DRAFT

STATEWIDE ELK MANAGEMENT PLAN FOR MONTANA

2004

Montana Department of Fish, Wildlife, and Parks

Wildlife Division

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ACRONYMS AND ABBREVIATIONS

AB –Antlered Bull
AHM – Adaptive Harvest Management
ATV – All-Terrain Vehicle
BAB – branch-antlered bull
BLM – Bureau of Land Management
BM – Block Management
BTB – Brow-Tined Bull
CV – coefficient of variation
CWD – Chronic Wasting Disease
DNRC—Montana Department of Natural Resources and Conservation
EMU – Elk Management Unit
ES – Either Sex
FWP – Montana Fish, Wildlife & Parks
FY – Fiscal year
GYA – Greater Yellowstone Area
GYIBC – Greater Yellowstone Interagency Brucellosis Committee
HB – House Bill
HD – Hunting District
LE – Limited Entry
MBO – Montana Board of Outfitters
MCA – Montana Codes Annotated
MRB – Missouri River Breaks
MOGA – Montana Outfitters and Guides Association
NPS – National Park Service
ORV – Off-Road Vehicle
PL/PW – Private Land/Public Wildlife
SD – Standard deviation
USFS – United States Forest Service
USFWS – United States Fish and Wildlife Service
WMA – Wildlife Management Area
YNP – Yellowstone National Park

INTRODUCTION

Managing Montana's elk populations at levels compatible with other land uses and meeting the current and future demand for hunting and other recreation has become increasingly complex, demanding increased comprehensive planning. FWP has operated under some form of elk plan since 1978. In 1992, Montana adopted a new, comprehensive elk plan. The process for formulating this plan was initiated in 1988 and differed from previous plans in 3 important ways: 1.) 35 elk management units (EMUs) were established based on similar ecological characteristics and each generally encompassed the yearlong range of a major elk population, 2.) statewide and EMU elk population objectives were established, and 3.) there was much greater public involvement in the planning process than for previous plans. The 1992 elk plan included statewide goals, objectives, management strategies and management guidelines. Under this broad "umbrella", each of the 35 EMU plans had management objectives and strategies specific to local habitat, elk population and landownership characteristics.

FWP intended the plan to provide guidance to wildlife and land managers for planning and policy decisions. It was also intended to help FWP personnel prioritize field activities, manage time and budgets, make elk management recommendations and coordinate management with other state and federal agencies and private landowners. The plan was to remain current through annual updating.

After 10 years and increasing problems in some phases of elk management, a need for substantial revision of the 1992 elk plan became apparent. For example, despite increases in numbers of antlerless elk permits issued and somewhat more liberal hunting seasons, 21 (or nearly 60%) of Montana's 35 EMUs exceeded objectives for numbers of elk counted in 2002. Game damage complaints were increasing in some areas that frustrated private landowners. Conversely, number of elk counted in some areas, primarily in northwestern Montana, were below objectives.

After internal scoping for important issues relative to elk management in Montana, on 19 November 2002, FWP issued a call to the public to inform us of elk management issues important to them. In addition to issues raised internally, elk management issues and concerns raised by the public are important to successfully address elk management challenges and determine if new issues have surfaced. FWP announced that they would take public comment through 30 December. Although any issues relative to elk management were solicited, to stimulate comments, FWP listed examples of issues that arose through internal scoping. Examples of these issues were:

- Some federal lands have different elk population and hunter access objectives than Montana's elk plan.

- Lack of hunting pressure on private lands compared to adjacent public lands is creating "refuges" and growing elk populations that, in turn, create damage problems for adjacent landowners who allow hunting.
- It is unfair for some hunters to have sole access to hunt bull elk on private lands when the general public is provided access only to hunt antlerless elk on the same lands.
- Mild weather conditions during the fall can hinder adequate harvest of elk during the general hunting season, even on public lands.
- The lack of good forage conditions on public lands in some areas causes elk to use private lands more frequently during winter and spring.
- FWP's road management policies that provide security for bull elk in conjunction with state and federal road management programs may be resulting in a reduction in antlerless elk harvest.

Within the overall revision, FWP and the FWP Commission decided to address the harvest management aspect of the overall elk management program by incorporating Adaptive Harvest Management (AHM) concepts into the hunting regulation setting process. This part of the elk plan will be similar to the AHM plan for mule deer (Wildlife Division, FWP, 2001). There are 4 major components in the AHM system: population objectives, a monitoring program, hunting regulation alternatives and modeling. The first and foremost is establishment of population objectives. These objectives must be measurable via a strong monitoring program, the second component. The third element is to select hunting regulation alternatives that can be implemented when the monitoring program detects significant changes in population status (Wildlife Division, FWP, 2001). The fourth element, modeling the dynamics of elk populations to predict future changes in numbers will not be implemented at this time due to budget, personnel and time constraints. AHM is a dynamic, learning as you go process. In that vein, there will be need to adjust population objectives, monitoring parameters and guidelines, and hunting regulation packages as results of the initial plan are determined through monitoring. Therefore, the public should realize that "the elk plan" is not set in stone, but will evolve as learning takes place through the AHM process. Further, although the elk plan will serve as a source of information and guidance to the FWP Commission, it does not preempt Commission authority to formulate annual rules, set hunting seasons and regulations or implement emergency actions in response to unexpected events or circumstances.

INITIAL PUBLIC PARTICIPATION

FWP received 408 responses from the public to the call for scoping for issues. Respondents were from 94 different Montana towns and 15 other states. Fourteen of the total responses were from groups/agencies. Additionally, to identify issues important to the public we used internal scoping, issues raised by the Private Land/Public Wildlife Advisory Council Report and Recommendations, the Legislative Audit Divisions performance audit of the Big Game Inventory and Survey Process, and issues underlying more than 20 bills introduced into the 58th Montana Legislature that were related to elk management.

Issues raised by the public fell into 8 broad categories:

- Elk population numbers
- Access to lands for elk hunting
- Hunting seasons/Strategies
- Equity of opportunity
- Economic issues
- Biological/Ecological issues (including wolves and predation)
- Habitat issues
- Information/Data issues

There were a variety of sub-issues and some of these related to several broad categories. These sub-issues are listed below in no particular order and include items for which FWP has no legal authority.

- How is "too many elk" defined and what is the basis for setting numerical objectives for elk populations?
- Hunter access to elk and availability of elk for harvest.
- Wolf predation on elk/effects of other predators on elk.
- Regulating/changing the hunter outfitting industry.
- Fee hunting/leased hunting on private lands and purchases of "hunting ranches".
- Effects of high elk numbers on elk habitat, the health of elk populations, agricultural landowners livelihoods and private land habitat.
- Demographics of the hunter population – the "aging hunter syndrome" and motorized game retrieval opportunities.
- Effectiveness of Block Management and other hunter access programs.
- The effects/potential effects of various hunting season types/strategies.
- Trophy hunting/bigger/older bulls.
- The effects of weather on harvest success.
- Competition for elk, especially bull elk, among various hunter weapon user groups, residency status and economic status category.
- Costs of elk damage to private and public lands.
- Costs of improved surveys of elk numbers, harvest and habitat monitoring.
- Chronic Wasting Disease/Brucellosis.
- Management of State Wildlife Management Areas.
- Accuracy and reliability of estimates of elk numbers and harvest.
- Providing more and more timely information to the public via the FWP website and by other methods.
- Property/real estate tax law changes for private lands with fee/leased hunting or "hunting ranches".
- Regulation of ATVs and motorized access.
- Land management (including access) by Federal agencies, Montana Department of Natural Resources and Conservation (DNRC) and private landowners.

We will address these issues/sub-issues in this revised elk plan. Some issues/sub-issues are in areas for which FWP has no legal authority and FWP response is limited to an advisory capacity to other entities.

BACKGROUND INFORMATION FOR ELK PLAN

History of Elk in Montana

Elk were widely distributed across North America prior to the time Europeans first arrived (Bryant and Maser 1982). In Montana, elk were distributed throughout the lengths of the Missouri and Yellowstone River valleys at the time of the Lewis and Clark expedition in 1804 and 1805. However, observations of Lewis and Clark extended little beyond the vicinity of the major river valleys. By the early 1800s, subsistence, market, and hide hunting had almost eliminated elk east of the Mississippi River. This hunting continued to reduce elk in the western United States, and elk were gone from eastern Montana by the mid-1880s and were also heavily impacted in western Montana.

