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## **Re: Comments on Draft Elk Conservation and Management Plan**

The Center for Biological Diversity submits these comments on the California Department of Fish and Wildlife's Draft Elk Conservation and Management Plan, on behalf of our more than 216,000 members and supporters in California. The Center is a national, nonprofit organization whose mission is to protect and restore rare animals and their habitats through science, policy, education, advocacy, and environmental law.

We support an elk management plan that uses evidence-based scientific data to significantly increase the state population of all three elk species, promote expansion of elk into their historical ranges, create and maintain crucial elk corridors, and improve the health and vitality of existing elk herds. The elk plan should also reduce human/elk conflicts, emphasize non-consumptive public enjoyment of elk, and provide for Native American cultural traditions.

### **Makeup of Elk Working Group**

The development of the draft conservation plan relied on input from an elk working group convened by the Department. This working group was inappropriately stacked with hunting and agricultural interests and did not include independent wildlife biologists with expertise regarding elk. Also excluded were members of the public and organizations advocating for elk conservation, research, education, and ecotourism. Representatives from State and National Parks were not included, even though they play important management roles for many elk herds. As a result the draft conservation plan focuses overly on hunting and controlling elk to benefit hunting and ranching interests, at the expense of ecological considerations, elk preservation and non-consumptive uses. Much of the public has been shut out of the development of this draft plan. The elk working group needs to include all stakeholders, specifically those advocating for elk conservation, research, education, and ecotourism.

## **Peer Review**

The draft conservation plan needs to be peer-reviewed by independent wildlife biologists with expertise regarding elk. The draft conservation plan clearly lacks a scientific basis for many of the unsubstantiated assertions in the plan and for proposed management activities. The Department is required to use “ecosystem-based management informed by credible science in all resource management decisions” (F&G Code § 703.3). Credible science is defined as the “best available scientific information.” The draft conservation plan does not meet this standard.

## **Statewide Elk Population Goals**

The plan calls for increasing elk populations by 10% by 2028 in areas where human-elk conflicts are expected to be minimal. However the plan also states that for the immediate future the Department intends to maintain at least 5,000 tule elk statewide. This is less than the current number of tule elk in the state. It has taken more than half a century to increase the state’s tule elk numbers from less than 1,000 to the current 5,700. The elk plan should aim for much faster and ambitious tule elk population growth and range expansion. This will require establishment of new elk herds on suitable public and private lands, and expansion of existing herds. The plan should formally end the Department’s unofficial policy against introducing new tule elk herds. A new tule elk herd has not established in the state since 1998.

The plan should identify state owned public lands in the range of tule elk which will be managed for preservation and expansion of elk. The plan should identify state lands which will be managed for no hunting and no cattle grazing to maximize elk numbers and prevent resource conflicts. The plan should also identify other protected public lands with the potential to introduce new elk herds or to dramatically increase existing herds, such as federal lands at Point Reyes National Seashore. Point Reyes National Seashore should be a high priority Elk Management Unit. The draft elk plan barely discusses the growing free-ranging tule elk herds at Point Reyes, the only national park with tule elk. Point Reyes may offer the state’s best potential to rebuild large tule elk herds on protected land to maximize genetic diversity, and in a location with excellent public access and viewing. It is appalling that the Department has been advocating shooting and/or removing free-roaming elk at Point Reyes.

State funding should also be made available for private landowners who wish to create public elk viewing areas on their land, instead of just for hunting. For example, Wind Wolves Preserve near Bakersfield has very successfully re-introduced tule elk to their preserve, the southernmost extension of their historic range. The Wind Wolves elk herd has grown to more than 360 elk since reintroduction efforts began in the late 1990s. The preserve is aiming for a population of 2,000 tule elk, at which point their herd will be an important food source for endangered California condors. Wind Wolves Preserve is open to public for up close elk viewing and for school education programs free of charge, and there is no hunting.

## **The Plan Lacks Comprehensive Elk Population Data**

The Department lacks current or scientifically credible elk population data for some herds where it has created elk hunt zones and issued elk hunting tags. The plan admits that the Department “does not have the resources required to intensively monitor all the elk herds on an annual basis” and discusses the limitations of various survey methods. The Department has relied on a 30-year old computer program to make assumptions about hunting impacts on elk populations, often without credible or current population data on which to base the model.

