Meeting Report
Wolf-Livestock and Wolf Conservation Stakeholder Subgroups
November 18, 2014

CDFW Office of Training and Development
Training Center
1740 North Market Blvd.
Sacramento, CA 95834

California Department of Fish and Wildlife
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1.0 Introduction

On November 18, 2014 the Wolf-Livestock Interactions and Wolf Conservation Subgroups convened together in Training Center of the California Department of Fish and Wildlife’s Office of Training and Development. This was the second and final combined meeting of these subgroups, and was intended to assist the California Department of Fish and Wildlife (CDFW, Department) by providing recommendations on a consensus-driven framework of management strategies that are consistent with wolf conservation, and that effectively deal with potential wolf impacts on California’s livestock.

2.0 Meeting Objectives and Mechanics

Objectives of the meeting as initially planned were:

- Discuss recent changes to the Conservation and Livestock Materials including
  - Location Sharing Information
  - Lethal Control Criteria
  - Nonlethal Coexistence Plan
- Deliver final stakeholder comments on Conservation and Livestock Strategy Matrix

The meeting was attended in person by the meeting facilitator Mr. Sam Magill, eleven stakeholders, four CDFW staff, and one member of the public. In addition, one CDFW staff member attended via conference line. Appendix A provides a list of participants, their affiliations, and their contact information. Appendix B contains the meeting agenda, and Appendix C contains updated documents provided by stakeholders that suggest additions to the strategy, non-lethal/coexistence measures, and draft criteria for providing wolf location information to producers. Appendix D contains the current version of the Phased Wolf Conservation and Livestock Conflict Strategy document.

3.0 Meeting Outputs

Review/Discuss Stakeholder Produced Documents on Nonlethal Coexistence Measures, Location Information Distribution, Lethal Control Criteria, and Local Wolf Advisory Groups

The four documents discussed in this portion of the meeting were drafted by various members of the Wolf Conservation and Wolf-Livestock Interactions Subgroups. In the interim since the previous combined subgroup meeting, members from the various caucuses have been in discussion of the documents, and authors have compiled comments for discussion today. To facilitate a review of all four documents within the timeframe of today’s meeting, the group decided against breaking out to caucus. Mr.
Magill asked the primary authors to provide an overview of each document, after which other members and Department staff provided comments.

**Proposed Criteria for Location Information Distribution on Wolves in California**

In their comments in the opening paragraph, the Agriculture Caucus brought timber harvest managers to our attention, and we realized the Department will probably need to consider them as potential information recipients. Paragraph 2 was moved up from the end of the document because we realized that proper implementation of nonlethal methods is as important as knowing that wolves are present. In paragraph 4 we were attempting to convey that for the information sharing to be useful it would be helpful if an Area of Known Wolf Activity (AKWA) had been previously designated. We anticipate a system similar to that used in Oregon in which a map is created establishing an AKWA, and the Department works with producers within the AKWA to map polygons for individual producers, who will be notified if and when a collared wolf enters their polygon. We clarified that the 24 hour download of location data is merely a guideline, and can happen more frequently by the Department as needed. Regarding sharing of information provided to producers by the Department, we assume that if an AKWA has been established, producers within it will already know that wolves are in the vicinity so discussing with neighbors is not a breach of confidentiality. Member comments included:

- In small communities people talk with their neighbors, and you set them up for failure if you expect them not to do that.
- If producers are implementing nonlethal deterrence methods, their neighbors will likely notice, which may give the appearance that they've breached confidentiality.
- We would rather stipulate no electronic sharing of information.
- In Washington the agency shares the location information with the counties.
- It’s possible that neighbors having discussions can reduce conflicts, thereby benefitting wolves.
- The enforceability of a “gag order” is questionable; from a management perspective it seems that would drive a wedge between the environmental and agriculture communities which would be counterproductive.
- Inappropriately sharing location information is a valid concern. There is precedent in such information being used to kill wolves in other states, so the question remains how specific the information should be. If we can’t penalize people for sharing then they should get nonspecific information.
- This document is complex and wordy to the point of being non-implementable. Location information is critical to protecting livestock and wolves. If we make it too complicated people will not want to participate.
- Timber producers will also need to know the locations of dens and rendezvous sites, both for harvest activities and for their grazing leases.
Proposed Nonlethal/Coexistence Measures to Minimize Wolf-Livestock Conflict

These measures are intended to be a description of the tools available to reduce conflicts. Nonlethal measures do work, but are not guaranteed to give 100% success in all situations. The goal is to provide information to producers, and for them to utilize these methods to the extent practical, not to overburden them. Producers will have to try different approaches in different situations to see what works, and will likely have to rotate through some of the measures over time in each location, but they shouldn’t expect business as usual with wolves on the scene. An education piece to go along with this list will also be important. The Agriculture Caucus members provided useful comments that helped to improve the document. Comments provided during the meeting included:

- Some of the measures are infeasible, and including them may lead some producers to dismiss the document entirely. It’s important that the document contain realistic recommendations.
- The introductory paragraph should state that this is a non-inclusive list of suggested practices, and the actual measures used will be determined by the producer in cooperation with the local entity that is established (see next section), consistent with existing laws.
- It is important to state clearly that nonlethal measures are required before more invasive measures are allowed.
- The document should list actions allowed by producers when there is a den on their allotment.

Wolf Advisory Groups

This document recommends the formation of local committees whose purpose will be to outreach to ranchers on nonlethal ways to reduce conflicts with wolves. They will also collect feedback from producers on the effectiveness of the methods they use, and will then report that information to the Department. These committees may occur at the county or regional level, and where appropriate, members should include producers, wolf conservationists, U.C. Extension advisors, and an appointee from the county Board of Supervisors and/or the local Fish and Game Commission. The final member would be appointed by the committee members, and the Department would also seat a nonvoting member.

A second committee suggested in the document is one that occurs at the statewide level, and could be a continuation of the stakeholder working group, with a focus on advising the Department in the event of unplanned-for situations, and discussing any significant conflicts that arise early in wolf recolonization. This group would also receive feedback from the local committees as to the effectiveness of nonlethal methods being implemented by producers. Member comments included:
• Oregon uses a similar structure and they suggest it has been very helpful. More specific language is needed regarding who can sit on the committees. It should not be open-ended, and should be balanced.
• Including people from the Boards of Supervisors and the Extension could make the committee unbalanced in favor of livestock. Surveys show that 80% of Californians support wolf recolonization. The state level committee membership should reflect that.
• It could be helpful if the local committees had someone familiar with funding mechanisms, possible the Resource Conservation District. There also should be a representative with a science background.
• Suggest a representative from Wildlife Services who would be able to advise on local livestock-related depredation issues.
• These groups should have a charter that specifies their purpose and term limits for members.

Additional Criteria in Phases II and III for Lethal Control of Wolves to Address Chronic Livestock Depredation

This document is largely based on Oregon’s plan, but with some changes where necessary; in particular, establishing AKWAs in the same way that Oregon is doing it. Fourteen days was established as the period between a first depredation incident and the establishment of an Area of Depredating Wolves (ADW), because the Department stated that 7 days may not be enough time. Member comments included:

• Oregon’s plan has a lot of provisions requiring actions by the Department within specific timelines. There was an incident in which the Department could not meet the timeline, so the depredation was considered to not be a qualifying incident. What will CDFW’s capacity be to achieve the provisions specified in this document?
  • Department response: Under our current staffing we would not be able to implement this program. We will need to design a program, then try to get the resources to implement it.
• Depredations could reoccur during the 14 day period between a first depredation and the establishment of an ADW, and these won’t count.
• Will the wolf plan be advisory only, or will it be adopted by rulemaking? To what extent will the plan be enforceable?
  • Department response: There will likely have to be some statutory or regulatory authority given to the Department that provides direction on how to implement the plan and this document may provide some of the content for such authority. But without that authority the plan will be advisory. There
is much in the plan that we can go forward with such as ungulate research, public outreach, and local advisory committees.

- It would be helpful to have another document that is a blueprint of implementation based on the Department’s capacity. That would help us to know that this document won’t go up on a shelf.
- The document states that if a depredation occurs within an AKWA or ADW, the owner must have removed any attractants at least 7 days prior, or the incident won’t qualify as a depredation. That doesn’t seem appropriate.

