



# OREGON WOLF CONSERVATION AND MANAGEMENT PLAN REVIEW REPORT

ODFW Plan Review Team  
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# EXECUTIVE SUMMARY

The Oregon Wolf Conservation and Management Plan (Plan) and its associated Oregon Administrative Rules (OARs) were first adopted by the Fish and Wildlife Commission (Commission) in December 2005. The Plan calls for an evaluation every five years, with the first scheduled update in 2010. Following mediation and a settlement agreement, the Plan and associated rules were modified in July 2013. The Commission removed wolves from the list of Oregon Endangered Species in November 2015, and following that change in legal status the department initiated a Plan review process in early 2016. Following that more than three-year effort, which included a facilitated work group process, the revised Plan was adopted in June 2019.

The Plan specifies that the department shall review the Plan every five years as practicable and recommend any changes to the Commission (OAR 636-110-0000). The Plan chapters and Appendix A are adopted into rule by reference and any modification to those sections of the Plan requires a formal rulemaking process with adoption by the Commission. To meet the review requirement following the 2019 adoption of the Plan, the department initiated a review of the Plan in May 2023. The department's review includes evaluating the Plan's relevancy and ability to address contemporary needs, assessing if the objectives in the Plan are being met, and ensuring that the Plan contains the best available science to support decision-making.

This report provides the findings of the department's internal review. This review included a team of staff within the department and evaluated all sections of the Plan. The department's internal review produced an overview, findings, and a recommendation for each of the ten chapters and one appendix (climate change), which are presented in this report.

Through the review it was observed that, in the majority of cases, there has been documented success or productive implementation of most areas of the Plan. For many topics where success or full implementation has not yet been achieved, the review found the Plan provides substantial flexibility to adapt to new or growing challenges. While many portions of the Plan could benefit from an update with new information, this review finds few if any modifications are needed for the Plan to be able to address contemporary needs and continue to successfully guide wolf conservation and management in Oregon.

# CHAPTER 1. INTRODUCTION

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## **Overview**

The Introduction chapter consists of seven sections, briefly covering the history of wolves in Oregon, state and federal legal status, and the development of the original 2005 Plan and subsequent updates. The chapter also clarifies that the Plan contains an appendix of general information on wolf biology, ecology, and disease, but otherwise does not serve as a resource covering those broad and rich topics. The chapter does, however, provide an overview of the potential role of wolves in ecosystems and trophic cascades.

## **Findings**

The majority of the content found in Chapter 1 remains accurate, relevant, and supportive of achieving the Plan's goal. Minor housekeeping such as updates on the latest wolf minimum counts and 2021 federal delisting and relisting could occur but would not impact the management strategies and goals or affect the department's implementation of the Plan. There have been a few recent scientific publications relevant to the 'Role of Wolves in Ecosystems' section since the Plan's adoption, but none significantly alter or better clarify the scientific community's understanding of the topic. A literature update in that section could occur but would just build on research that is already included and would not resolve outstanding uncertainties.

An update of the chapter would likely yield one shorter in length because content that is now outdated or simply unnecessary would be removed and references would be made to past Plans and other external resources rather than trying to incorporate here.

## **Recommendation**

Some housekeeping could occur such as updates on recent events, but no changes are needed.

# CHAPTER 2. WOLF CONSERVATION AND MONITORING

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## **Overview**

Consisting of five sections, this chapter focuses on information specific to wolf conservation and monitoring. The first two sections focus on wolf distribution and population metrics and emphasize the promotion of a naturally reproducing population of wolves. Section three discusses the potential threats to the conservation of the species and stresses the use of management strategies to address those threats when possible. Section four focuses on the techniques used to monitor populations. The final section briefly touches on the importance of coordination with other agencies and organizations.

## **Findings**

### A. Wolf Distribution

This section includes management objectives and strategies that are intended to promote the natural expansion of wolves within suitable habitat across Oregon while also remaining connected to a larger metapopulation across the Pacific Northwest (PNW) and Northern Rocky Mountain (NRM) populations. Direction is provided to maintain two Wolf Management Zones (WMZ) in Oregon to provide flexibility in achieving conservation and management goals for the state. Many of the strategies and associated text within the section are becoming outdated but their inclusion is not an impediment

to meeting the objective. For example, the Plan explicitly prohibits consideration of moving wolves into Oregon or using translocation to assist in increasing wolf distribution. This prohibition is unnecessary because there is no need to use the tool given the widespread distribution of wolves in Oregon and their documented dispersal success. Other strategies are reasonable in concept and are successfully being implemented but do not fit within the department's authorities so could be removed to ensure the Plan only provides actionable guidance to the department. For example, the plan provides direction to promote a wolf population in suitable habitat within Oregon. At present, wolves can and do naturally find and occupy large blocks of habitat on public land with suitable prey, but there is almost nothing actionable the department (nor public land management agencies) can do to promote nor restrict the occurrence. This questions the need and inclusion of a such a strategy. Other options identified in the Plan, such as creating additional wolf management zones and management phases as needed, remain necessary to provide flexibility to address future needs. However, the department has not identified a need to utilize these options at the current time and the necessary information (e.g., spatial population models) to guide the development of those products have not been produced.

There has been a significant increase in wolf distribution, range expansion, and connectivity across the Pacific Northwest in the four years since Plan adoption. Much of the Plan focuses on Idaho as a source population for wolves, but recent genetic information and documentations of wolf dispersal show that Oregon is connected to the entire PNW and NRM population. All too often the Oregon-only map is the focus of attention, but a more appropriate scale includes adjacent states as data shows that Oregon's population both sends and receives wolves to these other states, an indication of a functioning metapopulation. Since adoption, there are now wolves in the Cascades of Washington just 10 miles from the Oregon border and wolves just 20 miles from the Oregon border in northern California.

Although no establishment has yet been documented, verified detections of gray wolves have occurred in the Oregon coast range since Plan adoption, proving wolves are capable of dispersing to just about anywhere within Oregon. These detections satisfy the Plan's expectation that the population will continue to distribute and expand in both the east and west sides of the state. Nonetheless, there is still more to learn about their movement and habitat connectivity, especially as roadways continue to be a potential barrier based on documented vehicle mortalities. Ongoing department investigations and collaborations such as the Oregon Connectivity Assessment and Mapping Project (OCAMP) may serve to directly or indirectly address some of these questions and be beneficial to wolf conservation.

Translocation (moving wolves to facilitate dispersal and increased distribution) has never been considered since current Plan adoption and might not ever based on the sensitivity of the tool and ultimately the lack of need. Relocation is more plausible but the language (and OARs) regarding prohibiting relocation of wolves known to engage in conflict is unnecessary as the department's wildlife damage policy prohibits such an act for large carnivores. Oregon's wolf population has been discussed as a potential source for reintroductions elsewhere (e.g., Colorado), and while the Plan does not cover such an activity, it does not prohibit it, but it is also unnecessary for a unique scenario like that to be (fully) addressed in the Oregon Plan.

*Potential changes:* Strategies could be updated to remove those that are no longer relevant due to wolf expansion in the state (i.e., translocation, support wolf occupation of public lands, etc.). The map (Figure 1 in Plan) and associated discussion could be updated to include wolf expansion across the state and to/from other states.

