

West Nile Virus Forecasts – July 2023

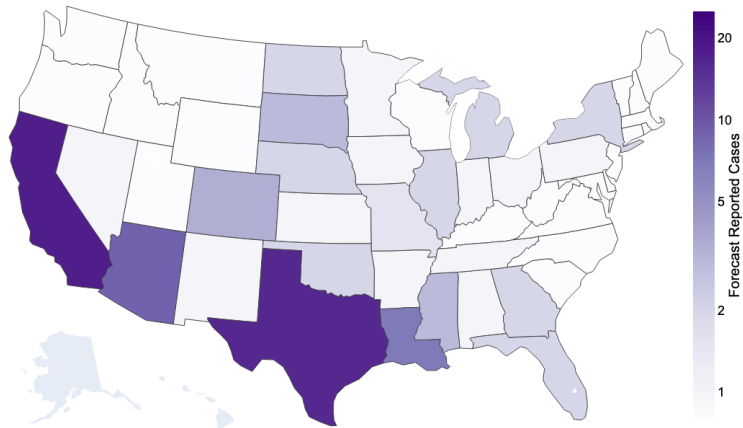
In April 2023, 10 teams submitted 12 forecasts for the monthly number of West Nile Neuroinvasive Disease (WNND) cases for each contiguous US state for May-December 2023. For the most recent submission deadline of June 30, 2023, 10 updated forecasts were submitted. We created an ensemble forecast using 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 be low but rising in all states in July with the highest forecasts and uncertainty in Arizona, California, Louisiana, and Texas.
- Peak incidence is forecast for August or September in all states and the District of Columbia. The median predicted peak monthly case numbers are 20 or more in California, Colorado, and Texas.
- The number of WNND in August 2023 is likely to be below the 10-year median for 35 states and the District of Columbia, above the median for 8 states, and equally likely to be below or above the median for 6 states.

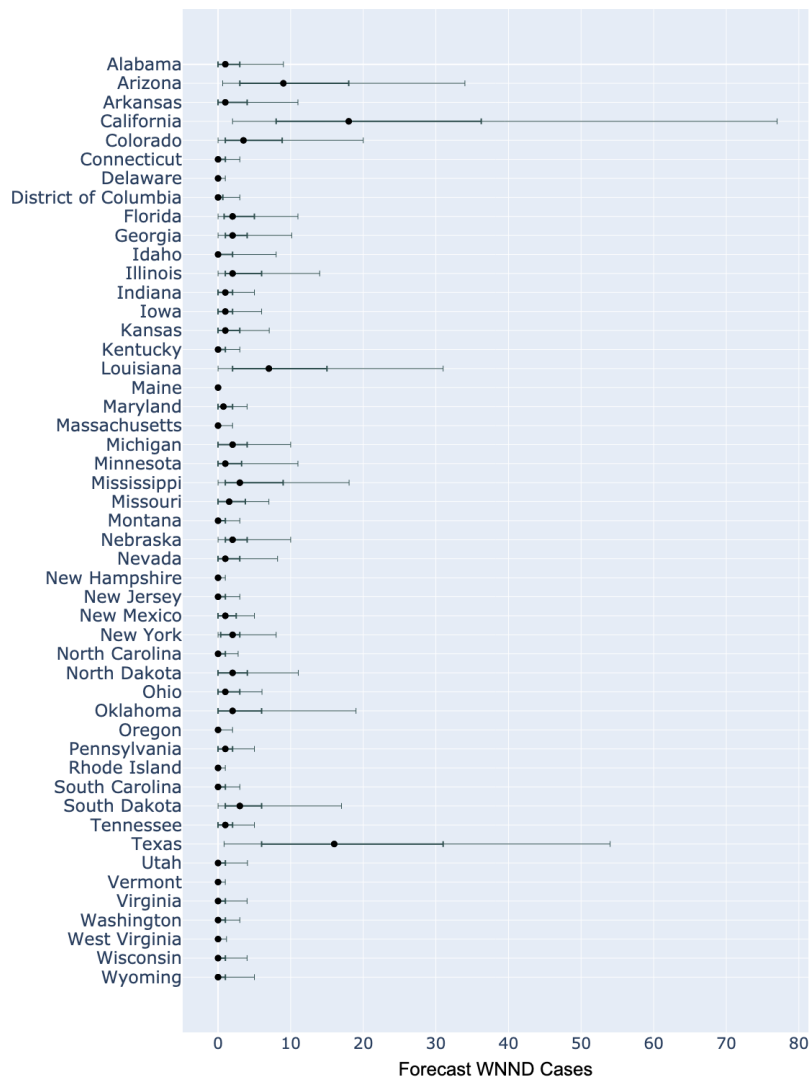
July Ensemble Forecast

July Ensemble Forecast of WNND Cases



This map shows the ensemble forecast for July. Uncertainty for each state forecast is shown below.