Review/Discuss Draft Phased Wolf Conservation and Livestock Conflict Strategies

Elements of this document had been discussed during previous meetings of both subgroups, and undergone multiple revisions based on those discussions, including merging from separate Wolf-Livestock Interactions and Wolf Conservation strategies into a single combined set of strategies. Since the previous discussion at the November 4th meeting, the most significant change made to the document was to reorder the elements. As a consequence, discussion at today’s meeting was brief. Member comments included:

- We previously requested that a population viability analysis (PVA) be conducted but that is not contained in this document. We want to tell our boards and constituents that the Department is committed to developing a better-informed set of wolf population numbers for these phases. We would need to see that before we can say we support the plan.
  - Department response: Notes from our discussion say that we need to articulate a commitment and strategy for projecting the future population and distribution of wolves, and if the results indicate our figures are not appropriate then we change them at that time. This table may not be the most appropriate place to document that, but we need to make clear in the Plan our commitment to engage in the science and resource assessment.
- Suggest you use a placeholder in Phase 1 stating that the number [of wolf breeding pairs] is subject to revision based on results of the analysis.
  - Department response: The way the strategy is constructed, the wolf population cannot decline due to the use of lethal control, even in the event that lethal control is legally allowable. There must be a minimum documented population increase of 5% before lethal will be considered.
- That is true except that the Plan will be advisory only.
- What is the reasoning for using 2 breeding pairs for 2 years as a trigger to commence developing the next phase? Two consecutive years is not long enough.
Action Items

- Document authors will make revisions based on today's discussion, and will provide to the Department as soon as possible, preferably by end of day on Friday, November 21\textsuperscript{st}. 
# APPENDIX A
## WORKSHOP PARTICIPANTS

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<th>Name</th>
<th>Affiliation</th>
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<tr>
<td><strong>Stakeholders</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noelle Cremers</td>
<td>California Farm Bureau</td>
<td><a href="mailto:ncremers@cfbf.com">ncremers@cfbf.com</a></td>
</tr>
<tr>
<td>Mark Rockwell</td>
<td>Endangered Species Coalition</td>
<td><a href="mailto:mrockwell@endangered.org">mrockwell@endangered.org</a></td>
</tr>
<tr>
<td>Lesa Eidman</td>
<td>California Woolgrowers Association</td>
<td><a href="mailto:lesa@woolgrowers.org">lesa@woolgrowers.org</a></td>
</tr>
<tr>
<td>Amaroq Weiss</td>
<td>Center for Biological Diversity</td>
<td><a href="mailto:aweiss@biologicaldiversity.org">aweiss@biologicaldiversity.org</a></td>
</tr>
<tr>
<td>Kirk Wilbur</td>
<td>CA Cattlemen’s Association</td>
<td><a href="mailto:kirk@calttlemen.org">kirk@calttlemen.org</a></td>
</tr>
<tr>
<td>Pat Griffin</td>
<td>CA Agriculture Commission – Siskiyou Co.</td>
<td><a href="mailto:pgriffin@co.siskiyou.ca.us">pgriffin@co.siskiyou.ca.us</a></td>
</tr>
<tr>
<td>Kim Delfino</td>
<td>Defenders of Wildlife</td>
<td><a href="mailto:kdelfino@defenders.org">kdelfino@defenders.org</a></td>
</tr>
<tr>
<td>Karin Vardaman</td>
<td>CA Wolf Center</td>
<td><a href="mailto:karin.vardaman@californiawolfcenter.org">karin.vardaman@californiawolfcenter.org</a></td>
</tr>
<tr>
<td>Robert Timm</td>
<td>UC Agriculture and Natural Resources</td>
<td><a href="mailto:rmtimm@ucanr.edu">rmtimm@ucanr.edu</a></td>
</tr>
<tr>
<td>John Mc Nerney</td>
<td>The Wildlife Society – Western Section</td>
<td><a href="mailto:jmcnerney@cityofdavis.org">jmcnerney@cityofdavis.org</a></td>
</tr>
<tr>
<td>Damon Nagami</td>
<td>Natural Resources Defense Council</td>
<td><a href="mailto:dnagami@nrdc.org">dnagami@nrdc.org</a></td>
</tr>
<tr>
<td><strong>California Department of Fish and Wildlife Staff</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karen Kovacs</td>
<td>Wildlife Program Manager – Region 1</td>
<td><a href="mailto:karen.kovacs@wildlife.ca.gov">karen.kovacs@wildlife.ca.gov</a></td>
</tr>
<tr>
<td>Eric Loft</td>
<td>Wildlife Branch Chief</td>
<td><a href="mailto:eric.loft@wildlife.ca.gov">eric.loft@wildlife.ca.gov</a></td>
</tr>
<tr>
<td>Karen Converse</td>
<td>Environmental Scientist – Lands Program</td>
<td><a href="mailto:karen.converse@wildlife.ca.gov">karen.converse@wildlife.ca.gov</a></td>
</tr>
<tr>
<td>Mark Stopher</td>
<td>Senior Policy Advisor</td>
<td><a href="mailto:mark.stopher@wildlife.ca.gov">mark.stopher@wildlife.ca.gov</a></td>
</tr>
<tr>
<td>Pete Figura</td>
<td>Environmental Scientist – Region 1</td>
<td><a href="mailto:pete.figura@wildlife.ca.gov">pete.figura@wildlife.ca.gov</a></td>
</tr>
</tbody>
</table>

## PUBLIC PARTICIPANTS AND COMMENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Email</th>
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<td><strong>Legislative Representatives and Public</strong></td>
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APPENDIX B – AGENDA

PROPOSED AGENDA
Wolf-Ungulate Subgroup
10 AM-2 PM November 18, 2014
DFW Training Room, 1740 N Market Blvd, Sacramento
Teleconference Line 877.860.3058, PC 758045#

Objectives:

- Discuss recent changes to the Conservation and Livestock Materials including:
  - Location Sharing Information
  - Lethal Control Criteria
  - Non-lethal Coexistence Plan
- Deliver final stakeholder comments on Conservation and Livestock Strategy Matrix

1. Introductions and Logistics (5 minutes)

2. Updates/Housekeeping (15 minutes)
   a. Identify Stakeholder member for update at final SWG meeting

3. Discuss Revisions to Location, Lethal Control, and Non-Lethal Coexistence Documents (90 minutes)

4. BREAK FOR LUNCH (10 minutes)**

5. Continue Discussion of Location Sharing, Lethal Control, and Non-Lethal Coexistence Documents (30 minutes)

6. Discuss Livestock/Conservation Strategy (70 minutes)

7. Public questions (10 minutes)

8. Discuss Action Items and Next Steps (10 minutes)
   - Action Item Review
   - Next Steps

*NOTE: This will be the final meeting of both the Conservation and Livestock Subgroups. For agenda items 3 and 5, each interest group/caucus is given the opportunity to request a breakout session to discuss specific points of the strategy internally. The facilitator will coordinate breakout sessions as needed.

** The session will include a working lunch.
APPENDIX C
STAKEHOLDER PRODUCED DOCUMENTS
Row E – Additional Criteria, in Phase II and III for Lethal Control of Wolves to Address Chronic Livestock Depredation

Lethal take to address chronic livestock depredation. CDFW may authorize its personnel or authorized agents to use lethal force on a wolf, wolves, or wolf pack it reasonably believes are responsible for chronic depredation upon livestock where each of the conditions in sections (1) through (6) of this rule is satisfied. CDFW shall limit lethal force to the authorized agents to use lethal force on a wolf, wolves, or wolf pack it deems necessary to address the chronic depredation situation.

Conditions for Lethal Take by CDFW. CDFW’s discretionary authority for use of lethal force pursuant to this rule may be exercised if CDFW:

1. Designates an Area of Known Wolf Activity (AKWA) and upon designation timely coordinates with potentially affected livestock producers to provide information about the California Wolf Plan, wolf behavior/management/conservation, how to document and report wolf activity to CDFW including livestock depredations, nonlethal measures/ incentives/assistance for minimizing conflicts between wolves and livestock/domestic animals in the AKWA.

2. CDFW confirms an incident of depredation by a wolf or wolves, following the protocol outlined in the strategy.

3. Within 14 days of CDFW’s confirmation of first wolf depredation incident, designates an Area of Depredating Wolves (ADW).

4. Concurrent with designation of ADW, prepares and publicly discloses area-specific wolf-livestock conflict-deterrence plan in coordination with potentially affected parties that identify appropriate non-lethal measures most likely to be effective for the particular circumstances.

5. Confirms a total of at least five separate qualifying incidents of livestock depredation on separate days within the previous 3 months by the same wolf or wolves.

