

Colorado Wolf Restoration and Management Plan Technical Working Group (TWG) to Colorado Parks and Wildlife (CPW)

Final Summary of Technical Considerations on Compensation for Wolf Damage to Livestock February 2022

Background & Purpose

The document summarizes the Wolf Restoration and Management Plan Technical Working Group (TWG) discussions regarding technical considerations of potential components of a livestock damage compensation plan. ‘Technical considerations’ in this context include perspectives on biological relevance, ability to quantify and/or measure, impact on technical outcomes, feasibility for managers, and experiences with and/or in implementing programs in other states. This document is intended to help provide background to inform discussions regarding a Colorado compensation plan for wolf damage to livestock.

This document is not a comprehensive set of recommendations on a complete compensation plan. The TWG recognizes that there are various social considerations for livestock compensation that the Stakeholder Advisory Group (SAG) has discussed, and that the SAG was charged with leading the development of comprehensive recommendations regarding the compensation plan.

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Eligible Damages

Confirmed depredation

Background: To confirm a depredation, CPW uses a "Preponderance of Evidence" standard; documentation by the claimant necessary to support a claim for damage can include "tangible evidence" such as photographs, scat, tracks, attack and feeding characteristics, puncture wound spacing, hemorrhaging, etc.

Summary of TWG feedback: Compensation for confirmed depredations at fair market value has technical merit.

Discussion and rationale

- TWG members emphasized the importance of timely and skilled investigation to confirm a depredation. They noted that the presence of scat and tracks alone are not technically sufficient to confirm a depredation. Because wolves are also scavengers, their presence at a carcass is not enough to confirm that they killed the livestock.
- TWG discussed that probable losses, missing livestock, and/or indirect costs associated with confirmed wolf depredations could provide technical merit for compensating more than 100% for the confirmed loss. Discussion of these topics, including discussion of multipliers and compensations ratios, is detailed below.

Probable depredation

Background: CPW currently does not have a definition for 'probable loss,' and rather uses a preponderance of evidence standard. Different states apply different definitions of 'probable' loss. An example definition for "probable" loss based on USDA APHIS/Wildlife Services includes the presence of some evidence to suggest possible predation but a lack of sufficient evidence to clearly confirm predation by a particular species. A kill may be classified as probable depending on factors including but not limited to recent confirmed predation by the suspected depredating species in the same or a nearby area, recent observation of the livestock by the owner or the owner's employees, and telemetry monitoring data, sightings, howling, or fresh tracks suggesting that the suspected depredating species may have been in the area when the depredation occurred.

Summary of TWG feedback: Compensation for probable depredation has technical merit. A range of compensation amounts (50-100% of fair market value) were suggested as having technical merit, however lesser amounts (i.e., less than 50%) were not suggested.

Discussion and rationale

- Criteria of probable depredation
 - Clear definition of probable depredation is important for managers in administration of the program and for producers in understanding the program.
 - U.S. Department of Agriculture Animal Plant Health Inspection Service – Wildlife Services (USDA APHIS-WS)'s definition of probable losses has been adapted by the states that have adopted probable depredation compensation models. Consultation with other states regarding their experience around probable losses is advised.

- In some states, the incidence of compensation for probable losses was initially high but has waned over time, due to the increased knowledge and experience of investigators over time. With this experience, there is likely to be a decrease in the number of incidents classified as probable losses, and thus a decrease in compensation paid for probable losses.
- It is important to define whether/what secondary management actions are triggered by a 'probable depredation' designation, as well as whether a 'probable depredation' can trigger a multiplier or compensation ratio (see below).
- Compensation amount
 - Compensation at 50-75% of fair market value were suggested to be economically feasible and adequate for probable depredation. Higher amounts (i.e., 100% of fair market value) were also seen by many as having technical merit as well as potential social merit in increasing social tolerance.
 - Different payment amounts for confirmed vs. probable depredations could complicate use of a multiplier if both kinds of losses trigger a multiplier (see below).
 - Compensation for probable losses at a different rate than confirmed losses may also complicate management of the compensation program and potentially could make the claims process more onerous for producers.

Compensation ratios/Multipliers

Background: The TWG considered the potential for use of a compensation ratio or multiplier to address missing livestock and/or indirect losses. The TWG considered use of a compensation ratio on public versus private lands, the value of the compensation ratio, and minimum acreage required, if any, to be eligible for compensation ratios.

