California Department of Fish and Wildlife
Wolf-Livestock Compensation Pilot Program

(FINAL)

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Wildlife and Fisheries Division
Wildlife Branch

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FORWARD

The California Department of Fish and Wildlife's 2016 Conservation Plan for Gray Wolves in California (Wolf Plan) proposed a potential future wolf compensation program for livestock producers affected by wolves in California. The Budget Act of 2021 was the legislature's first authorization to fund the Department to implement a "wolf conflict compensation pilot program" and authorized the Department to "develop a grant process to allocate funds to pay for the deterrence of wolf presence near livestock, the impacts of wolf presence on livestock, and for verified loss of livestock for participating ranchers" occurring on or after September 23, 2021.

To that end, the Department convened a group of interested parties with diverse perspectives, experience, and expertise to participate in a wolf stakeholder working group (Wolf SWG). The Wolf SWG aided the Department in gathering information from other programs and provided input for program development. This effort led the Department to develop and implement an Interim Wolf-Livestock Compensation Grants Program for the first two prongs of the program: direct loss compensation (prong 1), which began in February 2022; and deterrent method compensation (prong 2), which began in May 2022. In the final phase of program development, the Department broadened the Wolf SWG to solicit input on refinement of prongs 1 and 2 and establish compensation for indirect impacts on livestock due to wolf presence (Pay for Presence, prong 3). The Department understands that livestock producers operating within wolf territories may be impacted directly and indirectly by wolves.

When all three prongs of the pilot program are implemented, California will have the most comprehensive wolf-livestock compensation program in the nation. The program is the result of the commitment of the Department, the ranching community, and many diverse groups in California to acknowledge, understand, and mitigate the economic costs of wolf-livestock interactions on working lands. The Department is committed to annually evaluating each prong of this program.

1. DIRECT LOSS COMPENSATION (Prong 1)

Producers are eligible for compensation of direct loss of livestock (death, injury) due to confirmed or probable wolf depredation, as determined during a depredation investigation and documented in a CDFW Determination Form. The payment formula is based on fair market value (FMV) at time of sale if the animal had lived, as determined by the U.S. Department of Agriculture, unless another valuation method sets a different value: 100% of FMV for each head of livestock injured or killed due to confirmed or probable wolf depredation.

The Department classifies wolf depredation as "confirmed" when there is physical evidence that an animal was injured or killed by a wolf and "probable" when there is sufficient evidence to suggest wolf predation (e.g., evidence of predation and evidence that wolves were likely present at the time of injury or death), but not enough evidence to confirm it. Each reported depredation incident is unique and

requires a case-by-case analysis of the evidence, context, and other factors that inform the determination process. The Department strives to conduct investigations as soon as reasonably possible to preserve physical evidence and gather information from producers and potential eyewitnesses. At all times, the Department shall include the investigator's best professional judgement in its determination.

Upon issuance of compensation for a direct loss, producers will be expected to consult with the Department to evaluate and implement a deterrent strategy that may be beneficial in reducing wolf-livestock conflict. The deterrent tools and/or actions implemented as part of this strategy may be eligible for compensation under prong 2 of the pilot program.

2. NONLETHAL DETERRENT METHODS (Prong 2)

There are many nonlethal techniques that, when properly employed, can reduce the potential for wolf depredation. Some of these techniques are used to protect specific places (e.g., a fenced pasture), while others are generally used to protect livestock on extensive rangeland. However, not all techniques are applicable in all settings, and none will fully eliminate the potential for wolf depredation to occur (Bangs et al. 2006). The Department recognizes that the protection of livestock on remote working lands using nonlethal techniques remains a significant challenge. The Department will work closely with each applicant to provide technical assistance for developing an appropriate nonlethal deterrent strategy for potential compensation.

Eligible producers can be compensated for the use of a wide variety of nonlethal deterrent tools and actions. Producers may use established methods, as well as novel techniques that may be newer in understanding or use, to deter wolf presence near livestock. The payment formula is based on the actual cost at time of purchase (e.g., receipt) or other valid valuation method (e.g., standard rate, contract). Compensation is up to 100% for each approved deterrent method used.

Certain costs associated with the use of livestock guardian dogs may be eligible for compensation, such as the cost of replacement for a similar breed or veterinary treatment for dogs injured or killed while protecting livestock. The Department recognizes that the effectiveness of livestock guardian dogs is dependent on its breeding and training.

NOTE: Techniques used to deter a wolf away from livestock that do not result in physical contact or chance of physical injury would not be considered "pursuit", and therefore would not constitute prohibited take. Otherwise, prohibited take could be authorized pursuant to one of several permits provided for in the Fish and Game Code (i.e., Fish and Game Code sections 2081, 2086, 2089.6, 2835). In addition, any routine and ongoing agricultural activities, such as use of a livestock guardian dog, resulting in accidental take of an endangered species (e.g., wolves) could qualify for exemptions afforded by Fish and Game Code 2087, depending on the facts of the specific case.

