# West Nile Virus Forecasts – September 2023

In April 2023, 10 teams submitted 12 forecasts for the monthly number of West Nile Neuroinvasive Disease (WNND) cases for each contiguous US state for May-December 2023. For the most recent submission deadline of August 31, 2023, 6 updated forecasts were submitted. We created an ensemble forecast using the most recent submission for each forecast model and a baseline forecast using only historical WNND data.

Summary points for the ensemble forecast:
- Incidence of WNND is forecast to decrease after September in all states, with the highest September forecasts and uncertainty in Arizona, California, Colorado, Illinois, and Texas.
- The number of WNND cases in September is likely to be below the 10-year median for 42 states and the District of Columbia, above the median for 4 states, and equally likely to be below or above the median for 3 states.
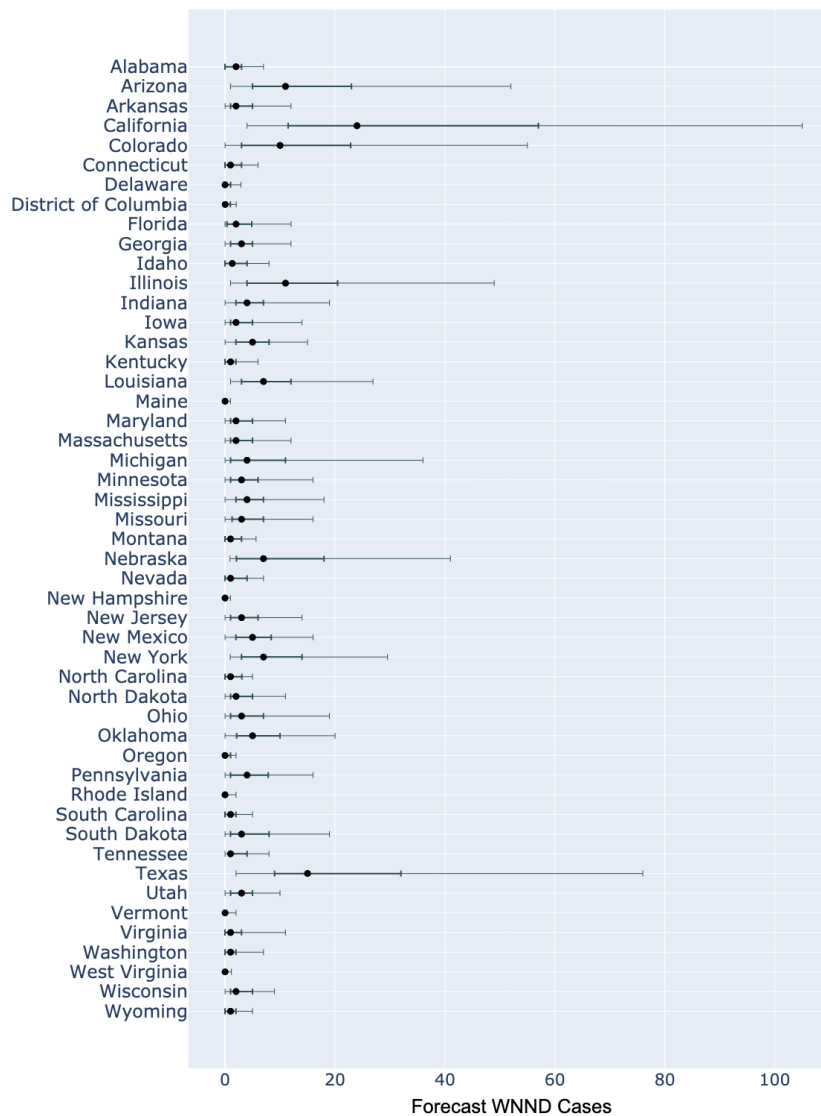
September Ensemble Forecast

September Ensemble Forecast of WNND Cases
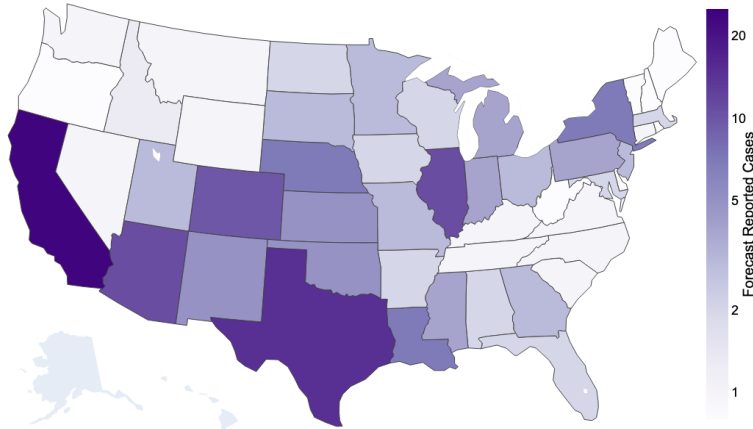
This map shows the ensemble forecast for September. Uncertainty for each state forecast is shown below.

