

SUMMARY OF ELK FEEDGROUNDS OPERATED BY THE WYOMING GAME AND FISH DEPARTMENT

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LIST OF ABBREVIATIONS

BFHAP	Brucellosis Feedground Habitat Action Plan
BLM	Bureau of Land Management
BTNF	Bridger Teton National Forest
CWD	Chronic Wasting Disease
FOP	Feedground Operational Plan
GTNP	Grand Teton National Park
GYIBC	Greater Yellowstone Interagency Brucellosis Committee
JCR	Job Completion Report
NER	National Elk Refuge
NWF	National Wildlife Federation
NPS	National Park Service
Region	Refers to the WGFD's Jackson-Pinedale Region
SWE	Snow Water Equivalent
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WGFD	Wyoming Game and Fish Department
WMA	Wildlife Management Area
WYGISC	Wyoming Geographic Information Science Center

EXECUTIVE SUMMARY

This report was written with two objectives in mind. Our first and primary objective was to compile the existing, pertinent information available for each of the 22 feedgrounds operated by the Wyoming Game and Fish Department (WGFD). No such document previously existed, and as feedground management continues to be evaluated, this report should be useful to all parties involved in the evaluation. The second objective was to develop a preliminary ranking of feedgrounds according to their potential for distributing elk onto native ranges, with the caveats that there would be no increase in private property damage, no increase in the potential for brucellosis transmission to livestock, and no decrease in elk numbers. These caveats represent the current social, political, and economic constraints that must be recognized if feedgrounds are closed and elk are expected to survive on native ranges. The preliminary feedground ranking was intended to identify where future and more detailed evaluation efforts may be focused when considering reducing elk dependency on supplemental feed.

BACKGROUND

The National Elk Refuge (NER), located near Jackson Hole, Wyoming was formed in 1912 and represents the first government-subsidized feeding program for wildlife (Smith 2001). Following establishment of the NER, the state of Wyoming began operating an additional 22 elk feedgrounds west of the Continental Divide. Most feedgrounds were established between the late-1940's and mid-1950's, in an effort to minimize winter mortality and reduce private property damage (Clause et al. 2002). In addition to elk, mule deer and moose were also fed during this period. Emergency winter feeding was also used at various locations around the state and records indicate elk were fed at more than 50 sites during the 1950's and 1960's. However, by the 1970's the WGFD began scaling back the use of feedgrounds and emergency feeding operations and it became WGFD policy that the Wildlife Commission approve activities associated with supplemental feeding of big game. Although the last feedground (Forest Park) was established in 1979, the WGFD substantially reduced the number of feeding sites during the 1970's.

While some elk in northwest Wyoming spend the winter on native ranges, the vast majority of elk in this region winter on the NER, managed by the US Fish and Wildlife Service (USFWS), or the 22 feedgrounds operated by the WGFD. Wyoming feedgrounds support approximately 23,000 elk (Smith 2001), more than 80% of the estimated 25,000-30,000 elk that occur in northwest Wyoming. Most of these elk summer on ranges managed by the US Forest Service (USFS) or National Park Service (NPS).

The primary reasons for establishing elk winter feedgrounds were:

1. **To alter distribution of elk and prevent them from damaging crops and/or private property.** Wyoming's game damage law (W.S. §23-1-302 and §23-1-901) requires the WGFD to compensate private landowners for certain kinds of damage caused by wildlife classified as trophy or big game, including elk. Among

other forms of damage the law covers damage to stored (e.g., hay bales) and standing crops and extraordinary damage to range lands. Many landowners consider any use of stored crops on private range lands as unacceptable and the WGFD currently pays approximately \$250,000 in damage payments and spends much more money for damage prevention each year. These damage payments are only for verified damage in accordance with state regulations and represent a small percentage of the damages that are actually claimed but unverified each year. In addition to the cost of damage payments, the WGFD loses considerable support from some private landowners who consider the use of their private property by public wildlife as unacceptable. The WGFD uses a variety of methods to prevent game damage throughout the state, but the use of feedgrounds is restricted to northwestern Wyoming.

2. **To reduce winter mortality of elk and address public concerns about animal welfare.** Some of the feedgrounds are considered necessary to support elk herds at current levels because of the loss of native winter range. For example, native winter ranges in Teton County were historically limited by geography and most are now lost to development in and around the town of Jackson, Wyoming. Without a supplemental winter feeding program, this herd would need to be substantially reduced from the current 13,000 animals to prevent massive starvation during normal winter periods.

Smith (2001) characterized the elk feedground situation as, “.....the least painful remedy for producing immediate results to appease differing groups: agricultural interests that desire rapid resolution to crop damage; and pro-wildlife constituencies that oppose reductions in elk populations despite wildlife-human conflicts and dwindling habitat.” Following establishment of the feedgrounds, artificially high concentrations of elk facilitated the intra-specific transmission and maintenance of brucellosis within these elk populations. Presence of brucellosis has been confirmed in 18 of the 22 elk feedgrounds operated by the WGFD, and, while prevalence rates may vary among feedgrounds, approximately 30% of adult females are believed to be seropositive (GYIBC White Paper). Maintenance of brucellosis in elk apparently requires disruption of normal calving behavior, as occurs when infectious cow elk are concentrated on winter feedgrounds and abortions occur (GYIBC White Paper). While brucellosis is not a limiting factor in elk populations, it is a major concern to the livestock industry. Because of the potential risk of brucellosis transmission to livestock from elk, an additional purpose of feedgrounds has become:

3. **Reducing elk and cattle interaction during periods of high risk potential for brucellosis transmission (February 15 – June 15).** Transmission of brucellosis occurs when susceptible animals come into direct contact with contaminated aborted fetuses, birth membranes, uterine fluids, or vaginal discharge from infectious animals. The WGFD has identified February 15 – June 15 as the high risk time period for brucellosis transmission; when third-trimester elk abortions and normal calving occur.

Today, the WGFD believes that the two major roles of the feedgrounds are to prevent damage to private property and reduce potential risk of brucellosis transmission to livestock (Dean et al. 2004). Much work has been done with brucellosis and we refer readers to Cheville et al. 1998, GYIBC (1994, 1997, White Paper), Kreeger 2002, Thorne et al. 1979, Thorne 1982, Thorne and Herriges 1992, Thorne et al. 1996, Cook et al. 2004, and Neff 2004, for details.

In addition to minimizing private property damage and brucellosis transmission to livestock, another perceived benefit of feedgrounds by the public is the maintenance of a larger number of elk than native winter ranges could naturally support. Large elk populations provide a variety of consumptive and non-consumptive benefits across western Wyoming. Maintaining current elk population levels is a high priority for sportsmen groups and can provide major economic benefits in the form of license revenues, outfitting businesses, visitor experience, and hunter expenditures.

While feedgrounds may attract elk away from private property, minimize co-mingling with livestock, and maintain artificially high elk populations, they are not without problems. The major problems associated with elk feedgrounds are:

- 1) *Cost:* Feedground operations are very expensive and divert dollars from other wildlife programs. The WGFD estimates the annual cost to operate their 22 feedgrounds is 1.5 million dollars; a cost that includes personnel (2 permanent and 20 temporary employees), equipment, and hay (Clause et al. 2002).
- 2) *Habitat Degradation:* High concentrations of elk frequently cause damage to surrounding native vegetation, particularly to browse species such as aspen, serviceberry, willow, and other deciduous woody vegetation.
- 3) *Public Perception:* Feedgrounds have resulted in less concern for the conservation of native ranges because some people feel these ranges are unnecessary to support elk. In other words, they have accepted winter feeding as mitigation for development and other habitat loss.
- 4) *Disease Transmission:* Perhaps the greatest concern over elk feedgrounds is their role in the maintenance and spread of the infectious disease brucellosis, a bacterial disease caused by the genus *Brucella*, an important disease of cattle worldwide. Significant levels of brucellosis in wild elk occur only in the Greater Yellowstone Ecosystem (Thorne and Herriges 1992, Cheville et al. 1997), where many elk rely on supplemental feed. Abortion is the most important effect of brucellosis in cattle, but it may also cause retained placenta and permanent or temporary infertility. A national brucellosis eradication program has nearly eliminated the disease from cattle, and since 1980, eradication efforts have focused on the potential for wild elk or bison to transmit brucellosis to cattle (Cheville et al. 1998). The WGFD began vaccinating elk with Strain 19 *Brucella* vaccine in 1985 at the Greys River/Alpine Feedground and in the following 17 years expanded the vaccination program to include 21 of the 22 feedgrounds.

Seroprevalence (frequency of detection of *Brucella* bacteria in tested animals) among WGFD-operated feedgrounds has averaged 34% since brucellosis surveillance began in 1971 (Clause et al. 2002). Of the estimated 1 million elk in North America, significant levels of brucellosis in wild elk occur only in areas associated with feedgrounds. There is overwhelming evidence that winter feeding of elk perpetuates the spread of diseases, including brucellosis (GYIBC Position Statement). Two recent cases (2004) of brucellosis in cattle herds in western Wyoming were investigated and found to have the same *Brucella* bio-type as the adjacent elk herd at Muddy Creek. This is considered strong evidence for transmission of brucellosis from elk to livestock.

Although brucellosis in elk has received much attention because of its potential effects on livestock, disease concerns among artificially high concentrations of elk are not limited to brucellosis. Another bacterial disease of concern is pasteurellosis, which has been documented on both the NER and WGFD feedgrounds (Smith 2001). Viral and parasitic diseases of concern include bovine viral diarrhea and psoroptic mange (scabies), respectively. Scabies tends to be a disease of mature bull elk in Wyoming (Thorne 1982) and kills 20-30 bulls each winter on the NER (Samuel et al. 1991). And finally, chronic wasting disease (CWD), a transmissible spongiform encephalopathy (TSE) is a concern for elk and other cervids, particularly those kept in captivity or in high concentrations.

- 5) *Wildlife migration and habitat connectivity*: 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.

As feedground management continues to be evaluated and scrutinized, a compendium of feedground information should facilitate discussion, education, evaluation, and management decisions. No single document contains all the available information on the 22 feedgrounds operated by the WGFD. Rather, some information is summarized every three years in the WGFD's Job Completion Reports (JCR), other information is included in the Brucellosis Feedground Habitat Action Plans (BFHAP), and no maps are available in either report. Additionally, as new management options are explored, by several entities including, the WGFD, the Greater Yellowstone Interagency Brucellosis Committee (GYIBC), and the Governor's Brucellosis Task Force, identification of objective and systematic approaches to prioritize or categorize feedgrounds according to their management potential should be explored.

OBJECTIVES

This report was written with two objectives in mind.

1. Summarize available elk information (i.e., elk numbers, feed dates, vaccination, feed costs, management plans) and landscape characteristics (i.e., land status,

- elevation, topography, vegetation) for the 22 elk feedgrounds operated by the WGFD.
2. Develop criteria and a preliminary ranking of the 22 elk WFGD feedgrounds according to their potential for distributing elk off feedgrounds and onto native ranges, without reducing elk numbers, increasing damage to private property, or increasing risk of brucellosis transmission to livestock.

The caveats included in the second objective represent the current social, political, and economic constraints that must be recognized if feedgrounds are considered for closure and elk are expected to survive on native ranges. The preliminary feedground ranking was intended to identify where future and more detailed evaluation efforts may be focused when considering reducing elk dependency on supplemental feed.

STUDY AREA

The 23 elk feedgrounds operated by the WGFD and USFWS are located in western Wyoming, including Sublette, Teton, and northern Lincoln counties (Figure 1). Most (n=12) feedgrounds occur in the upper Green River Basin, where a substantial amount of private land separates elk summer ranges on the Bridger-Teton National Forest (BTNF) and the lower-elevation Bureau of Land Management (BLM) lands that served as historic elk winter ranges.

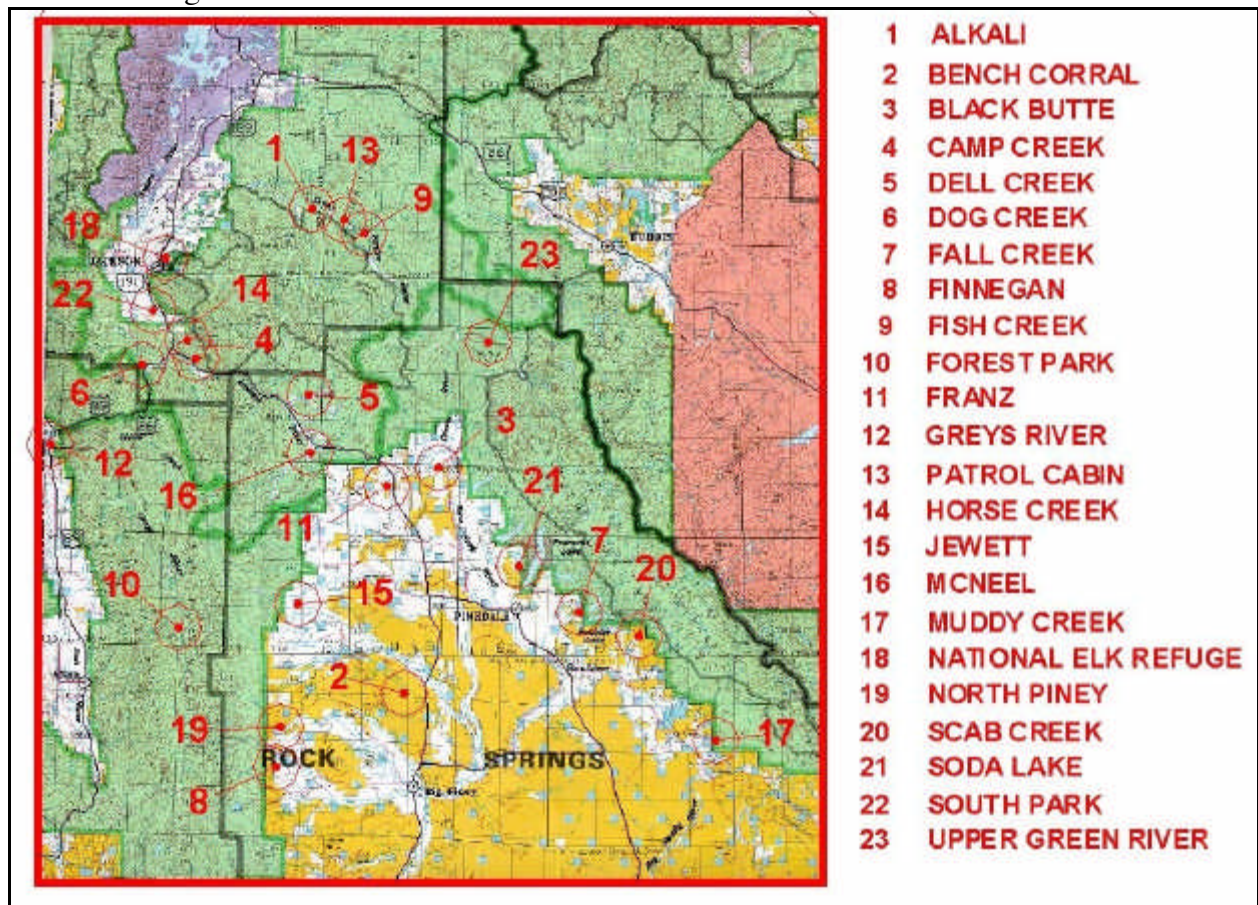


Figure 1. Location of 23 elk feedgrounds in western Wyoming.

METHODS

Elk information was compiled from JCR's and BFHAP's prepared by the WGFD. Landscape characteristics were based on GIS layers obtained from the WGFD and Wyoming Geographic Information Science Center (WyGISC). Because Wyoming elk populations are managed by herd units, we organized feedground summaries by herd unit. Landscape characteristics, population trends, and maps were provided for all herd units containing feedgrounds. Herd units included; Jackson (E102), Fall Creek (E103), Hoback (E104), Afton (E105), Piney (E106), Upper Green River (E107), and Pinedale (E108). Within each herd unit, feedground maps were provided with brief descriptions of landscape characteristics and elk information. Additionally, we included the latest WGFD information from the 2003 JCR's and outlines of their respective BFHAP's. The BFHAP's identify WGFD management issues and suggestions for each feedground. Information provided by the WGFD was edited for syntax, but not content.

We identified five criteria for use in ranking feedgrounds according to their potential to distribute elk on adjacent native ranges without increasing damage to private property, increasing risk of brucellosis transmission to livestock, or reducing elk numbers. The criteria included:

1. Average number of elk fed annually at each feedground;
2. Average feed duration at each feedground;
3. Amount of potential native range on public lands and adjacent to (within 5-miles of) the feedground;
4. Potential for private property damage without the feedground; and,
5. Potential for brucellosis transmission to livestock without the feedground.

Feedgrounds were given a score between 1 and 4 (1 best/least, 4 worst/greatest) for each criterion. Scores 1-4 were assigned by calculating the range of the criterion (e.g., feed duration ranged 90 days to 150 days, a range of 60), dividing the range by four ($60/4=15$), then assigning values for the four classes (e.g., $90-105 = 1$, $105-120 = 2$, $120-135 = 3$, and $135-150 = 4$). Scores were then summed across all six criteria. Feedgrounds with the *low cumulative scores* were considered to have more potential for native range conversion than those with high cumulative scores.

RESULTS AND DISCUSSION

Feedground Summary

The WGFD manages elk populations by large geographic areas defined as herd units. Each herd unit has a population objective that is annually evaluated and used to determine the following year's hunting season structure and to modify management practices, if necessary. Within each herd unit, the WGFD manages a number of hunt areas that allow them to distribute hunting pressure and implement a variety of harvest strategies intended to maintain elk numbers at objective levels. Additionally, hunt areas are used to provide sportsmen with a variety of hunting opportunities (e.g., trophy areas, limited quota areas) and experiences (e.g., wilderness, non-wilderness). Table 1 lists the

objective elk numbers, the 2003 population estimates, and the difference between the objectives and estimates for the Jackson, Fall Creek, Hoback, Afton, Piney, Green River, and Pinedale Herd Units.

The WGFD attempts to maintain elk numbers within +/- 10% of the population objective in each herd unit. During the 2003-04 winter, the Hoback, Piney, and Pinedale Herd Units were within +/-10% of their population objectives, while the Jackson, Fall Creek, and Afton Herd Units were 25%, 24%, and 22% over objective, respectively (Table 1). The Green River Herd Unit was 14% below objective. Elk numbers in western Wyoming have generally remained at or above objective levels for the last 10 years, and these seven herd units are no exception. Population estimates indicate these seven herd units combined were approximately 3,945 elk (15%) over objective during the 2003-04 winter (Table 1). Assuming 85% of these (n=3,353) were feedground elk, it cost agencies an additional \$221,298 to feed these elk during the 2003-04 winter.

Table 1. 2003 elk population estimates and objectives for the Jackson, Fall Creek, Hoback, Afton, Piney, Green River, and Pinedale herd units.

Herd Unit	WGFD Objective Elk Numbers	2003 Population Estimate	Difference
Jackson (E102)	11,029	13,730	+ 2,701
Fall Creek (E103)	4,392	5,450	+ 1,058
Hoback (E104)	1,100	1,080	- 20
Afton (E105)	2,200	2,300	+ 100
Piney (E106)	2,424	2,830	+ 406
Green River (E107)	2,500	2,150	- 350
Pinedale (E108)	1,900	1,950	+ 50
Totals	25,545	29,490	+3,945

The seven herd units including, Jackson, Fall Creek, Hoback, Afton, Piney, Green River, and Pinedale, contain all 22 elk feedgrounds operated by the WGFD (Table 2). Herd unit management is an important concept and needs to be recognized when feedground management is evaluated or modified. The following is a brief summary of the seven herd units and their feedgrounds. *We refer readers to Appendix I for maps, detailed descriptions, and WGFD management plans for individual herd units and elk feedgrounds.*

The Wildlife Commission set quotas for the allowable number of elk to be fed at each of the 22 feedgrounds (Table 2). These quotas are used to by the WGFD for long-term guidance and management. The WGFD began keeping annual records of the number of elk and amount of hay fed at each feedground during the winter of 1975-76. The long-term average numbers of elk fed at feedgrounds are generally lower than their respective quotas. However, elk numbers in recent years have exceeded quotas in some feedgrounds, and average elk numbers from the last 5-years exceed quota levels in 9 of the 22 feedgrounds (Table2). Combined, the 22 WGFD-operated feedgrounds supported ~15,500 elk during the winter of 2003-04, with an average cost of \$66 per elk (Table 2), substantially higher than the long-term averages. Annual variation is not unusual and

much of the increase in elk numbers and cost were likely a result of weather conditions, feed duration, and hay prices.

Table 2. Elk quotas, numbers fed, cost per elk, and long-term averages for the 22 elk feedgrounds operated by the WGFD.

Herd Unit	Feedground	WGFD Quota	Elk Fed During 2003-04	Long-term Average	Cost Per Elk 2003-04	Long-term Average
Jackson Herd Unit	Alkali	800	1,214 ^a	473	\$41	\$37
	Patrol Cabin	650	1,300 ^a	448	\$87	\$33
	Fish Creek	1,000	1,246 ^a	697	\$29	\$35
Fall Creek Herd Unit	South Park	1,000	1,401	998	\$56	\$39
	Horse Creek	1,250	1,346	1,073	\$60	\$40
	Camp Creek	900	1,004	782	\$58	\$43
	Dog Creek	800	1,214	792	\$59	\$45
Hoback Herd Unit	Dell Creek	400	275	252	\$93	\$82
	McNeel	600	680	578	\$65	\$60
Greys River Herd Unit	Alpine	1,000	810	845	\$62	\$51
	Forest Park	750	771	699	\$68	\$58
Piney Herd Unit	North Piney	400	410	369	\$21	\$51
	Bench Corral	250	813	390	\$63	\$33
	Finnegan	400	305	333	\$115	\$65
	Jewett	650	750	595	\$83	\$62
	Franz	450	428	398	\$89	\$70
Green River Herd Unit	Black Butte	500	877	496	\$85	\$68
	Green River Lakes	675	504	510	\$58	\$50
	Soda Lake	800	551	721	\$46	\$40
Pindale Herd Unit	Fall Creek	700	618	648	\$62	\$50
	Scab Creek	500	710	494	\$80	\$64
	Muddy Creek	600	486	600	\$73	\$58
Totals		15,075	17,713^b	13,191	\$66	\$52

^a Wolf activity in recent years has caused Gros Ventre elk to move among Alkali, Patrol Cabin, and Fish Creek Feedgrounds. Because elk may be counted multiple times at multiple feedgrounds, it has been difficult to obtain accurate elk counts since 1998.

^b Because elk in the Jackson Herd Unit visited all three feedgrounds, it is more appropriate to use the long-term average for number of elk fed at these three feedgrounds, resulting in a total of 15,571 rather than 17,713.

The **Jackson Herd Unit** covers approximately 2,050 mi², includes 13 hunt areas (70-72, 74-83), and has a post-season population objective of 11,029 elk. The 2003 post-season estimate was 13,730 elk (Table 1). The WGFD operates three feedgrounds in this herd unit: Alkali, Fish Creek, and Patrol Cabin. Additionally, the USFWS manages the NER which supports 8,000-10,000 elk. All three WGFD-operated feedgrounds are located in the upper end of the Gros Ventre River Drainage. This area is known for its mild winters and ability to sustain free ranging ungulates during the winter months. These feedgrounds have short feed periods (~89 days) relative to other feedgrounds, and consequently, have the lowest feed costs (see Appendix I). Wolf activity in the Gros Ventre has influenced

elk movement and distribution patterns in recent years, and elk are now more likely to move among all three feedgrounds, often in large groups. The primary role of these feedgrounds is to minimize private property damage and agricultural conflicts. These feedgrounds are believed to support more elk than could be sustained on native range, especially during severe winters.

The **Fall Creek Herd Unit** covers approximately 680 mi², includes two hunt areas (84-85), and has a post-season population objective of 4,392 elk. The 2003 post-season population estimate was 5,450 elk (Table 1). The WGFD operates four feedgrounds in this herd unit: South Park, Horse Creek, Camp Creek, and Dog Creek. According to the WGFD these feedgrounds support a much larger elk herd than could be sustained on native ranges alone. This herd has experienced a significant loss of historic winter range in the Jackson Hole area. Among the WGFD's primary concerns at these feedgrounds are: 1) elk and livestock interaction, 2) damage to standing and stored crops, 3) elk/vehicle collisions on highways, 4) waterfowl hunting at the South Park Unit, 5) human presence on or near feedgrounds, and 6) public perception. These feedgrounds occur in areas where winters are typically mild with relatively warm temperatures and low snow accumulation. However extensive subdivision development and potential agricultural conflicts limit the availability of native winter range. Management of these four feedgrounds is further complicated by their close proximity to US highways, especially South Park and Dog Creek. Elk movements to and from these feedgrounds may be affected by recently completed, and proposed, highway reconstruction.

The **Hoback Herd Unit** covers approximately 340 mi², includes two hunt areas (86-87), and has a post-season population objective of 1,100 elk (Figure 11). The 2003 post-season population estimate was 1,080 elk (Table 1). The WGFD operates two feedgrounds in the herd unit: Dell Creek and McNeel, both located near Bondurant. Despite the relatively low elevations (<7,000 feet) in the Hoback Basin, the area is characterized by high snowfall and low temperatures during the winter. Both feedgrounds are situated in areas considered as elk summer or transition range, and are intended to stop elk migration short of lower-elevation private property where they may cause damage or co-mingle with livestock. Because of the heavy snowpack, opportunities for elk to forage on native range in the area surrounding the feedgrounds are limited and they rely almost exclusively on supplemental feed. The WGFD views livestock interaction and private property damage as the major concerns at Dell Creek and McNeel. Dell Creek is the only WGFD-operated feedground where brucellosis vaccination is not conducted. Because there is minimal interchange of elk between Dell Creek and other feedgrounds, it provides the WGFD with a control or reference site to evaluate vaccination success at other feedgrounds.

The **Afton Herd Unit** covers approximately 960 mi², includes four hunt areas (88-91), and has a post-season population objective of 2,200 elk. The 2003 post-season population estimate was 2,300 elk (Table 1). The WGFD operates two feedgrounds in this herd unit: Greys River/Alpine and Forest Park. Management of the Greys River/Alpine Feedground focuses on reducing private property damage, while management of the Forest Park Feedground is for minimizing winter elk mortality. Forest

Park is one of only two feedgrounds (Green River Lakes is the other) where private property damage and agricultural conflicts do not exist. Subdivision development in and around the town of Alpine continue to create potential barriers for elk moving to and from the Greys River/Alpine Feedground. During the winter of 2003-04, the WGFD fed approximately 80 elk at two additional feeding sites; one northwest of Auburn near Toms Canyon, and another north of Afton near Anderson Canyon. The WGFD fed these elk to minimize private property damage and co-mingling with livestock.

The **Piney Herd Unit** covers approximately 1,570 mi², includes two hunt areas (92, 94), and has a post-season population objective of 2,424 elk (Figure 17). The 2003 post-season population estimate was 2,830 elk (Table 1). The WGFD operates five feedgrounds in this herd unit: North Piney, Bench Corral, Finnegan, Jewett, and Franz. These feedgrounds are generally located in transition ranges between the higher-elevation USFS lands and the lower-elevation private and BLM lands. The feedgrounds are strategically located to prevent elk from migrating to lower elevation winter ranges, thereby reducing conflicts with private landowners and their livestock. The Piney Herd Unit contains a considerable amount of native range suitable for sustaining elk during the winter. An additional concern in this herd unit is the high potential for oil and gas development, especially on BLM lands.

The **Green River Herd Unit** covers approximately 830 mi², includes three hunt areas (93, 95-96), and has a post-season population objective of 2,500 elk (Figure 23). The 2003 post-season population estimate was 2,150 elk (Table 1). The WGFD operates three feedgrounds in this herd unit: Black Butte, Green River Lakes, and Soda Lake. These feedgrounds are considerably different, with Black Butte having one of the longest feeding seasons while Green River Lakes and Soda Lake are typically among the shortest. According to WGFD, potential damage problems are major concerns at Soda Lake and Black Butte, while non-existent at Green River Lakes. Green River Lakes is one of only two feedgrounds (Forest Park is the other) where private property damage and agricultural conflicts do not exist. The purpose of the Green River Lakes Feedground is to reduce winter mortality of elk. Management and control of elk movements is facilitated at Soda Lake by an elk fence that extends 25 miles along the lower edge of the feedground property and keeps elk off private lands.

The **Pinedale Herd Unit** covers approximately 2,400 mi², includes two hunt areas (97-98), and has a post-season population objective of 1,900 elk (Figure 27). The 2003 post-season population estimate was 1,950 elk (Table 1). The WGFD operates three feedgrounds in the herd unit: Fall Creek, Scab Creek, and Muddy Creek. These feedgrounds are generally located in transition ranges, between higher-elevation USFS lands and lower-elevation BLM lands interspersed with private livestock operations. According to WGFD, elk wintering in this herd unit pose serious damage problems. Therefore the feedgrounds are situated to minimize this threat and keep elk separated from livestock and private property. Similar to the Piney Herd Unit, the Pinedale Herd Unit contains a considerable native range suitable for sustaining elk during the winter, however most is interspersed with private land or access is through private land. An

additional concern in this herd unit is the high potential for oil and gas development, especially on BLM lands.

Feedground Ranking

We identified five criteria to rank feedgrounds according to their potential to distribute elk onto adjacent native ranges without reducing elk numbers, increasing damage to private property, or increasing risk of brucellosis transmission to livestock. Feedgrounds were given a score between 1 and 4 (1 best, 4 worst) for each criterion. Scores were then summed across all six criteria. Feedgrounds with *low cumulative scores* should have more potential for distributing elk onto native ranges than those with high cumulative scores. The five criteria included:

1) Average feed duration at feedground

This criterion assumes that elk occupying feedgrounds with shorter feed durations (e.g., 90 days) are more likely to have successful transitions to native range, compared to elk occupying feedgrounds with long feed durations (e.g., 150 days). The WGFD annually monitors feed dates and duration for each feedground (Table 3). Feed duration is generally a function of snowpack levels or damage potential, depending on the feedground. Feed dates were obtained from WGFD JCR's prepared for the Pinedale/Jackson Region (see Appendix I). Scores 1-4 corresponded to feed days ranging from 81-100, 101-119, 120-138, and 139-157, respectively (Table 3).

Table 3. Long-term (1975-2004) average of feed days and criterion score for each of the 22 feedgrounds operated by the WGFD.

