

# Spent but Not Forgotten: Cartridges in the GRSLE Dataset

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The GRSLE Project records all traces of human activity in the alpine landscapes of northwest Wyoming, from lithics and faunal remains to modern recreational features. Among these datasets are hundreds of cartridge casings, each documented with provenience, caliber, grain, and headstamp information. Though often overlooked, such materials provide an opportunity to explore questions about contemporary hunting behavior. This poster introduces the cartridge dataset and outlines potential analytical approaches. GIS mapping will be used to examine whether casings are more frequently associated with particular landforms or located near big game migration routes. Cartridge attributes such as caliber and manufacturer will be summarized to investigate possible trends, while statistical tests may evaluate variation across spatial or contextual groupings. While analysis is ongoing, this project highlights how recording modern material culture contributes to integrated datasets and opens avenues for linking present behavior to broader archaeological questions.

## I. Introduction

The GRSLE Project documents an array of human activities across the Absaroka mountains in northwest Wyoming, ranging from prehistoric lithic scatters to modern recreational debris. Inferring past human behavior requires an understanding of modern behavior and its material record. To assess past hunting behavior in the Absarokas, the GRSLE project began documenting spent cartridge casings, often disregarded as modern refuse. This recent material evidence of contemporary hunting practices offers a unique perspective on how people practice large game hunting in mountain landscapes.

By integrating modern and archaeological hunting data, this study explores the spatial patterning between spent cartridge casings and stone projectiles to inform broader questions of human-landscape interaction and behavioral continuity across time and space.