*Impact if updated:* These updates would make the information in this section more current but would not impact implementation of the remaining strategies regarding distribution.

## B. Population Objectives and Management Phases

This section includes management objectives and strategies that relate to wolf population status during the phases and in each of the WMZs established in previous section. Specifically, the strategies call for the use of three management phases and to shift from using breeding pairs as a monitoring metric to pack counts when Phase III is reached.

Most of the text regarding the purpose and intent of the phases and population objectives is relevant, mostly because it is background information and not true guidance. Nonetheless, the cautious expectations and assumptions have held true such as steady advancement statewide towards satisfying the management population objective. This is demonstrated by the West WMZ meeting the first-year

requirement for transitioning into Phase II (i.e., four breeding pairs for three consecutive years), the East WMZ has been well above the seven breeding pair threshold for many years (13 breeding pairs in 2022), and 30% minimum wolf count increase from 2018 to 2022.

The Plan was updated immediately following removal of wolves from the list of Oregon Endangered Species in 2015. Due to the timing and the sensitivity of the topic, the Plan discusses in great detail the situations where state relisting could occur. Eight years after state delisting, four after the current Plan adoption, and continued growth in wolf numbers and distribution, the sensitivity of and potential need for relisting has been greatly reduced. While the current text is informational, it is perhaps excessive relative to other needs and points of guidance.

*Potential changes:* The current text could be edited to be more concise.

*Impact if updated:* These updates would result in simplified background text, but would not impact strategies for implementation, which remain relevant.

### C. Potential Conservation Threats

The Potential Conservation Threats section contains management objectives and strategies that focus on identifying and reducing threats to wolf populations and addressing conflict with competing human values while simultaneously using management measures consistent with long-term conservation. This area of the Plan is of interest to those focused on wolf conservation and recovery. The section is comprised of the following six sections.

#### *Human-caused mortality*

This subsection is likely the most important section of this chapter as all available information indicates human-caused mortality is the greatest potential conservation threat to wolves in Oregon as it is the highest documented source of wolf mortality on an annual basis. The impact of a given level of mortality on population dynamics requires understanding of survival and knowing whether mortality is additive or compensatory (i.e. apparently high levels of human caused mortality do not necessarily impact the population if other factors mitigate the losses). The Plan appropriately puts into context what varying levels of mortality mean in terms of potential population trajectory. Fortunately, documented rates have not exceeded the 20% for human-caused mortality rate (maximum documented 13% in 2009) and 32% total mortality rate (maximum documented 13% in 2021) that the Plan indicates may be a threshold above which population declines may occur. In addition, recent analyses by department researchers have observed high wolf survival rates and a population viability analysis suggests a robust, increasing population.

While authorized take continues to be carefully tracked and regulated, unauthorized take continues to be a significant concern in terms of potential effects on wolf populations, particularly as it is difficult to document and track and occurrences are under-reported. In recent years, known unauthorized take comprises about half of documented wolf mortalities. Despite documented mortality levels falling below estimated thresholds whereby population decline might occur, the increase in illegal take and difficulty quantifying it make this area the greatest conservation concern for the department. The Plan readily recognizes the concern, directs the implementation of measures to reduce the threat, and does not restrict any strategies or solutions to address the issue.

Targeted efforts to reduce illegal shooting of wolves due to mistaken identity via a wolf vs. coyote ID quiz and outreach materials may have been at least partially successful due to the low rate of occurrence despite growing wolf population numbers and distribution. Efforts to reduce poaching have primarily focused on monetary and big game preference point rewards. Messaging through the department's anti-poaching campaign that started after the current Plan adoption could be increased. To date, there have not been any rewards issued to individuals who have reported information contributing to any charges being filed. The campaign could increase messaging about wolf poaching to increase awareness, but alternate strategies may need to be considered as large monetary rewards seem inadequate to produce meaningful leads for law enforcement.

### *Genetic diversity and connectivity*

While a lack of genetic diversity and population isolation is a potential concern for wolves and any wildlife population, all data, analyses, and experience indicate it is not an issue for Oregon wolves. Genetic analyses and documented dispersals clearly show that Oregon wolves are a part of a metapopulation spanning Oregon, Washington, Idaho, Montana, Wyoming, California and into the Rocky Mountains of Canada. While it is fair to maintain mention of a lack of genetic diversity in the Plan as a potential conservation threat, the concern (or lack thereof) would have to be put into perspective with all the genetic research findings since adoption.

### *Habitat*

Like genetic diversity, it is most appropriate to include a lack of, or decline, in habitat as a potential conservation threat. While some wolf habitat has more of the necessary components (i.e., food, water, shelter, space) than other areas, habitat is not currently considered a factor limiting wolf conservation. Wolves are habitat generalists meaning they have few specific habitat needs relative to other species, but are dependent on prey populations. Because of this, management efforts to improve wolf prey and prey habitats are a meaningful surrogate for wolf habitat management.

A 2015 exercise by the department to coarsely map wolf habitat across the state remains relevant in terms of both our current understanding of wolf habitat and the presence and location of that habitat in Oregon. While small-scale losses of habitat may occur temporarily or permanently, rarely does habitat loss occur at a scale that has been documented to greatly impact wolf populations in Oregon. However, in some areas, preferred habitats may be reaching carrying capacity, pushing other wolves to occupy lower-quality habitats. Again, this is not likely a conservation threat, but these lower quality habitats may at times represent private land where these wolves are more at risk for conflict with humans and livestock. This occurrence or higher probability of occurrence is a large concern for livestock producers in areas of northeast Oregon.

### *Human attitudes towards wolves*

This section, which should occur under the human-caused mortality section, is closely tied to human-caused mortality in that an intolerance of wolves and/or wolf policy may be directly or indirectly associated with wolf mortalities, specifically illegal take. The department has desires to conduct human dimensions research on public opinion of wolves and wolf conservation and management, but no studies have been conducted thus far. Ideally, human dimensions research on the topic could help produce better strategies on how to address the human-caused wolf mortality conservation threat.

### *Hybridization*

Wolf hybridization with domestic dogs is seemingly rare in Oregon and does not serve as a relevant conservation threat. Hybrids, whether occurring naturally (e.g., wild wolves breed with domestic dogs) or unnaturally (e.g., wolves and domestic dogs are bred in captivity), may have little fear of humans and therefore serve more of a threat to human and pet safety.

### *Diseases and Wolf Health*

Wildlife pathology is an always evolving discipline of science, partially due to new or reoccurring diseases being documented. As such, disease will always be a potential conservation threat to wolves. That said, Oregon wolf disease surveillance suggests that diseases have not had a long-term impact on wolf populations to date. For example, serology analysis conducted on wolf blood samples continues to show the high prevalence of canine parvovirus presence and the rate of exposure has increased for some diseases like canine distemper. This means that more and more wolves are being exposed but not succumbing to these known wolf diseases. Disease monitoring will continue to be a regular part of wolf monitoring in Oregon to detect any emerging diseases that might negatively impact wolves, humans, prey, domestic animals, or other wildlife.