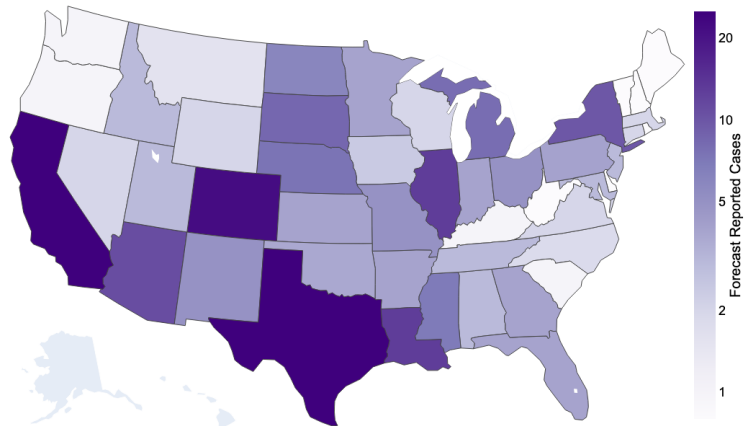
July Ensemble Forecasts



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

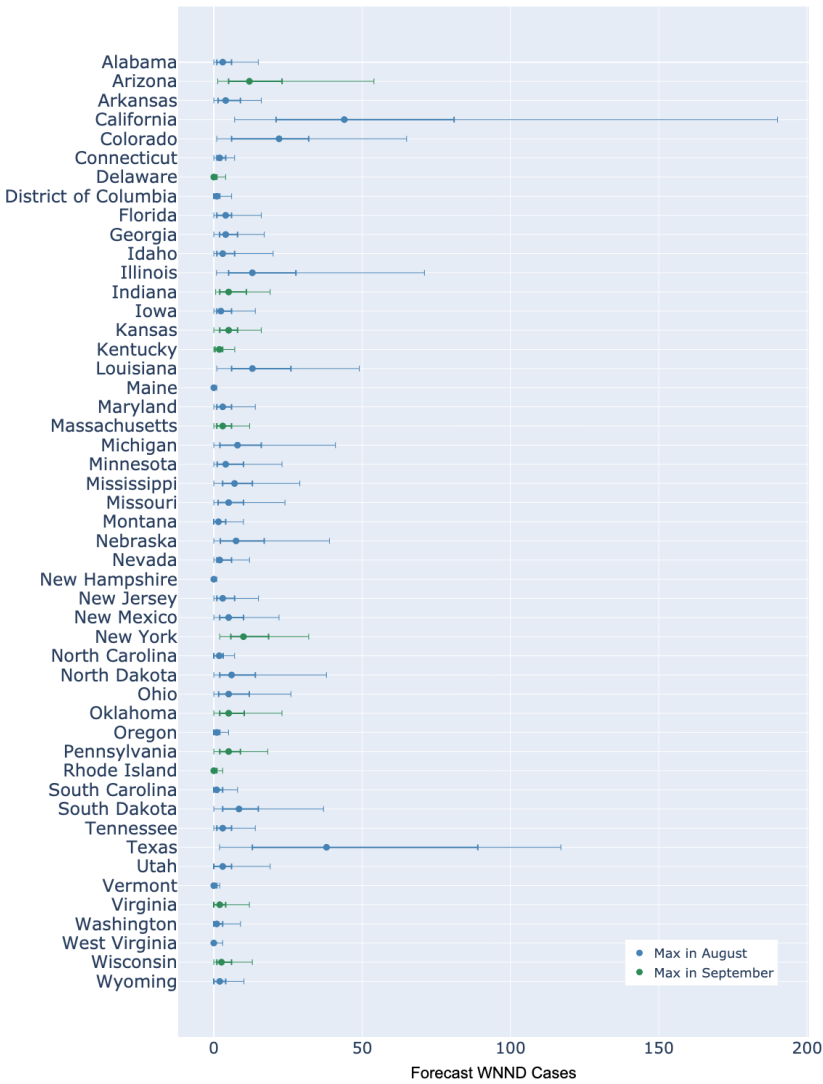
Peak Incidence Ensemble Forecast

August Ensemble Forecast of WNND Cases



This map shows the ensemble forecast for August, the peak month of historical incidence in the US. Individual state peak forecasts with uncertainty are shown below.