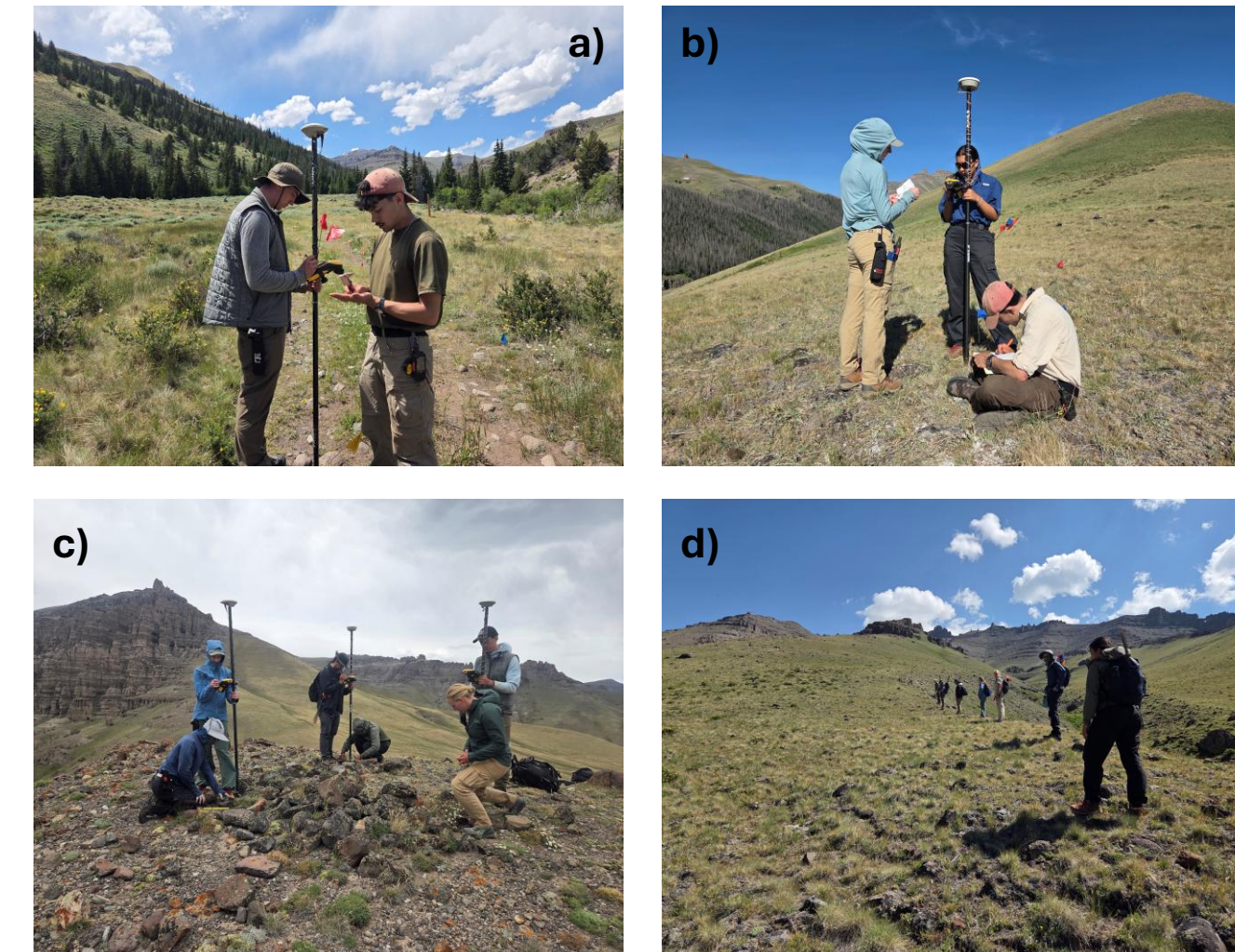
## II. Methods

**Recording:** Cartridges were documented using GRSLE's standardized artifact coding system (Figure 2). Recorded attributes include: context, portion, maximum measurements (length, width, and thickness), and headstamp. Provenience was recorded using Geo7 series Trimble devices with a post-processing accuracy of ~5cm (Figure 1).

**Attribute Analysis:** Headstamp data were summarized to evaluate caliber frequencies and elk-capable rounds (Figure 3). Manufacturer and caliber variations were examined to identify potential hunting trends.

**GIS Analysis:** Cartridge distribution is plotted against the GRSLE 2025 field season drainage (Figure 6), overlaid with local Cody elk herd migration corridors (Figure 7), and filtered by ridge line provenience and ability to take down elk (Figure 8).

**Range Modeling:** Ridge-line, elk-capable cartridges are buffered by 500m to estimate effective range. Buffers are overlain with elk migration density heat maps to evaluate spatial overlap and visibility (Figure 8).