The elk plan claims that expanding, modifying, or adding hunt zones will be evaluated based on adequate population monitoring which produces demographic data that indicates a population of sufficient size and stability to support hunting, and allows the Department to determine the effects of a limited hunting program. Such monitoring and demographic data has not been credibly done for some herds where hunt zones have been added or expanded, such as the Del Norte and King Range Roosevelt elk herds in the Northwestern California EMU and the Alameda-San Joaquin tule elk herds. The plan should prevent new or increased hunting of elk herds without scientifically sound information on population status and trends.

The Department is required to use “ecosystem-based management informed by credible science in all resource management decisions” (F&G Code § 703.3). Credible science is defined as the “best available scientific information” and recognizes the need for “adaptive management” which uses new information gathered through monitoring and evaluation to adjust management strategies and practices to meet conservation and management goals (F&G Code §§ 13.5, 33).

The plan should acknowledge and discuss the difference between an elk management unit and individual elk herds or subherds within that unit. The plan often conflates EMUs and herds when discussing impacts of hunting and population sizes. There may be small or declining elk herds within a particular EMU which cannot withstand current or increased hunting pressure. Due to hunter access, elk hunts may be placing increased pressure on specific herds rather than culling a few elk from all the regional herds in an EMU. A potential harvest strategy discussed for various EMUs is to divide hunt zones into smaller units and set tag quotas for these smaller areas/subherds. The plan needs to clearly identify and analyze the impacts of all hunting of all elk for each unit, by herd, that may be harvested and actual harvest numbers under general hunt, SHARE, PLM, Cooperative, Apprentice, and Tribal hunts; as well as all other known mortality (predation, disease, traffic accidents, poaching, etc.), before setting hunting tag quotas.

## **Non-Consumptive “Uses” of Elk Are Shortchanged**

The Department is required to manage wildlife to maintain “optimum levels,” to perpetuate native species of wildlife “for their intrinsic and ecological values” and to “provide for aesthetic,

educational, and nonappropriative uses” of wildlife (F&G Code § 1755). One of the goals of the elk plan is to enhance opportunities for the public to use and enjoy elk. The focus of the plan is clearly on increasing hunting, as the Department proposes to increase elk hunting by 10%. The plan pays token attention to non-consumptive uses, proposing 12 interpretive signs and four “workshops” as the sole action items to enhance public enjoyment of elk. This shortchanges the vast majority of Californians who do not hunt and want to view or learn about elk without hunting them.

Hunting is not the primary “public benefit” of the state’s elk herds. Wildlife tourism brings four times more revenue to California than hunting. The U.S. Fish and Wildlife Service’s 2011 survey of fishing, hunting, and wildlife-associated recreation in California documented that more than 6.7 million residents and nonresidents went outdoors for wildlife-watching in California that year, 17 times more than hunted in the state.<sup>1</sup> Public non-consumptive appreciation of wildlife led to \$3.777 billion in expenditures, as compared to \$964 million by hunters.

Increasing opportunities for elk viewing and public education should be much more of a priority in the plan. There are few easily accessible locations to view elk on public lands in California. The plan should focus on providing more elk viewing access to non-hunters. The plan should also discuss how and where hunting would conflict with non-consumptive enjoyment of elk.

### **Reliance on Hunting to Alleviate Human/Elk Conflicts**

California’s elk face many challenges, particularly habitat loss, lack of habitat connectivity, extended drought, genetic bottlenecks, and impacts from being hemmed in by urban development. Without sound and clearly-defined management policies based upon science, cumulative impacts from hunting have the potential to impede elk recovery or trigger declines in certain populations.

The draft elk plan has a goal of alleviating human-elk conflicts and depredation complaints. The plan discusses a number of management options including dispersal/hazing, physical barriers, repellents, translocation, and deferral through forage planting. However, increasing hunting tags seems to be the preferred and emphasized method considered for reducing human-elk conflicts and alleviating depredation. The plan states that where it is (or may become) necessary to alleviate property damage and public health/safety problems within an elk management unit, regulated hunting is the recommended primary method of population control, followed by capture/translocation of surplus animals when regulated hunting is unfeasible or ineffective.

