



**Meeting Report
Wolf-Livestock Stakeholder Subgroup
March 25, 2014**

CDFW Wildlife Branch Conference Room
1812 9th Street,
Sacramento, CA 95811



California Department of Fish and Wildlife

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1.0 Introduction

On March 25, 2014 the Wolf-Livestock Interactions Subgroup (WLIS) of the California Wolf Stakeholder Working Group (SWG) convened in Conference Room of the California Department of Fish and Wildlife's Wildlife Branch office in Sacramento. This was the sixth meeting of the WLIS, which was established to help the California Department of Fish and Wildlife (CDFW, Department) develop a consensus-driven framework of management strategies for effectively dealing with potential wolf impacts on California's livestock populations.

2.0 Meeting Objectives and Mechanics

The purpose of the meeting was to continue building consensus through discussion of potential topics for inclusion in a Wolf-Livestock Interactions chapter in the California Wolf Plan.

Objectives of the meeting as initially planned were:

1. Introductions and Housekeeping
2. Comments and corrections on meeting report for February 19, 2014
3. Review/discuss March 25 version of State by State Comparison of Management Strategies Overview of first concept
4. Review/discuss March 17 version of lessons learned document. Note changes made based on last meeting
5. Discussion of alternative concepts for wolf-livestock strategy
6. Group review of first draft of Wolf-Livestock chapter
7. Initial discussion of elements of potential amendment to Title 14 to address elements of wolf-livestock strategy
8. Discuss next steps
9. Public questions (last ten minutes)

The meeting was attended in person by six stakeholders and four CDFW staff, with two additional stakeholders attending via conference line. Appendix A provides a list of participants, their affiliations, and their contact information. In addition, one legislative representative attended in person. Appendix B provides that individual's name and questions posed. The agenda for the meeting is captured in Appendix C.

3.0 Meeting Outputs

Introductions and Housekeeping

After the group introduced themselves, Mr. Stopher informed them as to where restrooms and vending machines could be found. Mr. Pete Figura then recounted his attempts to follow up on a reported wolf sighting near Quincy. He was unable to find any evidence of a wolf, and Mr. Stopher explained that CDFW Region 1 office receives numerous calls reporting wolf sightings which have yet to yield any solid evidence of an actual wolf. A second item of housekeeping was that future SWG Subgroup meeting reports will be less content narrative focused due to the amount of time it takes to generate them. Instead they will contain a short summary of each topic discussed. Future full SWG meeting reports will continue to be as detailed as they have been in past. Finally, Mr. Stopher informed the group that the facilitation contract dispute has been resolved in the Department's favor and he anticipates having it signed by week's end. A representative from Kearns and West, the facilitation contractor, will attend tomorrow's full SWG meeting to familiarize himself with the proceedings.

Comments and Corrections on February 19th Wolf-Livestock Subgroup Meeting Report

Mr. Stopher provided an update to an item on page 7 of the meeting report, in which the group was discussing the Conservation Caucus's wolf strategy concepts. In that discussion of Item N, it was understood that an initial livestock depredation incident by a wolf in an area not yet designated as an Area of Known Wolf Activity (AKWA) by the Oregon Dept. of Fish and Wildlife (ODFW), does not count toward the definition of "chronic depredation" (i.e. 4 incidents within 6 months). However, since that meeting Mr. Stopher has read further on the ODFW website and learned that "the first depredation outside an AKWA (e.g. new wolves) always qualifies under the new rules."

Review/Discuss March 25th Version of State by State Comparison of Management Strategies

Updates to this document (see Appendix D) were made to Item 5 for Washington, to Item 10 for Oregon, and to Item 18 for California, and appear in color in the document. Further, the items below were presented for clarification.

- Item 6 for Washington State: the total amount available in areas with known wolf packs was increased to \$10,000, and program participants are required to be

commercial producers and to have signed a Damage Prevention Cooperative Agreement. In areas not yet known to have wolf packs, a pilot program was initiated, and \$5,000 is available in those areas.

- Item 7 for Washington State requires further clarification from WDFW as to whether lethal take of wolves is permitted on public land allotments.

Review/Discuss March 17th Version of Lessons Learned Document

This document (see Appendix E) was updated with a column added to Table 1, capturing information for 2013. To date only Oregon and Washington have provided data for that year, and the table will again be updated when the other western states submit their annual reports to the U.S. Fish and Wildlife Service.

Wolf-Livestock Strategy Template (Combined Concepts – Feb. 27 Version)

This is a new document (see Appendix F) developed for the Wolf-Livestock Working Group, but contains information developed for the February 19th meeting. At that meeting the members requested a table that presents the agriculture and conservation caucus's wolf-livestock strategies for California in a side-by-side format for easier referencing. This portion of today's meeting consisted of further discussion of those strategies, now contained within the requested table. The significant points of discussion were as follows:

- The primary reasons the agriculture caucus prefers not to discuss a compensation program is the lack of consistent funding, and the reluctance by some producers to participate; however if wolves are CESA listed, the higher the proposed wolf objectives are, the more willing they may be to consider a compensation program
- The agriculture caucus prefers more management flexibility to prevent livestock losses (e.g. injurious harassment to provide negative stimulus), so if wolves are not listed a compensation program would not be necessary
- The California Dept of Food and Agriculture would be the agriculture caucus's first choice as the agency to handle compensation claims
- For Item I, the agriculture caucus clarified that "grazing conditions" refers to the size of a property, which affects the feasibility to apply non-lethal deterrents
- The subgroup would like to develop specific definitions for injurious and non-injurious harassment to clarify what would and would not be allowed to deter wolves from harming livestock, particularly with respect to the use of ATVs to chase off potentially depredating wolves