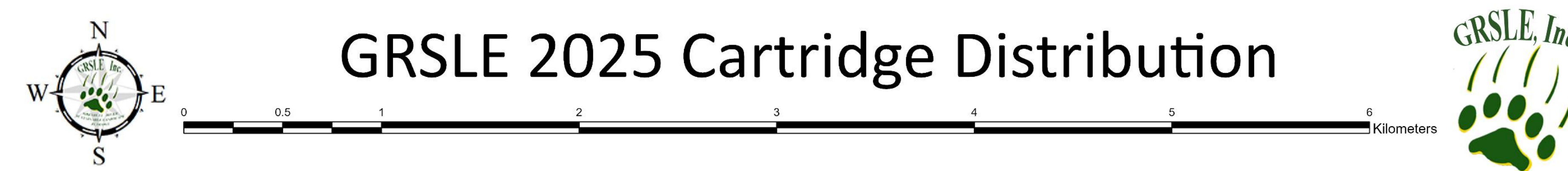
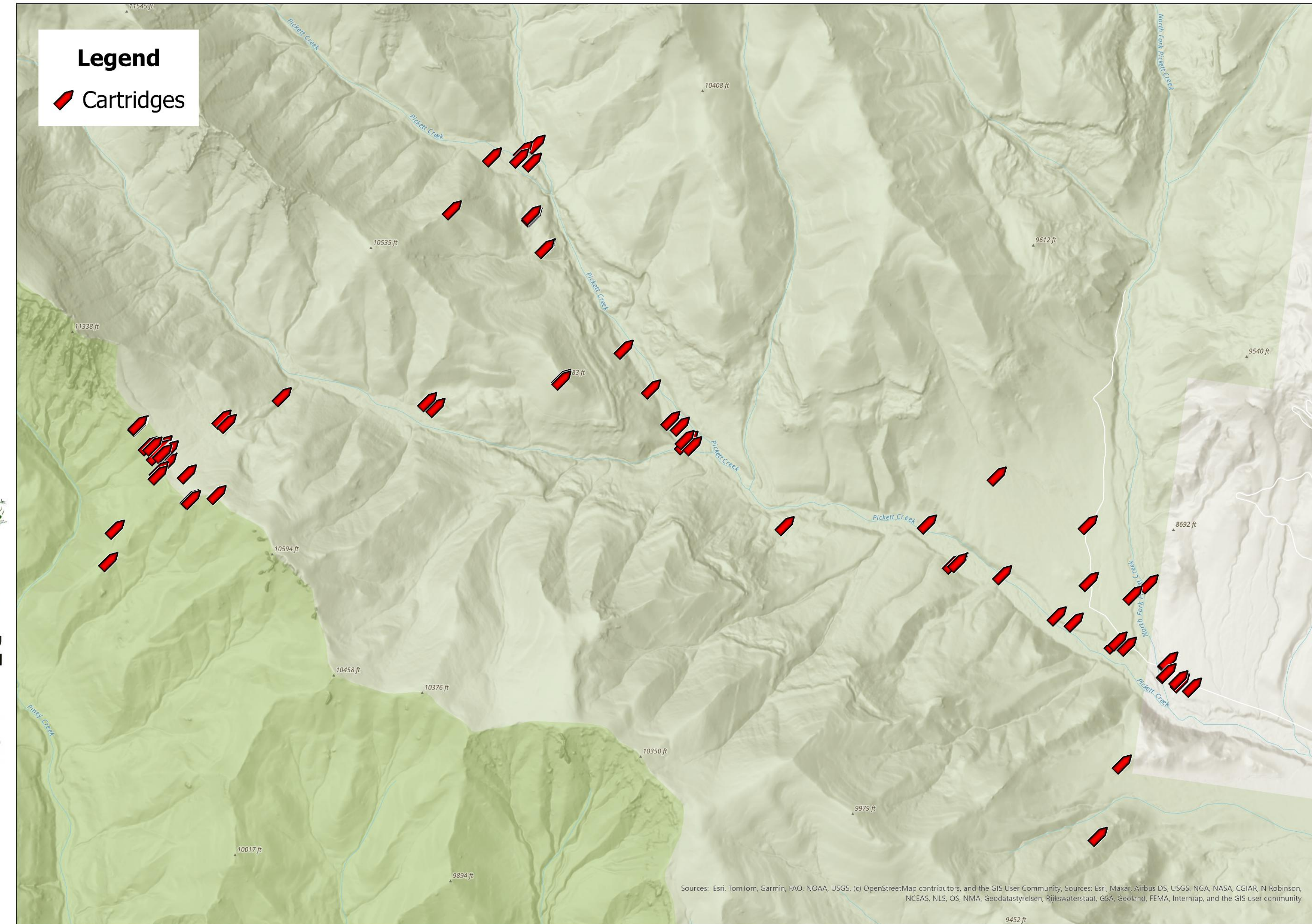


**Figure 1.** GRSLE field documentation across multiple alpine settings: (a) recreation areas, (b) ridge lines, (c) cultural features, and (d) pedestrian transect surveys.

**GRSLE CODES**

Context	Portion	Measurements	Headstamp
1. Surface	1. Full	1. Length	1. Manufacturer
2. Buried	2. Partial	2. Width	2. Caliber
3. Submerged	3. Fragment	3. Thickness	3. Grain
4. Other	4. None	4. Headstamp	4. Headstamp

