February 14, 2022

Patrica O'Connor
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PO Box 1888
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RE: Big Piney Ranger District and Greys River Ranger District; Bridger-Teton National Forest; Wyoming, Dell Creek and Forest Park Elk Feedgrounds: Long-Term Special Use Permits

Dear Forest Supervisor O'Connor,

Thank you for the opportunity to provide scoping comments in response to the proposed environmental impact statement to analyze the effects of reauthorizing long-term use permits that will allow the Wyoming Game and Fish Commission (WGFC) and Department (WGFD) to operate and manage the Dell Creek and Forest Park winter elk feedgrounds in Sublette and Lincoln counties.

Our organizations have long-standing, grave, and ever-increasing concerns about permitting and operating any elk feedgrounds on the Bridger-Teton National Forest (BTNF), including the Forest Park and Dell Creek feedgrounds. We oppose the proposed action to continue feeding for at least 20 more years at the two specified feedgrounds. Our concerns with continued feeding remain as we have previously articulated in numerous communications to the U.S. Forest Service (USFS) and are well summarized in scoping comments we submitted in 2016 regarding feeding on Dell Creek and Forest Park feedgrounds. Unfortunately, with little progress toward ending the ecologically harmful practice of winter elk feeding, our 2016 comments remain just as relevant today as they were when written six years ago.

Therefore, we incorporate those 2016 comments in their entirety, including all supporting references, into this comment letter, and you will find them attached to this letter (**Attachment 1**).

As stated in the Federal Register notice, "the WGFC's proposal is to continue long-term use (20 years) of the Dell Creek feedground (35 acres), Forest Park feedground (100 acres), and existing facilities for their winter elk management program." There are three proposed alternatives.

> **Alternative 1: No Special Use Authorization Alternative:** Use of National Forest System lands for WGFC's winter elk management activities would not be permitted at Dell Creek and Forest Park feedgrounds. WGFC would remove the existing facilities and rehabilitate impacts at both locations.

Alternative 2: Phase-Out Alternative: Use of National Forest System lands for WGFC's winter elk management activities would be permitted at Dell Creek and Forest Park feedgrounds for less than 20 years. The number of days elk would be fed would decrease over time. Upon expiration of the permit, use of National Forest System lands for WGFC's winter elk management activities would be terminated and WGFC would remove the existing facilities and rehabilitate impacts at both locations.

Alternative 3: Emergency Feeding Only Alternative: Use of National Forest System lands for WGFC's winter elk management activities would be permitted at Dell Creek and Forest Park feedgrounds for emergency use only. Upon expiration of the permit, use of National Forest System lands for WGFC's winter elk management activities would be terminated and WGFC would remove the existing facilities and rehabilitate impacts at both locations.

Support of Alternative 1 as proposed by the USFS for Forest Park

Because of the existing conditions at Forest Park such as disease transmission, noncompliance with the forest plan, and other factors, we support the No Special Use Authorization Alternative for this feedground. The immediate closure of existing facilities and rehabilitation of impacts would minimize the detrimental effects of the artificial feeding of wildlife in this specific area. Additionally, the BTNF objective to "provide suitable and adequate habitat to support game and fish populations established by the WGFD, as agreed to by the Forest Service" would be supported by rehabilitation of the 135 acres currently impacted by the feedground. Finally, since only one (Forest Park) out of the twenty-three feedgrounds managed by the WGFD would be affected by this action, the often expressed concern about mass elk starvation without feedgrounds would be extremely unlikely. The relatively small number of elk that are fed at Forest Park could easily disperse to natural winter range.

Support of Alternative 2 with modifications for Dell Creek

The Phase-Out Alternative described by the USFS has the potential to be a solid solution for managing disease transmission and increasing the health of wildlife, but the proposed time frame for phase out is far too long. We suggest that the USFS implements a phase out plan lasting no more than three years.

As proposed, Alternative 2 provides a path forward for phase out of feedgrounds but would also allow for feeding to continue for up to 20 years. As Bruce Smith wrote back in 2013, "I'm among those who argue that winter feeding serves neither the long-term health nor conservation of wildlife, and therefore is not in the public's best interests. As CWD has recently infected cervids within 50 miles of several elk feedgrounds, two fundamental questions arise: "What happens when CWD reaches those feedgrounds, and should something be done now to address this threat?"" (Smith, 2013). Considering that Bruce Smith wrote this back in 2013 and chronic wasting disease (CWD) is now at the doorstep and very likely already present on feedgrounds,

we cannot afford to wait another twenty years to phase out feeding. If we want prevalence rates of CWD to remain low in populations of elk, we cannot continue to provide the living petri dish of perfect conditions to allow the disease to spread that currently exists on feedgrounds. A reasonable phase out alternative would be no more than three years, with the number of days of feeding to decrease each year with no possibility of additional permit renewals.

The WGFD designated winter range totals 84,563 acres, last updated in 1987. This designation leaves out the Bacon Creek-Fish Creek area where elk typically winter and an area that will be included on the WGFD seasonal range overlay map in the next update. Including this area, there are an estimated 106,581 acres available for elk to winter on in the Gros Ventre drainage. Plentiful natural forage exists to accommodate elk that winter in the Gros Ventre. Elk that cannot find food in the Gros Ventre can travel further south along historic migration routes to areas with less snowpack and more snow-free slopes. Indeed, one of the stated goals of the Bridger-Teton National Forest Land and Resource Management Plan is to "[h]elp re-establish historic elk migration routes to provide increased viewing and hunting opportunities for outfitters and clients" (Objective 1.1(g)). As has been demonstrated by other efforts to phase out feedgrounds in other states, this goal is realistic and achievable. One notable example is provided by the Deseret Land and Livestock Company in Rich County, UT in the early 2000s. A combination of positive and negative reinforcements were used successfully to modify elk behavior and achieve the goal of either not feeding elk at all on the ranch or only feeding in emergency situations (Magnus, 2011).

Positive reinforcements to encourage elk to return to natural winter range included:

1. Range Improvements
2. Strategic Livestock Grazing
3. Dispersed Supplemental Feed (aka Spot Feeding) - supplemental not replacement feed
4. Sanctuary or 'Safe Zones'

Negative reinforcements to encourage elk to return to natural winter range were:

1. Hunting
2. Herding and Hazing

Positive reinforcements were better at changing elk behavior than negative reinforcements. In comparison to the Afton and Big Piney herds that were used as a control, no elk were fed in the 2005-2006 or 2006-2007 winters at Deseret Land and Livestock Company, while 73% and 76% of elk were fed in the Afton and Big Piney herds respectively during the same years. Perhaps the most prudent lesson learned from the Magnus (2011) study is, "When managers wish to reduce the occurrence of undesired behaviors and/or increase desired behaviors, the most effective method is to modify the consequences of those behaviors through management. Unfortunately, managers have not been trained to think in terms of behavior principles and their application in management. We simply assume animals behave by —instinct without appreciating the roles of learning in culture in everything they do. Critically, we must come to realize animals are not machines and genes are not destiny." Using the lessons learned from

this study, it seems reasonable to assume that elk elsewhere can be retrained to move to different areas and avoid conflict with humans if we apply pressure and positive reinforcement effectively.

There is no reason that elk in Wyoming accustomed to feedgrounds cannot be retrained the way the Deseret Land and Livestock elk were. Knowing the harmful effects to elk, cost of feeding, and impacts to the land, Dell Creek feedground should be phased out as expeditiously as possible with full closure after a maximum of three years from starting phase out.

The Bigger Picture of Elk Management in the Western U.S

First, let's examine occupied elk habitat in the United States. Figure 1 shows current elk habitat in green. The blue polygons are public lands that generally could offer less fragmented habitat and far lower potential for conflicts, while private lands, shown in white, would have more fragmented habitat and more potential conflicts. The areas where elk are artificially fed are in red. As is immediately evident from this map, there is only one area in the United States where significant numbers of elk are artificially fed. The few feeding operations run by other states are so small as to be invisible at this scale. This information is from the WGFD's document titled Western State Management of Wintering Elk, dated December, 2021 (Attachment 2).

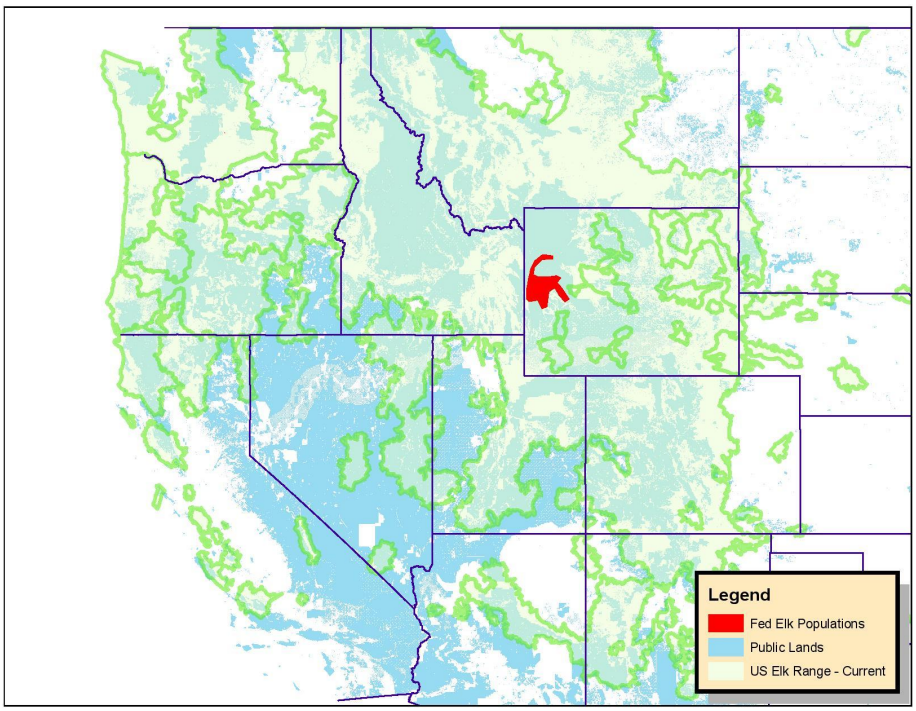

Figure 1. This map visualizes current elk range in the Western United States, and the small amount of elk that are artificially fed hay in Western Wyoming.