Summary of TWG feedback: Compensation ratios for both cattle and sheep on public and private lands have technical merit, but there are different perspectives and technical considerations regarding when these ratios should be triggered and how they should be administered. TWG members generally were uncertain as to what an appropriate ratio should be. Technical considerations for and against minimum acreage requirements include consideration of total leased lands, use of penning versus open range grazing, and other factors.

Discussion and rationale

- There is significant complexity in considering how to fairly apply a multiplier or compensation ratios.
- Frequency of missing livestock occurs at different rates depending on the age and type of livestock, spatial and temporal factors and differences in producer practices, such as regularity of cattle checks and detection rates.
- Compensation ratios may be more likely to be used in situations where locating depredations is more challenging and for livestock that are more vulnerable to depredation (i.e., calves and all sheep). Patterns of depredations observed in other states could be useful to constrain criteria for compensation ratios to only include certain ages or types of livestock.
- Compensation ratios could be employed with spatial considerations. However, this would be complex to implement.
- Variation in detection rate between producers, uncertainty in cause of death (such as due to another predator), and lack of well-documented trends lends to the importance of management discretion if a multiplier is to be employed.

- The use and value of a compensation ratio could also consider other factors such as implementation of conflict reduction cost-share programs or pay for presence programs.
- Compensation ratios may incentivize regularity of cattle checks but may also disincentivize conflict risk reduction solutions and improved management practices, as well as impede management of wolves similarly to other predators in Colorado.
- Minimum acreage requirements may lend managers flexibility for best management decisions, but number of missing livestock may also be a better criteria. Minimum acreage requirements are complicated by land use and ownership issues, such as livestock producers leasing multiple small acreage parcels. Further, current game damage program criteria do not distinguish between various types of operations (e.g., producer vs. hobbyist); acreage requirements may be confusing and create arbitrary distinctions for eligibility that may be inequitable.
 - For example, minimum acreage requirements could refer to the total area within which a livestock herd experiencing depredations is grazing. The idea would be to offer a compensation ratio for livestock depredations that occur in herds that are grazing a vast area, such that documenting additional depredation events would be difficult even if additional individual livestock are missing. Conversely, compensation ratios might not be applied when depredations occur in smaller pastures in more controlled settings, where detecting depredations is easier.
 - Terrain and vegetation characteristics may also be considered when determining whether and how to apply a multiplier for large tracts of lands where missing livestock are more difficult to find.
- Range cattle producers by the nature of their operations and large scale of acres being grazed will have difficulty participating in any compensation program since they infrequently become aware of depredation events that allow timely submission of documents to CPW.
 - Multipliers typically require having verified losses; it is more difficult to verify losses for cattle than for sheep and thus it will be more difficult to apply a multiplier or compensation ratio to cattle.
 - Given this challenge, alternatives for compensating for missing cattle, other than multipliers, should be considered. Criteria such as animals put on grazing allotments, the difference in animals collected at end of the grazing season and known presence of wolves on the grazing allotment may be appropriate to consider for missing cattle.
 - Multipliers may not be appropriate for all calving on open range because of the difficulty of distinguishing whether calving was successful vs. whether calves were lost to depredation. However, not all producers have a choice as to whether or not they calve on open range.
- From a technical perspective, size of pasture or rangeland is important in impacting detection of confirmed, probable, and missing livestock.
- Land ownership (public vs. private) is a social consideration rather than a technical consideration for compensation.

Indirect losses (Also referred to as production losses by the SAG)

Background: Indirect losses are those associated with economic impacts other than death of livestock.

Types of indirect losses considered: Pregnancy rates, weaning rates, lower weight gain due to stress or increased activity rates, future economic losses (for example, loss of future production or loss of investments in genetics), other losses.

Summary of TWG feedback: The TWG noted the technical reality of indirect losses such as those considered above but also noted that many factors can contribute to indirect losses. There was mixed feedback on whether there is technical merit to compensate for indirect losses, particularly as there is not a clear or proven technical approach for quantifying and compensating for indirect losses.