**Figure 2.** GRSLE artifact coding system.



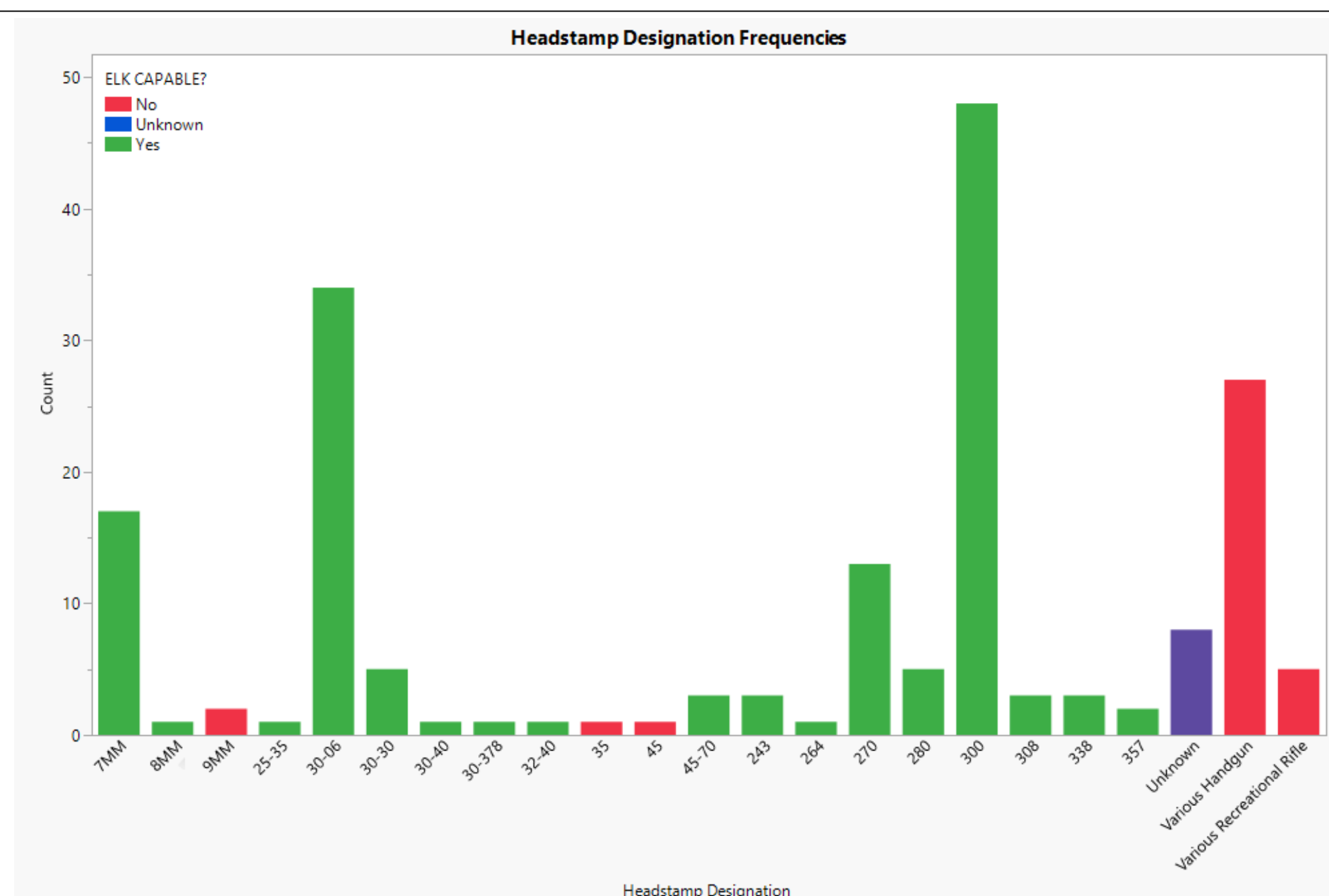
**Figure 6.** Distribution of cartridges recorded during the GRSLE 2025 field season.