An estimated 1.2 million elk live in the United States today. Of that 1.2 million, approximately 27,000 or 2% are artificially fed, almost all of these within the 23 elk feedlots in west-central Wyoming. The artificial feeding of elk does not make sense in the larger scope of elk populations in the United States. Below we compare the differences between the 2% of elk habitat where the network of elk feedlots has been established versus the 98% of elk habitat where elk populations are not artificially fed.

1. There is no difference in elk-livestock conflicts between the habitats. States, like Colorado and Montana, and other areas of Wyoming have mitigated conflicts with livestock operations with proper fencing and other conflict mitigation strategies.

2. In general, road density is significantly lower in the 2% of elk habitat in the network of feedlots than the 98% of elk habitat where populations are not artificially fed, such as the far higher population states like Colorado. So, are elk-based vehicle accidents significantly higher in the 98% of elk habitat without artificial feeding? The short answer is no. Colorado has nearly triple the elk density of Wyoming. Colorado is far more fragmented, with far higher road density, far higher human population density and the same amount of livestock production. However, Colorado does not artificially feed their elk populations. Montana has nearly 50% more elk than Wyoming and is far more fragmented, far higher road and population density and has double the livestock density of Wyoming but none of Montana's elk are artificially fed.

If the specious rationale put forward by the WGFD were true then we should see starving elk across the western U.S., high numbers of elk collisions and few hunting opportunities in the 98% of elk range where artificial feeding does not occur. However, robust data shows this is not the case.

The Special Use application submitted by the WGFC posits this baseless rationale for continuing the status quo despite the known problems that elk feedlots create:

> "Feedground is needed to reduce the risk of brucellosis transmission to livestock, prevent vehicle collisions on Highway 191, and to maintain population objectives. No new construction or significant operation costs are anticipated."
>
> "Feedgrounds will allow WGFD to maintain elk population objectives in the Hoback herd unit, while reducing negative impacts to livestock operators in the area."
>
> "Continued use of the feedground will allow WGFD to maintain elk population objectives in this herd."

On September 21, 2021, U.S. District of Wyoming Judge Freudenthal ruled that the permit authorizing the WGFC's use of the Dell Creek feedground expired in 2016, and that annual feeding allowed since has been without a valid permit. Under 36 CFR 251.50, an authorization is required for this use of public lands on national forests. We are happy to see that the BTNF

took Judge Freudenthal's ruling into consideration that the USFS must comply with the National Environmental Policy Act (NEPA) and complete a full environmental analysis based on current best available science that includes alternatives for phasing out artificial winter feeding.

The recent court decision invalidating the USFS's practice of allowing feeding without proper permitting offers the USFS and the WGFD a chance to stop feeding on Dell Creek and Forest Park feedgrounds and start figuring out how to allow and encourage elk to resume natural migration behaviors on natural winter habitats, while minimizing interactions with domestic livestock. Elk have existed for thousands of years in what is now the western United States, migrating between summer ranges in the high country to lower elevation winter ranges in the basins and valleys. Colorado, New Mexico, Utah, and Idaho all have elk herds with healthy populations and natural migration patterns and low elk/cattle conflict rates. The behavior of migrating is innate to elk and they readily make these choices to move from harsh climates to less harsh environments. Protected lands in Wyoming are vast and connected. That means elk and other migratory wildlife can disperse across seasonal ranges if we allow it.

In this recent ruling, the court found:

> CWD is an incurable and invariably fatal disease caused by an abnormal protein that affects the central nervous system of ungulates, including elk, mule and white-tailed deer, and moose. AR3549. Its effects are devastating; the onset of disease is slow, and those infected "show weight loss, reluctance to move, excessive salivation, droopy ears, increased drinking and urinating, lethargy, and eventually death." Id.
>
> Further, "CWD is highly transmissible via multiple direct and indirect pathways between and among cervid species." AR486. It is transmitted through contact with infected animals or carcasses, and through contact with soil, plants, or feed contaminated with urine, feces, and/or saliva from infected animals. Id. CWD exhibits a long latency period (twelve to thirty-six months), during which an infected animal is asymptomatic yet still capable of passing the infectious prions to others. AR487; AR1802. Thus, a single infected animal can transmit the disease to a substantial portion of the population before its presence is detected. AR1798.
>
> Moreover, recent research has shown that CWD, which is "resistant to most general disinfectants," can contaminate soil and remain infective in the environment "for years to decades." AR1802-03 (CWD "prions bound to soil are more infective than free prions, so soil may serve both as an environmental reservoir and a facilitator of CWD prion transmission."). Hence, uninfected animals are at risk of contracting CWD from the environment long after an infected individual has visited the area or died. Id.; AR489-90. Once introduced into a population, CWD "by itself can exceed natural rates of mortality," reduce survival of adult females, and decrease population growth of elk herds. AR492-93.

> There is no dispute that “congregating elk at very high densities at feedgrounds is likely to increase the spread of disease because of an increased number and rate of potential infectious contacts with infected individuals and an infected environment.” AR486; see also AR1803 (Feedgrounds “increase the risk of [CWD] transmission” by “exacerbating [] densities, increasing contact rates, altering normal behavior, and prolonging exposure to potentially contaminated areas.)”

We provide a few items of note from the September 2018 ruling by the same judge that need to be kept in mind during this process.

As discussed in more detail in a later under the NEPA section, the judge stated:

> An EIS must also assess the direct, indirect, and cumulative impacts of the proposed action, including unavoidable adverse environmental effects. 30 CFR § 1508.25.

Those “unavoidable adverse” effects have to include the contamination of soils, water and plants as a result of the proposed action.

The judge stated:

> NEPA requires an agency to take a "hard look" at environmental consequences of its actions and to adequately disclose those impacts to the public. *Baltimore Gas*, 462 U.S. at 97-98; *Middle Rio Grande Conservancy Dist*., 294 F.3d 1220, 1225 (10th Cir. 2002).

The ruling summarized the issue of CWD:

> CWD, the equivalent of "mad cow disease," is a fatal prion disease of cervids, which include elk, white-tailed deer, mule deer, and moose. AR29034; AR10283. The disease is easily transmitted," the prion (TSE) agent can contaminate the environment for long periods,'^ and management strategies have failed to stop its spread. Id\ AR28854; AR28876. As additional challenges, clinical signs of CWD are not diagnostic, there is a long incubation period, there is no treatment, there is no prevention in the sense of vaccination, and CWD is invariably fatal once clinical signs develop. AR18430. These challenges make surveillance difficult and expensive; hence the emphasis on preventing its introduction into the region. AR18431. Once this chronic disease is introduced into a population, "CWD can exceed natural rates of mortality, reduce survival of adult females, and decrease population growth of elk herds."

It continued:

> CM/ECF Document ("Doc.") 43, p. 16; AR17781 (seasonal concentrations of elk create "an unnatural situation that has contributed to . .. an increased risk of potentially major outbreaks of exotic diseases," and "damage to and loss of habitat"). Further, at least one expert with the USDA Animal and Plant Health Inspection Service ("APHIS") thinks

> "long-term feedgrounds are detrimental to the health of the wildlife." AR26800. The Service itself recognizes "that the WGFC action of feeding elk results in the artificial concentration of elk during winter and early spring that increases risk of disease transmission" (AR11108), and that prevalence of CWD is likely "functionally related to ungulate density" (AR28876). Indeed, in its brief the Service states, "the practice [of supplemental feeding] concentrates elk during the winter months and contributes to the spread of diseases such as brucellosis and CWD." Doc. 62, p.ll.
>
> Also, the Brief of Amici Curiae Scientists discusses the very high population density estimates of elk at Alkali Creek Feedground, the behavior changes that occur as elk population densities grow (higher frequency and duration of contact), and the corresponding significant risk of disease transmission, both directly between animals and indirectly through the environment. Doc. 55, p.15; AR26284; 24695.
>
> Further, both the NFS and NFWS agree that "elk concentrated on feedgrounds is likely to facilitate the spread of [CWD] when it reaches [the GTNP and Refuge]. As such, an overarching strategy to achieve the goals of the 2007 BEMP is to reduce reliance on winter supplemental feeding of bison and elk, and to transition to complete reliance on natural standing forage at an undetermined time in the future." AR28174.
>
> Finally, one court found that the 2007 BEMP for the Refuge "might well have been unreasonable had the agencies categorically refused to phase out the winter feeding program in spite of all the evidence in the record about the dangers of supplemental feeding." Defs. Of Wildlife v. Salazar, 698 F.Supp.2d 141, 148 (D.C.D.C. 2010), affd 651 F.3d 112, 118 (D.C.Cir. 2011) ("There is no doubt that unmitigated continuation of supplemental feeding would undermine the conservation purpose of the National Wildlife Refuge System").

