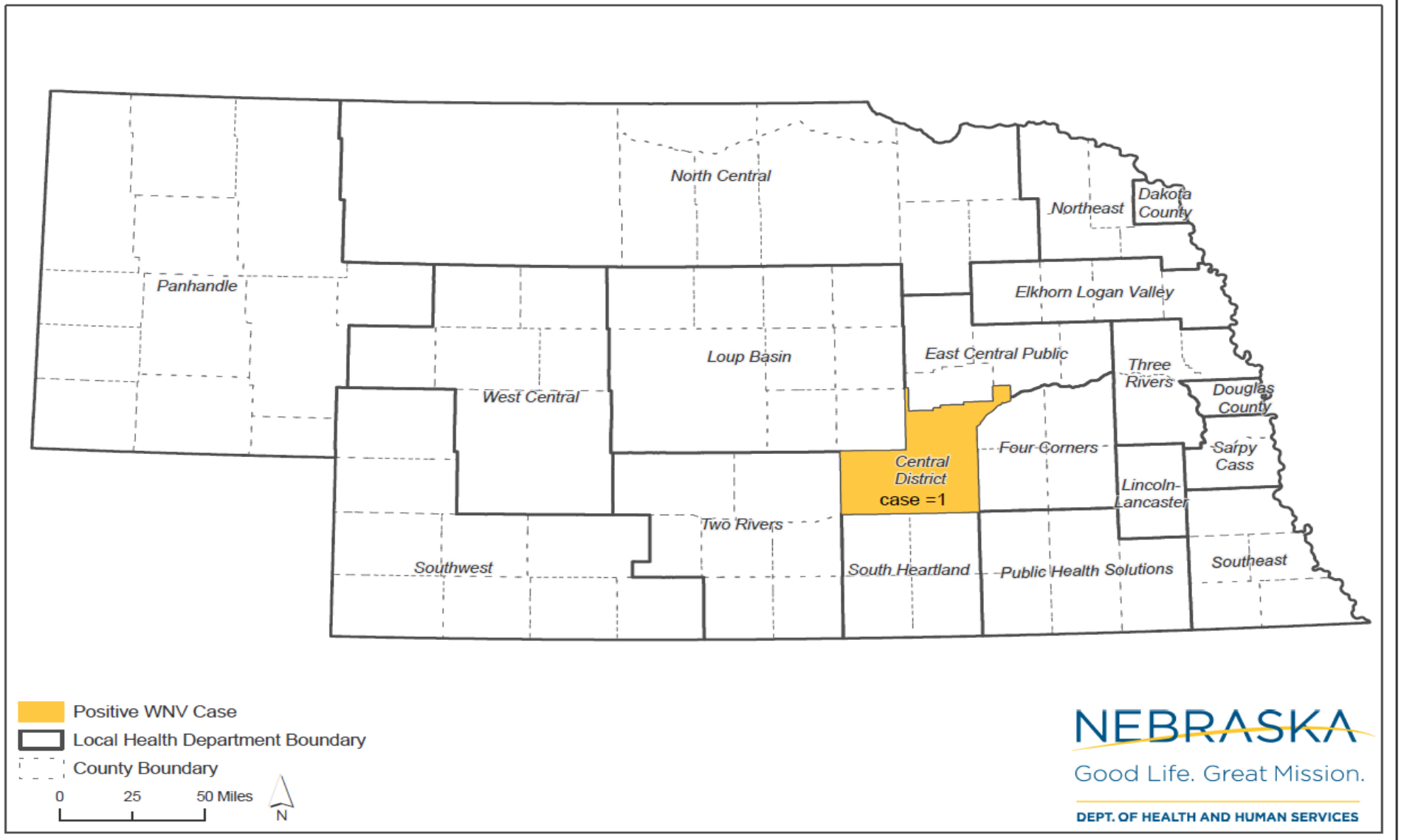


Figure 3. Nebraska Human West Nile Virus Blood Donor Cases by Local Health Department, 2022.

