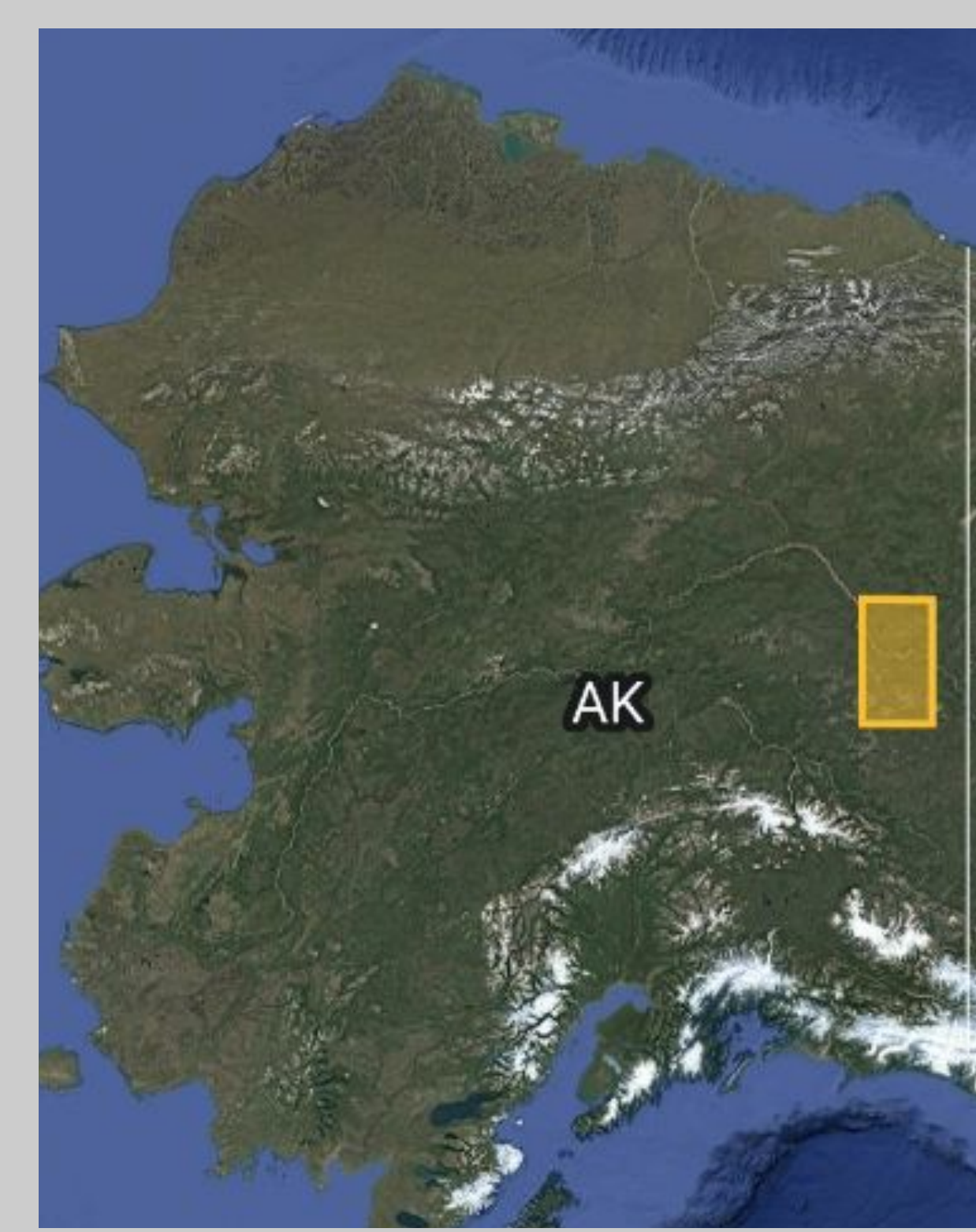




Individual Variation in Moose (*Alces alces*) Movement in Response to Predator Densities

