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2026 Mosquito Surveillance Report

The Public Health Importance of Mosquito Surveillance

Tracking mosquitoes is an essential part of keeping communities safe. Mosquitoes can carry dangerous viruses—such as West Nile Virus, Jamestown Canyon Virus, and Cache Valley Virus—that cause everything from mild fevers to severe, life-threatening brain and nerve infections.

By monitoring mosquito populations, public health departments can:

- Find out when and where disease-carrying mosquitoes are active.
- Catch viruses early, before people start getting sick.
- Tell residents how to protect themselves.
- Direct mosquito control efforts to the areas that need them most.
- Issue timely warnings to keep families safe across Sarpy and Cass counties.

Program Overview and State Collaboration

The Sarpy/Cass Health Department conducted local mosquito surveillance from June 2 to September 22, 2026, operating across three designated monitoring locations in Sarpy County:

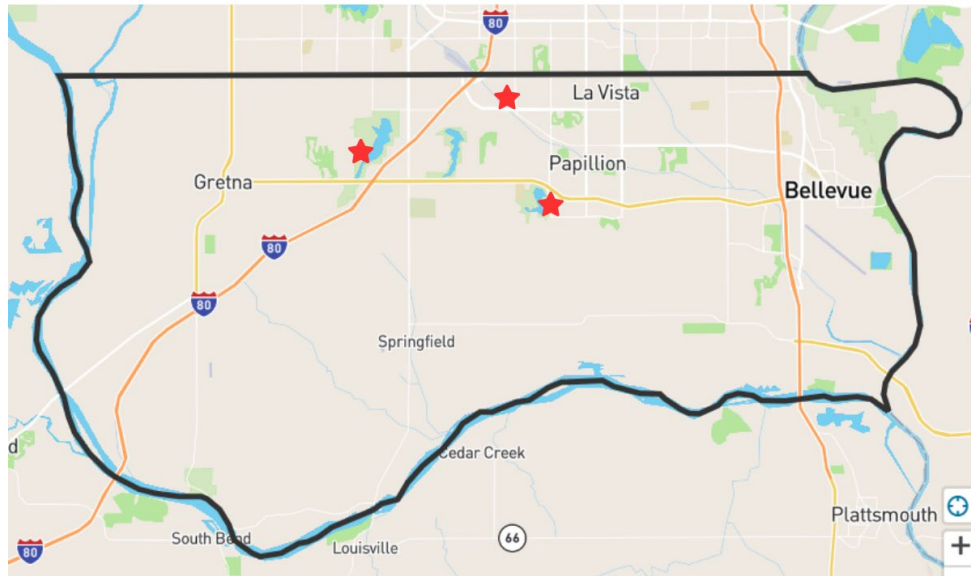
- Chalco Hills Recreation Area (Omaha/Western Sarpy)
- Walnut Creek Recreation Area (Papillion)
- West Papio Creek (La Vista)

In collaboration with the Nebraska Department of Health and Human Services (DHHS) Vector-Borne Disease Program, field teams utilized standard CDC Light Traps twice each month.

Throughout the season, field teams collected 27 trap samples containing a total of 8,969 mosquitoes across 17 different species. State laboratory partners tested these samples to check for local viruses, ultimately finding four groups (pools) that tested positive for disease, helping public health teams protect residents.

Sarpy County, Nebraska

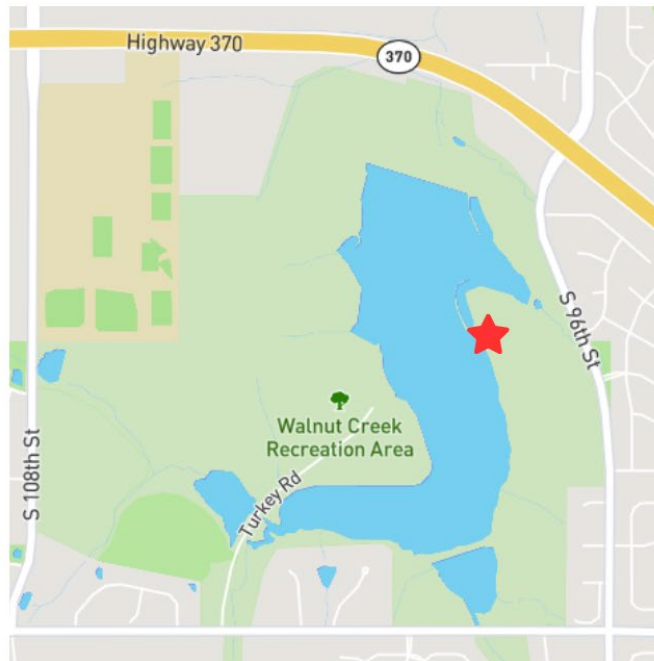
Mosquito Surveillance Monitoring Locations



