City of Oakbrook Terrace

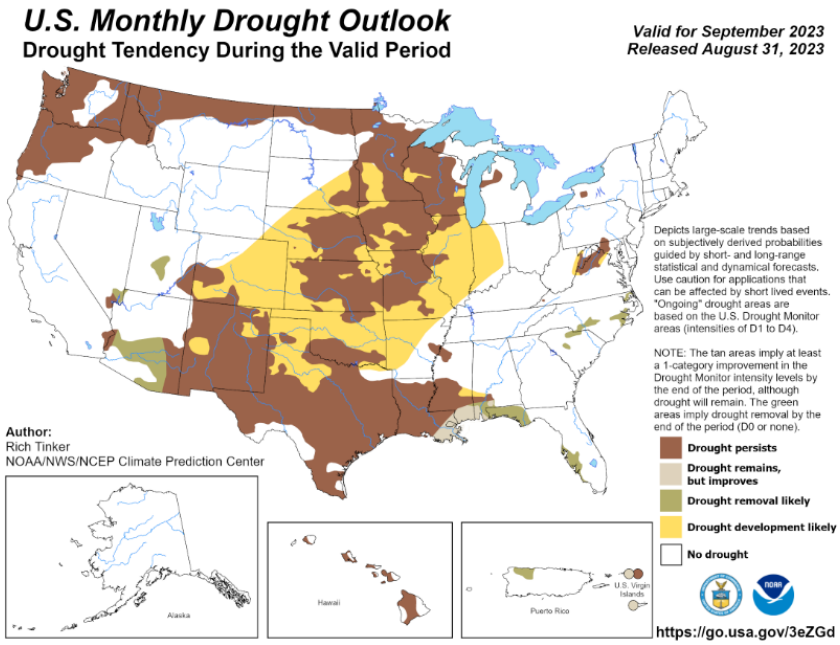
September 2023 - Status Report

SEASON PERSPECTIVE

Introduction. Weather conditions critically affect the seasonal mosquito population. Excessive rainfall periods trigger hatches of floodwater mosquitoes (*Aedes vexans*), the dominant annoyance species in northern Illinois that has a flight range of 15 to 20 miles. The other target species is the northern house mosquito (*Culex pipiens*), the primary vector of West Nile virus (WNV) that flourishes under stagnant water and drought conditions.

Drought conditions rebound in August as West Nile virus spikes.

After over 6 inches of rain in late June and July to improve soil moisture levels, persistent hot and dry August weather rebounded drought conditions. The following Drought Outlook map for September depicts the intensification of drought conditions in northern Illinois monthly drought outlook:



As a result of 2023 drought conditions, the impact of predicted floodwater mosquito (*Aedes vexans*) broods and significant periods of mosquito annoyance was diminished.

By contrast, the Culex mosquito population thrived. WNV typically peaks in August and is expected to be a significant factor for the balance of the 2023 season. On August 23rd, the Illinois Department of Public Health issued the following news release:

IDPH Reports First Illinois West Nile Virus Death of 2023

News – Wednesday, August 23, 2023

PRINT EMAIL

CHICAGO – The Illinois Department of Public Health (IDPH) announced the first Illinois human West Nile virus (WNV)-related death in 2023. Testing by CDC confirmed the case was WNV-related. The individual, who was in their 90's and lived in suburban Cook County, had an onset of symptoms of WNV in early August and died soon after. IDPH is also reporting 11 non-fatal cases of WNV confirmed to date this year.

Of the 12 human cases, seven were reported from Cook County, including two in Chicago. To date, Kane, Macon, Madison, Will and Woodford counties have each reported one human WNV case. ¶

As of September 5th, the following chart summarizes the number of WNV-positive *Culex* mosquito samples in northern Illinois confirming the increase in WNV activity:

County	No. of WNV-positive *Culex* Samples
Boone	7
Cook	2,149
DuPage	121
Kane	24
Lake	115
McHenry	28
Will	53

Operations Plan. For the balance of the season, Clarke operations will focus on permanent water larval development habitats for the control of *Culex.* To protect public health, truck ULV adulticide applications will be recommended as warranted by surveillance data for WNV and annoyance levels per the following Centers for Disease Control & Prevention (CDC) strategy guidelines:

> *"The objective of the adult mosquito control component of an IVM (Integrated Vector Management) program is to complement the larval management program by reducing the abundance of adult mosquitoes in an area, thereby reducing the number of eggs laid*

in breeding sites. Adult mosquito control is also intended to reduce the abundance of biting, infected adult mosquitoes in order to prevent them from transmitting WNV to humans and to break the mosquito-bird transmission cycle." (West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control. Page 35. June 2013); wnvGuidelines.pdf (cdc.gov)