Elk probably reached a low point in numbers in North America about 1900-1910. In 1910, it was estimated that fewer than 50,000 elk existed in North America (Thomas and Lyon 1987). About half were associated with Yellowstone National Park (YNP), Jackson Hole, and the surrounding areas. The establishment of YNP in 1872 and its remoteness was a major factor in preserving elk in North America.

During the late teens and 1920s, local and national sentiment for protecting and expanding existing elk herds became stronger. Many local sportsmen's clubs were formed with a prime purpose of preserving elk. In 1910, the first transplant of elk from YNP was made to Fleecer Mountain near Butte, Montana. During the period from 1910 to 1940, a total of 1,753 elk from YNP, Jackson Hole, and the National Bison Range was transplanted to 31 sites in the National Forests of Montana (West 1941). In 1913, the Sun River Game Preserve was established and hunting season closures were established elsewhere.

In 1922, about 13,000 elk were estimated to occur in the National Forests of Montana and northern Idaho, exclusive of YNP (West 1941). Probably about 7,500-8,000 of these elk were in Montana. In 1928, an estimated 10,900 elk were in Montana (Raymer 1930). By 1940, the National Forests of Montana, excluding YNP, were estimated to contain 22,000 elk (West 1941). All these estimates are subject to question, but give a general, relative sense of elk numbers in Montana early in the 20th century.

The era of biological management began in 1940 according to Picton (1991). At that time there were only 7 major native elk herds in Montana and scattered elk at various transplant sites (West 1941, Figure 1). The first State Game Manager position was created in 1940, biologists began to be hired, and the first acquisition of land by the State for elk winter range also occurred in 1940.

Transplantation of elk continued, and from 1941 to 1970 an additional 4,140 elk were transplanted into Montana, mostly from YNP. As a result of these and earlier transplants and natural increases in distribution of existing elk, elk began to fill in much of their former habitat, including some areas of eastern Montana (Figure 2). By 1969, 10 Wildlife Management Areas (WMAs) totaling 63,000 acres had been purchased by the State for elk winter range. In 2003, 21 WMAs totaling 306,083 acres support about 17,500 wintering elk. Today, all timbered mountainous areas of western and central Montana contain elk (Figure 3). Additionally, huntable elk herds exist in isolated mountain ranges and timbered areas of eastern Montana (Figure 3). As an example, about 160 elk were transplanted into the Missouri River Breaks in 1951 and 1952. Today, that population totals over 5,000 elk.

Statewide, post-season elk numbers increased from an estimated 8,000 in 1922 to 22,000 in 1940, 40,000 in 1951, 55,000 in 1978, and an estimated 130,000 to 160,000 today.

Elk Harvest and Harvest Distribution

Statewide trends in estimated elk harvest in Montana since 1962 (Figure 4) indicate substantial increases in both antlered and antlerless harvest since the early 1980s. The decline in antlerless elk harvest in the mid-1970s (Figure 4) occurred at the same time that conservative deer seasons were implemented after a decline in deer populations (Mackie et al. 1998). Concurrently, in substantial areas of the state, season-long either- sex (ES) seasons for elk were replaced by antlered bull (AB) regulations with limited permits for antlerless elk. This reduction in hunting pressure on antlerless elk likely was the prime cause of increasing elk populations by the early 1980s.The reduction in hunting pressure on antlerless elk also increased hunting pressure and mortality on bull elk, reducing post-season bull:100 cow ratios in some areas. In some areas, this coincided with increased logging and roads that decreased security for bull elk. Excluding the peak in bull elk harvest in 1991, when many migratory bulls from the Northern Yellowstone and Gallatin herds were harvested, bull harvest has recently fluctuated around 10-12,000 annually (Figure 4). However, the recent trend has been down, even considering fluctuations due to weather. We attribute part of this decline to recent increases in numbers of HDs with brow-tined bull (BTB) regulations. Starting in about 1984, antlerless elk harvest rose to the point that it has exceeded bull harvest each year since 1992. Again, annual variation in harvest due to weather conditions is evident in the high harvests of 1994, 1996, and 2000. For Region 3, especially, 1991 was another year with high harvests of antlerless elk.

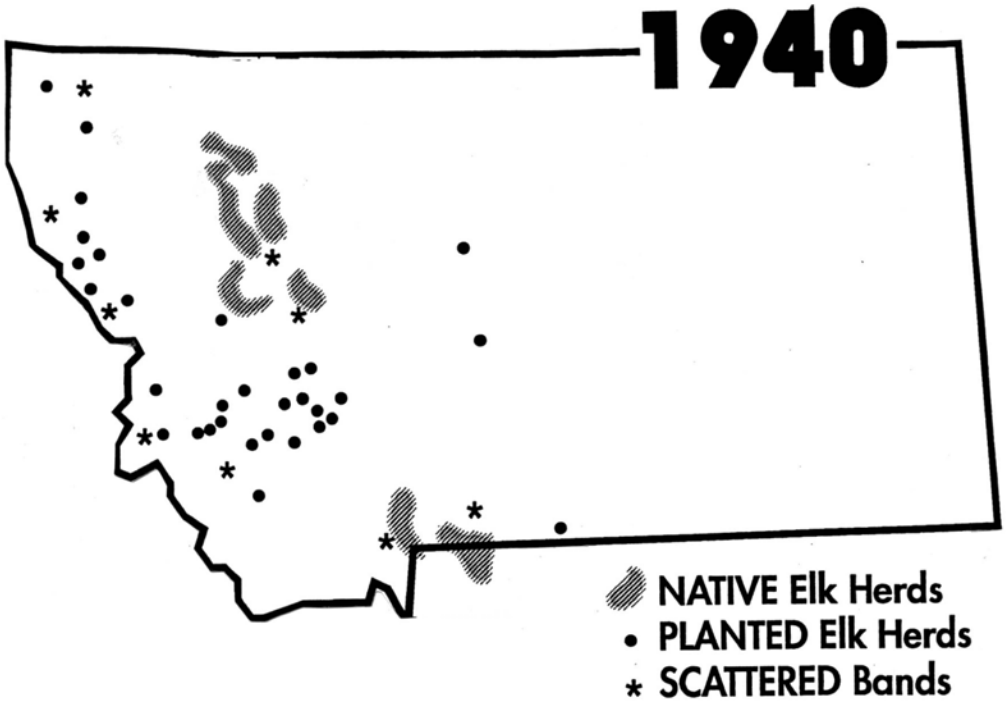


Figure 1. Distribution of elk in Montana during 1940 (from West 1941).

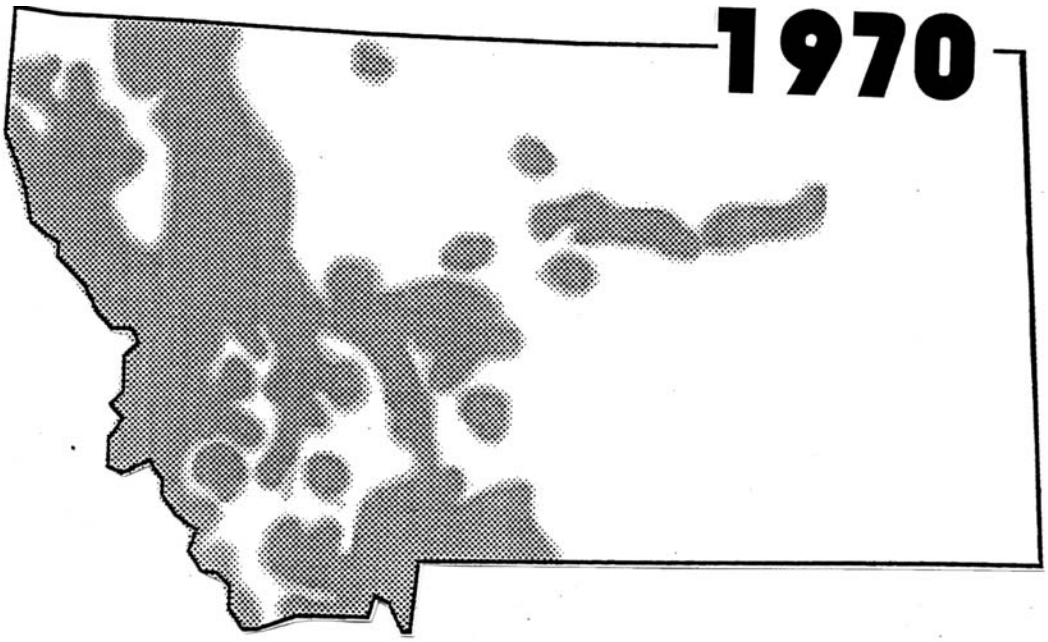


Figure 2. Distribution of elk in Montana during 1970 (from Rognrud and Janson 1971).

