

## Predicting the presence of West Nile Virus

### Problem statement:

Utilize GIS and weather data to predict the presence of the West Nile Virus in mosquitos in a given time, location and species so that more efficient and effective methods can be developed to prevent transmission.

### Context:

West Nile Virus can be transmitted to humans through infected mosquitos and causes symptoms ranging from a persistent fever, serious neurological illness as well as death in around 20% of those infected. Chicago reported the first human case of the virus in 2002. In order to prevent transmission, the City of Chicago and the Chicago Department of Public Health (CDPH) established a comprehensive surveillance and control program. To better allocate resources to prevent the transmission, there is a need to more accurately predict the presence of the virus in a given time, location and species.

### Criteria for success:

To accurately predict when and where different species of mosquitos will test positive for West Nile virus.

### Scope of solution space:

Focus on data collected in the city of Chicago.

### Constraints within solution space:

Data is only collected late-May to early-October and from Monday to Wednesday.

### Stakeholders to provide key insight:

City of Chicago

Chicago Department of Public Health (CDPH)

### Key data sources:

Kaggle - <https://www.kaggle.com/c/predict-west-nile-virus/data>

This provides the GIS and weather data to make the predictions.