



**Meeting Report  
Stakeholder Working Group  
Meeting on Wolves in California  
December 18, 2014**

California Department of General Services  
Hearing Room  
1500 Capitol Ave.  
Sacramento, CA 95814



Photo Courtesy of Gary Kramer

**California Department of Fish and Wildlife**

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## **1.0 Introduction**

On December 18, 2014 the California Wolf Stakeholder Working Group (SWG) convened in the Hearing Room at 1500 Capitol Ave. in Sacramento. This was the final meeting of the SWG, and was intended to complete their efforts toward the development of a draft California wolf plan. The group's previous meeting took place on September 9, 2014 at the California Dept. of Fish and Wildlife's Office of Training and Development in Sacramento, CA.

## **2.0 Meeting Objectives and Mechanics**

The stated objectives for the meeting were:

- Brief SWG on remaining CWP review schedule and public process
- Discuss outstanding items for inclusion in Public Review Draft
- Provide SWG suggestions/feedback on items for future iterations of the CWP

The meeting was attended in person by the meeting facilitator Mr. Sam Magill, 15 stakeholders, five CDFW staff, and one U.S. Fish and Wildlife Service (USFWS) staff. Also in attendance was one member of the public. Appendix A provides a list of participants, their affiliations, and their contact information. The meeting agenda is provided in Appendix B.

## **3.0 Meeting Outputs**

The SWG's standing ground rules are:

- Seek to learn and understand each other's perspective
- Encourage respectful, candid, and constructive discussions
- Provide balance of speaking time
- Seek to resolve differences and reach consensus
- Discuss topics together rather than in isolation
- Make every effort to avoid surprises
- Limit sidebars
- Turn off cell phones/switch to non-ring mode

The SWG's goals as presented in the group's operating principles are:

1. If and when wolves establish in California, seek to conserve biologically sustainable populations of wolves in the state
2. Manage the distribution of wolves in the state where there is adequate habitat
3. Manage native ungulate populations in the state to provide abundant prey for wolves and other predators, intrinsic enjoyment by the public, and harvest opportunities for hunters

4. Manage wolf-livestock conflicts to minimize livestock losses
5. Communicate to the public that natural dispersal of wolves into California is reasonably foreseeable given the expanding populations in the Pacific Northwest, inform the public with science-based information of gray wolves and the conservation and management needs of wolves in California, as well as the effects of having wolves in the state

## **Welcome, Introductions, and Logistics**

Because this was the last planned meeting of the SWG, Department staff expressed their gratitude to SWG members for their participation in and contributions to the wolf planning process.

## **Review Agenda and Ground Rules/Operating Principles**

Next, Mr. Magill provided an overview of the meeting agenda, and Ms. Kovacs conveyed a message from Senator Ted Gaines in which he expressed his appreciation to all stakeholder group members for their participation in the wolf planning process.

## **Summary of Subgroup SWG Meetings**

### Combined Wolf Conservation and Wolf-Livestock Interactions Subgroups Meetings

Mr. Pat Griffin reported on the two combined subgroup meetings that occurred in November. Most of the effort was in developing the wolf depredation strategy.

Topics discussed during the first meeting included how the Department will:

- Respond to depredations
- Implement a nonlethal program
- Consider lethal take if statutory changes occur to allow it
- Share wolf location information
  - How specific the information should be
  - How large the polygons should be
  - Confidentiality of the information (there is a risk of the information being shared improperly with people intending to harm wolves)

Topics discussed during the second meeting included:

- The likelihood of neighboring ranchers remaining mute on the information they receive about wolf locations (may not be realistic to expect people to not communicate with their neighbors)
- What authority the Department will have to limit information sharing

- Nonlethal coexistence measures
  - A draft document was produced suggesting the measures a rancher could take to help reduce impacts to his operations