*Potential changes:* Additional strategies could be added to reduce illegal take of wolves, though it is unclear what those might be. Information could be updated to reflect that genetic diversity and hybridization are less of a conservation threat than when the Plan was adopted.

*Impact if updated:* Illegal take of wolves remains a high priority issue for the department. Actions to address this issue are ongoing and updates to the Plan would not raise the urgency or provide additional management authorities.

#### D. Monitoring Wolf Populations

This section includes objectives and management strategies intended to ensure the department maintains information on the Oregon wolf population status and distribution through a monitoring program. The strategies focus on monitoring wolves through traditional techniques such as telemetry, remote camera surveillance, and biological information collected during captures, but also consider use of new techniques such as citizen science, models, and new research findings.

The section provides detailed guidance for collaring priorities in Phases I and II and establishes department discretion in Phase III. This is often an area of confusion or disagreement with the public, especially from the livestock community where the expectation is that the department will deploy at least one collar in every known pack in Phase III. The Plan does not require this, primarily in recognition that it is not logistically feasible (workload and success rate) to capture such a high number of wolves. Nonetheless, the department is often under pressure to deploy collars to potentially aid in addressing livestock issues. Additionally, there is public pressure to share wolf data such as collar frequencies and locations to help mitigate conflict. This is countered by public pressure not to share information due to concerns it could lead to illegal take. Additional Plan language could clarify how collar data is of limited value to some requestors, primarily due to the difficulty in locating a VHF collar through radio-telemetry and a GPS collar data only tells you where the wolf was at some point in the past (not where it is or will be), though it is unclear whether this would have an impact on perception. An overview of what it takes to safely capture and collar wolves could also be informative when detailing collaring priorities and the intended use of collars beyond annual counts and livestock conflict. For example, capturing and collaring wolves is a time intensive, expensive, and dangerous process that requires considerable skill and prohibits staff from addressing other responsibilities.

Some interested parties have expressed interest in clarifying in the Plan that the department is the lead agency for monitoring, including trapping and collaring. The department is indeed the lead agency for monitoring wolves in Oregon and collaborates with partners (e.g., agencies, tribes, etc.) as necessary, but the Plan could be more upfront and state those facts outright to satisfy the request, though again this has not been an issue for implementation of monitoring to date.

This section provides guidance to transition from monitoring of individual wolves to aid in assessing wolf breeding pairs (i.e., Phase I and II) to a monitoring program that is more conducive to tracking populations across large scales (Phase III). This transition has not occurred in the East WMZ that is currently in Phase III. The primary reason for this being that no reliable monitoring scheme has been developed for Oregon to date, though the department has initiated a process to evaluate other methodologies. Once developed, that product could be used to provide the zone pack count as called for in the Plan, but until then, current monitoring techniques will be employed, and the Plan does not prohibit this.

The department often hears frustration from some members of the public regarding the use of a minimum count because they feel the actual wolf population count is higher. The Department agrees that the actual count is higher than the minimum count, which is based on visual confirmation and therefore underestimates the actual wolf population count for Oregon because not all wolves will be observed. As noted in the Plan, modelling in other areas suggests that 10-15% of wolves are not detected in minimum counts, supporting the contention that Oregon's actual count is higher than reported. Although a more accurate count would be informative, achievement or implementation of Plan objectives, strategies, or criteria are not linked to population counts or estimates.

*Potential changes:* Additional guidance on priorities for collaring wolves and sharing collar data would help with workload and clarity on data-sharing issues. Clarification on roles and responsibilities for monitoring, including trapping and coloring could be added.

*Impact if updated:* Additional guidance and clarification could improve efficiency in implementation, but that guidance and clarification can be developed and implemented outside of a Plan revision.

#### E. Coordination with Other Govt. Agencies, Organizations

This section directs the department to communicate and coordinate with other agencies and organizations in wolf conservation and management. The section is straightforward and still relevant.

#### **Recommendation**

This chapter contains relevant guidance that has been actively followed by the department. Our review has highlighted instances where updates to the language would further clarify areas of the Plan that have been subject to misunderstanding or differing interpretation. For example, more detail could be provided on collaring priorities in the various phases. This would provide more realistic expectations given the significant challenges involved in capturing and collaring wolves. In addition, the conservation threats section of this chapter could be adjusted to better reflect our understanding that many are not considered current threats. Deemphasizing or removing issues that have not shown to be of major concern would also be beneficial by narrowing department focus. For example, this could include greater focus on illegal take and less focus on genetic concerns. While addressing these issues is a high priority for the department, the Plan as written is not hindering the department's efforts.

Several aspects of the Plan have yet to be implemented even though the thresholds for these actions have been met. For example, the Plan directs a shift from expressing the status of wolves in Oregon as the number of breeding pairs to the number of packs in areas where the management population objective has been met. In the East WMZ, which has been in Phase III for some time now, this transition has yet to happen because no new monitoring scheme has been developed for Oregon, but the process is underway. Similarly, there is a desire to shift away from the annual minimum count to a model-based population estimate. Again, while this has yet to occur, actions are currently being taken in pursuit of this goal.

Although we note that changes could be made, none of the aforementioned are impacting the department's ability to implement the Plan so identified changes could be deferred to a future date.

## CHAPTER 3. WOLVES AS SPECIAL STATUS GAME MAMMALS

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### **Overview**

Wolves are classified in Oregon Revised Statute as a special status game mammal (ORS 496.004(9)). Chapter 3 of the Plan describes (via Commission adoption) what that definition entails. The narrative in this chapter describes the overlap but also the separation of the conservation and management of wolves and other large carnivore game mammals. This includes management tools, information reporting, and penalties for illegal take. The majority of the chapter provides details regarding wolf management tools and activities in Phase III of the Plan, specifically the use of Controlled Take (Commission approved action for wolf population management that allows the take of a wolf by special permit (on public or private lands) to address long term, recurring wolf-livestock conflicts, ungulate population objectives, or winter range or feeding area objectives).

### **Findings**

The department has followed guidance in this chapter, but while eligible for consideration, controlled take has not occurred in the six years since the East WMZ has been in Phase III. When opportunities arise, the department continues to modify the wolf program to follow the lead of the Oregon bear and cougar programs. Examples include collaborating with agency partners to address workload issues.

Despite not being implemented, the potential for controlled take remains a topic of significant interest to some groups and individuals. The chapter lays out the numerous stipulations, but in summary, controlled take would allow hunters and trappers, who receive a permit from the

Commission through a public process, to take a wolf under one of two situations: long term recurring depredation of livestock or ungulate populations not meeting goals or objectives. Wolf advocates are generally opposed to controlled take.

In both scenarios (livestock conflict and ungulate population impacts), controlled take must not impair wolf population viability or reduce overall population health factors within the region. The Plan is not explicit on how to satisfy that requirement but the department would likely use a population viability analysis (PVA) run under relevant scenarios. If implemented, the Plan requires the department to monitor results and report on activities in the wolf annual report.

In summary, Chapter 3 receives a lot of public and interested party attention but to date, much of the controversial content has not been implemented because the established criteria have not been met. Our review concludes that the majority of the chapter content remains relevant, both in terms of providing agency direction and background information.