3. PAY FOR PRESENCE COMPENSATION (Prong 3)

The pay-for-presence framework allows for straightforward implementation of this first-ever state program, from application to payment. Efficiency and simplicity are key tenets. This program was developed with consideration of the best available literature and various sources including the Wolf Plan, Part II, Appendix G (Phases 1-3 of Wolves in California, Planned/Potential Options Common to all 3 Phases of Plan), other national programs (i.e., the Mexican Wolf/Livestock Coexistence Council's "Payment for Wolf Presence" component), and proposals and suggestions submitted by stakeholders and the public.

Known Wolf Territory

A pack's territory can change over time and use of the territory typically varies seasonally due to prey movements (e.g., annual migrations of deer or elk from one seasonal range to another). The Department uses the best available data (e.g., satellite collar data, cameras, depredation events, DNA) to identify each known wolf pack's territory and core area within that territory during each of two annual seasons (broadly characterized as "summer" and "winter"). A core area is that portion of a territory where the wolf pack spends most of its time, and therefore, livestock within the core area have higher wolf exposure rates and resulting risk. The Department works closely with each applicant to determine if (1) a producer operates in a pack territory; and (2) if those operations are within the core area of that territory.

The Department primarily uses a kernel density estimator (KDE) to annually calculate summer and winter pack territory and core area boundaries for resident wolf packs, as appropriate. The kernel density estimator method is used by other programs, such as the interagency Mexican Wolf Program. It is one of the most statistically efficient methods available for estimating a wolf pack territory when sufficient satellite collar data exists. The summer and winter pack territories and core areas are defined as the following:

- Summer (wolf locations from May 16 – October 15)
  - Pack territory: 95% KDE
  - Core area: 50% KDE of pack territory.
- Winter (wolf locations from October 16 – May 15)
  - Pack territory: 95% KDE
  - Core area: 50% KDE

The KDE method largely relies on available satellite collar data, or other means of tracking wolf locations. Therefore, if detailed location data for a given pack is not available, the Department may use other methods to estimate pack territories and/or core areas, as appropriate.

For resident wolf packs with no or very limited satellite collar data, the Department primarily uses a 100% Minimum Convex Polygon (MCP) to annually calculate summer and winter pack territory and core area boundaries. All field data verified by the Department will be utilized including DNA, confirmed wolf sign (e.g. scat, tracks), trail

camera data, and any limited collar data that may exist. Core and seasonal areas may not be defined in these calculations due to data limitations. Information regarding maps and calculation methods used for pack territories can be found on CDFW's Wolf Livestock Compensation Grants webpage.

Eligible Producers

Producers raising livestock within any portion of the known territory of a resident wolf pack may apply for compensation. In general, and for this pilot program, individual animals considered eligible for compensation are those that spend at least three months within a pack's summer and/or winter territory. Producers grazing within known wolf territories are encouraged to consult with the Department to determine final eligibility.

The program does not compensate producers for the presence of a dispersing wolf outside of known pack territory, as they are known to travel widely, and their movements are unpredictable. The Department recognizes that there may be extenuating circumstances whereby eligibility may be considered on a case-by-case basis.

Payment Formula

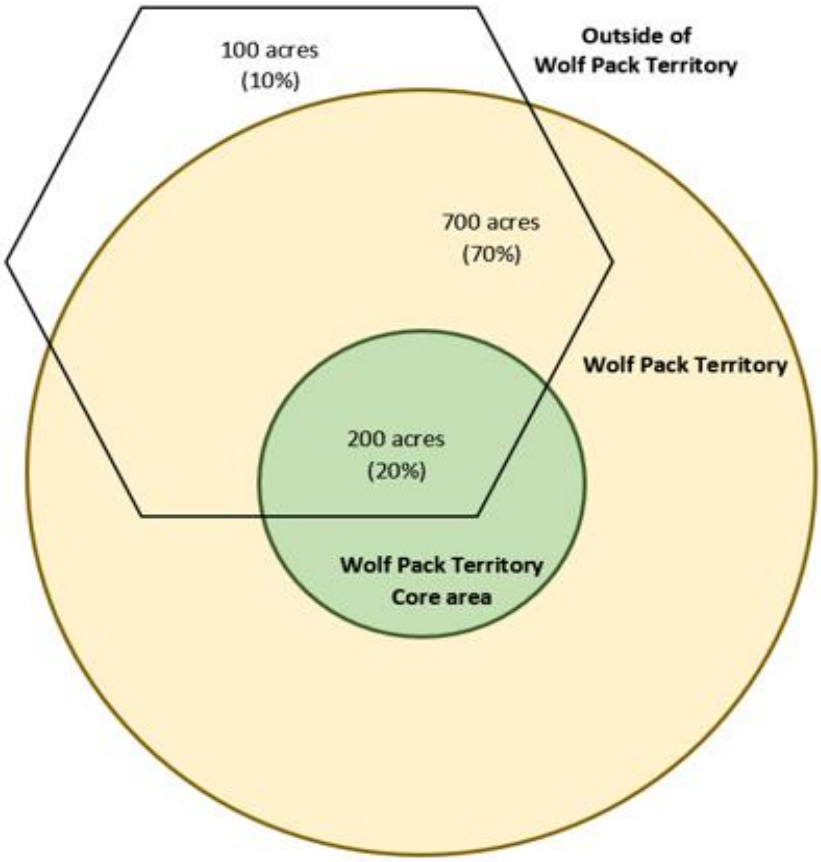
The Department recognizes that the impact of wolf presence on livestock in a known pack territory may include indirect costs such as weight loss and/or reduced productivity. For each allotment or pasture that is entirely or partially in a summer or winter wolf pack territory, payment will be based on the percentage of allotment or pasture (acres) in a core area or outside of the core area within a pack territory. The payment formula is based on FMV unless another valid valuation method sets a different value.