### Wolf-Ungulate Interactions Subgroup Meeting

This group followed a similar approach to the other subgroups, in that they discussed a table of proposed strategies to use in different situations, in a phased approach to wolf conservation. Members of the group provided the following comments on the final meeting of this subgroup which occurred on October 14:

- Under the phased approach proposed by the Department, there will be little anyone can do if wolves deplete an elk or deer herd
- The strategy does propose to gather the information necessary to make informed decisions about ungulate and wolf conservation
- The proposed assessments will require funding that may be difficult to obtain

### **Discussion of California Wolf Plan Review Schedule**

At this time, Task 1 is underway and nearing completion, Tasks 2 and 3 are complete, and Tasks 4 and 5 have been initiated. Tasks 6 through 12 constitute the remainder of the wolf planning process. Discussion of some of the tasks is summarized below. Members were assured that they will have additional opportunity to provide comments as an individual (as opposed to as a stakeholder member) during the public comment period. Appendix C contains a copy of the current version of the Wolf Plan Schedule.

In the context of discussing the schedule, members asked whether the Fish and Game Commission (FGC) will formally adopt the wolf plan, or if such plans are solely the purview of the Department. Staff responded that, while such plans are Department products, if they contain elements that would require amendments to statute or regulations to be enforceable, it is best practice to solicit feedback from the FGC.

Task 4: The Department is currently evaluating if the wolf plan must comply with the California Environmental Quality Act (CEQA). The comments received from the peer reviewers will inform the discussion about the need for CEQA compliance.

Task 5: Some members asked about the identity of the external peer reviewers, so Department staff explained that the complete set of peer reviewer's comments, as well as their identities, will be made available sometime after all comments have been received. This will ensure that reviewers are able to complete their reviews without influence from interest groups. After significant discussion, Department staff also agreed to extend the deadline for SWG comments on the plan until January 12<sup>th</sup>.

Tasks 7 & 8: The public review process will begin with the release of the public draft of the plan. The public will have approximately one month to review the document, during which time there will be at least two public meetings held. The dates for that period are currently scheduled for February 16<sup>th</sup> through March 20<sup>th</sup>, 2015, but may be revised depending on unforeseen issues. The format and locations of the public meetings are as yet undetermined. Staff will consider holding an afternoon question and answer session via webinar or open house prior to the evening meetings which would allow the public to get more detailed answers to their questions.

Tasks 10 & 11: The Department has attempted to solicit input from California Tribes without success, but now has a dedicated Tribal Liaison who may be able to facilitate that coordination. With respect to the federal land management agencies (US Forest Service [USFS] and Bureau of Land Management [BLM]), Department staff need additional internal discussion as to the most appropriate approach to that coordination. It is likely to occur as Department input to those agencies when they update their land management or forest plans.

Minority Report: The idea of a minority report to the public was revisited. Such a report would constitute one member's or one group's statement of dissent from a particular provision(s) of the plan. Members asked Department staff when it would be most appropriate to draft such a report, should they consider it necessary to inform the public of their dissent. Staff requested that members wait for the final draft at which point they may decide whether a minority report will or will not be necessary.

## **Remaining Items for Inclusion in the Wolf Plan**

### Wolf Advisory Council Concepts

Ms. Noelle Cremers, who provided leadership in drafting this document, gave the group an overview of the concept. She began the draft by reviewing the advisory council structures set up by Oregon and Washington, and merging and revising them to suit California's needs. The draft presented today (Appendix D) represents that effort, with some additional revisions put in place by the Department. The idea is to convene local committees in areas where wolves are most likely to establish. These committees will consist of local residents whose responsibility it will be to educate producers about nonlethal deterrence methods, and to solicit producers' feedback on the effectiveness of those methods. These groups will then inform a state-level committee whose role it will be to advise the Department on the implementation of nonlethal strategies, and feedback on the effectiveness of the wolf plan.