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Overview

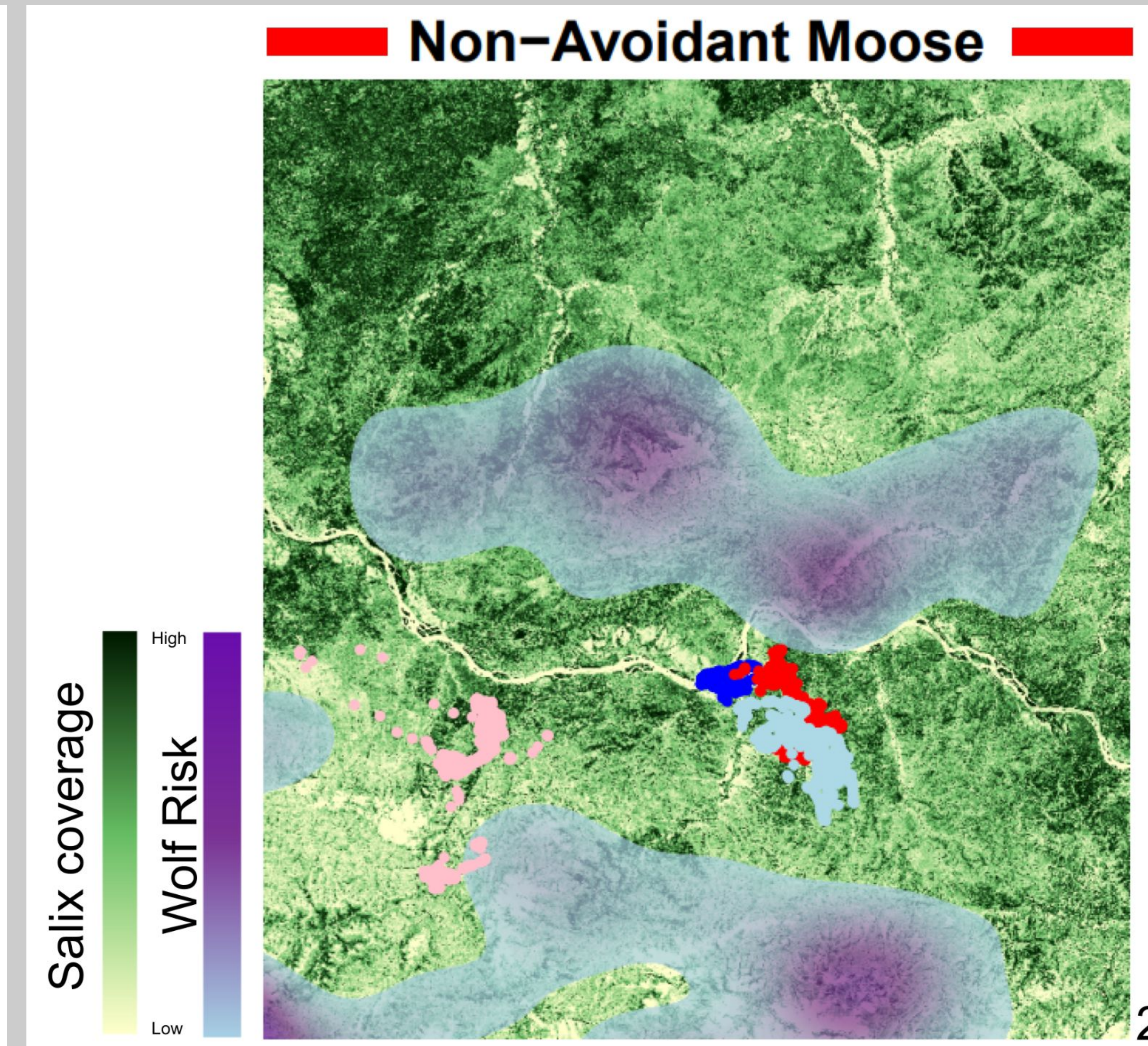
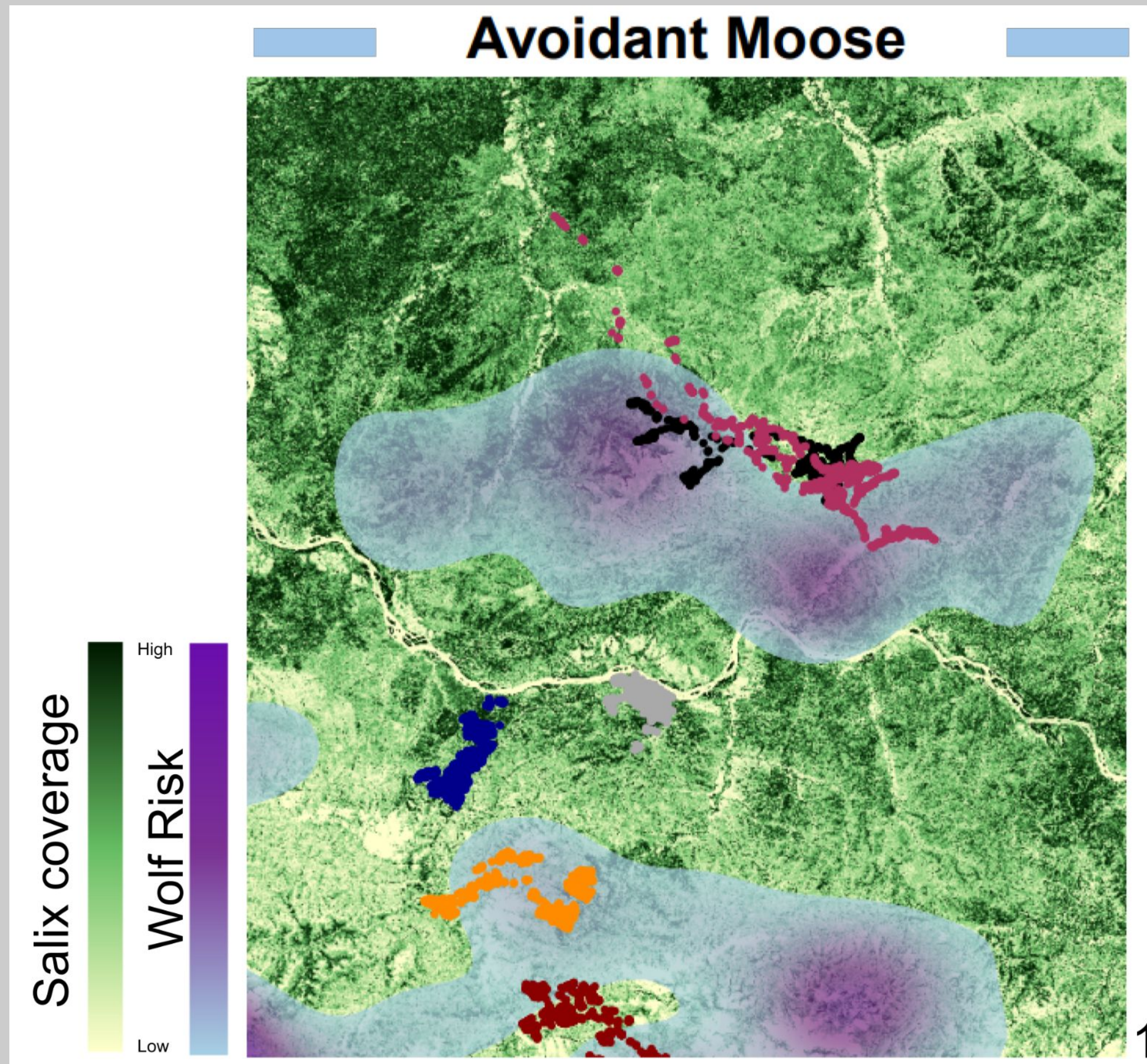
- This project uses data collected from GPS collars and step selection analysis to model how wolf density and vegetation (Salix coverage) influence movements of individual moose
- Investigating individual variation shows that moose adjust their movement as predators move through the landscape

