

Movement ecology of lynx along the Dalton Highway in the southcentral Brooks Range

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INTRODUCTION

GPS data has been collected on the movements of *Lynx canadensis* (lynx) along the Dalton Highway in the southcentral Brooks Range. Although the home ranges of collared lynx overlap with the road, running through optimal habitat (**low elevation, riparian vegetation**), preliminary analyses show that lynx make extensive elevational movements into suboptimal prey habitat. Road traffic may displace lynx from their preferred low-elevation habitat.

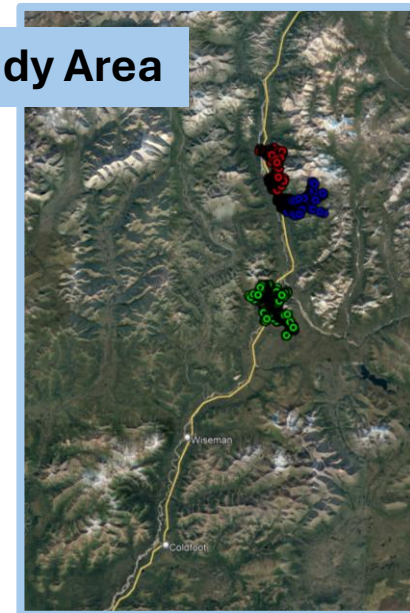


QUESTIONS

What is the spatial distribution of lynx in relation to distance from the highway?

How do the frequency distributions of these locations differ across groups, between males and females?

Study Area

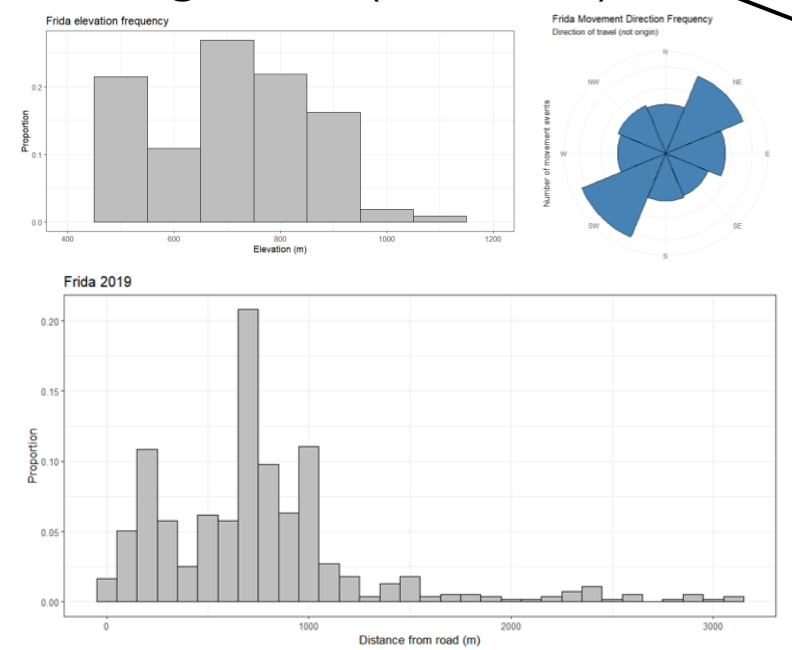


METHODS

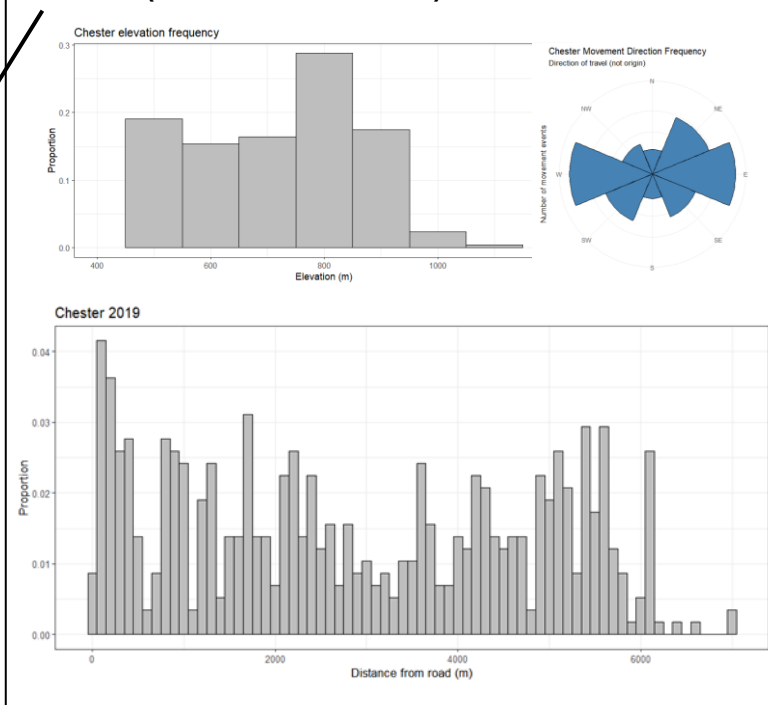
Using programming language **R** in **RStudio**:

- Developed R code to map GPS locations and plot average elevation, elevation frequency, and direction of travel
- Developed models to compute distance to the highway and plot average distance from the road and frequency distributions of distance from the road
- Input data across 3 groups: **Non-denning females, Denning females, and Males**