Topics discussed included:

- Composition of the local committees. Suggestions included local producers, UC Extension, USFS and/or BLM, County Agriculture Commissioner, local Fish and Game Commissioners, instructors in range management and/or natural resources management, and wildlife conservation organizations.
- Whether composition of the state-level committee should be representative of public opinion of wolves statewide, or that of Northern California only. Statewide representation would better reflect the 80% favorable opinion of wolves by California's public. Department staff suggested that breadth of experience in an advisory group is more important than their opinions of wolves.
- Whether Oregon and Washington are successfully implementing their advisory committees. Oregon has local committees which help to implement the depredation compensation program, but no statewide committee. Washington uses a statewide approach without the local groups, and has had limited effectiveness.
- Whether and by what process these groups would have any influence in managing wolf-related conflicts involving either livestock or wild ungulates as long as wolves remain listed as endangered.
- Whether the Department should provide facilitation to the local committees when they meet.
- Incorporating an educational requirement specifying ongoing training for these groups at some predetermined interval.

Department staff asked SWG members for comments to improve the concept by January 12<sup>th</sup>. In particular, they requested help in improving the bullet points that list the objectives for the committees.

#### Wolf Coexistence Measures Concept

Mr. Mark Rockwell presented the overview of this document. The basic idea was to include a resource in the plan that gives the livestock production community information on nonlethal techniques and measures they can use to minimize conflicts with wolves. Many of these were drawn from the brochure published by the Defenders of Wildlife and have been used by producers in other states. However it is important to note that their success depends on how well they are implemented, and on situations specific to each producer. As a result flexibility in their use impacts their effectiveness. The local committees will be an important avenue for providing the information contained in this document, and any new techniques developed in future, to local producers.

Topics discussed included:

- Some members requested rewording “eliminating conflict” in the document since it is unlikely that will occur, and it conveys unreasonable expectations and possibility of blame if measures don’t work.
- Producers who find themselves impacted by wolves will seek help in mitigating their losses. Consider presenting this as an offer of help as opposed to a list of things they must do. It will also be important to convey honestly that some measures may not be effective. The local advisory committee will be helpful with this outreach.

Members were asked to provide their comments on this document by January 12<sup>th</sup>.

### **Wolf Plan Review**

Stakeholders were provided a preliminary draft of the wolf plan to review on December 3<sup>rd</sup>, 2014. The objective for this section of the meeting was for SWG members to provide Department staff with general comments and questions regarding the content of the plan, rather than detailed spelling and grammatical edits.

Topics discussed included:

- The inclusion of a provision for relocating wolves if they are found to be impacting a local deer or elk population, when many members had expressed no interest in considering that provision. Staff responded that the provision was left in place when there was no specific call to remove it by the Wolf-Ungulate subgroup.
- Because many Department staff contributed to the drafting of the document, they should be named as contributors in addition to the main chapter authors.
- Provide more specificity with respect to the actual number of wolves that are expected to occur in a population given some number of successful breeding pairs. For example when Oregon had 4 pairs, their total population was about 65.
- Specify the goals for how many wolves the Department plans to fix with telemetry collars for tracking purposes.
- Get Native American outreach in place.
- The plan is missing a scientific justification for using 4 breeding pairs for 2 years as a trigger to switch to Phase 2.
- There is no language that explains what the backup plan would be if the proposed regulatory/statutory changes don’t occur, which would mean that any proposed lethal take in Phase 2 cannot be used. The public may perceive that the rest of the plan is then invalid.
- Whether potential impacts of wolves on California’s elk population will be discussed in the plan, or in a subsequent CEQA document. Staff explained that any impact is speculative at this point, and the Department has not yet



determined if the plan meets CEQA criteria as a project since it only proposes to respond to wolf recolonization, and does not propose a physical change in the environment that is a discretionary decision by a lead agency.