## III. Results

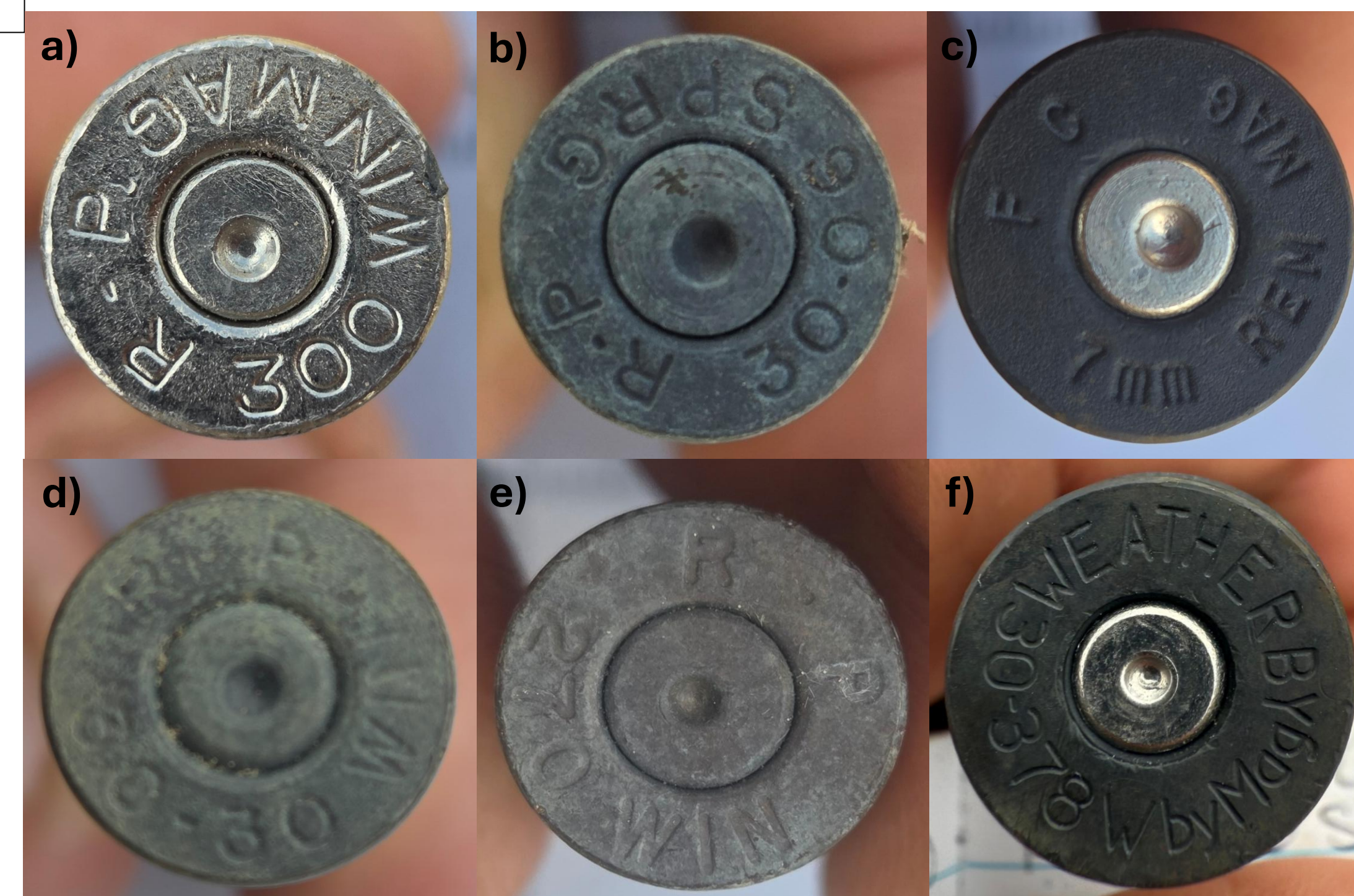
Cartridge distribution exhibits notable spatial patterning across the study area (Figure 6), aligning with drainages and ridgelines, features that correspond closely to elk migration corridors (Figure 7).

Frequency analysis of headstamp designations suggests that most recovered casings originate from elk capable calibers, such as .30-06 and .300 caliber rounds (Figure 3), indicating a focus on large-game hunting rather than recreational shooting.

Modeled effective ranges (Figure 8) show considerable overlap between cartridge localities and elk use areas, reinforcing interpretations of targeted hunting activity and intentional landscape use.