Floodwater Mosquito Brood Prediction – DuPage Airport

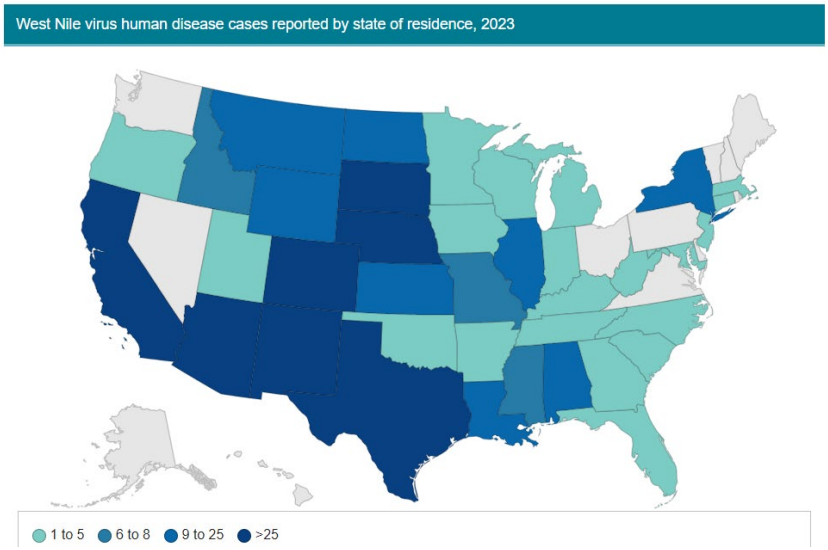
The floodwater mosquito (*Aedes vexans*) is the key nuisance species in the Chicagoland area. Floodwater mosquito population hatches, or broods, are triggered by significant rainfall events. The Clarke Brood Prediction Model calculates peak annoyance periods based on rainfall and temperature data collected from weather stations in your area.

Weather Station Name	Rain Date	Rain Amount	Brood Prediction Date
DuPage Co. Airport	6/24	0.83	7/11
DuPage Co. Airport	7/02	0.41	7/16
DuPage Co. Airport	7/05	1.00	7/19
DuPage Co. Airport	7/11	1.36	7/29
DuPage Co. Airport	7/12	0.48	7/29
DuPage Co. Airport	7/14	1.33	7/30
DuPage Co. Airport	7/22	1.03	8/5
DuPage Co. Airport	7/27	0.66	8/10
DuPage Co. Airport	7/28	2.51	8/11
DuPage Co. Airport	8/14	0.75	8/28

MOSQUITO-BORNE DISEASE UPDATE

West Nile Virus (WNV)

2023 – USA. As of August 29th, five hundred fifty-two (552) USA human WNV cases have been reported to the CDC in the following thirty-eight states as shown on the following map:



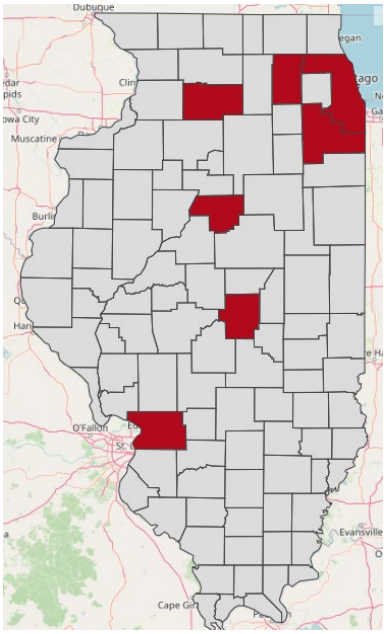
Colorado has the most diagnosed cases of 101.

2023 – Illinois. To date, the Illinois Department of Public Health has reported 2,034 WNV-positive mosquito samples (14.9% positive) of the 13,675 samples tested from 44 counties. Twenty-five birds have tested positive for WNV this year. Eighteen (18) WNV human cases including 1 fatality have been officially reported in Illinois so far this year.