- Consider including additional language on coordination with private land/forest managers.
- Consider including the findings of Wielgus et. al. 2014 that discusses whether lethal take of wolves for livestock depredation reduces livestock depredation, as well as having a conversation with Dr. Wielgus.
- Suggesting changes to statute to allow for lethal control of wolves for impacts to native ungulates is of concern. There is no mention of requiring scientific evidence that wolves are the primary cause of decline of an ungulate herd, or that other environmental factors may be involved in the decline.

Department staff requested stakeholders include specific language or strategies for consideration when they submit their comments on the plan on or before January 12<sup>th</sup>.

### **Discuss SWG Closeout**

The final topic of discussion at this meeting was whether the stakeholders would consider drafting a “majority report” for inclusion in the final draft plan. The report would characterize for the public what the process and the role of the stakeholder members has been in helping the Department to draft the plan. Some members expressed reluctance until they have seen the content of the document, as they do not wish to overstate their concurrence with the plan’s contents. Mr. Damon Nagami volunteered to draft the report for members to review.

### **Action Items**

- Update wolf plan schedule from 1/5/15 to 1/12/15 to reflect revised deadline for SWG comments on the draft plan.
- Members will provide comments on Draft CA Wolf Plan by 1/12/15.
- Members will provide comments on Wolf Advisory Committees and Wolf Coexistence Measures documents by 1/12/15.

## APPENDIX A WORKSHOP PARTICIPANTS

Name	Affiliation	Email
<b>Stakeholders</b>		
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<b>U.S. Fish and Wildlife Service Staff</b>		
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<b>Public Participants</b>		
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## **APPENDIX B**

### **AGENDA**

California Department of Fish and Wildlife (DFW)  
California Wolf Stakeholders Working Group (SWG) Meeting  
1500 Capitol Ave; Hearing Room\*  
December 18, 2014

9am-4pm

**Objectives:**

1. Brief SWG on remaining CWP review schedule and public process
2. Discuss outstanding items for inclusion in Public Review Draft
3. Provide SWG suggestions/feedback on items for future iterations of the CWP

**Agenda\*\***

- |  |             |
|--|-------------|
| <b>1. Gather in the meeting room</b>   | <b>9:00</b> |
| <br>   |             |
| 2. Welcome, Introductions and Logistics<br><i>Karen Kovacs, DFW</i><br><i>Sam Magill, Kearns &amp; West</i>  | 9:15        |
| <br>   |             |
| 3. Review Agenda and Ground Rules/Operating Principles<br><i>Sam Magill, Kearns &amp; West</i>   | 9:15        |
| <br>   |             |
| 4. Summary of subgroup SWG meetings/future meetings<br>a) Wolf Conservation/Wolf Livestock- Pat Griffin<br>b) Wolf Ungulate- TBD   | 9:30        |
| <br>   |             |
| 5. Discussion of California Wolf Plan Review Schedule<br><i>DFW Staff</i><br><i>All</i><br>a) SWG<br>b) Peer Review<br>c) Public Review and Meetings<br>d) CEQA Review<br>e) Tribal Consultation | 10:00       |

\* A map is available online [here](#).

**\*\*Agenda items and times are subject to change as needed. Conference call information available upon request- contact Sam Magill for more information at [smagill@kearnswest.com](mailto:smagill@kearnswest.com)**

**\*\*\*Please join us after the meeting at Devere's Irish Pub to celebrate your hard work as part of the SWG process!!**

6. Remaining Items for inclusion in the Wolf Plan	10:30
a) Wolf Advisory Council Concept	
b) Wolf Co-Existence Concept	
<i>DFW Staff</i>	
<i>All</i>	
<b>LUNCH</b>	<b>12:00</b>
7. Wolf Plan Review	1:00
a) What <i>concepts or general topics</i> would you like to see in the Phase 2 update?	
<i>DFW Staff</i>	
<i>All</i>	
<b>BREAK</b>	<b>2:30</b>
8. Wolf Plan Review (Continued)	2:45
<i>DFW staff</i>	
<i>All</i>	
9. Discuss SWG Closeout and Public Review Processes	3:15
<i>All</i>	
10. Public Questions	3:45
<i>All</i>	
11. Wrap Up and Action Item Review	3:55
<i>Sam Magill, Kearns &amp; West</i>	
<b>Adjourn***</b>	<b>4:00</b>