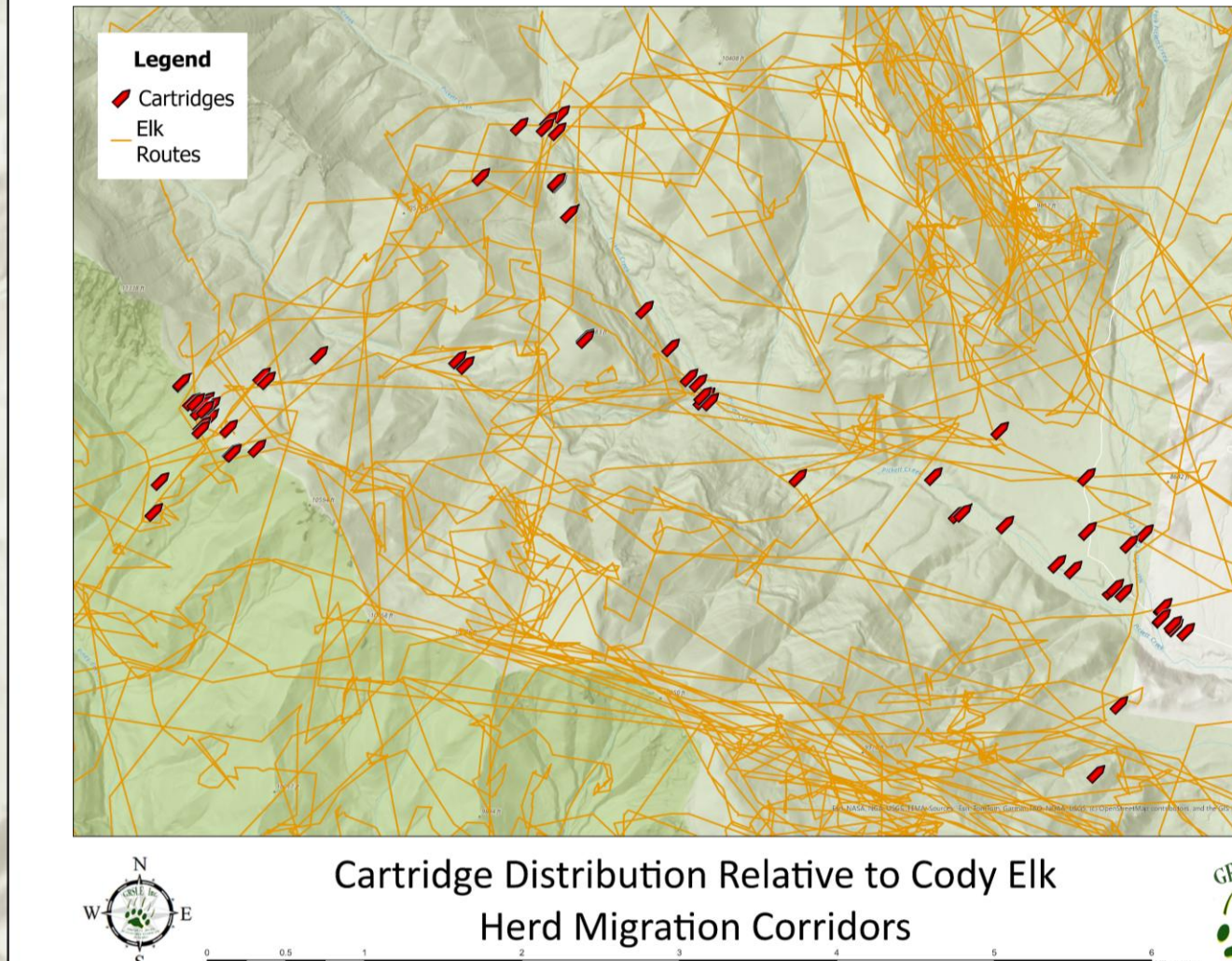
**Figure 3.** Frequency of cartridge headstamp designations recorded in the GRSLE dataset, categorized by elk-capable (green), non-elk-capable (red), and unknown (purple) calibers.