Feedground	Feed Days	Score (1-4)
Alkali	89	1
Patrol Cabin	81	1
Fish Creek	87	1
South Park	116	2
Horse Creek	111	2
Camp Creek	112	2
Dog Creek	119	2
Dell Creek	148	4
Green River Lakes	122	3
Greys River/Alpine	134	3
McNeel	142	4
Franz	157	4
Soda Lake	113	2
Fall Creek	135	3
Scab Creek	155	4
Muddy Creek	148	4
Finnegan	151	4
North Piney	135	3
Bench Corral	91	1
Forest Park	135	3
Jewett	153	4
Black Butte	155	4

2) Number of elk at feedground

This criterion assumes that feedgrounds with fewer elk (e.g., 400 animals) are more likely to have successful transitions to native range than those with many elk (e.g., 1,200 animals). The Wildlife Commission sets quotas for the number of elk allowed to be fed at each feedground. Initially, we planned to use the scores based on the WGFD quotas for the ranking (Table 4). However, because the actual number of elk fed fluctuates from year to year and may differ from the quota, we used the average number of elk fed the last five years (1999-2003) as the metric (Table 4). Scores 1-4 corresponded to elk numbers ranging from 1-471, 472-726, 726-981, and 981-1235, respectively.

Table 4. WGFD feedground quotas and criterion score compared to five-year average for number of elk fed at each of the 22 feedgrounds operated by the WGFD.

Feedground	WGFD Elk Quota	Elk Quota Score (1-4)		5-year Average	5-year Avg. Score (1-4)
Alkali	800	3		473	2
Patrol Cabin	620	2		448	1
Fish Creek	1000	3		697	2
South Park	1010	4		1164	4
Horse Creek	1250	4		1235	4
Camp Creek	900	3		1004	4
Dog Creek	800	3		691	3
Dell Creek	400	1		216	1
Green River Lakes	675	2		412	1
Greys River/Alpine	1000	3		772	3
McNeel	600	2		540	2
Franz	450	1		496	2
Soda Lake	800	3		915	3
Fall Creek	700	2		604	2
Scab Creek	500	1		648	2
Muddy Creek	580	2		585	2
Finnegan	400	1		276	1
North Piney	400	1		341	1
Bench Corral	250	1		781	3
Forest Park	750	2		848	3
Jewett	650	2		630	2
Black Butte	500	1		574	2

3) Proportion of potential native winter range on public land adjacent to feedground

This criterion assumes that feedgrounds adjacent to large tracts of potential native winter range on public land have a greater ability to support elk on native ranges, compared to those feedgrounds adjacent to non-suitable or privately-owned ranges. Public lands are less likely to have damage problems and should provide more options to elk in terms of movement and distribution, compared to those feedgrounds adjacent to large tracts of private land. Public lands were defined as any land parcels not privately owned, including state, WGFD, BLM, and USFS lands. “Potential native winter range” was defined as those areas containing non-timbered habitat (including burns and aspen, but excluding agricultural fields) and less than 8,000 feet in elevation. Proportions were calculated for the area within a 5-mile radius of the feedground; approximately 80-mi². We recognize elk have the ability to move much farther than 5 miles, however we have assumed that in order for these movements to occur without damage to private property or co-mingling with livestock, there must be adequate amounts of public land available to elk in close proximity to the feedground. We also recognize that the amount of potential native range may vary year to year, depending on winter severity. Zeigenfuss et al. (2003) defined available elk winter range in the Jackson Valley as areas with elevations <8,530 feet and used a snow water equivalent (SWE) model developed by Hobbs (2003) to estimate that available elk winter range may be reduced by ~40% during severe winters. Scores 1-4 corresponded to percentage of public winter range numbers ranging from 58-77%, 40-58%, 22-40%, and 1-22%, respectively.

Table 5. Criterion scores for percentage of winter range occurring on public land within 5-mile radius of each feedground operated by the WGFD.

Feedground	Acres of Potential Native Range on Public Land	%total	mi2	Score (1-4)
Alkali	16332	33%	26	3
Patrol Cabin	15654	31%	24	3
Fish Creek	15942	32%	25	3
South Park	19222	38%	30	3
Horse Creek	21090	42%	33	2
Camp Creek	18841	38%	29	3
Dog Creek	23483	47%	37	2
National Elk Refuge	15265	31%	24	3
Dell Creek ^a	22612	45%	35	2 (4) ^a
Green River Lakes	3676	7%	6	4
Greys River/Alpine	8315	28%	13	3
McNee ^a	36699	73%	57	1 (4) ^a
Franz	7632	15%	12	4
Soda Lake	16722	33%	26	3
Fall Creek	18717	37%	29	3
Scab Creek	14410	29%	23	3
Muddy Creek	12509	25%	20	3
Finnegan	2241	4%	4	4
North Piney	3520	7%	5	4

Bench Corral	38582	77%	60	1
Forest Park	2728	5%	4	4
Jewett	7811	16%	12	4
Black Butte	10402	21%	16	4

^aDell Creek and McNeel were assigned scores of 4 for suitable public range because of the deep snow levels in the Hoback Basin.

4) Potential for damage to private property adjacent to feedground

This criterion assumes that feedgrounds with relatively lower potential for damage to private property are more likely to have successful transitions to native range, compared to those feedgrounds with high damage potential. Originally we planned to use the amount of agricultural lands as a measure of damage potential. However, the available vegetation maps were too coarse (i.e., 1-km resolution) to identify many of the agricultural areas adjacent to feedgrounds. And, after discussions with WGFD personnel, it became apparent that using WGFD expert opinion to rank feedgrounds according to their potential for damaging private property was more appropriate, given their knowledge of the feedgrounds, landowners, livestock distribution, elk distribution, stackyard locations, feedlines, damage claim history, and other factors that influence damage potential. These rankings are subjective, but based on a combination of documented damage and potential damage.

Table 6. Criterion score for potential damage to private property for each of the 22 feedgrounds operated by the WGFD.

Feedground	Score (1-4)
Alkali	3
Patrol Cabin	2
Fish Creek	2
South Park	4
Horse Creek	3
Camp Creek	3
Dog Creek	4
Dell Creek	4
Green River Lakes	1
Greys River/Alpine	4
McNeel	4
Franz	4
Soda Lake	2
Fall Creek	2
Scab Creek	4
Muddy Creek	4
Finnegan	4
North Piney	3
Bench Corral	3
Forest Park	1
Jewett	4
Black Butte	4

5) Potential for brucellosis transmission from elk to livestock

This criterion assumes that feedgrounds with low potential for brucellosis transmission to livestock are more likely to have successful transitions to native range, compared to those feedgrounds with high potential for brucellosis transmission to livestock.

Incorporating this criterion may seem counter-intuitive, since free ranging elk populations cannot maintain brucellosis. If feedground elk were allowed to free range, there would be an initial risk of brucellosis transmission to livestock. However, at some point in time, those elk would not be able to maintain brucellosis and the risk potential to livestock would diminish. Nonetheless, the current political climate is focused on immediate risks to livestock, rather than long term risks. Therefore, the immediate risk of brucellosis transmission to livestock has been included as a criterion.

Transmission of brucellosis occurs when susceptible animals come into direct contact with contaminated aborted fetuses, birth membranes, uterine fluids, or vaginal discharge from infectious animals. The WGFD has identified February 15 – June 15 as the high risk time period for brucellosis transmission; when third-trimester abortions and normal elk calving occur. The risk of transmission is determined by the number of abortions that occur, the presence and survival of brucellosis in aborted tissues, and the exposure of the a susceptible host (Cheville et al. 1998). However, determining which feedgrounds have more risk of brucellosis transmission to livestock than others is extremely difficult because of the many factors that contribute to the risk. For example, a similar risk factor assessment compiled by Aune (2003), identified 16 factors that may influence brucellosis transmission from elk/bison to livestock, including:

- 1) Co-mingling of wildlife and cattle on a cattle ranch
- 2) Elk with access to stored feed (period not defined)
- 3) Cattle herds within bison calving habitat (April-June)
- 4) Cattle herds within elk calving habitat (May-July 15)
- 5) Elk feedgrounds are present nearby
- 6) Elk populations with sero-prevalence >5.0%
- 7) Cattle operation type of cow/calf
- 8) Cattle herds within elk winter range (Dec.-April)
- 9) Cattle herds within bison winter range (Dec.-March)
- 10) Cattle operation type is Dairy or Purebred
- 11) Cattle exposed to migrating elk during spring
- 12) Elk populations with sero-prevalence <5.0%
- 13) Wildlife rarely visit feeding areas
- 14) Cattle using summer cattle allotments
- 15) Cattle operation type is a feedlot
- 16) Cattle operation type is steers and spayed heifers

Because of the variable and complex factors involved with assessing brucellosis risk, we used WGFD expert opinion as a means to rank feedgrounds according to their potential risk of brucellosis transmission to livestock. The WGFD considered several important

factors in assessing brucellosis risk, including: 1) documented elk and cattle co-mingling on or near feedground, 2) feedground on or near a livestock allotment with turn-on dates prior to June 15, 3) feedground located near a cow/calf operation, and 4) brucellosis present in elk.

Table 7. Criterion score for potential risk of brucellosis transmission from elk to livestock at each of the 22 feedgrounds operated by the WGFD.

Feedground	Documented Elk-Cattle Co-mingling (0 or 1)	Early (<June 15) Allotment Turn On (0 or 1)	Cow/Calf Operation Nearby (0 or 1)	Brucellosis Present in Elk (0 or 1)	Cumulative Score (1-4)
Alkali	0	1	0	1	2
Patrol Cabin	0	1	0	1	2
Fish Creek	0	1	0	1	2
South Park	1	1	1	1	4
Horse Creek	1	1	1	1	4
Camp Creek	0	0	0	1	1
Dog Creek	0	1	1	1	3
Dell Creek	1	1	1	1	4
Green River Lakes	0	0	0	1	1
Greys River/Alpine	1	1	1	1	4
McNeel	0	1	1	1	3
Franz	1	0	1	1	3
Soda Lake	1	0	1	1	3
Fall Creek	1	0	1	1	3
Scab Creek	1	1	0	1	3
Muddy Creek	1	1	1	1	4
Finnegan	1	1	1	1	4
North Piney	1	1	1	1	4
Bench Corral	1	0	1	1	3
Forest Park	0	0	0	1	1
Jewett	1	0	1	1	3
Black Butte	1	0	1	1	3

The cumulative scores and rankings for each feedground illustrate the wide range of potential that the 22 feedgrounds offer for distributing elk onto native ranges (Table 8). Patrol Cabin, Green River Lakes, Alkali, Fish Creek, and Bench Corral appear to have the most potential, while Jewett, McNeel, Greys River/Alpine, Franz, Black Butte, South Park, Muddy Creek, Finnegan, and Dell Creek appear to have the least.

Table 8. Criteria scores and ranking matrix for the 22 elk feedgrounds operated by WGFD.

Feedground	ID	Criterion #1 Average Feed Duration	Criterion #2 Number of Elk Fed/Year	Criterion #3 Public Land/ Suitable Range	Criterion #4 Damage Potential	Criterion #5 Brucellosis Risk to Livestock	Cumulative Score and (Rank)
High Potential							
Patrol Cabin	13	1	1	3	2	2	9 (1)
Fish Creek	9	1	2	3	2	2	10 (2)
Green River Lakes	23	3	1	4	1	1	10 (2)
Alkali	1	1	2	3	3	2	11 (3)
Bench Corral	2	1	3	1	3	3	11 (3)
Moderate Potential							
Forest Park	10	3	3	4	1	1	12 (4)
Soda Lake	21	2	3	3	2	3	13 (5)
Camp Creek	4	2	4	3	3	1	13 (5)
Fall Creek	7	3	2	3	2	3	13 (5)
Dog Creek	6	2	3	2	4	3	14 (6)
Low Potential							
Horse Creek	14	2	4	2	3	4	15 (7)
North Piney	19	3	1	4	3	4	15 (7)
Scab Creek	20	4	2	3	4	3	16 (8)
Jewett	15	4	2	4	4	3	17 (9)
McNeel	16	4	2	4 ^a	4	3	17 (9)
Greys River/Alpine	12	3	3	3	4	4	17 (9)
Franz	11	4	2	4	4	3	17 (9)
Black Butte	3	4	2	4	4	3	17 (9)
South Park	22	2	4	3	4	4	17 (9)
Muddy Creek	17	4	2	3	4	4	17 (9)
Finnegan	8	4	1	4	4	4	17 (9)
Dell Creek	5	4	1	4 ^a	4	4	17 (9)

^aDell Creek and McNeel were assigned scores of 4 for suitable public range because of the deep snow levels in the Hoback Basin.

Clause et al. (2002) prioritized the 22 feedgrounds into high, intermediate, or low categories, according to their potential for “management opportunities” (Table 4). This categorization was based largely on expert opinion and provides a useful comparison for our ranking using the 5-criteria described above. When divided into three categories (high, moderate, and low), the 5-criteria ranking is similar to the Clause et al. (2002) categorization. Both identified Alkali, Fish Creek, Patrol Cabin, and Green River Lakes as having the most management opportunity or potential. And, both identified Scab Creek, Jewett, McNeel, Greys River/Alpine, Franz, Black Butte, South Park, Finnegan, and Dell Creek as having the least management opportunity or potential. Several feedgrounds (e.g., Bench Corral, Dog Creek, Muddy Creek, North Piney, Soda Lake, Horse Creek) fell into different categories and reflect different considerations used in the two categorization methods.

Table 9. Comparison of Clause et al. (2002) and the 5-Criteria feedground categorization.

Clause et al. (2002) Categorization		5-Criteria Ranking
High Opportunity		High Opportunity
Patrol Cabin		Patrol Cabin
Fish Creek		Fish Creek
Green River Lakes		Green River Lakes
Alkali		Alkali
Soda Lake		Bench Corral
Moderate Opportunity		Moderate Opportunity
Bench Corral		Forest Park
North Piney		Soda Lake
Muddy Creek		Camp Creek
Fall Creek		Fall Creek
Camp Creek		Dog Creek
Horse Creek		Low Opportunity
Forest Park		Horse Creek
Low Opportunity		North Piney
Scab Creek		Scab Creek
Jewett		Jewett
McNeel		McNeel
Greys River/Alpine		Greys River/Alpine
Franz		Franz
Black Butte		Black Butte
South Park		South Park
Dog Creek		Muddy Creek
Finnegan		Finnegan
Dell Creek		Dell Creek

SUMMARY AND CONCLUSION

Review of available information clearly illustrates how environmental (e.g., land status, elevation, vegetation), biological (e.g., elk numbers, elk distribution, wolf activity), and management practices (e.g., feed dates, feed costs, vaccination, damage prevention) vary across the 22 feedgrounds operated by the WGFD. Additionally, data summary tables provided for each feedground (see Appendix I) demonstrate the substantial amount of year to year variation that occurs at individual feedgrounds. This inter-specific and intra-specific variation among feedgrounds creates a complex and difficult management situation. Recognition and awareness of the different management issues associated with each feedground should be viewed as the first of many steps towards improving elk feedground management and facilitating discussions geared towards controlling brucellosis, minimizing private property damage, and sustaining elk on native ranges. We encourage sportsmen groups, non-government organizations (NGO), and others to use this compilation of feedground information to familiarize themselves with the 22 elk feedgrounds and their respective herd units.

Some feedgrounds appear to have more potential than others in terms of management options and distributing elk onto native ranges; however, because environmental and biological conditions vary across feedgrounds and across years, we believe developing criteria that accurately reflect these conditions across *all* feedgrounds and *all* years is generally unrealistic. Nonetheless, we believe that our ranking of feedgrounds does provide a general framework to prioritize where management efforts may be most effective for distributing elk onto native ranges. We view our ranking as preliminary and believe that site-specific management recommendations will require site-specific evaluations and recommendations, which will undoubtedly be affected by annual changes in weather, habitat condition, livestock management, wolf activity, and other factors not directly considered in our analysis. Oil and gas development was not considered in our analysis, but Appendix II includes maps of feedgrounds in relation to active and producing oil and gas leases.

This ranking system presented in this report could be used to guide and prioritize where alternative feedground practices (i.e., habitat improvement, landowner compensation for wildlife grazing, range acquisition, etc.) should be targeted. The ranking exercise also illustrates how the current social, political, and economic caveats of no private property damage, no increase in brucellosis risk to livestock, and no decrease in elk numbers, limit the management options available to agencies. Nevertheless, these caveats do not preclude pursuing alternative management practices, such as conservation easements, habitat acquisition, private landowner incentives, and private landowner collaboration, as a means to overcome some of these limitations. This analysis also illustrates that the public expectation of no decrease in elk numbers may be unrealistic. It is our opinion that elk management should be geared towards managing elk populations to reasonable objective levels set by the WGFD.

It seems clear that the majority of feedgrounds are operated to reduce conflicts with the livestock industry and private landowners. Alternative methods of reducing or

eliminating these conflicts will be required if feedground(s) are considered for elimination. Development of these alternatives will require a collaborative effort involving environmental organizations, sportsmen's groups, the WFGD, public land managers, the livestock industry, private landowners, and agricultural interests.

In conclusion, developing creative ways to deal with current social, political, and economic limitations should increase opportunities for elk to winter on native ranges. In the long term this should result in healthier elk herds and less potential for brucellosis transmission from elk to livestock.

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APPENDIX I:

**Summary of 22 Elk Feedgrounds
Operated by the
Wyoming Game and Fish Department**

JACKSON HERD UNIT (E102)

The Jackson Herd Unit covers approximately 2,050 mi², includes 13 hunt areas (70-72, 74-83), and has a post-season population objective of 11,029 elk. The 2003 post-season estimate was 13,730. Consistent with other herd units in western Wyoming, elk numbers have remained at or above objective levels for the last 10 years. This herd unit is comprised primarily of public lands and encompasses the Gros Ventre Wilderness, Teton Wilderness, Grand Teton National Park (GTNP) and the Southern portion Yellowstone National Park. Elk distribute themselves throughout the herd unit during spring, summer, and fall, and then migrate to feedgrounds and native winter ranges in the Gros Ventre, Jackson and Buffalo Valleys. Management of this herd is complex because it includes two national parks (Yellowstone and Grand Teton), the NER, large expanses of wilderness areas, and three WGFD-operated feedgrounds (i.e., Alkali, Fish Creek, and Patrol Cabin). The WGFD implements a variety of harvest strategies and seasons to address management concerns with various segments of the population. Elk hunting seasons in GTNP have been designed to control the number of elk using summer ranges. Hunting seasons in other hunt areas have been designed to regulate migratory segments of the herd and control the number of elk on various feedgrounds.

The WGFD operates three of the four feedgrounds in this herd unit: Alkali, Fish Creek, and Patrol Cabin. All three feedgrounds are located in the upper end of the Gros Ventre River drainage (Figure 2). This area is known for its mild winters and ability to sustain free ranging ungulates during the winter months. Because of the abundance of wildlife and its close proximity to Jackson, it is also a popular area for winter recreation, particularly snow-machining. The level of snow-machine activity is a concern, particularly at the Patrol Cabin Feedground. This herd unit also contains the NER, which is operated by the USFWS and annually supports 8,000-10,000 elk.

Elk movements between the Gros Ventre feedgrounds have become more common in recent years and made feeding patterns less predictable. Wolf activity in the Gros Ventre is believed to be responsible for changes in elk movements, including dispersing elk off Alkali and onto the Red Rock Ranch. The uncertainty of which feedground elk will attend requires large amounts of hay be stored at all sites. This can result in a slow turnover of hay and subsequent spoilage.

Damage claims have been filed at multiple locations in the Gros Ventre. Co-mingling has occurred at multiple locations (with horses and with cattle). Stray cattle from summer grazing allotments have been around feedgrounds in the Gros Ventre during elk feeding.

The cost of feeding elk in the Jackson Herd Unit is lower than any other unit. Low feed costs are generally a direct result of short feed durations (average of 89 days). Hay and feeder costs were \$40 per elk in 2003-2004, compared to a Region average of \$66, and the amount of hay fed (7.7 lb/elk/day) was less than any other herd unit.

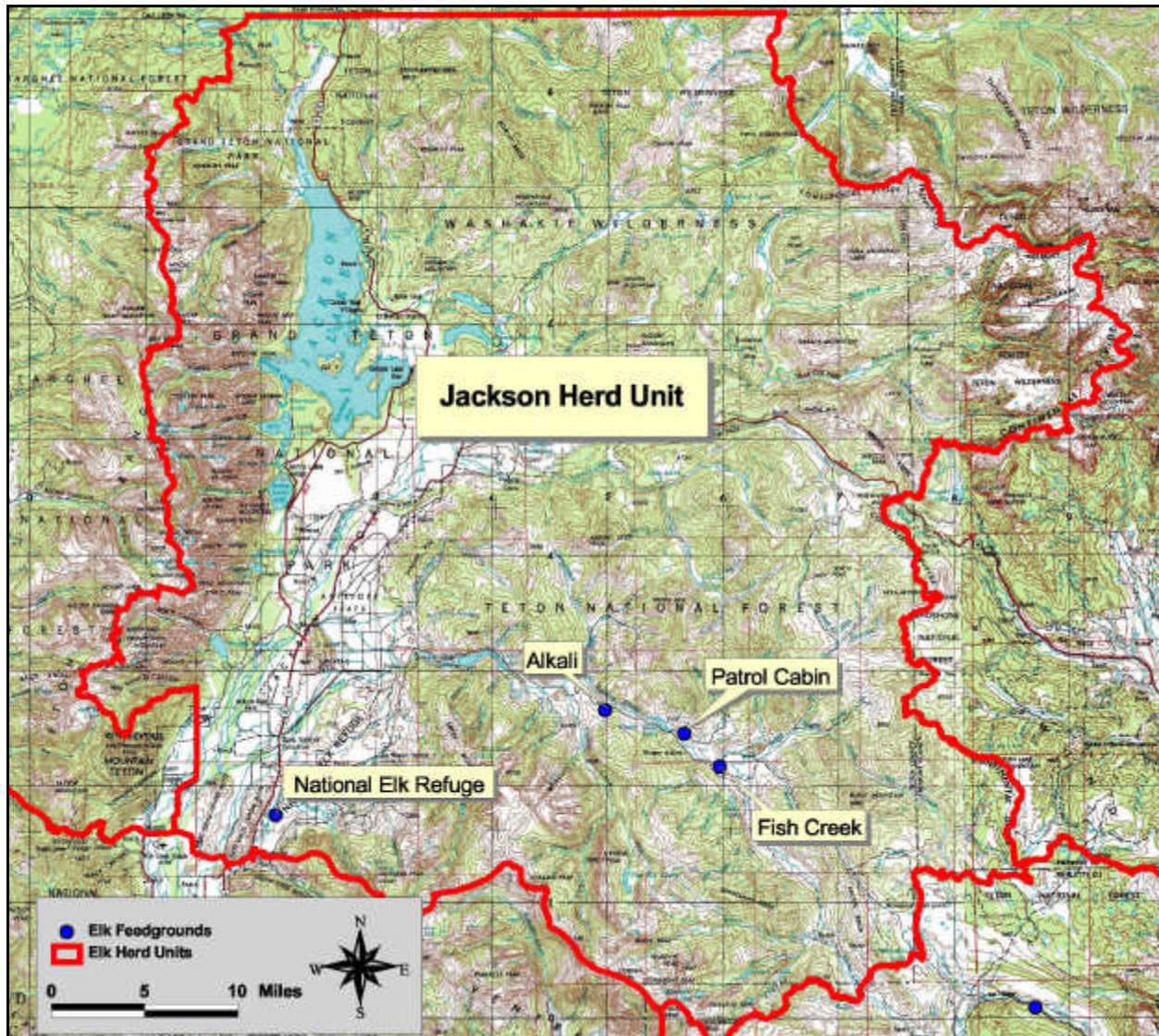


Figure 2. Location of elk feedgrounds in the Jackson Herd Unit.

Alkali Feedground

Landscape Characteristics and Elk Information

The Alkali Feedground is located on, and surrounded by, USFS lands within the BTNF. The feedground is situated at the base of Alkali Creek, near the Gros Ventre Road, approximately 20 miles northeast of Jackson (Figure 3). At 7,400 feet in elevation, the feedground location is characterized by mountain meadow and aspen, adjacent to sagebrush flats along the Gros Ventre River and higher elevation mixed conifer. According to the WGFD, of the three Gros Ventre feedgrounds, Alkali is in the least desirable location because of its close proximity (~1 mile) to the Red Rock Ranch, along Crystal Creek. Damage to stored hay at Red Rock and Red Hill Ranches occurs every year (WGFD, pers. commun.). Additionally, its small size and rolling terrain make feeding difficult.

WGFD quotas allow a maximum of 800 elk at this site. Prior to 2000, the average number of elk fed at Alkali was 473 (Table 1). However, from 2000 to present, wolf activity has influenced elk

distribution and movement patterns in the Gros Ventre, resulting in larger groups of elk visiting feedgrounds. Unpredictable elk movements have made it difficult for the WGFD to manage the distribution of elk among the three Gros Ventre feedgrounds. The average feed duration has been 89 days, with an average cost of \$37 per elk.

Brucellosis vaccination began at this feedground in 1991. Through the 2003-04 winter, a total of 2,453 elk had been vaccinated.

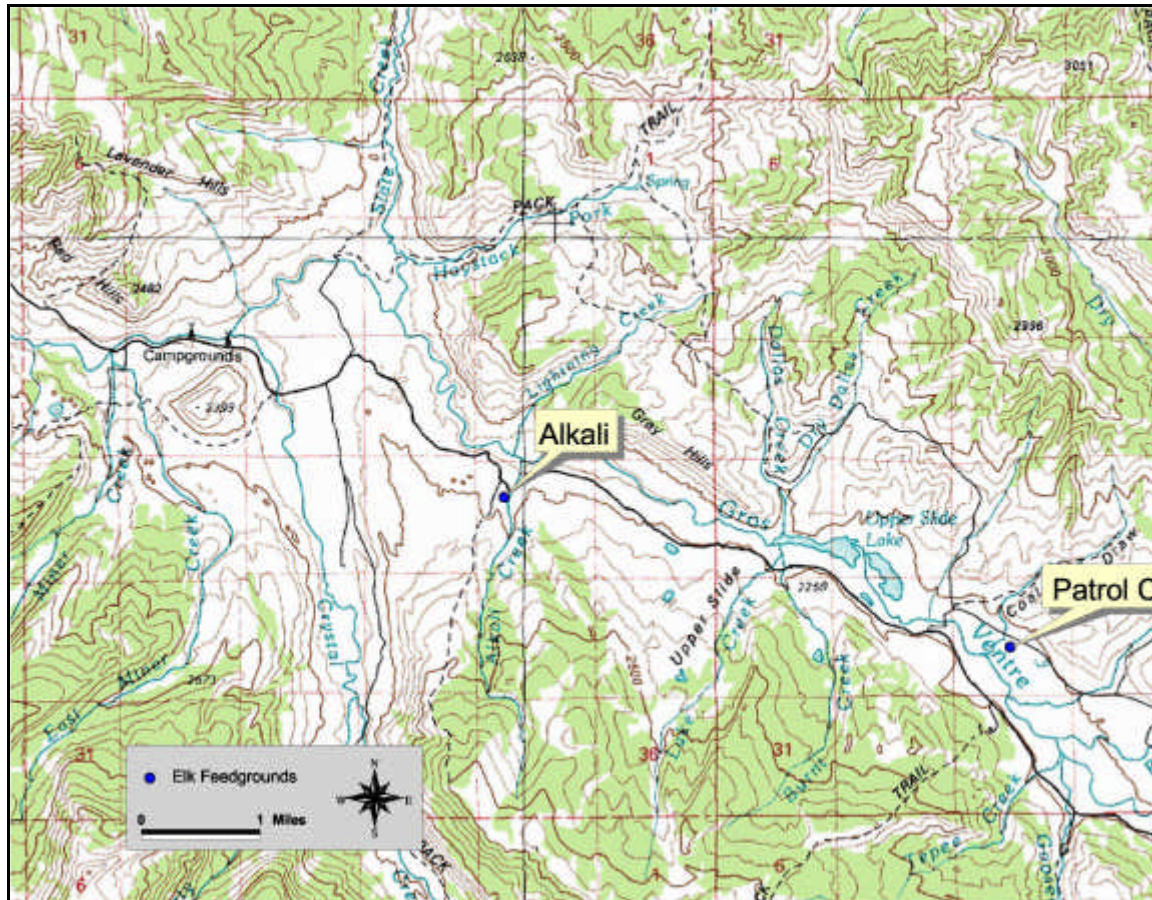


Figure 3. Location of Alkali Feedground.

Table 1. Summary data from Alkali feedground, 1975-76 to 2003-04.

YEAR	ELK #*	TONS	DAYS	DEAD	COST/ELK	TONS/ELK
1975-76	608	269	106	3	29	0.44
1976-77	0	0	0	0	0	0
1977-78	349	170	94	4	34	0.49
1978-79	660	271	100	8	27	0.41
1979-80	542	185	91	1	23	0.34
1980-81	0	0	0	0	0	0
1981-82	724	350	124	6	40	0.48
1982-83	375	139	94	6	36	0.37
1983-84	437	236	109	3	46	0.54
1984-85	223	73	77	1	35	0.32
1985-86	466	173	78	1	36	0.37

1986-87	325	118	90	1	42	0.36
1987-88	336	100	86	0	36	0.3
1988-89	450	204	119	5	47	0.45
1989-90	480	138	84	5	36	0.29
1990-91	432	183	140	3	53	0.42
1991-92	225	115	73	0	60	0.51
1992-93	482	218	108	1	56	0.45
1993-94	800	240	99	0	32	0.3
1994-95	407	121	92	2	38	0.3
1995-96	380	106	84	0	36	0.28
1996-97	800	319	120	7	47	0.4
1997-98	930	342	99	5	53	0.37
1998-99	939	315	92	3	41	0.34
1999-20	1140^(46)	142^	70	7	16^	0.12^
2000-01	853^(8)	126^	91	2	21^	0.15^
2001-02	1188^	389^	102	16	47^	0.38^
2002-03	2100^(1650)	320^	73	1	28^	0.15
2003-04	1214	417	96	16	41	0.33
AVERAGE	473#	183#	89	4	37#	0.36#

*Numbers in () refer to the number of elk classified if different from the maximum counted.

^ Comparisons of feed values in recent years are not possible because of the interchange of elk between the 3 feedgrounds.

#Average values refer to those years prior to 1999-20.

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. Elk that are not attracted to the feedground and kept there in the early winter may cause damage at the Red Rock Ranch.
2. Wolf harassment of elk increases the risk of elk co-mingling with domestic livestock, damaging stored crops, and/or moving to other feedgrounds.

Secondary Management Issues

1. Considerable amounts of native winter range go unused each winter that could support additional elk.
2. Bighorn sheep utilize nearby areas and large numbers of free ranging elk on these areas could create competition for these sheep.
3. Elk that migrate below the Alkali area could move onto one of three livestock operations located below the Red Rock Ranch or go to the NER.
4. Large numbers of elk on this feedground are not desirable because of the size and nature of the feeding site.