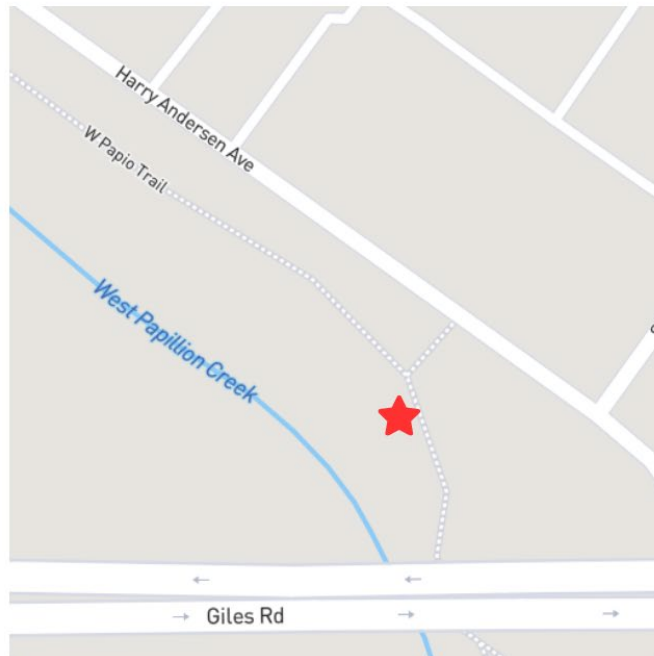
Chalco Hills Recreation Area, Omaha



Walnut Creek Recreation Area, Papillion



West Papio Creek, La Vista



Top 5 Mosquito Species and Disease Surveillance Results

During the 2026 surveillance season, the top five most abundant mosquito species accounted for most of the collection. The breakdown of species composition, their local habitats, and associated disease findings are detailed below:

1. *Aedes vexans* (72.70% of total collection)

- **Habitat:** A classic floodwater mosquito. Females lay eggs in moist soil along floodplains, roadside ditches, and temporary pools, which hatch rapidly after heavy rains or irrigation.
- **Nebraska Context:** Making up nearly three-quarters of the total catch, *Aedes vexans* is overwhelmingly the most abundant nuisance mosquito across Nebraska.
- **Illness Likelihood:** While they are aggressive, persistent biters (especially at dusk and into the night), they function primarily as a severe nuisance species rather than major vectors for localized endemic pathogens like West Nile Virus.

2. *Culex erraticus* (16.70% of total collection)

- **Habitat:** This species favors permanent or semi-permanent aquatic habitats containing heavy vegetation or floating organic debris, such as swamps, marshes, and slow-moving streams.
- **Nebraska Context:** While historically more common further south, its range extends into Nebraska, where it occasionally appears in moderate numbers during summer months.
- **Illness Likelihood:** They feed primarily on birds and mammals. Though they can harbor certain arboviruses, none of the pools in this category tested positive for disease.

3. *Culex pipiens* / *restuans* / *salinarius* (4.40% of total collection)

- **Habitat:** These *Culex* species prefer permanent pools, artificial containers, and stagnant water rich in organic matter, such as storm drains, birdbaths, ditches, and clogged gutters.
- **Nebraska Context:** These represent primary urban and suburban mosquitoes in Nebraska, frequently breeding in residential backyards.
- **Illness Likelihood:** *Culex pipiens* and *Culex restuans* are primary vectors for transmitting West Nile Virus to humans in the region because they heavily target birds (the natural reservoir) before shifting to mammalian hosts later in the season.
- **Surveillance Finding:** One pool in this group tested positive for West Nile Virus.

4. *Anopheles quadrimaculatus* (2.70% of total collection)

- **Habitat:** A permanent-pool mosquito that prefers clean, unpolluted water with dense emergent aquatic vegetation, such as permanent ponds, marshes, and vegetated lake margins.
- **Nebraska Context:** Recognized historically as a key malaria vector in North America, they rest in dark, cool shelters during the day and feed actively at night.

- **Illness Likelihood:** These are zoonotic arboviruses associated with white-tailed deer and floodwater environments that can occasionally cause human neuroinvasive disease.
- **Surveillance Findings:** Two separate pools of this type tested positive—one for Cache Valley Virus and one for Jamestown Canyon Virus.

5. *Culex tarsalis* (1.20% of total collection)

- **Habitat:** A transient water and permanent pool breeder, *Culex tarsalis* thrives in irrigation runoff, flooded agricultural fields, roadside ditches, and temporary ground pools.
- **Nebraska Context:** Highly prevalent in agricultural regions of Nebraska where irrigation creates abundant standing water.
- **Illness Likelihood:** *Culex tarsalis* is considered one of the most efficient and dangerous vectors of West Nile Virus in the American West because it readily feeds on both avian and mammalian (including human) hosts.
- **Surveillance Finding:** One pool tested positive for West Nile Virus.

Historical Comparison

- **2025:** Throughout the 2025 season, field teams collected 24 trap samples containing a total of 3,229 mosquitoes across 17 different species. No pools tested positive for disease.
- **2024:** Throughout the 2024 season, field teams collected 27 trap samples containing a total of 6,595 mosquitoes across 19 different species. No pools tested positive for any virus. Three separate pools tested positive for West Nile Virus.
- **2023:** Throughout the 2023 season, field teams collected 24 trap samples containing a total of 532 mosquitoes across 11 different species. No pools tested positive for any virus. Three separate pools tested positive for West Nile Virus. No pools tested positive for disease.