WHITTELL FOREST WILDLIFE REPORT

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CAMERA TRAPS

Content

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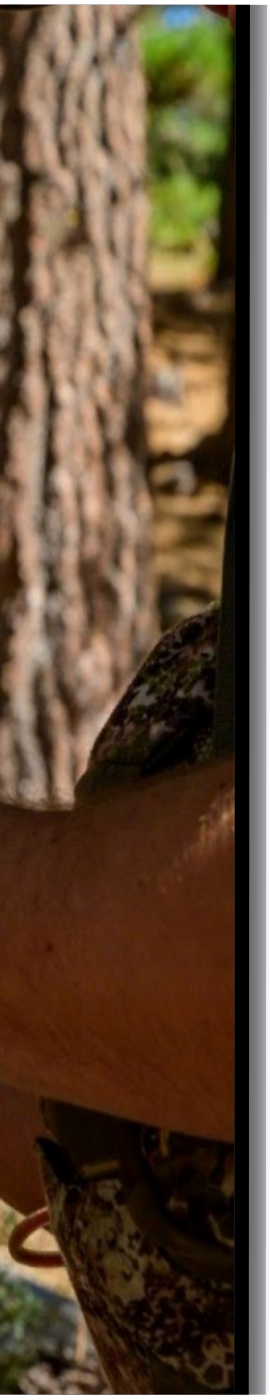
In Nevada's Whittell Forest, undergraduate researchers are using camera traps to reveal the hidden lives of wildlife. Andrew Hebert and Olivia Oldham's study on squirrels found a preference for areas near roads, emphasizing the importance of detection probabilities to avoid scientific misinterpretation. Jade Cheng and Megan Flynn's investigation into bear populations highlighted how bears favor areas farther from roads and are most active in specific habitats during late daylight hours. Michael Salerno and Faith Goddard focused on mule deer, assessing how elevation and road distance affect their presence. These studies demonstrate the effectiveness of camera traps in wildlife research, providing vital insights for conservation efforts. These articles were written for a general audiance (Popular Science).



01. COUNTRY ROADS, TAKE ME HOME: WHAT CAMERA TRAPS REVEAL ABOUT SQUIRREL BEHAVIOR.

Andrew Hebert & Olivia Oldham

Nevada's Whittell Forest & Wildlife Area is a hidden treasure trove of elusive wildlife. This forest is the perfect site for studying the effects of climate change on natural ecosystems. Unlike previous studies relying heavily on direct observations, our research employs camera traps to uncover the hidden lives of squirrels. Previous studies (Loeher and Risser, 1977) found that squirrels and chipmunks stayed around streams, but our study focuses on a broader range of factors influencing squirrel behavior.

To gather data, we obtained special permission from Hunter Noble, the Whittell Forest Manager. Our team set off into the forest, scouting ideal locations for our 29 camera traps. These cameras, triggered by movement, were placed in diverse habitats, avoiding areas with swaying vegetation to minimize false captures. Each site was selected for its accessibility and potential to capture wildlife activity.

Setting up the cameras was challenging, with obstacles like rivers, dense vegetation, and rocky cliffs complicating our task. Additionally, camera traps' frames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were unpredictable, and occasional technical issues, such as computer incompatibility and interference from curious bears, sometimes resulted in little to no data.

Once the cameras were set, we collected data over several weeks. Each photograph was logged, noting the presence or absence of squirrels, time, temperature, vegetation type, elevation, and distance to the road. This data was analyzed using the statistical program 'R,' with the 'unmarked' package helping us create occupancy models.

We developed 16 models to analyze factors influencing squirrel occupancy, such as time, elevation, distance to roads, and vegetation types. The Akaike Information Criterion (AIC) score was used to determine the best model, balancing accuracy and complexity.

Our analysis revealed that distance to the road significantly influences squirrel presence. Sites closer to roads were more likely to be occupied by squirrels. Additionally, time of day played a role, with certain times (afternoon) being more favorable for squirrel activity.


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Understanding wildlife behavior and habitat preferences has important implications for conservation efforts. Knowing whether wildlife favor areas near roads can help us implement targeted strategies to protect their habitats. While squirrels thrive in moderately urbanized environments, larger animals like deer and bear may be more adversely affected by roads.

Our study methods can provide valuable insights into the factors influencing wildlife occupancy. By using camera traps and occupancy models, we have a clearer picture of how squirrels navigate their environment and interact with human-made structures. This knowledge not only enhances our understanding of squirrel behavior but also aids in developing effective conservation strategies to preserve wildlife habitats in Whittell Forest for sensitive species.

02. UNVEILING WHITTELL FOREST'S BEAR ABUNDANCES WITH CAMERA TRAPS

By Jade Cheng and Megan Flynn

Whittell Forest Overview

Nestled within Whittell Forest, a quiet corner of nature steeped in history, a new study is underway. Here, bears roam freely, and we aim to understand their world better. Instead of intrusive methods, we're using camera traps to observe them without disruption.

Why Care About Bears in Whittell Forest?