Management Suggestions/Criteria

1. Feed start dates are based on the location and activity of elk. Feeding should be initiated before the elk leave the area and move onto the Red Rock Ranch. This requires frequent monitoring. If livestock are not be fed at Red Rock Ranch and stored crops are protected with elk proof fencing, then the initiation of feeding would depend on secondary management issues. In this case, the initiation of feeding could be delayed and the

possibility of encouraging free-ranging elk could be weighed against the other secondary concerns. This would involve input from the Warden and Biologists.

2. Feed stop dates are determined by the potential of elk co-mingling with livestock at the Red Rock Ranch. Feeding is terminated when WGFD determines enough native range is available and free of snow. This generally occurs when half or more of the elk leave for 5 consecutive days and do not return to be fed.
3. A maximum amount of hay should be stored in case extra elk winter at this site.

Patrol Cabin Feedground

Landscape Characteristics and Elk Information

The Patrol Cabin Feedground is located on a ¼-section parcel of WGFD land surrounded by, USFS lands within the BTNF. The feedground is situated along the Gros Ventre River, between Coal Mine Draw and Dry Cottonwood Creek, approximately 23 miles northeast of Jackson (Figure 4). At 7,400 feet in elevation, the feedground location is characterized by mountain meadow, sagebrush, and aspen, adjacent to higher elevation mixed conifer. The WGFD considers Patrol Cabin an excellent feedground location, with generally low snow levels and a substantial amount of native range available during the winter.

WGFD quotas allow 620 elk to be fed at this site. Prior to 2000, the average number of elk fed at Alkali was 448 (Table 2). However, from 2000 to present, wolf activity has influenced elk distribution and movement patterns in the Gros Ventre, resulting in larger groups of elk visiting feedgrounds. Unpredictable elk movements have made it difficult for the WGFD to manage the distribution of elk among the three Gros Ventre feedgrounds. Elk movements off Patrol Cabin have occurred earlier in the spring during recent years. It is unknown whether these early movements are due to wolf activity or below-average snowpack. The average feed duration has been 81 days, with an average cost of \$33 per elk.

Brucellosis vaccination began at this feedground in 1991. Through the 2003-04 winter, a total of 1,690 juveniles and 619 adult females had been vaccinated.

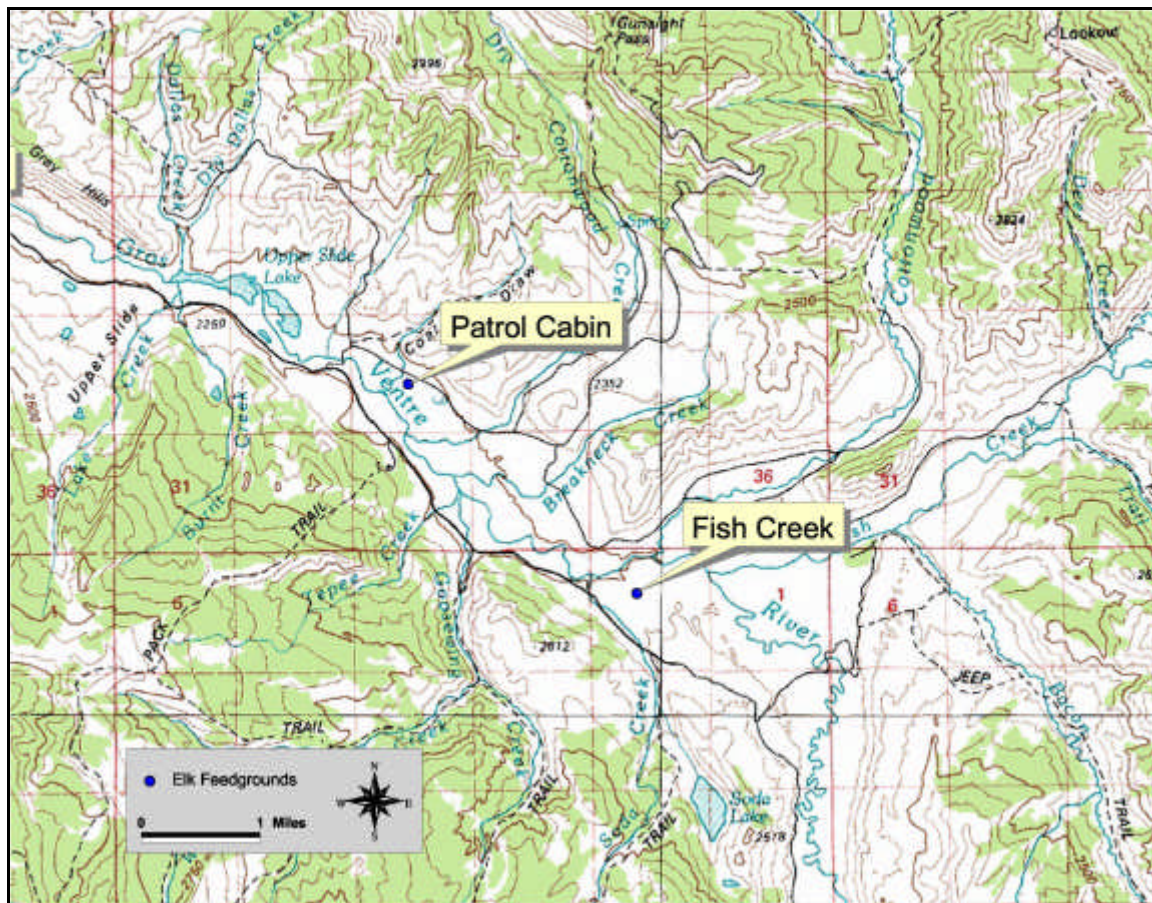


Figure 4. Location of Patrol Cabin Feedground.

Table 2. Summary data from Patrol Cabin feedground, 1975-76 to 2003-04.

YEAR	ELK #*	TON	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	525	149	100	1	18	0.28
1976-77	0	0	0	0	0	0
1977-78	627	195	94	3	22	0.31
1978-79	594	226	96	5	24	0.38
1979-80	831	237	90	5	20	0.29
1980-81	0	0	0	0	0	0
1981-82	548	234	114	6	35	0.42
1982-83	342	126	90	2	34	0.37
1983-84	147	66	88	1	50	0.45
1984-85	240	76	64	2	35	0.32
1985-86	480	121	71	1	23	0.25
1986-87	300	100	74	2	33	0.33
1987-88	388	100	86	0	29	0.26
1988-89	1000	279	115	33	27	0.28
1989-90	538	163	80	0	37	0.3
1990-91	443	126	77	3	34	0.28
1991-92	808	262	66	3	36	0.32

1992-93	280	134	106	2	54	0.48
1993-94	477	123	50	0	30	0.26
1994-95	644	155	122	5	28	0.24
1995-96	477	221	73	1	52	0.46
1996-97	330	169	114	1	62	0.51
1997-98	281	134	92	0	73	0.48
1998-99	605	318	90	1	58	0.53
1999-20	2500^(2140)	466^	74	10	19^	0.19^
2000-01	2650^	483^	92	2	21^	0.18^
YEAR	ELK #*	TON	DAYS	DEAD	COST/ELK	TON/ELK
2001-02	2600^(823)	512^	90	27	86^	.62^
2002-03	1200^(411)	74^	65	3	28^	.18^
2003-04	1300^(379)	253	92	12	87^	.67^
AVERAGE	448#	148#	81	4	33#	0.32#
*Numbers in () refer to the number of elk classified if different from the maximum counted.						
^ Comparisons of feed values in recent years are not possible because of the interchange of elk between the 3 feedgrounds.						
# Average values refer those years prior to 1999-20.						

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. The main concern associated with elk feeding at this site is timing start dates so elk are evenly distributed among the three Gros Ventre feedgrounds.
2. Wolf activity may result in large numbers of elk wintering at this location. The feedground is not large enough to support many more elk than the WGFD quota (620 elk). Sanitary feeding conditions are difficult to maintain when elk numbers exceed 620.

Secondary Management Issues

1. Opportunities to reduce the length of the feeding season exist, particularly with the stop dates in the spring of the year.
2. The snow-machine trail that runs across the northern part of the feedground is normally not a problem for elk. However, should large numbers of elk winter on this feedground, the snow-machine activity will reduce the area available for feeding.
3. Private property is located approximated 1 mile east of the feedground. Currently, damage and co-mingling are not concerns because livestock are not present and the stored crops are minimal. However, this situation may change and should be monitored.

Management Suggestions/Criteria

1. Extra hay needs to be stored at this feedground in case additional elk arrive from native ranges or other feedgrounds.
2. Feeding should start when 200-400 elk spend several days in or near the feedground. The elk need to be allowed to use the native ranges as much as possible, but need to be fed before they begin moving down drainage to Alkali.
3. Feeding should be stopped when elk begin utilizing the native range north of the feedground and do not return for 3-5 days. When the daily hay consumption declines to half of the amount fed during the winter, the feeder can continue additional reductions to encourage the elk to leave.

4. Work horses may be hauled into the Gros Ventre while roads are still open, or led in after roads are closed and prior to feeding. Horse hauling depends on who is feeding and if they are staying at the cabin.

Fish Creek Feedground

Landscape Characteristics and Elk Information

The Fish Creek Feedground is located on, and surrounded by, USFS lands within the BTNF. The feedground is situated at the base of Fish Creek, near the Gros Ventre River, Fish Creek, and Soda Creek confluence, approximately 25 miles northeast of Jackson (Figure 5). At 7,500 feet in elevation, the feedground location is characterized by mountain meadow, sagebrush, and aspen, adjacent to higher elevation mixed conifer. The WGFD considers Fish Creek to be an excellent location for feeding large numbers of elk. However, because escape cover does not exist within a mile of the feedground, these elk are easily disturbed off the feedground, often moving to the Patrol Cabin Feedground. Movement data suggests that elk migrating down the Gros Ventre drainage to other feedgrounds (including the NER) pass near this feedground. If feeding is initiated too early, there is potential to hold elk that would otherwise move onto other feedgrounds. And, conversely, if feeding is initiated too late, then too many elk may move onto other feedgrounds. The WGFD quota allows for 1,000 elk to be fed at this site. Prior to 2000, the average number of elk fed at Fish Creek was 697 (Table 3). However, from 2000 to present, wolf activity has influenced elk distribution and movement patterns in the Gros Ventre, resulting in larger groups of elk visiting feedgrounds. Stop dates for this feedground have been getting earlier since 1997, when wolf activity in the Gros Ventre began. The average feed duration has been 87 days, with an average cost of \$35 per elk.

Brucellosis vaccination began at this feedground in 1993. Through the 2003-04 winter, a total of 1,463 elk had been vaccinated.

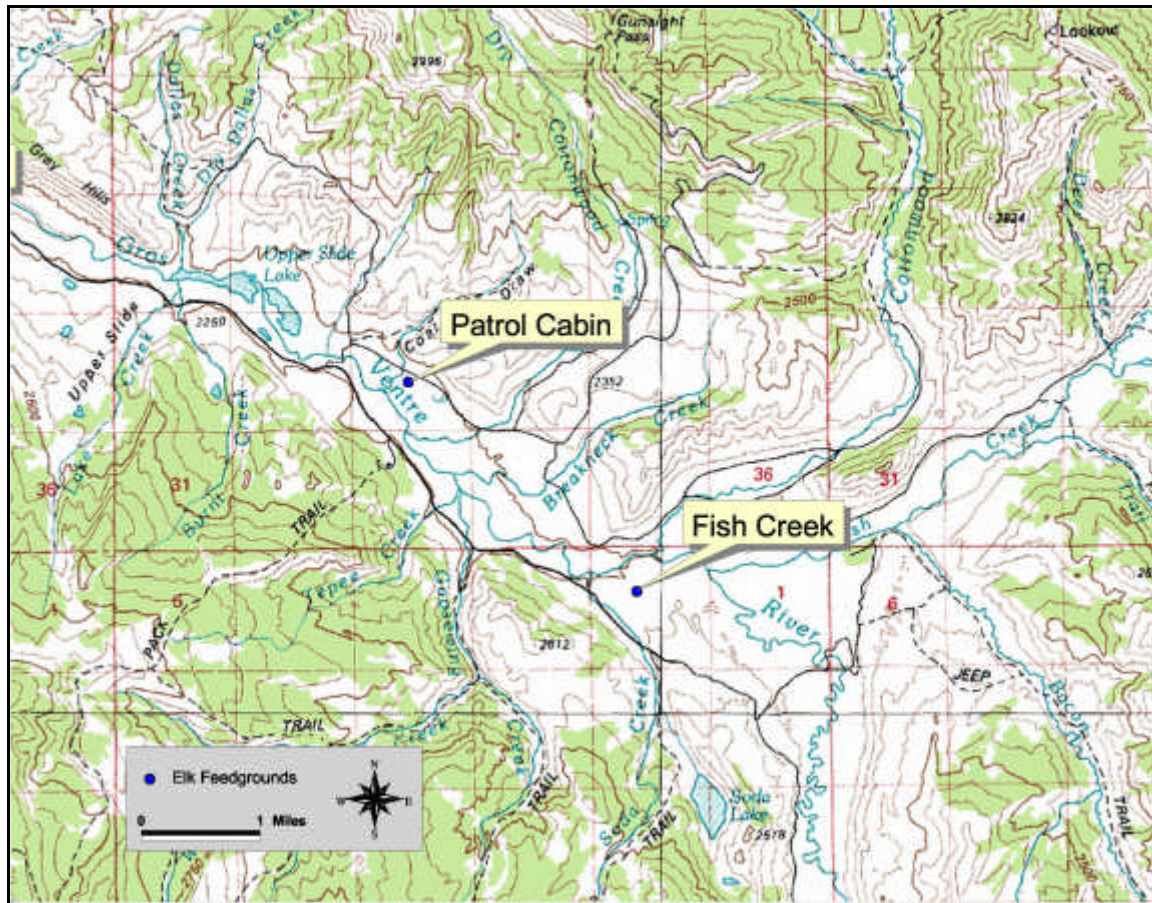


Figure 5. Location of Fish Creek Feedground.

Table 3. Summary data from Fish Creek feedground, 1975-76 to 2003-04.

YEAR	ELK #*	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	580	253	106	4	28	0.44
1976-77	0	0	0	0	0	0
1977-78	759	294	94	6	26	0.39
1978-79	600	248	103	4	28	0.41
1979-80	634	204	90	5	24	0.32
1980-81	0	0	0	0	0	0
1981-82	827	361	109	7	35	0.44
1982-83	720	283	110	3	35	0.39
1983-84	1000	236	109	3	36	0.24
1984-85	875	264	77	5	29	0.3
1985-86	725	260	81	10	43	0.36
1986-87	600	261	89	3	41	0.44
1987-88	843	339	100	2	37	0.4
1988-89	1100	465	119	42	39	0.42
1989-90	961	348	93	3	41	0.36
1990-91	594	168	90	9	32	0.28
1991-92	153	49	81	3	36	0.32

1992-93	926	447	109	8	54	0.48
1993-94	230	58	60	0	30	0.25
1994-95	1135	481	127	4	46	0.42
1995-96	913	383	106	6	52	0.42
1996-97	1130	475	120	45	47	0.42
1997-98	729	326	92	8	66	0.45
1998-99	781	369	87	6	53	0.47
1999-20	1500^(276)	80^	82	1	8^	0.05^
2000-01	2000^(0)	372^	91	2	22^	0.19^
2001-02	610^	84^	29	6	18^	0.14^
2002-03	134^	20^	48	1	36^	0.15^
2003-04	1246	297	79	2	29	0.24
AVERAGE	697#	270#	87	7	35#	0.35#

*Numbers in () refer to the number of elk classified if different from the maximum counted

^ Comparisons of feed values in recent years are not possible because of the interchange of elk between the 3 feedgrounds.

#Average refers to those years prior to 1999-20.

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. The main concern associated with elk feeding at this site is timing start dates so elk are evenly distributed among the three Gros Ventre feedgrounds.
2. Wolf activity may influence elk distribution and how this feedground is managed.

Secondary Management Issues

1. Private property is located adjacent to the feedground, as well as other private holding east of the feedground. If livestock are fed at either of these locations during the winter, starting and stopping dates for feeding elk may need to be altered.

Management Suggestions/Criteria

1. Store a maximum amount of hay at this site in case wolves alter the distribution of elk, causing extra elk winter at this site.
2. Initiate feeding after 200-400 elk spend several days in the immediate area or if elk continue moving back and forth from Cottonwood Creek.
3. During years of heavy snowfall, feeding should begin before snow depths limit the ability of horses to pull the sleigh.
4. The initiation of feeding should consider elk distribution at the three Gros Ventre feedgrounds. Feeding too early can retain large numbers of elk at Fish Creek. Feeding too late can result in too many elk at the other two feedgrounds.
5. Feeding is normally stopped at Fish Creek a few days later than the other Gros Ventre feedgrounds because the snow depths are generally deeper. Feeding can be terminated when elk begin leaving the feedground and do not return for 2-3 days. When the daily hay consumption declines to half of what was fed during the winter, the feeder can continue further reductions in the amount fed to encourage elk to leave.

FALL CREEK HERD UNIT (E103)

The Fall Creek Herd Unit covers approximately 680 mi², includes two hunt areas (84-85), and has a post-season population objective of 4,392 elk (Figure 6). The 2003 post-season population estimate was 5,450 elk. Consistent with other herd units in western Wyoming, elk numbers have remained at or above objective levels for the last 10 years. This herd has traditionally been popular for backcountry elk hunting by both residents and nonresidents. Access to designated wilderness areas is limited to hiking and horseback. Vehicle access is available in several major drainages, including Cliff Creek, lower Granite Creek, and the Munger Mountain-Mosquito Creek area.

Since 1989, hunting seasons have been designed to reduce this herd toward the postseason population objective of 4,400 elk. Hunting seasons over the last five years have generally been successful at reducing the elk population to within +/- 10% of the objective. This reduction has occurred through general license any/antlered elk hunting and the issuance of limited quota antlerless elk licenses. A late hunt has been in place since 1997 in an attempt to reduce elk damage to private property along the Snake River.

A special management concern for the WGFD has developed over the last six years in the Snake River bottomlands, between Wilson and South Park. Elk numbers on private lands have increased to 250-400 animals. Key landowners have been reluctant to allow hunting on their property in order to reduce elk numbers or disperse them off their property and into areas where hunters may access them. Because there is little or no opportunity to design a hunting season to harvest these elk, numbers will likely continue to increase, as will the potential for private property damage and livestock interaction. And, because most of these elk move onto the South Park Feedground during winter, a situation is created where several hundred additional elk are being fed on a WGFD-operated feedground. These elk are largely unavailable for harvest by the general hunting public because they reside on private property where landowners do not provide hunting opportunities.

The WGFD operates four feedgrounds in this herd unit: South Park, Horse Creek, Camp Creek, and Dog Creek. According to the WGFD these feedgrounds support a much larger elk herd than could be sustained on native ranges alone. This herd has experienced a significant loss of historic winter range in the Jackson Hole area due to ranching operations and subdivision development since the early 1900's. Because of their proximity to Jackson, private lands, US highways, and public viewing, the WGFD views management of these feedgrounds as more complex than others. Among the primary concerns associated with these feedgrounds are: 1) elk and livestock interaction, 2) damage to standing and stored crops, 3) elk/vehicle collisions on highways, 4) waterfowl hunting at the South Park Unit, 5) human presence on or near feedgrounds, and 6) public perception. All of these feedgrounds are located in areas where winters are typically mild. However extensive subdivision development and potential agricultural conflicts limit the availability of native winter range. Management of these four feedgrounds, especially South Park and Dog Creek, is complicated by their close proximity to US highways.

Wolf activity in this herd unit is most common at Camp Creek and Horse Creek. Elk co-mingling with livestock has been documented at several locations, including South Park and

Horse Creek. Although an elk fence separates livestock and feedgrounds, elk can walk around the ends of the fence and elk arriving to the feedgrounds can approach from the wrong side.

The amount of hay fed (8.15 lb/elk/day) and average cost (\$58.35) in this herd unit is low compared to other feedgrounds in the Region. The low cost is the result of a relatively short feeding season and the lower hay freight costs to these feedgrounds. The exception is Horse Creek, where the feeding rate is one of the highest in the Region and intended to prevent damage on adjacent private property. Approximately 4,965 elk were fed on the four feedgrounds during the 2003-04 winter. This was the most ever fed in this herd unit and represents 30% of all elk fed on WGFD feedgrounds.

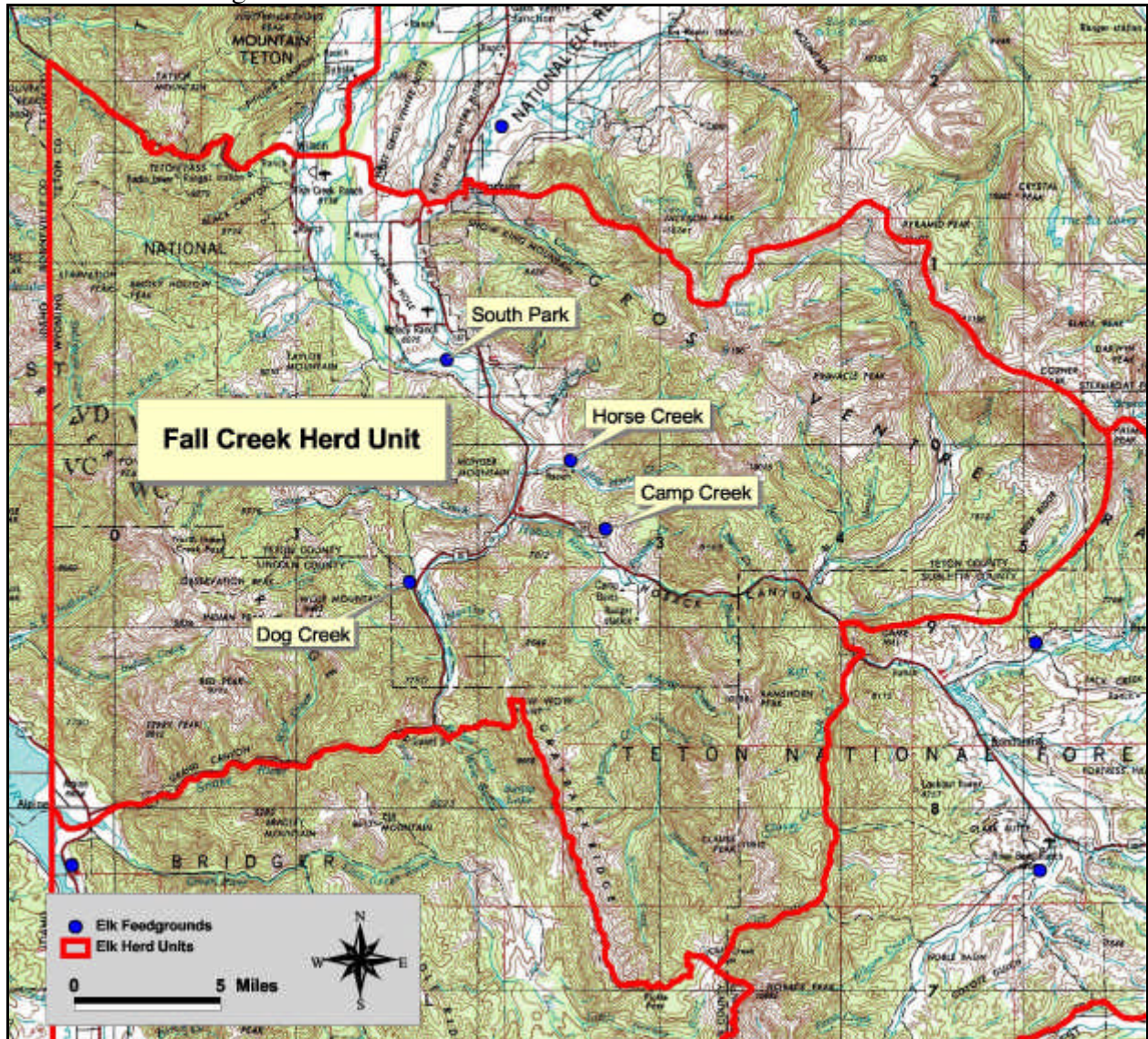


Figure 6. Location of WGFD feedgrounds in the Fall Creek Herd Unit.

South Park Feedground

Landscape Characteristics and Elk Information

The South Park feedground is located on 940-acre WGFD parcel adjacent to USFS and State lands, but surrounded mostly by private lands (agriculture and sub-divisions). The feedground is situated in a large meadow adjacent to the Snake River and Flat Creek, approximately 6 miles south of Jackson (Figure 7). A working cattle ranch is located adjacent to the feedground and the elk can easily co-mingle with cattle and/or cause damage. This feedground is also adjacent to US 26/89/189/191, where maintaining migration corridors and minimizing wildlife-vehicle collisions are major concerns. It is estimated that approximately 40% of the South Park elk enter and exit the feedground by crossing the highway from the east (FHWA-WY-EA 1996). At 6,000 feet in elevation, the feedground location is characterized by mountain meadow and riparian forest, adjacent to agricultural lands and higher elevation aspen and mixed conifer. WGFD quotas allow 1010 elk to be fed at this site. The average number of elk fed at South Park has been 998 (Table 4), with an average feed duration of 116 days and an average cost of \$39 per elk.

Brucellosis vaccination began at this feedground in 1990. Through the winter of 2003-04, a total of 3,696 juveniles and 909 adult females have been inoculated.

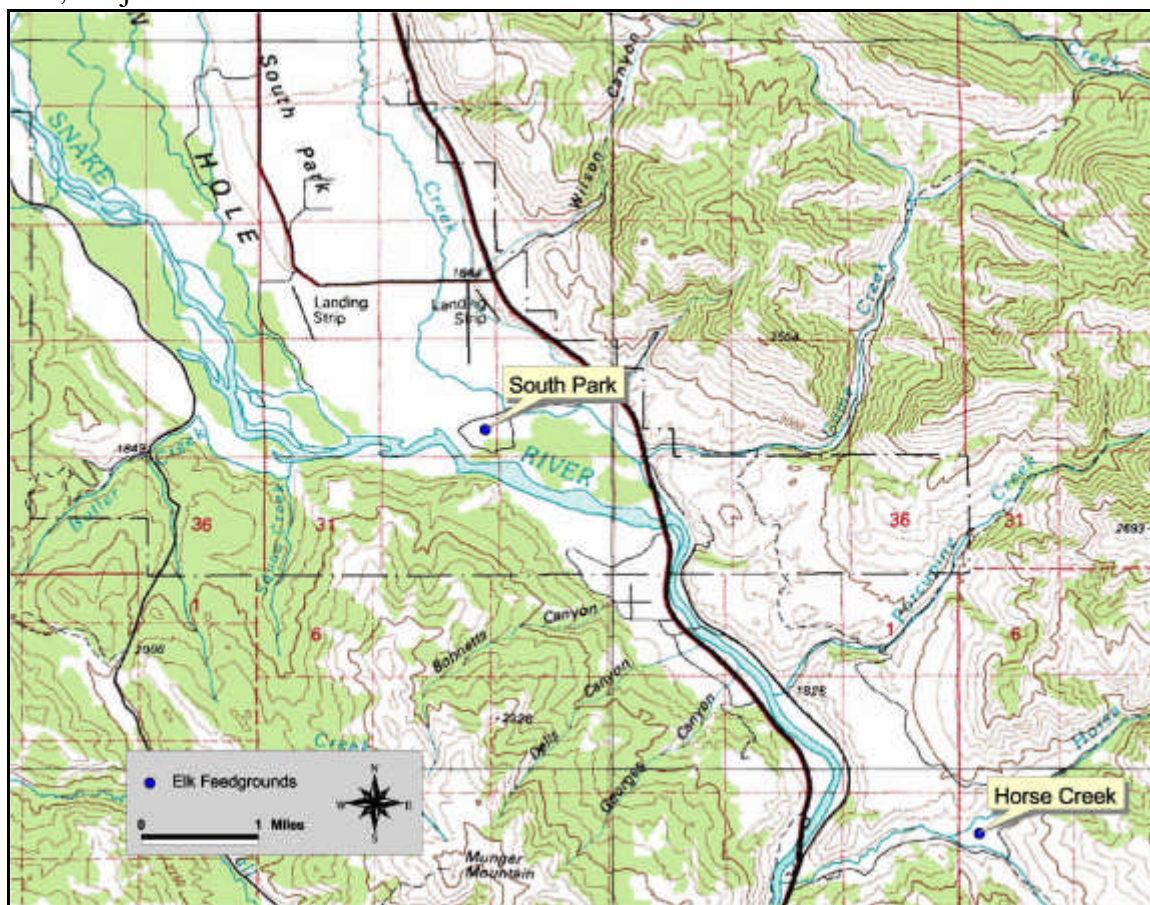


Figure 7. Location of South Park Feedground.

Table 4. Summary data from South Park feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON /ELK
1975-76	700	564	149	2	46	0.81
1976-77	0	0	0	0	0	0
1977-78	1150	569	136	4	21	0.49
1978-79	1200	672	130	15	26	0.56
1979-80	900	333	104	6	24	0.37
1980-81	600	110	62	0	15	0.18
1981-82	780	378	136	3	38	0.48
1982-83	675	306	128	5	39	0.45
1983-84	918	557	142	7	48	0.61
1984-85	896	511	130	0	46	0.57
1985-86	1002	662	139	3	52	0.66
1986-87	1185	680	136	4	46	0.57
1987-88	966	466	114	5	39	0.48
1988-89	1575	902	148	38	54	0.57
1989-90	909	322	100	3	39	0.35
1990-91	800	323	112	3	40	0.4
1991-92	1033	467	107	4	41	0.45
1992-93	1200	556	127	8	45	0.46
1993-94	1024	361	112	0	32	0.35
1994-95	1155	494	128	4	40	0.43
1995-96	1117	465	100	4	40	0.42
1996-97	1372	692	135	18	53	0.5
1997-98	1080	418	125	7	55	0.41
1998-99	886	314	108	8	39	0.35
1999-20	988	323	91	6	34	0.33
2000-01	1112	448	105	2	42	0.4
2001-02	1238	552	123	8	59	0.45
2002-03	1083	286	104	10	32	0.26
2003-04	1401	650	127	18	56	0.46
AVERAGE	998	461	116	7	39	0.44

WGFD Operational Plan (from WGFD 2001)*Primary Management Issues*

1. The primary concern at this feedground is keeping elk away from cattle feedlines. If cattle were not adjacent to the feedground, then start dates could possibly be delayed.

Secondary Management Issues

1. Flat Creek runs through the feedground property and offers waterfowl hunting opportunities prior to elk feeding. Because there are limited places for waterfowl hunting in Teton County, it is important to allow as much access to the Unit as possible.
2. Prior to feeding, elk are encouraged to free range on the South Park Unit. Care must be taken to discourage elk from foraging along and near the highway.
3. Damage to standing/stored crops may occur in the spring as elk leave the feedground.