Regarding irreversible commitments, the court stated:

> There is also little to suggest the Service took a hard look at the irreversible and irretrievable commitment of resources. Both considerations are required by 42 U.S.C. § 4332(C). There is no question that Alkali Creek Feedground could become a reservoir for CWD infection if it becomes established in elk populations in northwest Wyoming. That potential is increased with the concentration of elk at feedgrounds. If infected animals congregate, the environment will eventually be contaminated. This will significantly affect vegetation and soils, thus productivity, over a very long term (if not indefinitely) and may result in an irreversible and irretrievable loss of wildlife and habitat.

Further chastising the Forest Service for its NEPA failures, the court found:

> Relevant to the Service (and not simply within WGFD jurisdiction) are the problems that artificial feeding increases the risk of disease transmission, increases the risk that the site will be contaminated with prions for a very long time, and also appears to blindly

> support WGFD's goal of managing elk movements to prevent commingling with livestock and danger to agricultural land, notwithstanding the BTNF Land and Resource Management Plan that includes a stated goal to "[h]elp re establish historic elk migration routes to provide increased viewing and hunting opportunities for outfitters and clients." ARl 19. Based on the record, feedgrounds seem to undermine this goal.

Regarding cumulative impacts, the court ruled:

> Petitioners argue the Service failed to meaningfully analyze the cumulative impacts of the region's feedgrounds on wildlife resources, in violation of NEPA. Specifically, Petitioners complain that the Service refused to examine the impacts of Alkali Creek Feedground in conjunction with the other feedgrounds located in the BTNF, or the artificial feeding program conducted by the NFWS on the Refuge. Rather, the Service restricted its evaluation of cumulative impacts to include effects only from Alkali Creek and the other feedgrounds in the Gros Ventre drainage (Fish Creek and Patrol Cabin), thereby severing analysis of this action's impacts from the effects of other nearby feedground operations impacting the same elk herd, as well as the effect of the 2007 BEMP on the Refuge which anticipates a step-down approach to phase out artificial feeding.
>
> Petitioners argue these feedgrounds are all part of an integrated program which cumulatively impacts the Jackson elk herd, and the restricted analysis by the Service violates NEPA…. As to cumulative impacts, the Court again agrees with Petitioners. The finality of the 2008 FEIS does not eliminate the need for the Service to consider cumulative impacts from the integrated feedground program considering the best and currently available science that has advanced the understanding of CWD risk, transmission and mitigation since the 2008 analysis.

We provide both rulings, in their entirety, for your review as Attachment 3.

Concern over the risk of CWD concentration on feedgrounds.

The inherent and unavoidable concentration of elk during artificial winter feeding increases the risk of CWD and has a significant effect on the environment; winter feeding of elk also increases the prevalence of brucellosis and many other transmissible diseases in the herd. Winter elk feeding is highly controversial, with many scientists and members of the public fully aware of its detrimental impacts. It certainly has effects that pose unique risks to the Greater Yellowstone ecosystem’s elk herds. The Greater Yellowstone ecosystem is an ecologically critical area; and continued winter feeding of elk may cause the loss or destruction of significant wildlife resources within that ecosystem. These risks are not speculative: rather, they are known, imminent, and rapidly increasing, with documented cases of chronic wasting disease discovered every year in elk and mule deer, now literally adjacent to elk feedgrounds.

Thus, even though the USFS's listed resource conditions does not include impacts on elk from wildlife diseases and other wildlife diseases, the agency's present scoping analysis should consider how its decision to authorize further artificial feeding at Dell Creek and Forest Park will contribute to the spread of CWD and other diseases within and between elk herds that use habitat on the BTNF. To the extent the USFS refuses to consider potential disease impacts, the agency must explain why it has decided to contravene its own guidance under 73 Fed. Reg. 43,091 (July 24, 2008). Because elk feedgrounds have such profound effects (significant by any rational evaluation), the practice of artificial winter feeding is highly controversial, artificial feeding significantly impacts ecologically critical areas, and continuing to allow artificial winter feeding may cause significant losses of wildlife resources (Galloway et al., 2021).

USFS staff have openly acknowledged that winter feeding is harmful and should stop. See our attached comments from 2016 for explicit quotes from BTNF biologists and administrators. To dispel any doubt about the risk of chronic wasting disease becoming established on feedgrounds, review the WGFD's map of CWD positive areas, which clearly shows that the disease now surrounds the Dell Creek area (See Figure 2).

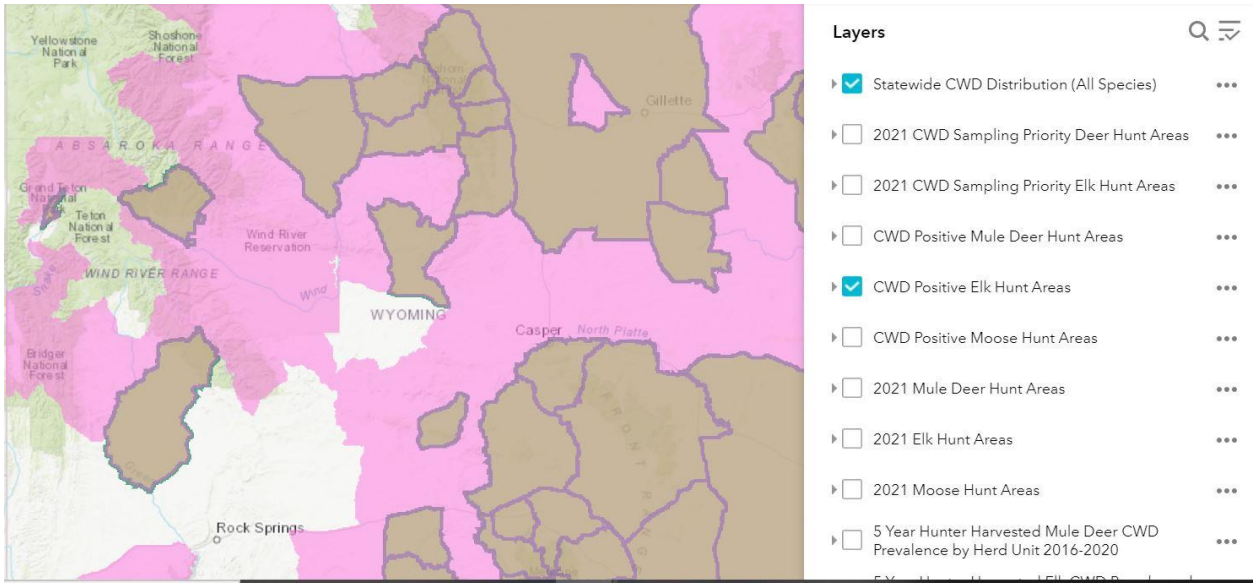

Figure 2: WGFD's map of CWD positive areas.
(https://wgfd.wyo.gov/Wildlife-in-Wyoming/More-Wildlife/Wildlife-Disease/CWD-in-Wyoming-Wildlife/CWD-Map)

Given the proximity of the disease to feedgrounds, the catastrophic risk of intraspecific and cross-species CWD transmission in and between herds of elk, deer, and moose, the long-term persistence of infectious prions in the environment, and the known harmful effects of concentrating thousands of elk for months each winter in the face of the highly infectious and 100% fatal CWD and several other contagious diseases, the USFS should consider the preparation of this EIS as a golden opportunity to fully evaluate the effects of feedgrounds and begin the process of phasing out of all feedgrounds on Forest Service land now. In the absence of feeding, mortality rate from CWD will likely be low initially and increase slowly (or stabilize)

(Galloway, 2021). Mortality rates could be high with supplemental feeding and CWD rates could be irreversible with sufficient environmental contamination/transmission (Galloway, 2021). Disease experts, such as Wyoming state veterinarian Sam Allen, fear that CWD will significantly decrease elk populations and that feedgrounds will become “hotspots.”

Concern for the welfare of elk from diseases exacerbated by feedgrounds

Hoof rot

Elk hoof disease, now referred to as Treponeme associated hoof disease (TAHD), is a bacterial-associated syndrome causing severe lameness in elk and livestock. Elk with the disease can have deformed, overgrown, broken, or sloughed hooves. These lesions can be painful and cause limping or lameness when walking. Elk that show these signs do not necessarily have elk hoof disease, as there are many other potential diseases or injuries that could cause similar abnormalities to elk hooves. Some bull elk also have deformities of the opposite antler depending on the timing of the hoof infection with antler growth. Treatment of any disease in free-living wildlife is difficult. In livestock, hoof diseases are often treated with repeated antibiotics and foot baths and managed by keeping their pens clean. Similar actions to treat wild elk are not practical. New research by Washington State University (2021) shows healthy elk can contract the rapidly spreading disease, known formally as Treponeme-associated hoof disease (TAHD), by simply walking on soil contaminated previously by infected hooves. The trampled and moist areas of elk feedgrounds will very much exacerbate hoof rot and this should be another consideration of phasing out elk feedgrounds quickly before both wildlife and livestock are affected.

Brucellosis

Brucellosis is a bacterial disease primarily of Rocky Mountain elk and bison. The disease is limited to northwestern Wyoming and adjoining portions of Montana and Idaho. Cows often abort their first fetus after becoming infected. Abortions may occur in subsequent pregnancies but diminish over time. Brucellosis also infects domestic cattle. A state/federal eradication program has almost eliminated the disease in cattle, but infected elk and bison pose a continuing threat. In the wild where there is no supplemental feeding, Wyoming elk are virtually brucellosis-free. In concentrated feedgrounds, however, elk test from 8% to 54% seropositive for exposure to brucellosis. As long as there are feedgrounds, there will be high percentages of seroprevalence in elk, and Wyoming's brucellosis-free status for livestock will be in continued jeopardy. The Brucella bacteria can survive in the environment for more than 180 days in cool and moist conditions. Like hoof rot and CWD, brucellosis is exacerbated by the use of artificial feedgrounds in Wyoming.