Data current as of 06 August 2022 and are subject to change

3. Mosquito Testing

The Nebraska Department of Health and Human Services in partnership with local public health departments collect mosquitoes from across the state. The primary vector mosquitoes are then tested by the Nebraska Public Health Laboratory in pools for the presence of West Nile virus, St. Louis Encephalitis virus, and Western Equine Encephalitis virus.

West Nile virus (WNV):

- 58 mosquito pools (527 total mosquitoes) collected during weeks 30 and 31 were tested for arboviruses
- Of the 58 pools from week 30 and 31 tested, two positive WNV pools (collected from week 31) were detected
- Cumulatively, 348 pools containing 2,432 mosquitoes have been tested through week 31
- Three positive mosquito pool has been detected during the 2022 season through week 31

Table 2. WNV Positive Mosquito Pools

Region/County	Weeks 30/31*		Cumulative Total (Week 31)	
	2022	2021^	2022	2021
Central Region		1	1	1
Adams Co.				
Dawson Co.				
Garfield Co.				
Hall Co.			1	
Holt Co.		1		1
East Region	2	1	2	2
Dakota Co.				
Dodge Co.	2		2	1
Douglas Co.		1		1
Jefferson Co.				
Lancaster Co.				
Madison Co.				
Platte Co.				
Richardson Co.				
Sarpy Co.				
Thurston Co.				
Wayne Co.				
York Co.				
West Region		1		4
Box Butte Co.		1		1
Lincoln Co.				
Red Willow Co.				
Scotts Bluff Co.				3
Total	2	3	3	7

*Please note that the sampling schedule for the NEDHHS mosquito surveillance program is set up so that half of the counties trap on an even MMWR week the other half trap on an odd MMWR week through the season. Therefore, it takes a full two weeks to have data from all counties that participate in the program. As a result, the data that is presented represents data from the most recent two weeks of mosquito surveillance.