6. Each of the documented depredation incidents has resulted in livestock mortality or injury.

7. Issues and makes publicly-available, prior to exercise of lethal force, written determination by CDFW Director or their designee to use lethal force to address specified situation of chronic depredation with supported findings that (a) criteria (1)-(6) above and (8)-(13) below have been met, (b) livestock producers in ADW have worked to reduce wolf-livestock conflicts and are in compliance with wolf protection laws and conditions of any harassment or take permits, (c) the situation of depredation by wolves on livestock in ADW is likely to remain chronic despite use of additional non-lethal conflict deterrence measures and (d) wolf or wolves identified by CDFW for removal are those which CDFW finds to be associated with the qualifying depredations and CDFW finds that their removal will decrease risk of chronic depredation in ADW.

8. Qualifying Contingencies and Counting Incidents. An incident of depredation is a single event resulting in the injury or death of one or more livestock that is reported to CDFW for investigation and, upon investigation by CDFW or its agent(s), CDFW confirms to have been caused by a wolf, wolves, or wolf pack of wolves.
A qualifying incident of depredation is a confirmed incident of depredation for purposes of this rule only if:

A. If the depredation is outside an AKWA or ADW, only the first confirmed depredation by a wolf or wolves counts as a qualifying depredation. As soon as a depredation by a wolf or wolves outside of an AKWA or ADW is confirmed by CDFW, the agency must immediately designate an ADW and an AKWA and take the steps described in (1)-(4) above. If additional depredations occur outside the AKWA or ADW before the agency has acted pursuant to (1)-(4), these subsequent depredations will not count as qualifying depredations.

B. If the depredation is within an AKWA or within an ADW, the landowner or lawful occupant has, at least 7 days prior to the depredation removed, treated or disposed of all intentionally placed, known or reasonably accessible unnatural attractants such as bone or carcass piles or disposal sites; and prior to and on day of depredation incident been using non-lethal measures CDFW deems appropriate to protect the specific livestock operation there.

In documenting the removal of unnatural attractants and implementation of conflict deterrence measures, the Department may rely upon documented personal observation and/or written statements by the owner or lawful occupant of the land (or his or her agents) to determine if an incident of depredation qualifies.

C. After the first depredation incident, the livestock producer has applied for or already has in place a Wolf Depredation Prevention Cooperative Agreement (WDPCA).

9. Reporting Timeframe. Documentation from livestock producer must be turned in to CDFW within 30 days of discovered suspected incident of depredation. Within 45 days of having received notification of suspected depredation CDFW must make determination.

10. Human Presence. Human presence, when used as non-lethal measures, is presence that CDFW could reasonably expect to deter wolf-livestock conflict under the circumstances and it occurs at proximate time prior to and in an area proximate to a confirmed depredation per CDFW and indicates timely response to wolf location information in situations of potential wolf-livestock conflict.

8.

9.11. Transparency and Public Disclosure. Prior to using lethal force to address chronic wolf depredation, and with adequate notice to the public, CDFW shall document and make publicly available on at least its website (a) the determinations and supported findings referenced in section (7) above (b) but with any personal information of landowners, lawful occupants or other relevant individuals redacted from public disclosure.

12. Duration of Chronic Depredation Lethal Take Authority. Chronic depredation lethal take authority expires [b] when wolf or wolves identified for lethal removal have been removed by...
CDFW: (b) 45 days after issuance of the take authority unless within that time period another qualifying depredation incident occurs by same wolf or wolves identified for lethal removal and non-lethal methods have continued to have been implemented; or (c) if CDFW determines wolf or wolves identified for lethal removal have left the ADW for more than just a short-term or seasonal movement outside the area’s boundary.

What is an “Area of Known Wolf Activity” and when/how is it designated?

An Area of Known Wolf Activity (AKWA) is an area which is designated by ODFW showing where resident wolves and/or packs have become established. AKWA designation is based on actual wolf data or information which is verified by ODFW, and not reports or other hearsay. AKWA’s are only designated in situations of repeated wolf use over a period of time. For example, a single photo or a set of tracks showing that a wolf may be traveling through an area would not be designated an AKWA.

When repeated wolf activity is established, ODFW will delineate AKWA boundaries using actual location data points. In situations where wolves are resident but location data is limited, ODFW will use a fixed circle of a size based on home range data from other packs. AKWA’s will periodically change as new information becomes available.

What does an AKWA mean to a livestock producer?

- ODFW coordinates with livestock producers within designated AKWA’s to discuss topics such as the Oregon Wolf Plan, current wolf management and conservation, how to recognize and report wolf activity, and appropriate non-lethal measures.
- Livestock producers within AKWA’s are encouraged to access the information associated with known wolves or packs.
- Producers are encouraged to implement non-lethal measures which are designed to minimize conflicts between wolves and livestock.
- Within an Area of Known Wolf Activity, an incident of depredation qualifies toward lethal control only if the landowner or lawful occupant of the land where the depredation occurred had:
  (i) At least seven days prior to the incident of depredation, removed, treated or disposed of all intentionally placed or known and reasonably accessible unnatural attractants of potential wolf-livestock conflict, such as bone or carcass piles or disposal sites, and
  (ii) Prior to and on the day of the incident of depredation, been using at least one non-lethal measure ODFW deems most appropriate to protect calving operations, nursing cattle, sheep operations, or other reasonably protectable situations, not including open range situations.
- In documenting the removal of unnatural attractants and implementation of conflict deterrence measures, the Department may rely upon documented personal observation and/or written statements by the owner or lawful occupant of the land to determine if an incident of depredation qualifies.

What is an “Area of Depredating Wolves” and when/how is it designated?

When ODFW confirms wolf depredation of livestock, an Area of Depredating Wolves (ADW) is designated for the purpose of focusing non-lethal deterrent measures. In some cases, the ADW may encompass the entire home range of a pack, but in others, it may only encompass a portion. Landowners and other
livestock producers can determine if their land is within an ADW by viewing the map associated with depredating wolves (see below for maps). ADW’s may be modified periodically based on new information.

What does an ADW mean to a livestock producer?

- Once an ADW is designated, ODFW will coordinate with affected livestock producers, landowners, and other relevant interests to prepare an area specific wolf-livestock conflict deterrence plan. The plan will be posted below.

- Under Oregon Administrative Rule OAR 635-110-0010(8)(a-c), some non-lethal measures from the conflict deterrence plan may be necessary before a depredation would qualify toward future lethal control actions.

- Within an Area of Depredating Wolves, an incident of depredation qualifies toward lethal control if the landowner or lawful occupant of the land where the depredation occurred had
  - Complied with the two AKWA qualification sections (i) and (ii) above, and
  - Prior to and on the day of the incident of depredation, was implementing at least one non-lethal measure identified in the area-specific conflict deterrence plan that is specific to the location, type of livestock operation, time of the year, and/or period of livestock production associated with the depredation. In open range situations, the conflict deterrence plan measure implemented by a landowner or lawful occupant must address wolf-livestock conflict.

- Human presence, when used as a non-lethal measure, is presence which could reasonably be expected to deter wolf-livestock conflict under the circumstances and may be considered an appropriate non-lethal measure if it: a) occurs at a proximate time prior to and in an area proximate to a confirmed depredation as determined by ODFW, and b) indicates a timely response to wolf location information in situations of potential wolf-livestock conflict.

- In documenting the removal of unnatural attractants and implementation of conflict deterrence measures, the Department may rely upon documented personal observation and/or written statements by the owner or lawful occupant of the land to determine if an incident of depredation qualifies.
Non-Lethal/Co-existence Measures to Minimize Wolf-Livestock Conflict

The purpose of co-existence/non-lethal strategies is to prevent, reduce or eliminate livestock-wolf conflicts. Awareness of all of the methods, tools and strategies currently available and how to effectively implement them are all essential to ensure success in reducing/eliminating wolf-livestock conflicts. It is the goal of this section to inform regarding the various methods, tools and strategies, and to provide guidance on the use of these techniques, based on experience in ranching communities in other states. That said, specific face-to-face training is the best way to learn, understand and then apply these measures in the field. It is the intent of the CDFW to provide opportunities for ranchers to have access to this face-to-face training in each county where wolves are likely to be present. The best outcome is no conflicts, both for livestock producers and wolves. Knowledgeable and diligent application of these strategies can minimize or eliminate conflicts.

The following is a list of non-lethal or preventative measures which are intended to help landowners or livestock owners minimize the risk of wolf predation on livestock. These measures should be required before other, more harmful measures can be applied (Yet to be determined). While ongoing research may identify new, additional measures not listed here, the following is a guide for non-lethal measures which are currently known to be the most effective in different circumstances.

CDFW may periodically update this list based on new research, information, and experience in working with wolves, landowners, and situations of wolf-livestock conflict. CDFW should work with the local committees when updating this document to make sure that the changes are feasible for the livestock owners.