Methods

- **Data Collection**
- 33 collared moose
- Summer 2020 - Winter 2023
- Collected by National Parks Service (nps)
- **Analysis**
- Conducted using R (R Core Team, 2026)
- Processing and Integrated Step Selection Analysis (iSSA) performed using the amt package (Signer et al., 2019)

Results

- Individuals responded differently to predator presence
- Moose prefer areas with willow but some individuals choose to avoid it when wolves are present
- While willow is a valuable food source, moose might be more vulnerable in areas with high willow densities
- During Winter 2023, certain individuals showed greater avoidance of wolves than other seasons



Figures 1 & 2 show individual moose positions along with kernel density estimates of wolves and salix species coverage.

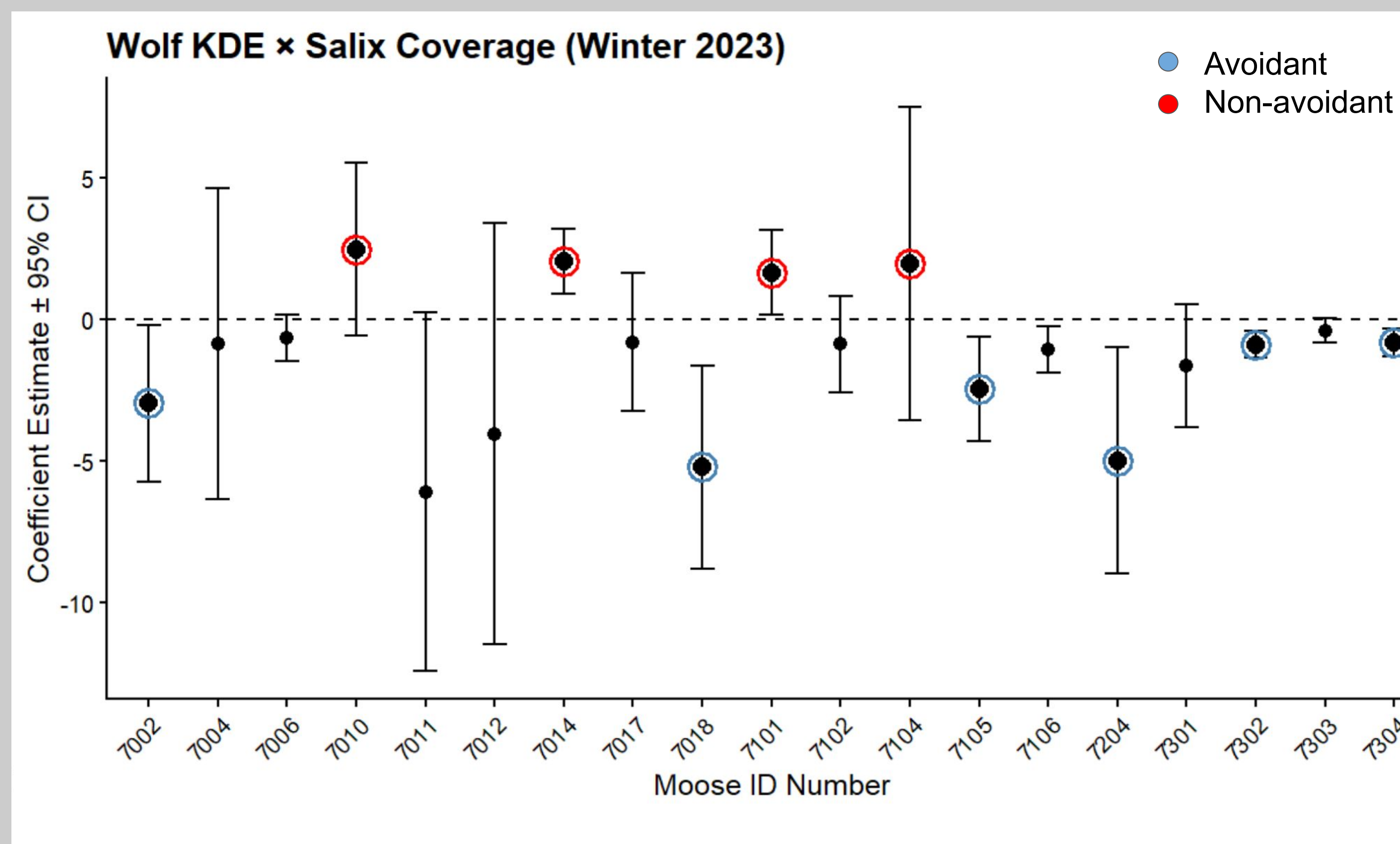


Figure 3 shows coefficient estimates for the interaction between wolf density and salix coverage for each individual during Winter 2023.