Management Suggestions/Criteria

1. Feeding should start as soon as there is any indication that elk may move around the end of the fence and co-mingle with livestock.
2. One of the major migration routes to and from the feedground crosses the highway. Considerable forage exists on the feedground for elk in the fall, which can be utilized before feeding begins. To minimize vehicle-elk collisions, feeding should be initiated if elk begin foraging near the highway.
3. Feeding should continue in the spring until sufficient native forage is available. Otherwise, elk may move onto private property where forage is needed for spring grazing by cattle.

Horse Creek FeedgroundLandscape Characteristics and Elk Information

The Horse Creek feedground is located on 160-acre WGFD parcel surrounded by USFS lands. The feedground is situated above the confluence of Horse Creek and Little Horse Creek, approximately 10 miles south of Jackson (Figure 8). At 6,200 feet in elevation, the feedground location is characterized by mountain grass and shrub habitats, adjacent to higher elevation aspen and mixed conifer. Similar to Camp Creek, this area has relatively mild winter conditions and is capable of supporting big game animals during the winter.

The close proximity of private property, US 26/89/189/191, and the possibility of the elk moving to another feedground (i.e., Camp Creek or South Park) often influence the initiation and termination of feeding at this location, rather than the availability of native forage. Concerns with private property damage arise when elk move off the feedground or adjacent native ranges and onto private lands. Feeding rates at Horse Creek are often higher than other feedgrounds to reduce elk movements onto adjacent private property. Horse Creek elk can move to South Park and Camp Creek Feedgrounds if sufficient feed is not available at Horse Creek (either in the form of native forage or supplemental feed). The WGFD quota allows 1,250 elk to be fed at this site. The average number of elk fed at Horse Creek has been 1,073 (Table 5), with an average feed duration of 111 days and an average cost of \$40 per elk.

The WGFD recently completed negotiations with a private landowner for a permanent access into the Horse Creek Wildlife Management Area (WMA). Seasonal travel on the new access will begin once the USFS completes their permitting process and road construction is completed.

Brucellosis vaccination began at this feedground in 1993. Through the 2003-04 winter, a total of 3,123 juveniles have been inoculated.

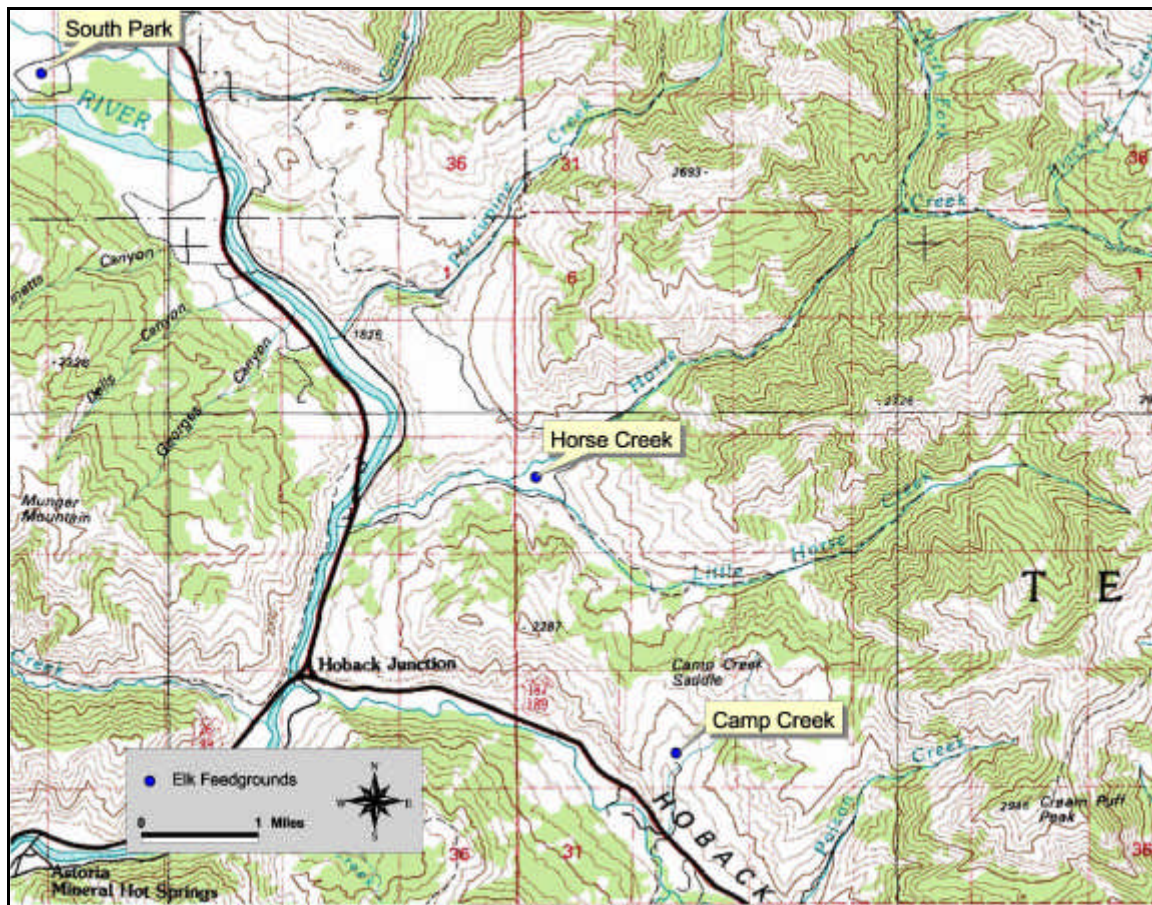


Figure 8. Location of Horse Creek Feedground.

Table 5. Summary data from Horse Creek feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	700	450	139	6	29	0.64
1976-77	0	0	0	0	0	0
1977-78	1170	659	122	9	32	0.56
1978-79	959	493	141	16	31	0.51
1979-80	1250	445	104	6	22	0.36
1980-81	496	73	59	1	12	0.15
1981-82	722	499	132	8	44	0.69
1982-83	925	458	123	4	38	0.49
1983-84	880	617	136	13	54	0.7
1984-85	1393	633	127	18	36	0.45
1985-86	1550	885	146	18	45	0.57
1986-87	879	393	111	4	36	0.44
1987-88	940	464	103	5	39	0.49
1988-89	1287	833	148	17	54	0.64
1989-90	1155	454	107	6	41	0.39
1990-91	1194	494	112	2	38	0.41
1991-92	1005	401	109	5	36	0.39

1992-93	1179	539	125	9	43	0.46
1993-94	712	139	56	0	18	0.2
1994-95	1033	423	106	10	36	0.41
1995-96	1104	397	94	3	38	0.36
1996-97	1330	793	135	12	57	0.6
1997-98	1505	609	104	13	47	0.42
1998-99	1587	625	117	13	42	0.39
1999-20	1321	517	111	3	41	0.39
2000-01	1200	673	109	6	56	0.56
2001-02	1414	716	138	17	68	0.51
2002-03	895	529	114	8	78	0.59
2003-04	1346	778	100	8	60	0.58
AVERAGE	1073	517	111	8	40	0.46

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. The tolerance of elk on adjacent private property is low.
2. The desired distribution of elk between Horse Creek and Camp Creek is the same proportion as the WGFD quotas for these feedgrounds. Elk appear to prefer Horse Creek to Camp Creek, and if the Camp Creek elk winter at Horse Creek, they can exceed the capacity of the feedground and the capability of one feeder.

Secondary Management Issues

1. Current access into the unit crosses numerous different landowners. Care and courtesy must be exercised in order maintain the access.

Management Suggestions/criteria

1. Feeding at Horse Creek should begin one or two days after feeding is initiated at Camp Creek, in an attempt to minimize the number of elk moving to Horse Creek.
2. Feeding should begin when elk move down drainage and begin co-mingling with livestock and/or causing damage on private land. Elk may be hazed away from these private holding for a few days each winter and delay the feed start date.
3. Elk may move from the feedground into the Porcupine area, where they can cause damage or create a problem for horse owners on small acreages. This situation should be monitored and considered when deciding feed start dates.
4. Feeding can be stopped when adequate residual/new growth forage exists to keep elk from migrating to lower elevations where they can cause damage problems. Feeding levels can be reduced in the late winter/early spring as forage becomes available. Feeding can be stopped if damage problems do not arise.

Camp Creek Feedground

Landscape Characteristics and Elk Information

The Camp Creek feedground is located on 150-acre WGFD parcel surrounded by USFS lands. The feedground is situated along Camp Creek, near its confluence with the Hoback River, approximately 13 miles south of Jackson and 3 miles east of Hoback Junction (Figure 9). At 6,500 feet in elevation, the feedground location is characterized by mountain grass and shrub

habitats, adjacent to higher elevation aspen and mixed conifer. Elk from both Camp Creek and the Horse Creek Feedground utilize this area in the fall and spring. Additionally, elk from Willow Creek often move across the highway and onto the area surrounding the feedground. Feeding is sometimes started early to keep elk from moving to Horse Creek. According to WGFD, this feedground is located in some of the best native winter range in the Hoback drainage. The WGFD quotas allow 900 elk to be fed at this site. The average number of elk fed at Camp Creek has been 782 (Table 6), with an average feed duration of 112 days and an average cost of \$43 per elk.

Wolf activity and predation has been documented at Camp Creek, but generally not affected feedground management.

Brucellosis vaccination began at this feedground in 1993. Through the 2003-04 winter, a total of 1,920 juveniles have been inoculated.

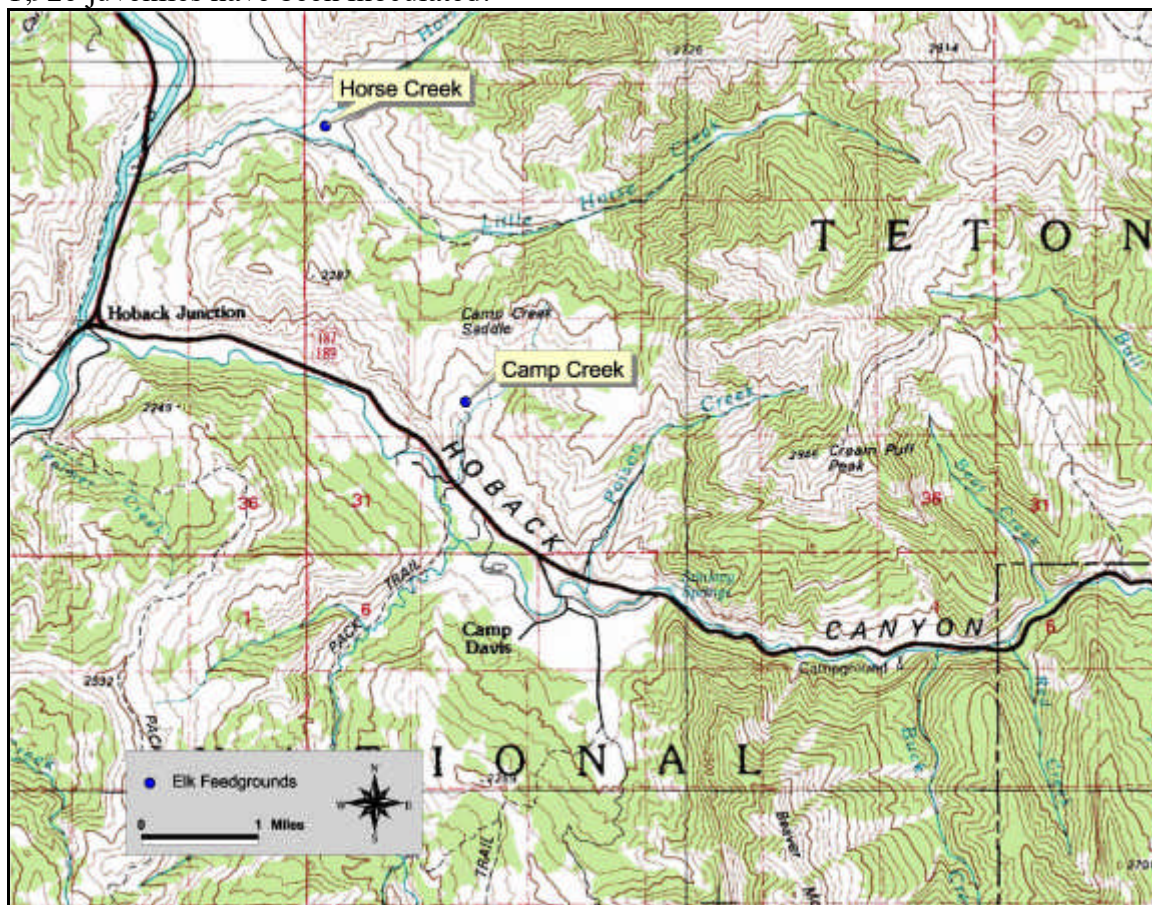


Figure 9. Location of Camp Creek Feedground.

Table 6. Summary data from Camp Creek feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	1025	491	130	1	28	0.48
1976-77	0	0	0	0	0	0
1977-78	500	218	117	2	28	0.44
1978-79	854	525	137	11	37	0.61

1979-80	615	302	106	6	32	0.49
1980-81	625	121	63	3	16	0.19
1981-82	686	399	134	8	45	0.58
1982-83	510	199	120	0	35	0.39
1983-84	815	575	136	10	57	0.7
1984-85	787	510	138	9	53	0.65
1985-86	651	531	134	8	65	0.81
1986-87	770	381	123	9	42	0.49
1987-88	1073	467	113	4	35	0.44
1988-89	960	584	145	10	53	0.61
1989-90	935	393	108	4	44	0.42
1990-91	950	379	115	7	37	0.4
1991-92	1180	371	110	3	29	0.31
1992-93	957	474	124	34	48	0.5
1993-94	1000	119	54	0	11	0.12
1994-95	600	273	105	5	45	0.46
1995-96	582	270	93	1	47	0.46
1996-97	582	261	136	3	53	0.45
1997-98	485	200	96	9	76	0.53
1998-99	516	334	104	8	72	0.64
1999-20	650	256	106	0	43	0.39
2000-01	1000	429	101	1	45	0.43
2001-02	1076	530	143	31	67	0.49
2002-03	1292	408	125	3	39	0.32
2003-04	1004	490	139	11	58	0.49
AVERAGE	782	362	112	7	43	0.46

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. It is preferred to have elk remain near the feedground, rather than moving south towards the highway or north to Horse Creek.

Secondary Management issues

1. None

Management Suggestions/criteria

1. Feeding should begin at this feedground a day or two before feeding begins on Horse Creek in an effort to keep elk from leaving the area. When the Camp Creek elk move to Horse Creek, the number fed at that feedground can reach ~2,000. The workload associated with feeding this number of elk exceeds the ability of a single elk feeder. Additionally, the area at Horse Creek is not large enough to feed that number of elk and maintain sanitary conditions.
2. Feeding should start early enough to minimize the number of elk that forage along the highway. Elk migrating from Willow Creek have to cross the highway. Once they move across the highway, they utilize native range on or near the feedground. However, as the winter progresses, they move farther and farther from the feedground and some will eventually begin feeding adjacent to the highway, especially at night and in the early

mornings. Once supplemental feeding begins, they generally stay away from the highway.

Dog Creek Feedground

Landscape Characteristics and Elk Information

The Dog Creek feedground is located on USFS land, adjacent to a narrow strip of private land along the Snake River corridor. The feedground is situated at the base of Dog Creek, near its confluence with the Snake River, approximately 14 miles south of Jackson and 4 miles west of Hoback Junction (Figure 10). At 6,000 feet in elevation, the feedground location is characterized by riparian forest habitat, adjacent to higher elevation sagebrush and mixed conifer. The Dog Creek Feedground is <0.5 miles from US 26/89. The WGFD estimate 50-60% of the elk fed at Dog Creek migrate across the Snake River and US 26/89. During migration and prior to feeding, elk tend to feed near the highway and vehicle-elk collisions are not uncommon. Elk are sometimes fed early in an effort to bait elk away from the highway and reduce elk-vehicle collisions. The highway was recently widened to 3-4 lanes in this area and the effect(s) this may have on vehicle-elk collisions is unknown. Nonetheless, maintaining functional migrations routes across the highway and minimizing vehicle-elk collisions is an important consideration at this site.

Elk are fed at one of two sites. The preferred site is on private property, which provides a large, flat meadow for feeding. The other site is on USFS property, which sets in the cottonwood trees at the mouth of Dog Creek. This is a not a preferred feeding site because of limited space, a small pond, and numerous trees. However, when arrangements to feed on the private property cannot be made, this site offers a place to feed. On two different occasions, WGFD biologists and USFS personnel have examined other locations as possible feeding sites. To date, nothing has resulted from these efforts and the elk continue to be fed at the existing sites. The WGFD quota allows 800 elk to be fed at this location. The average number of elk fed at Dog Creek has been 792 (Table 7), with an average feed duration of 119 days and cost of \$45 per elk. The 1,214 elk fed during the 2003-04 winter was the most elk ever fed at this site and 414 over the WGFD quota (Table 7).

Brucellosis vaccination began at this feedground in 1990. Through the 2003-04 winter, a total of 3,086 juveniles and 1,252 adults had been inoculated.

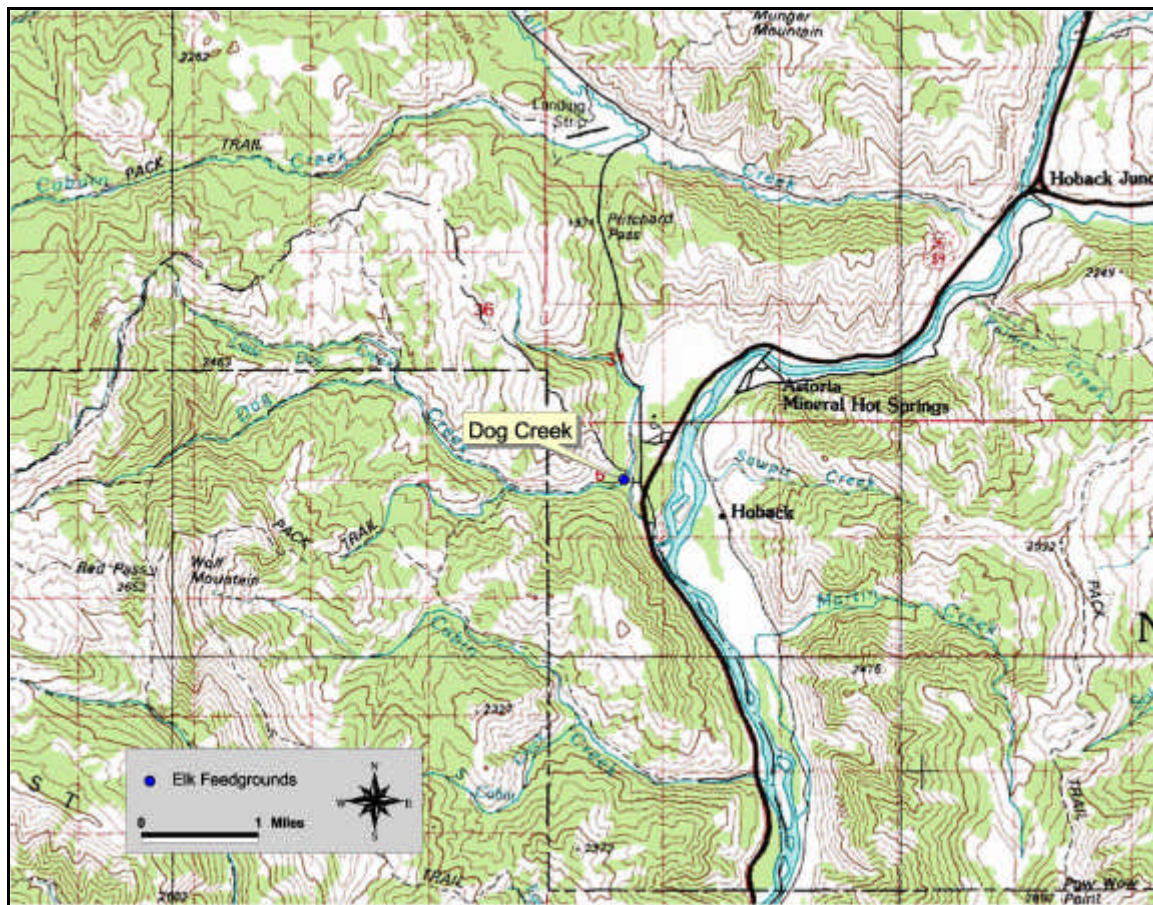


Figure 10. Location of Dog Creek Feedground.

Table 7. Summary data from Dog Creek feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	750	452	135	23	35	0.6
1976-77	0	0	0	0	0	0
1977-78	734	400	123	10	32	0.54
1978-79	670	454	139	22	41	0.68
1979-80	750	302	103	2	26	0.4
1980-81	500	184	120	6	30	0.37
1981-82	600	408	150	4	51	0.68
1982-83	588	329	130	4	45	0.56
1983-84	815	575	145	10	57	0.71
1984-85	787	510	138	9	53	0.65
1985-86	1020	619	139	13	49	0.61
1986-87	746	402	113	1	44	0.54
1987-88	910	596	111	9	50	0.65
1988-89	1068	754	156	15	57	0.71
1989-90	1000	430	118	7	45	0.43
1990-91	873	399	105	5	42	0.46
1991-92	950	500	116	2	47	0.53

1992-93	985	506	128	24	48	0.51
1993-94	650	229	108	1	32	0.35
1994-95	756	378	116	4	47	0.5
1995-96	742	260	90	5	35	0.35
1996-97	788	371	130	22	53	0.47
1997-98	623	311	119	7	66	0.5
1998-99	870	364	116	6	42	0.42
1999-20	885	460	119	0	51	0.52
2000-01	848	421	114	4	54	0.5
2001-02	1040	547	132	12	73	0.53
2002-03	817	318	111	7	47	0.39
2003-04	1214	652	141	16	59	0.54
AVERAGE	792	418	119	9	45	0.51

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. The primary factor for determining feed dates and feed levels is the need to keep elk off of the highway and minimize elk-vehicle collisions. This feedground needs to be monitored closely during the fall migration.
2. Efforts to maintain good working relationship with the land owner are important so that he will allow elk to be fed on the meadow. In the past, this has meant repairing fences in the spring after feeding has been completed, harrowing the meadow, and feeding in a different location each day to prevent manure from accumulating in any one spot.

Secondary Management Issues

1. The USFS has occupied homes adjacent to the horse corral. Also, the water used for drinking by the workhorses comes from a USFS outlet. It is important that the feeder be courteous to the people living in the homes.
2. To ensure feeding will be allowed to continue in the future, feedground personnel need to communicate with, and be aware of concerns that the private landowner and USFS may have.

Management Suggestions/criteria

1. Feeding should be initiated if elk begin foraging along the highway,
2. Feeding can be stopped earlier in the spring than snow conditions may suggest. Elk migrate out of the area during the spring and generally do not forage along the highway as they often do in early winter.

HOBACK HERD UNIT (E104)

The Hoback Herd Unit covers approximately 340 mi², includes two hunt areas (86-87), and has a post-season population objective of 1,100 elk (Figure 11). Because elk movements and winter distribution patterns in the herd unit are unpredictable, population estimates are difficult to calculate. Nonetheless, the 2003 post-season population estimate was 1,080 and believed to be +/- 10% of 1,100 elk objective. Consistent with other herd units in western Wyoming, elk numbers have remained at or above objective levels for the last 10 years.

The WGFD operates two feedgrounds in the herd unit: Dell Creek and McNeel, both near Bondurant. Despite the relatively low elevations in the Hoback Basin, the area is characterized by high snowfall and low temperatures during the winter months. Both feedgrounds are situated in areas considered elk summer range to stop elk migration short of lower-elevation private property. Because of heavy snowpack, native range is limited and elk that winter in the area rely almost exclusively on supplemental feed. Livestock interaction and private property damage are major concerns for the WGFD.

The 900-1000 elk fed at McNeel and Dell Creek represent 6-7% of the total number of elk fed in the Region. Reports of wolf activity have increased in recent years, but feedground management in this area has not been significantly affected. The cost of feeding elk in the Hoback Herd Unit is often higher than other units because of the long feed seasons. Hay and feeder costs were \$73 per elk in 2003-2004, compared to a Region average of \$66.

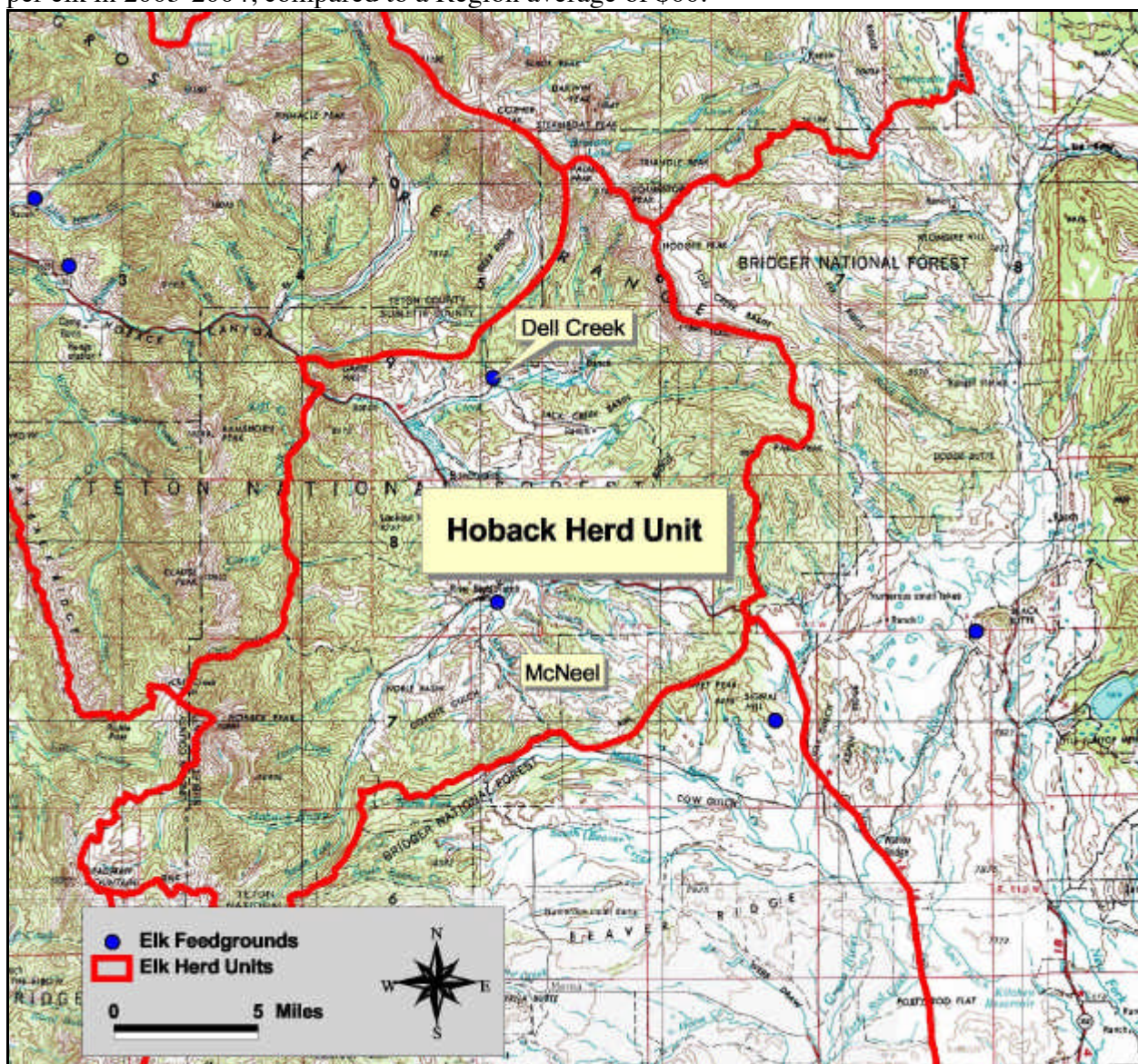


Figure 11. Location of WGFD feedgrounds in the Hoback Herd Unit.

Dell Creek Feedground

Landscape Characteristics and Elk Information

The Dell Creek Feedground is located on the BTNF, adjacent to private lands along the Dell and Jack Creek Drainages. The feedground is situated at the base of Riling Draw in the Hoback Basin, approximately 24 miles southeast of Jackson (Figure 12). At 6,800 feet in elevation, the feedground location is characterized by sagebrush, aspen, and mixed conifer habitats. The feedground is approximately one mile from the Little Jennie Cattle Ranch, which runs ~1,000 head of breeding cows and has had brucellosis in their herd (**when?**). The WGFD attempts to minimize elk and cattle interactions during the period of high risk potential (February 15 – June 15).

The Dell Creek Feedground is the only WGFD-operated feedground where brucellosis vaccination is not conducted. Because there is minimal interchange of elk between Dell Creek and other feedgrounds, the feedground provides the WGFD with a reference site to help evaluate vaccination success at other feedgrounds. Brucellosis surveillance has been ongoing for seven years and suggests a seroprevalance rate of approximately 41%.

According to WGFD, deep snow accumulations are normal and it is difficult to break new feedlines and keep elk distributed across the feedground property. The WGFD quota allows 400 elk to be fed at this location. The average number of elk fed at Dell Creek has been 252 (Table 8), with an average feed duration of 148 days and an average cost of \$82 per elk. Dell Creek supports the fewest number of elk of all feedgrounds in the Region.