Eliminating/Reducing Attractants – Bone Piles, Carcass Disposal Sites, or Other Known Carcasses/attractants

Application: General Removal: Wolves and many predators are attracted to dead animals and the presence of a single carcass can have the effect of attracting and keeping wolves in areas of livestock. Wolves
have a highly-developed sense of smell, and are attracted to dead animals even if that animal is many miles away from known wolf locations. When wolves become used to an easily-attained food source they may return to that area, which increases the risk of depredation. As a general practice, and specific to reduced wolf habituation, carcasses should be removed as quickly as possible. Removing dead or diseased livestock is a very important way to reduce conflicts.

**Description and Intent:** The physical removal or treatment of dead or diseased livestock greatly reduces the opportunity for conflicts. Removal may occur by hauling carcasses to a landfill or other appropriate location, or by burying in some situations (see Considerations and Limitations below). In situations where removal or burying is not an option, treatment of carcasses may include liming, covering up the carcass, or limiting access to the carcass via fladry or temporary predator-resistant fences. (We should consider if there is any way Wildlife Services or other public agencies could help in the removal. In the Blackfoot valley in Montana, FWS provides truck hauling from pick-up points 2X weekly)

**Regulatory Implications:** Unknown at this time.

**Documentation:** Landowners or livestock owners should document all carcass removal or treatment actions, and final disposition of carcass. All documentation should include date(s) of actions taken. **Allowable documentation would be:** notes in the herd book, notations on their production calendar, or receipts for costs associated with the removal.

**Appropriate Season & Area:** Year-round in all areas where possible.

**Considerations and Limitations:** Not all carcasses can be physically removed due to terrain or the condition of the carcass. In situations where a carcass cannot be removed, other options to discourage wolf use of these carcasses such as covering the carcass with lime, burying the carcass with lime, or limiting access to the carcass via fladry or barrier fencing should be considered. However, some of these measures must
comply with other land-use policies (i.e., U.S. Forest Service, BLM or State of California) and may not be allowed in certain situations. In addition, some landfills may not be authorized to accept dead animal carcasses.

In some situations, weather conditions (i.e., frozen, snow covered, or extreme wet/muddy) may prevent the removal of carcasses. When this occurs, carcasses should be removed as soon as possible, and temporary barrier fencing or fladry to prevent access may be appropriate as an interim measure.

Carcasses of natural prey species (i.e., deer and elk) are not generally considered unnatural attractants. However, if livestock are grazing in areas of dead natural prey species, those species should be removed, or livestock moved to locations away far away from those dead carcasses. In some cases wildlife carcass disposal sites may be identified as attractants and these should also be removed by the appropriate entity, or livestock grazing in those areas prohibited discouraged.

**Removal of injured or ill livestock:** Removal of sick or injured non-ambulatory livestock from pastures and open range in areas where wolves are present is important to prevent attraction of wolves to these particularly vulnerable animals. Livestock owners and their agents should provide immediate veterinary/medical attention to sick and/or injured animals. If it is feasible and proves to be beneficial for the safety of the livestock to remove the sick or injured animal than the rancher is encouraged to do so. Livestock owners and their agents should be on the lookout for sick or injured animals to provide immediate veterinary-care if the illness or injury is minor or to immediately remove the sick or injured animal from the grazing location if it is non-ambulatory.

**Human Presence as a Non-Lethal Measure**
**Description and Intent:** The underlying concept of increasing human presence as a deterrent to wolf depredation is that wolves tend to avoid humans. When human presence occurs in an area of simultaneous use by wolves and livestock, it is expected that wolves will move away and depredation will be reduced or eliminated. Human actions are often conducted with the primary intent of reducing or deterring wolf or other predator depredation, while at other times human presence may be passive or secondary to other ranching operations (e.g., all-night presence during calving, while wolves are in the area, would be expected to minimize wolf-livestock conflict).

**Regulatory Implication:** Unknown at this time for Calif. In Oregon, here is the rule: The 2013 rule (OAR 635-110-0010) requires that human presence, when used as a non-lethal measure, must: 1) occur at a proximate time prior to and in an area proximate to an ODFW confirmed depredation, and 2) indicates a timely response to wolf location information (such as text messages or other knowledge that wolves are in an area of potential conflict). By rule, human presence is defined as presence which could reasonably be expected to deter wolf-livestock conflict under the circumstances.

**Application:** Two approaches to using human presence as a deterrent are: 1) Regular or planned presence using range riders, herders, or other planned human guarding of livestock, and 2) Presence in response to alerts (i.e., texts, tracks, observations of wolf activity), wolf location information (not yet determined), or during susceptible depredation times (i.e., night, when wolves are known to be present in areas of livestock, etc.). Monitoring for signs of wolf activity, though not considered a non-lethal measure by itself, is important to help prioritize effective wolf-deterring presence. When provided on a limited, need-to-know basis, the locations of known wolf dens and rendezvous sites, as well as general wolf pack habits, can be helpful to specific livestock owners in that vicinity in keeping livestock away from conflicts.
Regular or Planned Human Presence – Range riders: Generally considered to be regular or sometimes continuous presence for the specific purpose of protecting livestock, range riders should patrol areas with wolves and of known wolf activity where livestock are present at hours when wolves are most active (dawn, dusk, night). The rider should use any information available to patrol in livestock areas with current wolf activity and should be equipped to actively haze wolves away from livestock when found, or move livestock to safer location. In areas of active depredation or in large areas with dispersed livestock, more than one range rider likely is necessary to provide adequate protection.

Range riders can manage grazing livestock near the core areas (dens, rendezvous sites) of wolf territories to minimize wolf-livestock interactions. Tools that may help this include placing watering sites, mineral blocks and supplemental feed away from wolf core areas. If available, it may also include temporarily switching grazing sites and moving livestock to another location. Range riders can be used to increase the frequency of human presence checking livestock in areas with wolves or when wolves are in the vicinity of livestock pastures. Range riders can be used to keep cattle distributed throughout pastures (as appropriate) and away from wolves while working to distribute grazing and improve forage utilization.

Herders or other Guarding: Directly applicable to sheep operations where human herding is a normal part of sheep ranching. Human presence in cattle operations via range riders should similarly become a normal part of cattle ranching in areas where wolves reside or travel through.

Human presence in sheep operations is typically a normal part of sheep ranching. Human presence in cattle operations via range riders should similarly become a normal part of cattle ranching.
Human Presence – Individual: This is human presence which may be additional to regular ranch operation and with the intent of deterring wolf-livestock conflict if wolves are present. Human presence should be flexible in approach, but should be tailored to situations when wolves are in proximity to livestock (i.e., may not be practical or expected when wolves are known to be in another area). Presence may be conducted by patrolling during active wolf periods such as dawn and dusk, and in situations such as calving or lambing periods; may be best to conduct at night when depredation is most likely to occur. It should also include monitoring and responding to information of wolf activity in areas of livestock. Though increased human presence may not prevent all wolf-livestock conflicts, it should be conducted in a manner which would reasonably be expected to deter wolf-livestock conflict; this would be determined based on frequency of wolf use, depredation patterns (i.e., depredation around calving areas), seasonal patterns of wolf and livestock use, and in conjunction with other known presence (i.e., range rider was in area last night so producer did not go out).

Documentation: Producers should document activities when human presence is used to deter wolf-livestock conflict. CDFW or other agency/individual presence which meets the above applicability standards should also be documented. Documentation could include, but is not limited to the following: dates, times, specific location, action taken, purpose or intent of action, and findings or results.

Appropriate Season and Area: All seasons, but should be tailored to livestock areas which are being used by wolves. Lambing and calving areas and periods should especially be prioritized if wolves are known to be in area.

Considerations and Limitations: With dispersed livestock grazing, range riders will need to cover as much area as possible or focus on the area where the wolves are known to roam. All increased human presence activities (i.e., range riders, herders, and individual producers) should consider information of wolf activity, areas of livestock use, and
recent depredation information to prioritize areas and times to best apply human presence. Herding livestock together, temporary fencing/fladry or moving them to safer locations within a grazing allotment should always be considered. Costs associated with any kind of increased presence will have the effect of increasing production costs. Agencies and affected livestock producers should consider pooling resources to increase human presence most effectively based on the situation. Human presence is dependent upon CDFW being able to share wolf location with the landowners and ranchers.