Discussion and rationale

- Reduced summer weight gain and other indirect losses can be subject to external factors beyond wolf depredation – for example, spatial or interannual variability in weather and forage production, other predation, and effects of other land use pressures such as recreation on public lands. It can be difficult to separately determine or fairly compensate indirect loss due to effects of wolf-livestock interactions.
- There is a lack of a concrete scientific body of research on indirect losses and conflicting anecdotal information. Documentation of indirect losses varies between producers.
- Indirect losses could be compensated through a multiplier or compensation ratio. If allowing compensation for indirect losses separate from a multiplier, stringent documentation and confirmation criteria are important to prevent abuse. In one state that allows compensation for indirect losses, the process is cumbersome and complex for producers. Currently, there is not a consistent approach among states, nor technical consensus on an approach for quantifying and compensating for indirect losses apart from using multipliers for confirmed losses.
- Multipliers have served to reduce social conflict in some places.
- The TWG recognized that there are also social considerations regarding compensation of indirect losses. A member noted that there are social science studies that indicate that wolf restoration would be better received if indirect losses were acknowledged and accounted for.
- Availability, or lack of availability, of lethal management tools to reduce indirect losses is also a consideration for whether to compensate for indirect losses.

Pay for presence program

Background: Pay for presence programs provide compensation for presence of wolves on lands used for livestock production, regardless of whether there is confirmed, probable, or indirect loss.

Summary of TWG feedback: The TWG offered a variety of perspectives regarding feasibility, purpose, and efficacy of a pay for presence program, without clear consensus on whether or not such programs have technical merit.

Discussion and rationale

- Pay for presence programs can help to recognize and value the benefits of private landowners in providing wildlife habitat, migration corridors, carbon sequestration, watershed health, and recreational opportunities. Additionally, implementation of a pay for presence program may be a simpler way to address indirect losses and/or probable depredation.
- Pay for presence programs were implemented to minimize illegal killing of wolves to assist in and benefit species recovery, as it was employed to do in the Mexican gray wolf recovery effort in Arizona and New Mexico, but may not lend to conflict reduction.
- Potential drawbacks of a pay for presence program include inconsistency of treatment of wolves vs. other predators, funding constraints and monitoring requirements. Similarly, paying for wolf presence on private land may lead to paying for presence of other wildlife species, or at least

landowners questioning why this is not the case, which could lead to more expense and distribution monitoring needs for other species.

- Actual damage may not justify pay for presence, with spatial and landscape factors such as vulnerability of livestock and location of dens and range geography more greatly informing depredation patterns than presence of wolves.
- To properly distribute available funds, this program may also require a greater degree of monitoring, which may constrain agency flexibility to allocate time and staffing resources to the development and deployment of conflict risk reduction tools.
- Pay for presence would create an additional financial burden.
- Pay for presence may also disincentivize producers to adopt conflict minimization practices, while not reducing conflict between wolves and livestock.
- The funding constraints of compensation, in addition to the staffing and capacity constraints indicated above, may also prevent management flexibility and ability to compensate for confirmed, probable, or indirect losses.
- One consideration for initial restoration is to compensate producers through a pay for presence program near and around a certain radius of release sites. It would need to be determined whether such compensation would be for a certain amount of time following release, or indefinitely. It would be difficult to determine the appropriate radius or amount of time for which to do this, and could create administrative challenges as well as concerns over fairness for producers falling just outside of temporal or spatial boundaries to qualify for the program.

Administration and Funding

Damage investigations

Background: CPW conducts most game damage investigations in the state. Some verification is also conducted by USDA APHIS-WS.

Summary of TWG feedback: Conducting damage investigation via CPW and APHIS-WS has technical merit. Investigators should have adequate training to conduct professional, consistent damage investigations.

Discussion and rationale

- A central consideration for investigative authority is adequate training. Both CPW and APHIS-WS staff are well-trained and trusted in local communities to conduct damage investigations. Investigation training courses could be offered on a regular basis to ensure investigators stay up-to-date on investigation practices.
- Regardless of the compensation formulas used, key to a successful compensation program are unbiased field investigators providing honest and accurate assessments.
- While the TWG generally did not see technical merit in the use of other potential investigative bodies, they noted that there may be other social values in having local officials accompany professional investigators and livestock producers and/or landowners during damage investigations.
- It will be important to depoliticize damage investigations as much as practical. In some highly politicized or controversial investigations, USDA APHIS-WS could serve as a sort of “third-party neutral,” which would help to protect relationships between state officials and local

communities. However, different agencies may be viewed differently by various stakeholders. Consistency of approaches within the state is important to build trust between the agencies, and among agencies, livestock producers and the public.