Bovine Tuberculosis

Bovine tuberculosis (bovine TB) is a disease found in mammals caused by the bacteria Mycobacterium bovis (M. bovis). In North America, bovine TB is most commonly found in domestic cattle and captive and wild cervids such as white-tailed deer, mule deer and elk. Bovine TB is spread primarily through the exchange of respiratory secretions between infected and uninfected animals. This transmission usually happens when animals are in close contact

with each other. Thus, animal density is a major factor in the transmission of M. Bovis. Bacteria released into the air through coughing and sneezing can spread the disease to uninfected animals. Research suggests that bovine TB can also be contracted from ingesting contaminated feed. Survival of M. Bovis in the environment is primarily affected by exposure to sunlight. Reports on the length of survival of M. bovis vary from 18-332 days at temperatures ranging from 54-75 F. In a number of studies under laboratory conditions, M. Bovis has been isolated for up to 8 weeks from various feeds kept at 75 F and 14 weeks from various feeds kept at 32 F. However, under field conditions, it is difficult to isolate M. bovis from pastures grazed by animals known to be infected with bovine TB (Michigan DoG, 2022). Non-cervid animals most likely contract TB from feeding on infected tissues from deer carcasses.

Bovine TB is a chronic disease, and it can take years to develop. M. Bovis grows very slowly and only replicates every 12-20 hours. The lymph nodes in the animal's head usually show infection first and as the disease progresses lesions will begin to develop on the surface of the lungs and chest cavity. In severely infected deer, lesions can usually be found throughout the animal's entire body. Non-cervid animals on the other hand do not develop the disease as extensively and lesions are usually not found in lungs or other tissues.

Bovine TB has been greatly reduced in the cattle industry since the National Cooperative State-Federal Bovine Tuberculosis eradication program began in 1917. Currently, most states are accredited as “Bovine Tuberculosis-Free” by the United States Department of Agriculture, however, sporadic outbreaks do still occur throughout the United States. Continuing to feed elk in Wyoming could be a major risk to the cattle industry in Wyoming, if Bovine TB gains prevalence.

Scabies aka psoroptic mange

Psoroptic mange, or the disease known as scabies is prevalent in many mammals. Scabies results in hair, fluid, and heat loss and ear canal occlusions. Secondary infections include decreased weight gain and mortality in domestic and wild animals. Like many other diseases, scabies is more common on elk feedgrounds.

“Scabies isn’t rare, but it seems to be more common in higher density herds like those found in the [National Elk Refuge],” - Eric Maichak (2019), habitat biologist for the Game and Fish.

The risk of all the diseases listed above, and many more, remain a great threat to wildlife and livestock both, as long as wildlife is artificially fed, which concentrates them unnaturally and spreads bacteria and diseases with ease.

Purpose and Need is inadequate

The purpose and need as described by the USFS for this EIS process is to “analyze the proposal to assure that the Wyoming Game and Fish Commission is managing elk in a manner

that allows the health of the land to be sustained and to meet the goals and objectives of the 1990 Bridger-Teton Land and Resource Management Plan with Amendments."

Due to the aforementioned adverse effects of feedgrounds on the health of elk and the presence of diseases that may last for decades on feedgrounds, it's clear that the WGFC is not managing elk to meet the needs of the health of the elk nor the land. The BTNF forest plan (p. 11) states:

> "Historical elk migration routes should be re-established to enhance the outfitting and guide industry."

Therefore, the benefits to restoring natural elk migrations would benefit not only the health of elk populations in Wyoming, but also the outfitting and guide industry.

According to the Bridger-Teton forest plan (p. 37), "Maintaining elk feedgrounds has adversely changed composition of plant communities surrounding some feedgrounds."
Continuing to feed for an additional 20 years will continue to deteriorate vegetative conditions in and around Dell Creek and Forest Park. Additionally, the decision to continue feeding elk for 20 years at Dell Creek and Forest Park goes against the BTNF Forest Plan *Big-Game Winter Range Standard* (p. 155)

> Human activity and disturbance in crucial big-game winter range will be restricted from November 15 to April 30 if big-game are present in the area.

Lastly, the BTNF *Grazing Use of the National Forest* (p.150) states that grazing must sustain or improve overall range, soils, water, wildlife, and recreation values or experiences. Objective d. States that the BTNF:

> "must require that suitable and adequate amounts of forage and cover are retained for wildlife and fish."

The USFS must take into consideration the fact that feedgrounds are deemed "necessary" for winter elk forage, and then in turn, look into the health of natural winter forage ranges and the impacts that cattle grazing has on wildlife.

The impacts of feedgrounds must be considered comprehensively rather than just for Dell Creek and Forest Park

In response Western Watersheds Project, et al., vs. Vicki Christiansen (Chief, U.S. Forest Service), et al, (Case No. 17-cv-202-NDF) decided on September 14, 2018, attorneys (Meyer Glitzenstein & Eubanks LLP) for the petitioners sent the USFS Chief and the Supervisor of the BTNF a letter, dated September 26, 2018, that describes in part:

"(H)ow the Forest Service should address the National Environmental Policy Act ("NEPA") and Administrative Procedures Act ("APA") issues recently remanded to the agency in light of the ruling by the U.S. District Court for the District of Wyoming in Western Watersheds Project v. Christiansen, No. 17-cv-202-NDF (D. Wyo. Sept 14, 2018)."

In that letter, among several legal and environmental issues discussed, it points out that:

> "These concerns are universal to all elk feedgrounds on the BTNF. Therefore, it is Petitioners' view that this decision applies to Alkali Creek Feedground, and to all future requests for renewals of special use permits to operate elk feedgrounds on NFS Lands." (Furthermore,) "(c)onsidering the Court's holding that the Forest Service must "consider cumulative impacts from the integrated feedground program considering the best and currently available science that has advanced the understanding of CWD [chronic wasting disease] risk, transmission, and mitigation since the 2008 analysis," Petitioners strongly urge the Forest Service to prepare an EIS for all feedgrounds on the BTNF. The piecemeal approach of examining individual feedgrounds tends to obscure or minimize the severity of adverse impacts and hinders the Forest Service's ability to examine alternatives to phase out artificial feeding across the BTNF. In contrast, a comprehensive EIS examining the entire "integrated feeding program" would enable the Forest Service to gain a more complete understanding of the impacts of artificial feeding on the BTNF and its resources, and efficiently and effectively consider phase-out and reduced impact alternatives to minimize and mitigate those impacts."

Take, for example, the Dell Creek feedground, you can not rationally examine the alternatives without relation to the other feedground. It makes little difference across all the issues we have discussed if the elk simply move to the next nearest feedground. The Forest Service must examine the full network of feedgrounds in order to take the "hard look" that NEPA requires.

National Forest Management Act (NFMA) compliance

The BTNF must also act within the mandates of the National Forest Management Act. NFMA directs the Forest Service to "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives." (16 USC Sec. 1604(g)(B)) Under this authority, the Forest Service's regulations require it to provide ecosystem components including ecosystem integrity, ecosystem diversity, and maintain viable populations of species of conservation concern. (36 CFR Part 219.9) Elk feedgrounds are the opposite of healthy ecosystems, they prevent healthy wildlife populations, and, thus, do not comply with NFMA.

National Environmental Policy Act (NEPA) compliance

NEPA Section 102(2)(C) states that an EIS must be a detailed statement on

> “(i) the environmental impact of the Proposed action,
>
> “(ii) any adverse environmental effects which cannot be avoided should the Proposal be implemented,
>
> “(iii) alternatives to the Proposed action,
>
> “(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of
>
> long-term productivity, and
>
> “(v) any irreversible and irretrievable commitments of resources which would be involved in the Proposed action should it be implemented.” (Emphasis added.)

There are many irreversible commitments that are being proposed by the Forest Service here. Given the scientific certainty of CWD already on these feedlots or arriving shortly, given the 100% infection rate on exposure to prions, given the 100% mortality rate for infected individuals, given high levels of infectious materials deposited on these feedlots and given the essentially permanent contamination that results due to prions remaining infectious for decades, the issuance of these permits is an irretrievable commitment of resources.

In addition to these obvious direct impacts, there are a range of indirect impacts which must be considered.

For example, Riling Draw runs down the middle of the Dell Creek feedlot. Elk consume approximately 11 pounds of forage per day, so the 700 elk would produce approximately 3 and a half tons of waste per day. So that is some 315 tons of waste matter for a 3 month feeding season. During the peak spring run off period, large quantities of that waste matter would wash into Dell Creek. There are numerous major irrigation diversions downstream of Riling Draw that would spread these feces across the irrigated hay fields. Prion contamination would be taken up in the plants and soils which would significantly increase the scale of contamination. These impacts must be analyzed.

What is the liability to the Forest Service and WGFC should downstream landowners sue for the damages to their private lands due to the essentially permanent contamination by prions? These impacts must be analyzed.

Recently there have been significant discussions within the county governments of the 3 elk feedlot counties regarding the cost, difficulty and liability of the disposal and destruction of infected animals. Facilities capable of destroying the infectious prions will cost millions of dollars. This is an indirect impact of the Forest Services proposed action.

A “hard look” would be examining the information gathered by each county on carcass destruction.