This raises a number of questions not answered in the plan. Is hunting the best method for alleviating human-elk conflicts and depredation complaints? Where is the evidence or examples? There is little information or evidence in the plan that increasing hunting

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<sup>1</sup> U.S. Fish and Wildlife Service. 2011. [Survey of Fishing, Hunting, and Wildlife-Associated Recreation in California](#).

tags will be effective. In fact, the plan admits that elk causing depredation may not be accessible to general elk tag holders or that hunters may exacerbate the situation by pressuring elk from public property onto properties already experiencing depredation. Will hunting tags actually target problem animals or will hunters just shoot the largest bull available based on hunting access? What are the criteria for deciding when it has become necessary to alleviate elk property damage and public safety problems? What are examples of elk causing public health or safety problems, and how widespread are these problems? How effective are other methods to reduce conflicts and depredation compared with increasing hunting tags?

The plan should emphasize translocating repeat problem animals to suitable public lands or willing private lands to start new elk herds or to supplement existing herds, based on enhancing genetic diversity. This approach would help alleviate human-elk conflicts while expanding elk populations and enhancing the genetic diversity of the overall elk species. The plan states that the Department will "periodically and opportunistically translocate small groups of elk to enhance the genetic diversity of geographically isolated populations." Repeat problem animals on private lands are a good opportunity for such translocations.

Funding from elk hunt tags could be used to help compensate landowners for damage from elk and prevent further elk damage (fencing, planting alternative forage, etc.).

### **Small or Declining Elk Herds Should Not Be Hunted**

The plan claims that expanding, modifying, or adding hunt zones will be evaluated based on adequate population monitoring which produces demographic data indicating a population of sufficient size and stability to support hunting and to allow the Department to determine the effects of hunting. This has not been done for some herds where hunt zones have been established. The Department continues to add or maintain hunt zones for elk in some management units with small elk herds where not enough is known about elk numbers and population trends to determine whether hunting may affect the long-term viability of herds (for example in the King Range Roosevelt elk and Alameda tule elk hunt zones).

The plan acknowledges that the Department has no idea what constitutes minimum population viability for elk herds. The plan then states that for the immediate future the Department intends to maintain at least 100 individual elk in each unconfined EMU, presumably as a surrogate for minimum population viability. Again, the plan must discuss the difference between an elk management unit and individual elk herds within that unit, and whether the herds in an EMU have connectivity and constitute one breeding population, or whether the EMU has isolated herds. There may be small or declining elk herds within a particular EMU which cannot withstand current or increased hunting pressure. Until the Department develops a better minimum population viability estimate, any herd which has less than 100 elk should be excluded from hunt zones. For any existing or proposed hunt zones which have small herds, the Department must provide scientifically sound information on population status, trends and minimum

population viability of the herds as well as the entire EMU, before any hunting is allowed.

### **Impacts of Hunting on Elk Demography and Genetics**

The plan should discuss the impacts of hunting regarding removal of the highest-quality males from herds and hunts that occur during the elk rut. Hunters are not known to seek out weak, crippled, or sickly elk - the individuals natural predators usually target. Hunters typically go after large bulls with the largest rack. Large antlers are a sexually selected trait linked to the genetic quality of males, who gain the majority of matings. Strong sexual selection can allow a population to adapt faster to a changing environment. The plan should discuss the impact when males with higher genetic quality are continually removed by selective harvest, and whether this could negatively influence genetic viability. The plan should also discuss whether hunts during rutting season (August into November; and tule elk can continue later) place additional stress on elk.

### **Wolves Should Not Be Scapegoated for Ungulate Population Trends and Should Be Acknowledged for the Invaluable Role They Will Have In Controlling Diseases of Wild Ungulates In California**

The draft elk plan identifies wolves as a potential management problem for elk and implies there will be some action against wolves if arbitrary elk population thresholds aren't met. The plan notes that "the best available scientific information suggests that wolves preferentially prey on elk populations when present and on deer in the absence of elk." The plan goes on to claim that "there is concern that wolves alone or in combination with other predators could significantly affect elk populations and possibly extirpate local populations of elk." The plan cites no scientific basis for this assertion, and in fact there is extensive scientific literature demonstrating that wolves contribute to an ecological balance of ungulate populations and richness in both animal and plant biodiversity.<sup>2</sup>

Both the draft elk conservation plan and the Department's draft Conservation Plan for Gray Wolves in California propose completely arbitrary triggers for managing and killing wolves (as well as coyotes and bears) as scapegoats for likely unrelated ungulate population trends.<sup>3</sup> The draft elk conservation plan references California's low numbers of elk compared to other western states and the long-term declining trend in the state deer population as causes for concern about "anticipated impact" from wolves. Neither the current low numbers of elk nor the deer population trend has anything to do with wolves or other predators, rather impacts from hunting, ranching, habitat loss, climate