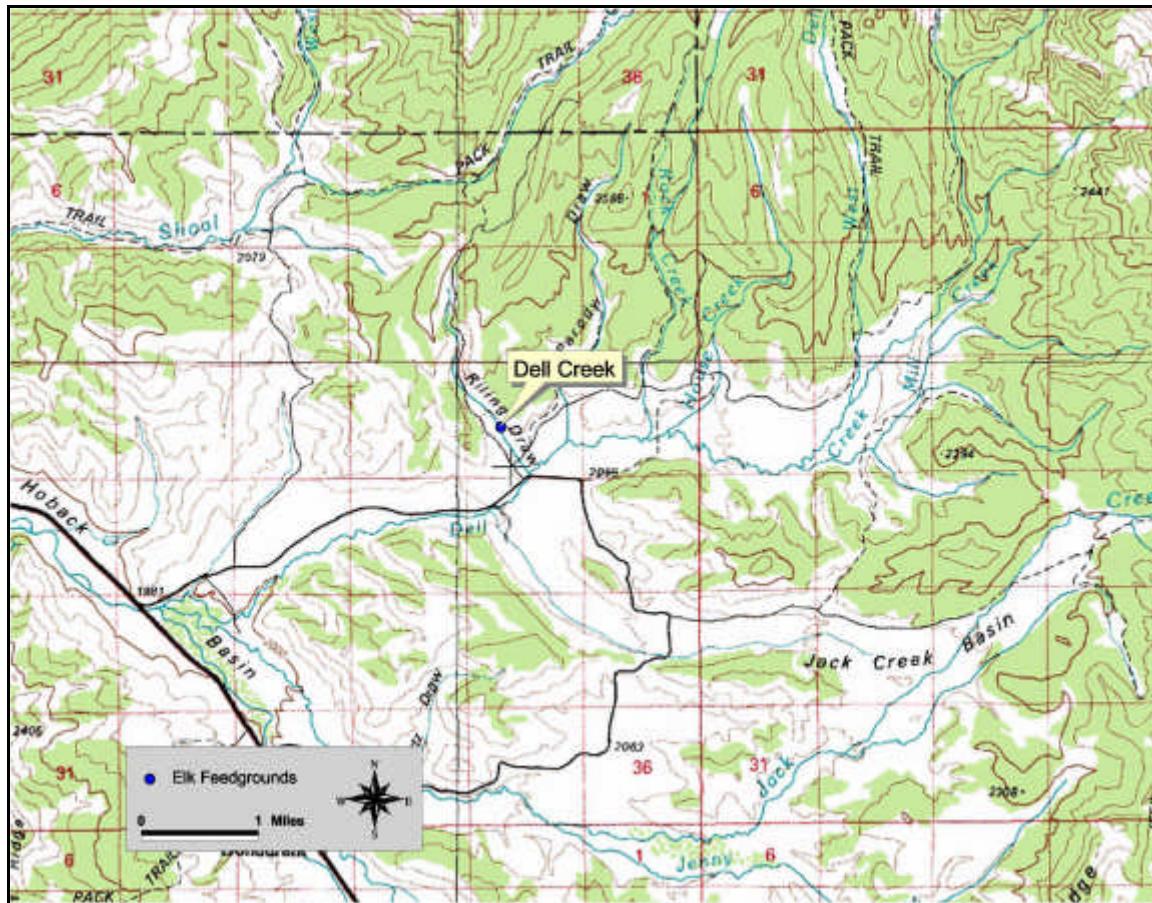


Figure 12. Location of Dell Creek Feedground.

Table 8. Summary data from Dell Creek feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	259	285	158	3	66	1.1
1976-77	365	28	84	0	9	0.1
1977-78	350	300	154	4	55	0.86
1978-79	265	234	155	3	59	0.88
1979-80	245	188	153	1	59	0.77
1980-81	200	140	131	0	64	0.7
1981-82	234	234	172	5	87	1
1982-83	225	203	156	0	86	0.9
1983-84	290	277	176	3	83	0.96
1984-85	230	228	169	2	91	0.99
1985-86	300	305	175	0	90	1.02
1986-87	320	238	156	3	68	0.74
1987-88	235	195	130	2	81	0.83
1988-89	285	278	163	2	89	0.98
1989-90	320	221	136	2	81	0.69
1990-91	275	206	143	2	80	0.75
1991-92	214	164	138	1	85	0.77

1992-93	246	234	184	1	107	0.95
1993-94	234	145	128	0	66	0.62
1994-95	255	168	148	0	75	0.66
1995-96	290	179	146	0	71	0.62
1996-97	220	193	166	1	118	0.75
1997-98	159	80	100	1	82	0.5
1998-99	225	191	156	1	103	0.84
1999-20	150	119	137	0	104	0.79
2000-01	185	158	144	1	109	0.85
2001-02	245	185	149	0	115	0.76
2002-03	225	141	139	1	90	0.63
2003-04	275	195	146	0	93	0.71
AVERAGE	252	197	148	1	82	0.79

WGFD Operation Plan

Primary Management Issues

1. The feedground is located within one mile of the Little Jenny Ranch, where there is stored hay and cattle feedlines. All feeding efforts should be directed at minimizing the possibility of feedground elk co-mingling with cattle.
2. This feedground serves as the control (elk not vaccinated) when evaluating the effectiveness of brucellosis vaccination at other feedgrounds. The trapping and disease surveillance of these elk is very important.

Secondary Management Issues

1. Deep snow limits the ability to break new feedlines. However, every effort should be made to keep hay scattered.

Management Suggestions/criteria

1. Elk begin arriving near the feedground when snow depths reach 8-10 inches. Feeding should begin when elk move onto the feedground property and no longer travel in search of food. The first hay is usually put out before snow depths preclude using a pickup for feeding.
2. Feeding can be terminated in the spring when the elk begin feeding away from the feedground and hay consumption begins to decline.

McNeel Feedground

Landscape Characteristics and Elk Information

The McNeel feedground is the only feedground located on private land. An annual lease fee is paid for the use of this feedground and currently a long-term agreement is being sought. The feedground is bordered by USFS lands and situated along the Hoback River, approximately 31 miles southeast of Jackson and 32 miles northwest of Pinedale (Figure 13). At 6,900 feet in elevation, the feedground location is characterized by riparian meadow habitats, adjacent to higher elevation aspen and mixed conifer. Because of its close proximity to the Hoback River, some feedground structures have been lost to high spring run-offs and the existing stackyard/hayshed could be lost if the river rose above existing flood control barriers. The area where the elk are fed is an irrigated hay meadow that produces hay. According to WGFD, deep

snows in the Bondurant area make feeding difficult and native ranges unavailable. However, elk at McNeel often leave the feedground earlier than would be predicted by native forage availability and snow conditions. The WGFD quota allows 600 elk to be fed at this location. The average number of elk fed at McNeel has been 578 (Table 9), with an average feed duration of 142 days and an average cost of \$60 per elk.

Brucellosis vaccination began at this feedground in 1992. Through the 2003-04 winter, a total of 1,892 juveniles and 704 adult females have been inoculated.

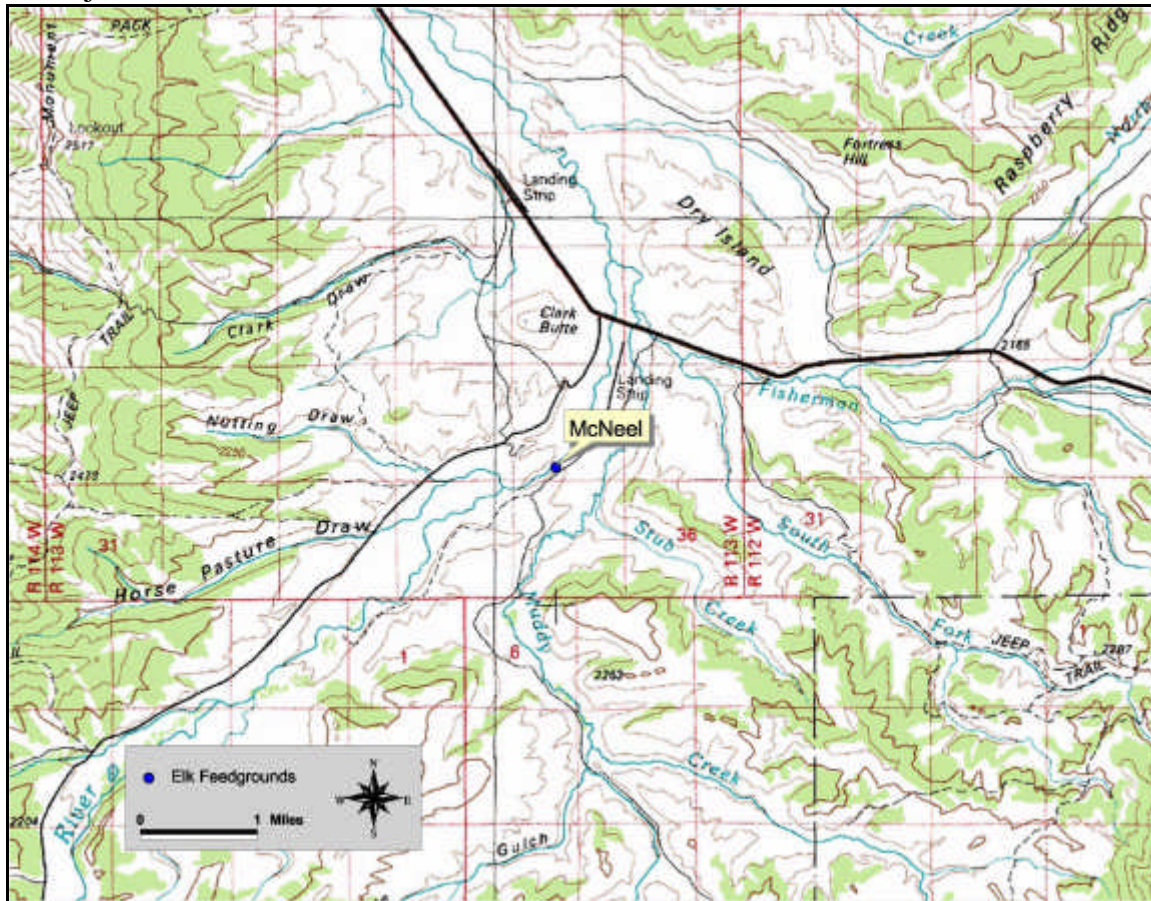


Figure 13. Location of McNeel Feedground.

Table 9. Summary data from McNeel feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	590	472	158	6	46	0.8
1976-77	450	103	87	0	20	0.23
1977-78	650	463	141	4	44	0.71
1978-79	633	465	145	3	47	0.73
1979-80	530	376	150	7	50	0.71
1980-81	475	215	126	0	40	0.45
1981-82	438	406	179	2	76	0.93
1982-83	435	341	153	2	81	0.78
1983-84	500	392	162	0	66	0.78
1984-85	430	314	163	3	82	0.73

1985-86	560	431	163	3	68	0.77
1986-87	570	429	149	3	63	0.75
1987-88	700	366	130	1	44	0.52
1988-89	850	652	158	8	71	0.77
1989-90	1003	515	137	10	56	0.51
1990-91	736	366	138	1	50	0.5
1991-92	729	426	150	8	57	0.58
1992-93	789	522	159	3	67	0.66
1993-94	565	266	126	0	45	0.47
1994-95	488	189	119	6	42	0.39
1995-96	603	410	173	12	72	0.68
1996-97	630	470	164	10	86	0.75
1997-98	274	112	91	5	60	0.41
1998-99	427	231	149	9	62	0.54
1999-20	500	286	123	5	63	0.57
2000-01	500	321	131	2	75	0.64
2001-02	570	299	131	7	70	0.52
2002-03	448	206	137	0	62	0.46
2003-04	680	364	133	9	65	0.53
AVERAGE	578	359	142	4	60	0.62

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. Cattle operations that previously determined many of the feeding management decisions no longer exist near the feedground. The most significant concern is to feed elk early enough to keep them from moving over the Hoback Rim (several miles) and onto the Franz Feedground and/or onto private property beyond Franz.
2. High quality hay should be fed early in the feeding season to entice the elk to stay at this location. Concerns with elk leaving the feedground lessen as snow depths increase.
3. Efforts must be made to keep the feedground free of loose baling twine. Also, feedlines must be moved frequently to prevent the build-up of old hay and manure. It may be necessary to use heavy equipment to break new feedlines.

Secondary Management Issues

1. None

Management Suggestions/criteria

1. Feeding should be initiated when elk first move onto the feedground, in order to keep them at this location and reduce the likelihood of them migrating to the Franz Feedground.
2. Potential for these elk to cause damage during the spring is low. Feeding can be terminated in the spring as soon as the snow has receded and hay consumption begins to drop.

AFTON HERD UNIT (E105)

The Afton Herd Unit covers approximately 960 mi², includes four hunt areas (88-91), and has a post-season population objective of 2,200 elk (Figure 14). The 2003 post-season population

estimate was 2,300 elk. Consistent with other herd units in western Wyoming, elk numbers have remained at or above objective levels for the last 10 years.

The Afton herd unit covers the western slope of the Wyoming Range, south to Tri-Basin Divide, the Salt River Range, and west to the Wyoming/Idaho border including Star Valley. Most (95%) of the land is administered by the USFS, while private lands, restricted primarily to Star Valley, make up most of the remaining area. The Salt River and the Greys River are the major drainages in the herd unit. The major land uses within the herd unit include domestic livestock grazing and recreation. Since 1988 there have been four major wildfires (Corral Creek, Aspen Hollow, Blind Trail, and East Table) that burned approximately 50,000 acres. Prescribed fires have been conducted in Moose Creek and Blind Bull Creek in the Greys River watershed, and Spring Creek in Salt River over the last 10 years.

Depending on winter severity, the western portion of the herd unit may experience a general increase in elk moving from Idaho summer ranges to Wyoming winter ranges. Since 1991, elk trend counts in the western portion of the herd unit have ranged from 121 in 1991 to a high of 869 in 1997. During the winter of 1996-1997, at least 525 elk were provided supplemental feed along the western portion of Hunt Area 91 from February to April. These elk are part of an interstate population and not part of the After Elk Herd. Because of the movement of Idaho elk into Wyoming during winter months, previous elk trend counts over-estimated the number of elk in the Afton herd unit.

The WGFD operates two feedgrounds in this herd unit: Alpine and Forest Park. Management of the Alpine Feedground focuses on reducing private property damage, while management of the Forest Park Feedground is for minimizing winter elk mortality. Two supplemental feeding operations were implemented during the winter 2003-2004; approximately 40 elk were fed north of Afton in Anderson Canyon, and another 40 elk were fed northwest of Auburn, near Tom's Canyon. The WGFD viewed these elk as a chronic damage problem and decided that the most effective action to minimize elk co-mingling with cattle was to feed them away from livestock. Damage problems (i.e., stored crops) are common in the Afton Herd Unit, especially in Star Valley.

For the second year, elk moved around housing developments southwest of Alpine and entered the feedground. The newly constructed elk jump allowed these elk to access the feedground rather than gathering on the lakebed to the west. The density of buildings is increasing to the southwest of Alpine and access for elk to the feedground is becoming more restricted each year. Presumably, all the private property between the town and the feedground will be developed. If this happens and Palisades Reservoir is full of water, the only migration corridor may be across the open space of land set aside by the town for ball fields and play grounds. This corridor needs to be protected.

Wolves preyed on elk at the Forest Park feedground this winter. Predation was documented for about one week during early winter. After this, wolves did not prey on feedground elk, but made kills on native range elk near the feedground. The presence of wolves in Greys River may affect elk management on native winter ranges and the Forest Park Feedground. A total of 13 wolves were observed in March 2004 in the headwaters of Moose Creek, a tributary of Greys

River. The 2004 elk trend count was the first year in the last 15 years that elk were not observed on south slopes of the Deadman Creek/Middle Ridge winter range complex.

There were 1,581 elk fed in the herd unit, which is up slightly from the previous winter. Seventeen elk deaths were reported on the 2 feedgrounds combined. The cost per elk fed (\$65.07) was slightly above the Regional average.

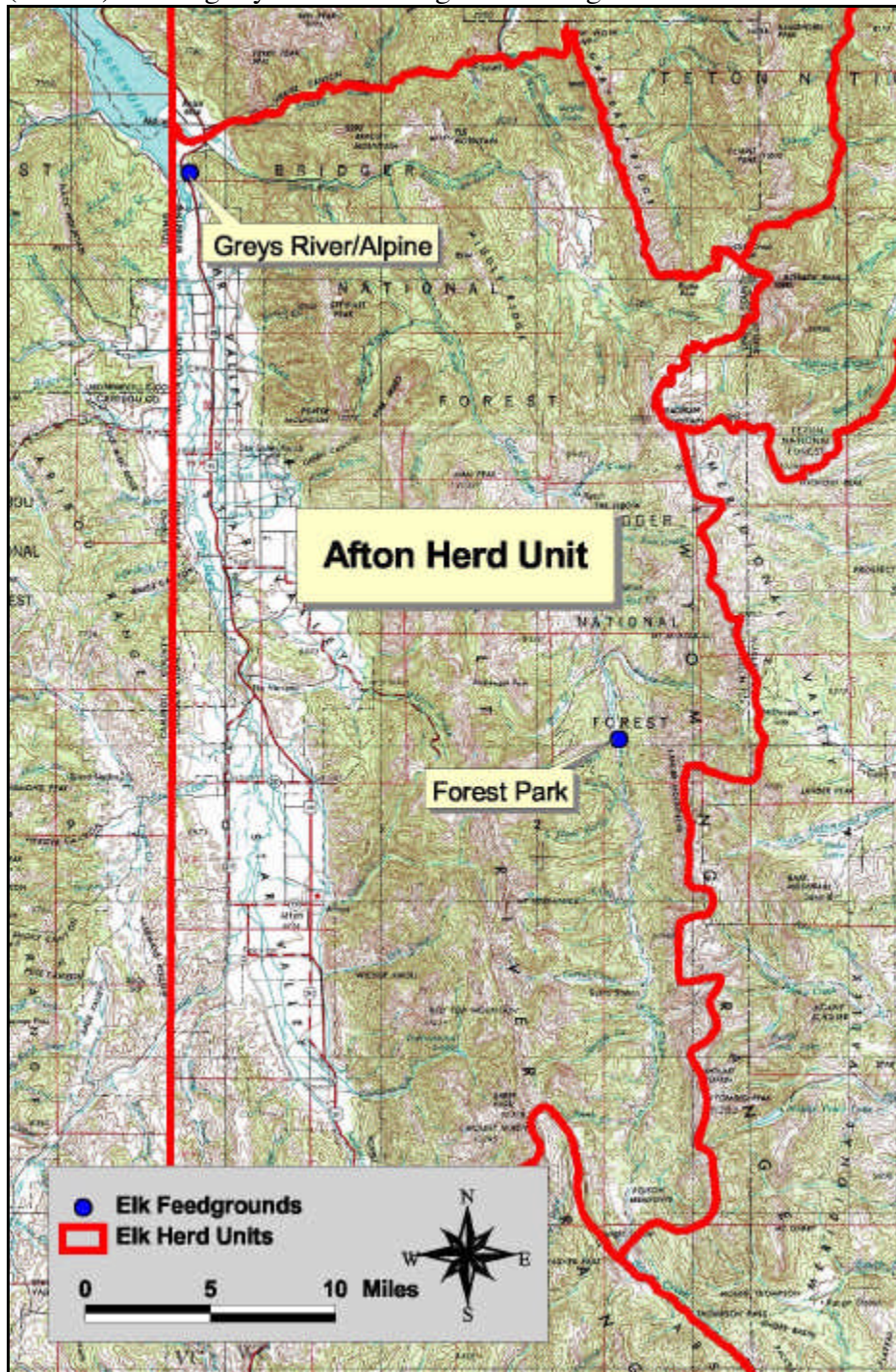


Figure 14. Location of WGFD feedgrounds in the Afton Herd Unit.

Alpine Feedground

Landscape Characteristics and Elk Information

The Alpine Feedground is located on a 1,750-acre WGFD parcel, surrounded by BLM, USFS, and private lands. The feedground is adjacent to US 89, approximately one mile south of Alpine (Figure 15). The feedground was formally called “Greys River” even though it has been located in the Salt River drainage for more than 50 years. The Alpine Feedground is the most accessible of all WGFD feedgrounds. A pull-out along US 89 allows the public to view the elk at close range.

Elk migrate to this site from many locations, including the Snake River Canyon, Indian Creek (Idaho), Salt River, Little Greys River, and Greys River. Before arriving at the feedground, many elk pass through or near the town of Alpine, cross US 26/89, and cross the ice on Palisades Reservoir/Snake River. An elk proof fence runs about 11 miles to the south and about ½ mile to the north of the feedground. This fence encourages elk to move to the feedground rather than entering private property and causing damage. Some elk get below the fence each year and inevitably cause damage problems. Elk generally move around housing developments southwest of Alpine and enter the feedground. A recently constructed elk jump allows these elk to access the feedground rather than gathering on the lakebed to the west. Increased subdivision development southwest of Alpine will continue to restrict elk access to the feedground. Maintaining an effective elk movement corridor to and from the feedground is a major concern for the WGFD. The WGFD quota allows 1,000 elk to be fed at this site. The average number of elk fed at Alpine has been 845 (Table 10), with an average feed duration of 134 days and an average cost of \$51 per elk.

Brucellosis vaccination at this feedground dates back to 1985 and is the longest running vaccination program of all WGFD-operated feedgrounds. Through the 2003-04 winter, a total of 3,883 juveniles and 1,449 adult females have been inoculated. Brucellosis surveillance is also conducted at this feedground. Seroprevalence for adult females was 59% (n=23/39) during the 2003-04 winter, 51% (n=28/55) in 2002-03, and 50% (n=21/42) in 2001-02. Seroprevalence has significantly increased since 2000, when it was estimated at 11%. The reason(s) for the recent increase is unknown.



Figure 15. Location of Alpine/Greys River Feedground.

Table 10. Summary data from the Alpine feedground 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	925	573	156	11	33	0.62
1976-77	450	161	94	2	27	0.36
1977-78	850	623	154	5	39	0.73
1978-79	850	537	150	6	34	0.63
1979-80	800	372	106	8	28	0.46
1980-81	430	131	74	2	24	0.3
1981-82	720	671	149	7	60	0.93
1982-83	650	507	158	4	56	0.78
1983-84	830	605	166	16	50	0.73
1984-85	830	550	137	17	48	0.66
1985-86	947	593	144	14	48	0.63
1986-87	716	414	127	5	45	0.58
1987-88	1000	545	119	5	40	0.55
1988-89	1200	672	149	31	46	0.56
1989-90	933	591	135	8	63	0.63
1990-91	885	526	131	9	53	0.59
1991-92	954	568	136	7	51	0.6

1992-93	980	683	153	13	64	0.7
1993-94	906	470	111	1	37	0.52
1994-95	1100	683	145	18	57	0.62
1995-96	916	537	130	17	55	0.59
1996-97	980	654	151	9	66	0.67
1997-98	900	508	128	9	81	0.65
1998-99	880	462	118	7	52	0.53
1999-20	840	439	129	3	43	0.52
2000-01	740	448	137	3	63	0.61
2001-02	806	470	140	8	78	0.58
2002-03	663	341	115	2	62	0.51
2003-04	810	452	134	8	62	0.56
AVERAGE	845	510	134	9	51	0.6

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. The elk fence should be well-maintained and gates kept closed in order to keep elk above the fence and away from livestock and private holdings.
2. This site has been used by the WGFD to gather research information on elk for 30+ years. Disease surveillance is an important component of this feedground.
3. The feedground is important in reducing damage to private property and minimizing elk/vehicle collisions.

Secondary Management Issues

1. The feedground is highly visible and part of the public perception/education should be considered in management decisions.
2. Because of its close proximity to the highway and subdivisions, several problem situations may occur each year, including dogs on the feedground, antler hunters on the feedground, people walking on the feedground to take photos, occasional poaching (very rare), gate left open and WGFD horses on the highway, and home owners needing access to their water development (which sets on the feedground).

Management Suggestions/criteria

1. Elk migrate to the feedground in the fall and early winter. These elk will use the native forage on and near the feedground as snow depths allow. When elk begin foraging near the highway or moving towards town, feeding should be initiated.
2. Feeding can be terminated in the spring when elk begin leaving the area. Feeding often lasts longer here than other feedgrounds because of snowpack levels and public perception that elk are not being fed when they should.

Forest Park Feedground

Landscape Characteristics and Elk Information

The Forest Park Feedground is located on, and bordered by, USFS lands. The feedground is situated at the base of Elk Creek near the confluence of the Grey's River, approximately 14 miles northeast of Afton and 35 miles northwest of Big Piney (Figure 16). At 7,000 feet in elevation,

the feedground location is characterized by mountain meadow and shrub habitats, adjacent to high elevation mixed conifer habitats. This feedground is one of the most inaccessible.

Historically, elk that wintered along the middle and upper portion of the Greys River were susceptible to relatively high levels of natural winter mortality. This segment of the elk herd apparently did not migrate from the Greys River/Forest Park area. With the increased use of snow-machines into the upper Greys River during the 1970's, the public became aware of the high winter mortality of elk that wintered near Forest Park. As a result of public pressure, the WGFD submitted a special use application to the Greys River Ranger District, and approval of this special-use application by the USFS formally established the Forest Park elk feedground in April, 1979. This was the last feedground to be established by the WGFD, and one of only two feedgrounds (Forrest Park and Upper Green River) that were established to minimize winter mortality, rather than prevent damage to private property. WGFD quotas allow 750 elk to be fed at this location. The average number of elk fed at Forest Park has been 699 (Table 11), with an average feed duration of 135 days and an average cost of \$58 per elk.

Brucellosis vaccination began at this feedground in 1988. Through the 2003-04 winter, a total of 3,351 juveniles and 715 adult females have been inoculated.



Figure 16. Location of Forest Park Feedground.

Table 11. Summary data from the Forest Park feedground 1979-80 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1979-80	379	107	122	1	22	0.28
1980-81	38	9	60		18	0.24
1981-82	300	267	136	9	73	0.89
1982-83	250	239	156	3	86	0.96
1983-84	440	374	172	12	72	0.85
1984-85	450	318	143	1	63	0.71
1985-86	550	323	165	1	51	0.59
1986-87	550	266	125	1	44	0.48
1987-88	625	347	130	5	49	0.56
1988-89	800	462	155	4	51	0.58
1989-90	885	410	130	3	52	0.46
1990-91	950	517	145	2	55	0.54
1991-92	850	483	132	5	56	0.57
1992-93	950	613	154	5	65	0.65
1993-94	760	419	137	2	52	0.55
1994-95	790	451	134	5	57	0.57
1995-96	720	450	135	5	65	0.63
1996-97	806	465	137	9	66	0.58
1997-98	1050	492	122	1	69	0.51
1998-99	1091	517	129	3	51	0.47
1999-20	976	462	120	3	49	0.47
2000-01	929	478	131	2	56	0.51
2001-02	883	490	133	18	76	0.55
2002-03	681	411	129	7	75	0.6
2003-04	771	442	132	9	68	0.57
AVERAGE	699	392	135	5	58	0.57

WGFD Operational Plan (from WGFD 2001)*Primary Management Issues*

1. This is one of two feedgrounds (Green River Lakes being the other) where damage issues do not drive feedground management decisions. The sole purpose of this feedground is to reduce winter starvation in the Upper Greys River area. Migrating elk arrive at or near the feedground as snow depths increase. Feeding needs to begin before these elk move down the Greys River where they may starve or compete with other elk that free range on the south end of the Middle Ridge.

Secondary Management Issues

1. The feeder at Forest Park is extremely isolated. This site is 34 miles from the end of the plowed road. Some snow-machine activity occurs in this area but these machines are not allowed within ½-mile of the feedground. There is not a telephone at the site and radio/cell phone reception is poor. The USFS has allowed the feeder to use one of their radios, which has been extremely useful. The WGFD needs to discuss this situation with the feeder and decide how contacts can be made, particularly during emergencies.

2. The cabin at the site is heated by wood stove and the feeder needs to have firewood available.

Management suggestions/criteria

1. A maximum amount of hay should be stored at this location to ensure adequate amounts are maintained through the feeding season.
2. Feeding should be initiated when snow depths approach 18 inches and/or the elk show signs of migrating down drainage.
3. Feeding in the spring can be terminated when south slopes are open and adequate residual/new growth is available to the elk.

PINEY HERD UNIT (E106)

The Piney Herd Unit covers approximately 1,570 mi², includes two hunt areas (92, 94), and has a post-season population objective of 2,424 elk (Figure 17). The 2003 post-season population estimate was 2,830 elk. Consistent with other herd units in western Wyoming, elk numbers have remained at or above objective levels for the last 10 years. This herd unit is bounded by the Green River on the east, the Wyoming Range divide on the west, and the Hoback Rim on the north. Major drainages include Horse Creek, Cottonwood Creek, the Piney Creeks, and part of LaBarge Creek.

There is extensive vehicle access into this herd unit with graveled logging roads located along most major drainages. In addition, horseback hunting opportunities exist in backcountry areas at higher elevations. During the 1950s to early 1980s, a significant portion of the timbered drainages at lower elevations were logged. Most of these timber stands have regenerated to a height and age class of trees that provide suitable forage and cover for elk. Oil and gas development has, and will continue to be a major land use in this herd unit, particularly on lands administered by the BLM.

The WGFD operates five feedgrounds in this herd unit: North Piney, Bench Corral, Finnegan, Jewett, and Franz. These feedgrounds are generally located in transition ranges between the higher-elevation USFS lands and the lower-elevation private lands. The feedgrounds are strategically located to entice elk from moving to lower elevation winter ranges, thereby reducing conflicts with private landowners and their livestock.

According to WGFD, considerable amount of area suitable for sustaining wintering wildlife exists in the herd unit and a large portion of these elk could likely sustain themselves on native ranges. Because of the high potential for property damage and disease transmission to livestock in these areas, allowing elk to free range would require close monitoring of their activities and location. According to WGFD, when conflicts with private interests are likely, feedground management needs to be conducted in a manner that gathers and holds elk rather than allowing them to disperse. Damage problems occur every year in the Piney Herd Unit. Wolf activity and predation has been reported on or near most feedgrounds in the unit, and occasionally results in elk dispersing from feedgrounds onto private lands. When elk are displaced from feedgrounds (for whatever reason), the WGFD will typically try to move elk back to the feedground before they create any damage problems or co-mingle with livestock.

The cost of feeding elk in the Piney Herd Unit is higher than most units. During the 2003-04 winter elk were fed at a cost of \$84.85 per elk, which was the highest of any herd unit in the Region. The high cost resulted from long feeding seasons and large daily rations, both of which exceeded Region averages. High elk numbers and/or long feeding seasons sometimes results in hay shortages at Bench Corral and Jewett.

