Reinventing Ancient Human Practices: Efficacy of Livestock Guard Dogs at Keeping an Apex Predator away from People

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Historic practices to reduce dangerous interactions between people, livestock, and large carnivores are returning alongside the recovery of some large carnivore populations. Emerging novel scenarios where people and carnivores interact make it important to identify nonlethal tools to reduce risk to people and facilitate coexistence. We tested an ancient practice in a novel way by placing livestock guard dogs (LGDs) at farmsteads (i.e., areas with a family home and grain bins) with chronic interactions with grizzly bears (Ursus arctos). Grizzly bears are attracted to spilled grains around storage bins, causing concern over human safety near homes. We found several lines of evidence supporting the use of LGDs to deter bears and protect people in areas where grizzly bears visit farmsteads. There were 58-fold fewer camera detections of bears visiting farmsteads with LGDs compared to paired neighbor farmsteads that did not receive an LGD (i.e., control sites). After LGDs were deployed, there was an 87.5% reduction in bear collar locations near farms relative to before. At sites with LGDs, uncomfortable behaviors in bears increased. LGDs did not wander uncontrollably and were primarily active at night when bears were also more likely to be near farmsteads. Farmers had a positive experience using LGDs and would recommend them to others. Our results suggest LGDs can serve to protect specific locations and offer a new use of an old tool.