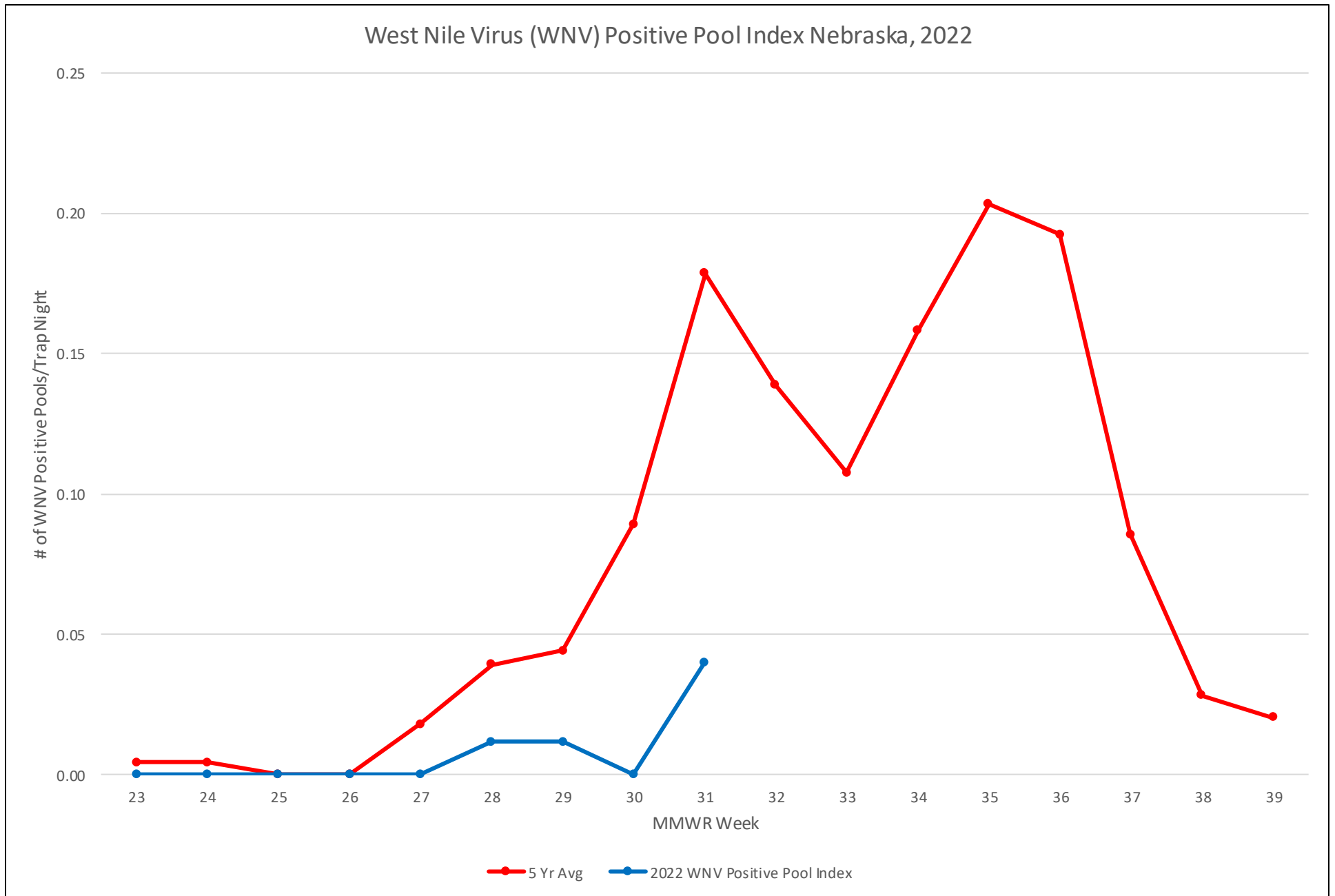


Figure 4. West Nile Virus Positive Mosquito Pool Index, 2022.

Data current as of 06 August 2022 and are subject to change

St. Louis Encephalitis Virus (SLE) and Western Equine Encephalitis Virus (WEE):

Table 3. Cumulative 2022 Mosquito Pool Testing for SLE and WEE

Region/County	SLE		WEE	
	Pools	Positive	Pools	Positive
Central Region	104		104	
Adams Co.	34		34	
Dawson Co.	23		23	
Garfield Co.	11		11	
Hall Co.	19		19	
Holt Co.	17		17	
East Region	200		200	
Dakota Co.	12		12	
Dodge Co.	21		21	
Douglas Co.	21		21	
Jefferson Co.	9		9	
Lancaster Co.	30		30	
Madison Co.	9		9	
Platte Co.	9		9	
Richardson Co.	13		13	
Sarpy Co.	12		12	
Thurston Co.	12		12	
Wayne Co.	30		30	
York Co.	22		22	
West Region	44		44	
Box Butte Co.	18		18	
Lincoln Co.	11		11	
Red Willow Co.	2		2	
Scotts Bluff Co.	13		13	
Total	348	-	348	-