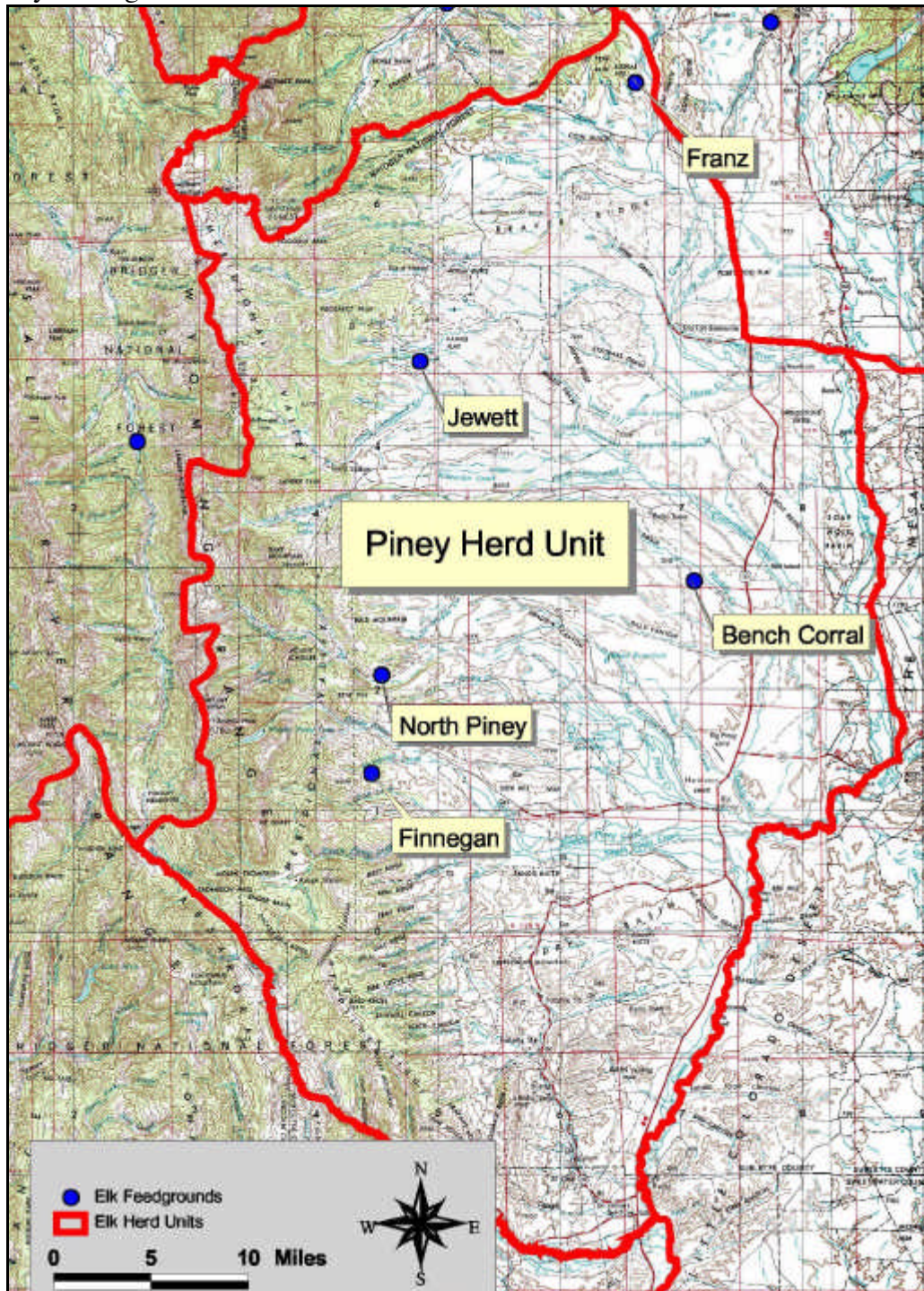


Figure 17. Location of WGFD feedgrounds in the Piney Herd Unit.

North Piney Feedground

Landscape Characteristics and Elk Information

The North Piney Feedground is located on BLM land, bordered by USFS, State, and private lands. The feedground is situated along North Piney Creek at the base of the Wyoming Range, approximately 18 miles northwest of Big Piney (Figure 18). At 8,000 feet in elevation, the feedground location is characterized by sagebrush habitats, adjacent to aspen, riparian, and mixed conifer habitats. Several working cattle ranches exist in the area and once elk enter these private lands, it is extremely difficult to return them to North Piney.

According to WGFD, the management of this feedground has evolved over the years, and will likely change in the future. Elk that typically wintered on this feedground were baited to the Bench Corral Feedground during the winter of 1995-96 in an effort to eliminate the North Piney feedground. The elk have voluntarily moved to Bench Corral each year since then, which has reduced feeding costs and increased the days that the elk free range. However, it is our understanding that because of concerns expressed by some elements of the public about overgrazing and their interest in reducing livestock grazing in the area, the livestock industry has asked that both feedgrounds be operated as they were prior to 1995-96. As a result, the emphasis on feeding at North Piney is being done in a manner to entice the elk not to migrate on to Bench Corral. WGFD quotas allow 400 elk to be fed at this location. The average number of elk fed at North Piney has been 369 (Table 12), with an average feed duration of 135 days and an average cost of \$51 per elk. Feed seasons in recent years have been unusually short because of elk moving off North Piney and onto Bench Corral. For example, during the 2003-04 winter, elk were only fed for 48 days before they moved onto Bench Corral. Because of these movements, brucellosis vaccination is not conducted at North Piney.

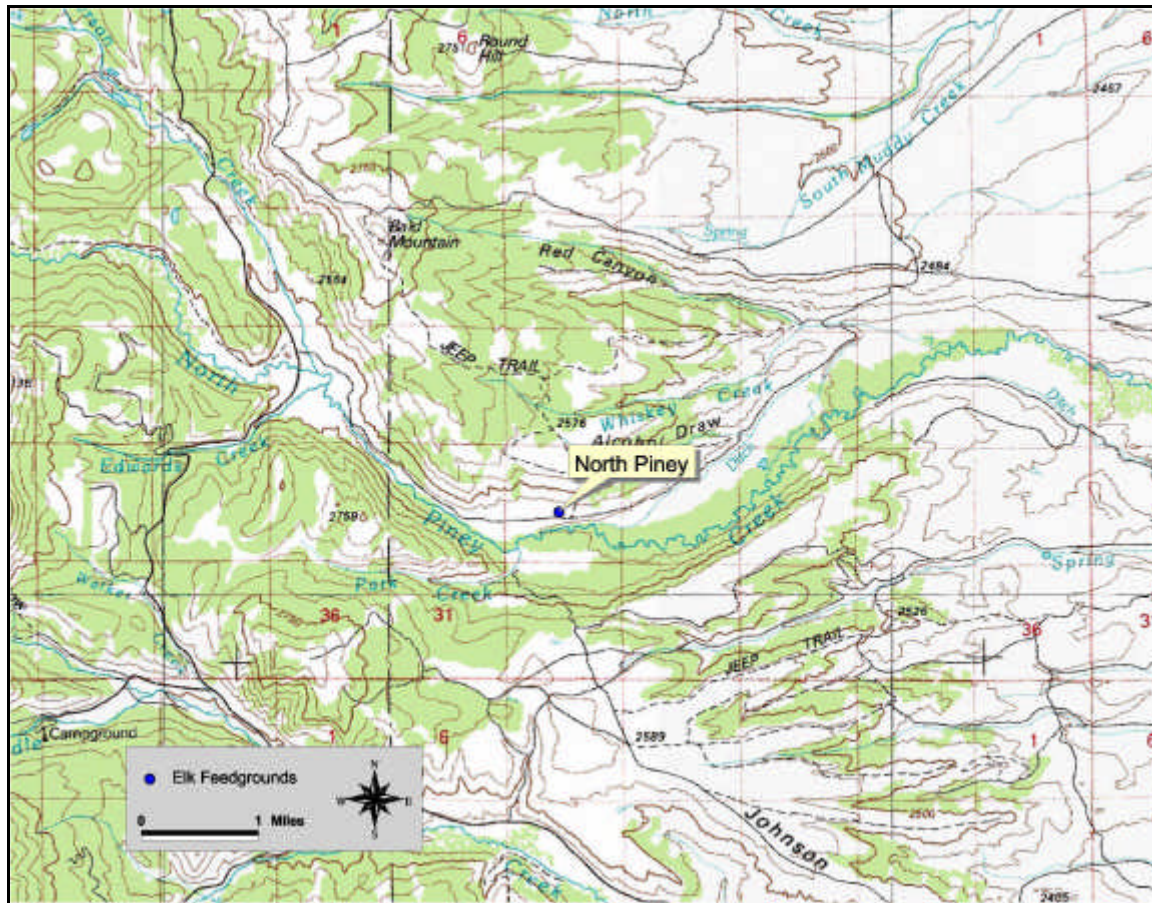


Figure 18. Location of North Piney Feedground.

Table 12. Summary data from North Piney feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	420	256	156	1	42	0.61
1976-77	106	41	91	0	37	0.39
1977-78	400	250	156	2	44	0.63
1978-79	400	293	160	1	49	0.73
1979-80	394	279	167	1	50	0.71
1980-81	350	171	144	0	41	0.49
1981-82	332	252	156	2	74	0.88
1982-83	337	251	165	1	68	0.74
1983-84	374	192	136	4	48	0.51
1984-85	238	125	155	1	56	0.53
1985-86	288	187	164	1	62	0.65
1986-87	324	169	153	2	53	0.52
1987-88	397	233	147	1	64	0.59
1988-89	396	246	160	4	67	0.62
1989-90	468	216	134	2	57	0.46
1990-91	374	162	152	2	53	0.43
1991-92	396	203	148	0	61	0.51

1992-93	450	276	180	1	76	0.61
1993-94	534	241	136	0	42	0.45
1994-95	386	115	136	0	37	0.3
1995-96	*350(0)	56	139	0	30	0.16
1996-97	*300(215)	168	167	3	118	0.48
1997-98	*373(22)	91	103	0	38	0.24
1998-99	*475(86)	108	167	1	30	0.23
1999-20	*396(0)	74	46	0	23	0.19
2000-01	*311(22)	79	96	1	26	0.25
2001-02	*200(0)	85	64	0	74	0.43
2002-03	*388 (0)	133	75	0	50	0.34
2003-04	410(0)	62	48	1	21	0.15
AVERAGE	369	173	135	1	51	0.48

WGFD Operational Plan (from WGFD 2001)

Primary Management Issues

1. Early winter feeding should be initiated to prevent elk from migrating onto private property and/or Bench Corral.
2. If elk leave the feedground during the winter and can be intercepted before they reach Mason Point (County Road 143), the WGFD will attempt to herd them back to the feedground.
3. The elk feeder must be informed prior to hiring that the duration of the job is dependent on elk being present at the feedground in large enough numbers to justify feeding them. If the elk leave, the job may be terminated.

Secondary Management Issues

1. Continue to pursue available options that would allow these elk to migrate onto the Bench Corral Feedground at some future date.

Management Suggestions/Criteria

1. High quality alfalfa should be placed on the feedground as soon as the hunting season ends (usually mid-November) in an attempt to prevent elk from migrating onto private property or to the Bench Corral Feedground.
2. If elk leave North Piney and move toward Bench Corral, they should be herded back to North Piney if they have not moved east of the Mason Point Road.
3. Elk feeders must make certain that adequate amounts of good quality feed is fed each day and properly distributed so that all elk receive adequate amounts.
4. Feeding in the spring should cease as soon as enough native forage (new growth and/or residual) is available to hold the elk from moving to private property.
5. If the elk leave, the draft horses should be walked out promptly or they might get snowed in at the feedground until spring.

Bench Corral Feedground

Landscape Characteristics and Elk Information

The Bench Corral Feedground is located on a State section surrounded by BLM land. The feedground is situated in the sagebrush flats of the Green River Basin, some 20 miles east of the

Wyoming Range, approximately 11 miles north of Big Piney (Figure 19). At 7,100 feet in elevation, the feedground location is characterized by sagebrush grasslands, adjacent to agricultural lands along Cottonwood Creek. Because of the low elevation, low snowfall, and abundance of sagebrush-grassland habitat, this area offers considerable native forage during the winter months. Consequently, this feedground typically has the shortest feeding season of all feedgrounds, which also results in the lowest cost of feeding elk.

The opportunity to encourage free ranging elk exists at this feedground, although the elk activity and location must be closely monitored. Elk can move great distances in a relatively short time and it is the opinion of the WGFD that these elk can quickly cause significant damage problems if allowed to leave the area. For example, on several occasions during the 2003-04 winter, large groups of elk (40-300) left Bench Corral and moved onto private lands along Cottonwood Creek. Elk visited at least two different stackyards and caused significant damage to stored crops at these locations. WGFD quotas allow 250 elk to be fed at this location. The average number of elk fed at Bench Corral has been 390 (Table 13), with an average feed duration of 91 days and an average cost of \$33 per elk.

Brucellosis vaccination began at this feedground in 1997. No vaccination took place in 2000 or 2001 because of mild weather conditions. Through the 2003-04 winter, a total of 1,768 elk have been inoculated.

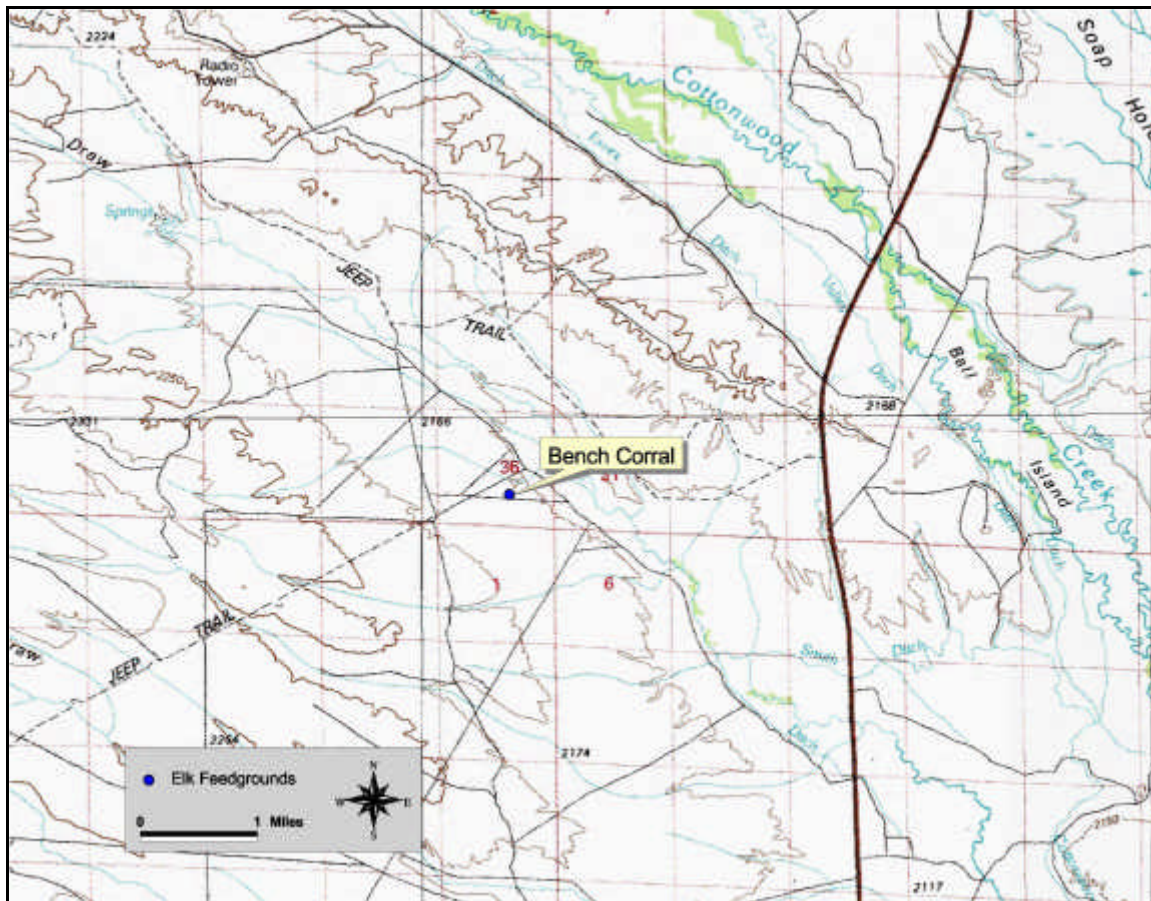


Figure 19. Location of Bench Corral Feedground.

Table 13. Summary data from Bench Corral feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	240	86	103	5	27	0.36
1976-77	0	0	0	0	0	0
1977-78	258	103	115	0	69	0.4
1978-79	298	133	99	0	31	0.45
1979-80	372	180	105	4	33	0.48
1980-81	65	4	67	0	4	0.06
1981-82	325	160	128	0	44	0.49
1982-83	281	113	131	2	39	0.4
1983-84	285	134	120	2	41	0.47
1984-85	170	69	105	0	46	0.41
1985-86	273	136	137	0	44	0.5
1986-87	339	102	123	0	28	0.3
1987-88	280	37	46	0	15	0.13
1988-89	439	193	132	0	50	0.44
1989-90	322	73	101	0	37	0.23
1990-91	250	47	59	0	23	0.19
1991-92	275	56	117	0	32	0.2
1992-93	258	92	104	6	47	0.36
1993-94	0	0	0	0	0	0
1994-95	250	2	10	0	1	0.01
1995-96	803	212	111	2	34	0.26
1996-97	650	322	121	3	67	0.5
1997-98	559	175	76	0	42	0.31
1998-99	841	215	76	1	28	0.26
1999-20	837	189	67	1	25	0.23
2000-01	700	159	80	0	27	0.23
2001-02	671	263	114	4	60	0.39
2002-03	882	110	102	0	18	0.12
2003-04	813	443	125	5	63	0.54
AVERAGE	390	120	91	1	33	0.3

WGFD Operational Plan (from WGFD 2001)*Primary Management Issues*

1. The location of this feedground is situated to allow the WGFD to hold elk that have moved past other feedgrounds (i.e., North Piney) and keep them from moving east across US 189. Feeding the elk at Bench Corral also keeps them from moving onto private property.
2. Store enough hay to feed the North Piney elk, should they move onto this feedground.
3. Feed the elk before they move east off the feedground and/or north of Muddy Creek.

Secondary Management Issues

1. Opportunities to encourage free ranging elk may occur on this feedground. Monitor elk activities closely and be prepared to take advantage of these.

Management Suggestions/criteria

1. Feeding should begin when elk move onto the feedground or immediate area.
2. Elk feeding may be reduced or terminated when elk begin moving off the feedground in the spring. Elk from this feedground generally remain above the snowline as they migrate westerly.

Finnegan Feedground

Landscape Characteristics and Elk Information

The Finnegan Feedground is located on BLM land, bordered by USFS to the west and private to the east. The feedground is situated in the foothills of the Wyoming Range, approximately 18 miles northwest of Big Piney (Figure 20). At 8,500 feet in elevation, the feedground location is characterized by sagebrush and aspen habitats, adjacent to mixed conifer and lower-elevation sagebrush-grasslands. This feedground is not easily accessible and is located immediately adjacent to a working ranch with low tolerance for elk on their property. The WGFD considers the damage potential for elk that migrate beyond this feedground as extremely high. WGFD quotas allow 400 elk to be fed at this location. The average number of elk fed at Finnegan has been 333 (Table 14), with an average feed duration of 151 days and an average cost of \$65 per elk.

Brucellosis vaccination began at this feedground in 1995. Through the 2003-04 winter, a total of 731 juveniles and 172 adult females have been inoculated.



Figure 20. Location of Finnegan Feedground.

Table 14. Summary data from Finnegan feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	273	165	153	0	42	0.6
1976-77	81	26	85	0	47	0.32
1977-78	385	225	145	0	43	0.58
1978-79	425	287	166	0	46	0.68
1979-80	440	290	158	13	49	0.68
1980-81	356	126	146	2	32	0.35
1981-82	389	252	156	0	56	0.65
1982-83	285	180	164	0	61	0.63
1983-84	355	217	155	2	57	0.61
1984-85	274	98	129	2	36	0.36
1985-86	293	152	164	1	52	0.52
1986-87	287	142	148	0	52	0.49
1987-88	357	201	146	1	59	0.56
1988-89	404	237	160	3	59	0.59
1989-90	355	213	139	0	75	0.6
1990-91	327	161	150	1	60	0.49
1991-92	375	181	144	0	57	0.48
1992-93	386	243	178	2	77	0.61
1993-94	376	115	131	0	42	0.31
1994-95	389	111	156	0	38	0.29
1995-96	394	188	172	0	78	0.48
1996-97	450	271	177	0	87	0.6
1997-98	323	201	164	4	89	0.62
1998-99	281	234	169	1	106	0.83
1999-20	311	207	137	2	84	0.67
2000-01	290	194	147	0	94	0.67
2001-02	242	189	142	2	129	0.78
2002-03	234	170	160	0	109	0.73
2003-04	305	242	162	1	115	0.79
AVERAGE	333	188	151	1	65	0.56

WGFD Operational Plan (from WGFD 2001)*Primary Management Issues*

1. Elk should be fed in a manner that keeps them on the feedground and off the adjacent private property. Generally this requires an early start date and feeding until enough new growth exists to entice the elk away from private property and onto native ranges.

Secondary Management Issues

1. None.

Management Suggestions/criteria

1. Monitoring bales should put out near the end of the hunting season (around mid-November).

2. Feeding should continue in the spring until the elk quit eating the hay and move to higher elevations.

Jewett Feedground

Landscape Characteristics and Elk Information

The Jewett Feedground is located on a State section bordered by private lands. The feedground is situated between South Horse Creek and North Cottonwood Creek, approximately 17 miles west of Daniel (Figure 21). Existing livestock operations are several miles from the feedground. At 7,800 feet in elevation, the feedground location is characterized by mountain meadow and sagebrush habitats, adjacent to lower-elevation sagebrush and agricultural habitats. The WGFD quota allows 650 elk to be fed at this site. The average number of elk fed at Jewett has been 595 (Table 15), with an average feed duration of 153 days and an average cost of \$62 per elk.

Brucellosis vaccination began at this feedground in 1996. Through the 2003-04 winter, a total of 1,090 juveniles and 304 adult females have been inoculated.

Wolf activity and predation has been reported on Jewett. Five elk were killed by wolves during the 2003-04 winter.

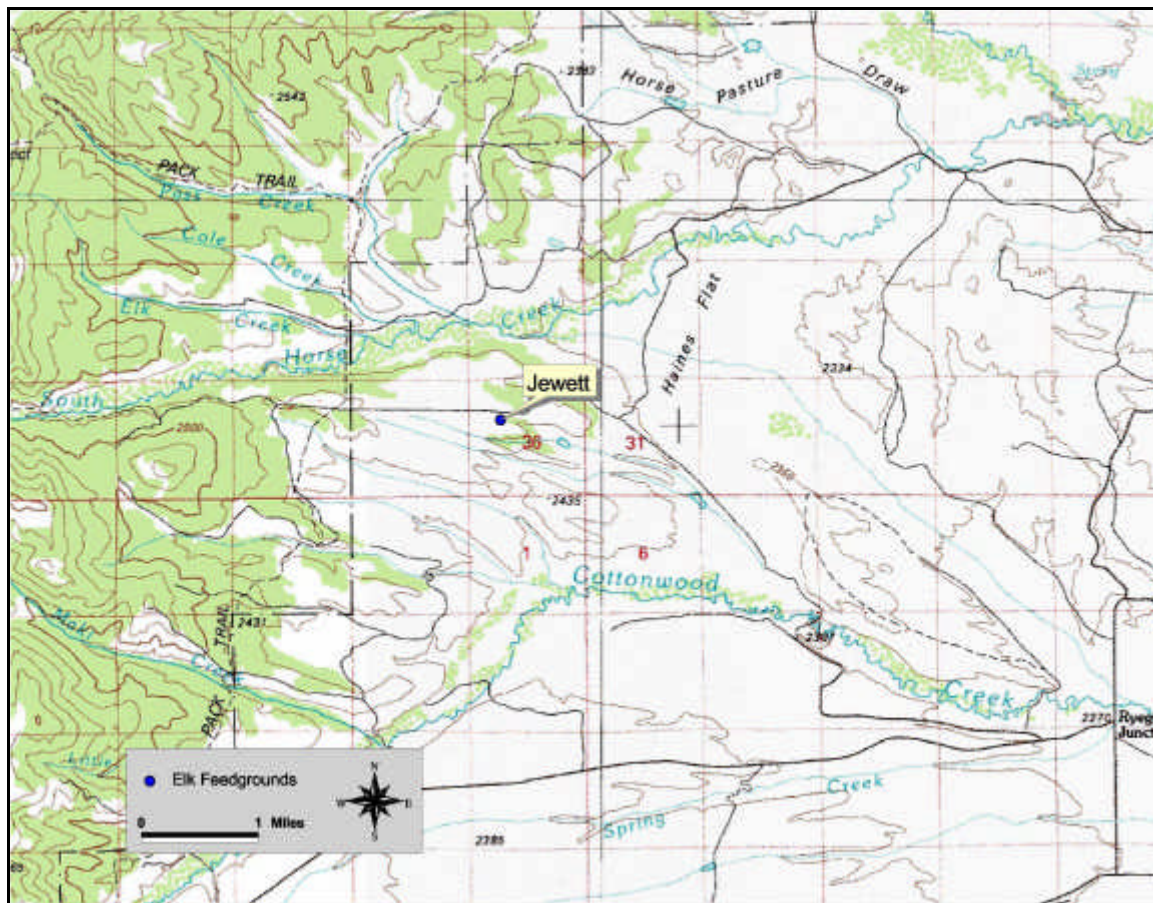


Figure 21. Location of Jewett Feedground.

Table 15. Summary data from Jewett feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	533	369	160	11	46	0.69
1976-77	217	83	95	0	30	0.38
1977-78	650	390	156	4	42	0.6
1978-79	480	385	167	4	53	0.8
1979-80	601	392	153	0	45	0.65
1980-81	551	246	145	2	36	0.45
1981-82	680	567	179	1	58	0.83
1982-83	611	460	163	4	57	0.75
1983-84	620	400	157	5	51	0.65
1984-85	652	440	160	3	55	0.67
1985-86	666	472	166	2	54	0.71
1986-87	693	378	156	0	44	0.54
1987-88	672	395	136	4	51	0.59
1988-89	628	437	160	3	65	0.7
1989-90	617	296	128	0	56	0.48
1990-91	500	268	145	1	60	0.54
1991-92	547	248	139	1	50	0.45
1992-93	580	441	188	6	87	0.76
1993-94	636	241	136	0	42	0.38
1994-95	618	289	139	3	55	0.47
1995-96	597	379	159	0	73	0.63
1996-97	602	420	170	4	89	0.7
1997-98	607	327	159	5	69	0.54
1998-99	553	380	160	1	78	0.69
1999-20	530	389	136	0	84	0.73
2000-01	670	475	154	1	73	0.71
2001-02	675	464	145	5	114	0.68
2002-03	523	401	156	8	97	0.77
2003-04	750	541	166	9	83	0.73
AVERAGE	595	378	153	3	62	0.63

WGFD Operational Plan (from WGFD 2001)*Primary Management Issues*

1. Feed in a manner that entices the elk to stay in the immediate area around the feedground and discourages them from moving onto private property.

Secondary Management Issues

1. None

Management Suggestions/criteria

1. Although there are opportunities to allow elk to free range prior to feeding, experience has shown that this can result in elk leaving the area and ultimately causing damage to private property. While it is desirable to promote free ranging elk at this feedground, it comes at the risk of elk leaving the area. Feeding elk as soon as they arrive after the fall

hunting season minimizes the potential for elk co-mingle with livestock or causing damage to private property.

2. Feeding can be terminated when elk begin leaving the feedground and adequate residual/new growth is available.

Franz Feedground

Landscape Characteristics and Elk Information

The Franz feedground is located on a 662-acre parcel of BLM land bordered private lands. The feedground is situated along the southern edge of the South Hoback Rim, approximately 22 miles northwest of Pinedale (Figure 22). At 7,900 feet in elevation, the feedground location is characterized by sagebrush, aspen, and mixed conifer habitats. According to WGFD, the management of this feedground is extremely important for controlling damage problems in the area. Franz has been used to hold elk that leave the Black Butte Feedground and elk that move into the “40 Rod” area or nearby ranches. In recent years, elk from the McNeel feedground have moved into this area during the early winter months. The WGFD quota allows 450 elk to be fed at this site. The average number of elk fed at Franz has been 398 (Table 16), with an average feed duration of 157 days and an average cost of \$70 per elk.

Brucellosis vaccination began at this feedground in 1996. Through the 2003-04 winter, a total of 683 juveniles and 545 adult females have been inoculated.

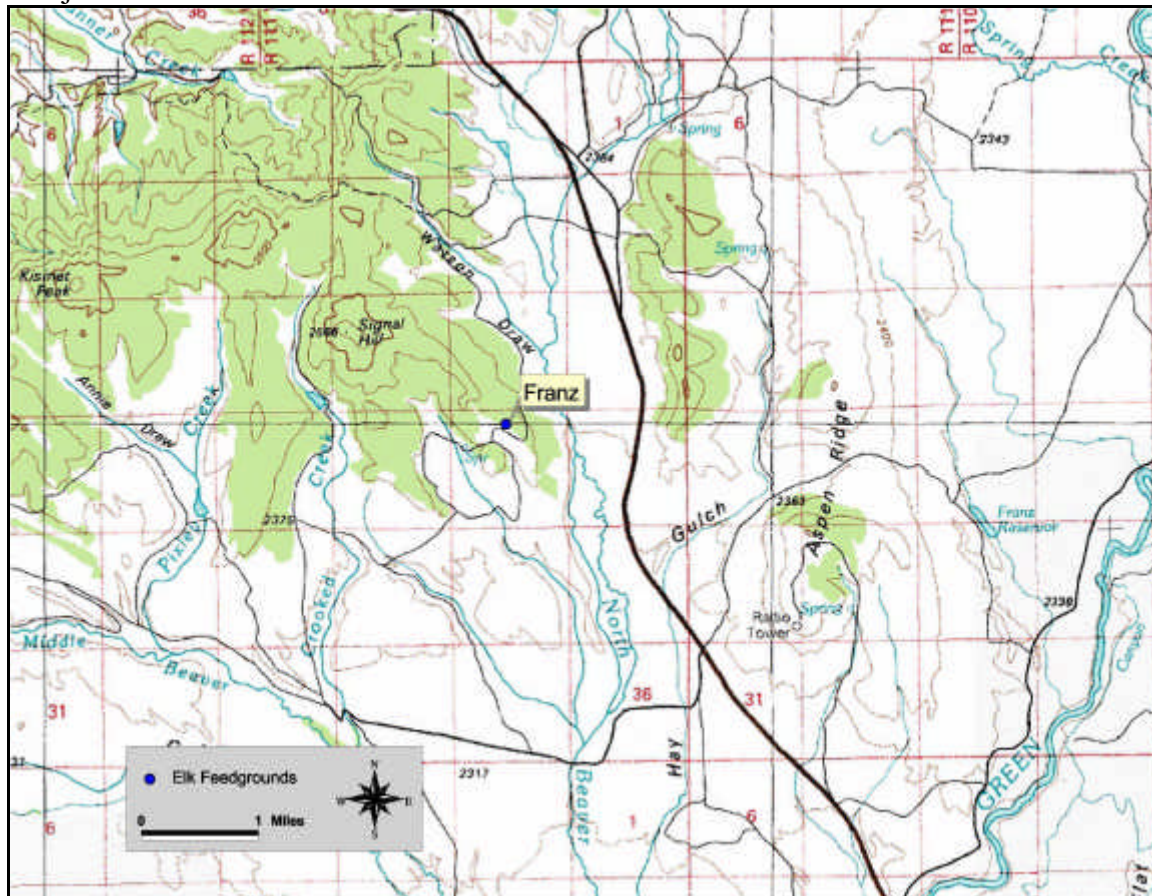


Figure 22. Location of Franz Feedground.