**Barriers – Fladry and Fencing**

**Description and Intent:** Fencing used specifically to deter wolves from livestock, may be permanent or temporary, and may be from a variety of fencing materials, depending on each situation. In general, fencing is considered when attempting to protect livestock in a small pasture, enclosure, or when stock is gathered in a reasonably protectable area. It is generally not applied to larger, open-range type of grazing operations. The type of barriers used is highly dependent on the type of livestock and conditions, but includes two general types as follows.

**Fencing:** May be effective, and often a good option for small numbers of livestock and/or small acreages or pens. Types of fencing vary and may include multiple-strand electric, mesh, panels, or other hard barriers. In some cases, existing fences may be augmented (e.g., by increasing effective height or by fladry) to protect against wolves at a lower cost than new permanent fencing. Fencing may also be used to create small temporary or permanent pens to protect livestock at night and may be used in conjunction with other measures such as noisemakers, guard animals, or lighting.

**Fladry and Electrified Fladry:** Highly portable and quickly installed, fladry can be used for a variety of livestock operations – sheep night penning, and some calving areas. Fladry consists of a line of rope from which are suspended strips of fabric or colored flags that will flap in a
breeze, intended to deter wolves from crossing the fladry-line. It may be applied to certain open range situations but is best used as mobile protection on a short term basis. Producers are encouraged to work with CDFW managers, or other knowledgeable agents to determine if fladry is appropriate. Fladry requires regular maintenance for effective use. In general, fladry is not intended for use over long periods of time in the same location because wolves may become habituated, and thereby reduce its effectiveness. CDFW or other organizations may develop cooperative fladry projects to assist producers with installing and maintaining fladry protection. Fladry enhances any permanent fence situation, and should be added to permanent pasture fences at times of the year when livestock are more vulnerable.

**Turbo-fladry (electrified)** – This is the use of fladry and electricity together for increased protection. It is more appropriate in more permanent fencing locations, like home-range grazing, or smaller pastures.

**Application:**

**Sheep:** Electrified hard-fencing is recommended for all small, protectable areas that have sheep. Open range night penning of sheep in portable fenced areas or fladry fences in areas of wolf use is highly recommended. Even with herders present, fladry may reduce depredation risk. Defined areas of lambing when wolves are present would also be an appropriate application for fladry. It is not recommended that lambing be done in large open range areas, but rather in lambing pens or locations close to human occupation and livestock guardian dogs (see below).

**Cattle:** Fencing options are generally used where cattle are confined to small pastures or pens. Some operators calve in smaller areas which could be appropriate for fladry or other fencing. If range riders are present in known wolf locations, tighter herding and use of fladry could be very helpful, especially during vulnerable times like evening.
Awareness of wolf locations and habits helps to better know when to apply fencing, fladry or turbo-fladry.

**Documentation:** It is recommended that livestock owners document when and how they use fladry or fencing, and the conditions under which its use was determined. This helps to better manage livestock over multiple-year periods, and helps to build a history of understanding and success/failure.

**Appropriate Season & Area:**

**Sheep:** All seasons for hard-permanent fences, but fladry is most appropriate for night penning on open range in areas of wolf use.

**Cattle:** Specific cattle pens or small pastures (often during winter months) or calving areas (calving season) for fences. Fladry is useful on open range when tightening the herd is possible. It can also be applied on larger home ranges if wolf presence is known. Fladry is NOT to be used over long periods due to wolf habituation. Its use in addition to permanent fencing is helpful for short periods (days to a couple of weeks).

**Considerations and Limitations:** Permanent fencing, though long lasting, is usually expensive and can often only be affordably applied to small areas. Fladry is much less expensive but can have limited availability on short notice. Fladry should be “on hand” so its use can be implemented quickly as circumstances mandate. Fladry, when determined to be an appropriate deterrent, is generally effective on a short-term basis, requiring the use of other tools (lights, noise makers, human presence), sometimes in conjunction with fladry, for longer-term deterrence.

Livestock animals which are fenced may require additional feeding which can increase the cost to the livestock owner. Some livestock may not respond well to confinement, which may also increase management
costs. Fencing on allotments must comply with grazing permit requirements, and may not be allowable in some cases.

Livestock Guardian Dogs and Other Guarding Animals

Description and Intent: Use of specific breeds of livestock guardian dogs or other animals with intent to protect livestock from wolves or other predators, discourage predators from exploring the flock or herd and to alert humans to predators in the area.

Application: Livestock Guardian Dogs (LGDs): Breeds such as Great Pyrenees, Anatolian Shepherd, Akbash, Pyrenean mastif, Spanish Mastif and other established guarding breeds. Livestock guardian dogs are often used in conjunction with herded livestock such as sheep, but may be used for cattle or other livestock species. Multiple dogs are recommended, but may depend on the level of wolf activity in the area, size of grazing area, and behavior characteristics of the dogs. It is important to have a suitable number of LGDs present to deter wolves. The goal is not active conflict between the dogs and wolves but an appropriate number of dogs to discourage wolf exploration and to alert the humans in the area responsible for the livestock. Some livestock owners use protective collars for dogs to prevent injury in case of conflict with wolves. Consultation with CDFW or other professionals may be necessary to evaluate the most effective guard dog strategy.

Other Animals: This may include the use of non-guarding dog breeds used to specifically alert herders of wolf presence. With this type of use, dogs must be protected from wolf attack. These dogs are not expected to be as effective as a group of LGDs to sound an alarm to humans on site. Other aggressive breeds of animals (i.e., donkeys, etc.) may help protect against wolves but should be considered experimental.

Documentation: Livestock owners should keep records of LGD use including numbers of animals, dates, areas, species protected, etc.
Experimental use of other guarding animals should be documented and coordinated with CDFW so that their effectiveness can be evaluated.

**Appropriate Season and Area:** All seasons. Wolves may be more aggressive towards dogs near den sites and rearing areas (rendezvous sites) and dogs are not recommended in these areas.

**Considerations and Limitations:** LGDs and other types of guarding animals must be appropriate for each grazing application. For example, a single guard dog in a large dispersed grazing situation would not be expected to provide adequate protection from or deterrent to predators or serve to alert humans.

Guard animals require specific training, care, oversight and precautions. Livestock owners using guard animals should seek advice on the use of this method from professionals or others with experience using these animals.

**Alarm or Scare Devices**

**Description and Intent:** This includes any combination of alarm system with lights and/or loud sounds which are used for the purpose of scaring wolves from areas of livestock. Primarily used for protection of defined/enclosed areas or small pastures, but in certain situations may be used to deter wolves from using a more general area (esp. calving/lambing pastures) or to alert livestock owners of the presence of wolves in the area. Using these devices in conjunction with fladry and human presence increases effectiveness.

**Application:** Radio-Activated-Guard (RAG) Devices: These are scare devices which are triggered by the signal from an approaching radio-collared wolf. Typically they are affixed to a fenceline. When activated they emit strobe light flashes and varying loud sounds. RAG devices may be available through CDFW (?) or other organizations. Coordinate with CDFW for information on placement and use.
Other Light and Sound Making Devices: These may be warranted in situations similar to above but where wolves are uncollared and could include a variety of lighting devices, such as Foxlights™ (lights which blink on and off in a rotating fashion), radios, music players, etc. Varying the sounds and frequently changing positions of the device will increase effectiveness and reduce the chance that wolves become habituated. Techniques such as lighted pastures or pens may be considered experimental (depending on situation) and should be coordinated through CDFW to determine if applicable.

Documentation: Producers should track use of devices, dates, times, locations, etc. In addition, proper function and effects of devices (on wolves) should be monitored and documented.

Appropriate Season and Area: Any season, but generally not expected to be effective in large areas, or areas with widely dispersed livestock.

Considerations and Limitations: RAG devices require the presence of a radio-collared wolf to activate. Wolf packs do not always travel together and depredation may occur by uncollared wolves even in the presence of a properly functioning device.

Scare devices are generally only effective for short-term use, and work more effectively when combined with fladry, or other deterrents in smaller areas. Wolves can easily become habituated to any type of fixed scare device or tactic, and devices should be varied by moving or changing the response.

Livestock Management/Husbandry Changes

Description and Intent: These are husbandry actions taken specifically to help avoid wolf-livestock conflicts. Actions taken may be tailored to each ranching situation and thus, not all actions used will be appropriate for all. Management actions may include but are not limited to switching or changing pasture use to avoid areas of wolf activity, night feeding, reducing length of calving period, birthing earlier to have larger calves.

Comment [42]:
11/13/14 12:07 PM
Rockwell
November 13, 2014 12:08 PM
why was the Foxlights deleted?