Figure 3. Distribution of elk in Montana during 1999.

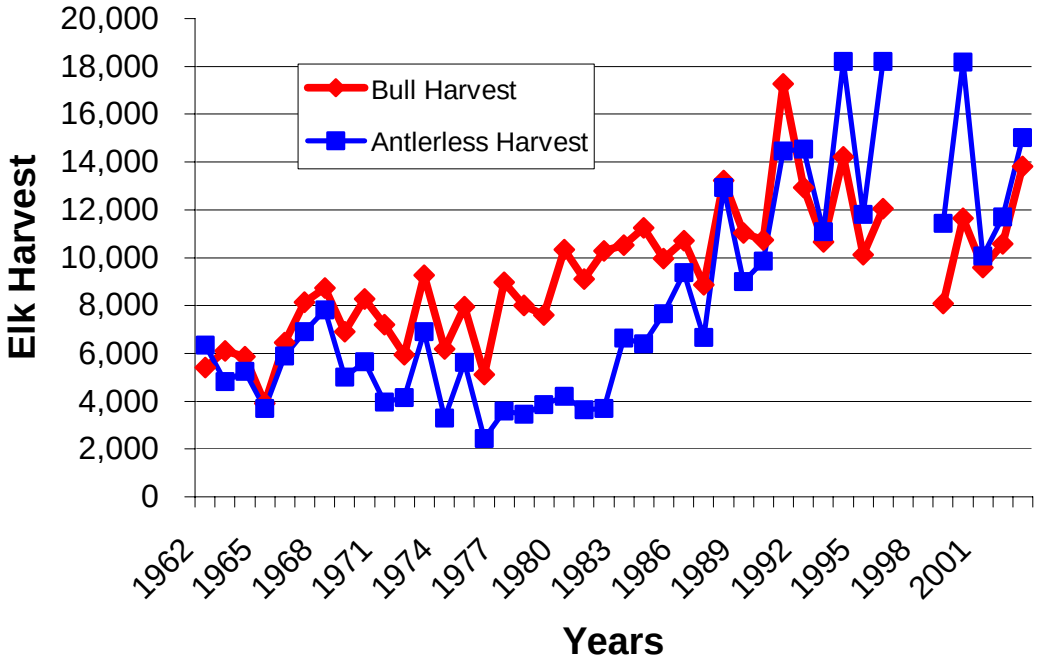


Figure 4. Annual elk harvest in Montana, 1962-2003.

Within the statewide pattern of increased elk harvest over the last 30 years, regional trends have varied. Bull elk harvest has generally always been the highest in FWP Administrative Region 3 (Figure 5) and the increase in numbers harvested has been greatest there. Bull harvests fluctuated annually and these fluctuations have increased recently (Figure 5). Generally, bull harvest in Region 3 averaged about 2,000 in the early 1960s, 3,000 in the late 1960s through the mid 1970s, about 4,500 in the 1980s, and about 6,000 bulls in the 1990s. The high harvest of 1991 was an anomaly because of the harvest of substantial numbers of bulls from Yellowstone National Park normally not accessible during the general season. Regional elk harvests have always been second highest in FWP Region 2. There, average bull harvests increased from about 1,500 in the early 1960s to about 2,500 in the 1990s, substantially less than in Region 3 (Figure 5). Similar to other Regions, a slight decline in average bull harvest may have occurred during 1999-2001. Although total number harvested has remained lower in Region 4 than Region 2, proportionally, bull harvest has increased more in Region 4 than in Region 2 (Figure 5). Bull harvests increased from an annual average of about 750 in the early 1960s to about 1,800-2,000 today. Bull harvest in Region 1 was generally stable at an annual average of about 1,100 bulls since the 1960s. However, since 1995, bull harvest has averaged about 750 annually. Bull harvest has steadily increased in Regions 5, 6, and 7 since 1960 (Figure 6). Although total numbers harvested are low compared to Regions 1, 2, 3, and 4, annual bull harvest in Region 5 is now approaching the level recorded in Region 1.

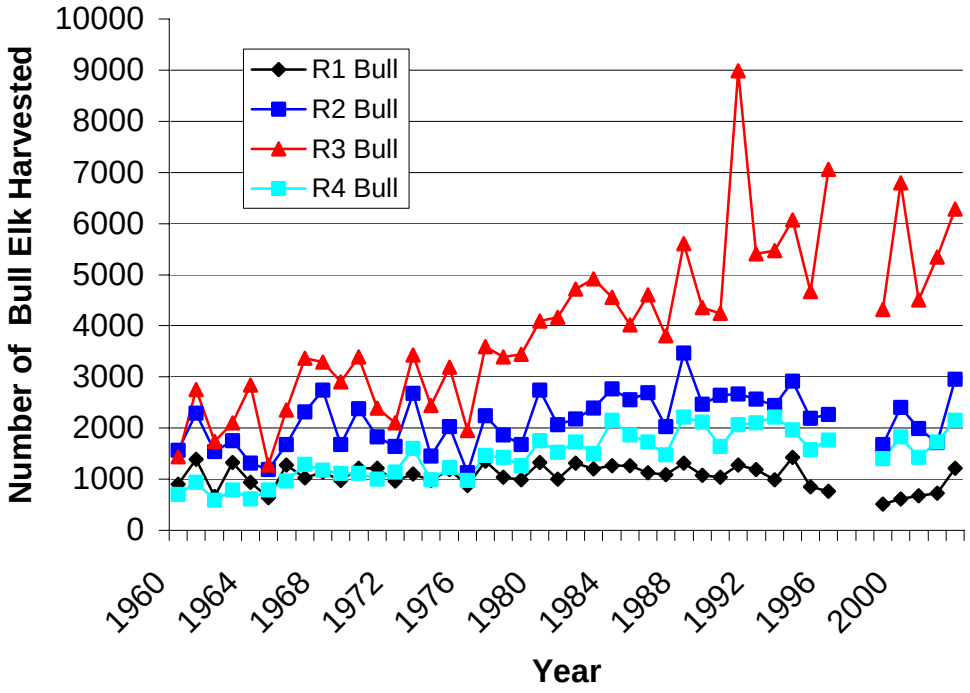


Figure 5. Annual bull elk harvest in Regions 1, 2, 3 and 4, Montana, 1960-2003.

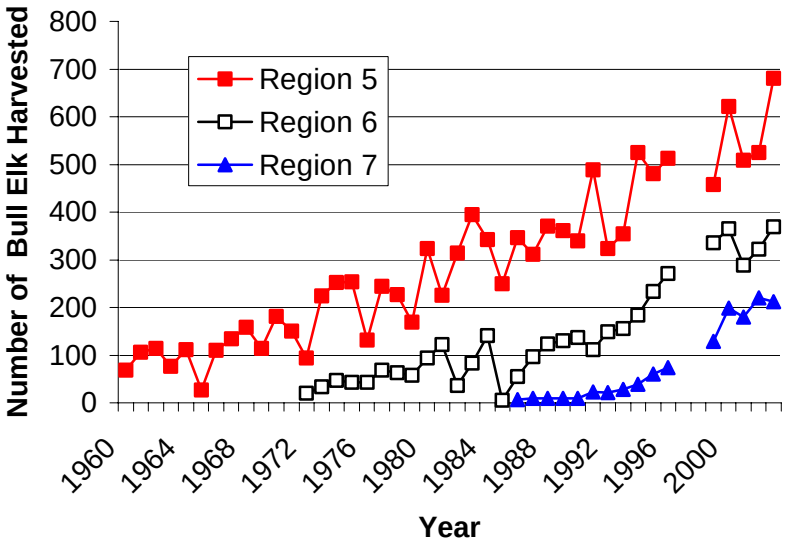


Figure 6. Annual Bull elk harvest in Regions 5, 6 and 7, Montana, 1960-2003.