Understanding and preserving our natural world is crucial. This study isn't just about pretty pictures; it's about conservation. By studying bears, we learn how to better protect their habitat and manage ecosystems.

The Research: Bears in Whittell

Our main question: How do bears interact with their environment here? We're looking at where they go, when and they move. Camera traps are our eyes, letting us watch without bothering the bears.

Our Approach

We sampled 2,650-acre forest with 30 cameras, strategically placed to capture different habitats. It wasn't easy. Setting up cameras and analyzing the data took a lot of planning and teamwork.

Using Stats to Understand Bears

We used occupancy models and AIC tables to analyze our data. These tools help us figure out where bears are likely to be and how often they're there.

It’s like a puzzle, putting together all the pieces to see the bigger picture.

Why Camera Traps?

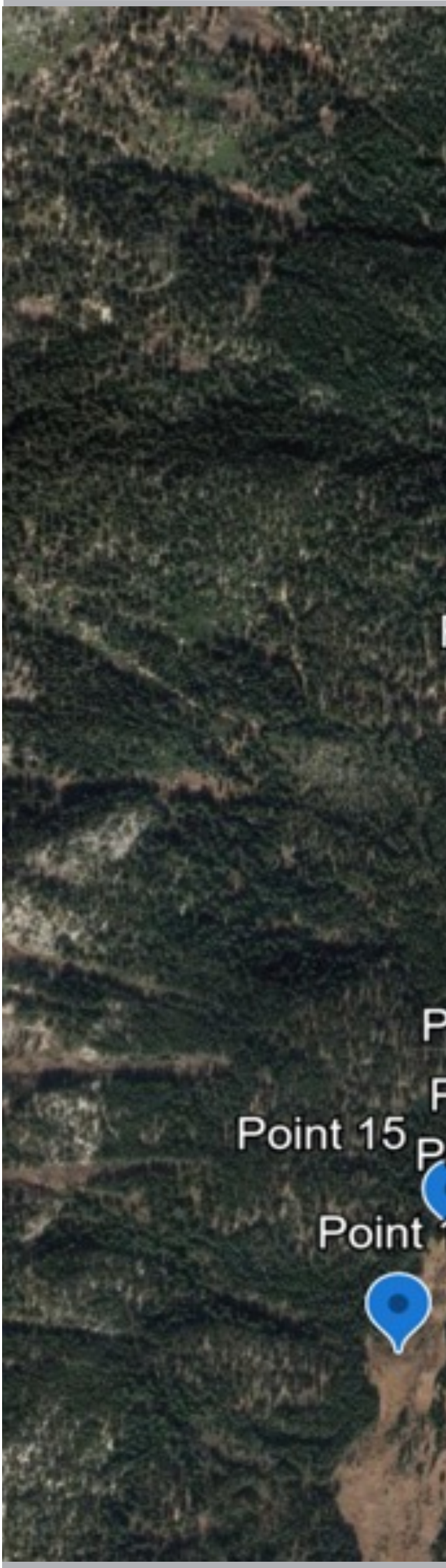
Camera traps are essential for wildlife research. They let us observe animals without disturbing them. With cameras, we gather important information about bear behavior, movements, and interactions with other species.

