

## Exploring Trends in Human-Grizzly Bear Conflicts Amid Occupied Range Expansion (Poster)

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As grizzly bear populations expand across their historical range in Montana Fish, Wildlife & Parks Region 4, human-grizzly bear conflicts continue to be a concern. This project examines trends and correlations in grizzly bear range expansion and conflicts using Conrad bear management office data from 2018 to 2024. We analyzed our data using a principal components analysis. We found the number of reported conflicts in our study area remained near constant, increasing 0.5 percent on average, while grizzly bear range expansion was increasing yearly by 4 percent. We did not find that grizzly bear range expansion was strongly correlated with all types of conflicts. The number of complaints received related to grizzly bears rose 4.6 percent during that same period, strongly correlated to grizzly bear range expansion. We found negative correlations among depredation conflicts, unnatural food conflicts, and average monthly precipitation (PC1  $\ell$ ij 0.257, 0.375, and 0.357, respectively). We also found the number of carcasses we removed to be positively correlated with the percent change of the grizzly bear estimated range expansion area, and negatively correlated with depredation and unnatural food conflicts (PC1  $\ell$ ij -0.492, -0.329, 0.257, and 0.375 respectively). Our carcass removal program coincides with a downward moving average trend in confirmed livestock depredations. Our results suggest that grizzly bear range expansion interacts with conflicts both spatially and temporally.