Antlerless elk harvest shows a similar trend as bull harvests. Highest antlerless harvests are in Region 3 (Figure 7). There, antlerless harvest averaged about 1,800 annually during the 1960s, declined to about 1,000 during the late 1970s and early 1980s, then rapidly increased to a widely fluctuating range of 5,000 to 11,000 during the 1990s to 2001 (Figure 7). After being lower than in Region 2, antlerless harvest has increased since the early 1980s in Region 4 to be nearly equal to that of Region 2. In Region 2, antlerless harvest has increased only slightly from levels of the 1960s, when it was sometimes higher than in Region 3. By contrast, antlerless harvests in Region 4 have recently been about 3 times levels of 1960 – 1984. Similar to results for bull elk harvest, antlerless elk harvest in Region 1 has declined substantially since the 1960s (Figure 8). Antlerless elk harvests in Regions 5, 6, and 7 have increased substantially, following the same pattern as bull harvest (Figure 8).

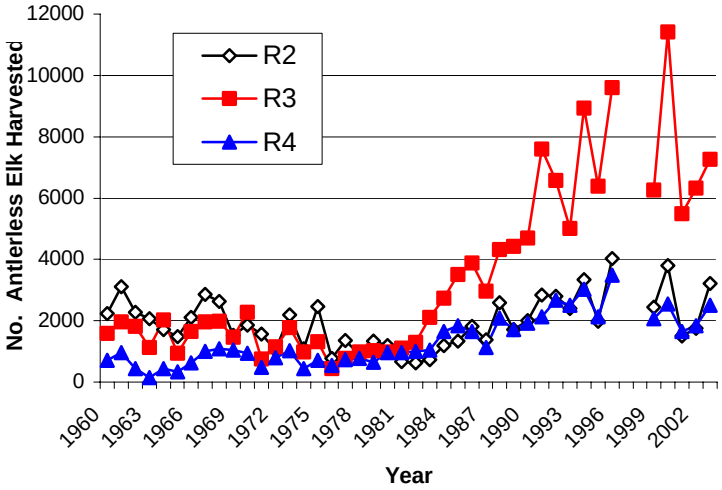


Figure 7. Annual antlerless elk harvest, Regions 2, 3 and 4, Montana, 1960-2003.

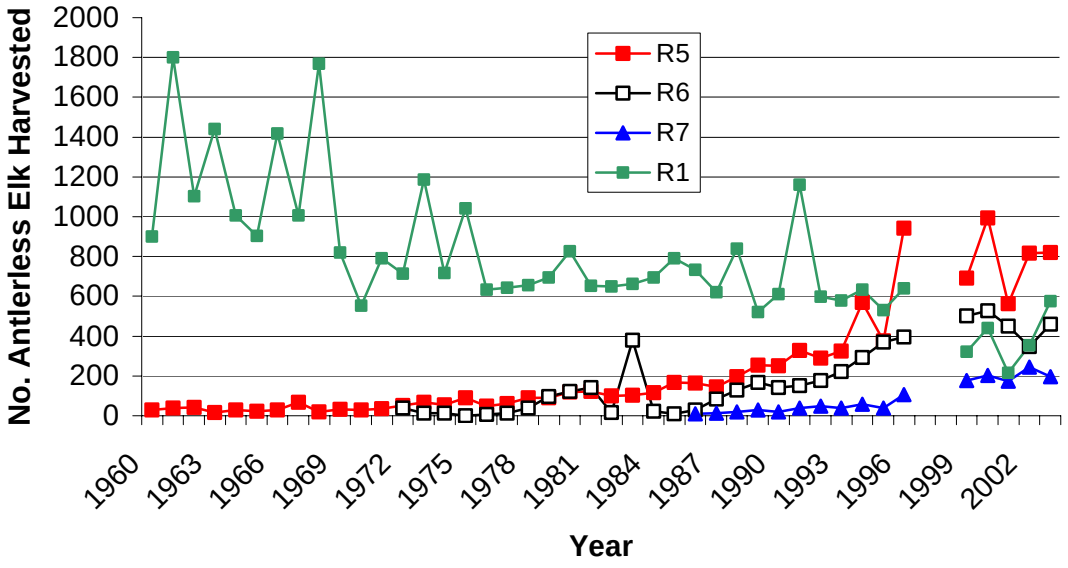


Figure 8. Annual antlerless elk harvest, Regions 1, 5, 6 and 7, Montana, 1960-2003.

Of elk kills where location was identified to either public or private land, about 65% of elk were killed on public lands and 35% on private lands during each year, 1992, 1993, and 1997 (Table 1). Harvest on public lands was highest in FWP Regions 1, 6, and 3. Harvest on private lands was highest in Regions 5, 4, and 7. Harvest by landownership in Region 2 was near the statewide average. To some extent, these figures are biased toward private lands because FWP has issued permits valid only on private lands (or outside the National Forests) for some areas with game damage.

Table 1. Distribution of elk kill identified to either public or private lands, 1992, 1993, and 1997.

Statewide	Regional	Public Land	Private Land
1992		65.5	34.5
1993		66.1	33.9
1997		64.1	35.9
1997	R1	84.0	16.0
1997	R2	61.2	38.8
1997	R3	72.7	27.3
1997	R4	48.6	51.4
1997	R5	36.5	63.5
1997	R6	76.2	23.8
1997	R7	58.5	41.5

Density distribution of bull elk harvest by HD, averaged for 1999-2001 (Figure 9), indicated that the highest harvest density was in southwestern and west central Montana. Density distribution of antlerless elk harvest for the same period was similar (Figure 10). Generally, highest harvest density distribution coincided with

EMUs where observed elk numbers were above objectives, indicating the attempt by FWP to reduce elk numbers in those areas.

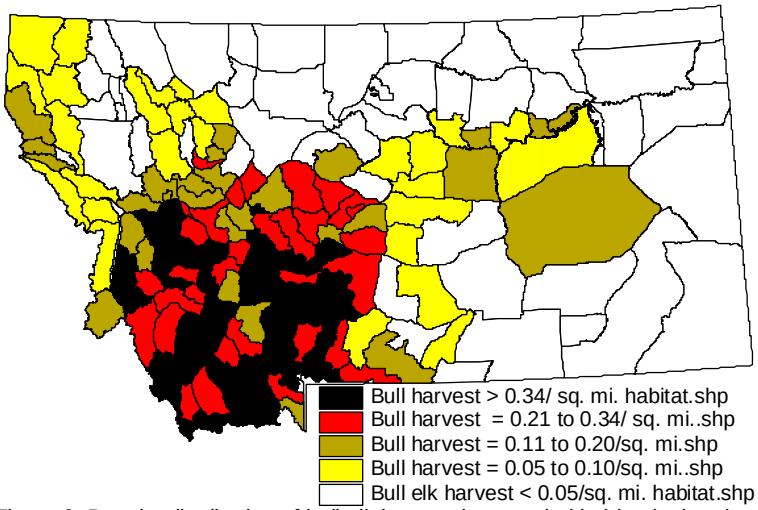


Figure 9. Density distribution of bull elk harvest in occupied habitat by hunting district, 1999-2001.

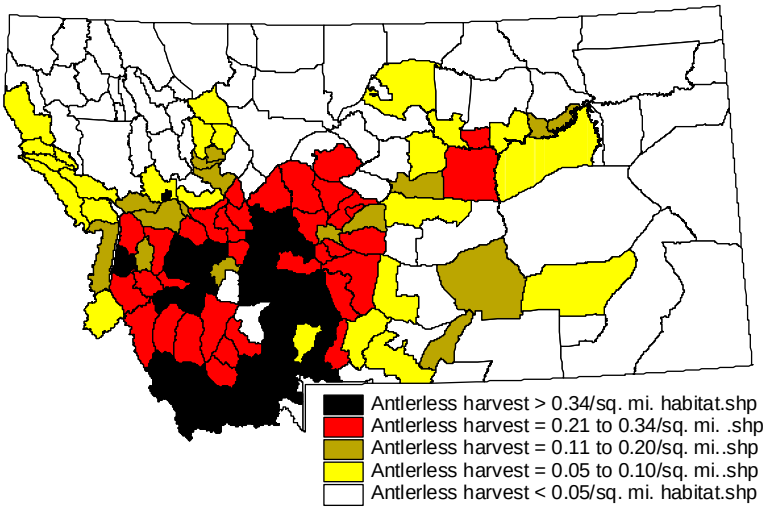


Figure 10. Density distribution of antlerless elk harvest in occupied habitat by hunting district, 1999-2001.