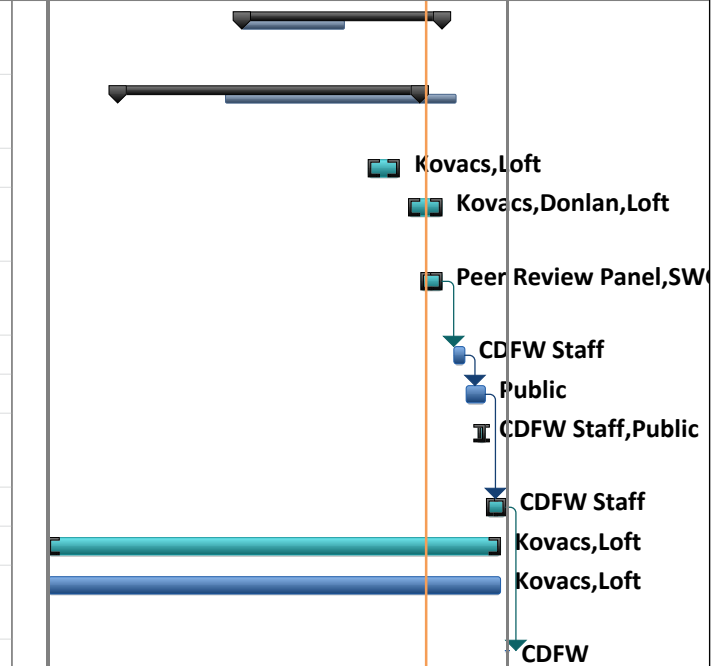
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**APPENDIX C**  
**CALIFORNIA WOLF PLAN SCHEDULE**

ID	Task Name	Resource Names	Start	Finish	2013				2014				2015				2016
					Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
1	<b>Task 1 - Wolf Stakeholder Working Group</b>	Kovacs,Loft,Stopher,Conve	Wed 1/29/14	Mon 1/5/15													
10	<b>Task 2 - Write Preliminary Draft CA Wolf Plan</b>	CDFW Staff	Mon 7/1/13	Fri 11/28/14													
25	<b>Task 3 - Select Peer Review Panel</b>	Kovacs,Loft	Tue 9/2/14	Fri 10/24/14													
26	<b>Task 4 - Evaluate Necessity for CEQA compliance</b>	Kovacs,Donlan,Loft	Mon 11/10/14	Mon 1/5/15													
27	<b>Task 5 - SWG and Peer Review of Draft</b>	Peer Review Panel,SWG	Mon 12/1/14	Mon 1/5/15													
28	<b>Task 6 - Write Public Review Draft</b>	CDFW Staff	Mon 1/26/15	Fri 2/13/15													
29	<b>Task 7 - Public Review of Draft Plan</b>	Public	Mon 2/16/15	Fri 3/20/15													
30	<b>Task 8 - Public Comment Meetings (2)</b>	CDFW Staff,Public	Mon 3/9/15	Fri 3/20/15													
31	<b>Task 9 - Write Final CA Wolf Plan</b>	CDFW Staff	Mon 3/23/15	Fri 4/24/15													
32	<b>Task 10 - Coordinate With Tribes</b>	Kovacs,Loft	Mon 3/4/13	Wed 4/15/15													
33	<b>Task 11 - Coordinate With Federal Land Managers</b>	Kovacs,Loft	Mon 3/4/13	Wed 4/15/15													
34	<b>Task 12 - Public Release of Final Wolf Plan</b>	CDFW	Mon 4/27/15	Mon 4/27/15													