Changed conditions and newer scientific findings

The BTNF should be aware of the changed conditions and newer scientific findings during the years since Forest Park and Dell Creek were last permitted in 1998 and 1996 respectively. See in particular BTNF employee Tyler Johnson's June 2014 Chronic Wasting Disease Literature Review Technical Report (Attachment 5) to the Final Supplement to the Environmental Impact Statement Long Term Special Use Authorization for the Wyoming Game and Fish Commission to Use National Forest System Land for their Winter Elk Management Activities at Alkali Creek Feedground, 2015. Some of the many important findings described in that June 2014 review by Johnson include:

> "Owing to highly efficient direct transmission of CWD among cervids, the number, duration, and frequency with which infectious individuals encounter susceptible ones is likely to drive early density dependent transmission of CWD (p .5)."
>
> Cross et al. 2013 demonstrated that "in areas where elk are artificially congregated at feedgrounds per capita rates of contact and duration of contact were more than twice as high as groups not receiving supplemental feed (p. 6)." (E)lk feedgrounds attract elk from large catchments and congregate elk that might not otherwise contact each other, thereby increasing the chance that an infected elk from a distant locale would be the one to introduce the disease to a new herd area. (p. 6)"
>
> "(S)tudies on free-ranging and farmed elk and deer are clear in showing that population level impacts are to be expected from the introduction and spread of CWD in elk on the Bridger-Teton National forest and nearby areas (p. 7)."
>
> Naturally occurring populations of elk have shown that mortality from chronic wasting disease by itself can exceed natural rates of mortality and reduce the overall survival of free roaming cow elk below 85% (Monello et al. 2014)." p.7
>
> "Free-ranging elk herds in Wyoming (Cross et al. 2013, Williams et al. 2014) and Canada (Vander Wal et al. 2013, 2014) have herd densities ranging from .21 to 1.2 elk/km2 . . . . . Elk density at the average state feedground in Wyoming is 1976.6 elk/km2, based on the reported average of 600 elk on 75 acres." p.8
>
> "I clearly understand and acknowledge that the Commission's action of feeding results in artificially high concentrations of elk during winter and early spring which increases disease transmission (Johnson, 2014; Attachment 5; and in the 2015 Final SEIS)." (Id.:6) "When chronic wasting disease becomes established on the Bridger-Teton National Forest, there is a moderate to strong likelihood that the population limiting effects of chronic wasting disease to elk, mule deer, and moose may be hastened by supplemental feeding." (Id.:6)

Patricia O'Connor, has also recently acknowledged that elk feedgrounds should cease on USFS lands stating:

> "The continued westward expansion of chronic wasting disease detected during the 2015 hunting season punctuates the need for exploring opportunities for change. In making this decision, I am recommending that the WGFC/WGFD transition away from the need for supplemental feeding for elk. Use at Alkali Creek feedground is not intended to be permitted in perpetuity. My staff will prepare a report annually that identifies changing conditions and recommends any needed adjustment in feedground management." (O'Connor 2015:5 in Final Record of Decision for the Alkali Creek elk feedground SEIS)

CWD exists in western Wyoming in the elk feedgrounds region. It is indisputable that CWD is now in western Wyoming in the region where the WGFD and the US Fish and Wildlife Service feed some 22,000 densely concentrated elk at 23 locations each winter. A moose tested positive for CWD in Star Valley in 2008 (Moose Hunt Area 23). Three doe mule deer tested positive for CWD in Green River, Wyoming, in late 2012 (Deer Hunt Area 132). A dead doe mule deer positive for CWD was discovered in Star Valley early summer of 2016 (Deer Hunt Area 145). A buck mule deer harvested by a hunter near Dubois, Wyoming, tested positive for CWD (Deer Hunt Area 128). More recently, a buck mule deer in Grand Teton National Park tested positive for CWD in November of 2018 and an elk in the park tested positive for CWD in December, 2020. A buck mule deer was confirmed positive for CWD in February of 2022 (Deer Hunt Area 143).

All these CWD endemic areas are either west of the Continental Divide in Wyoming, or adjacent to the Continental Divide; all are near- or are connected via cervid migrations to- elk feedgrounds. Forest Park elk feedground in the Greys River drainage is only 13 miles from where the CWD-infected moose was found in 2008, and only 18 miles from where the CWD-infected mule deer was found in 2016. It is located within a CWD endemic area as determined by the Wyoming Game and Fish Department. Dell Creek elk feedground near Bondurant, Wyoming, is along the migratory path of mule deer from the lower Green River Basin; CWD was found in mule deer in the town of Green River in 2012. Dell Creek feedground is bracketed by CWD endemic areas 31 miles to the northeast (Deer Hunt Area 128), and 26 miles to the southwest (Deer Hunt Area 145), respectively.

Elk, deer, and moose are known to share habitats throughout this region; it is virtually assured that elk, deer, and moose move from CWD endemic areas to currently non-endemic areas every year. The risk is significant that elk that attend both Forest Park and Dell Creek will be or already are exposed to CWD. Given the proximity of the disease, the catastrophic risk of intraspecific and cross-species infection to herds of elk, deer and moose from CWD, the persistence of the infectious prions in soil and plants, and the known harmful effects of concentrating hundreds and thousands of elk for months each winter in the face of this infectious and fatal disease, the BTNF must consider and thoroughly analyze alternatives to elk feedgrounds. Merely "monitoring" elk feedgrounds for symptomatic elk or other cervids is not sufficient and does

virtually nothing to mitigate the risk to elk, nor does removing symptomatic elk or other cervids. Additionally, the BTNF must not allow hay harvested from CWD endemic areas to come onto BTNF lands.

- **Contamination of lands in and around feedgrounds - Soil, water, plants, feces, and urine**

Scientists believe CWD proteins (prions) likely spread between animals through body fluids like feces, saliva, blood, or urine, either through direct contact or indirectly through environmental contamination of soil, food, or water. Once introduced into an area or farm, the CWD protein is contagious within deer and elk populations and can spread quickly (CDC, 2021). Experimental studies have also shown that prions can be taken up by certain plants, including alfalfa, corn, tomatoes, and wheat, and remain infectious (CIDRAP, 2020). Knowing these factors and continuing to expose elk to the prions that cause CWD and potentially make it worse is ignoring the science.

“Scientists searched for prions at Mineral licks – areas where deer seek out essential nutrients and minerals – in the CWD endemic area across south-central Wisconsin. Out of 11 sites, nine had detectable levels of the disease-causing misfolded proteins. Prions were found both in soil and in water from the sites, as well as in nearby fecal samples from one site” (*Outbreak News Today,* 2018).

Given the reality that infectious CWD prions can be in soil, plants, water, feces and minerals, *and, when ingested, may be infectious for mammals*, the BTNF must analyze the potential effects of hay grown and harvested in CWD endemic areas being fed to feedground elk. The BTNF must also consider the effects of mineral licks, both natural licks and minerals placed by people for livestock use, on wildlife and the environment. The BTNF must also consider the effects on wildlife *and human health* given the potential for infectious prions to be in plants, water, and soil, and the potential of elk feedgrounds to amplify the distribution and prevalence of CWD in deer and elk, and consider the effects to wildlife *and people* of increased exposure to CWD prions.

The BTNF must require appropriate disposal of the carcasses of CWD-infected elk or other cervids discovered and/or removed by the WGFD or anyone. The vector of CWD is called a prion, which is a misfolded brain protein known for its near indestructibility and knack for persisting in the natural environment, including in soil and water. Prions are so persistent that attempts to remove them from the environment have mostly proven unsuccessful. Deer and elk holding pens in Sybille, CO, were left empty for six months to one year after all animals were removed and killed. New animals were introduced that had no previous contact with infected deer and elk. Elk in the pens came down with CWD within five years after the attempt at facility sterilization (Forester media et al, 2003). Prions that will be found on both the Dell Creek and Forest Park feedgrounds will not only infect elk today, but have the potential to infect animals for years, even decades, to come. A plan for proper destruction and removal of all elk carcasses at feedgrounds will need to be conducted by the Forest Service during this process.

- **Human health concerns**

In addition to the risk of CWD to elk, deer, and moose, there also exists a human health risk (Waddel et al., 2018; Osterholm et al., 2019). Since 1997, the Centers for Disease Control and the World Health Organization have recommended that agents of any prion disease should not enter the human food chain. Bovine spongiform encephalopathy (mad cow disease), a prion disease, became epidemic in the United Kingdom in the 1980s and 1990s after infected beef was consumed by humans causing significant social and economic disruption. Teton County, Wyoming, Health Officer, Dr. Travis Riddell, M.D., penned a column (2019) in the health section of the Jackson Hole News and Guide warning, "the situation with wild game in Wyoming is eerily similar to that of mad cow disease in the U.K. 20 years ago, and things didn't turn out so well for humans there."

Leading researchers are highly concerned about the risk of transmission of CWD to humans concluding that "[t]he past century has provided compelling evidence that effective public health interventions are needed to prevent the transmission of prion-related transmissible spongiform encephalopathies (TSEs) between animals and humans and between humans…Available data indicate that the incidence of CWD in cervids is increasing and that the potential exists for transmission to humans and subsequent human disease" (Osterholm et al., 2019). A human health epidemic could cause similar disruptions with resulting economic consequences for the economy of Wyoming and neighboring states dependent on wildlife-related recreation (Peterson, M.J., 2003; Local News 8, 2019).

Decision to continue artificially feeding elk does not comply with BTNF forest plan

The Bridger-Teton National Forest(s) plan's main *Resource Management Goal for Recreation Management* lists the Forest's top priority as "to maintain and improve the health, diversity, and productivity of forest ecosystems for the enjoyment of current and future generations". The USFS must consider wildlife viewing as very much a part of the recreationist's experience while visiting national forests in Wyoming.