Hunter Numbers and Distribution

Elk hunter numbers have approximately doubled since the 1950s, though they have been relatively stable at about 100,000 hunters on a statewide basis since 1985 (Figure 11). For 1999-2001, resident elk hunters averaged 88,353 (85.0%) annually and non-resident hunters averaged 15,641 (15.0%), for a total annual average of 103,994 elk hunters. Resident hunters accounted for 91.2% of antlerless harvest and

73.5% of bull harvest. Non-resident hunters accounted for 8.8% of antlerless harvest and 26.5% of bull harvest. In Colorado, where a less expensive non-resident antlerless elk license is available, non-residents account for up to 20% of antlerless harvest (J. Ellenberger, personal communication). For 1999-2001, resident and non-resident elk hunters averaged about equal success rates on special permits, 34.8% and 34.4%, respectively. For the general elk license, non-residents averaged nearly twice the success rate (20.5%) of residents (10.7%). This was likely due, at least in part, to the much greater use of outfitters by non-resident elk hunters.

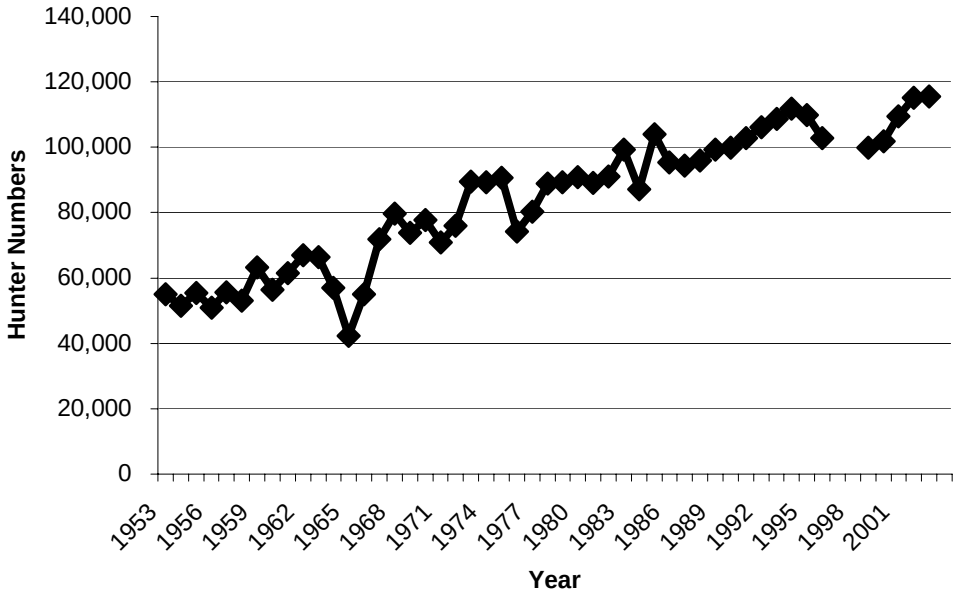


Figure 11. Annual number of elk hunters in Montana, 1953-2003.

Regional trends in hunter numbers (Figures 12 and 13) indicate that patterns have been different across the state. Note that because hunters may hunt in more than one Region, the sum of Regional numbers is greater than the statewide total of individual hunters. The greatest increase in hunter numbers occurred in Region 3, especially accelerating compared to other Regions since about 1977 (Figure 12). The relative increase for Region 3 became even more apparent after 1990 (Figure 12). By contrast, hunter numbers in Regions 1, 2, and 4 were relatively stable since the mid-1970s, declining slightly during 1999-2002, especially in Region 1 (Figure 12). In Regions 5, 6, and 7, hunter numbers increased steadily since the 1980s, but decreased in 2001 (Figure 13). The apparent declines in Regional hunters in 2001 (Figures 12 and 13) compared to the increase in statewide hunters that year (Figure 11) indicated that fewer hunters hunted multiple Regions that year. Average hunter density distribution by HD during 1999-2001 (Figure 14) indicated that generally, hunter density and elk harvest (Figures 9 and 10) coincided. However, northwestern Montana had relatively higher hunter density (Figure 14) than elk harvest (Figures 9 and 10). Increased hunter numbers in FWP Administrative Region 3 has led to recent complaints and concerns with hunter crowding, aesthetics, and ethics.

The age of the average resident hunter increased from 37 in 1988 to 42 in 1998 and remained stable at 42 in 2002 (King and Brooks 2001 and unpublished). Average age of non-resident hunters increased from 43 in 1988 to 47 in 1998 and was not measured in 2002.

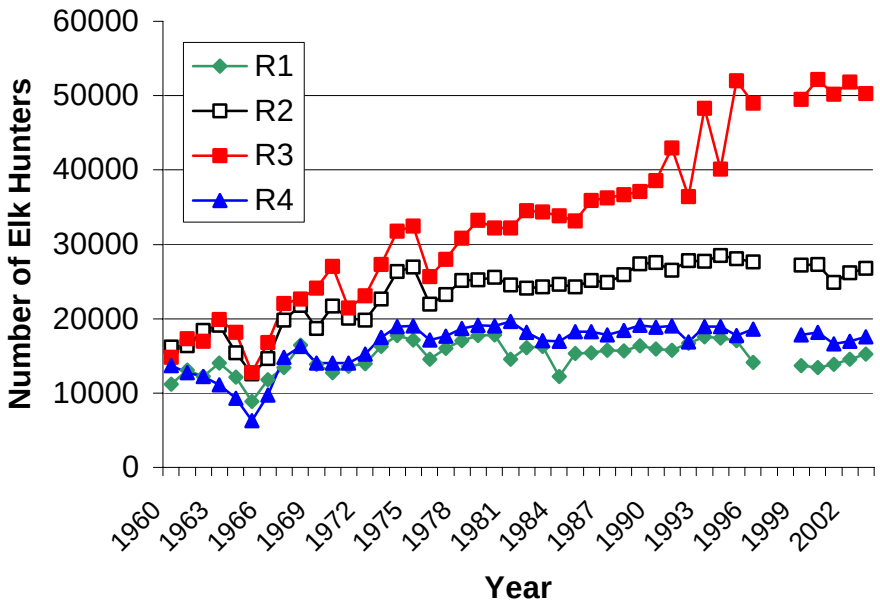


Figure 12. Annual number of Montana elk hunters, Regions 1, 2, 3 and 4, 1960-2003.

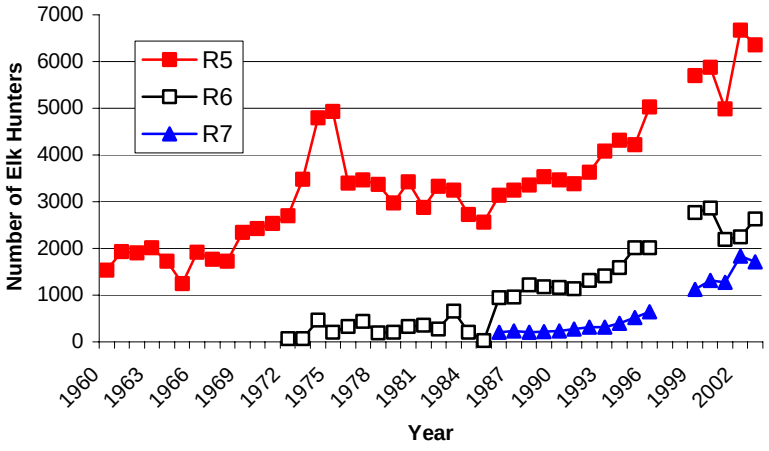


Figure 13. Annual number of Montana elk hunters, Regions 5, 6 and 7, 1960-2003.