September Ensemble Forecasts

This figure shows state-level ensemble forecasts for September. Points represent the median forecasts with thick and thin lines representing the 50% and 90% prediction intervals, respectively.

Likelihood of Exceeding Median 10-Year Caseload in September

Likelihood of Exceeding Median 10-Year September Caseload
(Ensemble Forecast)
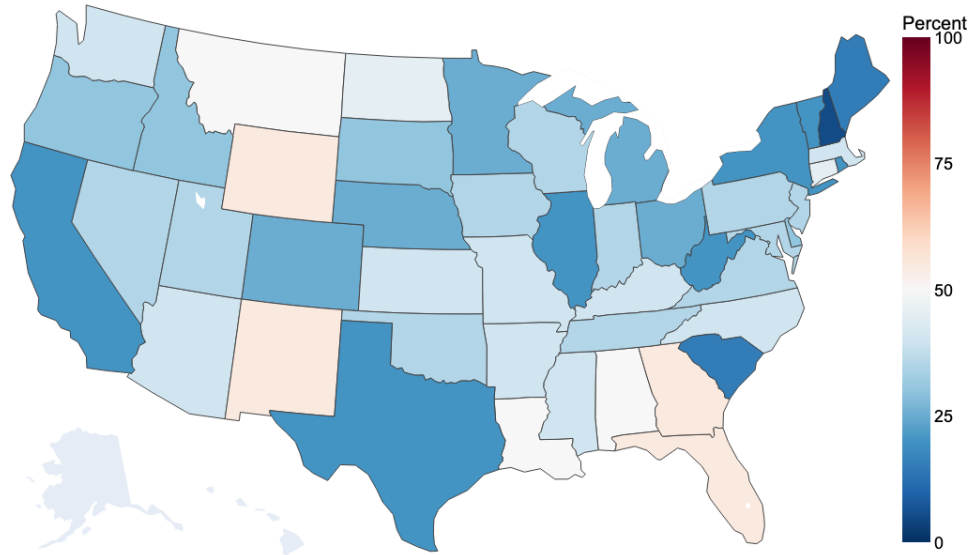
This figure shows the state-specific likelihood of exceeding the median 10-year (2013-2022) reported caseload of West Nile virus neuroinvasive disease.

Median 10-Year September Caseload
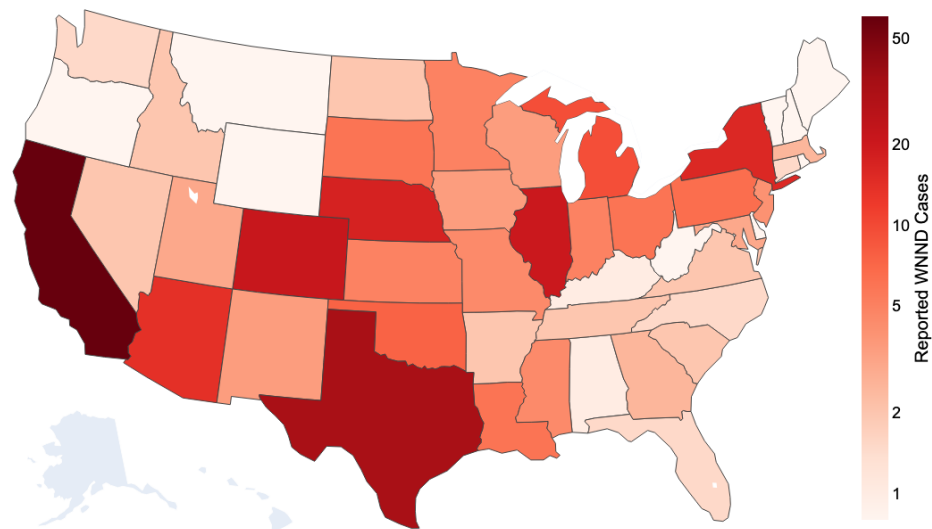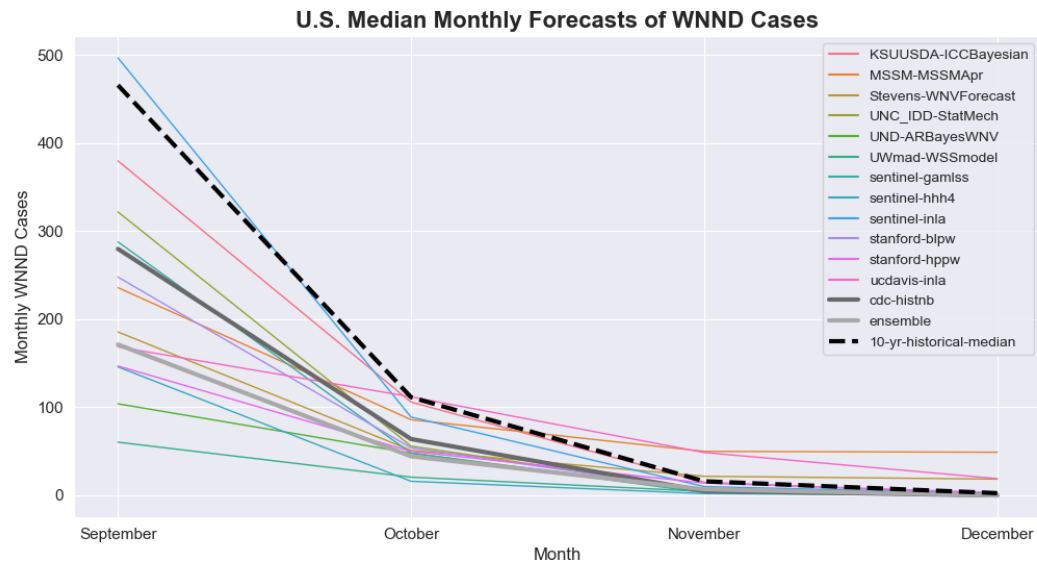
This figure shows the state-specific median 10-year (2013-2022) reported caseload of West Nile virus neuroinvasive disease.