2022 CDC Light Trap Mosquito Surveillance

Updated 6 August 2022

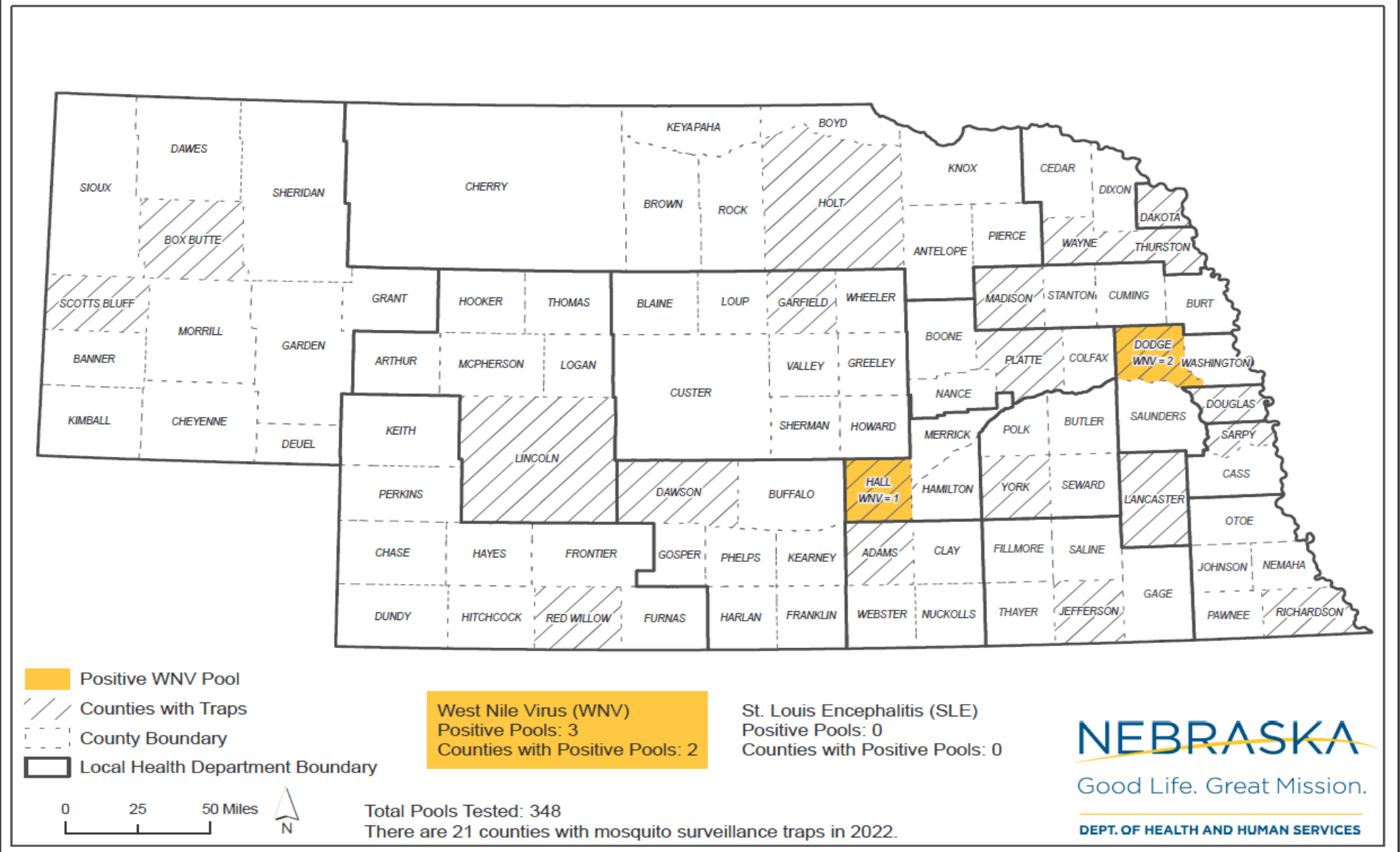


Figure 5. Arboviral Positive Mosquito Pools by County in the Nebraska CDC Light Trap Network, 2022.

Data current as of 06 August 2022 and are subject to change

4. Equine West Nile Virus (WNV) Cases

Equine cases of WNV are investigated and reported to the Nebraska Department of Health and Human Services by the Nebraska Department of Agriculture

- No equine cases have been reported in 2022.