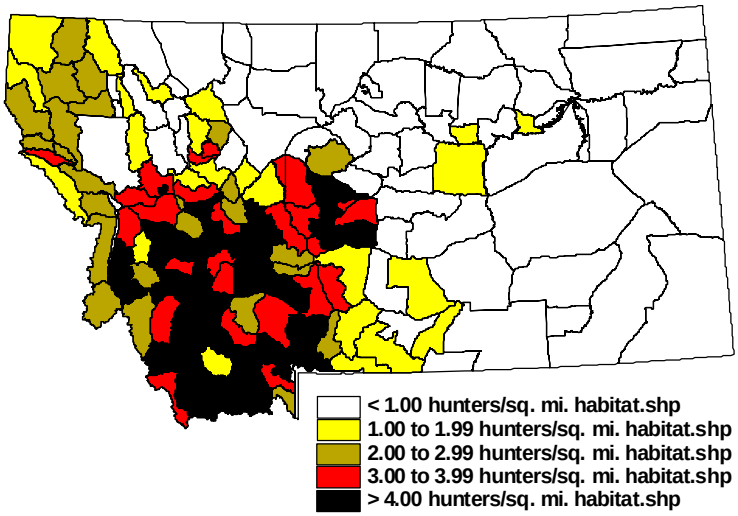


Figure 14. Density distribution of elk hunters in occupied habitat in Montana by hunting district, 1999-2001.

Results of Elk Hunting Regulation Types

General elk hunting regulation types in Montana at selected intervals, 1963-2002 (Table 2), indicate that substantial changes have occurred. First, a 60% increase in the amount of occupied elk habitat has occurred since 1963. Although some of this increase has occurred in northwestern Montana, much of it has occurred in habitats in central and eastern Montana where lower natural habitat security dictates limited-entry (permit only) hunting. This has contributed to the increase in the amount of elk habitat with limited-entry (LE) hunting (Table 2). In 1963, 67% of occupied elk habitat had 5 weeks of either-sex (ES) elk hunting. This contributed to high antlerless/antlered ratios in the harvest in the 1960s (Figure 4) and relatively low and stable populations. By 1971, general hunting regulations for elk were more conservative with general antlered bull (AB) hunting and 66% of elk habitat had only 1 day to 2 weeks of ES hunting (Table 2). Although numbers of antlerless permits issued may have increased over the years, general ES hunting has declined, with only a slight increase from 1992 to 2002 (Table 2). Introduction of branch-antlered bull (BAB) regulations in 1984 and brow-tined bull (BTB) regulations in 1990 resulted in only 22% of elk habitat with AB regulations by 2002. In 2002, 50% of elk habitat had BTB general hunting regulations.

Table 2. Comparisons of general elk hunting regulation types in Montana, 1963-2002. Percentages may not add up to 100% because of overlap of bull and antlerless regulation types.

Year	Season Length (General Season)	Season-long ES (either-sex) hunting	1 day –2 weeks ES Hunting	AB (antlered bull) hunting with or without antlerless permits	Bulls Permit Only (Limited Entry)	BAB (Branch-antlered Bull) hunting	BTB (Brow-tined bull) hunting with or without antlerless permits
1963	5-week	67% of habitat (34,062 mi^2)	12% of habitat	21% of habitat	None	None	None
1971	6-week	7% of habitat (35,469 mi^2)	66% of habitat	90% of habitat	3% of habitat	None	None
1985	5-week	1% of habitat (36,406 mi^2)	32% of habitat	90% of habitat	6% of habitat	3% of habitat	None
1992	5-week	< 1% of habitat (41,992 mi^2)	15% of habitat	50% of habitat	18% of habitat	None	24% of habitat
2002	5-week	< 1% of habitat (56,666 mi^2)	18% of habitat	22% of habitat	25% of habitat	None	50% of habitat

The reduction in ES regulations led to a reduction in antlerless/antlered harvest ratios after 1968 (Fig. 4). Further reductions occurred after 1976 (Fig. 4), which led to increasing elk populations. Increased numbers of antlerless permits were issued after 1987, and antlerless/antlered harvest ratios have increased (Fig. 4), especially during years with weather favorable to hunting. Bull harvest has declined in recent years at least partially because of increased implementation of BTB regulations. Although antlerless harvests have increased, especially since 1994, total elk populations in some areas have not declined.

Bull Hunting Regulation Types

As hunting pressure increased in areas with low habitat security, numbers and ages of bulls surviving the hunting season declined substantially under the AB regulation (Hamlin and Ross 2002). The BAB and BTB regulations were introduced to increase the total number of bulls surviving the hunting season. These regulations were intended to allow general hunting without restricting bull hunting to limited entry (permits). These seasons were not intended to increase the average age of harvested bulls more than the one year that protection of “spikes” allowed, and they did not (Hamlin and Ross 2002). Actually, some decline in total reported legal bull harvest may have occurred because

illegal mortality of “spike” bulls prevented “spikes” from reaching legal age (Hamlin and Ross 2002). In the Gravelly-Snowcrest Mountains, this illegal mortality averaged 15% of the yearling bulls under the BTB regulation. Some decline in average age of bulls 2-years or older may have occurred in areas with more secure habitat (Gallatin and Madison HDs) under the BAB and BTB seasons (Hamlin and Ross 2002). Preliminary information indicates similar results for northwestern Montana after BTB regulations were introduced in 1998. Several more years of information will be necessary to determine the effects of BTB regulations on total numbers of older bulls harvested in the more secure habitats of northwestern Montana. The BTB regulation has been successful in increasing total post-season bull:100 cow ratios in areas of insecure habitat and has become popular with many hunters. However, it did not increase the number of older (≥ 5 years), trophy bulls harvested, nor did FWP expect this to occur. In areas with low bull survival, more breeding is accomplished by 2-year-old bulls rather than “spikes” under the BTB regulation. The benefits of this regulation in areas of more secure habitat where older bulls had remained in the breeding population under AB regulations have not yet been determined. However, it does not appear likely that the number of older (≥ 5 years), trophy bulls harvested in more secure habitat will increase with BTB regulations. The number of yearling bulls in the harvest declines dramatically by regulation definition, and the number of 2-year-old bulls increases proportionally (minus the number of illegally shot yearling bulls). Illegal mortality may end up reducing total reported legal bull harvest at stable populations.

“Trophy management” in Montana is primarily limited to those areas where, because of insecure habitat, FWP must control hunter numbers by limited-entry (LE) permits. Additionally, some late-season opportunity to hunt “trophy” bulls is available by LE in HDs 313 and 310, near Gardiner and in the Gallatin Canyon, respectively. The number of HDs and area of habitat where bulls can only be harvested with LE permits has increased (Table 2). This has occurred primarily with expansion of elk into insecure habitats of central and eastern Montana. These areas of LE hunting have increased from 21 HDs with 545 ES permits and 11,178 applicants in 1992 to 26 HDs with 1,149 ES permits and 20,785 applicants in 2002. The demand for opportunity to hunt these areas is intense because of “trophy type management” and the presence of older, larger-antlered bulls. Some of these areas, particularly the Missouri River Breaks HDs, also experience substantial hunting pressure by archers. Additionally, opportunity to hunt for “trophy” bulls exists in some areas of Montana with general hunting that have secure habitat (unroaded to lightly roaded, rugged terrain, and substantial timber cover).

Another regulation type considered by some to be a “trophy” regulation is the general “spike” season with BTB (ES) on Limited entry permits. This regulation has been in place in the Elkhorn Mountains (HD 380) since 1987 and was implemented in HD 339 in 1996. Average age of bulls harvested on these permits in HD 380 had increased to over 6-years-of-age by 2000. About 84% of the annual bull harvest in HD 380 is “spikes” and 16% older bulls. This regulation type is popular in the areas where it occurs. Idaho implemented a similar regulation in the Centennial Mountains and just south in the Island Park Unit. BTB:100 cow ratios and ES permit levels are both relatively higher there than

in HD 380, however, their general spike season has been only 1 to 2 weeks (2 weeks currently) compared to 5 weeks in HD 380.

The opportunity to harvest bull elk during the rut with a rifle exists in HDs 150, 151, 280 and 316 (early backcountry hunt). Primarily because of safety concerns, hunting in some HDs or portions of HDs is limited to archery only or archery, shotgun, traditional handgun or muzzleloader only. Some areas in Region 3 have special limited general and late season opportunity for ES elk hunting for youth (12-14) and disabled hunters. This has partially addressed concerns with recruiting new hunters and reaching goals expressed in the "Crossing the Barriers" Program.

Antlerless Hunting Regulation Types

We have already discussed the decline in season-long, either-sex (ES) elk hunting since the 1960s, which may have held elk populations stable at that time. There has been a slight increase in recent years (Table 2) in HDs with a week of ES or antlerless only hunting for either the first or last week of the season. However, antlerless elk management has primarily been by limited-entry (LE) antlerless or ES permits issued through a drawing since the mid-1970s. In some areas, this has included early or late extensions to the general season. In other areas, because of availability of elk due to migration or private land access, these hunts have been only late season hunts. Another antlerless elk management tool has been the A-7 license that restricts hunters to taking antlerless elk in certain areas (usually private lands) and time periods and denies them the opportunity to harvest bull elk anywhere in the state. Generally, the incentive for hunters to apply for these licenses is that the likelihood of harvesting an elk is greater, seasons may extend earlier and/or later than the general season, and there may be less hunting pressure than in some other areas.