West Nile Virus Activity Comparison and Summary (as of August 31, 2023)

	Number Collected in all Counties	# WNV Positives	% WNV Positives
2023 Data as of August 31			
2023 Mosquito Surveillance Samples	12,751	2,511	19.7%
2023 Bird Surveillance Samples	133	25	18.8%
2023 WNV Positive Counties	53		
2023 Human Cases as of August 31	18		
2022 Historical Data as of August 31 for Comparison			
2022 Mosquito Surveillance Samples	13,581	1,942	14.3%
2022 Bird Surveillance Samples	151	12	7.9%
2022 WNV Positive Counties	36		
2022 Total Human Cases	34		
2012 Historical Data as of August 31 for Comparison			
2012 Mosquito Surveillance Samples	16,147	4,425	27.4%
2012 Bird Surveillance Samples	514	104	20.2%
2012 WNV Positive Counties	45		
2012 Total Human Cases	290		

As of August 31st, the following map shows the counties with WNV human cases:



DUPAGE COUNTY HEALTH DEPARTMENT
Everyone, Everywhere, Everyday

News Release

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DuPage County Board of Health
Sam Tornatore, J.D.
President

September 1, 2023
For Immediate Release

First 2023 Human Case of West Nile Virus Reported in DuPage County

DuPage County - The DuPage County Health Department (DCHD) is reporting the first human case of West Nile virus (WNV) in DuPage County in 2023. A Woodridge resident in their 60s became ill in August.

2023 – DuPage County Surveillance Data & Personal Protection Index – August 19, 2023

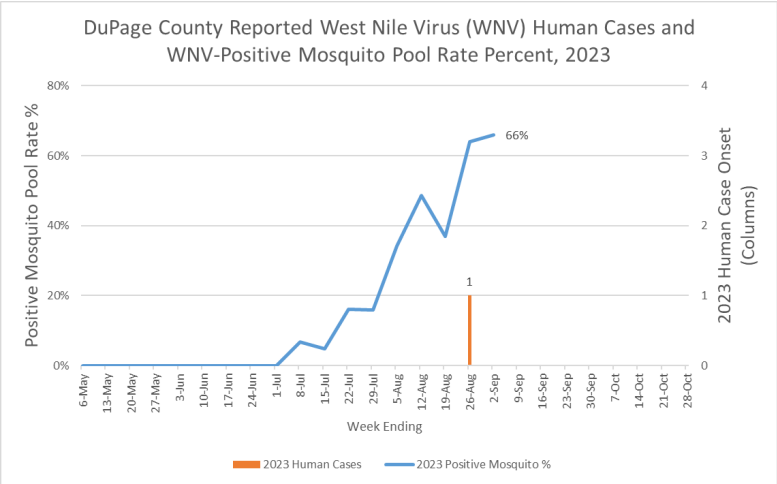
2023		
DUPAGE COUNTY WEST NILE VIRUS SURVEILLANCE DATA 2023	YTD 2023	WEEK: 35 8/27 - 9/2
Mosquitoes Tested	25,908	1,247
WNV Total Tests	737	41
WNV Positive Tests	127	27
Positive Mosquito Pool Rate %	17%	66%
Reported Human Cases onset	1	--
Communities with Human WNV Cases	Woodridge	--
Personal Protection Index	Risk Level >>>	2

Risk Level*	Definitions	Recommended Actions
0 NONE	Off season, mosquitoes not active, climate not favorable for *Culex* species.	None required
1 LOW	Localized abundance of active mosquitoes, climate conditions favorable for development of virus.	Drain, Defend
2 MODERATE	High numbers of infected mosquitoes in most areas, at least one confirmed human case.	Drain, Defend, Dawn & Dusk
3 HIGH	Multiple confirmed human cases in DuPage County.	Drain, Defend, Dawn & Dusk, Dress

DuPage County surveillance, testing, and analysis of Culex mosquitoes for West Nile virus is a collaboration of the following agencies:

- DuPage County Information Technology Department, GIS Division
- City of Naperville
- Clarke Environmental Mosquito Management, Inc.
- Forest Preserve District of DuPage County
- Illinois Department of Public Health
- DuPage County Health Department Public Health Center and Health Promotions Staff

The following chart shows the DuPage County spike in WNV of positive *Culex* samples in August and first human case confirmed in Woodridge:



OPERATIONS UPDATE

Services Performed – August & Early September 2023:

Service Item	Completion Date(s)
Merus Truck ULV	08/01/2023
NatularG30 Helicopter Prehatch	08/02/2023
Natular G 5#/Acre Hand	08/17/2023
Complete Site Larval Insp Serv	08/17/2023
Merus Truck ULV	08/17/2023
Natular G 5#/Acre Hand	08/28/2023
Targeted Site Larval Insp Serv	08/28/2023
Natular T30 CB Bike	08/29/2023
Merus Truck ULV	08/30/2023

Upcoming September 2023 Operations

Work Type	Number of Treatments
Targeted Site Larval Insp Serv	1