- The conservation caucus would add “rendezvous site” to their restrictions under Item K that limit where non-injurious harassment should be allowed
- The subgroup would like further discussion about developing protocols for notifying landowners of the locations of wolf den and rendezvous sites (Item K)
- The conservation caucus is very uncomfortable with the idea of having the U.S.D.A. Wildlife Services involved with confirming livestock depredation causes; their concerns are related to transparency with data, lack of a regulatory framework, the manner in which they apply science in their methods, their effects on non-target species, and the extent of their accountability to the public. It should be noted that Department staff and others pointed to the fact that most of these issues were related to the UDAWS’s wildlife control programs, and that their staff have significant trust in the agriculture community, as well as expertise with interpreting wildlife depredation incidents. Some felt that a partnership between USDAWS and CDFW may be a viable alternative.

Group Review of First Draft of Wolf-Livestock Interactions Chapter

Because the chapter is still in the first draft stage, Mr. Figura, the author, asked for more general suggestions pertaining to the structure and general content of the document rather than specifics such as typographic errors. Suggestions and clarifications from the group were as listed below:

- Paragraph 3 on page 2 discussing what proportion of livestock mortality is due to wolf depredation, should be part of the chapter’s opening paragraph
- Paragraph 2 under Direct Effects: “calves in Idaho born one month younger” can be reworded to state “one month later” to clarify that the calves were born later and are therefore one month younger than others
- Consider looking at the 2010 NASS report which shows data for livestock depredations back to the mid-1990s; they have doubled since then and this matches the period of wolf reintroduction
- With respect to the figures showing where the cattle and sheep are occurring on the landscape, there are some problems associated with the data used to generate them. One, cattle reported may or may not include dairy cattle – the relevance of which is that dairy cattle may be less likely to be encountered by wolves. Two, livestock are reported from the home ranch of the producer, which may not reflect where the animals actually are. The figures should include footnotes explaining these limitations to the data.
- As the discussion continued it became evident that the subgroup needed more time to consider the chapter outside of the meeting. Mr. Stopher suggested that each caucus work as a group to develop one document containing that group’s

comments and suggestions, with one person from each caucus delegated to compile them. These documents will consist of the chapter as originally presented to the group, with all comments and suggestions in “track changes” format, and sent via email to Mr. Figura by Thursday, April 3rd. Mr. Figura will then identify the major disagreements, and place them into a table for continued discussion at the upcoming Wolf-Livestock Interactions Subgroup meeting which is scheduled for Wednesday, April 9th.

Discussion of Potential Amendments to Title 14 Addressing Wolf-Livestock Strategy

In this section Mr. Stopher presented the concept of the SWG generating some language for Title 14 of the state regulations, specific to wolf management. Any such language presented for inclusion in Title 14 would have to be adopted by the Fish and Game Commission. Its purpose would be to provide the regulatory framework for making the wolf plan enforceable. No decision was made, but it was generally agreed that it may be of value after more conversation by the larger SWG.

Summary and Wrap-up

The remainder of the meeting involved discussion about the next WLIS meeting, which is scheduled for the morning of April 9, preceding the Wolf Conservation Subgroup meeting on the afternoon of the same date. Because of scheduling conflicts for some members, it was decided to ask the members of the Wolf Conservation Subgroup (WCS) if the two meetings could be switched. Mr. Stopher agreed to check with the WCS members for conflicts.

Action Items

- Mr. Stopher will continue his dialogue with WDFW for clarification as to whether lethal take of wolves in the act of depredating livestock can be permitted on public land, and how actions allowed by range riders in federally listed versus non federally listed parts of the state differ
- Generate a list of methods to help define injurious and non-injurious harassment
- Remove the second “states” from the second-to-last sentence in paragraph 3 on page 2
- Ms. Cremers will send Mr. Figura the 2010 USDA NASS document containing livestock mortality factors
- Mr. Stopher will check with the WCS for conflicts over switching their next meeting to the morning of April 9

- Mr. Figura will attempt to determine if the rate of livestock depredations by predators has changed in proportion to both the livestock population size and the wolf population size in the Northern Rocky Mountains
- Each caucus will select one person to compile all of their comments and suggestions into one “track changes” document and will provide to Mr. Figura by Thursday, April 3.
- Mr. Figura will generate a table of comments and suggestions from the two caucuses for discussion at the next WLIS meeting

APPENDIX A WORKSHOP PARTICIPANTS

Name	Affiliation	Email
Stakeholders		
Noelle Cremers	California Farm Bureau	ncremers@cfbf.com
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Lesa Eidman	CA Wool Growers Association	lesa@woolgrowers.org
Kirk Wilbur	CA Cattlemen's Association	kirk@calcattlemen.org
Amaroq Weiss	Center for Biological Diversity	aweiss@biologicaldiversity.org
Lauren Richie	CA Wolf Center	lauren.richie@californiawolfcenter.org
Pamela Flick	Defenders of Wildlife	pflick@defenders.org
California Department of Fish and Wildlife Staff		
Pete Figura	Environmental Scientist – Region 1 Wildlife Program	pete.figura@wildlife.ca.gov
Karen Miner	Non-Game Wildlife Program Manager (Acting)	karen.miner@wildlife.ca.gov
Karen Converse	Environmental Scientist – Wolf Program	karen.converse@wildlife.ca.gov
Mark Stopher	Senior Policy Advisor	mark.stopher@wildlife.ca.gov

**APPENDIX B
PUBLIC PARTICIPANTS AND COMMENTS**

Legislative Representatives		
Name	Affiliation	Email
Catherine Bird	Senator Ted Gaines' Office	Catherine.Bird@sen.ca.gov

Question posed: With respect to the question about which agency would be best suited to confirm the causes of livestock depredations, would CDFW staff have the ability to get up to speed in gaining the expertise needed to be as skilled as staff from Wildlife Services?