Also, the USFS must ensure that the decision complies with the BTNF Land and Resource Management Plan. The decision to permit WGFC to continue to feed elk would go against Objective 2.1 (a):

> "to [h]elp re-establish historic elk migration routes to provide increased viewing and hunting opportunities for outfitters and clients"

Continuation of artificially feeding elk limits the ability for elk herds to restore their historic migratory patterns. Feedgrounds have interrupted elk migration from summer ranges to traditional winter ranges, resulting in a functional fragmentation of their habitat. With reduced concern for the conservation of native winter ranges, this fragmentation is likely to become

permanent unless action is quickly taken to phase out feedgrounds. Additionally, feedgrounds have resulted in less concern for the conservation of native ranges because some people feel these ranges are unnecessary to support elk (Western EcoSystems Technology, Inc.). In other words, they have accepted winter feeding as mitigation for development and other habitat loss. More emphasis on rehabilitation of winter range for elk should be a priority for the public and land management agencies. Alternative 1, would provide this needed rehabilitation from the impacts of decades of feeding at Forest Park and Alternative 2 would provide the same at Dell Creek.

Carnivore tolerance can benefit healthy elk herds

Increasing tolerance for wolves in CWD-infected areas can be a strategy for containing this disease. Human/predator interactions are often viewed through the lens of 'conflict' or 'risk' to human communities, such as livestock depredation, impacts on abundances of game species, and threats to human safety. However, carnivores can also benefit humans by pest control, waste and carcass disposal, and nature tourism. On the topic of elk feedgrounds, carnivores are especially helpful when it comes to culling sick animals out of the population. A recent study finds that “predators may create healthier prey populations by selectively removing diseased individuals (Brandell, et al., 3).” *Examination of the interaction between age-specific predation and chronic disease in the Greater Yellowstone Ecosystem,* published in the *Journal of Animal Ecology*, in 2022 shows that wolves selectively remove animals that are infected years before humans can detect that an animal is infected with CWD. Ungulates that are infected are likely to have symptoms which, even in the early stages of illness, make them less wary, and less able to avoid predators, long before the disease progresses to the point of death. So, wolves, by the way they hunt, are likely to single out these animals and remove them long before they would have succumbed to the illness. If they take the infected animal out six months or a year earlier than they would have died, it can reduce all those potential transmission to other elk or deer, therefore reducing the spread of CWD. Wolves and other canines are not susceptible to the illness and thus are unable to spread it.

Additionally, research published in 2021 in the *Proceedings of the National Academy of Sciences* highlights an underappreciated benefit of wild wolf populations: the large predators frighten deer and elk away from dangerous roadways, saving money and lives in the process. Most of the reduction in collisions was due to the “landscape of fear” that wolves create (2021). Wolves tend to follow clear paths through the landscape, like streams. In an area that has been developed by humans, wolves follow roads, trails, and pipelines. Deer adapt to the wolves’ presence by staying away, which would reduce the chance that they would get hit by a car. Since car-elk collisions are one of the concerns that comes with closures of feedgrounds, promoting the health of wolves could be a great mitigation strategy.

Impacts on wildlife protected under the Endangered Species Act

Dell Creek and Forest Park feedgrounds are located in critical Canada lynx habitat (USFWS, 2014) and grizzly bear occupied and Demographic Monitoring Area (WGFD 2016). Canada lynx and grizzly bears are protected under the Endangered Species Act (ESA). Since the promulgation of elk feedgrounds by the BTNF adversely affects the health of prey species such as deer, moose and elk, elk feedgrounds have the potential to adversely affect carnivores including those protected under the ESA. The EIS will need to address the long-term effects to Threatened and Endangered Species if elk populations plummet due to disease. Due to these impacts on ESA-listed species, the Forest Service also needs to consult with the US Fish and Wildlife Service about potential effects to listed species under the ESA on any elk feedground permit regardless of term.

The BTNF must also consider the beneficial effects of abundant predators of elk and deer on the prevalence of CWD and other diseases in elk and deer and whether the existence of elk feedgrounds will affect the ability of predators to influence the health of elk and deer herds.

Professional wildlife management agencies recommend phasing out feeding

a. AFWA
    i. The American Association of Fish and Wildlife Agencies (of Which the Wyoming Game and Fish Department is a member) states in their Best Management Practices for Prevention, Surveillance, and Management of Chronic Wasting Disease, “There is currently no evidence that baiting and feeding of free-ranging cervids can be conducted to mitigate increases in the opportunity for disease transmission. There is also no evidence the practice is likely to increase harvest sufficiently to overcome the negative effects of those increases by disease transmission. Evidence to date suggests that “restrictions on feeding quantity would not mitigate the potential for disease transmission” and that putative mitigating practices such as spreading feed or bait over a specified area, or restricting the kinds of food items that can be used, did not substantially reduce the potential risk for disease transmission” (Palmer and Whipple 2006; Thompson et al. 2008).

b. The Wildlife Society
    i. The official statement from The Wildlife Society in 2020 is to “encourage fish and wildlife agencies, wherever possible, to phase-out supplemental feeding of wild ungulate populations, both in-house and by the general public, and to manage populations at levels that are compatible with the long-term carrying capacity of the habitat.”

Regional effects to wildlife from Wyoming’s elk feedgrounds

Elk feedgrounds in Wyoming do not just affect the state but have detrimental effects across the entire Greater Yellowstone ecoregion. The Montana Fish and Wildlife Commission sent a letter to Wyoming asking wildlife managers to reconsider the use of winter feeding grounds in order to

help prevent chronic wasting disease (Montana Fish & Game, 2017). They stressed that feedgrounds make Wyoming's wildlife populations less stable, less healthy, and more susceptible to a catastrophic disease event. They also acknowledged that if we do not address CWD, we will all be culpable in leaving a greatly devalued landscape to future generations. In closing, they asked that Wyoming begin the process of closing feedgrounds.

What Happens When Elk Feeding Ends

As a result of hearing a wide range of questions and concerns about ending the addiction to feeding created by the WGFC in this area, Wyoming Wildlife Advocates examined the common excuses provided for maintaining the status quo of the elk feedlot operations in west-central Wyoming. Please see Attachment 4 for this white paper.

The Forest Service's Public Trust Responsibilities

In 2016, the Forest Service commissioned law and policy experts to research the role and duties of the Forest Service in regard to wildlife management. The legal review was published in 2017 in the journal Environmental Law. We provide this review, in its entirety, as Attachment 7. The Forest Service's role here is not simply ministerial, the approval of a Special Use Permit, the Forest Service's role here is the conservation and protection of wildlife. This role and duty cannot be shuffled off to the state.

The executive summary of this review is as follows:

> This Article reviews the authority of federal and state governments to manage wildlife on federal lands. It first describes the most common assertions made by state governments regarding state powers over wildlife and then analyzes the relevant powers and limitations of the U.S. Constitution and federal land laws, regulations, and policies. Wildlife-specific provisions applicable within the National Park System, National Wildlife Refuge System, National Forest System, Bureau of Land Management, the special case of Alaska, and the National Wilderness Preservation System are covered, as is the Endangered Species Act. We reviewed an extensive collection of cases of conflict between federal and state agencies in wildlife management on federal lands. These cases show how federal land laws, regulations, and policies are frequently applied by federal agencies in an inconsistent and sometimes even unlawful fashion. They also demonstrate how commonalities found in state wildlife governance, such as sources of funding and adherence to the North American Model of Wildlife Conservation, often exacerbate conflict over wildlife management on federal lands.
>
> Federal land management agencies have an obligation, and not just the discretion, to manage and conserve fish and wildlife on federal lands. We debunk the myth that "the states manage wildlife and federal land agencies only manage wildlife habitat." The myth is not only wrong from a legal standpoint but it leads to fragmented approaches to wildlife conservation, unproductive battles over agency turf, and an abdication of federal

> responsibility over wildlife. Another problem exposed is how the states assert wildlife ownership to challenge the constitutional powers, federal land laws, and supremacy of the United States. While the states do have a responsibility to manage wildlife as a sovereign trust for the benefit of their citizens, most states have not addressed the conservation obligations inherent in trust management; rather, states wish to use the notion of sovereign ownership as a one-way ratchet—a source of unilateral power but not of public responsibility. Furthermore, the states' trust responsibilities for wildlife are subordinate to the federal government's statutory and trust obligations over federal lands and their integral resources.
>
> The Article finishes by reviewing the ample opportunities that already exist in federal land laws for constructive intergovernmental cooperation in wildlife management. Unfortunately, many of these processes are not used to their full potential and states sometimes use them solely as a means of challenging federal authority rather than a means of solving common problems. Intergovernmental cooperation must be a mutual and reciprocal process, meaning that state agencies need to constructively participate in existing federal processes, and federal agencies should be provided meaningful opportunities to participate in, and influence, state decision making affecting federal lands and wildlife. (emphasis added)

We also request a complete review of Attachment 7 - Wildlife Health and Public Trust Responsibilities for Wildlife Resources, 2016. The paper is directly related to the federal government's responsibilities regarding wildlife disease transmission.

Provided as Attachment 8 is the Wildlife Society's Technical Review 10-01 The Public Trust Doctrine: Implications for Wildlife Management and Conservation in the United States and Canada. This Technical Review provides an in-depth review of the government's Public Trust duties and responsibilities.