### ***Recommendation***

As many of the management strategies identified in this chapter have not yet been implemented, there is little direct experience regarding the explicit issues at hand and prescriptive solutions.

The department could provide clarification on some terms and phrases to satisfy interested parties, but doing so would likely require a full evaluation and process including protracted interested party engagement. The department has implemented the direction provided in the chapter regarding recognizing wolves as a special status game mammal while also following other Oregon large carnivore policies. There are no proposed changes to this chapter at this time because content remains relevant and management options in the Plan have not yet been fully utilized.

## CHAPTER 4. WOLF-LIVESTOCK CONFLICTS

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### ***Overview***

Consisting of six sections, this chapter focuses on information, methods, and management actions to reduce or minimize wolf-livestock conflicts in Oregon. The first three sections are primarily informative on livestock and dog/pet conflict and tools and techniques and contain Oregon data and findings from published literature. The final three sections provide guidance and direction regarding explicit strategies to reduce conflict, department responses to depredations, and department assistance to livestock producers.

### ***Findings***

#### ***A. Livestock depredation and other effects***

This informational section provides an overview of livestock species in Oregon and reported losses across all sources, but the majority of information in the section is on wolf-livestock conflict. This latter section provides information on documented depredation norms, rates and numbers in Oregon and the West, creating a greater understanding of what contributes to conflict and the ability to detect and quantify these events.

There is substantially more Oregon data that could be added to this section coming from additional ODFW analyses. This could contemporize the section and place greater emphasis on Oregon-derived data and experiences than those from elsewhere. The Plan does not include a relatively new analysis of Oregon wolf depredations using data from 2009-2022. That analysis includes findings on department depredation investigations, the spatial and temporal patterns in depredations, livestock producer frequency of occurrence, and department lethal removal authorization rates. These results help put into context wolf-livestock conflict that otherwise is not adequately distributed through current communication outlets, but findings would not likely redirect current Plan direction.

Current topics receiving attention from interested parties related to this section include the rate of undetected depredations (in open range systems) and correlations between depredations and pack size. The interest in undetected depredations is in relation to compensation for loss of livestock and some argue that compensation should account for undetected losses. However, neither the Plan nor the department regulate compensation (see below). Because larger packs have higher energy demands, some argue that wolves should be managed to occur below a certain pack size to reduce depredations. However, depredation data collected in Oregon do not support such a clear relationship.

*Potential changes:* Updating this section with new Oregon data and analyses would contemporize the chapter and provide more insight into wolf-livestock depredations in Oregon.

*Impact if updated:* Impacts of such a change would be minimal as it would just be building upon the informational content already present.

#### B. Working dog and pet predation

This informational section describes the risks to working dogs and pets/sporting dogs from wolves and describes scenarios in which encounters could occur.

*Potential changes:* The section could be updated to include Oregon occurrences but is otherwise short and limited in directing Plan implementation. Other low-priority updates could also include consistent clarification of domestic, pet and sporting dogs and a recognition that as wolves expand in Oregon, certain geographical areas may be more conflict prone than others due to factors beyond department control.

*Impact if updated:* There is likely no impact, as the section is mostly informational.

#### C. Tools for minimizing livestock depredation

This informational section provides a comprehensive list of specific tools and techniques to proactively and/or reactively alleviate wolf-livestock conflict. Many items can be further expanded, increasing the context for each, but while experimental practices continue to surface (e.g., drones), no proven tools/techniques are missing nor are prohibited by the Plan.

Two sections would benefit most from an update: human presence and lethal removals. Human presence is a highly important tool, but experience has shown a great deal of confusion in understanding what it is and is not. Providing examples demonstrating the tool and how it can be implemented (even second-hand when attempting lawful lethal removal) would be of value so it can be used more frequently and effectively. While making these clarifications in the Plan would have some value, the department is already working directly with producers to improve understanding and has recently entered into agreement with the Western Landowners Alliance to further strengthen implementation of these methods.

The other section is lethal removal, a highly controversial tool that receives considerable attention. Department staff hear that the lethal removal tool is being used too often and at the same time not enough. Lethal removal is a complex component of wildlife management, and the appropriateness and success of the tool is entirely dependent on the situation. An opportunity to update a section with new findings and Oregon data and experience could add clarity to the use of the tool.

*Potential changes:* The section could be updated to include additional information on tools for reducing conflict. Additional information could be provided on effective levels of human presence as a deterrent. The section on lethal removal could be expanded to include more recent findings on effectiveness, as well as Oregon-specific data.

*Impact if updated:* These updates could provide more clarity to livestock producers and other parties on available tools and effectiveness; however, these efforts to develop or improve tools, implementation, and effectiveness are ongoing, and a Plan update is not critical for those implementation efforts to continue.

#### D. Strategies to address livestock conflict.

Working off the foundation laid by the proceeding sections, this section and those after it contain management objectives and strategies. The management objective in this section is to continue use of a three-phased approach to reduce conflict while maintaining wolf conservation. The strategies include the department working to inform, educate, implement, and train all affected parties in techniques to resolve wolf-livestock conflict. There are limited differences between Phase II and Phase III when it comes to management guidance and tools, or at least those eligible to date. However, there is often an expectation that there is a substantial difference between the two phases and that the department has failed to demonstrate a substantial difference in actions between Phase II and Phase III in the East WMZ. At times, the department receives inquiries regarding the possibility of a Phase IV at some point, but conversations regarding the need rarely progress very far because much of what's defined in Phase III has yet to be implemented.

Many expectations and explanations are provided in the section, such as the value of nonlethal tools and expectations that some (but not all) nonlethal tools will be implemented to address conflict. There is often confusion regarding the expectations outlined in this section, such as an assumption that the Plan requires all nonlethal tools to be implemented (regardless of appropriateness), that implementation of non-lethal tools can stop once lethal removal has been authorized, or that an incremental increase in implementation of (appropriate) nonlethal work is required of a livestock producer in perpetuity. Clarification in this section of the chapter could help narrow and focus these kinds of expectations in the Plan but disseminating the information through other means would likely be more efficient and effective.

This section also includes a general description of how the department evaluates each situation on a case-by-case basis to determine the most appropriate response in meeting the goal of resolving wolf-livestock conflict. What's not stated clearly nor frequently enough is that the goal of all lethal and nonlethal actions is to resolve conflict. All too often other metrics are incorrectly used to evaluate success (e.g., dead wolves, producer burden) which do not align with the primary goal. For example, if lethal removal is authorized and no wolves are killed, but the conflict stops, then the overall goal was achieved. The disconnect with that overall goal has led to a diversity of measures of success, resulting in multiple perspectives to assume success or failure. With more experience stepping through these processes and additional questions regarding them, there are many lessons-learned that could be included here to help the public understand the process and the ultimate decisions made.

The section then closely follows OAR Division 110 describing the allowances and processes associated with the harassment and take of wolves in each of the three phases. The Phase I description is much simpler than OARs but better focuses on the intent of these rules. The confusion created by the complexities of Phase I OARs could be at least partially resolved if OARs were simplified to match the corresponding narrative found in this section. Phase II and III narratives are also presented but are a much closer match to OAR language. Confusion under these phases is not associated with complex OAR language, but rather the differences between reaching the minimum definition of Chronic Depredation status and when lethal authorization occurs and who is eligible to receive a permit.

