





Introduction

- Changing temperature and precipitation greatly affect various vectors of disease, such as Culex mosquitoes¹
- This project was seeking to create visual representations to correlate changing climate and West Nile Virus
- Hopes for improved vector management, health preparation, & awareness of WNV



Objectives/ Hypotheses

Objectives

- Generate a model for WNV trends in WY
- With the help of WPH we want to spread awareness to Wyoming citizens using thoughtful, collaborative public health efforts

<u>Hypotheses</u>

- H1: Modeling with WNV human cases vs temperature and precipitation will relay a correlation
- H2: We will observe increases in WNV cases per county in the past 5 years

Wyoming West Nile and Climate Change: A Correlative Study Duke Dickson, Jenavieve Tozzi, Olivia Devine, Sean Harrington, Rachel Watson

Results



Figure 1: This graph visualizes the number of WNV cases per WY county from 2019 – 2023. All counties reporting zero cases were excluded.



Figure 2: This map of Wyoming showcases the average temperature from each county in 2023 (May-Oct) and the number of WNV cases in each.

two largest were

- Lack of surveillance of Wyoming

Conclusion/Discussion

Conclusions

- Dramatic rise in cases
- Overall rise in temperature and precipitation Discussion
- various vectors of disease. hopefully raise awareness the issue.

Acknowledgements

- Noah Hull
- Elizabeth Case
- Sierra Jech
- **Courtney Tillman**
- Erin Bentley
- MiKenna Smith

References

1. Rocklöv and Dubrow. 2020. "Climate Change: An Enduring Challenge for Vector-Borne Disease Prevention and Control." *Nature Immunology* 21, no. 5 (2020): 479–83. ttps://doi.org/10.1038/s41590-020-0648-y

2. NCEI. "County Mapping: Climate at a Glance." County Mapping | Climate at a Glance | National Centers for Environmental Information (NCEI), 2023. https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/mapping.



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Natural Resource

Limitations All models have limitations: our

mosquito populations in

Underreporting of WNV cases / lack of testing and resources

Supporting H1 and H2, we see continually rising temperatures there is an expanded habitat range for Visualizations like these ones can for preparation and management of



Current WY WNV Data