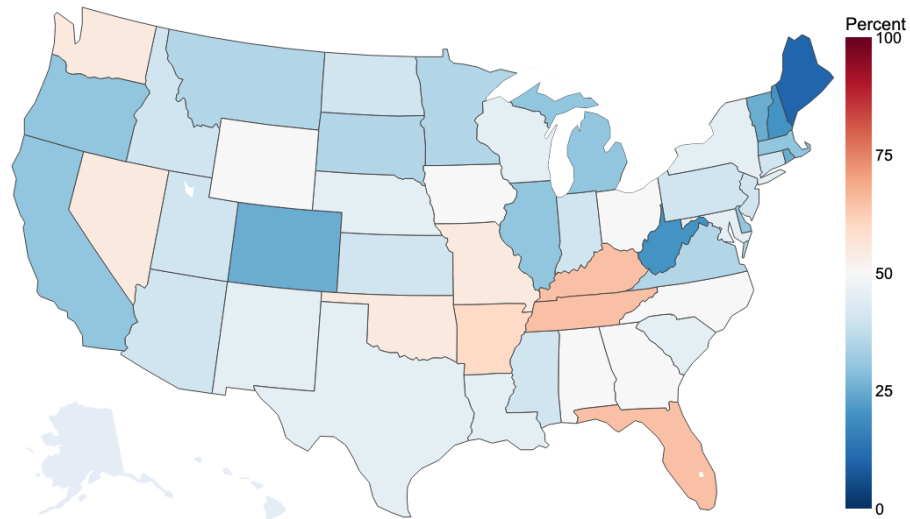
Peak Month Ensemble Forecasts



This figure shows the peak number of monthly WNND cases predicted for each state in the ensemble forecast. The month of the maximum forecast is shown by the color of the points (blue equates to a forecast maximum in August; green in September). The points represent the median ensemble forecasts and the thick and thin lines represent the 50% and 90% prediction intervals, respectively.

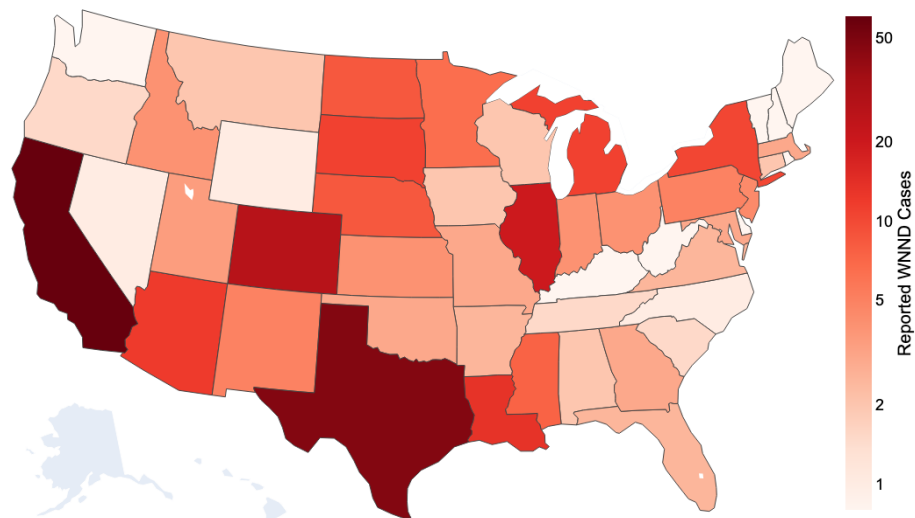
Likelihood of Exceeding Median 10-Year Caseload in August

Likelihood of Exceeding Median 10-Year August Caseload (Ensemble Forecast)



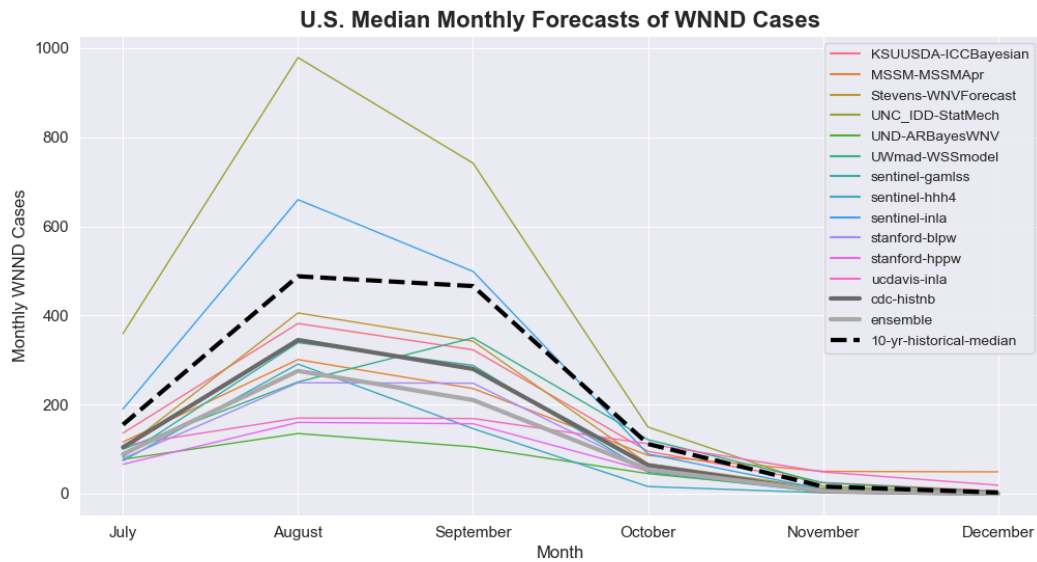
This figure shows the state-specific likelihood of exceeding the median 10-year (2013-2022) reported caseload of West Nile virus neuroinvasive disease.

Median 10-Year August 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.