Comment [43]:
11/13/14 12:07 PM
Rockwell
November 13, 2014 12:08 PM
The birthing earlier process is to allow calves to grow larger before they are turned out on large allotments. History has shown that larger calves are less vulnerable to depredation.
on allotments, changing herd structure, developing more aggressive or protective livestock breeds, calving and lambing in a discrete defensible area rather than on the open range and possibly others. Actions should be considered individually for each producer and in some cases may be experimental.

**Application:** Changing pastures or grazing sites to avoid wolf use areas may be an option when wolf use data or recent depredation indicates area-specific problems. This may be most applicable when wolves show seasonal use of a particular area.

Night feeding can have the effect of bunching cows and calves into a common area where they would be less vulnerable to night predation. Night feeding may also affect birthing times of livestock (some animals do not give birth while their stomach is full).

Other techniques such as adjusting birthing seasons or shifting to more protective or aggressive breeds are typically long-term changes and may not be appropriate to solve immediate depredation situations. Mixing cattle with sheep may also be effective in some cases. The purpose here is to encourage producers to explore options to protect herds and to coordinate those efforts with CDFW so that all may continue to develop workable solutions.

Keeping calving or lambing areas away from areas known to be occupied by wolves can help prevent conflict. In the event there is known wolf activity in a producer’s calving or lambing areas, then protective fencing or fladry should be used around calving or lambing areas. Producers should also use lambing sheds during and immediately after lambing.

Changes in turnout of livestock that can be helpful, including turnout of calves onto forested/upland grazing pastures or allotments after calving is finished and once calves are larger (e.g., 200 lbs). Delaying turnout of livestock onto forested / upland grazing pastures or allotments...
until June 10th [or whatever date CDFW staff think pertinent for CA] when wild ungulates are born.

**Documentation:** Producers should track and document changes in herd management practices and coordinate closely with CDFW on how a particular husbandry practice may reduce wolf depredation. There is much to learn on which herd changes result in conflict reduction. Keeping track of outcomes of herd management changes helps everyone to employ effective strategies.

**Appropriate Season and Area:** All seasons and areas. However, practices associated with birthing livestock or management of newborn/young livestock should receive priority.

**Considerations and Limitations:** The effects of any particular action may be unknown in some cases and will be dependent on many factors. In some cases a practice may be experimental and close communication between producers and CDFW (for the purpose of reducing risk of wolf predation) will be important.

There may be costs associated with alternative grazing practices used to reduce wolf risk. Producers are encouraged to coordinate with CDFW, other state or federal agencies (Dept. of Ag, NRCS, RCD’s, etc.) and local Compensation Committees to determine resources available for implementing any changes.

Not all producers have grazing pasture options, or options may be dependent on other allotment plans. Individual producer coordination will be necessary to evaluate appropriate actions.

**Experimental Practices**

**Description and Intent:** A number of non-lethal and preventative practices (i.e., bio-fencing, belling cattle, using wolf-savvy cattle, shock collars, and possibly others) which may reduce depredation risk, but are not yet known to be effective, are being tested. Experimental practices
are encouraged but may require additional use to determine if they are practical, useful, and the conditions in which they would be most effective.

**Application:** Development and implementation of any unproven non-lethal action would require close coordination with CDFW, especially to ensure that a new method being tested was not, in fact, an attractant to wolves. Experimental practices will be evaluated based on their reasonable expectation to reduce depredation risk.

**Documentation:** Documentation of experimental practices will vary depending on the practice. Livestock owners who implement experimental practices must coordinate with CDFW to track use and effectiveness. The sharing of information and learned outcomes helps all livestock owners, and can lead to reduced conflicts for neighbors and other producers in California. Sharing with friends and neighbors is expected, but engaging CDFW and other agency people allows the learned information to be disseminated broadly, which helps everyone.

**Appropriate Season and Area:** May be implemented during any season or area.

**Considerations and Limitations:** Some experimental practices such as bio-fencing and shock collars on wolves require active involvement by CDFW to implement. In an effort to assist with costs of implementing, CDFW or other agencies/organizations may enter into cooperative agreements to implement experimental practices. *(Not sure what the requirements of the state are here)*
Wolf Advisory Groups

County Wolf Committees – The Department will create local committees to coordinate efforts to prevent wolf conflicts with livestock. These committees shall be made up of two individuals who are owners or managers of livestock, two individuals who support wolf conservation or coexistence with wolves, one individual with UC Cooperative Extension, one member appointed by the County board of supervisors, and one member of the public who is selected by the original six members of the committee. The Department of Fish and Wildlife will designate a staff person as a non-voting ex officio member of the committee. All members of the committee shall be residents of the county or region in which the committee is based.

The local committees will be regionally based (not sure if they need to be county based, or if you have a few that cover more than one county) and will meet at least once annually prior to wolves becoming established in California and at least twice annually once wolves are established.

The purposes of the committees are to:

- Encourage livestock producers to take proactive, preventative measures to decrease the risk of loss.
- Communicate with local livestock producers about effective non-lethal measures and provide training in the use of these methods.
- Gather feedback from livestock producers on the effectiveness of recommended non-lethal measures.
- Recommend research to improve management of wolves to reduce conflicts with livestock.
- Report the local impacts of the wolf presence to the State.

State Advisory Committee – The Department will create a statewide committee of interested stakeholders to advise the Department on areas of conflict. The Department has invested significantly in the creation of a wolf management plan for California prior to wolves becoming established in the state. This proactive effort should help to reduce conflicts by planning a management strategy prior to wolves’ establishment. However, creating a plan without fully understanding when, where, and how wolves will become established, leaves questions around whether the recommended actions will fully capture the potential management challenges that will present themselves. The role of the state advisory committee will be to recommend actions to the Department when situations occur that were not considered in the original plan, or were not believed to be necessary.

The Department will carefully consider information provided by advisory committee members in its decision making, including any recommendations it may make to the Fish and Game Commission concerning wolf conservation and management. CDFW will make the final decision regarding all products and final outcomes. Members are expected to express whether or not their represented group can accept what is being proposed and to explain why they can or cannot accept the proposed action. The Department will provide feedback regarding decisions it makes; this feedback shall articulate all views provided and how it determined its action, final decision, or outcome.

The advisory committee shall be made up of four representatives of agricultural interests, four representatives of wolf conservation interests, and four representatives of hunting organizations.

Comment [n1]: Not all northern counties have a UCCE agent with a livestock focus. We may want to have them be the first choice, but have a backup.

Comment [n2]: Not sure if we want to designate that the person should be from the County’s fish and game commission.
Ranchers, livestock producers and working timberland owners have a ‘need to know’ relative to wolf and wolf pack location in order to take action to prevent, reduce and/or eliminate wolf-livestock conflicts, and manage timber harvest to reduce impacts on wolves. However, distribution of location information could place wolves at greater risk resulting from individuals who have a desire to see wolves killed or harmed. Because these two competing realities exist, it is appropriate to craft policies that both help ranchers/livestock producers protect their livestock, and eliminate the likelihood of harm to wolves. The policies listed below are designed to accomplish these dual goals.

It is the goal of the CDFW and others to give the livestock community as many tools as possible to prevent possible conflicts. Of primary importance is the use and implementation of the nonlethal tools in conjunction with wolf location information. It is highly encouraged that those who could be impacted as wolves immigrate into California take the opportunity to learn about and implement these nonlethal tools. It is important to understand that nonlethal actions are effective only if (a) they are used together, not relying on any one action alone, but implemented in concert; (b) they are used correctly; and (c) they are the most appropriate actions for the specific livestock operation. CDFW will assist with educational opportunities, information distribution and financial assistance to allow these tools and strategies to be implemented correctly.

The wolf location information released pursuant to these policies is strictly limited to use by the recipient or his or her on-the-ground agent to implement earnest and verifiable efforts to prevent, reduce or eliminate conflict between livestock and wolves in a manner that can be readily confirmed by CDFW. A comprehensive process shall be established to ensure wolf location data shall not be distributed beyond the qualifying recipients who have livestock and/or ranches in the designated area, and who have met prevention criteria and agreed to use the information for that purpose.

As indicated elsewhere in this chapter, as wolves occupy and frequent a particular territory, CDFW will designate as areas on a map, posted to the agency’s website, Areas of Known Wolf Activity (AKWA). CDFW will then work with individual livestock owners whose livestock are present, or have property where livestock are grazed, within the AKWA to create polygons depicting where the individual livestock owner has livestock present. Wolf location information provided to qualifying individuals will consist of notification by CDFW that one or more radio-collared wolves have been detected as present, within the past 24 hours, within that individual’s polygon. The location of radio-collared wolves in California will be obtained by CDFW as a result of satellite detection of the collar’s signal and the downloading of that information every 24 hours, or as deemed necessary. CDFW will not provide point location information of any data points downloaded from the satellite but will provide...
notice to qualifying individuals that data obtained from the satellite indicate a wolf (or wolves, if more than one is radio-collared) was present within their polygon.