WGFD quotes that make solid arguments against elk feedgrounds

> *"Quite naturally, all the groups interested in these elk have not seen eye to eye as pertains to their management. In some instances disputes have arisen. Much of this disagreement, however, is because at times prejudices, distortions and emotions have been substituted for facts. At other times the available facts have not always been recognized in their proper perspective by everyone concerned. Unfortunately, all that is known is not common knowledge, nor have all the facts been brought to light."*

-A.F.C. Greene, Wyoming State Game and Fish Commissioner, in the Forward to Chester C. Anderson's The Elk of Jackson Hole (1958)

> *"Feeding is most common in winter when well-intentioned people think wildlife need extra energy, but data collected over the last 50 years indicates that feeding causes a great deal of harm and may actually decrease winter survival. Feeding increases*

disease transmission, causes habitat degradation, can upset the normal digestive process, interferes with wildlife social structure and may attract predators and other problem wildlife."

"When animals are fed, they tend to congregate in unnaturally high numbers. This high density allows disease to be transmitted much more quickly."

"TB should not only be a concern for wildlife enthusiasts. The disease may infect domestic livestock and well as humans…once this disease is well established, it is very difficult to completely eradicate it from a wild population. One of the best preventative steps in this effort is to not feed wildlife."

"The evidence is undeniable. Wildlife are adapted to survive winter without supplemental feeding. Feeding causes many more problems to wildlife than it solves. Additionally it can be harmful to humans and domestic animals."

"[Brucellosis] is virtually nonexistent in elk herds that are not fed or closely associated with herds that are fed. There is no doubt that feeding has allowed the disease to persist. Likewise, there is little doubt that if feeding were discontinued and elk used native winter ranges, the disease would eventually disappear over time."

"Finally, it can be questioned whether feeding wildlife is even ethical."

The Wyoming Game and Fish Department - Feeding Wildlife: A Recipe for Disaster

"The supplemental feeding of elk, or any big game species, is not recommended. Concentrating animals in such a manner increases the potential for disease transmission (including brucellosis and scabies), as well as dependence upon unnatural food sources. This may result in less healthy populations and reduced reproduction. Supplementary fed animals are less inclined to forage for themselves and can lose their natural wariness, increasing the chance of predation. Concentrating elk may result in range degradation to the area surrounding the feedground. Collisions with motor vehicles while elk are feeding near highways and elk grazing damage to fields and haystacks are other undesirable possibilities resulting from supplemental feeding."

"Keep in mind that elk populations are neither stagnant nor constant. They fluctuate annually, higher in years of mild weather and/or plentiful forage and lower in years of severe weather and/or poor forage production. Big game herds do not, nor should they be expected to, remain at a constant level year after year. Though starvation of big game animals is not pleasant, it is a natural process that removes less fit animals the range simply cannot support at the time. To intervene in this process is to remove natural selection from elk population dynamics and jeopardize the future condition and capacity of the range to support elk."

Wyoming Game and Fish Department – Habitat Extension Bulletin No. 27

Landscape connectivity and big game winter ranges

There are vast areas of protected public lands in western Wyoming that allow for wildlife to free-range. The only counties in western Wyoming with elk feedgrounds are Sublette County, Lincoln County, and Teton County. These three counties' combined acreage is almost 8.6 million acres of which 83% is federal land. More than 7 million acres in these counties are managed by the National Park Service, the US Forest Service, the US Fish and Wildlife Service and the Bureau of Land Management. Very importantly, there are 1.74 million acres of big game winter range in these counties, as designated by the Wyoming Game and Fish Department.

In adjacent counties, well within migratory capabilities of elk, there are even more natural winter ranges acknowledged by wildlife management agencies. In the context of this large area (Sublette, Lincoln, and Teton Counties and surrounding counties), human settlement is relatively sparse on comparatively small acreages. These critical wildlife habitats have better protections for wildlife than they did during settlement times in the late 19th and early 20th centuries. Federal agencies and the WGFD restrict or prohibit many human activities on winter ranges to protect wildlife. Some elk, deer and other big game are known to undertake local and large-scale, long-distance migrations among their seasonal habitats throughout this region (Wyoming Migration Initiative 2016). The BTNF must consider the innate ability of elk to migrate between seasonal ranges in western Wyoming, and the fact that winter feedgrounds impede that ecologically beneficial behavior and harm the health of elk and the ecosystem. The BTNF must consider alternatives that do not bait elk onto disease-ridden small parcels for the winter months, but allow elk to naturally free-range among their natural, healthier seasonal habitats throughout the region. The BTNF must consider a healthier paradigm than feedgrounds to manage elk on the USFS lands.

Economics of sustainable wildlife management

Direct expenditures (plus a multiplier effect of expenditures) of wildlife watchers in Wyoming during 2011 were $556 million dollars. A 2018 study found that people spent $802.2 million in Wyoming on wildlife-based recreation in 2017. From that direct spending, the state saw the benefit of $1.065 billion in total economic activity (Sweetwater Now, 2019). While the three counties in western Wyoming where elk feedgrounds are located are only a portion of the state of Wyoming, the annual revenue from wildlife-related recreation in Sublette, Teton and Lincoln counties is undoubtedly many millions of dollars annually. The allowance of elk feedgrounds that promulgate diseases in elk and other wildlife threatens the tourism and wildlife-based economies of western Wyoming and the Greater Yellowstone Ecosystem. The BTNF must consider these facts and must consider the impacts of diseased elk feedgrounds on the economy, and must consider a transition to a healthier more sustainable paradigm of wildlife and habitat management, which will better serve the regional economy in the future.

Climate change

Climate change is affecting the natural ecosystems of Wyoming and the Greater Yellowstone Ecosystem. “The frequent warm years coincide with a reduction in the frequency of extremely low (<-20 degrees C) January temperatures . . . “ (Shuman, 2011).

Wildlife are affected by changes in climate. “The ecology of ungulates in the (Rocky Mountains and Upper Columbia Basin) is strongly influenced by climate” (NPS 2010:48). “One of the key issues for ungulate management is wildlife disease, the spread and virulence of which is likely to be exacerbated by climate change (Harvell, 2002).” (Id.) It is known that elk feedgrounds exacerbate the incidence of diseases in elk (Smith, 2001; Peterson, 2003). “Climate change will likely increase the range, frequency, severity, and impact of plant and wildlife disease (Harvell, et al., 2002)” (NPS 2010:17). “Plant communities and wildlife that are faced with multiple stressors are the least likely to resist the emergence of novel diseases” (Id.). The BTNF must consider the effects of climate change on elk and elk habitat and must consider alleviating stressors on elk (such as density dependent diseases and diseased habitats) and implementing less harmful alternatives to managing elk than confining them on feedgrounds every winter.

The BTNF must also consider available natural forage for elk on important habitats such as native winter ranges. The impacts of seasonal livestock grazing on USFS and BLM lands that also serve as big game winter ranges must be considered and managed to allow for residual forage to sustain wintering elk and other big game.

Separation from livestock

The BTNF must consider alternative ways (other than elk feedgrounds) to maintain separation between elk potentially exposed to or infected with brucellosis and livestock vulnerable to brucellosis infection on private lands adjacent to or near the BTNF. One method to maintain separation is to fence in the livestock with elk proof fences, or construct elk proof fences to prevent elk from entering into private land where vulnerable livestock are pastured, and allow elk to free range. There are already elk proof fences on USFS land (and other jurisdictions) in the area of Soda Lake near Pinedale, Muddy Creek near Boulder, and along the Star Valley Front south of Alpine to mitigate commingling. It is important to fence as little area as possible so as not to affect natural wildlife movements including wildlife migrations more than necessary to accomplish the goal. Another way to separate elk from livestock is to ship the livestock to winter elsewhere.

Conclusion

Elk that attend winter feedgrounds in western Wyoming, including on the BTNF, have elevated seroprevalence for exposure to *Brucella abortus, which* can cause brucellosis in elk, and elevated levels of other diseases, in comparison to elk that free range (Smith 2001). These are serious indicators that these elk herds are unhealthy and at risk of other diseases such as CWD, and that a change in the management paradigm for elk including those elk that use the BTNF is needed. Since deadly CWD is expanding throughout Wyoming at an alarming pace, time is of the essence to manage elk and habitat on the BTNF in a more holistic way. Rather than manage elk according to artificial objectives such as numbers of elk as determined by the

Wyoming Game and Fish Commission regardless of their health or the health of the habitat, the BTNF and other agencies must strive for a healthier ecosystem and more sustainable objectives to manage the public's wildlife. Extensive, connected habitats and the conservation of predators can serve as natural capital to improve the health of the elk herds that are currently sick, at high risk, and confined on small feedgrounds months at a time. Predators can, if conserved in abundance, steward the game herds, remove infected individuals, and help ensure healthy wildlife. Elk feedgrounds are an archaic method of wildlife management whose time has passed. We support **Alternative 1**, immediate closure, of **Forest Park Feedground** and **Alternative 2**, phase out within three years, for **Dell Creek Feedground**.

We are submitting this joint comment letter on behalf of the organizations listed below:

Sierra Club, a non-profit environmental organization founded in 1892, has 5,000 members and supporters in Wyoming and 3.8 million members and supporters nationwide. Its mission is to explore, enjoy, and protect the wild places of the Earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.

Wyoming Wildlife Advocates (WWA) is a non-profit organization focused on informing, educating, and empowering communities to preserve our wild legacy and protect our shared wildlife resources. WWA envisions a Wyoming that leads the nation in exceptional and innovative wildlife management; all stakeholders are valued equally, and management decisions are driven by the best available science. Headquartered in Jackson, Wyoming, WWA has thousands of supporters in Wyoming, the Greater Yellowstone Ecosystem, and nationwide.

Western Watersheds is a non-profit conservation organization founded in 1993 with the mission of protecting and restoring western watersheds and wildlife through education, public policy initiatives, and litigation. Headquartered in Hailey, Idaho, Western Watersheds Project has 2,000 members and field offices in Idaho, Montana, Oregon, Wyoming, Arizona and California.

