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Wildlife
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USDA Wildlife Services Colorado Non-Lethal Program

Impetus and Need to Explore Non-Lethal Methods

In the United States, wildlife is managed based on the Public Trust Doctrine- wildlife is a public resource held in trust and managed by the government for present and future generations. Wildlife Services focuses on science-based wildlife management – the protection of resources, and health and human safety from damage or other issues caused by or related to the presence of wildlife.

WS' mission is to provide Federal leadership and expertise in resolving wildlife conflicts to allow people and wildlife to coexist. Over the years, WS' philosophy – as well as the wildlife management profession as a whole – has evolved, along with societal values and perspectives. Today, program personnel balance multiple priorities, including wildlife and environmental conservation, human health and safety, economic considerations, and social factors.

Wildlife Services – Colorado Program

Since 2020, Wildlife Services Colorado (WS-CO) has received Congressional funding to expand research and increase the implementation of non-lethal livestock protection projects involving large carnivore species. These funds support the increased use and evaluation of a variety of methods and tools, including fladry, guard dogs, electric fencing, and range riding. Along with alleviating ongoing conflicts with large carnivores, WS-CO is utilizing these funds as part of a larger collaborative effort to prepare Coloradoans for wolf reintroductions and wolf damage management.

WS-CO has other non-lethal tools available, such as turbo fladry deployment; Foxlights; trail camera loan, monitoring, and final report; drone hazing; and educational outreach. In listening to the agricultural community, speaking with neighboring states, building upon WS' 1987 and early- to mid-2010s livestock guarding dog research, and in the spirit of the Non-Lethal Initiative (NLI) to reduce lethal management of large carnivores; WS-CO thought this would be a great opportunity to explore and expand the practical use of livestock guardian dog breeds on multiple landscapes in Colorado.



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Livestock Guardian Dog Breeds – Kangals, Boz, Karakachan

In the initial stages of the LGD program, WS-Colorado was searching for a European breed that would readily investigate potential threats to the herd, remain vigilant, be able to decipher a threatening from an unthreatening stimulus, and that was most importantly friendly to humans. WS' National Wildlife Research Center did several field studies in the early- to mid-2010s that evaluated the efficacy of three different European livestock guardian dog breeds, including the Kangal. Initially Kangals were identified as demonstrating these subtle behavioral differences and were therefore chosen to assist livestock producers for their operations' needs when faced with large carnivore depredations.

In late April 2024, WS-CO decided to work with local livestock guardian dog (LGD) breeders in the state to match specific breeds of LGDs (Boz, Kangals, Karakachans) to producers, their operation, needs, comfortability with training, and the specific traits of the dogs. WS-CO is working on building a training support network (with our breeders and other producers), enhancing outreach materials, and creating a LGD community webpage within Colorado to help both the LGDs and producers have a good foundation from which to build.

What does WS-Colorado do as a part of the LGD program?

Once an interested producer contacts WS, they are encouraged to fill out a LGD Suitability Assessment. The assessment questionnaire gathers information about their existing operations (land use, acres grazed, livestock species), other tools they are using, experience with LGDs, comfort with training, expectations, pros and cons of the specific breed, along with Colorado Parks and Wildlife rules and regulations.

Once received, WS-CO and participating LGD breeders review the information talk about different applications, proximity and probability of wolf-LGD interactions, characteristics of each LGD breed, puppies available, and decide if an individual or pair of available puppies would work on a specific livestock operation. This requires multiple conversations between the producer, the breeder, and the WS-CO LGD coordination team. Once puppies are placed with a producer, outreach information, breed specific information, contacts for continued support, vet vaccination and spay/neuter visits, and follow-up check-ins with WS are discussed and arranged. WS-CO is working on developing a limited access website where producers in the LGD program can interact with one another, the breeders, receive targeted support related to training, bonding, and other issue; and ultimately build and enhance a Colorado LGD community support network.

WS-CO encourages frequent communications so that we can support and help in addressing any training or behavioral questions promptly. At time of placement, WS signs ownership of the LGDs over to the producer with the stipulation that if the producer decides they no longer wish to have the dogs or if the dogs are determined to be unhealthy or abandoned, WS will recover the dogs and ensure their care.

WS-CO cost-shares 50:50 of the individual LGD puppies price, conducts transport of the puppies directly from the breeders to the producers, covers the cost of first year medical care (including vaccinations and spay/neuter of the dogs at an appropriate age), provides LGD/Livestock signage, and GPS tracking collars (owned by USDA). Along with the placement of the LGD GPS tracking collars, the producer pays for the yearly subscription for the service provider. WS-CO and the producer utilize GPS technology to actively monitor LGD movements, potential interactions, gather research data, and enhance training over the first 2 years. After 2 years, LGDs are considered mature adults and behaviors have been established to ensure bonding with livestock. WS-CO then collects the GPS collars and redeploys with new LGD/producer teams. Currently, WS-CO is in collaborative discussions with several NGO groups to develop a new LGD collar incorporating satellite tracking, lights, sound, and biometrics data. Once a prototype is developed, these new collars will be deployed with all existing and new USDA LGDs in the program.

What have you learned so far about the use of LGDs in Colorado?