APPENDIX C

PROPOSED AGENDA

Wolf-Livestock Subgroup

1-4 PM March 25, 2014

1812 Ninth Street, 2nd Floor conference room, Sacramento

Teleconference Line 888.379.9287, PC 476990

*Parking on the street (bring lots of quarters) or parking garages on both 10th and 11th streets between "O" and "P" streets

1. Introductions and Housekeeping
2. Comments and corrections on meeting report for February 19, 2014
3. Review/discuss February 11 version of State by State Comparison of Management Strategies
 - Review updated items on this version
 - Identify any inaccurate or incomplete statements
 - Identify any other elements/categories which will be useful to developing a California strategy
4. Review/discuss February 11 version of lessons learned document. Note changes made based on last meeting.
5. Discussion of alternative concepts for wolf-livestock strategy
6. Group review of first draft of Wolf-Livestock chapter
7. Initial discussion of elements of potential amendment to Title 14 to address elements of wolf-livestock strategy
8. Discuss next steps
 - Are there additional areas of inquiry needed to develop a wolf-livestock strategy?

Public questions (last ten minutes)

APPENDIX D

**WOLF-LIVESTOCK INTERACTIONS: STATE-BY-STATE COMPARISON OF
MANAGEMENT STRATEGIES (MARCH 25, 2014 VERSION)**

March 25 February 11, 2014. draft for consideration by the California wolf-livestock interactions subgroup of the California Stakeholder Working Group

WOLF-LIVESTOCK INTERACTIONS, STATE-BY STATE COMPARISON OF MANAGEMENT STRATEGIES

Indicated management actions by the State Wildlife Agency (SWA) are for those lands where Federal Endangered Species Act listing does not preempt SWA authority.

Row	Element/State	Montana	Idaho	Wyoming	Oregon	Washington	California
1	Federal Listing Status	Not listed	Not listed	Not listed	Endangered in western 2/3 of the state. Unlisted in eastern Oregon (east of Hwys 395/78/95)	Endangered in western 2/3 of the state. Unlisted in eastern Washington	Endangered
2	State Listing Status	Designated as a "Species in need of Management"	Designated as a big game species	Trophy game animal in NW part of State. Predatory animal in balance of State (some seasonal overlap exists)	Special Status Game Mammal and Endangered Oregon Plan divides state into eastern and western management zones defined by Hwys 97/20/395	Endangered	Nongame mammal CESA Candidate
3	Approximate Wolf Population Size (Jan 1, 2013)	625 (minimum) with ≥ 147 packs 37 breeding pairs. ⁱ	Estimated at 683 with ≥ 117 packs ⁱⁱ 35 breeding pairs.	277 (minimum) with ≥ 43 packs Breeding pairs: Yellowstone NP = 6 Balance of state = 15	46 (minimum) in 6 known packs. 6 breeding pairs.	51 (minimum) in 9 known packs. Estimated population is 101 wolves. 5 breeding pairs.	One animal No packs
4	State wolf population objectives	Minimum Objectives: Population: 150 Breeding Pairs: 15	Minimum Objectives: Population: 150 Breeding Pairs: 15	Minimum Objectives: Yellowstone NP and Wind R. Reservation: Population: 50	Phase 1 – Conservation Population Objective: 4 breeding pairs for three consecutive	Established 3 recovery regions (RR). Reclassify to Threatened: 2 breeding pairs	TBD

Row	Element/State	Montana	Idaho	Wyoming	Oregon	Washington	California
				Breeding Pairs: 5 Balance of State: Population: 100 Breeding Pairs: 10 ⁱⁱⁱ	years in both E. and W. Oregon. Phase II - Management Population Objective (delisted) 7 breeding pairs for three consecutive years in both E. and W. Oregon Phase III – maintenance objective: TBD ^{iv}	in each RR for 3 consecutive years. Reclassify to Sensitive: 4 breeding pairs in each RR for 3 consecutive years. Delist: 4 breeding pairs in each RR for 3 consecutive years, and 3 more breeding pairs anywhere. ^v	
5	Is there a State managed livestock depredation compensation Program?	Yes. Through the Montana Livestock Loss Reduction and Mitigation Board.	No. Program is postponed indefinitely for lack of funding	Yes, in NW part of the State. No compensation in the Predatory Animal Area. Compensation when depredation of cattle is confirmed is for missing animals up to a 7:1 ratio. Verified claims are typically submitted in the fall after	Yes. Two components. A Wolf Depredation Tax Credit also exists (requires ODFW or peace officer ^{vi} confirmation of depredation). OR Dept. of Agriculture administers depredation compensation and financial assistance grant program through the counties.	Yes. Managed by WDFW. Compensation for “confirmed” is full value. Compensation for probable is %50 value. Double compensation for properties >100 acres. Caps of \$200 for sheep, \$1500 for horse/cattle. Total cap of \$10K. Can be	TBD