Allowance of location information sharing to individual ranchers will be allowed only if the following criteria are met:

1. The livestock producer has been briefed by CDFW or its agent on the rules and criteria for information receipt and confidentiality.
2. A confidentiality agreement with that individual has been read and signed, with original or copies provided to both CDFW and the signer. This agreement will allow the livestock producer and/or his/her on-the-ground agent(s) to receive the information. The agreement does not allow sharing or distribution of information, other than through verbal means, to any other entity unless CDFW or its agent approve.
3. The livestock producer receiving information has participated in a CDFW-sponsored program to learn and implement non-lethal predator management tools and conflict-reduction strategies.
4. The livestock producer receiving information is implementing CDFW (or agreed to implement when wolves are known to be in area) approved and verifiable non-lethal strategies to prevent, reduce or eliminate conflict in the grazing areas relative to possible wolf-livestock conflicts.
5. The livestock producer documents his/her use of non-lethal strategies and makes this information available to CDFW.
6. The livestock producer agrees to communicate with CDFW staff or agent about any conflict problems or issues that are of concern including any outcomes (successes/failures) that might result from the information sharing.
7. The livestock producer reports to CDFW the outcomes that result from the information sharing.

Violation of the agreement Agreement Violation: will result in the following:

The intention of information sharing is for the sole purpose of allowing the livestock producer to be pro-active in implementing approved tools to reduce or eliminate the possibility of conflict when wolves are known to be in the area. Misuse of the information sharing agreement may result in one or both of the following:

1. Violation of the confidentiality agreement will result in cessation of information-sharing with that individual for 12 months and notice to be posted on the CDFW website of the violation. The notice will indicate that a breach of confidentiality has occurred; it will not indicate the identity of the violator.
2. Any subsequent violation of the confidentiality agreement, whether by the same participant or another participant, will result in a review by CDFW of the wolf-location.
information-sharing program, and if CDFW determines that misuse of information is putting wolves at risk the program may be terminated.

3. Wolf location information used by the recipient for any purpose other than to implement approved and verifiable efforts to prevent, reduce or eliminate conflict between livestock and wolves will result in cessation of information-sharing with that individual for 12 months.

Comment [CWC3]: Program “may” be at risk – will be evaluated case-by-case.
Comment [k54]: Omit. All ranchers ought not be punished for the bad acts of one or two.
Comment [LE5]: This is saying the same thing as #1.
APPENDIX D
DRAFT PHASED WOLF CONSERVATION AND LIVESTOCK CONFLICT STRATEGIES
<table>
<thead>
<tr>
<th>Element/Phase</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
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<tbody>
<tr>
<td>A</td>
<td>Commence development of next phase when:</td>
<td>• Two successful breeding pairs for two consecutive years</td>
<td>• Six successful breeding pairs for two consecutive years</td>
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<td></td>
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<td>• CDFW will conduct status review at this time to examine CA wolf populations, prospects for the future of wolves in CA, and report to the Fish and Game Commission.</td>
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<tr>
<td>B</td>
<td>Conclude phase when:</td>
<td>• Four successful breeding pairs(^1) anywhere in California for two successive years</td>
<td>• Eight successful breeding pairs anywhere in CA, for two successive years</td>
</tr>
<tr>
<td>C</td>
<td>Co-existence and non-lethal strategies. Options include, but are not limited to:</td>
<td>Same for all three phases</td>
<td>Allowable and recommended in all 3 phases. Must be implemented before lethal management options are allowable. Implementation is necessary to prevent, reduce or eliminate conflicts.</td>
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<tr>
<td></td>
<td>• Reducing Attractants</td>
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<td>• Human presence</td>
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<td></td>
<td>• Barriers - Fladry and Fencing</td>
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<td></td>
<td>• Protection dogs and guard animals</td>
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\(^1\) A successful breeding pair is an adult male and adult female which produce at least two pups in a breeding season, all of which survive until December 31 of the year of their birth.

\(^2\) Four successful breeding pairs explicitly means at least sixteen living wolves at the end of a calendar year. In Oregon and Washington the existing data indicates that four successful breeding pairs are correlated with a range of 45-65 wolves at years end. These numbers are not intended to have meaning for CESA listing status.
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<tr>
<th>Element/Phase</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
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<tbody>
<tr>
<td>D</td>
<td>Non-lethal livestock depredation assistance by CDFW</td>
<td>Same for all phases</td>
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</tr>
<tr>
<td></td>
<td>• Alarm and scare devices</td>
<td>1. Provide technical information (e.g. telephone and email assistance, web access to information, local public meetings).</td>
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<td></td>
<td>• Livestock management &amp; husbandry changes</td>
<td>2. On-site evaluations and recommendations if requested by livestock producers.</td>
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<td></td>
<td>• Experimental practices</td>
<td>3. Focused disclosure when GPS collared wolves are detected within a geographic area (i.e. polygon) developed for a specific livestock producer. An information sharing agreement between CDFW and the livestock producer must be in place for this to occur. A commitment to not disclose provided information will be required.</td>
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<td>4. Short-term loan of equipment (e.g. fladry, RAG box, noisemakers). Individual agreements will set terms of the loan.</td>
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<td>5. Technical assistance, funding and approval for Wolf Damage Depredation Prevention Cooperative Agreements.</td>
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<td>E</td>
<td>CDFW Wolf Damage Prevention Cooperative Depredation Prevention Agreements (WDPCA) with livestock producers</td>
<td>Same for all phases</td>
<td></td>
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<td></td>
<td>• Implemented in priority counties with sympatric distributions of wolves and livestock. List of priority counties to be updated as needed, but at least annually by CDFW.</td>
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<td></td>
<td>• CDFW shall withhold 10% of available funding, on an annual basis, from regular allocation, as an emergency response fund.</td>
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<td></td>
<td>• Cost share (i.e. 50%) funding up to $10,000 annually by State for CDFW approved plans.</td>
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</tbody>
</table>