Project: Rev. CA Wolf Plan Schedule Date: Wed 12/10/14	Task		External Milestone		Manual Summary Rollup	
	Split		Inactive Task		Manual Summary	
	Milestone		Inactive Milestone		Start-only	
	Summary		Inactive Summary		Finish-only	
	Project Summary		Manual Task		Deadline	
	External Tasks		Duration-only		Progress	

**APPENDIX D**  
**WOLF ADVISORY GROUPS CONCEPT**



## **Wolf Advisory Groups**

### Local Wolf Advisory Committees (LWAC)

#### **A. Objectives**

CDFW will facilitate creation of local committees to:

- Provide a forum for identifying and discussing issues related to wolf recovery as they apply to the specific local area
- Provide a forum for identifying and discussing issues related to wolf recovery as they apply to the entire state of California
- Encourage livestock producers to take proactive, preventative measures to decrease the risk of wolf depredation 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.
- Implement data collection in a systematic and standardized manner such that it can be used to quantify depredation impacts and effectiveness of non-lethal deterrent methods.
- Recommend research to improve and develop ongoing non-lethal management methods designed to reduce potential wolf conflicts with livestock.
- Report any local impacts, positive and negative, of wolf presence to the State.

Initially, CDFW will work to establish these committees in Siskiyou, Modoc and Lassen counties. This outreach will expand to other counties when wolves are documented in those counties. If it becomes more practical to establish these on a regional level (e.g. a two county area), considering preferences of local members of the community and availability of willing participants, CDFW will do so.

#### **B. Membership of the LWAC**

These committees shall be made up of two individuals who are owners or managers of livestock, two individuals who support wolf conservation and coexistence with wolves, one local representative of the U.S. Forest Service or Bureau of Land Management whose duties include management of grazing allotments, 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.

CDFW recommends the committee consider the following for selection as the seventh member:

- A representative of UC Cooperative Extension
- County agricultural commissioner
- An instructor in range management or natural resources conservation from a local college

CDFW 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.

### C. Meeting Schedule

The local committees will meet at least twice annually upon adoption of the Wolf Plan.

### State Wolf Advisory Committee (SWAC)

#### A. Objectives

CDFW will create a statewide committee of interested stakeholders to:

- Provide a forum for identifying and discussing issues related to wolf recovery as they apply to the entire state of California
- Review implementation of the California Wolf Plan for the purpose of evaluating perceptions of where it is working well, and where changes may be warranted
- Communicate directly with the primary stakeholder groups on status of wolves in California, including distribution, abundance, consequences for livestock and ungulate populations, and human safety

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.

#### B. Membership of the SWAC

The advisory committee shall be made up of four representatives of agricultural interests, four representatives of environmental groups supporting wolf conservation, and four representatives of organizations supporting conservation, including hunting opportunity, of wild ungulates.

### C. Meeting Schedule

The advisory committee shall meet at least twice annually, in Sacramento, following finalization of the Wolf Plan.

**APPENDIX E**  
**WOLF COEXISTENCE CONCEPT**

# CO-EXISTENCE MEASURES TO MINIMIZE WOLF-LIVESTOCK CONFLICT<sup>1</sup>

The goal of this document is to review various methods, tools and strategies, and to provide an introduction to the use of these techniques, based on experience in other states. It is the intent of the CDFW to provide technical assistance for ranchers, including training in each county where wolves are likely to be present. The best outcome is one with no conflicts, both for livestock producers and wolves. Measures which can be reasonably applied in a particular circumstance must be implemented before other, more harmful measures, specifically injurious harassment or lethal take can be used. CDFW may periodically update this list based on new research, information, and experience in working with wolves, landowners, and situations of wolf-livestock conflict.

The following is a list of potentially effective tools to assist livestock producers in reducing or eliminating wolf-livestock conflicts. Successful use depends on many factors, and all, some or possibly none may be applicable for any particular livestock situation.