With increasing numbers of elk and elk harvest, just issuing more antlerless permits appears to have reached the level of ineffectiveness for population control in some areas (Hamlin and Ross 2002). For example, in 1974, 275 antlerless elk permits were issued for the entire Gravelly-Snowcrest complex. By 1997, 5,200 antlerless permits were offered for the same area and there were only 3,549 first choice applicants. Also, average success rates appear to have declined, partially because many hunters may just use these permits as a "backup" in case they have not harvested a bull by late in the season. In any case, demand for antlerless harvest in this area appears to be below the level necessary to stabilize or reduce the population at current calf recruitment rates. This area may be an extreme example because demand for antlerless permits is still high in some areas. However, even on a statewide basis, demand for antlerless permits appears to be declining relative to permits available (Figure 15). This trend is also apparent within Region 2 (Figure 16) and Region 3 (Figure 17), the Regions with the largest elk populations and antlerless harvest.

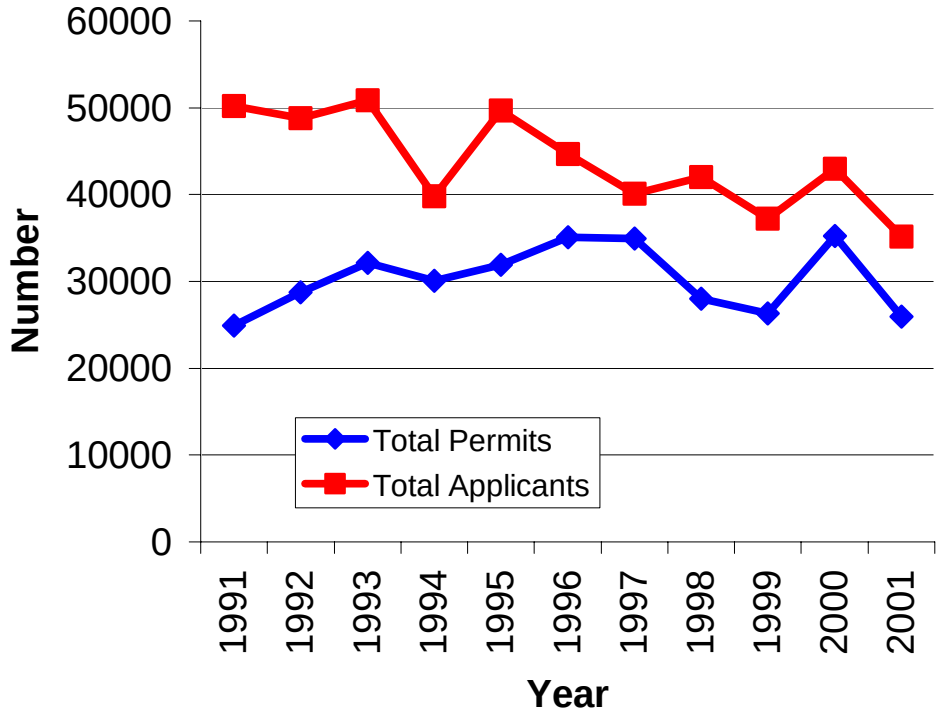


Figure 15. Total statewide antlerless (BTB/antlerless) elk permits offered and total number of first choice applicants for those permits.

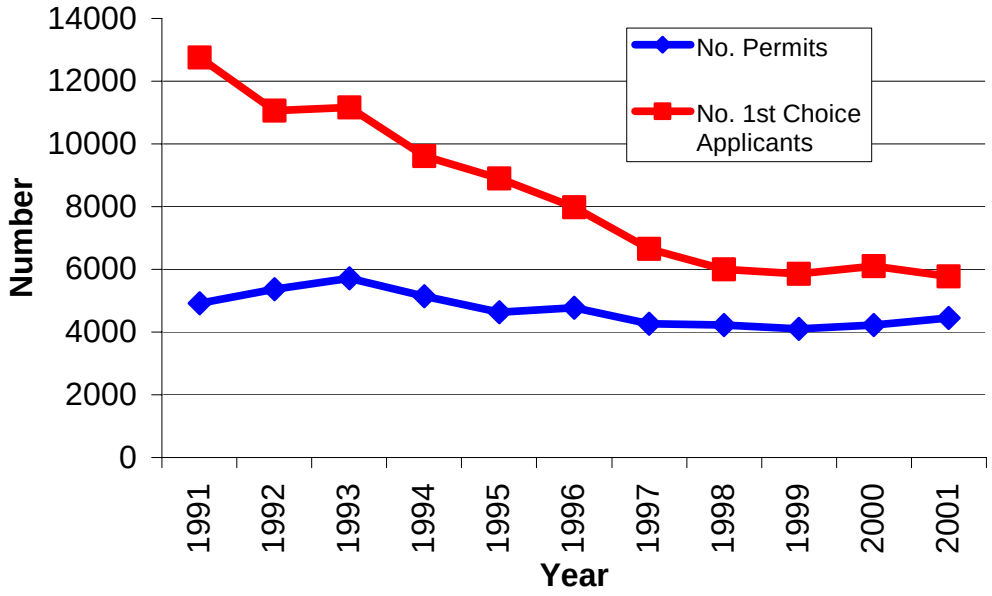


Figure 16. Number of antlerless (BTB/antlerless) elk permits offered and number of first choice applicants for those permits, Region 2.

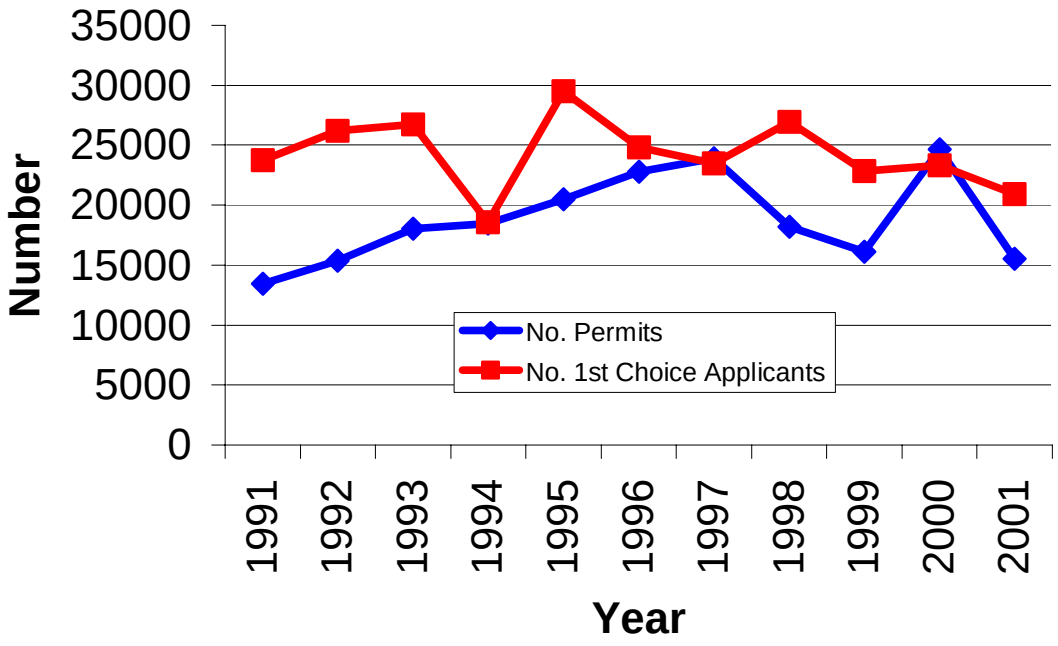


Figure 17. Number of antlerless (BTB/antlerless) elk permits offered and number of first choice applicants for those permits, Region 3.