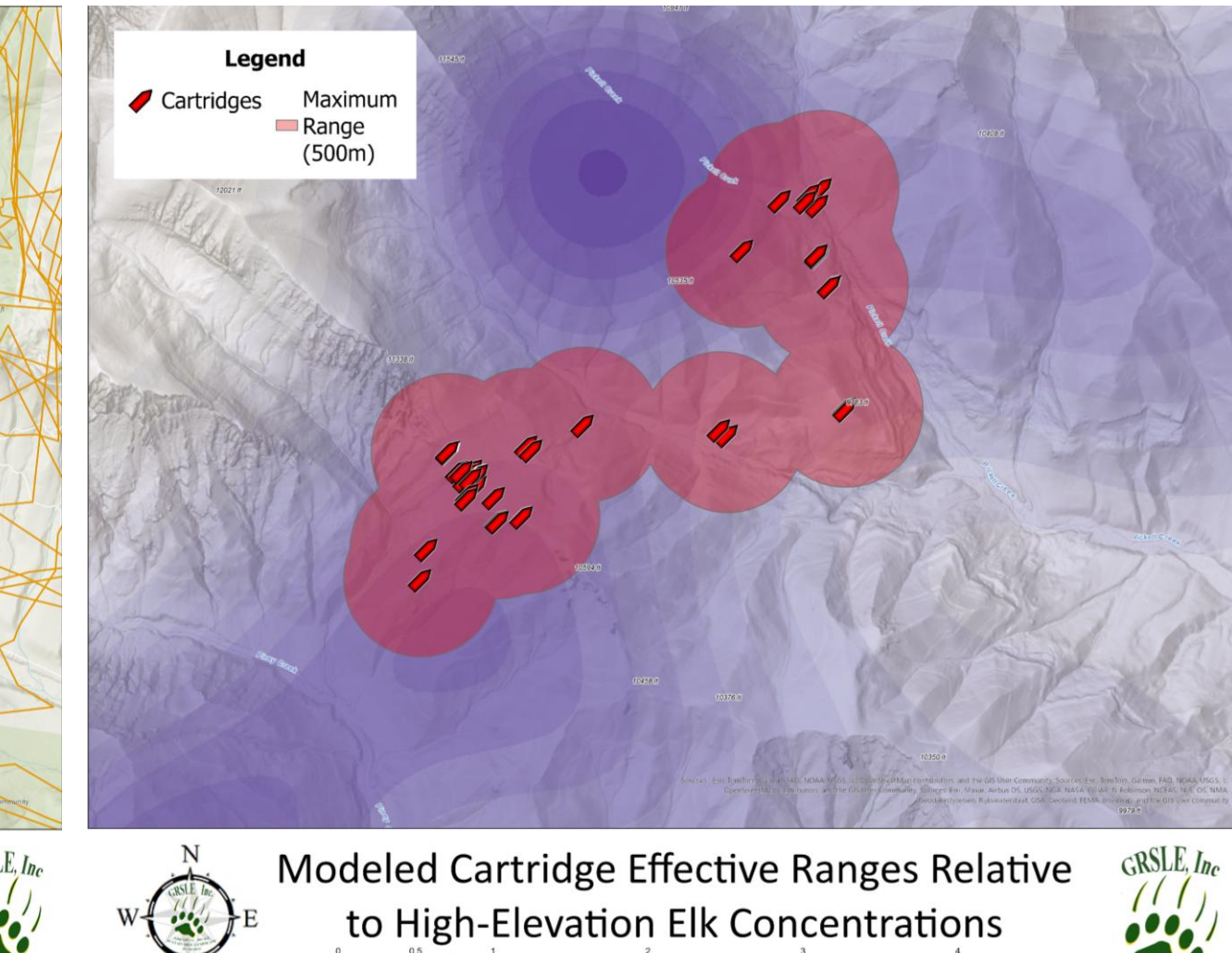
**Figure 4.** Examples of elk-capable cartridge headstamps: (a) .300 Winchester Magnum, (b) .30-06 Springfield, (c) 7mm Remington Magnum, (d) .30-30 Winchester, (e) .270 Winchester, and (f) .30-378 Weatherby Magnum.



**Figure 5.** Examples of elk-capable cartridges recorded in high frequency in the GRSLE dataset: (a) .30-06 Springfield, (b) .300 Winchester Magnum, and (c) 7mm Remington Magnum.



**Figure 7.** Cartridge distribution relative to Cody elk herd migration corridors.



**Figure 8.** Distribution of cartridges with modeled 500 m effective ranges, shown in relation to high-elevation elk concentrations.

## IV. Discussion

Concentrations along ridgelines and drainages correspond closely to elk migration routes, suggesting that hunters select vantage points that maximize visibility and encounters with game. The dominance of elk capable calibers reinforces this interpretation, pointing toward intentional, subsistence-oriented hunting rather than recreational shooting.

These findings demonstrate that modern material culture, often dismissed as recent litter, can hold valuable behavioral insights. When analyzed systematically, cartridges function as proxies for decision-making, mobility, and environmental knowledge.

Importantly, the GRSLE data system's inclusive recording strategy, which documents a wide array of human activity rather than limiting itself to "archaeological" materials, enables analyses like this one. By treating modern artifacts as part of a continuous record, GRSLE facilitates the connection between present-day behaviors and long-term patterns of landscape use and adaptation.

## V. Conclusion

This study demonstrates the interpretive value of modern artifacts in archaeological research. Cartridge distributions within the GRSLE dataset reveal spatial and behavioral continuities in how people use alpine landscapes for hunting. When analyzed alongside ecological data on elk, these materials provide a unique lens on decision-making, mobility, and environmental knowledge in the recent past.

Future research will expand this work by integrating archaeological projectile points into spatial analyses to test whether similar landscape use patterns persist across time. By comparing cartridge and projectile point distributions, the project will explore whether hunting behaviors have remained consistent through changing cultural contexts.

This ongoing research, which will continue at the 91st Society for American Archaeology Conference, aims to bridge the gap between modern and archaeological datasets, highlighting how contemporary material traces can inform long-term studies of human-landscape interaction and behavioral continuity in the Absaroka Range.