Table 16. Summary data from Franz feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	309	221	156	3	48	0.72
1976-77	80	32	92	0	39	0.4
1977-78	384	272	160	2	55	0.71
1978-79	256	194	166	1	56	0.76
1979-80	250	175	161	1	57	0.7
1980-81	63	29	127	0	38	0.46
1981-82	234	222	163	1	81	0.95
1982-83	280	167	164	0	62	0.6
1983-84	402	290	162	0	60	0.72
1984-85	420	312	158	0	66	0.74
1985-86	421	368	188	2	85	0.87
1986-87	524	310	151	5	53	0.59
1987-88	571	329	147	2	54	0.58
1988-89	575	432	160	2	70	0.75
1989-90	450	249	138	1	69	0.55
1990-91	502	324	167	4	73	0.65
1991-92	375	234	152	4	74	0.62
1992-93	368	281	186	2	97	0.76
1993-94	480	152	137	0	41	0.32
1994-95	354	197	139	1	68	0.56
1995-96	300	145	157	0	64	0.48
1996-97	370	333	181	0	118	0.9
1997-98	625	320	155	0	71	0.51
1998-99	461	325	183	0	82	0.7
1999-20	467	262	148	0	72	0.56
2000-01	550	358	157	0	80	0.65
2001-02	571	420	160	0	123	0.73
2002-03	466	288	171	0	89	0.62
2003-04	428	310	164	1	89	0.72
AVERAGE	398	260	157	1	70	0.65

WGFD Operational Plan (from WGFD 2001)*Primary Management Issues*

1. Feeding should begin early enough to hold elk in the area before they move onto private property or onto the desert, where they may cause damage problems.

Secondary Management Issues

1. Some concern exists that this herd may grow in numbers because of the amount of private property in the surrounding areas where hunting is not allowed. This situation needs to be monitored.

Management Suggestions/criteria

1. Similar to most feedgrounds in this Herd Unit, little opportunity exists to promote free ranging elk and feeding generally begins following the fall hunting season.
2. Feeding is terminated in the spring when the elk begin leaving the feedground and adequate residual/new growth is available.

GREEN RIVER HERD UNIT (E107)

The Green River Herd Unit covers approximately 830 mi², includes three hunt areas (93, 95-96), and has a post-season population objective of 2,500 elk (Figure 23). Because elk movements and winter distribution patterns in the herd unit are unpredictable, population estimates are difficult to calculate. Nonetheless, the 2003 post-season population estimate was believed to be 2,150 elk. This is the only herd unit in the Jackson/Pinedale Region where elk numbers are below objective levels.

The majority of elk in this herd unit occupy public land managed by the USFS, of which nearly half is designated wilderness where access is limited to foot or horseback travel. The remaining USFS lands have moderate vehicle and trail access. Most of the private lands in this herd unit occur at lower elevations and contain riparian and agricultural habitats along the Green River, New Fork River, and Willow Creek drainages. Elk damage to stored crops sometimes occurs below the Soda Lake elk fence. Co-mingling of elk and livestock is uncommon in this herd unit.

The WGFD operates three feedgrounds in this herd unit: Black Butte, Green River Lakes, and Soda Lake. These feedgrounds are considerably different, with Black Butte having one of the longest feeding seasons while Green River Lakes and Soda Lake are typically among the shortest. Potential damage problems are major concerns at Soda Lake and Black Butte, while non-existent at Green River Lakes. The cost of feeding elk in the Green River Herd Unit is slightly below the \$66/elk average.

Wolf activity and predation has occurred at or near all three feedgrounds. In recent years, wolf activity is believed to be responsible for dispersing elk from Black Butte to Soda Lake.

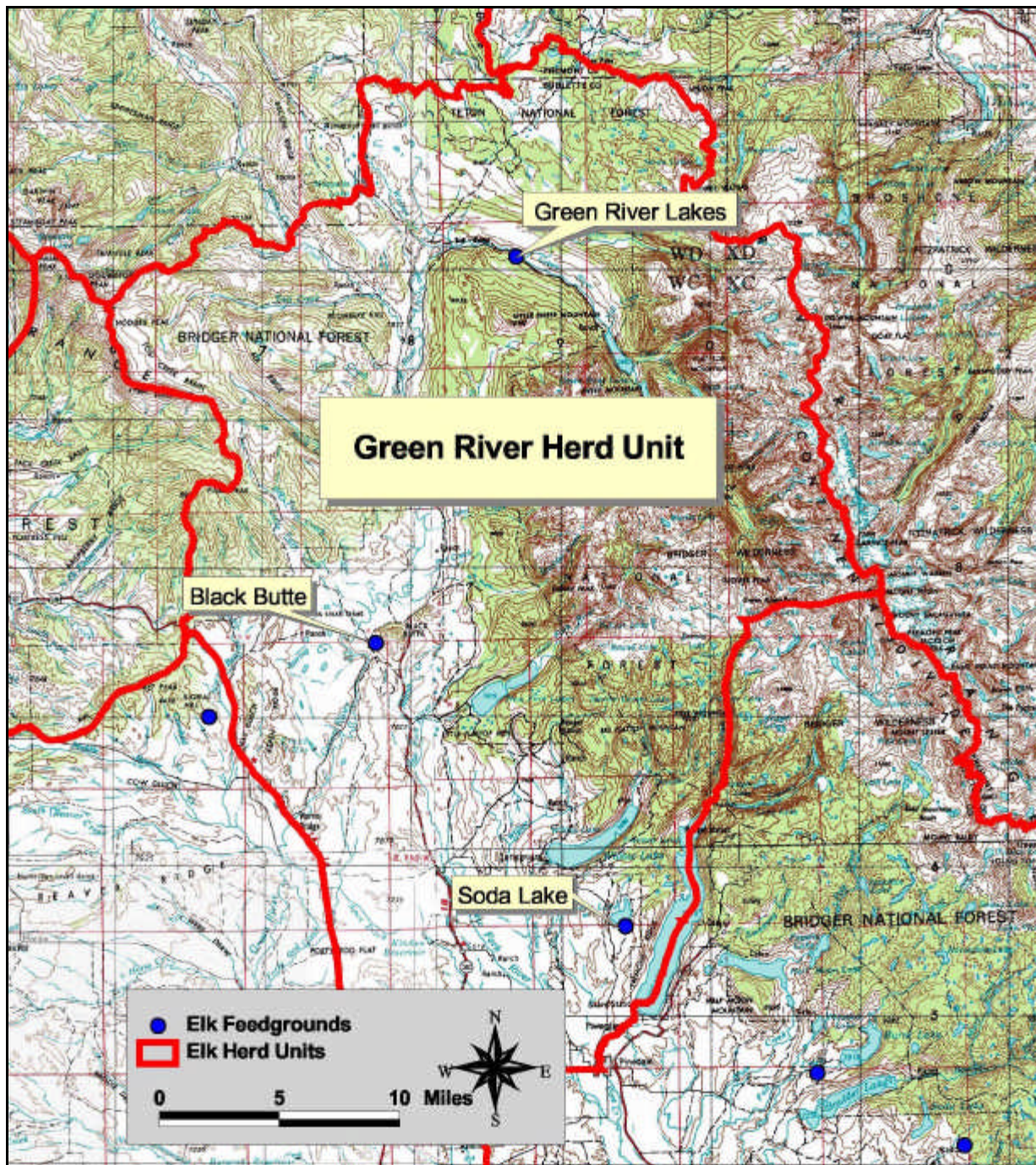


Figure 23. Location of WGFD feedgrounds in the Green River Herd Unit.

Black Butte Feedground

Landscape Characteristics and Elk Information

The Black Butte feedground is located on a 520-acre WGFD parcel, adjacent to BLM and private lands in the upper Green River Basin. The feedground is situated at the base of Black Butte, one mile east of the Green River and approximately 20 miles north of Pinedale (Figure 24). At 7,800 feet in elevation, the feedground location is characterized by sagebrush flats and extending into aspen, and mixed conifer habitats of Black Butte. Feeding normally starts in November and usually continues until May. Elk have arrived at this feedground as early as September.

According to WGFD, the potential for these elk to cause damage to private property is extremely high.

When the WGFD acquired this property, it was with the understanding that hunting would not be allowed. As a result, elk often use this property as a sanctuary during the hunting season and as a result it has become difficult to control elk numbers. Wolf activity and predation has occurred on Black Butte. Four elk were killed by wolves during the 2003-04 winter. The WGFD quota allows 500 elk to be fed at this site. The average number of elk fed at Black Butte has been 496 (Table 17), with an average feed duration of 155 days and an average cost of \$68 per elk.

Brucellosis vaccination began at this feedground in 1989. Through the winter of 2003-04, a total of 2,430 juveniles and 909 adult females have been inoculated.

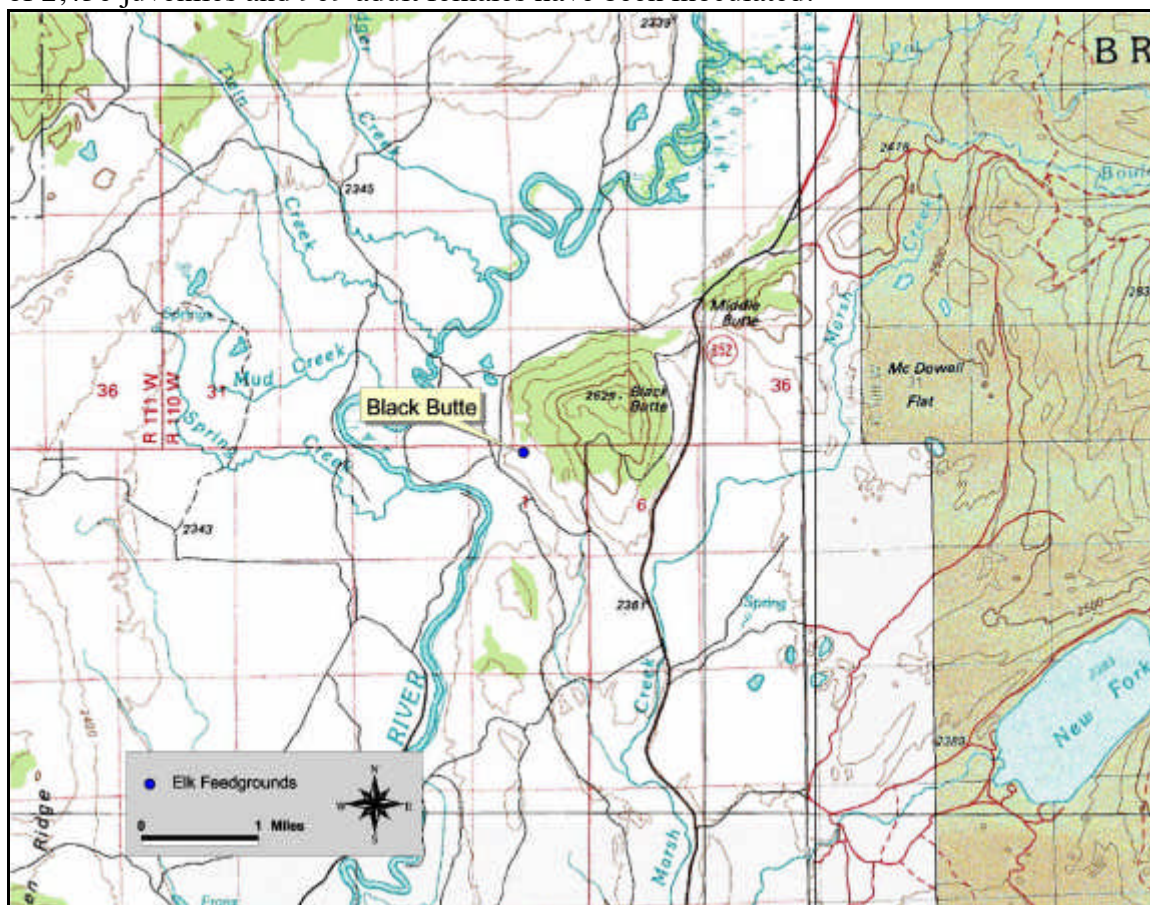


Figure 24. Location of Black Butte Feedground.

Table 17. Summary data for Black Butte feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	431	310	166	6	48	0.72
1976-77	410	183	97	0	30	0.45
1977-78	488	397	176	1	59	0.81
1978-79	495	308	161	2	41	0.62
1979-80	400	295	159	0	53	0.74
1980-81	506	248	136	0	38	0.49

1981-82	398	320	175	0	63	0.8
1982-83	448	334	185	0	71	0.75
1983-84	400	326	167	0	65	0.82
1984-85	256	167	156	4	58	0.65
1985-86	285	262	161	0	76	0.92
1986-87	424	348	178	2	70	0.82
1987-88	530	162	133	1	34	0.31
1988-89	591	443	164	3	69	0.75
1989-90	553	357	143	4	75	0.65
1990-91	425	336	167	2	88	0.79
1991-92	468	366	160	5	81	0.78
1992-93	550	448	188	1	92	0.81
1993-94	608	344	138	0	60	0.57
1994-95	523	241	127	3	50	0.46
1995-96	425	330	144	2	90	0.78
1996-97	610	484	167	3	92	0.79
1997-98	610	438	163	2	88	0.72
1998-99	667	465	155	2	79	0.79
1999-20	740	441	140	4	64	0.6
2000-01	785	421	148	14	64	0.54
2001-02	296	230	148	1	126	0.78
2002-03	473	213	138	6	62	0.45
2003-04	577	438	161	6	85	0.76
AVERAGE	496	334	155	3	68	0.69

WGFD Operation Plan

Primary Management Concerns

1. Feeding should begin early in the season to reduce the likelihood of elk leaving the area and causing damage to private property. When elk are not fed, they move south to Alexander's property and eventually cross WY 352. From here they have to be moved to Soda Lake or back to Black Butte, both of which are difficult tasks for WGFD personnel.
2. Efforts should be made to re-negotiate the land agreement, which prohibits hunting on the unit. Growing numbers of elk will increase the cost of operating the feedground without offering any additional hunting opportunities. Because the WGFD manages the Herd Unit based on population objectives, increased number of elk at this feedground will ultimately result in reducing numbers of elk on native ranges and/or the other feedgrounds.

Secondary Management Issues

1. Wolf activity on the feedground may affect the management of these elk.

Management Suggestions/criteria

1. Feeding should be initiated before the elk leave the feedground and cause damage to private property or co-mingle with livestock.
2. Feeding can be terminated when sufficient residual/new growth forage is available in the spring. The potential for these elk to cause damage during the spring is low.

Upper Green River Feedground

Landscape Characteristics and Elk Information

The Upper Green River Feedground is located on, and surrounded by, USFS lands. The feedground is situated along the upper Green River, some 35 miles north of Pinedale, approximately 5 miles below Green River Lakes (Figure 25). At 7,900 feet in elevation, the feedground location is mountain meadow, adjacent to conifer, riparian shrub, and sagebrush habitats. The location of this feedground is very remote and accessible only by a 15-mile snow-machine trip during the winter. Potential damage concerns are not an issue at this location. This feedground serves primarily to prevent elk starvation in the upper Green River and has been in operation for about 70 years. Snow depth accumulations are less here than at nearby locations and results in a relatively shorter feeding season. Also, several hundred elk (500-600) typically free range on Pinyon Ridge, which is a short distance from the feedground. The groomed snow-machine trail, used to access Green River Lake, passes through the edge of the feedground and can be a source of elk disturbance.

The WGFD quota allows 673 elk to be fed at this site. The average number of elk fed at Upper Green River has been 510 (Table 18), with an average feed duration of 122 days and an average cost of \$50 per elk.

Brucellosis vaccination began at this feedground in 1986. Through the winter of 2003-04, a total of 1,805 juveniles and 1,006 adult females have been inoculated.

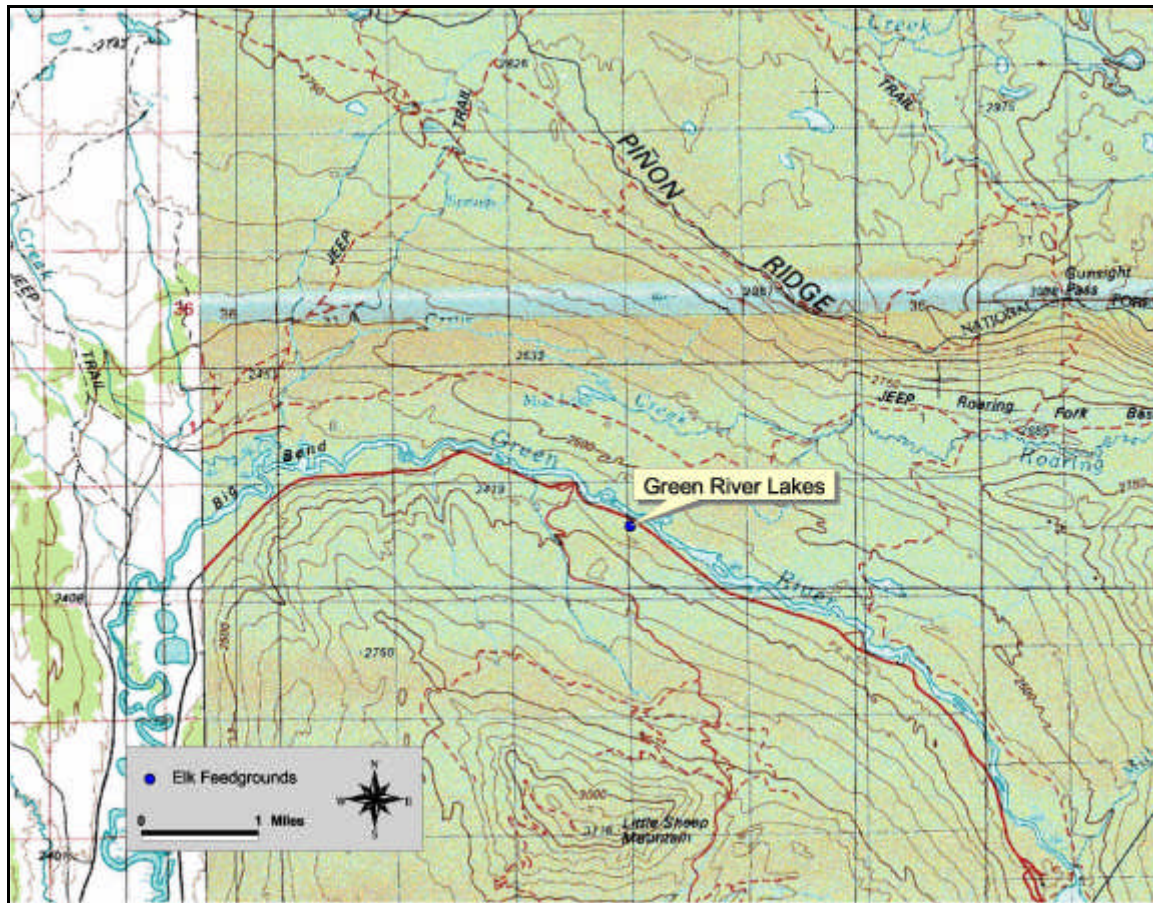


Figure 25. Location of Upper Green River (Green River Lakes) Feedground

Table 18. Summary data for Green River Lakes feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	633	270	122	1	32	0.43
1976-77	660	147	96	0	17	0.22
1977-78	651	377	131	9	43	0.58
1978-79	700	391	156	3	39	0.56
1979-80	650	309	108	7	34	0.48
1980-81	577	311	139	1	42	0.54
1981-82	426	398	164	1	75	0.93
1982-83	435	299	157	3	59	0.69
1983-84	490	386	151	1	65	0.79
1984-85	440	298	134	3	59	0.68
1985-86	560	449	162	6	69	0.8
1986-87	640	315	127	1	45	0.49
1978-88	640	292	110	1	43	0.46
1988-89	645	327	157	9	48	0.51
1989-90	480	190	95	6	47	0.4
1990-91	430	230	138	1	61	0.53
1991-92	408	208	120	3	54	0.51

1992-93	440	257	135	2	67	0.58
1993-94	415	126	106	1	36	0.3
1994-95	430	149	84	0	38	0.34
1995-96	473	233	108	0	53	0.49
1996-97	540	287	128	7	68	0.53
1997-98	480	179	96	5	52	0.37
1998-99	475	177	102	7	42	0.37
1999-20	400	161	96	1	48	0.4
2000-01	325	73	73	0	33	0.22
2001-02	480	214	119	4	66	0.45
2002-03	352	163	92	1	64	0.46
2003-04	504	229	118	1	58	0.45
AVERAGE	510	257	122	3	50	0.5

WGFD Operation Plan

Primary Management Considerations

1. Because of the remote location, enough hay should be stored at this location to handle maximum elk numbers for a long feeding season.
2. Feeding practices should not encourage free ranging elk in the area to visit the feedground, especially elk from Pinyon Ridge.

Secondary Management Considerations

1. Monitor snow-machine activity on and near the feedground and make an effort to minimize disturbance to the elk.
2. Be aware that the feeder is isolated and that some method of monitoring safety and well-being should be employed.

Management Suggestions/criteria

1. Feeding at this site can be delayed without risk of elk causing damage or co-mingling with livestock. The decision to initiate feeding is normally based on snow conditions and forage availability. Feeding should begin when 100-200 elk begin spending most of their time on or near the feedground. Snow depths are normally 12 to 18 inches when this happens.
2. Elk will voluntarily leave the feedground in the spring as forage becomes available in surrounding areas. Feeding should be terminated when most elk have moved off the feedground.

Soda Lake Feedground

Landscape Characteristics and Elk Information

The Soda Lake feedground is located on a 3,800-acre WGFD parcel bordered by USFS and BLM lands. The feedground is situated in a sagebrush basin near Soda Lake, approximately 5.5 miles north of Pinedale (Figure 26). At 7,600 feet in elevation, the feedground location is characterized by sagebrush grassland habitats, adjacent to higher elevation aspen and mixed conifer to the north and east. An elk fence runs for 25 miles along its lower edge and is effective in keeping elk off of private property. Because of the fence, feedground management can be altered to promote more free ranging elk than other feedgrounds in the area. Also, the area offers

several hundred acres of terrain and vegetation that is suitable for wintering elk. As a result, the beginning and ending feeding dates can be modified to encourage more elk to free range. Feed seasons at Soda Lake are often among the shortest of any feedground. Consequently, feed costs are also among the lowest of any feedground.

The feedground location was shifted a short distance to the east during the mid 1990's to keep elk further away from Soda Lake. Nitrogen levels in the lake were higher than desired and elk feces were considered the source. Although the feedground and feeding sites were moved, a subsequent study showed that nitrogen levels in the lake did not respond to changes in elk feeding practices. The WGFD quota allows 800 elk to be fed at this site. The average number of elk fed at Soda Lake has been 721 (Table 19), with an average feed duration of 113 days and an average cost of \$40 per elk.

Wolf activity and predation has occurred at Soda Lake. During the 2003-04 winter, twelve elk were reportedly killed by wolves.

Brucellosis vaccination began at this feedground in 1992, with poor success. However, vaccination coverage has improved during years. Through the winter of 2003-04, a total of 1,365 juveniles and 821 adult females have been inoculated.



Figure 26. Location of Soda Lake Feedground.

Table 19. Summary data for Soda Lake feedground, 1975-76 to 2003-04.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	610	301	141	6	32	0.49
1976-77	465	121	104	0	19	0.26
1977-78	700	427	143	15	43	0.61
1978-79	675	430	145	23	41	0.64
1979-80	640	284	151	2	30	0.44
1980-81	330	86	126	0	24	0.26
1981-82	586	341	149	5	47	0.58
1982-83	620	390	142	5	52	0.63
1983-84	630	366	141	2	47	0.58
1984-85	569	262	130	2	39	0.46
1985-86	715	463	158	10	52	0.65
1986-87	615	265	103	5	37	0.43
1987-88	503	149	110	0	34	0.3
1988-89	800	370	138	4	43	0.46
1989-90	760	238	89	1	36	0.31
1990-91	800	433	134	4	51	0.54
1991-92	670	337	118	4	54	0.5
1992-93	810	386	129	1	53	0.48
1993-94	500	59	47	0	15	0.12
1994-95	600	109	66	1	22	0.18
1995-96	1090	416	90	3	43	0.38
1996-97	852	457	118	12	65	0.54
1997-98	885	268	74	1	36	0.3
1998-99	895	267	90	3	32	0.3
1999-20	1015	366	91	1	38	0.36
2000-01	800	323	98	5	48	0.4
2001-02	1304	449	117	7	51	0.34
2002-03	906	148	51	1	21	0.16
2003-04	551	207	90	10	46	0.38
AVERAGE	721	301	113	5	40	0.42

WGFD Operation Plan

Primary Management Issues

1. Frequent monitoring is required on this feedground than to encourage free ranging elk, but not allow them to leave the area. Although adequate amounts of native forage are available in the early winter, elk can leave via open gates and/or around the south end of the fence if they are not closely monitored.

Secondary Management Considerations

1. None.

Management Suggestions/criteria

1. Gates through the elk fence must be left open as long as possible to allow migrating deer to pass through and to allow elk access to the feedground. The initiation of feeding can be delayed at this feedground until behavior and movement of the elk indicate that they

are foraging south and east of the feedground. At this time the gates should be closed and feeding started.

2. Feeding can be terminated in the spring as the elk begin to move off the feedground and begin foraging on native range. The feeder can gradually reduce feed amounts to encourage elk to free range.

PINEDALE HERD UNIT (E108)

The Pinedale Herd Unit covers approximately 2,400 mi², includes two hunt areas (97-98), and has a post-season population objective of 1,900 elk (Figure 27). The 2003 post-season population estimate was 1,950 elk. Consistent with other herd units in western Wyoming, elk numbers have remained at or above objective levels for the last 10 years.

The majority of elk in this herd unit occupy public land managed by the USFS, of which nearly half is designated wilderness where access is limited to foot or horseback travel. The remaining USFS lands have moderate vehicle and trail access. Most of the private lands in this herd unit occur at lower elevations and contain riparian and agricultural habitats along the Big Sandy, East Fork, Boulder Creek, and Pole Creek drainages. According to WGFD, livestock grazing during the summer and early fall sometimes causes a significant reduction in available forage for the elk during the fall months.

The WGFD operates three feedgrounds in the herd unit: Fall Creek, Scab Creek, and Muddy Creek. These feedgrounds are generally located in transition ranges, between higher-elevation USFS lands and lower-elevation private land livestock operations. According to WGFD, elk wintering in this herd unit pose serious damage problems. The feedgrounds are situated to minimize this threat and keep elk separated from livestock and private property. Implementation of the Hunter Management program in the Chimney Buttes area has minimized some traditional damage problems. Additionally, the prescribed fire conducted on Half Moon Mountain was successful in terms of improving the quality of native range and decreasing damage problems.

Wolf activity and predation has been reported at Fall Creek and Scab Creek. However, according to WGFD, there has been no feedground management problems associated with wolf activity. Elk were fed an average of 8.34 lb/elk/day, or 0.56 ton per elk for the entire winter. The cost of feeding elk was \$70.78 per animal, which is \$8 more than the Region average.

The cost of feeding elk in the Pinedale Herd Unit is generally above the Region average. Hay and feeder costs were \$70 per elk in 2003-2004, compared to a Region average of \$66, and the amount of hay fed (8.3 lb/elk/day) was higher than most herd units.

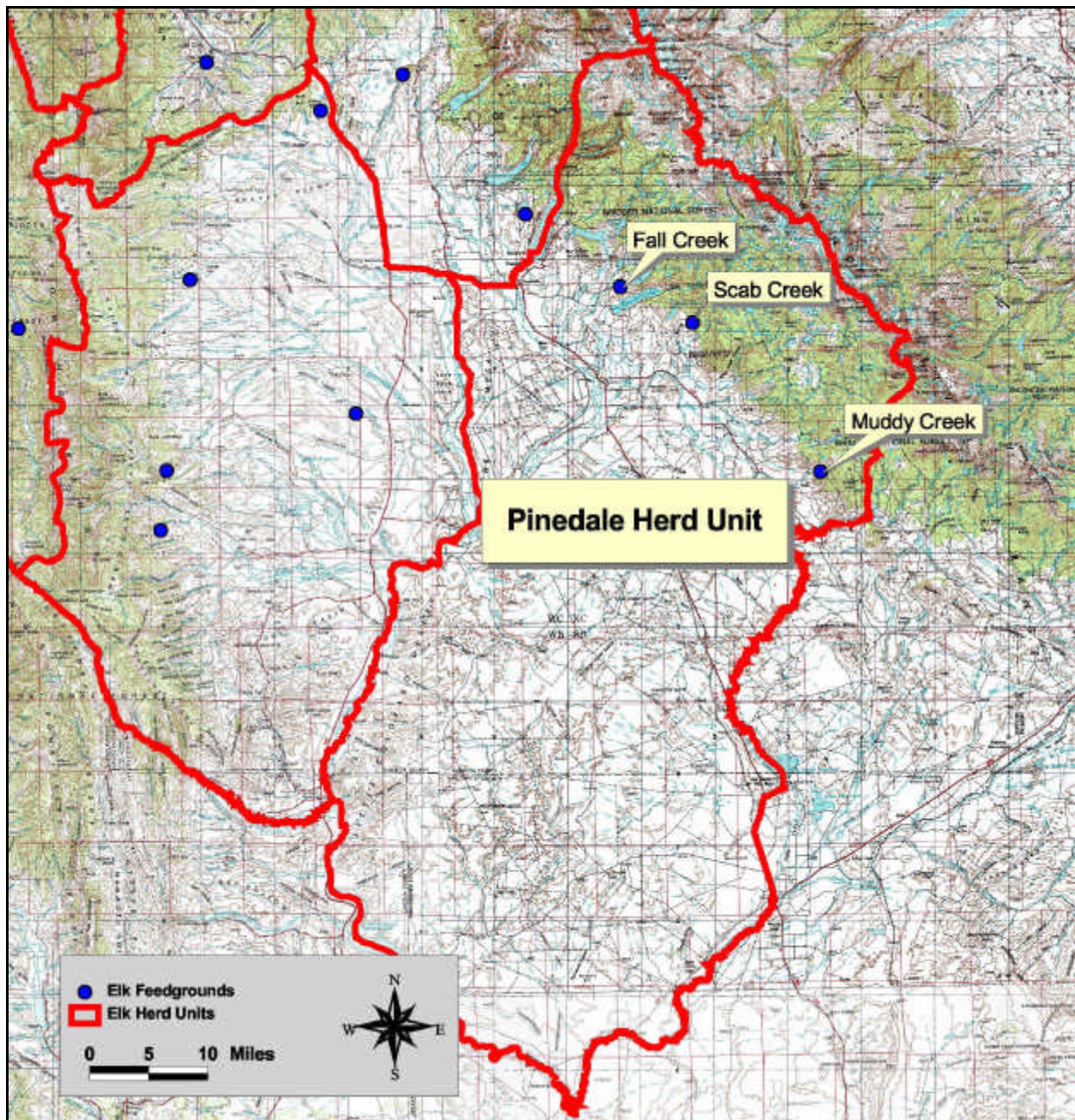


Figure 27. Location of WGFD feedgrounds in the Pinedale Herd Unit.

