Final Report: Prediction of West Niles Virus Human Cases in Southern California by Precipitation and Temperature from 2006-2010

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Project Aim.

The main focus of this project was to use R to add to the expanding epidemiolgical research on West Nile Virus in North America. Specifically, we wanted to investigate the *relationships that exist between Nest Nile Virus incidence and weather*. Temperature and precipitation were the weather metrics that were selected and compared against West Nile Cases. Due to the accessibility of weather and case data, the scope of analysis was narrowed to **Southern California**. It was hypothesized that cases of West Nile Virus in California would be higher in counties with high temperatures and precipitation than in low temperature and precipitation counties. In order to test this hypothesis a shiny app was developed to visualize how temperature and precipitation by county compared to county case data.

Data Sources

`In order to generate the shiny web app, data on weather and West Nile cases`

by county was gathered and loaded into R. The first data set used was California West Nile cases by county and was downloaded from the California Department of Public Health website.

[CHHS]https://data.chhs.ca.gov/dataset/west-nile-virus-cases-2006-present/resource/6ef33c1b-9f54-49f2-a92e-51a1b78f0a06

`This data ranged from 2006 to present and included the year, week,`

county, and the number of positive cases. California temperature data was gathered from the Centers for Disease Control Wonder website (CDC Wonder).

[CDC Wonder]https://wonder.cdc.gov/

`Data was obtained for 2006 to 2011 and included the state, state code, county, county code, date, avera`

date	county	positive_cases
2006	Alameda	1
2006	Butte	31

county	fips	date	day_year	max_temp	min_temp_f
Alameda County, CA	06001	2006-01-01	1	54.56	48.00
Alameda County, CA	06001	2006-01-02	2	51.49	46.46

county	date	avg_precip
Alameda County, CA	2006-01-01	3
Alameda County, CA	2006-01-02	31

Findings

After generating and exploring the shiny web app, a few interesting observations were made. First, it a

The Shiny App can be viewed from:

[IO Shiny]<https://devsnelson.shinyapps.io/CaliforniaWNVMaps/>

Relevance to Current Research

This project fits nicely into the broader study of West Nile Virus research by expanding upon previous r

How the Problem Was Tackled

The easiest way to determine the effect a variable has on something is to either test it statistically o

Challenges

There were a few particularly challenging aspects of this project that our group struggled with. The fi

Fresh Start Ideas

If given the opportunity to start the project again from the beginning, there are a few things we would

References

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