A major barrier in this section has been the demand of wolf work on staff time, adding to an already heavy workload. Nonetheless, successes on this issue include: simplification of the depredation investigation form and subsequent streamlining of the public reporting process (see Chapter 7); assistance from USDA Wildlife Services (Wildlife Services) to address nonlethal needs and lethal removal when requested; pending additional assistance from Wildlife Services to conduct depredation investigations; additional staff (regional wolf biologists) that are focused on wolves, outreach and education, who can assist with non-lethal measures, and provide greater support to districts; and partnerships with outside agencies and organizations that provide additional support to livestock producers in the form of grants and non-lethal tools.

*Potential changes:* The section could be updated to provide clarification on expectations around use of non-lethal tools, the goal of lethal and non-lethal actions, and the process for decision-making around lethal authorization.

*Impact if updated:* These updates could provide clarity, but as described above, much of this work to provide clarity and improve implementation is ongoing and does not require a Plan update to continue.

E. Agency response to wolf depredation

This section contains an objective and strategies to implement an effective, transparent depredation response program to meet producer needs and ultimately minimize further occurrence of wolf-livestock conflict. In this section, the department is directed to partner with other agencies such as Wildlife Services and the USFWS to meet the section's goal, especially in areas of Oregon where wolves are federally listed under the Endangered Species Act. The section prioritizes conducting depredation investigations in a timely manner and the necessary components of an objective process and final determination.

The department has been able to implement the majority of this section, however increased workloads due to more wolves and increased wolf-livestock conflict has made it difficult to uphold. A recent analysis of department investigations has demonstrated that the department spends an enormous amount of time responding to investigation requests and has done so very quickly following notification, even on nights, weekends, and holidays. As described in this section, cooperation with federal partners (USFWS and USDA Wildlife Services) is necessary to address the growing department workload issues. However, those federal agencies often have their own limitations making it challenging to lean on these collaborations as the Plan describes.

The expectations regarding implementing a robust, objective, evidence-based investigation process have been achieved by the department. Over time, the wolf program has been adaptive in refining the process, focusing on site preservation and key evidence to improve the quality of information and reduce unnecessary uses of time. Having conducted over 800 depredation investigations (almost 400 since Plan revision in 2019), the department's trained staff are experts in using evidence to produce objective determinations. As the department adds USDA Wildlife Services as an agent to do livestock investigations, some groups are requesting additional transparency to build trust that the same evidence-based investigation process will be conducted. Regarding these investigations, the Plan dictates that both agencies will review and implement consistently applied training protocols and standards, and the department will continue to rely on objectively conducted and evidence-based investigations, regardless of which agency conducts the investigation. Although not required by the Plan, sharing the ultimate determination of an investigation is still an action by the department (see Chapter 7).

*Potential changes:* This section and the strategies described remain relevant.

*Impact if updated:* No updates recommended.

F. Livestock producer assistance

The livestock producer assistance section has an objective to provide proactive and reactive livestock producer assistance. The associated strategies focus on the department providing education, outreach, training, resource acquisition, and networking to establish broadscale awareness and implementation of conflict-deterrent tools and techniques. Ideally, through these beforementioned collaborations, a network of educated livestock producers and self-sufficient assistance programs could meet fluctuating needs.

The section describes how the department is to provide assistance, but the text falls short of directing the actual work performed. Many times, department staff are the individuals installing or implementing nonlethal tools to address conflict and are not just sharing information as the section suggests. The department also actively recruits external resources to provide training or direct assistance to aid livestock producers such as NGOs and grants that specialize in addressing conflict. These resources are imperative as they can increase the acceptance and implementation of tools by livestock producers because the messaging is coming from a peer in or a trusted source to the livestock community.

There have been a number of successes in this section, most notably where livestock producers have found creative and strategic pathways to alleviate conflict and become advocates for proven techniques to their peers. Local and county governments, working with the department, have also taken steps to aid in addressing conflict such as in Baker County where producers can take carcasses to a new composting facility, eliminating potential wolf attractants in the county. Another success here has been a shift from reporting individual areas of known wolf activity (AKWAs) for wolves north of I-84 to a super AKWA that better represents wolf use and pack overlap to establish more accurate public expectations and decreases staff workload. Department staff have also crafted a guidance document to be provided to livestock producers to help them understand what is required and expected in a lethal removal request to reduce confusion, frustration, and delayed action.

There is often confusion regarding compensation and wolf management, primarily the lack of department ownership, oversight, and overlap of Oregon Department of Agriculture's (ODA) Wolf Depredation Compensation and Financial Assistance grant program. Public feedback regarding that grant program and the Plan are often misaligned due to this confusion. The department assists with the implementation of the program by determining when depredation occurs, delineates areas of known wolf activity, and provides input (when requested) by county wolf compensation committees. Otherwise, the department does not dictate the availability or allocation of funds, despite public comments assuming so. Providing greater details regarding the overlap and involvement of the department and the grant program in this section could help reduce this confusion.

*Potential changes:* This section could provide additional information to clarify the confusion around ODA's Wolf Depredation Compensation and Financial assistance grant program.

*Impact if updated:* This update could reduce confusion about roles of ODFW and ODA; however, this clarification can also be provided outside of a Plan update.

### **Recommendation**

The chapter provides relevant guidance, and the department has been successful at following that guidance. Our findings identify issues that could be updated, but many are being addressed when possible and do not necessitate a change in the Plan. The Plan could benefit from some updating and clarification on certain points but most of those changes would not impact the implementation nor actual function of the Plan itself.

## CHAPTER 5. WOLF-UNGULATE INTERACTIONS AND INTERACTIONS WITH OTHER CARNIVORES

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### **Overview**

This chapter consists of five sections. The first three sections focus on current population trends of Oregon's ungulate species, and the potential and current effects that wolves have on those populations. Section four focuses on Oregon's multiple predator system and how wolves interact with other large carnivores. Section five dives into ODFW's adaptive management strategies for wolf ungulate interactions specifically recognizing the importance of ungulate populations to wolves and humans.

## ***Findings***

### **A. Potential Effects of wolf Predation on Oregon's Ungulates:**

This informational section contains no management strategies or objectives but is background for the strategies outlined in section V of this chapter. The discussion in this section relies heavily on previous studies throughout the range of wolves to predict the effect that wolves will have on Oregon's elk, deer, moose, bighorn sheep and mountain goat populations.

*Potential Changes:* An update of the scientific literature on the topic, which has continued to advance, could include additional research findings in Oregon.

*Impact if updated:* The literature cited in this section remains current and the new studies have not identified significant changes that warrant updating the plan. Inclusion of Oregon specific data in this section could increase awareness by interested parties of data efforts in Oregon. When possible, providing a better sense of scale would be advantageous to increase clarity of potential effects at a fine scale (e.g., small area, few individuals) versus large scale (e.g., large area, many individuals).