National Summary of Median Forecasts

This figure shows model-specific nationwide forecasts across all months. These national summaries were created by adding all state-level median forecasts for each month and do not reflect the uncertainty in each forecast.

Supplemental Table with September Ensemble Forecast

	Ensemble Forecast (percentiles)					10-Year Historical Values		
	5th	25th	50th	75th	95th	minimum	median	maximum
Alabama	0	0	2	3	7	0	0	2
Arizona	1	5	11	23	52	1	5	11
Arkansas	0	1	2	5	12	0	1	2
California	4	11.5	24	57	105	4	11.5	24
Colorado	0	3	10	22.9	55	0	3	10
Connecticut	0	0	1	3	6	0	0	1
Delaware	0	0	0	1	2.9	0	0	0
District of Columbia	0	0	0	1	2	0	0	0
Florida	0	0.3	2	4.9	12	0	0.3	2
Georgia	0	1	3	5	12	0	1	3
Idaho	0	0	1.3	4	8	0	0	1.3
Illinois	1	4	11	20.5	49	1	4	11
Indiana	0	2	4	7	19	0	2	4
Iowa	0	1	2	5	14	0	1	2
Kansas	0	2	5	8	15	0	2	5
Kentucky	0	0	1	2	6	0	0	1
Louisiana	1	3	7	12	26.9	1	3	7
Maine	0	0	0	0	1	0	0	0
Maryland	0	1	2	5	11	0	1	2
Massachusetts	0	1	2	5	12	0	1	2
Michigan	0	1	4	11	36	0	1	4
Minnesota	0	1	3	6	16	0	1	3
Mississippi	0	2	4	7	18	0	2	4
Missouri	0	1.3	3	7	16	0	1.3	3
Montana	0	0	1	3	5.6	0	0	1
Nebraska	0.9	2.1	7	18	41	0.9	2.1	7
Nevada	0	0	1	4	7	0	0	1
New Hampshire	0	0	0	0	1	0	0	0
New Jersey	0	1	3	6	14	0	1	3
New Mexico	0	2	5	8.4	16	0	2	5
New York	1	3	7	14	29.6	1	3	7
North Carolina	0	0	1	3.1	5	0	0	1
North Dakota	0	1	2	5	11	0	1	2
Ohio	0	1	3	7	19	0	1	3
Oklahoma	0	2.1	5	10	20	0	2.1	5
Oregon	0	0	0	1	2	0	0	0
Pennsylvania	0	1	4	7.9	16	0	1	4
Rhode Island	0	0	0	0	2	0	0	0
South Carolina	0	0	1	2	5	0	0	1
South Dakota	0	1	3	8	19	0	1	3
Tennessee	0	1	1	4	8	0	1	1
Texas	2	9	15	32	76	2	9	15
Utah	0	1	3	5	10	0	1	3
Vermont	0	0	0	0	2	0	0	0
Virginia	0	0	1	3	11	0	0	1
Washington	0	0	1	2	7	0	0	1
West Virginia	0	0	0	0	1.2	0	0	0
Wisconsin	0	1	2	5	9	0	1	2
Wyoming	0	0	1	2	5	0	0	1

This table provides state-level ensemble forecasts for September. Ensemble forecast values for the 5th, 25th, median, 75th, and 95th percentiles are shown, as well as 10-year historical minimum, median, and maximum values.