## **1. Eliminating Attractants – Bone Piles, Carcass Disposal Sites, or Injured Livestock**

**a. Description and Intent:** The physical removal or treatment of dead or diseased livestock greatly reduces the opportunity for conflicts. Wolves and other predators will scavenge dead animals and a single carcass can attract and keep wolves in areas of livestock. Wolves have a highly-developed sense of smell, and can detect carcasses from a considerable distance. When wolves exploit an easily-attained food source they will likely remain nearby or return to the site, which may increase the risk of depredation. As a general practice, and to reduce wolf habituation, carcasses should be removed as quickly as possible. Removing dead or diseased livestock is a very important way to reduce conflicts.

**b. Application:** Removal may occur by hauling carcasses to disposal in a landfill (where legal or available) 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 (consistent with water quality laws), covering up the carcass, or limiting access to the carcass via fladry or temporary predator-resistant fences. Covering a carcass with a black plastic tarp to accelerate decomposition, and fencing with temporary electric fencing may be an option when removal or burial is not practical.

**c. Documentation:** Landowners or livestock owners should document all carcass removal or treatment actions, and final disposition of carcass (es). Documentation may be accomplished with photographs, notes in a herd book, notations on a production calendar, receipts for expenses, or other records. Useful information may include date(s), locations, livestock species, number of carcasses and methods.

**d. Appropriate Season & Area:** Whenever wolves and livestock are present in the same area.

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<sup>1</sup> Adapted from original document prepared by Oregon Department of Fish and Wildlife

**e. Considerations and Limitations:** Not all carcasses can be physically removed due to terrain, accessibility, or physical condition of the carcass. In some situations, weather conditions (i.e., frozen, snow covered or extreme wet/muddy) may delay or prevent removal. 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.

**f. Removal of injured or sick 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. If animals are injured cannot be moved it is important to isolate and protect those animals, and contact a veterinarian.

## **2. Human Presence**

**a. Description and Intent:** The underlying concept of 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 may move away and depredation will be reduced or eliminated. Human actions may be conducted with the primary intent of reducing or deterring wolf or other predator depredation, while at other times human presence may be incidental to other ranching operations (e.g., human presence during calving, is likely to minimize wolf-livestock conflict).

**b. Application:** Two approaches to using human presence as a deterrent are:

### **i. 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 of known wolf activity where livestock are present, especially 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 a 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 feasible, 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.

**Herding or other Guarding:** Especially applicable to sheep operations where human herding is a normal part of sheep ranching. This measure is particularly useful if herders are present and active at night when sheep are gathered or in bedding areas – and effectiveness is increased if a herder is working with guarding animals and/or fladry to protect sheep. Where and when

possible, additional herders may be needed in areas of high wolf activity to specifically work at night when depredation is most likely to occur.

**ii. Human Presence in Response to Known Wolf Sign/Activity:** This is human presence in addition to regular ranch operation and with the intent of deterring wolf-livestock conflict. Human presence should be flexible in approach and used when wolves are in proximity to livestock (i.e., it may not be practical or useful when wolves are known to be in another area). Presence may be focused by patrolling during periods of increased wolf activity such as dawn and dusk. In calving or lambing periods; it may be best to patrol 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 presence in the area, depredation patterns (i.e., depredation around calving areas), seasonal patterns of wolf and livestock use, and in conjunction with other known human presence in the area (i.e., range rider was in area last night so producer did not go out).

**c. 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 may include, but is not limited to: dates, times, specific location, action taken, purpose or intent of action, and results.

**d. 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 are especially important if wolves are known to be in area.

**e. Considerations and Limitations:** With dispersed livestock grazing, range riders may need to cover as much area as possible or focus on the area where wolves have been observed. 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. Although livestock producers may be aware of wolf presence through their own observations, human presence as a deterrent method is facilitated by CDFW being able to share wolf locations with the landowners and ranchers.