### **B. Elk and Mule Deer Populations since Wolf Re-establishment:**

This section contains no management strategies or objectives but is background for the strategies outlined in section V of this chapter. This section discusses elk and mule deer population trends in nine of the Oregon Wildlife Management Units, specifically in NE Oregon, that have had established wolf packs since as early 2009.

*Potential changes:* Ungulate population data could be updated to include recent years data and data from other WMU's where wolf packs have recently established.

*Impact if updated:* The data in these tables inform whether wolves are and/or have been impacting ungulate populations in Oregon. At the time of the last Plan revision, there was no WMU showing a decline correlated with the arrival of wolves. Recent data does not change this conclusion so its inclusion would have minimal impact, especially as the department is already considering these data in its implementation.

The department will continue to monitor Oregon's ungulate populations to determine if impacts occur in future.

### **C. Big Game Wildlife Management Units and Management Objectives:**

This section contains no management strategies or objectives but is background for the strategies outlined in section V of this chapter. This section includes ODFW's wildlife population management objectives (MO) and benchmarks (for black-tailed deer) and discusses the purpose of objectives and the factors that are considered when setting these objectives. It then overviews the elk, mule deer, black-tailed deer, white-tailed deer, pronghorn, California bighorn sheep, rocky mountain bighorn sheep and rocky mountain goat population trends in relation to MO's (or benchmarks for black-tailed deer).

*Potential changes:* Oregon ungulate MO's and benchmarks in this section could be updated. The mule deer information is likely to change following update of the Oregon Mule Deer Management Plan in 2024.

*Impact if updated:* Updates to this section could increase clarity but not impact Plan implementation.

### **D. Wolf Interactions with other Carnivores – Multiple Predator Systems:**

This section contains no management strategies or objectives but is background for the strategies outlined in section V of this chapter. This section discusses wolf interactions with Oregon's top

three large predators: bear, cougar, and coyote, specifically looking at how wolf interactions with bear, cougar, and coyote may affect ungulate populations.

*Potential Changes:* Additional Oregon-specific data has been collected since the last review that could be included.

*Impact if updated:* The new data does not alter our prior understanding that there are currently no known negative consequences of interactions between wolves or other large carnivores in areas of wolf reestablishment.

E. Strategies to Address Wolf-Ungulate Interactions:

This section contains management objectives and strategies that focus on ensuring wolves and ungulates are managed to avoid negative impacts to both. This section begins with recognizing the importance of ungulate populations to wolves and humans and then discusses strategies/factors the ODFW will look at when considering active management of wolves in a specific area.

*Potential Changes:* Most of the strategies remain relevant both to wolf and ungulate management. The strategy associated with use of translocations for Phases I and II could be eliminated or de-emphasized as it is likely not a tool the department would use.

*Impact if updated:* This change would have no practical impact as the use of translocations is optional, so the department has discretion whether or not to utilize this tool.

**Recommendation**

No substantive changes are recommended for this chapter. Updates and clarifications to the strategies outlined could occur, but these would not alter the department's ability to implement strategies in the most effective manner to meet the management objective.

Organizational changes (rearranging content) and updating data in tables may help address some of the most common questions the department gets regarding this chapter. Specifically, addressing the difference between scale at which we are monitoring the impact of wolves on ungulates and the scale at which the public may observe impacts (i.e., localized impacts vs population impacts) may help with understanding of this discrepancy and clarify the departments implementation of the Plan, though this could also be achieved via other mechanisms.

Continued recognition by the department that ungulates remain a major priority is important to address many concerns from the public. The department will continue to research and monitor the relationship between wolves and ungulates to inform future management. Oregon's elk populations in areas with wolf reestablishment are currently stable-to-increasing.

Mule deer populations have continued to decline in Oregon and throughout the West. This trend is apparent in WMU's that have established wolf populations and in areas that do not. While this is a concern for the department and public, addressing those declines in the Plan is not appropriate and should be undertaken in the Mule Deer Plan revision process.

## CHAPTER 6. WOLF-HUMAN INTERACTIONS

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**Overview**

This chapter covers: background on human safety; the general public and wolves; hunters and trappers and wolves; dogs and wolves; illegal, incidental, and accidental take of wolves; and

strategies to address wolf-human interactions. Addressing public safety concerns and providing information on wolf behavior are important to wolf conservation.

## ***Findings***

### A. Human Safety

This section is informational only, providing background on known wolf attacks to contextualize their rarity, especially in relation to attacks by other wildlife species.

*Potential Changes:* The section could be updated to reflect new information on attacks.

*Impact if Changed:* Despite the new information, wolf attacks remain exceptionally rare so the overall messaging would not change.

### B. Interactions with the Public

This section is informational only, providing background on normal wolf behaviors so the public understands what might constitute threatening or aggressive behavior. A list of guidelines is presented to provide information on actions people can take to help ensure that wolves do not become habituated. An additional set of guidelines is provided that describes what to do during a close encounter with a wolf. This information is thorough, still relevant, and does not require any changes.

### C. Hunters, Trappers and Wolves

This section is informational only, providing hunters and trappers background on the rules and regulations surrounding wolves because the chance of encountering a wolf in the field is significantly higher for these groups. This section references where to find information on wolves and emphasizes the importance of knowing the difference between a wolf and coyote. Trappers are encouraged to try to avoid catching wolves, but it is explained that if a wolf is caught in a public trap that the managing agency must be notified. Trappers have been doing well at notifying the ODFW when they incidentally catch a wolf resulting in more wolves collared.

*Potential Change:* The data on wolves caught in Oregon from licensed trappers could be updated or removed.

*Impact if changed:* This information is not linked to implementation of any management strategies.

### D. Dog and Wolves

This section is informational only, describing wolf-dog altercations and providing general advice on how to reduce conflict between dogs and wildlife. There are concerns from sports groups that sporting dogs and pets do not receive enough attention in the Plan. Specifically, protection of livestock and working dogs from wolves is allowed under caught in the act provisions and the take of those dogs by wolves are eligible to qualify as a depredation. However, the Plan and rules do not provide similar protections for domestic dogs. Livestock protection dogs are not included in this section as it references Chapter IV. All the information provided is still relevant and does not require updating.

### E. Illegal, Incidental, and Accidental Take

This section is informational only. House Bill 4046 (2016) and ORS 496.705 are described followed by a transition into a more detailed look at each one of these categories of take. The three forms of take are each described through the lens of what is relevant to the law as it stands. Illegally taking a wolf is now a Class C felony, but as this section is informational only, an update of this section through a rulemaking process is not required.

## F. Strategies to Address Wolf-Human Interactions

This section describes management strategies intended to minimize the potential for negative wolf-human interactions. This is followed by a list of eight strategies that describe how the Plan proposes to meet the objective. The strategies are focused primarily on information and education but also include relocation, and stress timely response to incidents when they occur.

**Potential Changes:** This section could be moved to the beginning of the chapter to improve consistency with the layout of other chapters in the Plan.

**Impact of Changes:** Given that the objective and strategies remain relevant the benefit of organizational changes may be minor.