Row	Element/State	Montana	Idaho	Wyoming	Oregon	Washington	California
				livestock come off of allotments and missing animals can be determined.		appealed. Certified livestock appraisers are used by the SWA to verify the damage claim. 3rd party appraisal is compared with the submitted claim.	
6	Is there a state managed program for non-lethal proactive measures to reduce depredation?	Yes. Through Loss Prevention grants by MY Livestock Loss Reduction and Mitigation Board. State funding appears to be a limitation.	No. USDA provides this service when requested by livestock producer.	Rarely requested. The Wyoming Animal Damage Management Board considers and provides funds for animal damage management which may include non-lethal methods	OR Dept. of Agriculture administers depredation compensation and financial assistance grant program through the counties. Also see row 17	Yes. SWA enters into Damage Prevention Cooperative Agreements with livestock producers. Producer can receive up to \$10K in State cost-share for implementation. Annual agreement.	
7	Is lethal take of wolves by private parties while wolf is "in the act" of depredating on livestock allowed?	Yes (actual biting, wounding or grasping livestock or domestic dogs).	Yes. Molesting or attacking livestock or domestic animals. See Idaho Code 36-	Allowed statewide	In Phase 1 and II. Yes, by landowners, lawful occupants (or authorized agents) on their property if biting, wounding or killing livestock or	Yes, by owners of domestic animals (or the owner's agents) on private property. ^{viii}	TBD

March 25 February 11, 2014. draft for consideration by the California wolf-livestock interactions subgroup of the California Stakeholder Working Group

Row	Element/State	Montana	Idaho	Wyoming	Oregon	Washington	California
			1107(c)		domestic dogs. Landowners, lawful occupants or authorized agents may also take wolves chasing livestock in designated area of chronic depredation ^{vii}		
8	Are wolf lethal take permits issued to private individuals?	Yes	Yes	Yes	No in Phase I. Yes in Phase II.	Yes, after non-lethal measures have been implemented without success. ^{ix}	TBD
9	Does SWA notify landowners of wolf presence?	Rarely	Limited to active den or rendezvous sites.	No	Yes	Yes	TBD
10	Are non-lethal control measures required before SWA permits lethal take of wolves?	No	No	No	Yes. "Qualifying event determination" requires implementation of deterrence measures. However, the first confirmed depredation outside an area of known wolf activity is always a qualifying event.	Yes	TBD

~~March 25~~February 11, 2014. draft for consideration by the California wolf-livestock interactions subgroup of the California Stakeholder Working Group

Row	Element/State	Montana	Idaho	Wyoming	Oregon	Washington	California
11	Which entity is responsible for investigating and confirming livestock depredation?	USDA Wildlife Services	USDA Wildlife Services	Principally SWA in NW Wyoming but sometimes USDA Wildlife Services. USDA Wildlife Services in balance of state, if done at all.	SWA (east of Hwys 395-78-95). USFWS, USDA Wildlife Services or ODFW in western Oregon. ^x	SWA lead with support from USDA Wildlife Services or USFWS	TBD
12	Does SWA develop wolf-livestock conflict deterrence plans?	No	No	No	Wolf-Livestock Conflict Deterrence Plans are prepared in a designated "Area of Depredating Wolves". ^{xi}	SWA enters into Damage Prevention Cooperative Agreements with landowners	TBD
13	Is non-injurious harassment of wolves by landowners allowed?	Allowed – no permit required	Allowed – no permit required	Allowed – no permit required	Allowed – no permit required	Allowed – no permit required	TBD
14	Is non-lethal injurious harassment of wolves by landowners allowed?	Allowed – no permit required	Allowed – no permit required	Allowed – no permit required	Allowed with a permit	Allowed with a permit	TBD
15	Does SWA relocate wolves depredating livestock or domestic animals?	No	No	No	No	On a case by case basis	TBD
16	Is translocation part of the management	No	No	No	Yes	Yes	TBD

March 25 February 11, 2014. draft for consideration by the California wolf-livestock interactions subgroup of the California Stakeholder Working Group

Row	Element/State	Montana	Idaho	Wyoming	Oregon	Washington	California
	strategy?						
17	Does SWA provide technical support for non-lethal control methods?	Yes	Yes	Rarely requested. Provided through Wyoming Animal Damage Management Board or local Predator Management District	Yes. Provides advice and some resources (e.g. flady, RAG boxes. Also see row 12	Yes. SWA enters into Damage Prevention Cooperative Agreements with livestock producers. Producer can receive up to \$10K in State cost-share for implementation. Annual agreement. ^{xii}	TBD
18	SWA budget for wolf management	State law mandates \$900K/year. 2014 Budget Personnel: \$467K Operating: \$325,482 USDA WS: \$110K ^{xiii}	FY 2014 \$1.2 M total. Federal contribution was \$380 K this year	Personnel: \$100K Contract staff: \$70K Operating: \$175K Compensation: \$70-170K ^{xiv}	Current annual expenditures: Personnel: \$220K Operating: \$125K Research: \$220K Mostly Federal funds with State match. ^{xv}	Current annual expenditures: Personnel: \$501K Operating: ^{xvi} \$130K Outreach: \$41K USDA WS: ^{xvii} \$75K Depredation Compensation: \$150K Mostly State funds ^{xviii}	Current— Zero \$300,000 from USFWS ESA S6 funding. State match (mostly in-kind staffing) of \$100K. Of that: \$115 K for facilitation contract \$275K personnel costs (approximate estimates)
19	Federal money	\$685,402	\$532,686	\$52,694	\$218,746	\$212,814	