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<sup>2</sup> Weiss et al. 2007. Social and ecological benefits of restored wolf populations. Transactions of the 72<sup>nd</sup> North American Wildlife and Natural Resources Conference; Estes et al. 2011. Trophic downgrading of Planet Earth. Science 333, 301; Callan, R. Nibbelink, N.P., Rooney, T.P., Wiedenhoef, J.E. and A.P. Wydeven. 2013. Recolonizing wolves trigger a trophic cascade in Wisconsin (USA). Journal of Ecology Vol. 101: 837-845; Ripple, W.J., J.A. Estes, R.L. Beschta, C.C. Wilmers, E.G. Ritchie, M. Hebblewhite, J. Berger, B. Elmhagen, M. Letnic, M.P. Nelson, O.J. Schmitz, D.W. Smith, A.D. Wallach, and A.J. Wirsing. 2014. Status and ecological effects of the world's largest carnivores. Science Vol. 343: 1241484.

<sup>3</sup> California Department of Fish and Wildlife. 2016. [Conservation Plan for Gray Wolves in California, Part I](#).

change and drought are the primary reasons for the current ungulate populations. Blaming predators for ungulate trends is counter to scientific knowledge and ignores modern understanding of the ecological importance of predators. The draft elk conservation plan offers no peer reviewed science to support this approach. Recent research has demonstrated that killing coyotes and other predators to boost ungulate populations is questionable at best and may even be counterproductive.

The draft elk conservation plan proposes the following thresholds as indicating significant wolf impacts to ungulate populations and triggering “management considerations” (clearly a euphemism for killing or removing wolves); reduction in survival of adult female elk below 80%; a 25% or more population reduction in elk herds in a three-year monitoring period; elk calf/cow ratios falling below 20/100 in a three-year monitoring period; or reduction of allocated big game tags to below current levels in areas occupied by wolves. The plan arbitrarily presumes each of these triggers to be influenced by wolf predation, with no discussion of the role of overhunting, disease, habitat conditions and availability of nutritional resources, drought, climate change, or other factors in elk population trends. Reduction of allocated big game tags could occur due to economic or societal issues that have nothing whatsoever to do with wolves, so linking reduction of tags to controlling a wolf population that is in the early stages of becoming established is without basis, inappropriate and absurd.

It is disingenuous and misleading for the plan to state that “the Department and the Wolf Stakeholder Working Group identified an initial set of thresholds which when met, would initiate management responses.” The entire environmental contingent of wolf stakeholders disagreed with these arbitrary thresholds and management actions – which include not only killing wolves but also increasing take of bears and coyotes (see attached February 2016 letter from 19 conservation groups). This language which inaccurately characterizes or implies stakeholder agreement on the thresholds should be removed from the elk plan. And the unsupported and scientifically questionable “management” triggers should be removed from the elk plan, as well.

In late 2014, the Department sent an internal draft version of the California Wolf Plan for peer review by outside scientists. Reviewer Dr. Cristina Eisenberg, who is one of world’s foremost experts and published researchers on wolf/elk interactions and trophic cascades, expressly stated in her comments that while wolf recolonization and recovery in California will undeniably have impacts on ungulates, “the strengths of these impacts are impossible to fully predict” and she does “not expect that wolf predation on elk will be as much of an issue as predicted in the Plan.” Dr. Eisenberg continued, “Relocation of wolves subsequent to a reduction of allocated big game tags is not based on science, it is based on natural resources management economics. It is inappropriate to apply such an economic approach to a wolf population that is in the early stages of becoming established. It risks scapegoating wolves further, and this could have negative impacts on human perception of wolves.” Finally, she noted that, “[I]ethal control of wolves to promote elk and other prey species population growth . . . is unacceptable. Other strategies need to be implemented, such as ungulate or wolf translocation. This opens

the door for lethal take without sideboards and scapegoats the wolf in a system in which predator-prey relationships will be highly complex ecologically.”<sup>4</sup>

A recent report by the Washington Department of Fish and Wildlife has concluded that Washington’s growing population of wolves (115 by the end of 2016) is not harming that state’s populations of elk, deer, moose or bighorn sheep.<sup>5</sup> WDFW studied ungulate populations from 2015-2017 and found that none showed clear signs of being limited by predation. The WDFW assessment shows that Washington’s elk herds are generally meeting population objectives (and for some herds exceeding population objectives) despite the expansion of wolves, and that the majority of mortality to elk in Washington state is human-caused. The WDFW report also reveals that human disturbance, forest management practices and severe winters are key factors affecting elk population dynamics.