Fall Creek Feedground

Landscape Characteristics and Elk Information

The Fall Creek feedground is located on a WGFD section bordered by USFS, BLM, and private lands. Some feeding occurs on adjacent USFS land. The feedground is situated in a large meadow along Fall Creek and below Burnt Lake, in the central portion of the Wind River Range, approximately 8 miles east of Pinedale (Figure 28). At 7,800 feet in elevation, the feedground location is characterized by mountain meadow and shrub habitats, adjacent to lower elevation

sagebrush habitats to the west and higher elevation aspen and mixed conifer to the east. The prescribed fire conducted on Half Moon Mountain was successful in terms of improving the quality of native range and decreasing damage problems.

Brucellosis vaccination began at this feedground in 1994. Through the 2003-04 winter, a total of 1,878 juveniles and 822 adult females had been inoculated.

The WGFD quota allows 700 elk to be fed at this site. The average number of elk fed at Fall Creek has been 648 (Table 20), with an average feed duration of 135 days and an average cost of \$50 per elk.

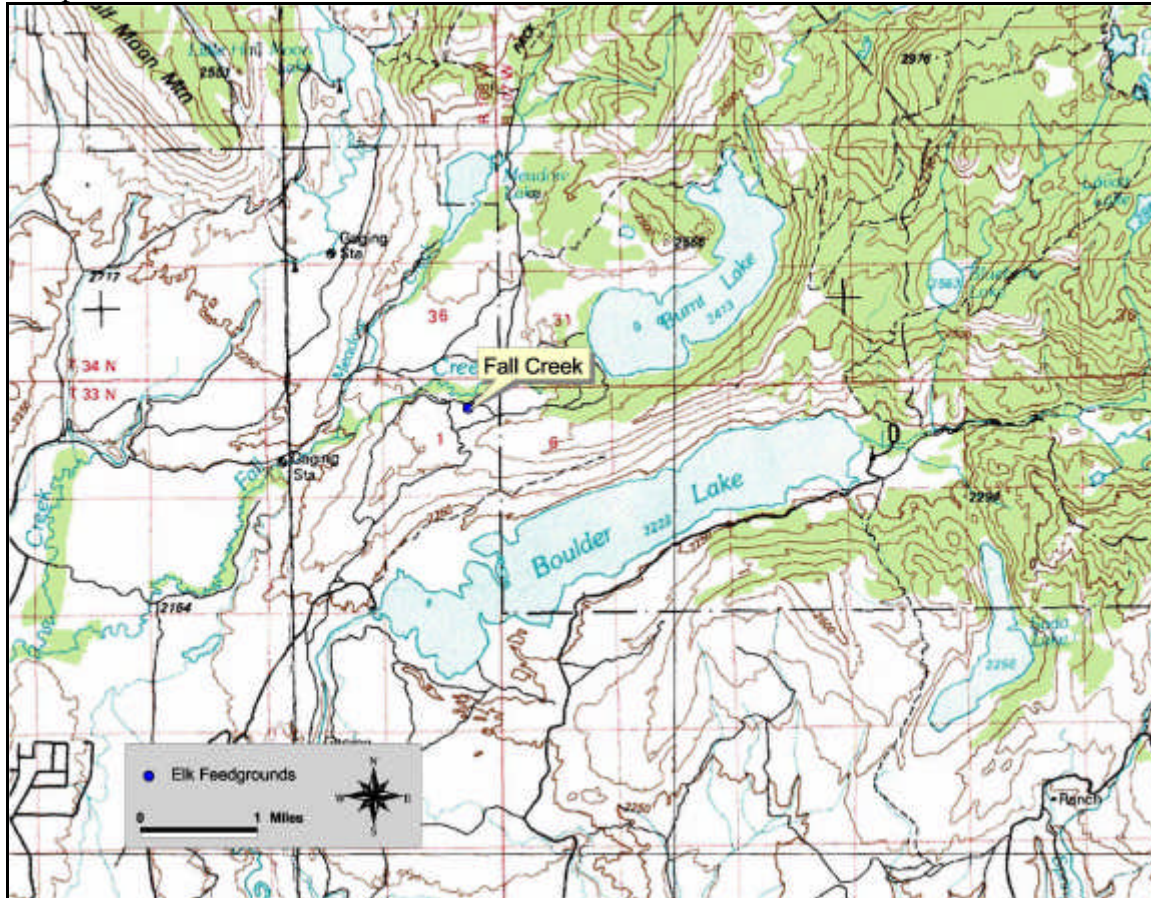


Figure 28. Location of Fall Creek Feedground.

Table 20. Summary data for the Fall Creek feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	660	490	140	0	40	0.74
1976-77	605	253	98	0	28	0.42
1977-78	720	449	140	9	44	0.62
1978-79	580	318	158	6	36	0.55
1979-80	517	322	152	2	42	0.62
1980-81	460	207	132	2	35	0.45
1981-82	465	315	156	4	55	0.68
1982-83	563	352	161	3	53	0.63

1983-84	570	372	153	4	56	0.65
1984-85	470	205	139	4	44	0.44
1985-86	527	349	163	10	58	0.66
1986-87	500	265	141	1	51	0.53
1987-88	675	299	122	1	41	0.44
1988-89	680	364	153	7	48	0.54
1989-90	710	277	132	4	49	0.39
1990-91	735	346	142	2	50	0.47
1991-92	700	360	132	11	55	0.51
1992-93	914	419	145	6	52	0.46
1993-94	742	327	128	2	53	0.44
1994-95	813	325	100	2	43	0.4
1995-96	754	368	120	3	62	0.49
1996-97	936	559	154	4	81	0.6
1997-98	635	261	129	4	60	0.41
1998-99	806	230	107	3	35	0.28
1999-20	533	280	123	1	53	0.53
2000-01	691	282	120	2	49	0.41
2001-02	696	337	124	3	76	0.48
2002-03	482(182)	147	121	0	46	0.3
2003-04	618	300	119	2	62	0.49
AVERAGE	648	324	135	4	50	0.51

WGFD Operation Plan*Primary Management Issues*

1. Preventing damage to private property should be the primary factor in the operation of this feedground. Once migrating elk have moved beyond the feedground they are very difficult to bring back.

Secondary Management Issues

1. Elk should be fed away from the stream (Fall Creek) that flows along the edge of the feedground.
2. Living quarters are provided at this feedground. Because the feeder is isolated, they should have some means of communicating in case of emergency.

Management Suggestions/criteria

1. Elk will generally utilize native range on the Half Moon Unit until forage becomes limited. Feeding should begin when the Half Moon Unit can no longer support elk and before they move onto the Fayette Ranch where co-mingling with livestock and damage to stored crops are concerns. It is very difficult to move elk back to the feedground once they are on the Fayette Ranch.
2. Feeding can be terminated as the elk begin leaving the feedground in the spring and hay consumption declines. The feeder can reduce feed amounts to encourage elk to free range.

Scab Creek Feedground

Landscape Characteristics and Elk Information

The Scab Creek feedground is located on a large parcel of BLM land bordered by USFS, State, and private lands. The feedground is situated on a ridge between the upper ends of Scab and Spring Creek, in the central portion of the Wind River Range, approximately 9 miles northeast of Boulder (Figure 29). At 7,900 feet in elevation, the feedground location is characterized by mountain shrub habitats, adjacent to lower elevation sagebrush habitats to the west and higher elevation aspen and mixed conifer to the east. According to WGFD, this area is one of the worst feeding sites among all the feedgrounds because: 1) the area is relatively small with many scattered boulders, 2) there is no permanent water source, so water for the horses must either be hauled or snow melted, and 3) heavy cattle grazing leaves little native forage available to hold elk as they pass through the area in the early winter. As a result, feeding at this location often begins earlier than other feedgrounds. The WGFD often initiates early feed dates to prevent elk from moving past the feedground onto lower-elevation areas where they may cause damage to private property or co-mingle with livestock.

Brucellosis vaccination began at this feedground in 1995. Through the 2003-04 winter, a total of 1,431 juveniles and 1,123 adult females had been inoculated.

Elk numbers at Scab Creek have gradually increased since 1998 (Table 21) and in 2003, more elk were fed at Scab Creek than any other year since 1975-76. The 2003-04 attendance figures were 216 elk over the long-term average and 210 over the WGFD quota of 500. The average number of elk fed at Scab Creek has been 494 (Table 21), with an average feed duration of 155 days and an average cost of \$64 per elk.

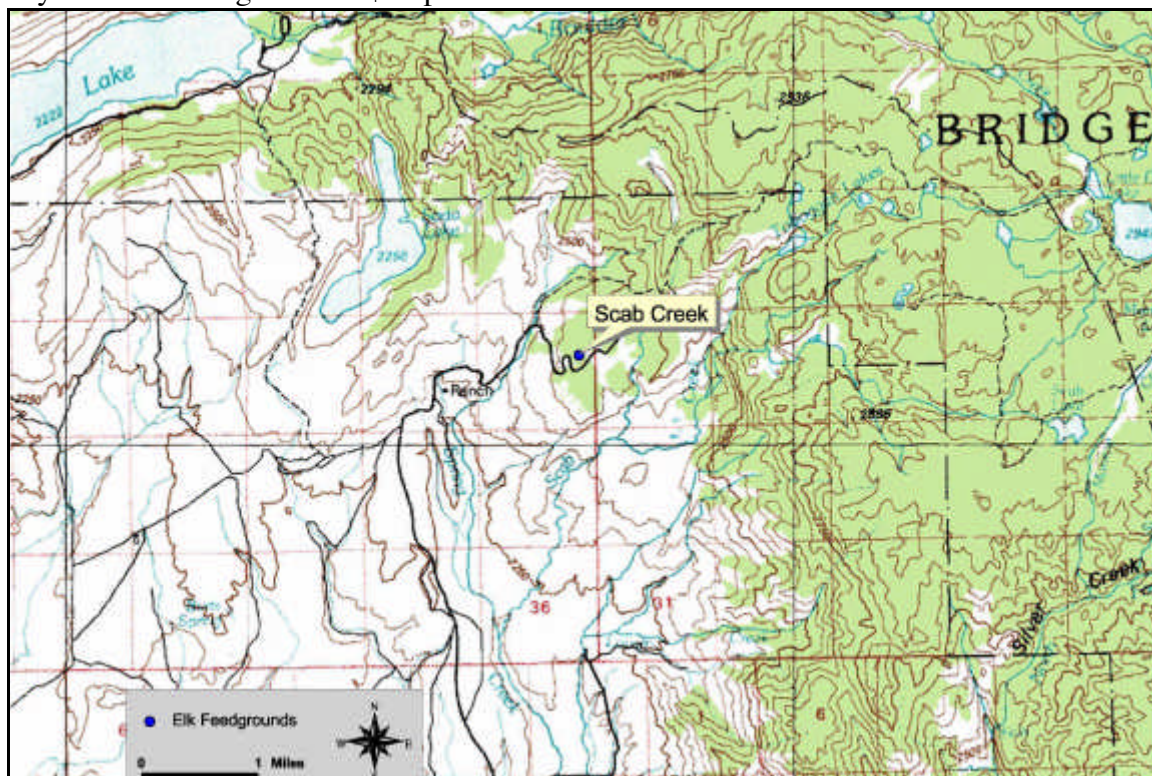


Figure 29. Location of Scab Creek Feedground.

Table 21. Summary data for the Scab Creek feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	377	202	143	0	38	0.54
1976-77	200	71	98	0	28	0.36
1977-78	315	197	137	0	51	0.63
1978-79	198	136	157	0	56	0.69
1979-80	215	109	153	2	35	0.51
1980-81	150	76	135	0	52	0.51
1981-82	340	196	176	0	57	0.58
1982-83	416	271	174	2	61	0.65
1983-84	485	246	180	1	51	0.51
1984-85	510	252	160	1	47	0.49
1985-86	615	361	171	1	56	0.59
1986-87	587	286	156	1	49	0.49
1987-88	673	364	163	0	54	0.54
1988-89	670	364	153	3	54	0.54
1989-90	529	290	172	5	73	0.55
1990-91	555	335	176	5	74	0.6
1991-92	504	288	154	5	63	0.57
1992-93	550	392	180	3	87	0.71
1993-94	578	347	166	4	71	0.6
1994-95	515	274	174	4	72	0.6
1995-96	503	356	147	0	82	0.71
1996-97	631	503	171	4	108	0.8
1997-98	601	384	164	2	95	0.64
1998-99	586	316	151	2	69	0.53
1999-20	631	299	117	1	56	0.47
2000-01	627	351	142	1	68	0.55
2001-02	620	363	134	9	93	0.59
2002-03	651	385	135	2	85	0.59
2003-04	710	416	142	4	80	0.59
AVERAGE	494	286	155	2	64	0.58

WGFD Operation Plan*Primary Management Concerns*

1. Because of the high damage potential in the area, the main feedground concern is gathering elk at the feedground before they migrate to lower-elevation private lands.

Secondary Management Concerns

1. Potential damage problems may occur in the spring if elk move to lower elevations and get onto private property.
2. The number of elk on this feedground has been over the WGFD quota for the past 20 years and the additional elk are currently being accepted as normal. The WGFD quota should be changed to reflect current management.

Management Suggestions/criteria

1. Feeding is immediately started when elk arrive in the fall because there is little native forage available and significant damage problems can result if the elk move on to private property.
2. Efforts should be made to encourage elk to free range in the spring. On many feedgrounds, the elk will voluntarily leave in the spring regardless of feeding practices. However, elk on this feedground can be held with supplemental feeding and reduce the potential for private property damage. Feeding can be reduced in the spring as the native range becomes available, but close monitoring of residual/new growth forage should be made to ensure elk do not move onto private property and cause damage.

Muddy Creek Feedground

Landscape Characteristics and Elk Information

The Muddy Creek feedground is located on the edge of the BTNF bordered by State, BLM, and private lands. This is the southern most feedground on the Pinedale Front and, according to WGFD, is a poor feeding site. The feedground is situated in the bottom of a large canyon along the southern portion of the Wind River Range, approximately 5 miles east of Big Sandy (Figure 30). At 7,700 feet in elevation, the feedground location is characterized by mountain shrub habitats, adjacent to lower elevation sagebrush habitats to the west and higher elevation aspen and mixed conifer to the east. Several livestock operations are located within a few miles of the feedground and damage concerns dictate many of the feedground management decisions. An elk fence constructed south of the feedground has not been effective at containing elk and reducing damage to private property.

Brucellosis vaccination began at this feedground in 1995. Through the 2004 feeding season, a total of 1,118 juveniles and 822 adults have been vaccinated. Elk trapping was conducted at the Muddy Creek feedground during the 2003-04 to obtain culture isolates from seropositive elk for comparison with a bovine reactor isolate from an adjacent brucellosis positive cattle herd. Muddy Creek has been trapped 4 times prior to 2004 (1990, 91, 96, and 97). A predetermined sample size of 15 yearling and adult females was achieved in one trap day (2/3/04), with 49 total elk trapped and tagged. Four of the 15 elk tested positive for *Brucella* exposure, for a seroprevalence of 27%. This rate is similar to 24% seroprevalence in 1997, and the mean rate of 30% for all years. The *Brucella* strain found in the elk and infected cattle were the same.

The WGFD quota allows 580 elk to be fed at this site. The average number of elk fed at Muddy Creek has been 600 (Table 22), with an average feed duration of 148 days and an average cost of \$58 per elk.

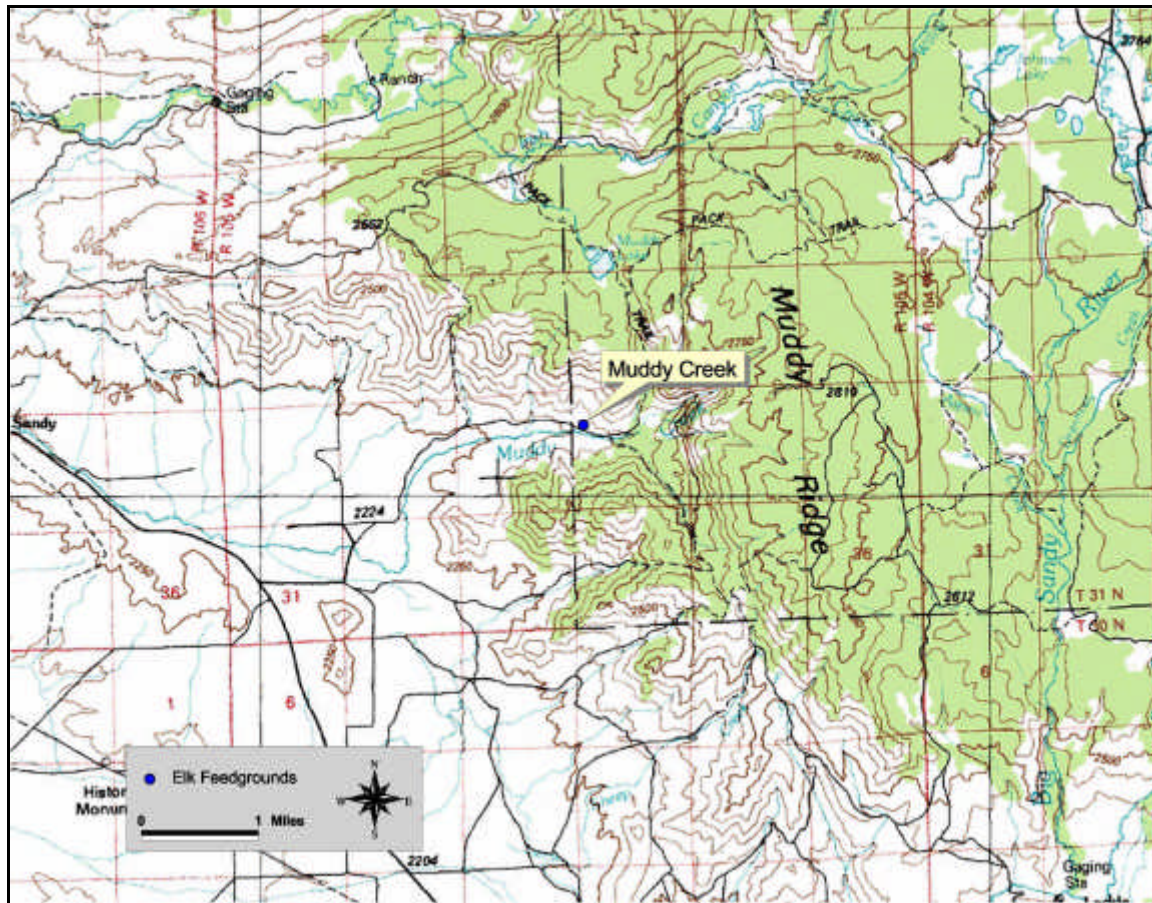


Figure 30. Location of Muddy Creek Feedground.

Table 22. Summary data for the Muddy Creek feedground, 1975-1976 to 2003-2004.

YEAR	ELK #	TONS	DAYS	DEAD	COST/ELK	TON/ELK
1975-76	803	622	153	1	42	0.77
1976-77	770	285	102	2	24	0.37
1977-78	470	305	141	1	47	0.65
1978-79	580	378	159	4	43	0.65
1979-80	473	309	151	5	46	0.65
1980-81	480	231	143	3	39	0.48
1981-82	486	415	171	0	70	0.85
1982-83	610	335	165	6	48	0.55
1983-84	620	402	175	0	55	0.65
1984-85	430	260	156	3	56	0.6
1985-86	483	321	160	7	61	0.66
1986-87	431	230	155	0	52	0.53
1987-88	560	288	117	1	47	0.51
1988-89	564	366	162	2	67	0.65
1989-90	537	247	148	4	59	0.46
1990-91	648	449	168	2	82	0.69
1991-92	590	363	150	3	63	0.62

1992-93	780	490	171	2	72	0.63
1993-94	730	265	145	0	47	0.36
1994-95	750	375	154	11	58	0.5
1995-96	786	322	120	2	48	0.41
1996-97	523	390	161	7	101	0.75
1997-98	594	313	147	0	67	0.53
1998-99	566	359	153	1	76	0.63
1999-20	676	290	119	4	50	0.43
2000-01	580	334	126	3	57	0.58
2001-02	635	327	132	3	73	0.51
2002-03	550	279	135	5	72	0.51
2003-04	486	270	129	2	73	0.56
AVERAGE	600	341	148	3	58	0.58

WGFD Operation Plan*Primary Management Issues*

1. Preventing private property damage and elk/cattle interactions are the primary concerns at this feedground.

Secondary Management Issues

1. Access to and from the feedground is allowed through an easement with adjacent landowners. Good working relationships need to be maintained with the landowners.

Management Suggestions/Criteria

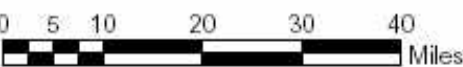
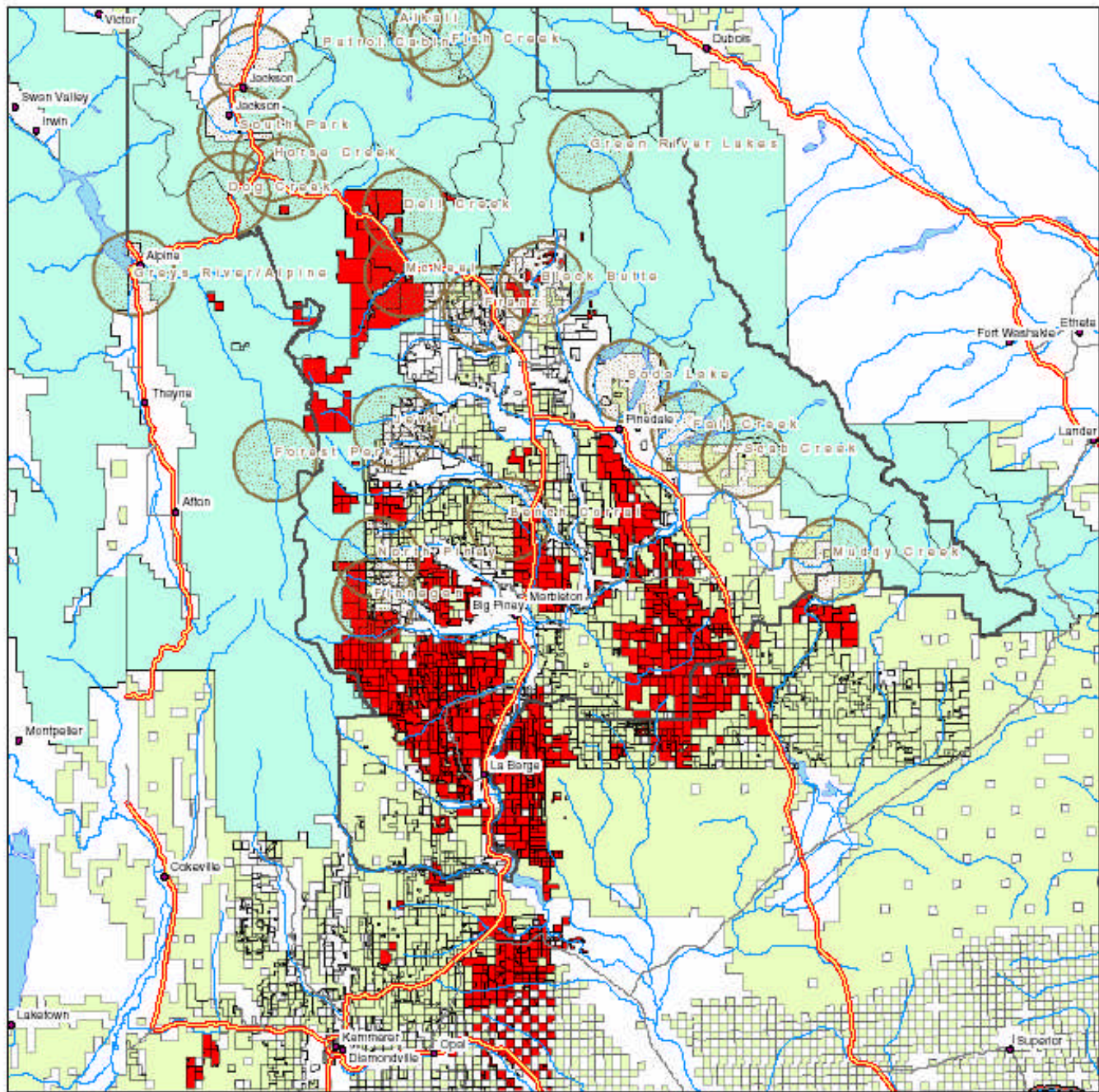
1. Feeding should be initiated when elk arrive at the feedground and show signs of moving from the area or if snow and forage conditions indicate that available forage is marginal. Feeding should begin early enough to keep elk off private hay meadows located north of the elk fence.
2. Feed amounts can be reduced in the spring to encourage elk to leave.

APPENDIX II:
Elk Feedgrounds and Oil & Gas Leasing

Elk Feedgrounds and Oil & Gas Leasing

Upper Green River Valley, Wyoming

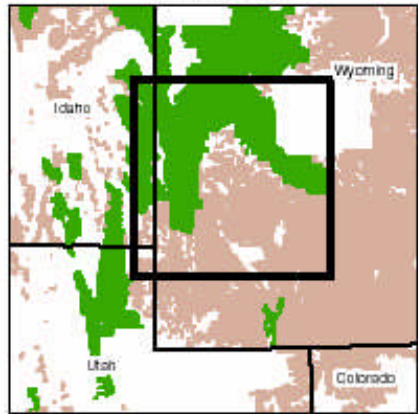
Leases In Production As Of 2002



Map Legend

- Elk Feedgrounds, 5 Mile Buffer
- BLM Pinedale Field Office
- Leases held in production as of April, 2002
- All Leases
- Lakes and Reservoirs
- BLM Lands
- Forest Service Lands

Index Map



Index Legend

- BLM Lands
- Forest Service Lands

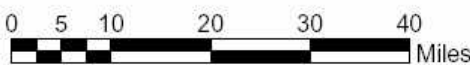
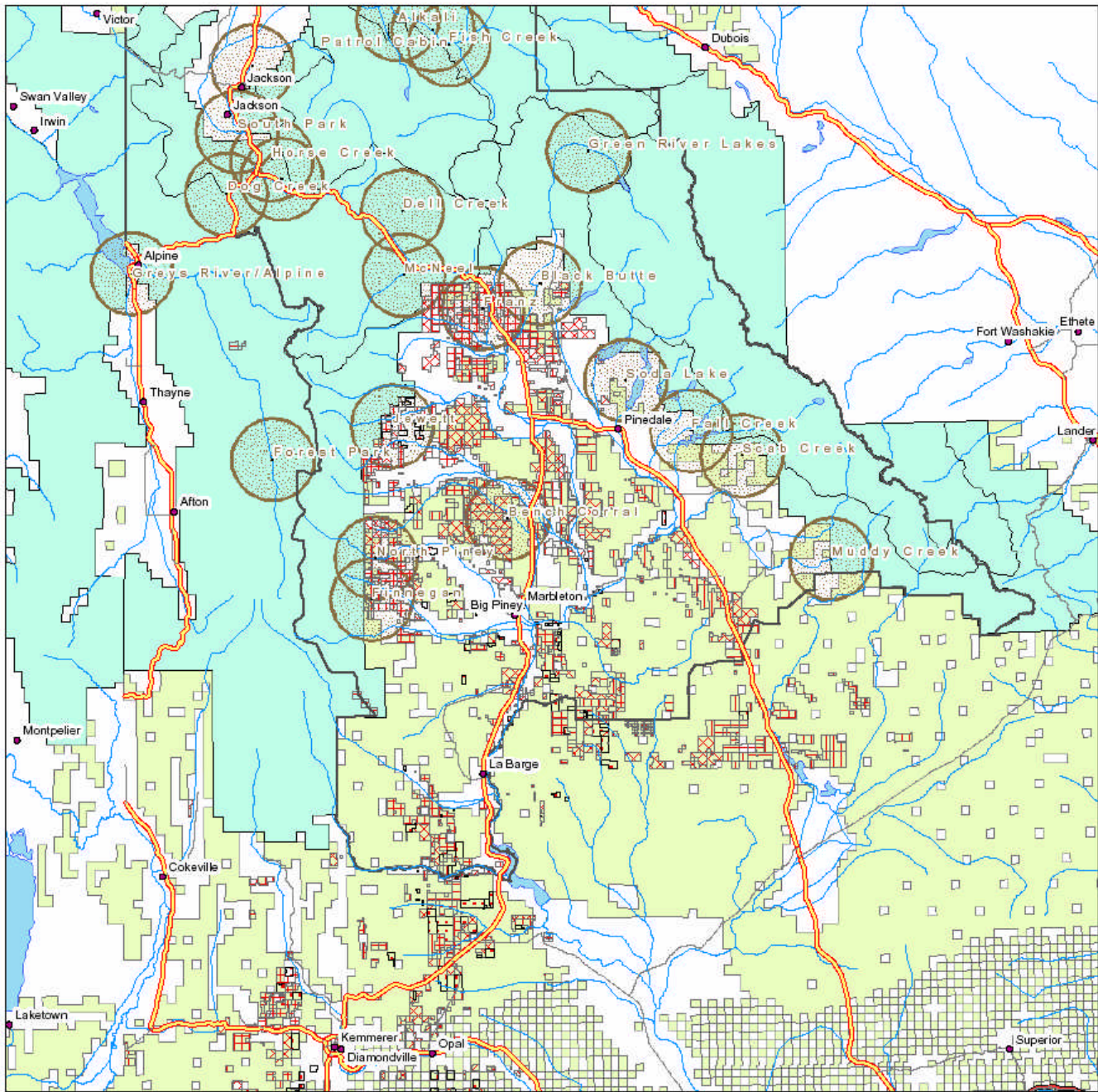


Data derived from BLM Lease database for the Pinedale Field Office. Leases in production are those without lease expiration year.

Elk Feedgrounds and Oil & Gas Leasing

Upper Green River Valley, Wyoming

Leases Expiring between 2002 and 2006

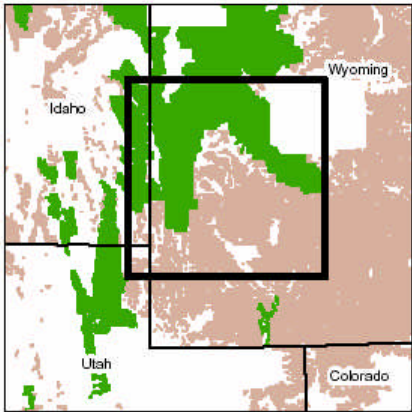


Map Legend

- Elk Feedgrounds, 5 Mile Buffer
- BLM Pinedale Field Office
- BLM Lands
- Forest Service Lands
- Year of Expiration**
 - 2002
 - 2003
 - 2004
 - 2005
 - 2006



Index Map



Index Legend

- BLM Lands
- Forest Service Lands

Data derived from BLM Lease database for the Pinedale Field Office.