~~March 25~~~~February 11~~, 2014. draft for consideration by the California wolf-livestock interactions subgroup of the California Stakeholder Working Group

Row	Element/State	Montana	Idaho	Wyoming	Oregon	Washington	California
	spent by SWA's on wolves in 2012 ^{xix}						
20	Federal money spent by other entities on wolves in 2012 ^{xx}	USDA WS \$216,232	USDA WS \$397,000 Nez Perce Tribe \$217,500	USDA WS \$207,024 Grand Teton NP \$60,000 Yellowstone NP \$202,500	USDA WS \$26,502 ^{xxi}	USDA WS \$5,397 Colville Tribe \$75,000	

ⁱ A breeding pair is ≥ 1 adult male and ≥ 1 adult female in a pack producing ≥ 2 pups that survived through December 31.

ⁱⁱ Idaho determines a pack based on four animals using a defined home range, other states use a threshold of two animals

ⁱⁱⁱ In Wyoming, the State and Yellowstone NP are separately responsible for meeting their respective population and pack objectives.

^{iv} If delisted based on meeting the standard in the eastern part of the State, wolves in western Oregon will be managed as if they were listed until the western Oregon wolf population reaches four breeding pairs.

^v Washington has established an alternative set of objective for delisting from state sensitive, which is met by 4 breeding pairs in each of the three recovery regions and 6 additional breeding pairs anywhere in the state. Under the alternative delisting criteria, the 3 consecutive year criterion is not required.

^{vi} To date, no Sheriff has made this confirmation. However, without ODFW confirmation it is not a qualifying event and there can be no compensation.

^{vii} ORS 498-012

^{viii} WAC 232-36-051 and 232-36-052

^{ix} Source: Personal communication with WDFW 01092014

^x County Sheriff may be a first responder but has no role in making determinations. ODFW must make determination for tax credit or compensation.

^{xi} Ranchers may implement all, some or none of the plan. However, without implementation of deterrent methods consistent with the plan, confirmed depredation is not a qualifying incident which counts toward lethal control.

^{xii} Currently 30 in effect.

^{xiii} Personal communication with George Pauley, Montana FWP 02102014

^{xiv} Personal communication with Ken Mills, WGFD. 01302014

^{xv} Personal communication with Russ Morgan, ODFW. 01162014

^{xvi} Includes some non-lethal deterrent components

^{xvii} Includes on-call for lethal and non-lethal implementation and staff person for non-lethal deterrent implementation

^{xviii} Personal communication with Stephanie Simek, WDFW 01242014

^{xix} Source: Northern Rocky Mountain Wolf Recovery Program 2012 Interagency Annual Report

^{xx} Source: Northern Rocky Mountain Wolf Recovery Program 2012 Interagency Annual Report

^{xxi} Expenditures reported by USDA Wildlife Services in responding to wolf related issues

APPENDIX E

**DRAFT OVERVIEW OF LESSONS LEARNED FROM THE WESTERN
UNITED STATES REGARDING WOLF-LIVESTOCK INTERACTIONS
(MARCH 17, 2014 VERSION)**

California Department of Fish and Wildlife

Draft overview of lessons learned from the western United States¹ regarding wolf-livestock interactions
March 17, 2014

1. Where wolves and livestock are sympatric, depredation by wolves on livestock has been a consistent result.
2. Where wolves and livestock are sympatric, not all wolves and wolf packs, attempt to kill, or kill livestock. For example, in 2010, Montana reported that an average of 35% of packs were confirmed to depredate livestock. In 2012, the Fish and Wildlife Service estimates that approximately 28% of known wolf packs (in the northern Rocky Mountains Distinct Population Segment) were involved in at least 1 confirmed livestock depredation.
3. When characterizing the severity of wolf impacts on livestock, geographic scale for the analysis, context (e.g. grazing practices and landscape conditions) and mechanism (i.e. lethal or non-lethal) of effect are important.
 - a. Depredation by wolves on livestock is a very small fraction (i.e. <1%) of livestock mortality from all causes when analyzed at a statewide scale.
 - b. Depredation by wolves on livestock is a very small fraction (i.e. <5%) of the overall depredation mortality by wildlife (e.g. coyotes, bears, lions) on livestock when analyzed at a statewide scale.
 - c. Depredation mortality by wolves on livestock can be significant for individual livestock producers.
 - d. Sub-lethal effects of wolf presence, harassment and failed attempts to kill livestock can be significant to individual livestock producers.
 - e. Sub-lethal effects can include reduced weights of livestock caused by increased vigilance, reduced foraging, increased physical activity, reduced reproduction; and non-lethal wounds.
 - f. Impacts to individual livestock producers through management efforts to avoid and minimize depredation by wolves can be important, in terms of time and financial costs.
 - g. Relative risk of depredation varies depending on grazing methods, geographic location, local wolf population, habitat (i.e. topography and vegetation) the extent of previous depredation by local wolf populations and the feasibility of applying non-lethal deterrent methods.
4. Most livestock depredation by wolves is of cattle or sheep.
5. Depredation incidents on cattle generally take 1-2 animals/incident.
6. Depredation incidents by wolves on sheep often result in much larger numbers of dead animals (compared to cattle).