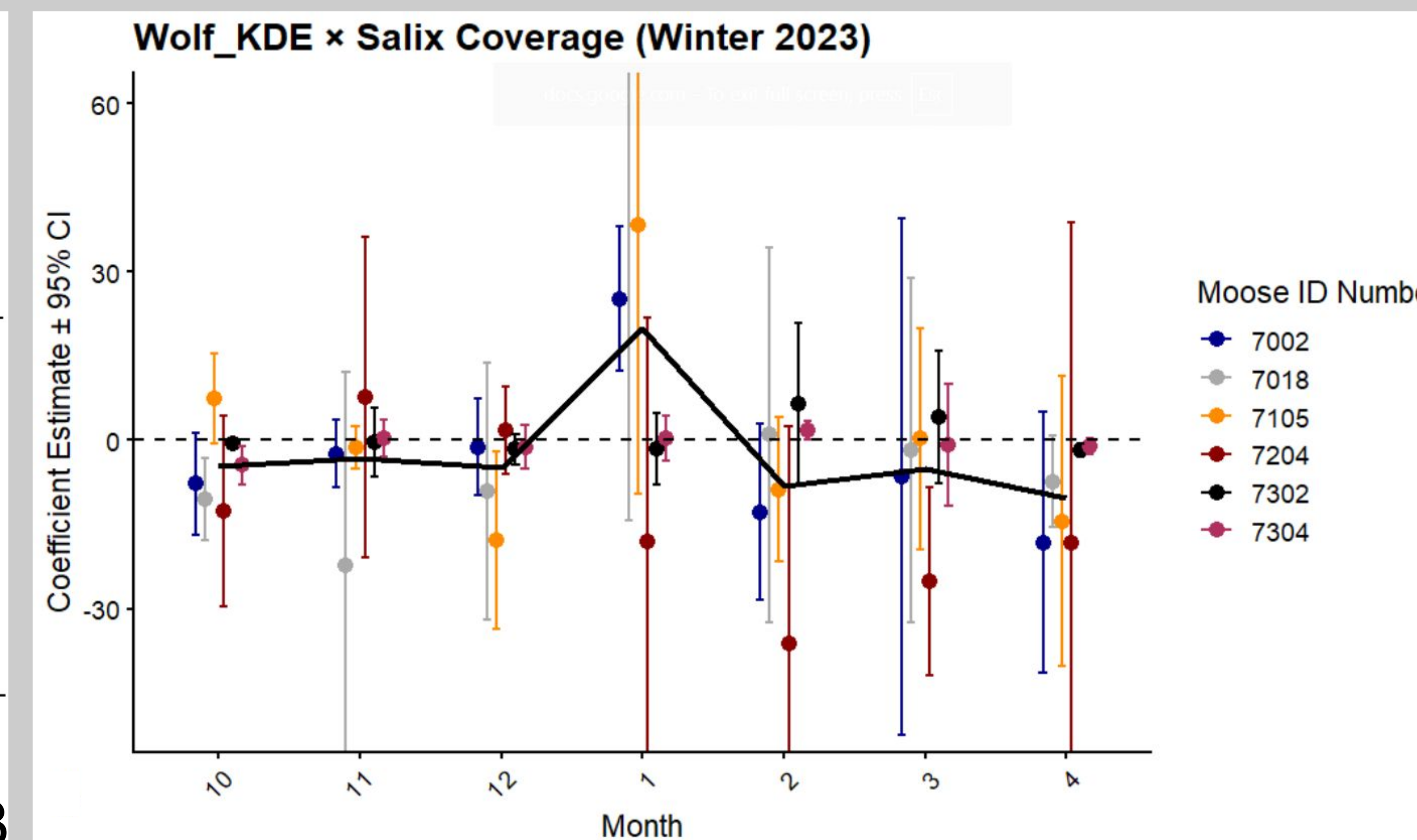


Figure 4 shows monthly coefficient estimates and 95% confidence intervals for the interaction between wolf density and Salix coverage for avoidant individuals.



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