### ***Recommendation***

In reviewing this chapter, the basic concepts and recommendations regarding minimizing human interactions with wolves remain relevant. Current review of literature mostly updates statistics on European and North American wolf population estimates.

Some maintenance could occur such as updating the statistics and addition of details to accompany the examples present in the chapter. It would also be beneficial if the chapter was structured in alignment with the other chapters in the Plan by starting with the chapter objectives and subsequent strategies (currently found at the end of the chapter in section F). However, a change is not recommended as none of this would impact implementation of the Plan itself.

## CHAPTER 7. INFORMATION AND EDUCATION

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### ***Overview***

This chapter directs the department to inform and educate the public through programs using a communication plan that ensures transparency and easy access to information. Specifically, the chapter directs the department to disseminate content and provide education on a long list of topics related to wolf management. Multiple examples are provided of the various recipients of department directed information and education.

### ***Findings***

This chapter contains a management objective and associated strategy intended to inform and educate the public and foster two-way communication.

The Plan recognizes the need for broad distribution of information on wolves. However, it does not get into detail with respect to how information distribution may be compartmentalized and prioritized to best meet Plan goals. For example, information/resources directed to livestock producers to prevent depredation and information/understanding of our implementation of lethal control.

The chapter emphasizes transparency and easy access to information; this is accomplished with weekly updates to the internet-based wolf webpages, “Wolves in Oregon” ([www.odfw.com/wolves](http://www.odfw.com/wolves)) where information is shared about wolf biology and behavior, wolf management, specific Oregon wolves, livestock conflict, wolf current events, as well as an online form for reporting a wolf sighting.

The passage of HB2841 in 2019 directed the department to protect certain wildlife data, such as wolf radio-collar frequencies and exact location data that puts wolves and den/rendezvous sites at risk. The department takes these risks seriously, particularly in light of the illegal take that has been occurring. Although the data needs to be protected, there are times that it should be shared, such as

with agency partners and research institutions. Livestock producers and counties have requested radio-collar frequencies and for exact point location data to assist in their range rider activities and to search for dead livestock. To further explore this request, a commitment was written into SB886 in the 2023 legislative session requiring the department to submit a report to the Legislature by Sept 15, 2024, outlining wolf/livestock conflict and a summary of discussions occurring during this Plan review related to releasing wolf location data. None of this is currently addressed in this chapter or anywhere else in the Plan.

The department has implemented each strategy listed in Chapter 7, and the improvement of these strategies and techniques is ongoing. The department is constantly looking for the most effective methods, messages, and outlets to inform and educate the public, especially those living, working, or recreating in areas that are or could be occupied by wolves.

One communication strategy success is the 2022 changes to the internet-based wolf webpages where the department developed more mobile-friendly web pages with the goal of making it easier and more efficient for the public to get information about wolves in Oregon. Since the launch of the new mobile-friendly platform, the Wolves in Oregon site has seen a significant increase in traffic.

Lessons learned include adjusting informational web updates to better address contemporary data levels and workload. With increases in wolf counts, distribution, depredations, etc. since the Plan adoption, the high frequency of posting immediate notifications of new information was consuming large amounts of time for wolf program, Wildlife Division, and Information & Education staff. The inclusion of nonessential details in updates, while previously acceptable from a workload standpoint with fewer wolves, has become unsustainable.

Adaptations to address these issues were twofold. First, rather than posting notice of every new piece of information, similar types of information now get batched and released in regular intervals. For example, notifications of confirmed or probable depredations now get compiled and released weekly rather than as each occurs. Second, the information in those notifications were refined to include content essential to the subject. For example, current notifications of depredation investigation findings provide the date, final determination, general location, livestock species (and age class), land ownership, and associated wolves (if applicable) in a table. Previously, narrative investigation reports had excessive details on the pasture size (small pasture vs open range), when the animal had died or been injured, physical examination specifics, and details such as estimated livestock weight. These adaptations have greatly reduced staff workload while still meeting commitments of sharing essential information in a timely fashion.

In 2022, the department also combined the general wolf program and wolf-livestock automated email listservs to reduce staff time and duplication. These emails go to more than 12,000 subscribers. These subscribers to the email updates are a large driver of traffic to the new web pages.

*Potential changes:* As written, Chapters 7 and 8 both have strategies about maintaining a comprehensive wolf website and other confusing overlaps between the chapters. In a Plan update, this chapter could be rewritten to focus on sharing information with the public and change the title from “Information and Education” to “Public Outreach”. An alternative change could be to remove this chapter and instead develop an internal communications plan for wolves that segments out messaging and tactics for important audiences (e.g., livestock producers, hunters, hikers, etc.) in more detail. Information and education needs (and associated strategies) are constantly evolving so it is important to retain flexibility to change course outside of administrative rule (as do all other big game management plans).

### ***Recommendation***

In reviewing this chapter, the strategies to inform the public are being implemented and remain relevant. Several changes could be made such as adding strategies that are already being implemented or reformatting the objective and existing strategies to distinguish focus on different groups that could be affected by wolf interactions or conflict. The department will continue to

maintain a comprehensive wolf website and prioritize creating outreach materials to share with the public to increase tolerance and help livestock producers reduce depredation. None of the findings addressed above would impact the overall function of the Plan. Removal of this chapter entirely from the Plan could be considered and possibly replaced by an internal adaptive wolf outreach communications plan to provide more structure and guidance.

## CHAPTER 8. REPORTING AND EVALUATION

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### **Overview**

This chapter provides direction regarding the documentation and reporting of wolf conservation and management activities and the evaluation of the success and effectiveness of meeting the Plan's identified goals and strategies. The chapter contains management objectives and strategies that direct the department to report on annual activities, use the website to disseminate content, evaluate the Plan's effectiveness by assessing benchmarks established by the Plan and do so every five years as practicable, as is occurring now.

### **Findings**

The department has been successful in implementing the reporting requirements identified in this chapter, and actions such as the presentation of the annual report (now recorded and livestreamed) receives enormous attention. The department has also advanced reporting products such as a 2022 website revamp making the content more user-friendly. These efforts have improved the accessibility of wolf information. Whenever possible, the department is trying to find ways to streamline reporting to meet the Plan expectations but also be adaptive and address workload issues associated with more wolves, depredation events, and spatial areas. The evaluation strategies are being implemented in this Plan review.

The intent of this chapter is to ensure that the department provides public reports to allow the public and interested parties to track the department's progress in implementing the Plan. Unlike other department wildlife management plans, the Plan has one upfront goal but contains numerous objectives and dozens of strategies throughout the text. It is very difficult to measure progress with this number of objectives and strategies at varying levels of detail and scope. Some possible considerations include a condensed set of objectives (like other wildlife plans) based on the Plan's content, removal/reduction of redundant objectives and strategies, and more inclusive strategies (e.g., a single strategy that includes multiple fine-detail strategies). In this review, the majority of these objectives and strategies have been/are being satisfied by the department; however, the ability to readily recognize that fact by others due to the current format is likely undermining the departments progress and success of the Plan.