7. Other livestock species, including goats, horses and llamas are rarely killed by wolves (i.e. 3-20/year).
8. Confirmed wolf depredation on dogs has varied between 2 and 25 animals/year for the last ten years.
9. Statistics based on “confirmed” wolf mortalities, through forensic evaluations under-count actual mortality, because:
 - a. Not all dead livestock are found.
 - b. Some dead livestock, when found, are consumed by scavengers to an extent that a conclusive determination of the cause of death is not possible.
10. Reports of wolf predation from livestock producers, including USDA NASS data, include instances where some other cause of death is ultimately determined or the cause of death cannot be determined. For example, the following figure is presented in the 2010 Montana annual wolf report. The geographic context is not provided but the number of incidents suggests it is a multi-state compilation.

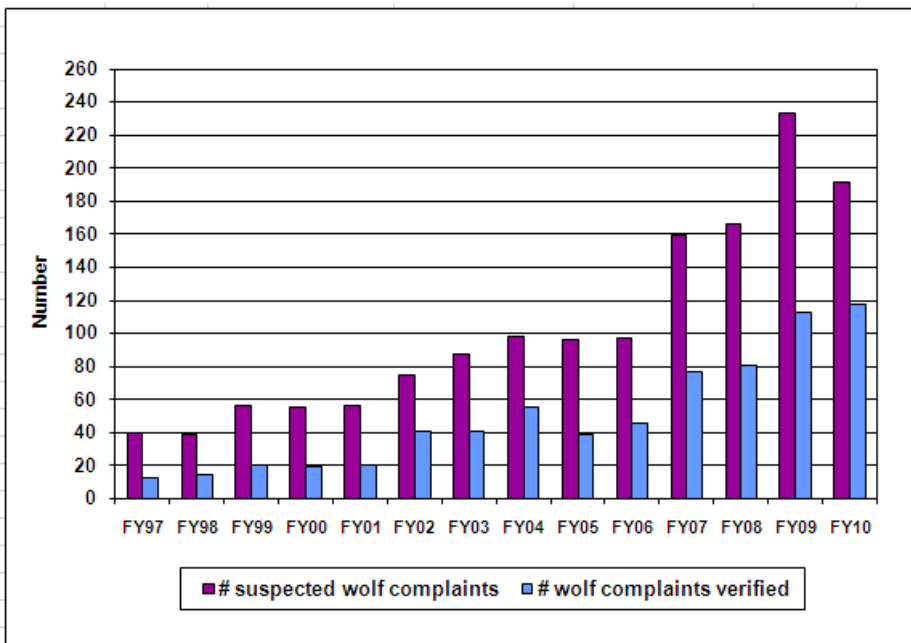


Figure 1. Number of complaints received by USDA Wildlife Services as suspected wolf damage and the percent of complaints verified as wolf damage, federal fiscal years 1997 – 2010. Federal fiscal years from October 1 to September 30.

Data in this table is consistent with an examination of depredation investigations conducted by Oregon Department of Fish and Wildlife, and available at http://www.dfw.state.or.us/Wolves/livestock_loss_investigations_2012.asp. These reports demonstrate that forensic investigations of suspected wolf depredation often determine some other cause of death, or are unable to confirm wolves as the cause of livestock mortality.

11. The relationship between annual wolf population statistics and mortality from all causes can be represented in several different ways. A comprehensive understanding must consider all of these statistics.
 - a. The number of wolves killed in 2012 by hunting, trapping, lethal control and other causes, amounts to approximately 50% of the wolf population known to exist at the beginning of the year (Table 1). However, this method of estimating fractional mortality is insufficient and misleading because it overlooks the fact that wolves are recruited into the population through reproduction and possibly, though to a lesser extent, immigration.
 - b. A relatively more accurate and informative method of understanding the extent of mortality is to determine the total number of wolves known to exist, at any point in a calendar year. For 2012 this is determined by adding the number of wolves known to exist at the end of the year (1682), to the number of wolves known to have died, from all causes, during the year (894). That number is 2,576ⁱⁱ. The fractional mortality is then calculated by dividing this total into the known wolf mortality number for the year (i.e. 894/2576). By this method, 34.7% of the wolves known to exist in 2012 died in 2012.
 - c. The minimum known wolf population at the end of 2012 was 5.7% smaller than the minimum known wolf population at the end of 2011.
 - d. Since hunting and trapping began in 2009, the minimum number of documented wolf packs has increased each year.
12. Wolves killed by hunting and trapping may or may not have been involved in livestock depredation.
13. Confirmed depredation by wolves has been stable for cattle but variable for sheep over the past six years (see Table 1).
14. Currently available methods, especially the use of GPS collars, allow lethal control actions on wolves to be focused on individual animals or packs reliably determined to have engaged in livestock depredation.
15. Non-lethal deterrent methods:
 - a. Have successfully reduced wolf depredation on livestock in many applications.

- b. Are not always successful in preventing wolf depredation of livestock.
- c. May become less effective over time as wolves habituate to particular applications
- d. More than one method may be used either concurrently or sequentially.