In Colorado, we have learned that building a community and network of LGD breeders and owners is essential, alongside proper bonding and training of young dogs. Reaching out to livestock producers and breeders in multiple western states and within Colorado helps everyone learn, grow, and ensures that the LGDs placed have the best possible opportunity to perform what they were bred to do. It takes generations to build a wealth of knowledge about LGDs and their use in different livestock operations throughout multiple landscapes and we need to be willing to listen, learn, and adapt our behaviors to ensure these dogs have a good foundation to build on. The real magic happens when you match the right qualities of the LGDs so they work together as a team, match that pair of dogs with the personality of a producer, and have a producer that is as committed to the training and success of their dogs as the dogs are committed to protecting their herd.

As Colorado continues its wolf reintroduction, has WS-Colorado seen interest grow in the LGD program?

As wolf reintroductions continue in Colorado, USDA WS-CO has seen a steady interest in the livestock guardian dog program. Not every tool works for every situation, and it takes a significant time commitment to train or invest in a LGD. LGDs typically mature at 2 years of age. If you invest heavily in training and bonding your LGD in the first 2 years you experience multiple years of return on your initial time investment. The same can also be said if you decide that you are not as committed to investing time and effort required for training specific LGD breeds in the first 2 years. What you invest, you get in returns.

As with any new venture, people need to be aware of the strengths and benefits of using various non-lethal tools, and the benefits of integrating multiple tools in unison. LGDs are innately bred for a specific purpose. But they work as a team, with

their handler, on their landscape, with other LGDs, and their success is based on the synergy of these variables and the conflict-situation. With any team, the challenge is usually how well they perform together not how they perform individually.

What other non-lethal wolf damage management tools are available from Wildlife Services-Colorado?

Wildlife Services Colorado is ready and available to:

- install fladry (6 miles and all equipment in stock),
- deploy Foxlights,
- loan or deploy trail cameras (90 cameras) – includes final report,
- respond with technical drone hazing (\$20,000 drones with advanced trained pilots - extension of Wildlife Services National Wildlife Research Center 4-year research project in Oregon and California), and
- provide outreach education presentations, talks, booths.

Trail Camera Program, Final Reports for Producers, and Trainings

WS-CO has 90 trail cameras actively deployed/loaned to producers at 30-60 day increments. Trail cameras are loaned to producers or WS-CO travels to producer and places cameras to document gray wolf or other large predator presence and use of area(s).

Remote trail cameras can be monitored via cell service (used on grazing allotments). Trail cameras are used to monitor livestock herds (cattle, sheep, goats) and document if predators are present on the property and if they are exploring/testing non-lethal tools. Trail cameras also document effectiveness of non-lethal tools.

Once predator presence is detected, nonlethal tools can then be initially deployed, or nonlethal tools can be added to existing projects to alter the behavior of the wolf, bear, lion away from a resource. WS-CO is in the process of finalizing a **Trail Camera Placement, Training, and Support Workshop**. This training details proper camera placement, commonly experienced technical trouble/programming, and using trail cameras to monitor gray wolf occurrence. WS-CO has documented gray wolves are highly sensitive to novel mechanical noises inside of the trail camera units. Animals will actively avoid cameras placed near to the ground as they can detect when the shutter on the camera is triggered.

Trail cameras can also be used to identify a baseline of livestock grazing and movements on landscapes. This baseline can be analyzed to seasonally pattern grazing and how predators alter use patterns. By creating a baseline of livestock usage, producers can detect behavioral changes in their livestock or wild ungulates when wolves appear. This information can identify areas where novel nonlethal

tools may be beneficial (e.g. areas for night penning, drones, range riders, fladry, etc...) where historically, such tools might not be beneficial.

- All trail cameras (i.e. loaned or placed by WS) include a monitoring form that identifies camera #s, location, date, time, and comments. These monitoring forms can be turned into WS-CO and the data analyzed by our staff to produce a final report. The **final report** includes a map, analysis of animal occurrence, and any patterns of use on the property.

Wildlife Services Colorado Program Personnel

At full capacity, there are 43 USDA Wildlife Services-Colorado - wildlife biologists and specialists located throughout Colorado. Each has professional wildlife training and expertise to assist with wildlife conflict. Nationwide, USDA Wildlife Services has offices in all 50 states and multiple territories around the globe. Additionally, the Wildlife Services National Wildlife Research Center, the research unit of USDA-APHIS-Wildlife Services, develops and evaluates new tools and techniques to resolve human-wildlife conflicts. Their scientists and support staff are dedicated to finding solutions to challenging wildlife damage management problems related to agriculture, natural resources, property, and human health and safety.

What is the future of the LGD program?

In 2026, WS-Colorado anticipates placing LGDs that have gone through an initial training program (6 months) to enhance the success of both the LGDs and producers. Details are still being negotiated.

Currently, this program is limited in capacity by both the funding level and the specific appropriation language of the Congressional allocation. Expansion of either of these aspects of the NLI would allow WS-CO to assist with more livestock-carnivore conflicts.

Ultimately, our hope is to continue to learn and grow from our successes and failures and build relationships within our communities. As wildlife professionals we hope to use our Federal leadership and expertise to promote coexistence that is biologically, environmentally, and socially sound.

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