As written, Chapter 7 and 8 both have strategies about maintaining a comprehensive wolf website and other confusing overlaps between the chapters. In a plan update, this chapter could be rewritten to focus on what reports are required and how Plan implementation will be evaluated and leave the methods of dissemination to Chapter 7. Another consideration would be to move Chapter 7 entirely from the Plan and some of the strategies moved into this chapter. Either way, the title of the chapter should be changed to clearly reflect the contents of the chapter.

### **Recommendation**

The reporting structure identified in this chapter consisting of timely updates through a website and email notifications, annual reports, and a five-year review with interested party engagement has served the Plan's overall goal well. Outside of the possible modifications to formalize an evaluation process, no issues have been identified with this chapter and the department proposes no modifications.

# CHAPTER 9. RESEARCH AND INFORMATION MANAGEMENT

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## ***Overview***

This chapter directs the department to use research to address key questions to ultimately aid in wolf conservation and management in Oregon. Strategies listed in the chapter include conducting research through collaboration, being fiscally/logistically conscientious, focusing on science-based monitoring protocols, strategically incorporating non-Oregon research findings, and publishing and sharing research results. The body of the chapter identifies the highest priority areas for research and provides a brief overview of current understandings and ongoing research.

## ***Findings***

The use of scientific research to address questions and knowledge gaps is foundational to wolf program activities. Collaborations have grown and so has the ability for in-house analyses by wolf program and wildlife research staff. Several endeavors are currently underway, but limited Oregon research has been finalized since Plan adoption. Interested party requests for specific research projects are limited but conducting human dimensions research to evaluate social tolerance is a shared desire by the department and interested parties. Sport groups have shown interest in research assessing wolf population trajectories, potential capacities in northeast Oregon, wolf impacts on native ungulate and other wildlife populations, especially small populations, and investigating controlled take criteria identified in Chapter 3 (i.e., are there situations where wolves are a major cause of ungulate populations not meeting established objectives or herd management goals). Ongoing ungulate research can continue to shed light on some potential impacts but may not all align with specific interested party questions. For example, the department might be focused on ungulate population health (e.g., survival rates, nutrition, recruitment, etc.), whereas some interested parties want to know potential wolf impacts on hunter harvest such as possible shifts in prey behavior and distribution at fine scales (e.g., within subpopulations, wintering areas).

Large questions remain, but as identified in the chapter, the department is addressing them as financial and logistical resources allow. One effort related to this chapter has been to store data and create databases to better facilitate the use of collected data. Research areas not identified in the chapter but are of interest to the department include human dimensions and assessing program practices such as depredation investigation response time and department workload (progress has been made on the latter).

## ***Recommendation***

There are possible changes to the chapter regarding the direction it provides, such as modifying the Objective to better reflect the chapter's direction of the use of research and more fine scale examples of possible research questions. There are also sections that could be updated to reflect the current status of ongoing research projects. However, the concept of the chapter remains relevant as are the topics within, and there is desire to carry out guidance such as conducting human dimensions research. No changes have occurred that would necessitate direction outside of the current chapter's scope.

# CHAPTER 10. BUDGET FOR IMPLEMENTATION

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## **Overview**

This chapter focuses on the program staffing and costs to implement the Plan and identifies funding sources. It also includes costs by ODA to implement the Wolf Depredation Compensation and Financial Assistance Grant Program.

## **Findings**

This chapter acknowledges that as the wolf population has increased, the costs associated with management have also increased. Since the 2019 Plan update ODFW staffing and budgets have increased dramatically, and it is anticipated that costs will continue to increase. Since it will be hard to keep the budget amounts up-to-date in the Plan, it may be better to steer the public towards the annual report for funding amounts and sources.

One major success for Plan implementation is the addition of three full-time staff to work regionally on wolf capture, monitoring, and conflict mitigation. Their support provides increased capacity to district biologists when wolf challenges are highest. The federal funding for ODA to use on grants to assist and compensate livestock producers has increased due to general fund match provided by ODFW regional wolf biologist positions.

Missing from this chapter is that the majority of the statewide implementation of the Plan is conducted by district wildlife biologists. These expenses in terms of time and costs are not enumerated in this chapter and have also increased as wolves have greatly expanded their range.

The chapter provides outdated amounts of funding provided by the USFWS and it does not account for the money the USFWS is spending on wolf management in the federally-listed area of Oregon. It also does not account for money spent by USFWS, ODFW and other sources to fund USDA Wildlife Services wolf activities.

Some interested parties prefer the department improve their own staff capacity, retention and budgets so that the department is even more of the lead agency and less assistance is required from other agencies such as Wildlife Services. However, other interested parties have desires for greater inclusion of other agencies. The Plan accurately predicts growing needs and workloads and calls for collaborations with partners to implement and achieve the Plan's directives. At times, those collaborations do require additional funds, sometimes coming directly from the department.

The chapter does not explain that although staffing and funding have increased to date, there is a limit to how much staffing and funding can be spent on only one of the species that ODFW manages. It will be necessary to develop a new approach more similar to other Oregon carnivores. As the wolf population will continue to increase, instead of continually increasing staff numbers, the department needs to consider adapting the responsibilities of ODFW biologists (i.e., changes in wolf monitoring, conflict response, non-lethal assistance, etc.).

## **Recommendation**

The chapter provides an overview of funding sources, budgets, and staffing related to the department's implementation of the Plan. It also includes mention of ODA's compensation grant program which is not a department funding source but is important for Plan implementation, but so are other agencies and programs not currently listed in the chapter (e.g., USDA Wildlife Services, OSP, USFWS, NRCS, anti-poaching campaign). Despite the need to update information and consider what content to include/exclude based on the lack of direct department overlap, the chapter does not provide any guidance or direction to the department. As this is essentially an information-only chapter of low public interest and one that is outdated when more contemporary values are presented

in the department's Wolf Annual Reports, the need to update this chapter is extremely low. In fact, this chapter could be omitted altogether and would not affect implementation.

## APPENDIX E. THE CHANGING CLIMATE

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### ***Overview***

This appendix provides an overview of the potential impacts on wolf conservation from climate change and biodiversity influences, including the potential direct and indirect impacts. Little has been directly documented regarding the relationship between wolves and climate change anywhere across their range, including Oregon, but information can be gleaned from a general understanding of wolf ecology and habitat and related observations and predictions. Specific sections of the Plan are identified as areas of opportunity to detect and better understand possible impacts.

### ***Findings***

The content found in Appendix E is still accurate, relevant, and supportive of achieving the Plan's goal. There have been more recent scientific publications relevant to wolves and climate change, but they are relatively few, often indirect on connections, and none significantly alter or change the scientific community's understanding of the topic. A literature update in that section could occur but is currently unnecessary.

The ODFW Climate and Ocean Change Policy (Policy), adopted after the current version of the Plan, is not referenced here but is partially embodied by this appendix, such as when addressing the potential impact of predicted future conditions (i.e. ORS 635-900-0017: Climate and Ocean Change Key Principles for Species and Habitat Management). This appendix, however, could be more explicitly aligned with the Policy to ensure ODFW's implementation of the Policy is clear.

### ***Recommendation***

Some additions and modifications could occur such as including reference to and more direct alignment with the ODFW Climate and Ocean Change Policy, but no major changes are needed.