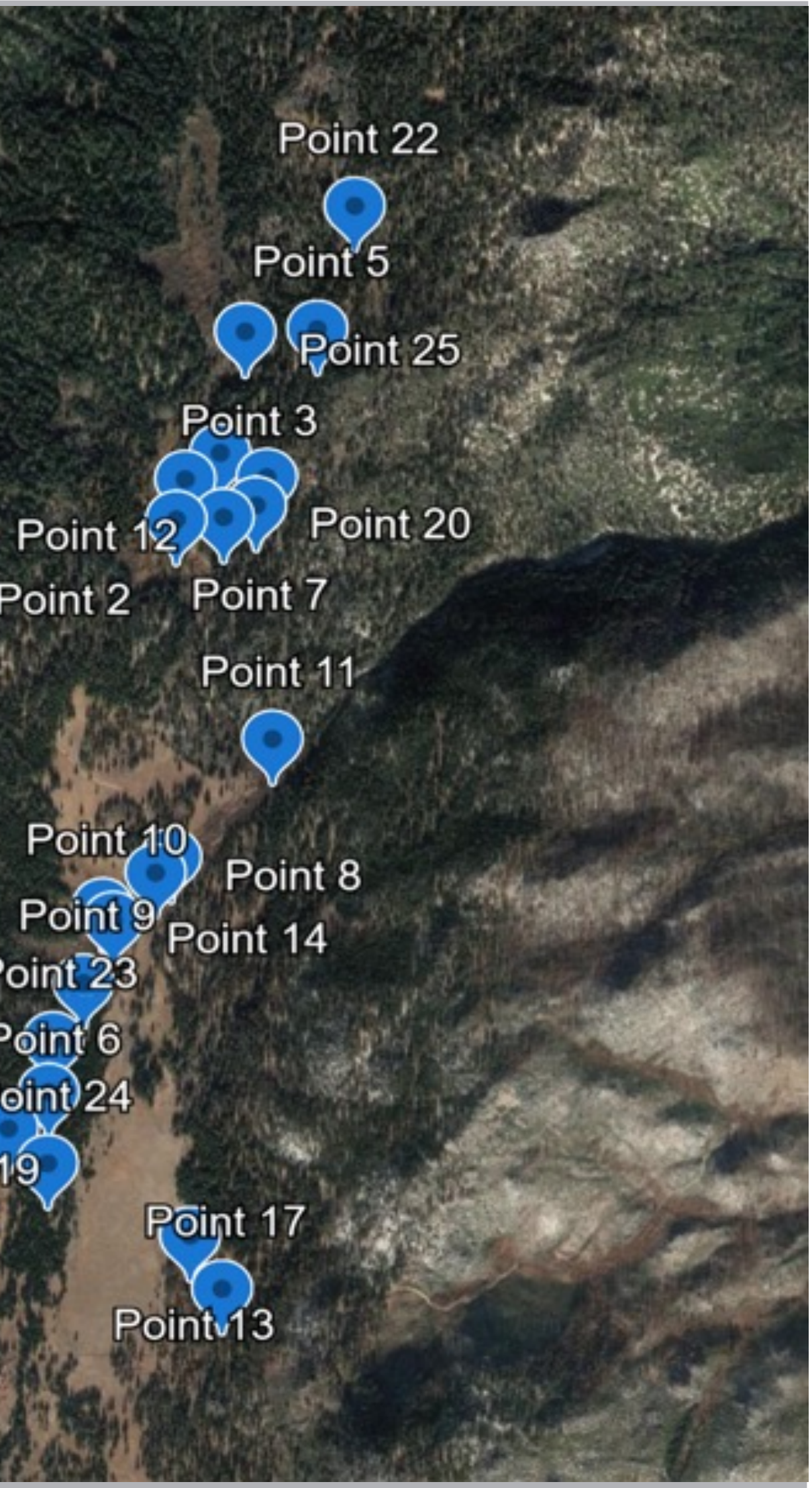
What We’ve Learned

Our data show that bears are more active in certain areas and times of day. They prefer spots away from roads and like certain types of vegetation. Most bears are seen more in the late daylight, especially past 1:00 PM. They show a preference for areas with Jeffery Pine or Montane shrub habitats. Interestingly, elevation didn’t significantly affect their sightings.

Getting Involved

Wildlife conservation isn’t just a nice idea; it’s necessary. Every creature, no matter how small, matters. By caring about wildlife, we’re safeguarding our planet’s future and ensuring a healthy environment for all. Let’s work together to protect Earth’s biodiversity.

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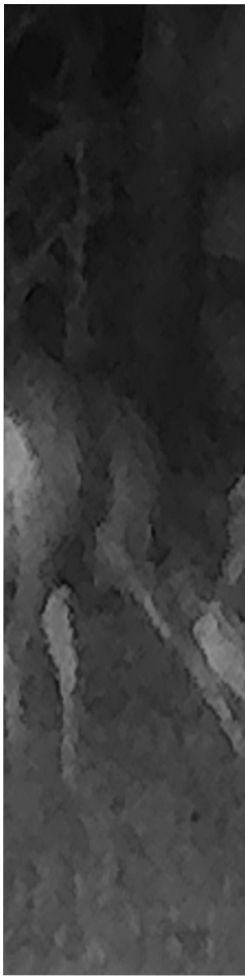

03. HIDDEN NEIGHBORS: DISCOVERING WILDLIFE IN OUR EVERYDAY SURROUNDINGS

MICHAEL SALERNO AND FAITH GODDARD

Ever wonder how much wildlife surrounds us daily? Technology helps reveal the hidden world of animals in our midst. Through motion-triggered wildlife cameras, we gain insights into the wildlife we often overlook. This study focuses on mule deer, employing camera traps in Whitell Forest, near Reno, Nevada, to understand their habitat patterns.

Study Setup:
Using 27 camera traps strategically positioned across Whitell Forest, we aimed to estimate the occupancy percentage of mule deer in various areas. These cameras operated round the clock, capturing wildlife movement continuously. Setting up the cameras required careful consideration of vegetation, elevation, and distance from roads to maximize data collection.

Challenges and Data Collection:
The setup process was time-consuming, involving trial and error. After about a month and a half, we retrieved the cameras for data analysis. Each photo with a mule deer was documented with details of camera number, location, date, and time. However, challenges like unclear photos and interference from other wildlife, like bears, posed obstacles.

Data Analysis:
We compared different factors such as distance from roads, elevation, vegetation type, and time against the probability of detection on the cameras. Several models were created to understand which variables impacted detection probability and occupancy rate the most. Models 3 and 4, focusing on elevation and distance from roads, respectively, emerged as the most influential.

Implications and Future Actions:
Understanding how environmental factors affect wildlife detection is crucial for effective wildlife management. Depending on whether these factors positively or negatively influence occupancy, future actions may involve altering habitat conditions or adjusting camera placement strategies. By comprehending these dynamics, we can better manage wildlife populations and preserve their habitats for the future.


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THANKS
FOR READING!