Table 4. Equine WNV Cases Reported to the Nebraska Department of Health and Human Services

	Weeks 31		Cumulative Total (Year)	
	2022	2021	2022	2021
Equine WNV Cases	0	0	0	7

2022 Equine West Nile Virus Surveillance

Updated 6 August 2022

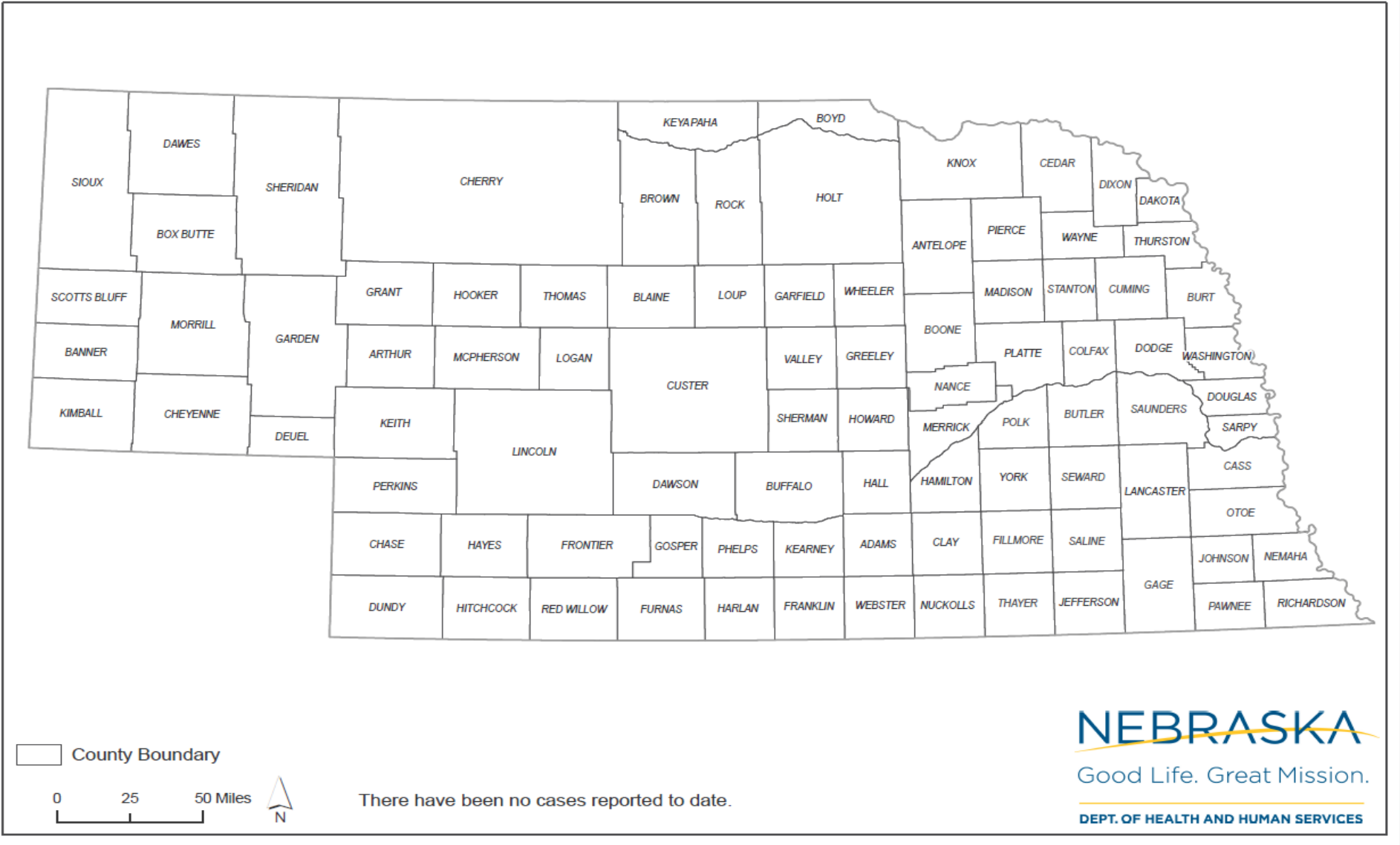


Figure 5. Nebraska WNV Equine Cases, 2022.