- Communication of investigation standards to impacted parties should be a priority, and local individuals should be equipped with the appropriate knowledge and tools to navigate the claims process. A valuable purpose of public and stakeholder engagement is in increasing knowledge of how to 1) protect the scene of a potential depredation so an investigation may be conducted with minimal contamination and 2) follow the appropriate steps to successfully file a claim for compensation if a wolf, or other large predator, were determined to be the cause of the depredation.

Funding sources

Background: CPW's Game Damage Program is funded by the appropriation of sportspeople's dollars from the Wildlife Cash Fund. HB21-1243, passed during the 2021 Colorado legislative session, prohibited use of wildlife cash funds generated from the sale of hunting and fishing licenses or from associated federal grants to fund the program implementation and administration of the restoration and management of gray wolves.

Summary of TWG feedback: TWG perspectives generally support using multiple sources of funding for compensation and other livestock interactions issues, although there were varying perspectives on whether this is a technical issue and/or is an issue with technical merit. Consistency in administration of funds, regardless of sources, was emphasized.

Discussion and rationale

- Maintaining reliability and consistency of funding are common considerations. Donations and/or funding from external sources such as NGOs should be considered from these perspectives.
- While some suggested a decentralized funding paradigm could support localized management strategies, others strongly discouraged management priorities and administration of funding to be set by any agency other than CPW and the Parks and Wildlife Commission.
- In some other states, the Department of Agriculture is responsible for administration, however Colorado statutes are clear that this responsibility lies with CPW. Use of sources that are already allocated for other special interests, such as license plates or tax checkoffs, would potentially dilute already limited funding.
- Some encouraged maintaining the status quo regarding funding for other species; others suggested wolves may imbalance current financial frameworks.
- Difficulties in obtaining and maintaining federal funds were noted.

Administration

Background: CPW is currently the sole administrator of reimbursement for game damage.

Summary of TWG feedback: The importance of consistency of funding administration was common feedback. The pros and cons of using other agencies as administrators for funding and/or for other elements of the game damage program was also discussed.

Discussion and rationale

- Other states' funding administrators include state departments of agriculture and/or livestock, local government, and federal government.
- Political agendas, public and private special interests, and trust in administrators were recurring concerns regarding multiple administrators.
- Use of a sole administrator offers simplicity, transparency, and ease of access to members of the public.
- Coordination between state and federal wildlife agencies should be considered to anticipate potential delisting of the gray wolf and its implications for game damage compensation and management.
- Local NGOs and coalitions may have roles to play in funding, stakeholder engagement, information dissemination, training and promotion of conflict risk reduction tools, and communication to inform agency best management practices.

CPW's current game damage program

Background: CPW reimburses for damages caused by big game species to livestock. Wolf damage to livestock is currently included under this program; CPW is considering updates to the program specifically for wolves. Additional information about the current program is linked from the CPW website and from www.wolfengagement.co.org.

Summary of TWG feedback: There are various considerations for whether and how the current program should be evolved specifically for wolves. There is general consensus regarding the value of consistency of process, however there are a variety of opinions on whether there should be differences in compensation eligibility, amount and/or criteria. Many TWG members suggest technical merit in consistency in using the existing program, however the TWG also recognizes that there are various social considerations on this topic as well that the SAG will weigh in regarding whether and how the current program should be evolved for wolves.

Discussion and rationale:

- If the current program is effective and well-respected, there is value to both livestock producers and wildlife managers in consistency of approach to game damage across different species of predators. At the very least, consistency of the process used streamlines ease, access, timeliness, and administration. There are technical arguments as well for treating all predators similarly rather than differentiating wolves as unique from other predators.
- The wolf restoration effort could be an opportunity to make improvements to the current program, such as incorporating incentives for non-lethal conflict prevention or minimization tools.
- As wolves are currently a state and federally-protected species, livestock producers may not have the same management tools available for wolves as for other predators such as bears and lions. If the program changes over time, including based on listing status and available management tools, changes in the compensation program might be appropriate. Any changes should be clearly communicated to the public.
- Generally, for compensation programs for wolves throughout the West, "burden of proof" is often a primary reason for producers to find a compensation program unsatisfactory. Clarity of

who investigates, how investigations occur, and how to make the claims process more accessible and efficient for producers are key components of a successful compensation program.

- The TWG anticipates that there are a variety of social considerations that the SAG might discuss affecting whether and how compensation amount, eligible expenses, and/or other criteria should be modified for wolves as compared to the current program.