In Oregon, the Oregon Department of Fish and Wildlife has been undertaking a multi-year study on elk and mule deer in the Starkey Management Unit. Started in the winter of 2013-2014 and concluding in the winter of 2017-2018, the research includes examinations of effects of roads, timber harvest, ATV presence and hunter effects on elk and mule deer; cattle/elk/deer interactions; and predation by cougars and wolves. Data which has undergone analysis so far concludes that (1) elk avoid/are displaced by cattle and mule deer avoid elk and thus are displaced by both elk and cattle (2) density of archery hunting in combination with nutritional conditions can influence ungulate pregnancy rates (3) human disturbance can influence movement and distribution of elk which could translate into population consequences for elk (4) cougars selectively prey on elk calves which results in decreased survival and recruitment into the adult elk population but cougar diets are dominated by deer (5) the recent reestablishment of wolves may reshape Oregon predator/prey dynamics. A compilation of summaries of the research and data results so far was prepared by ODFW as a packet for the Oregon Fish and Wildlife Commission October 6, 2016 meeting.<sup>6</sup> In section 5 of the packet, ODFW notes, “Ultimately, ungulate populations are regulated by the amount and quality of forage available” but study results analyzed thus far demonstrate that human activities and disturbance and displacement from habitat by cattle also factor into and have impacts on elk population dynamics and adult:juvenile ratios.

Rather than targeting wolves as the limiting factor for elk in the California Elk Management Plan, we recommend CDFW look to research studies such as those conducted by the state wildlife agencies in Washington and Oregon as models upon which to base California’s own studies to be able to tease apart, scientifically, factors which could impact elk and which likely already are impacting elk.

Similar to Washington’s and Oregon’s findings, in the northern Rockies, where the wolf population is at around 1600 animals – about ten times that of Washington and Oregon -- after a decline of elk in Montana's Bitterroot Valley was first attributed to wolf

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<sup>4</sup> Eisenberg, Dr. Cristina. California Wolf Plan Peer Review comment letter to CDFW, January 2015.

<sup>5</sup> Washington Department of Fish and Wildlife. 2017. [Wildlife Program 2015-2017 Ungulate Assessment](#).

<sup>6</sup> Oregon Department of Fish and Wildlife. October 6, 2016. Oregon Fish and Wildlife Commission Tour Packet.

predation, the Montana Department of Fish, Wildlife and Parks (MFWP) discovered that the primary elk predator was mountain lions, not wolves, and that the original cause of the elk decline was due to over-issuance of elk cow hunting tags.<sup>7</sup> Another recent report by MFWP demonstrates that human hunting caused a decline in six-point bulls in an elk herd near Yellowstone National Park, likely affecting the overall productivity of the Yellowstone area elk herds.<sup>8</sup> In both the Bitterroot Valley example mentioned above, as well as in Yellowstone National Park, elk numbers declined due to predators including wolves as well as human hunting outside of Yellowstone, but after five to seven years elk numbers began to recover, and the resulting elk herd is healthier with a higher proportion of reproductive age cows. MFWP found that declines in elk calf/cow ratios usually self-correct to some degree if given time.

In the northern Rocky Mountain states, elk numbers and hunter harvests of elk have been at all-time highs since at least 2012, despite the reintroduction of wolves in the region in 1995-1996 and an increasing population that now stands at around 1600 wolves. Information from the Wyoming, Montana and Idaho state fish and game agencies also indicate that elk populations are at or above management unit objectives in the majority of units. A Wyoming Game and Fish Department (WGFD) report on elk harvest for 2016 refers to WY as becoming a “go-to” state for elk hunting, with 44.9 percent of all hunters reporting harvest success and with harvest up for cow elk, bull elk and spikes.<sup>9</sup> A 2015 article reported that of 138 elk management units in Montana, 80 were over objective.<sup>10</sup> Idaho Department of Fish and Game (IDFG) reported in 2015 a top-10, all-time deer harvest in 2016, an all-time record whitetail harvest in 2015, and a top-five, all-time elk harvest in 2015, and that the word was out that Idaho’s elk hunting has improved -- despite the existence of a wolf population that grew from zero animals in 1995 when wolves were reintroduced in central Idaho to around 700 wolves in the state today.<sup>11</sup>