Data current as of 06 August 2022 and are subject to change

5. Syndromic Surveillance for Tick-Related Emergency Department and Outpatient Visits

The Nebraska Department of Health and Human Services' (NDHHS) Syndromic Surveillance program electronically collects de-identified, limited information on patient visits to emergency departments (ED) and outpatient clinics across the state. The data allow the NDHHS Vector-Borne Disease Program to track trends for certain types of ED and outpatient clinic visits. Tick exposures are where a patient reports a tick bite during their visit. Tick bite exposure data can act as a proxy to tick activity and indicate when people may be at risk for tick bites. It is important to note that not everyone exposed to ticks will be seen in an ED or outpatient clinic and thus the data does not show all patients with tick bites in Nebraska. Additionally, not all EDs and outpatient clinics currently report data to the NDHHS Syndromic Surveillance program. Finally, due to the nature of the data being collected, the data may over-estimate or under-estimate the true numbers.

In week 31 the rate of visits for tick bites continued to decrease but were above average for this time of year. Please see Figure 6 below.

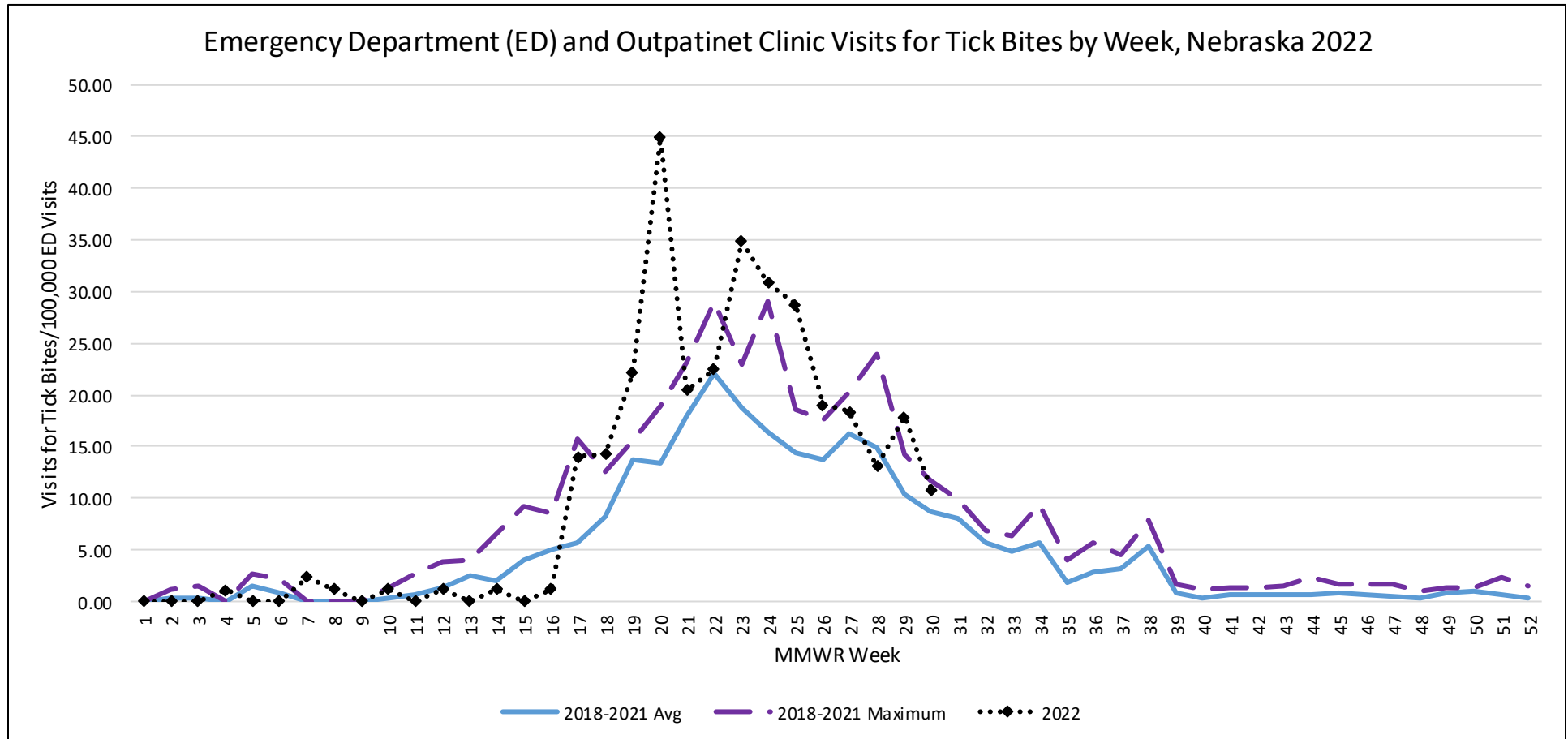


Figure 6. Tick Bite Related Emergency Department and Outpatient Clinic Visits, Nebraska 2022.

MMWR Weeks

MMWR Week	Week Starting	Week Ending
1	1/2/2022	1/8/2022
2	1/9/2022	1/15/2022
3	1/16/2022	1/22/2022
4	1/23/2022	1/29/2022
5	1/30/2022	2/5/2022
6	2/6/2022	2/12/2022
7	2/13/2022	2/19/2022
8	2/20/2022	2/26/2022
9	2/27/2022	3/5/2022
10	3/6/2022	3/12/2022
11	3/13/2022	3/19/2022
12	3/20/2022	3/26/2022