The Department may adjust the payment formula as more information and data become available during this pilot program.

For the purposes of compensation, a payment year is defined as October 16 – October 15 of each year of this program. Payment will be provided annually for each animal that spends at least 3 months during a given payment year within a summer and/or winter wolf pack territory and survives through October 15. Payment rates are as follows:

- 3.5% of FMV for each head of calf inside the core area of a winter and/or summer pack territory.
- 3.0% of FMV for each head of cow inside the core area of a winter and/or summer pack territory.
- 2.3% of FMV for each head of ewe inside the core area of a winter and/or summer pack territory.
- 2.0% of FMV for each head of cow and calf, outside of the core area within a winter and/or summer pack territory. Livestock outside of a core area generally experience less wolf presence.

Figure 1. Example of an eligible producer grazing livestock for 3+ months on a 1000-acre allotment that intersects a portion of a wolf pack summer territory. NOTE: eligibility based on total time grazing within a pack's summer and/or winter ranges.



For compensation purposes, livestock within each allotment are assumed to be proportionally distributed across wolf pack territory boundaries. In Figure 1, the producer would be compensated for 20% of their livestock at the "core" rate (3.0% of FMV for cows, 3.5% of FMV for calves, 2.3% of FMV for ewes) and 70% of livestock at the non-core area or "wolf pack territory" rate (2.0% of FMV, cows/calves).

Table 1. Annual Pay for Presence payment calculation for 500 cow/calf pairs based on Figure 1.

Allotment location	Payment formula	Calculation
Core Area	500 cows x FMV (e.g., $1100/cow) x 3.0% x 0.20	$3,300 (Cows)
(20% of allotment)	500 calves x FMV (e.g., $1400/calf) x 3.5% x 0.20	$4,900 (Calves)
Wolf Pack Territory	500 cows x FMV (e.g., $1100/cow) x 2.0% x 0.70	$7,700 (Cows)
(70% of allotment)	500 calves x FMV (e.g., $1400/calf) x 2.0% x 0.70	$9,800 (Calves)
	Compensation Total	$25,700

Application Period

Compensation is retroactive from September 23, 2021, and available annually during the pilot program until all funds are expended, or June 30, 2026, whichever comes sooner. The Department will accept applications year-round, but payments will be made based on cattle presence in winter and summer wolf pack territories during the prior winter and summer period (i.e., October 16 through October 15, annually). Soon after October 15 each year, CDFW will calculate territories and cores for the prior summer and winter seasons and base payments for each applicant on their livestock numbers within those boundaries during those periods. Because wolf territories change over time, boundaries will be updated annually. Current territory maps will be provided on CDFW's Wolf Livestock Compensation Grants webpage.

Application Package

At a minimum, the following supporting documentation will be required as part of a complete application package:

- Location(s) of each grazing allotment or pasture (e.g., detailed boundary maps, allotment area maps).
- Brief description of operation (e.g., seasonal pasture, allotment).
- Dates livestock are at location.
- Type of livestock (in each allotment or pasture).
- Total head of livestock (at start of season and at time of sale).
- Proof of FMV or other valid valuation method.
- Brief description of nonlethal deterrent methods previously and/or currently used (e.g., carcass removal, fladry, range riding).

Grant Agreement

Upon review of the application form, applicants enter into a Depredation Prevention Agreement (i.e., application package) with the Department. The Agreement is based on each producers' unique circumstances, including livestock operation type, total head of livestock, and land use within a pack territory. One component of the Agreement is the development and use of a nonlethal deterrent strategy to help mitigate future potential conflict. The deterrent tools and/or actions implemented as part of this strategy may also be eligible for compensation under prong 2 of the pilot program.

The Department recognizes that there is little or no data quantifying the effects of wolf presence near livestock specific to California. Additional research and analyses are required. During this pilot program, data will be collected and analyzed in coordination with participating producers to inform adjustments to the payment formula and the use of nonlethal deterrents as the program expands through this adaptive pilot process.

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