The elk management plan should examine and discuss the developing literature on the role of wolves in controlling diseases of wild ungulates, including Chronic Wasting Disease (CWD), an insidious disease found in elk and deer. Though we are not aware of CWD yet entering California, it is almost ensured to happen, as the disease has been making its way across states in the Midwest and Western United States. While northern Rockies states have reported CWD within their borders, in 2017, Oregon became the first Pacific West Coast state to report its first confirmed case of CWD, after a hunter illegally brought into the state body parts of a CWD-infected deer from Montana.<sup>12</sup>

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<sup>7</sup> Montana Fish, Wildlife & Parks. 2017. [Bitterroot Elk Research Project](#).

Perry Backus. [Solving the Bitterroot Elk Mystery](#). How biologists and local volunteers finally figured out what was reducing the popular Ravalli County elk population. Montana Outdoors, Nov-Dec 2014.

<sup>8</sup> Montana Fish, Wildlife & Parks. 2016. [Winter 2016 Hunting District 313 Elk Survey \(Gardiner to 6-mile Creek\)](#). Prepared by MFWP biologist Karen Loveless.

<sup>9</sup> <https://www.youtube.com/watch?v=dFQ0a1NZEYo> Wyoming Game and Fish Department. 2016.

<sup>10</sup> <http://www.greatfallstribune.com/story/news/2015/10/22/montanas-elk-hunting-season-expanded/74421088/>

<sup>11</sup> <https://idfg.idaho.gov/press/big-game-outlook-similar-numbers-elk-and-whitetails-fewer-mule-deer>

<sup>12</sup> <http://www.bendbulletin.com/localstate/5771024-151/deer-and-elk-disease-comes-to-central-oregon>

During the public comment period on the revisions pending for Oregon's wolf conservation and management plan, extensive comments on this topic and others were submitted by Norman Bishop, whose expertise on wolves and their role in ecosystems is significant. Through several positions he held at Yellowstone National Park, Bishop was involved in drafting two editions of *Wolves for Yellowstone?* (1990 and 1992), and the 1994 wolf reintroduction Environmental Impact Statement. He was the park's principal public educator on wolves and their recovery from 1985 to 1997, when he retired, and then he taught field courses on wolves for the Yellowstone Association Institute through 2005. He is a board member of the Wolf Recovery Foundation, an advisory board member of Living With Wolves, and a member of the Montana Fish, Wildlife and Parks (MFWP) Region 3 Citizens' Advisory Committee. Comments Bishop submitted recently to both the Oregon Fish and Wildlife Commission (OFWC) and to MFWP on the role of wolves in controlling diseases of wild ungulates are directly on point for managing elk in California. The arrival of wolves in California may be essential to the continued survival of elk in the face of wild ungulate diseases now spreading across the U.S. and likely to reach California in the future. In his comments to the OFWC, he noted:

*"Wildlife veterinarian Mark R. Johnson (who wrote the protocols for and supervised the handling of all wolves translocated from Canada to the U.S. in 1995-1996) also wrote (1992) that wolves scavenge carrion, such as aborted bison or elk calves. In doing so, wolves may reduce the spread of Brucellosis to other bison or elk.*

*Chronic wasting disease is marching inexorably across the North American landscape. The State of Montana is just beginning to plan for its arrival. We should consider the services wolves provide that can avert epizootics of wildlife diseases. Bruce L. Smith, in his 2012 book, *Where Elk Roam*, warns us of the danger of concentrating elk on feed grounds, because of two serious diseases: brucellosis and chronic wasting disease (CWD). Noting that Wisconsin had spent \$27 million depopulating its whitetail deer to curb CWD (and no CWD had been detected where wolves live), he traced the inexorable march of CWD across Wyoming. "Recent modeling suggests wolf predation may suppress CWD emergence in deer." Wolves and other large carnivores are essential to the health of the ecosystems on which our game animals and we depend. Wolves have been shown to be capable of reducing or eliminating the spread of brucellosis and chronic wasting disease (Hobbs 2006, Wild et al 2011), in part by reducing density and group sizes of elk and deer. Wild et al concluded, "We suggest that as CWD distribution and wolf range overlap in the future, wolf predation may suppress disease emergence or limit prevalence." Cross et al (2010) wrote, "(T)he data suggest that enhanced elk-to-elk transmission in free-ranging populations may be occurring due to larger winter elk aggregations. Elk populations inside and outside of the GYE that traditionally did not maintain brucellosis may now be at risk due to recent population increases." Wise et al (2011) also observed that Wisconsin had extended their hunting season one year to over 100 days, in an attempt to reduce white-tailed deer, to little effect.*