Yellowstone to Uintas Connection is a 501c3 public interest organization whose staff and members have and will continue to work to protect the integrity of habitat for fish and wildlife as well as recreate in this region. We are concerned about the loss of integrity of the Regionally Significant Wildlife Corridor that connects the Greater Yellowstone Ecosystem and Northern Rockies to the Uinta Wilderness and Southern Rockies. Yellowstone to Uintas Connection is headquartered in Paris, Idaho with a satellite office in Bondurant, Wyoming.

Buffalo Roam Tours is a Greater Yellowstone Ecosystem guiding company founded in 2012 based out of Teton County Wyoming. We specialize in connecting 1000's of tourists annually, through experiential outdoor interpretation to the wonders of the natural world. Buffalo Roam's mission of Human and Nature Connection is founded on science based teaching to explain,

experience and re-connect visitors to the amazing interconnection of wildlife, landscapes and humans.

Gallatin Wildlife Association (GWA) is a non-profit volunteer wildlife organization of approximately fifty members. Headquartered in Montana, GWA is composed of dedicated hunters, anglers, and other wildlife advocates in Southwest Montana and beyond. GWA's mission is to protect habitat and conserve fish and wildlife for future generations. GWA has long standing interests in supporting the sustainable management of fish and wildlife populations through fair chase, public hunting and fishing opportunities that will ensure these traditions are passed on for future generations to enjoy.

Jackson Hole Conservation Alliance (JHCA) is a non-profit organization with the mission to protect the wildlife, wild places, and community character of Jackson Hole. JHCA represents thousands of Wyoming residents with an interest to protect our wildlife based on the best available and most accurate science, and through proactive community engagement. Since 1979 the Alliance has effectively worked as a watchdog to keep Jackson Hole wild and beautiful.

Thank you again for the opportunity to provide these scoping comments. We look forward to continuing to engage in this important decision-making process.

We incorporate by reference the comments submitted by:

1) Lloyd Dorsey
2) Dr. John Carter - Yellowstone to Uintas Connection
3) Clint Nagel - Gallatin Wildlife Association

Sincerely,

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References:

Brandell, Ellen, et al. 2022. Examination of the interaction between age‐specific predation and chronic disease in the Greater Yellowstone Ecosystem. Journal of Animal Ecology.

Bridger-Teton National Forest. 2015. Bridger Teton National Forest Land and Resource Plan: Forest Plan with amendments and corrections. Accessed 2/8/22: https://www.fs.usda.gov/resources/btnf/landmanagement/resourcemanagement

Centers for Disease Control (CDC). 2021. Chronic wasting disease transmission.https://www.cdc.gov/prions/cwd/transmission.html

Center for Infectious Disease Research and Policy (CIDRAP). 2020. Frequently asked questions. https://www.cidrap.umn.edu/cwd/faqs

Forester Media. 2003. Chronic Wasting Disease and Waste Disposal: Making an Informed Decision. https://www.mswmanagement.com/collection/article/13002357/chronic-wasting-disease-and-waste-disposal-making-an-informed-decision

Galloway, N.L., Monello, R.J., Brimeyer, D., Cole, E.K., Hobbs, N.T. 2021. Supporting adaptive management with ecological forecasting: chronic wasting disease in the Jackson Elk Herd. *Ecosphere 12(10)*. DOI: 10.1002/esc2.3776.

Harvell, C.D., C.E. Mitchell, J.R. Ward, S. Altizer, A.P. Dobson, R.S. Ostfeld, and M.D. Samuel. 2002. Climate warming and disease risks for terrestrial and marine biota. *Science 296*: pp. 2158-2162.

Johnson, T. 2014. Appendix 7 to Final Supplement to the Environmental Impact Statement Long Term Special Use Authorization for Wyoming Game and Fish Commission to Use National Forest System Lands for their Winter Elk Management Activities at Alkali Creek Feedground. Bridger-Teton National Forest. Jackson, WY.

Local News 8. 2019. Fishing, hunting, and wildlife watching a big part of Wyoming economy. Retrieved from https://www.localnews8.com/news/fishing-hunting-and-wildlife-watching-a-big-part-of-wyoming-economy/1001325061

Magnus, D.L. 2011. Reducing reliance on supplemental winter feeding in elk (*Cervus canadensis*): An applied management experiment at Deseret Land and Livestock Ranch, Utah. *All Graduate Theses and Dissertations.* Paper 951. http://digitalcommons.usu.edu/951

Maichak, E. 2019. Habitat biologist for the Game and Fish. Quote in the article: *Sick bull elk put down near Powell,* 2016. Powell Tribune

Michigan Department of Natural Resources, 2022, *Bovine Tuberculosis.* https://www.michigan.gov/dnr/0,4570,7-350-79136_79608_85016-99064--,00.html

Monello, R.J., Powers, J.G., Hobbs, N.T., Spraker, T.R., O'Rourke,K.I. & Wild, M.A. 2013. Efficacy of Antemortem rectal biopsies to diagnose and estimate prevalence of chronic wasting disease in free-ranging cow elk (*Cervus elaphus nelsoni*). *Journal of Wildlife Disease, 49(2)*, pp. 270-278.

Monello, R.J., Powers, J., Hobbs, N.T., Spraker, T., Watry, M.K & Wild, M. 2014. Survival and population growth of a free-ranging elk population with a long history of exposure to chronic wasting disease. *Journal of Wildlife Management (78)2*: pp, 214-223.

Montana Fish & Wildlife, 2017. Montana Fish and Wildlife Commission. *Letter to Wyoming regarding Elk Feedgrounds.* https://drive.google.com/file/d/1xaK0ZNYk_rmP_xWQzDlWbKOmkycVRmmG/view)

Osterholm, M.T., Anderson, C.J., Zabel, M.D., Scheftel, J.M., Moore, K.A., Appleby, B.S. 2019. Chronic wasting disease in cervids: Implications for prion transmission to humans and other animal species. American Society for Microbiology (10)4. https://doi.org/10.1128/mBio.01091-19.

Outbreak News Today. 2018. Chronic wasting disease prions found in soil and water in Wisconsin: Study. http://outbreaknewstoday.com/chronic-wasting-disease-prions-found-soil-water-wisconsin-study-68515/

Palmer, M. V. and D. L. Whipple. 2006. Survival of Mycobacterium bovis on feedstuffs commonly used as supplemental feed for white-tailed deer (*Odocoileus virginianus*). Journal of Wildlife Diseases. 42(4): p. 853–858.

Peterson, M.J. 2003. Appendix F Infectious agents of concern for the Jackson Hole elk and bison herds: An ecological perspective. Prepared for The National Elk Refuge and Grand Teton National Park, Department of the Interior. Jackson, WY.

Raynor, Jennifer, et al. 2021. Wolves make roadways safer, generating large economic returns to predator conservation. *Proceedings of the National Academy of Sciences*

Riddell, T. 2019. If you eat game meat, will it eat your brain? Jackson Hole News and Guide. Retrieved from https://www.jhnewsandguide.com/valley/columnists/if-you-eat-game-meat-will-it-eat-your-brain/article_514694d4-bd40- 5779-aa02-728db87fdb88.html

Smith, B. 2001. Winter feeding of elk in Western North America. *Journal of Wildlife Management 65*:173-190.

Smith, B. 2012. *Where elk roam: Conservation and biopolitics of our national elk herd.* Guildford, CT: Lyons Press.

Smith, B. 2013. Elk winter feeding=disease facilitation: The threat as CWD approaches western feedgrounds. *The Wildlife Professional*, pp.42-47.

Sweetwater Now. 2019. Wildlife-based recreation contributes $1 billion to Wyoming economy. https://www.sweetwaternow.com/wildlife-based-recreation-contributes-1-billion-to-wyoming-economy/

The Wildlife Society. 2020. Baiting and supplemental feeding of game wildlife species. Issue Statement. https://wildlife.org/tws-issue-statement-baiting-and-supplemental-feeding-of-game-wildlife-species/

Thompson, A. K., M. D. Samuel, and T. R. Van Deelen. 2008. Alternative feeding strategies and potential disease transmission in Wisconsin white-tailed deer. Journal of Wildlife Management. 72(2): p. 416–421.

U.S. Forest Service, Bridger-Teton National Forest. Scoping letter issued by Tricia O'Connor, January 14, 2022. (Jackson, WY: 2022).

Washington State University. 2021. *WSU researchers discover one way elk become infected with devastating hoof disease. https://news.wsu.edu/press-release/2021/09/16/*

Waddell,L., Greig, J., Mascarenhas, M., Otten, A., Corrin, T., Hierlihy, K. 2018. Current evidence on the transmissibility of chronic wasting disease prions to humans: A systematic review. *Transboundary and Emerging Diseases, 65(1)*, 37- 49. https://doi: 10.1111/tbed.12612

Wild, M.A., Hobbs, N.T., Graham, M.S. & Miller, M.W. 2011. The role of predation in disease control: A comparison of selective and nonselective removal on prion disease dynamics in deer. *Journal of Wildlife Disease, 47(1)*, pp. 78-93.

Please see additional attachments

Attachment 1: 2016 Organizational scoping comments
Attachment 2:Western State Management of Wintering Elk
Attachment 3: Court Case Rulings
Attachment 4: What Happens When Elk Feeding Ends
Attachment 5: Chronic Wasting Disease Literature Review Technical Report
Attachment 6: Fish and Wildlife Management on Federal Lands
Attachment 7: Wildlife Health and Public Trust Responsibilities For Wildlife Resources
Attachment 8:The Public Trust Doctrine

Link to Attachments