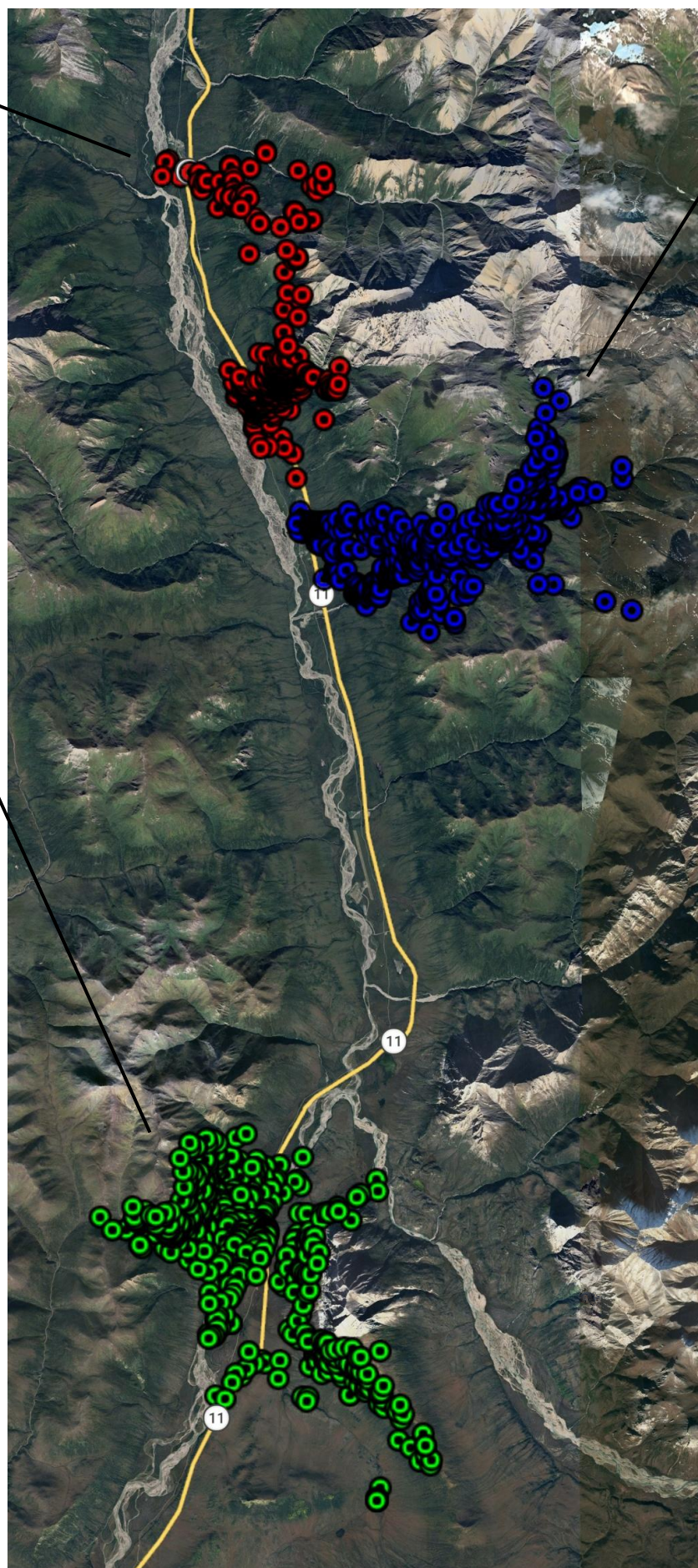
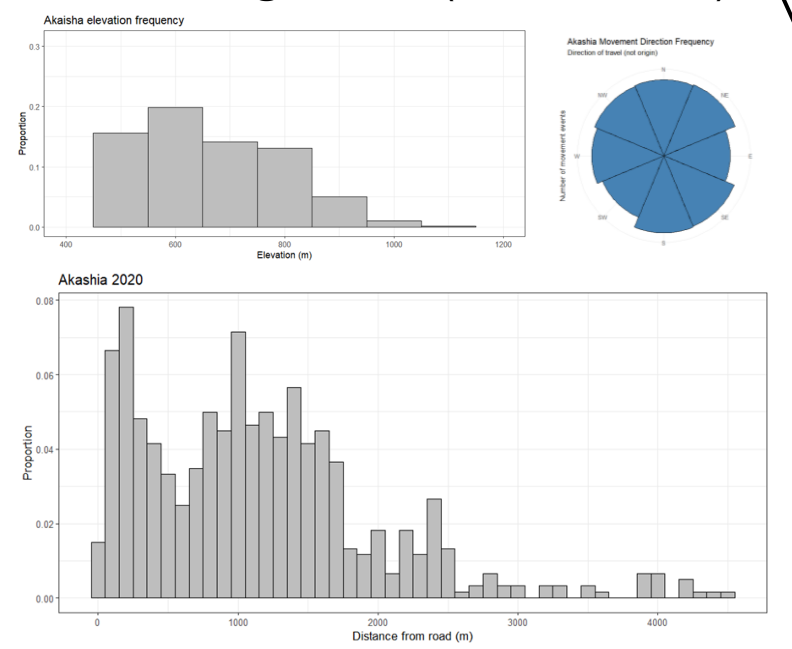
Denning female (Frida 2019)



Male (Chester 2019)



Non-denning female (Akashia 2020)



Discussion

- Lynx appear to be spending a higher proportion of time at elevations at and above 600m, outside of preferred habitat
- Proportion of time spent near the road, distance-wise, appears to be unaffected by the road
- Direction of travel appears to be unaffected by the road (N to S), including road crossings

Future Directions

- Utilize graphics to support future projects assessing these datasets
- Compile average elevation and distance frequency distributions

Acknowledgements

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