*Hunters can't contain CWD. But wolves can: they are on the hunt 365 days of the year, 24 hours of the day, with 100 times our sensory capacity, sifting and sorting for disabled or disadvantaged prey that is less likely to kick their teeth out.”<sup>13</sup>*

And in the November 2017 letter Bishop submitted to MFWP during that agency's comment period on its proposed plan for addressing CDW in Montana's wild ungulate herds, he notes:

*For an article for the Jackson Hole News and Guide, “Do Wolves, Cougars Help Curb Diseases?” Todd Wilkinson contacted biologist L. David Mech, one of the world's foremost wolf authorities. He has written or contributed to hundreds of peer-reviewed scientific papers on wolves and prey.*

*“In the main, the preponderance of scientific evidence supports the view that wolves generally kill the old, the young, the sick and the weak,” Mech began. “There's so much documented field data behind it.” Mech made a fascinating point: Wolves appear to target sick animals that, to the human eye, exhibit no overt symptoms of disease.*

*“There's a lot more going on than we can detect,” Mech said. “They are killing animals that most people would say, ‘That animal looks pretty healthy to me,’ but in fact it isn't.” Mech stays out of the political fray, though he says the value of predators is clear. “Based upon everything I've seen over the course of my career, I generally stand behind the assertion that wolves make prey populations healthier,” he said. “The evidence to support it is overwhelming.”*

*Wilkinson continues: “In 2003, Denver Post reporter Theo Stein interviewed scientists about CWD spreading through deer and elk in Colorado. Dr. Valerius Geist, who paradoxically has become a darling of anti-wolfers, made this assertion about the significance of wolves in containing CWD spread via proteins called prions: “Wolves will certainly bring the disease to a halt,” he said. “They will remove infected individuals and clean up carcasses that could transmit the disease.” Stein added that “Geist and Princeton University biologist*

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<sup>13</sup> Bishop, Norman. Oregon Wolf Plan revisions comment letter, April 2017. Citations referenced in Bishop's comment letter include the following:

Johnson, Mark R. 1992. The Disease Ecology of Brucellosis and Tuberculosis in Potential Relationship to Yellowstone Wolf Populations. Pp. 5-69 to 5-92 in Varley, J.D., and W.G. Brewster, Ed's. Wolves for Yellowstone? A report to the United States Congress. Volume IV, Research and Analysis; Smith, Bruce L. 2012. *Where Elk Roam - Conservation and Biopolitics of our National Elk Herd*. Lions Press. 266 pages; Hobbs, N. Thompson. 2006. A Model Analysis of Effects of Wolf Predation on Prevalence of Chronic Wasting Disease in Elk Populations of Rocky Mountain National Park; Wild, M.A., N.T. Hobbs, M.S. Graham, and M.W. Miller. 2011. “The role of predation in disease control: A comparison of selective and non-selective removal of prion diseases in deer.” *Journal of Wildlife Diseases* 47(1): 78-93; Cross P. C., E. K. Cole, A. P. Dobson, W. H. Edwards, K. L. Hamlin, G. Luikart, A. D. Middleton, B. M. Scurlock, and P. J. White. 2010. Probable causes of increasing brucellosis in free-ranging elk of the Greater Yellowstone Ecosystem. *Ecological Applications*, 20(1):278–288.

*Andrew Dobson theorize that killing off the wolf allowed CWD to take hold in the first place.”<sup>14</sup>*

As wolves expand their range and numbers in northern California, they will need more elk. Populations of Rocky Mountain elk and Roosevelt elk in northeastern and northwestern California should be increased in part to provide a prey base for restored wolf populations. Wolves and elk should be allowed to find their own ecological balance, without scapegoating wolves for ungulate population fluctuations. Wolf management strategies to address theoretical elk declines based merely on a pro-hunting philosophy and which have no foundation in science or ecosystem management should be removed from the elk plan.