13	3/27/2022	4/2/2022
14	4/3/2022	4/9/2022
15	4/10/2022	4/16/2022
16	4/17/2022	4/23/2022
17	4/24/2022	4/30/2022
18	5/1/2022	5/7/2022
19	5/8/2022	5/14/2022
20	5/15/2022	5/21/2022
21	5/22/2022	5/28/2022
22	5/29/2022	6/4/2022
23	6/5/2022	6/11/2022
24	6/12/2022	6/18/2022
25	6/19/2022	6/25/2022
26	6/26/2022	7/2/2022
27	7/3/2022	7/9/2022
28	7/10/2022	7/16/2022
29	7/17/2022	7/23/2022
30	7/24/2022	7/30/2022
31	7/31/2022	8/6/2022
32	8/7/2022	8/13/2022
33	8/14/2022	8/20/2022
34	8/21/2022	8/27/2022
35	8/28/2022	9/3/2022
36	9/4/2022	9/10/2022
37	9/11/2022	9/17/2022
38	9/18/2022	9/24/2022
39	9/25/2022	10/1/2022
40	10/2/2022	10/8/2022
41	10/9/2022	10/15/2022

MMWR Week	Week Starting	Week Ending
42	10/16/2022	10/22/2022
43	10/23/2022	10/29/2022
44	10/30/2022	11/5/2022
45	11/6/2022	11/12/2022
46	11/13/2022	11/19/2022
47	11/20/2022	11/26/2022
48	11/27/2022	12/3/2022
49	12/4/2022	12/10/2022
50	12/11/2022	12/17/2022
51	12/18/2022	12/24/2022
52	12/25/2022	12/31/2022

6. Resources

- CDC Prevent Mosquito Bites Page: <https://www.cdc.gov/ncezid/dvbd/media/stopmosquitoes.html>
- CDC West Nile Virus Page: <https://www.cdc.gov/westnile/index.html>
- CDC Tick Bite Prevention Page: https://www.cdc.gov/ticks/avoid/on_people.html
- CDC Tick-borne Diseases Page: <https://www.cdc.gov/ticks/tickbornediseases/index.html>
- CDC Tick Bite Data Tracker Page: <https://www.cdc.gov/ticks/tickedvisits/index.html>
- NDA WNV Page: <https://nda.nebraska.gov/animal/diseases/westnile/index.html>
- U.S. EPA Insect Repellent Page: <https://www.epa.gov/insect-repellents>
- Nebraska Mosquito and Vector Control Association Page: <https://www.nemosquito.org/>
- NEDHHS Vector-Borne Diseases Page: <https://dhhs.ne.gov/VBD>