Table 1. Detailed Data by State for Cattle and Sheep Depredation, Wolf Populations and Wolf Mortalityⁱⁱⁱ

		2007	2008	2009	2010	2011	2012	2013
Cattle depredation	Oregon	0	0	1	8	13	4	<u>5</u>
	Washington	0	0	0	0	0	7	<u>1</u>
	Idaho	53	96	75	75	71	73	
	Montana	75	77	97	87	74	67	
	Wyoming	55	41	20	26	35	44	
	Totals	183	214	193	196	193	195	
Sheep depredation	Oregon	0	0	28	0	0	8	<u>6</u>
	Washington	0	0	0	0	0	1	<u>0</u>
	Idaho	170	218	324	148	121	312	
	Montana	27	111	202	64	11	37	
	Wyoming	16	26	195	33	30	112	
	Totals	213	355	749	245	162	470	
Wolves (min # at year end)	Oregon	?	?	14	21	29	46	<u>64</u>
	Washington	?	?	5	19	27	51	<u>52</u>
	Idaho	732	846	870	705	746	683	
	Montana	422	497	524	566	653	625	
	Wyoming	359	302	320	343	328	277	
	Totals	1513	1645	1733	1654	1783	1682	
Wolf Packs (min # at year end)	Oregon	0	1	2	2	5	6	<u>8</u>
	Washington	0	1	2	3	5	9	<u>13</u>
	Idaho ^{iv}	83	88	94	87	101	117	
	Montana	73	84	101	108	130	147	
	Wyoming	36	42	44	45	48	43	
	Totals	192	216	236	245	289	323	
# Breeding Pairs	Oregon	?	?	1	2	1	6	<u>4</u>
	Washington	?	1	1	1	3	5	<u>5</u>
	Idaho ^v	59/43	60/39	65/49	54/46	63/40	66/35	
	Montana	39	34	37	35	39	37	
	Wyoming ^{vi}	14	16	21	19	19	15	
	Yellowstone	10	6	6	8	8	6	
Average Pack Size^{vii}	Idaho	7.7	8.3	7.8	7.1	6.5	5	
	Montana	5.7	6.0	6.0	6.0	≈6.5	≈6.5	
	Wyoming ^{viii}	6.9	5.7	7	6.8	6.1	5.5	
	Yellowstone	14.2	9.3	7.1	8.3	10.2	10	
Agency lethal	Oregon	0	0	2	0	2	0	<u>0</u>
	Washington	0	0	0	0	0	7	<u>0</u>

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control wolf mortality	Idaho	50	108	93	80	63	73	
	Montana	73	110	145	141	64	108	
	Wyoming	63	46	31	40	36	43	
	Totals	186	264	271	261	165	231	
Hunting & trapping wolf mortality	Oregon	0	0	0	0	0	0	<u>0</u>
	Washington	0	0	0	0	0	0	
	Idaho	0	0	134	46	200	329	
	Montana	0	0	68	0	121	175	
	Wyoming	0	0	0	0	0	66	
	Totals	0	0	202	46	321	570	
Other known wolf mortality^{ix}	Oregon	1	0	0	1	0	1	<u>3</u>
	Washington	0	0	0	1	0	2	<u>5</u>
	Idaho	28	45	45	18	33	23	
	Montana	29	51	42	38	31	41	
	Wyoming ^x	18	50	19	27	25	26	
	Totals	76	146	106	85	89	93	

ⁱ For purposes of this information, the western United States includes Wyoming, Montana, Idaho, Oregon and Washington.

ⁱⁱ The 2012 USFWS Annual Report estimates 2,569 but this does not take into account later population revisions.

ⁱⁱⁱ Data sources were USFWS annual interagency reports <http://www.fws.gov/mountain-prairie/species/mammals/wolf/>, annual reports for individual states and updated information available on individual state websites. Where data discrepancies between the USFWS and state reports existed, the most recent state data was used. Such discrepancies were minor. These data reflect confirmed cattle and sheep depredation. Wolf population and mortality data reflect the best efforts of state and federal agencies to document populations which are dynamic and are minimum counts of wolves and wolf packs. There is inherent uncertainty when designating wolves and wolf packs as resident in one state or another when home ranges are near a state line. Dispersing uncollared wolves are difficult to count and detection of all wolves or wolf mortality is impossible. Actual numbers of depredated cattle and sheep, wolf packs and wolves are all likely greater than presented. These data are most useful as indicating trends, rather than absolute numbers.

^{iv} Packs are generally counted when the SWA can document two animals using a defined home range. Idaho uses a threshold of four animals to define a pack, though once a pack is diminished below four animals it may still be counted as a pack

^v Idaho reports the # of wolf packs known to have reproduced as well as the number qualifying as breeding pairs. For Idaho, the data are presented as “# known reproducing packs/# known breeding pairs”

^{vi} The portion of Wyoming outside of Yellowstone NP

^{vii} Estimated by a subset of documented packs where this can be determined with confidence. These are reported as average pack size with no statistical confidence interval. There are wide variations in pack size from 2 – 20+.

^{viii} The portion of Wyoming outside of Yellowstone NP

^{ix} There are several components to this category, including, but not limited to, vehicle road kill, illegal harvest, disease (e.g. mange, parvovirus, distemper), intraspecific aggression, malnutrition and unknown causes.

^x Accounting for mortality in Wyoming is relatively more difficult than other western states because (1) data for Yellowstone NP, the balance of the state, and sometimes the Wind River Reservation, are accounted for separately, (2) Wyoming has a predator management area and in some years this mortality has been included in agency control actions, in other years as “other”, and (3) Yellowstone NP does not report known mortality of pups in the summer and Wyoming presumably does.

