4-24-2020

Recreation and Wildlife Activity in the Wood River Valley

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Abstract

As the human population grows, people increasingly seek to recreate on public lands. Consequently, humans and animals find themselves sharing space. It is important, therefore, to understand how humans and wildlife interact in these natural spaces. The Big Wood River Watershed in Blaine County, Idaho is an excellent example of a natural area with a high density of recreational activity. This study aims to determine whether frequency and/or intensity of recreational activity affects wildlife activity. Data was collected using a combination of camera trapping and use of autonomous recording units. We expected that areas with high levels of recreational activity and high average sound would correlate with low wildlife activity and also that wildlife would change their activity patterns to avoid interaction with recreationists. Early analysis, however, indicates that the relationship between recreation and wildlife activity is more nuanced. These results will provide insight into public land management and how to best balance recreationist demands for access to lands with needs of wildlife.

Authors

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Recreation and Wildlife Activity in the Wood River Valley

PRESENTER:

Sarah Coose

BACKGROUND: As the human population grows, humans and animals increasingly share space – potentially leading to human-wildlife conflict in natural spaces.

METHODS

Data Collection

Deployed 48 infrared-trigger field cameras along various trails in the Wood River Valley.

Spatial Analysis : Hurdle Model

Uses binomial and negative binomial regression to describe whether number of human detections is correlated with the presence or absence and/or abundance of a species.

Temporal Analysis: Coefficient of Overlap

Describes how much the temporal activity patterns each species overlaps with human recreation.

RESULTS

Binomial regression

There was no significant correlation between number of human detections and the presence or absence of any species.

Negative binomial regression (n = 48)

- High recreation correlates with low abundance of elk (p = 0.004).
- High recreation correlates with high abundance of bear (p = 0.012), coyote (p = <0.001), and wolf (p = <0.001).

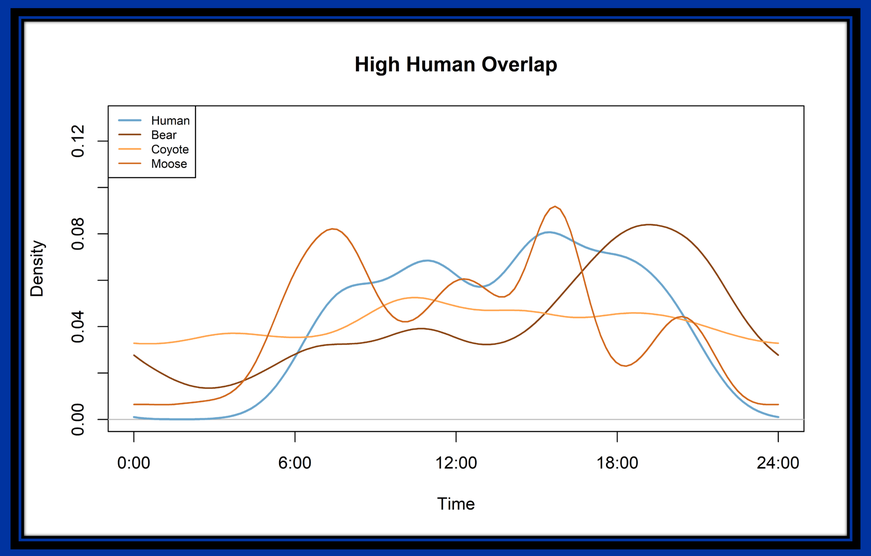
Temporal analysis

- There was a general trend of two groups of animals – one with high coefficients of overlap and one with a low coefficients of overlap

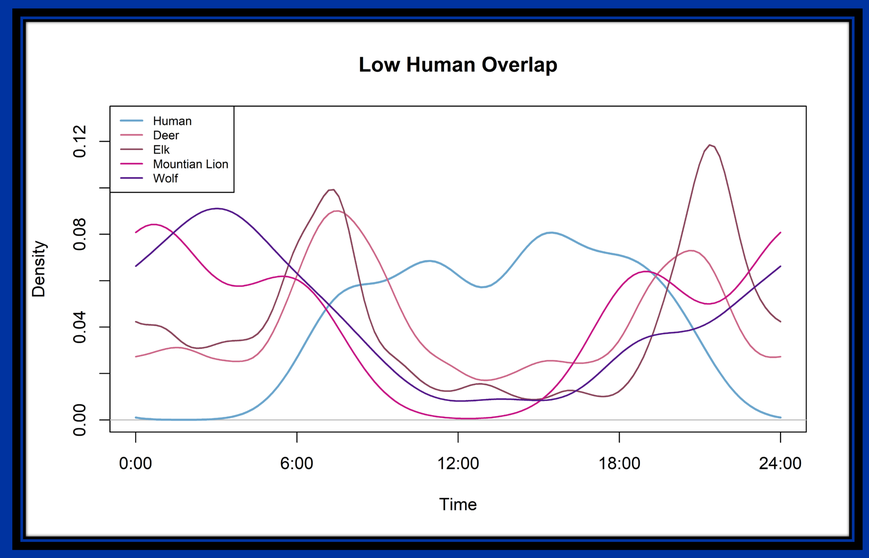
CONCLUSIONS

High recreation correlated with higher presence of bear, coyote and wolf. However, these species utilized different temporal strategies.

Many species use the **same trails** as humans, but **different strategies** in how they spend their time



Strategy 1: High human overlap. These species were active at similar times to humans.

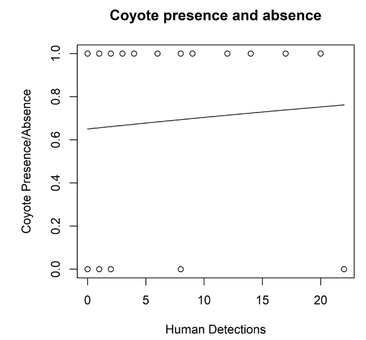


Strategy 2: Low human overlap. These species were active at different times than humans.

Further Details

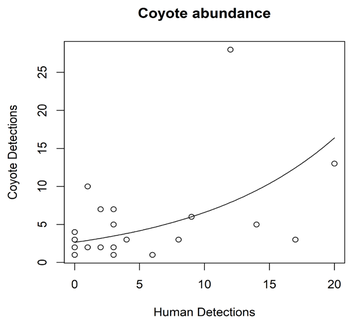
Spatial Analysis : Hurdle Model

- Binomial regression example



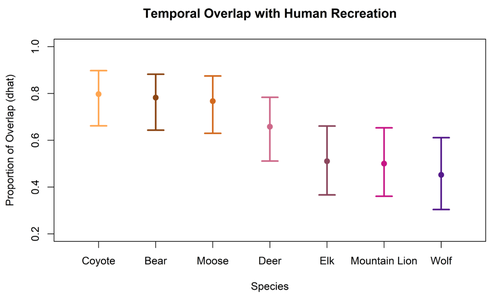
Higher number of human detections correlated with a higher probability of coyote presence.

- Negative binomial regression example



Higher number of human detections correlated with higher number of coyote detections

Temporal Analysis: Coefficients of Overlap



Mean coefficient of overlap with 95% CI. General trend shows coyote, bear, and moose with high overlap and elk, mountain lion, and wolf with low overlap.

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