## **Fire**

The elk plan should discuss strategies and opportunities to reestablish fire on the landscape to benefit elk habitat. Fire suppression has reduced elk forage, and fire can help keep a steady supply of young, tender and nutritious browse available for elk. The plan should discuss opportunities to use fire on state lands for elk, and coordination with California Department of Forestry and Fire Prevention, U.S. Forest Service and U.S. Bureau of Land Management.

## **Disease**

The plan needs to discuss transmission of diseases from livestock to elk and evaluate strategies for preventing cattle from spreading diseases to elk herds. For example, dairy cattle were documented to have transmitted John's disease to tule elk at Point Reyes National Seashore.<sup>15</sup> Any state public lands that have livestock grazing leases where elk are present should require livestock to be tested to ensure they are disease-free and should also require measures to ensure that diseased livestock do not come in contact with elk, including removal from public lands if needed.

## **Climate Change**

The plan contains some discussion of how climate change could affect elk, focused largely on the abundance, distribution and structure of natural plant communities on which elk depend for browse. The plan fails to discuss the impacts of drought, a remarkable omission given the state of extreme drought that currently exists across much of the western United States and in California. Elk productivity declines significantly in drought. For example, severe drought in 1989 in Yellowstone caused 1/3 of the elk herd to die off due to starvation (this was before wolves were present).

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<sup>14</sup> Bishop, Norman. Montana CWD Plan comment letter, November 2017. Sources Bishop cites to include: Wilkinson, T. Do Wolves, Cougars Help Curb Diseases? Jackson Hole News & Guide <http://mexicanwolves.org/index.php/news/1243/51/In-the-News-Do-Wolves-Cougars-Help-Curb-Diseases>. See, also, Chronic Wasting Disease Alliance. 2003. Officials Fighting CWD Ponder a Natural Partner: Wolves. <http://cwd-info.org/officials-fighting-cwd-ponder-a-natural-partner-wolves/>; and Geist, V., D. Clausen, V. Crichton, and D. Rowledge. 2017. The Challenge of CWD: Insidious and Dire. Living Legacy White Paper Series Version 1.0. Alliance for Public Wildlife. [www.apwildlife.org/publications](http://www.apwildlife.org/publications)

<sup>15</sup> National Park Service. 1998. [Point Reyes National Seashore Tule Elk Management Plan and Environmental Assessment](#).

## **Protection for Specific Elk Populations of Special Concern**

As an endemic species, tule elk may warrant special protected management status. Although tule elk statewide are slowly recovering, many herds remain small and vulnerable to poaching, natural loss, drought and other factors.

Conservation, preservation and management strategies should be considered for each elk species, since habitat requirements including home range, feeding habits, herd behavior are different. Roosevelt and Rocky Mountain elk exhibit more migratory behavior in forest habitat while tule elk are non-migratory and inhabit oak woodlands, oak savanna, and grasslands habitats.

Roosevelt elk populations in Humboldt and Del Norte may warrant special protection because they have little to no influence of gene flow from other North American elk subspecies (Meredith et al. 2007)<sup>16</sup>, whereas elk populations in Siskiyou and Shasta counties are considered hybrids of Roosevelt and Rocky Mountain elk, as noted in the draft plan.

Some populations of Roosevelt elk are also of limited size and occur in areas popular with nonconsumptive uses such as wildlife viewing. For example, hunting unit 483 in the Northwest California EMU has a small herd of approximately 80-100 Roosevelt Elk that are in the southern portion of the King Range National Conservation Area and Sinkyone State Wilderness Park/Sinkyone Intertribal Wilderness. Data regarding this population shows that may be too small to sustain any hunting without impacting non-consumptive uses. The very small herd at Rowdy Creek within Smith River National Recreation Area may also need to be off limits to hunting, to encourage natural expansion. Similar conflicts exist elsewhere in the state, and need to be analyzed in the elk plan.

Sincerely,



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California Fish and Game Commission

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<sup>16</sup> Meredith, E.P., Rodzen, J.A., Banks, J.D., Schaefer, R., Ernest, H.B., Famula, T.R., & May, B.P. (2007). Microsatellite Analysis of Three Subspecies of Elk (*Cervus elaphus*) in California. *Journal of Mammalogy*, 88(3), 801-808.