APPENDIX F

**WOLF-LIVESTOCK STRATEGY TEMPLATE – COMBINED CONCEPTS
FEBRUARY 27, 2014**

Wolf-Livestock Strategy Template February 27, 2014 – Combined Concepts

	Element	Cons. Caucus CESA Listed – take is prohibitedⁱ	Cons. Caucus Not CESA listedⁱⁱ	Ag. Caucus Not CESA Listed	Ag. Caucus Not CESA listedⁱⁱⁱ
A	Should there be a state managed compensation program?	<p>Yes, open to the idea, but depends on how it's administered:</p> <ul style="list-style-type: none"> - To qualify for compensation, in areas of known wolf activity, producer must have been using agency-recommended nonlethal, proactive methods and no unnatural attractants present at the time the depredation occurred, unless is first instance in area not known to have wolves. - No compensation for livestock grazed on public lands. - Depredations must be confirmed by CDFW. - 100% of market value for confirmed depredations; 50% for probable. - Phase out over time as nonlethal techniques become more refined & used. - Majority of state's finances should be spent on nonlethal proactive methods, e.g. 1:4 ratio of compensation: nonlethal methods. <p>Looking for input from other states/models.</p>		The Livestock working group is not comfortable discussing a compensation fund until the Conservation chapter has been developed, funding is available, and the lethal control parameters have been established.	No
B	If yes, which entity should handle claims and payments?	CDFW, or possibly CA Department of Agriculture (would like to learn more about Dept of Ag).			
D	If, yes, how should the program	See (A).			

Wolf-Livestock Strategy Template February 27, 2014 – Combined Concepts

	operate?			
E	Should the state provide non-lethal deterrent assistance?	Yes	Yes. Voluntary participation.	Yes. Voluntary participation.
F	If yes, what types (e.g. advice, financial support, equipment such as fladry)?	Advice, training, loan of equipment. Funding if available or if cost-share agreements can be struck.	Provide technical information and financial assistance in the form of cost share programs.	Provide technical information and financial assistance in the form of cost share programs.
G	OR and WA develop deterrence plans, should CA?	Yes. Suggest team approach: CDFW pairs with NRCS or other trusted partner (but not WS).	Develop of a deterrence plan would be voluntary and would not be required in order to have a qualified incident. In order to access state funds for state provided deterrent assistance, a deterrence plan would be required.	Develop of a deterrence plan would be voluntary and would not be required in order to have a qualified incident. In order to access state funds for state provided deterrent assistance, a deterrence plan would be required.
H	Should CFDW inform livestock producers of proximity to collared wolves?	Yes, if they are willingly cooperating in a nonlethal program & if they sign an agreement that they won't share the information beyond their authorized agents & family. Information should be provided in the form of presence in a general sector, not exact location of wolf(ves).	Yes with no conditions attached	Yes with no conditions attached
I	Should non-	N/A - see (M)	Yes	No, unless specific criteria No

Wolf-Livestock Strategy Template February 27, 2014 – Combined Concepts

	lethal deterrents be required before lethal take is authorized?			is developed based on grazing conditions	
J	Should non-injurious harassment of wolves be allowed?	Yes	Yes	Yes.	Yes.
K	If yes, under what conditions?	Not near known or suspected den sites. Not if wolf is eating or pursuing wild prey.		When wolves presence is a threat to property.	When wolves presence is a threat to property.
L	Should injurious harassment of wolves be allowed (e.g. rubber bullets, bean bags)?				
M	Should relocation of depredating wolves to another location in California be an option?	No	No	No.	No.
N	Should lethal take be included as part of the strategy?	Not an option except by CDFW. Question: what does "except by CDFW" mean? Under what circumstances can the agency	Only if certain conditions are met – see (N)	Not an option under the current statute except by CDFW	Yes

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		use lethal take?			
O	If yes, under what conditions or standards should lethal take be authorized?	N/A (?) – see (M)	No lethal take for depredations occurring on public lands. On private land, for agency to consider the use of lethal take, must be after confirmed instances of chronic depredation and after all feasible nonlethal methods have been exhausted yet depredation is continuing. Only the wolf or wolves CDFW reasonably believes is/are responsible for chronic livestock depredation subject to lethal take under above conditions.	When confirmed depredation has been observed, DFW should control problem wolves.	When confirmed depredation has been observed and when threatening and/or killing livestock.
P	Which entity should have authority to investigate and confirm livestock depredation?	<ul style="list-style-type: none"> - Only CDFW. Only qualified biologists. - If federally listed, it will be FWS (&WS) 		Wildlife Services	Wildlife Services
Q	How should state agency efforts be funded?	<p>Ideas:</p> <ul style="list-style-type: none"> - Personal license plate, e.g. WA's \$10 added fee goes to wildlife conflict management fund - Non-consumptive wildlife user fee - If wolves are federally listed, should have cost sharing with FWS 		Unknown, but preferably through a longer term mechanism that provides certainty	Unknown, but preferably through a longer term mechanism that provides certainty

ⁱ Fish and Game Code section 86. "Take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

ⁱⁱ Take regulated under existing law or amended regulations which may modify current procedures

ⁱⁱⁱ Take regulated under existing law or amended regulations which may modify current procedures