

El Dorado County Mountain Lion (*Puma concolor*) Research Proposal

My name is Haley Molzahn, and I am an independent wildlife researcher specializing in carnivores. As an El Dorado County resident and former rancher in Cool, I have ample experience with livestock and wildlife interactions. Since September, I have been investigating wildlife conflicts in El Dorado County, focusing on mountain lion interactions with residents.

I propose a collaborative research project with El Dorado County to assist the Sheriff's and Agriculture departments in understanding the nature, frequency, and locations of mountain lion depredations on livestock. This research will also examine the reasons behind underreporting of depredation incidents. This project has three main goals:

1. Survey residents to identify the wildlife species they encounter and the types of conflicts that occur.
2. Identify the locations and species involved in livestock depredations.
3. For mountain lion depredations:
 - Analyze predator defense and husbandry methods used by residents.
 - Collect environmental data to identify habitat selection patterns by mountain lions.
 - Determine the effectiveness of various predator defense strategies.

To achieve the third goal, I will develop a model to map the probability of mountain lion presence and depredation attempts based on environmental factors and husbandry methods (e.g., night penning, livestock guardian dogs, predator-proof fencing). This model will be compared to existing data to identify similarities and differences specific to El Dorado County.

This research will also identify areas where proactive management practices would be beneficial, particularly when existing predator defenses prove ineffective. By analyzing unverified and undocumented depredations, the county can better understand reporting barriers and improve communication with residents. Additionally, the survey will assess residents' information needs regarding local wildlife to address educational gaps.

This data could be used to inform the Sheriff's department about areas requiring targeted, proactive management practices, such as non-lethal hound pursuit ("tree and free"). By fostering open dialogue and collaboration with the community, this project aims to improve record accuracy for wildlife depredations and interactions, enhance the effectiveness of education and management strategies, identify needs for improved education or funding for predator defenses, and inform wildlife managers on possible proactive strategy implementation.