3 Potential Cooperating entities include: County Agricultural Commissioners, USDA Wildlife Services, University of California Cooperative Extension, Natural Resources Conservation Service
4 Funding priority will be established by relative scoring of all plans received during the designated application period which exceed a previously established minimum acceptable score.
<table>
<thead>
<tr>
<th>Element/Phase</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Plans are valid for 12 month period from time of approval and may be renewed or amended.</td>
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<td>● Plans are valid for 12 month period from time of approval and may be renewed or amended.</td>
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<tr>
<td></td>
<td>● CDFW may cap the funds to be allocated by county.</td>
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<td>● CDFW may cap the funds to be allocated by county.</td>
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<td>● On-site evaluation by CDFW required.</td>
<td>● On-site evaluation by CDFW required.</td>
<td>● On-site evaluation by CDFW required.</td>
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<td>● Livestock producer must report on implementation and effectiveness of the actions.</td>
<td>● Livestock producer must report on implementation and effectiveness of the actions.</td>
<td>● Livestock producer must report on implementation and effectiveness of the actions.</td>
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<td>● An evaluation by CDFW is required prior to amending or renewing an Agreement.</td>
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<td>● An evaluation by CDFW is required prior to amending or renewing an Agreement.</td>
</tr>
<tr>
<td>F Payments to livestock producers for wolf presence</td>
<td>Same for all phases</td>
<td>Same for all phases</td>
<td>Same for all phases</td>
</tr>
<tr>
<td></td>
<td>1. Implemented in priority counties with sympatric distributions of wolves and livestock. List of priority counties to be updated as needed, but at least annually by CDFW.</td>
<td>1. Applications by livestock producers will be scored based on a formula which accounts for wolf presence, number of livestock exposed to wolves, and implementation of non-lethal deterrents by the livestock producer.</td>
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</tr>
<tr>
<td></td>
<td>2. Applications by livestock producers will be scored based on a formula which accounts for wolf presence, number of livestock exposed to wolves, and implementation of non-lethal deterrents by the livestock producer.</td>
<td>3. Annual payments for wolf presence will be reduced by any amounts paid in compensation for confirmed depredation by wolves on livestock.</td>
<td>3. Annual payments for wolf presence will be reduced by any amounts paid in compensation for confirmed depredation by wolves on livestock.</td>
</tr>
<tr>
<td>G State managed livestock depredation compensation program</td>
<td>Same for all phases</td>
<td>Same for all phases</td>
<td>Same for all phases</td>
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<tr>
<td></td>
<td>1. Through CA Victim’s Compensation and Government Claims Board with supporting documentation by CDFW</td>
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<td>1. Through CA Victim’s Compensation and Government Claims Board with supporting documentation by CDFW</td>
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<td>2. Livestock producer must notify CDFW within 24 hours, or as soon as possible, of discovery of dead or injured livestock</td>
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<td></td>
<td>3. Protect the carcass(es) and site and provide access to CDFW or its agent to investigate</td>
<td>3. Protect the carcass(es) and site and provide access to CDFW or its agent to investigate</td>
<td>3. Protect the carcass(es) and site and provide access to CDFW or its agent to investigate</td>
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<tr>
<td></td>
<td>4. Any investigator must have been trained and approved by CDFW prior to responding.</td>
<td>4. Any investigator must have been trained and approved by CDFW prior to responding.</td>
<td>4. Any investigator must have been trained and approved by CDFW prior to responding.</td>
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<td>5. Any investigation will follow established protocols and provide substantive documentation to support any determination.</td>
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<td></td>
<td>6. File a claim within 6 months of CDFW determination of confirmed or probable wolf depredation</td>
<td>6. File a claim within 6 months of CDFW determination of confirmed or probable wolf depredation</td>
<td>6. File a claim within 6 months of CDFW determination of confirmed or probable wolf depredation</td>
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<td>7. 100% of fair market value for confirmed5</td>
<td>7. 100% of fair market value for confirmed5</td>
<td>7. 100% of fair market value for confirmed5</td>
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<td></td>
<td>8. 50% for probable</td>
<td>8. 50% for probable</td>
<td>8. 50% for probable</td>
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<td>9. After two confirmed depredation incidents in any twelve month period, future compensation for the affected producer is available only if that producer has applied for a Wolf Damage Prevention Cooperative Agreement with CDFW and the application is still active or has been approved.</td>
<td>9. After two confirmed depredation incidents in any twelve month period, future compensation for the affected producer is available only if that producer has applied for a Wolf Damage Prevention Cooperative Agreement with CDFW and the application is still active or has been approved.</td>
<td>9. After two confirmed depredation incidents in any twelve month period, future compensation for the affected producer is available only if that producer has applied for a Wolf Damage Prevention Cooperative Agreement with CDFW and the application is still active or has been approved.</td>
</tr>
</tbody>
</table>

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5 Process claims in the chronological order received and pay claims on a July 1-June 30 fiscal year basis until annual funds are exhausted.
<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Non-injurious harassment, including:</td>
<td>Same for all three phases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Air horns or whistles</td>
<td>• Allowed when wolves are within 100 yards</td>
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<td></td>
<td>• Firearm discharge aimed in a safe</td>
<td>of a residence (e.g., homes and garages),</td>
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<td>direction at an angle of 45° or more</td>
<td>agricultural structure (e.g. barns, shops,</td>
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<td></td>
<td>away from wolves</td>
<td>storage sheds, lambing sheds, corrals, pens,</td>
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<tr>
<td></td>
<td>• Cracker shells</td>
<td>other livestock confinement facilities,</td>
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<td></td>
<td>• Shouting</td>
<td>cages); commercial facilities including</td>
<td></td>
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<td></td>
<td>• Throwing objects</td>
<td>waste management sites, campsites</td>
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<tr>
<td></td>
<td>• Motion activated lights or sprinklers</td>
<td>or within 0.25 mile of livestock.</td>
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<td></td>
<td>• Using deterrent sprays</td>
<td>• Harassment is not allowed within 0.25</td>
<td></td>
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<tr>
<td></td>
<td>• Radio activated guard boxes</td>
<td>mile of known den or rendezvous sites.</td>
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<td></td>
<td>• Chasing wolves on foot or horseback for</td>
<td>CDFW will advise affected livestock</td>
<td></td>
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<td></td>
<td>no more than 0.5 mile</td>
<td>producers of these locations.</td>
<td></td>
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<tr>
<td>I</td>
<td>Injurious harassment⁷</td>
<td>1. Not allowed while federally listed</td>
<td>1. Same as Phase 2</td>
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<td></td>
<td>2. Not proposed in Phase 1</td>
<td>1. Allowed when specifically authorized by</td>
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<td></td>
<td>CDFW, subject to criteria for when, where</td>
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<td></td>
<td></td>
<td>and how this may be</td>
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</table>

⁶ Additional methods may become available during implementation of this plan
⁷ Defined as any harassment that causes any object to physically contact a wolf, including firearms discharging nonlethal ammunition (e.g. rubber bullets or bean bags) or using motorized equipment (e.g. an all-terrain vehicle, motorcycle, or four wheel drive vehicle) to follow or pursue a wolf.
<table>
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<tbody>
<tr>
<td></td>
<td></td>
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<td>implemented.</td>
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<tr>
<td>J</td>
<td>Lethal control for human safety&lt;sup&gt;8&lt;/sup&gt;</td>
<td>After Federal delisting, allowed when authorized by CDFW and carried out by CDFW or its agent. No limit on how many wolves can be removed for public safety.</td>
<td></td>
</tr>
</tbody>
</table>
| K            | Use of lethal control for management. Allowed when authorized by CDFW in Phases 2 and 3, if legal to do so, and carried out by CDFW or its agent. Allowed consistent with required preliminary measures. | 1. Not allowed while federally listed  
2. Not proposed in Phase 1  
3. Not currently allowed under State law | 1. Not allowed while federally listed  
2. If allowed under State law, managed consistent with the following criteria  
3. Allowed if the most recent annual statewide wolf population estimate increased by at least 5% compared to the preceding calendar year  
4. Allowed to the extent that total human caused mortality<sup>9</sup> in any year does not exceed 10% of the estimate of the statewide wolf population at the end of the preceding year | 1. Not allowed while federally listed  
2. If allowed under State law, managed consistent with the following criteria  
3. Allowed if the most recent annual statewide wolf population estimate decreased by no more than 5% compared to the preceding calendar year  
4. Allowed to the extent that total human caused mortality in any year does not exceed 15% of the estimate of the statewide wolf population at the end of the preceding year |

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<sup>8</sup> This is anticipated to be an extremely rare occurrence. Will be implemented when a wolf demonstrates aggressive action that has resulted in physical contact with a human; or a wolf exhibits an immediate threat to public health and safety, given the totality of the circumstances. Immediate threat refers to a wolf that exhibits one or more aggressive behaviors directed toward a person that is not reasonably believed to be due to the presence of responders. Public safety includes situations where a wolf remains a threat despite efforts to allow or encourage it through active means to leave the area.

<sup>9</sup> Human caused mortality includes public safety take, poaching, vehicle accidents, accidental death from trapping or hunting and any authorized lethal take for management.
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</thead>
<tbody>
<tr>
<td>L Lethal control of wolves</td>
<td>1. Not allowed while federally listed</td>
<td>Allowed when carried out by CDFW or its agent, consistent with Row J and the following criteria:</td>
<td>To be determined in the Phase 3 development process based on wolf population and legal status, best available scientific information and experience gained during Phases 1 and 2</td>
</tr>
<tr>
<td>depredating livestock</td>
<td>2. Not proposed in Phase 1</td>
<td>1. There have been at least two (three?) separate incidents of livestock depredation (i.e. death or injury) confirmed by CDFW in a six (other number?)-month period by the same wolf or pack</td>
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<td>5. Any lethal take shall be designed by CDFW to accomplish the specific intended purpose while avoiding or minimizing the potential population effects on wolves in CA.</td>
<td>5. Subject to additional requirements of the wolf-livestock conflict management strategy,</td>
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<td>6. Subject to additional requirements of the wolf-livestock conflict management strategy</td>
<td>6. Subject to additional requirements of the wolf-ungulate conflict management strategy</td>
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<td></td>
<td>7. Subject to additional requirements of the wolf-ungulate conflict management strategy</td>
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<tr>
<td>calendar year</td>
<td></td>
<td>population at the end of the preceding calendar year</td>
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<tr>
<td>5. Subject to additional requirements of the wolf-livestock conflict management strategy</td>
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<tr>
<td>6. Subject to additional requirements of the wolf-ungulate conflict management strategy</td>
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<td>Element/Phase</td>
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<td>2. Non-lethal deterrent methods recommended by CDFW to the producer after the first depredation incident are being implemented or the producer is working toward prompt implementation</td>
<td>3. Restricted to wolves in packs confirmed by CDFW to have depredated livestock</td>
</tr>
</tbody>
</table>