Non-lethal conflict risk reduction

Feedback on practices and programs

Background: Non-lethal conflict risk reduction techniques are employed to prevent livestock conflict, and include strategies such as management intensive grazing, livestock guard dogs, carcass management, riders and herders, fladry, scare devices, high risk landscape management, and herd composition.

Summary of TWG feedback: Adoption of non-lethal conflict risk reduction techniques by livestock producers in Colorado is important to the long-term success of the wolf restoration and management program. Their effectiveness is context-specific and not well quantified. Various considerations for how to disseminate and facilitate adoption of conflict risk reduction techniques were also discussed. *Note: This report does not address lethal management for conflict risk reduction.*

Discussion and rationale

- The adoption of conflict risk reduction techniques by producers as both a proactive and reactive (post-depredation) approach to livestock conflict will be important to the long-term success of wolf management in Colorado.
- Experiences with livestock producers in other states also suggests that incentivizing and allowing creativity in conflict risk reduction approaches and working with producers is an effective approach.
- Context-specific considerations for effectiveness and feasibility of use of conflict risk reduction techniques include livestock type, age, time of year, land size, other land uses, landscape conditions, and local geospatial features, among other considerations that may impact livestock operations and wolf predation behaviors.
- Quantifying the effectiveness of various non-lethal tools is difficult and research in this area is in development, suggesting effectiveness is highly context-specific and requires some trial.
- The effectiveness of translocation of conflict wolves may vary, and some landscape conditions, independent of individual predator or pack reputation or conflict minimization, may create conflict hotspots.
- Suggestions for dissemination of non-lethal tools included building upon and/or leveraging relationships with members of the agricultural community, including through agency outreach (CPW, USDA APHIS-WS, and/or Colorado Department of Agriculture), community collaboratives, NGOs, stakeholder groups and livestock producer associations, rancher-to-rancher engagement and training programs, academic programs such as Colorado State University Extension, and conflict risk reduction cooperatives.
- Providing funding support, either directly or through cost-share programs, may help to foster adoption of techniques.

Non-Lethal risk reduction requirements for compensation

Background: The TWG discussed technical considerations regarding requirements that non-lethal risk reduction techniques be used prior to depredation to be eligible for compensation.

Summary of TWG feedback: TWG members emphasized the importance of encouraging non-lethal risk reduction techniques, however there were various perspectives regarding the technical merit and feasibility of requiring their use in order to receive damage compensation. The TWG discussed context-specificity of non-lethal risk reduction practices and losses, importance of maintaining flexibility rather than prescribing practices, difficulty in defining risk reduction requirements, value in strategies to incentivize adoption and creative problem solving, and maintenance of relationships with local producers.

Discussion and rationale

- As stated above, the context-specific effectiveness of non-lethal conflict risk reduction tools may suggest that the requirement of techniques may not always lead to conflict reduction, and flexibility in tool use should be prioritized.
- Questions around the assessment burden on agency staff, what should be required, and how conflict risk reduction should be assessed and regulated arose as important considerations.
- Requirement of non-lethal risk reduction techniques may also shape the technical and social value of these tools: some producers may simply use them to fulfill the requirement, while others may invest a lot of time and effort into conflict reduction. This variability complicates implementation of risk reduction requirements.
- Some producers will likely view additional requirements to be another unfunded mandate, which may strain or harm relationships between local agency officials and producers.
- Whether or not non-lethal conflict risk reduction techniques are required for compensation, development of programs to alleviate the financial burden on producers and foster the adoption of techniques may be more effective to achieve conflict reduction.

Appendix A: About the Technical Working Group

The purpose of the Technical Working Group (TWG) is to review objective, science-based information as well as provide its own knowledge and experience at the state/federal/tribal level to inform the development of the Colorado Wolf Restoration and Management Plan. The TWG is composed of members who bring experience in wolf reintroduction, wolf management, conflict minimization, depredation compensation, and other relevant topics. CPW is responsible for writing the Wolf Restoration and Management Plan. The Parks and Wildlife Commission (PWC) serves as the decision-making body responsible for approving the Wolf Restoration and Management Plan. The TWG serves in an advisory capacity to Colorado Parks and Wildlife, offering non-binding input into the development of plan content. The TWG is not a decision-making body and has no authority on wolf management policy, research, or operations. The TWG operates by consensus. For purposes of the TWG, consensus refers specifically to general agreement, or lack of objection, that an option or alternative has sufficient technical merit to be recommended for consideration by CPW. In the absence of consensus, dissenting views will be documented.

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