### **3. Barriers**

**a. 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 in open-range grazing operations. The type of barriers used depends on the type of livestock and conditions, but the general types are as follows;

Fencing: May be effective for small numbers of livestock and/or small acreages or pens. Types of fencing 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 be used in conjunction with other measures such as noisemakers, guard animals, or lighting.

Fladry: Highly portable and quickly installed, fladry can be used for a variety of livestock operations including sheep night penning, and calving areas. Fladry consists of a line of rope from which is suspended strips of fabric or colored flags that will flap in a breeze. 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, which will reduce its effectiveness. CDFW or other organizations may 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 most 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.

#### **b. Application:**

Sheep: Electrified fencing is recommended for 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.

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 from dusk through early morning.

Livestock Working Animals: In areas of regular wolf use, fencing or other protective barriers to protect livestock working dogs should be considered. This is especially important if dogs are left unattended by humans.

**c. Documentation:** Producers should document the dates, areas, type and amount of fencing used as a non-lethal measure to reduce wolf depredation.

#### **d. Appropriate Season & Area:**

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

Cattle: Suggested for 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 for use 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).

**e. 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), 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.

#### **4. Livestock Guardian Dogs and Other Guarding Animals**

**a. 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.

**b. Application:**

Livestock Guardian Dogs (LGDs): Includes breeds such as Great Pyrenees, Anatolian Shepherd, Akbash, Pyrenean Mastiff, Spanish Mastiff, among others. 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 that 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 enough LGDs present to discourage wolf exploration, provide protection for the dogs themselves and to alert the humans responsible for the livestock. LGDs cannot be expected to fight off or kill wolves. 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 as herding dogs or companions. If these dogs are present they too will need protection. These dogs should not be expected to be as effective as 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.

**c. 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.



**d. Appropriate Season and Area:** All seasons. However, wolves are likely to be more aggressive towards dogs near den sites and rearing areas (rendezvous sites) because adult wolves see them as a threat to the pups. Hence, during times when wolf pups are present, at either the den site or rearing site, it is recommended to suspend the use of LGD's until the pups are large and moving with the pack, and apply other non-lethal strategies during this period. The purpose of this recommendation is to prevent unnecessary risk to the dogs.

**e. 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. Additionally, LGDs are not recommended around spring time den or rearing (rendezvous) sites. Both dogs and livestock are more vulnerable in these areas when wolf pups are present.

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 with experience using these animals.

## **5. Alarm or Scare Devices**

**a. 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 (i.e. calving/lambing pastures), but in certain situations may be used to deter wolves from using larger areas or to alert livestock owners of the presence of wolves in the area. Use of these devices in conjunction with fladry and human presence increases effectiveness.

### **b. 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 fence posts. 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, 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 and should be coordinated through CDFW to determine if applicable.

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

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

**e. 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.

## **6. Livestock Management/Husbandry Changes**

**a. Description and Intent:** These are husbandry actions taken specifically to help avoid wolf-livestock conflicts. Actions must be tailored to each ranching situation and thus, not every possible action 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, changing herd structure, developing more 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.

**b. 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. Sheep producers could also consider using lambing sheds if at all possible.

It is not recommended that lambing be done in large open range areas, but rather in areas that can be protected by fladry, or locations close to human occupation and/or livestock guardian dogs.

Changes in turnout of livestock could also be helpful, including turnout of calves onto forested/upland grazing pastures or allotments once calves are larger (e.g., 200 lbs.).

**c. 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.

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

**e. 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 Food and Agriculture, UC Cooperative Extension, NRCS, RCD's, etc.) and local Advisory 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.

## **7. Experimental Practices**

**a. Description and Intent:** A number of non-lethal and preventative practices (i.e., 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.

**b. 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.

**c. Documentation:** Documentation of experimental practices will vary depending on the practice. Livestock owners who implement experimental practices should 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.

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

**e. 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.