The statewide trend in demand for antlerless permits has declined since 1991 (Figure 15). Although total numbers of available antlerless permits has fluctuated around 30,000 annually, the number of first choice applicants (demand) for these permits has declined from about 50,000 to about 35,000. The number of A-7 licenses for antlerless elk available increased from about 2,000 in 1991 to about 4,000 in 2001 (Figure 18). There were more than twice as many applicants for these licenses as licenses available in the early 1990s. Recently however, demand for these licenses has declined relative to availability, and they were actually under-subscribed in 2000 (Figure 18). Most of the elk, antlerless permits issued, and desire to reduce elk populations in some areas occurs in Regions 2 and 3. Demand for antlerless permits has either declined (Region 2, Figure 16) or remained relatively stable (Region 3, Figure 17). Even with relatively stable demand, the demand for antlerless permits in Region 3 has been either less than availability in some years (Figure 17) or less than numbers necessary to be issued to achieve desired results. This indicates that simply issuing more antlerless permits is unlikely to result in substantial increases in antlerless elk harvest.

Demand for A-7 licenses was about twice the "supply" in 1991 (Fig. 18), but has declined recently to equal the increasing number of A-7 licenses available. This convergence of supply/demand curves may indicate that, although still valuable as a local redistribution and population control technique, A-7 licenses may have limited effectiveness as a major population control technique. The majority of A-7 licenses are

issued in Regions 2 and 3 and harvest success rates are usually higher than for general antlerless permits in both areas. For example, averaged for 2000 and 2001, harvest success was 42% for general antlerless permits and 53% for A-7 licenses within the same HDs in Region 3. Demand for A-7 licenses has exceeded "supply" in Region 2 but A-7 licenses are usually under-subscribed in Region 3. The main reason for this appears to be that few unrestricted antlerless permits are available in surrounding areas of Region 2 but many unrestricted antlerless permits are available in surrounding areas of Region 3. Region 3 hunters will usually opt to retain their bull hunting opportunity and apply for unrestricted antlerless permits.

A combination of A-7 licenses valid outside the National Forest beginning 1 October through the general season and regular antlerless permits valid through 1 January outside the National Forest appears to have reduced elk populations in the Blackfoot area of Region 2 and reduced elk damage complaints by half. The combination of A-7 licenses, regular antlerless permits, and both early and late season extensions in the Blackfoot makes it impossible to separate out the relative effectiveness of individual management responses. For 6 HDs in Region 3, an average 37% of the antlerless harvest occurred with A-7 licenses during the 29% of the time represented by the 2-week season extension to 15 December.

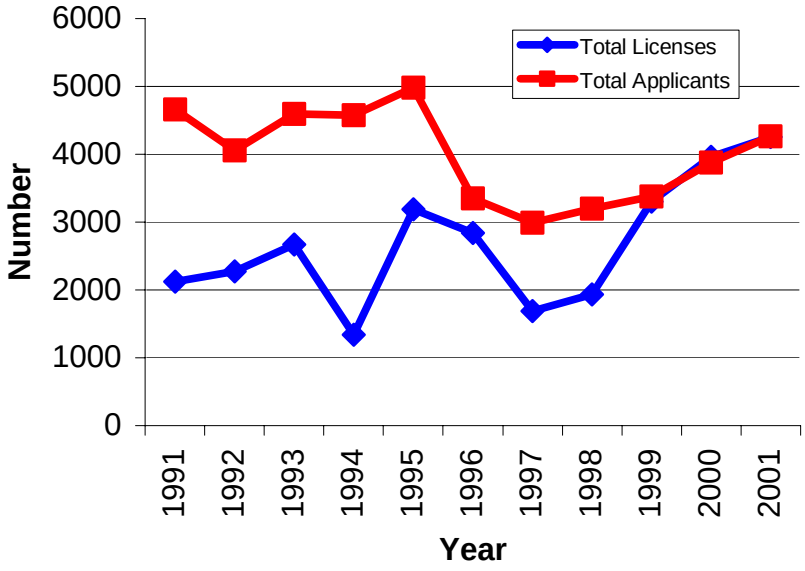


Figure 18. Total statewide A-7 licenses offered and number of applicants for those licenses.

An antlerless-only extension of the season to 15 December for general ES permit holders in HD 314 resulted in an average 54% of the antlerless kill for the season occurring during the 2-week extension during 2000 and 2001. Part of this increased harvest occurred because of increased availability of migrating elk, but perhaps increased access

allowed by private landowners during the time period that bulls were not legal to harvest (by their clients or others) was a major reason for the increase.

Having ES or antlerless-only hunting during the first or last week of the general season was used extensively in the past, is currently used in a few areas and has been proposed as a tool for increased antlerless harvest and population reduction in more HDs. For areas with limited numbers of antlerless permits, having the first week of the season valid for antlerless elk only or ES elk has taken a significant portion of the antlerless elk harvested. For example, prior to 1997 in Region 1, about 10 HDs had the first week as an antlerless elk hunting opportunity. Antlerless elk harvest averaged about 600 elk in Region 1 during 1994-1996. During 1999-2001, with antlerless elk hunting opportunity limited to a few special permits in some HDs, an average of about 300 antlerless elk were harvested per year. Although a high proportion of the Region 1 antlerless harvest occurred during the first week antlerless period, few total antlerless elk were harvested. Higher numbers of antlerless elk might be harvested in other portions of the state with greater numbers of elk. It is too early to determine results of this regulation type in some areas of southwestern Montana where it was introduced in 2002. During 2002, about 2 antlerless elk were harvested during the first week by general license holders or by Youth throughout the season for every 3 harvested by limited permits on the same areas. However, total numbers harvested were low and given the migratory nature of elk in these areas, the rugged terrain and difficult access, it is unlikely that high harvests of antlerless elk will occur during the first week of the general hunting season.

Most of the Little Belt-Castle EMU has had either-sex hunting for the last week of the general season for many years. There, about 3 antlerless elk are harvested on the general license during the last week for every 2 antlerless elk harvested by limited permits earlier in the season in the same areas. Although substantial numbers of antlerless elk are harvested, elk numbers in some HDs remain above population objectives. Similarly, the north portion of the Bridger EMU has had antlerless only elk hunting during the last week of the season since 1989. Starting in 2002, the south portion of the EMU has had BTB/antlerless hunting during the last week of the general season. This level of antlerless hunting has not been enough to control this elk population; it is one of the fastest growing elk populations in the state.

Thus far, except for northwestern Montana, one week of general antlerless elk hunting has not been sufficient to control or reduce elk populations where implemented. The effects might vary, depending on area, but hunter access to elk is a major factor controlling antlerless harvest. In the Little Belt, Castle, and Bridger EMUs, substantial numbers of elk are located on private lands with limited access during the last week of the season. For areas where most elk are on accessible public lands, more antlerless elk might be harvested with this regulation. However, potential results will vary depending on whether the antlerless hunting occurs during the first week or last week of the season and weather during the season. Generally, lighter harvests occur during the first week of the season when, on average, elk are more dispersed during milder weather, and many hunters are still “holding out” for a bull. Harvests could be high during the last week of the season if migrations have occurred, elk are concentrated on winter ranges due to

severe weather, and hunters have "given up" their attempt to shoot a bull or few bulls are left.

Starting in 2002, regulations allowed youths age 12-14 to hunt a legally defined bull or antlerless elk season-long in 7 HDs in R-1, 17 HDs in R-2, 38 HDs in R-3, 12 HDs in R-4 and 4 HDs in R-5. Preliminary results for 2002 indicate that harvest of antlerless elk was increased by no more than 10% as a result of Youth being able to harvest antlerless elk throughout the season. For example, in the Gravelly-Snowcrest Mountains where maximum results might be expected, an estimated 80 (8.0%) of 998 total antlerless elk killed were taken via the Youth regulation. In Region 1, we estimated 81 antlerless elk of a total of 353 might have been harvested via the Youth regulation.

Weather during the hunting season has a large impact on harvest of antlerless elk. About 1,000 more antlerless elk may have been harvested statewide in 2002 compared to 2001 with the added combination of the Youth hunt **and** more areas with a week of general season either-sex hunting. However, in 2000, without either of the opportunity enhancements, about 7,300 more antlerless elk were harvested than in either 2001 or 2002 because of "better" weather conditions during the hunting season. More than just a week of either-sex hunting might be required in many areas to reduce antlerless elk populations. During the "right" weather year, a substantial reduction could occur, however.

Another antlerless harvest technique has been late season permits. These are usually implemented where migrating elk are typically not available until after the general season or under some conditions where access by private landowners is not allowed until after the general season. The best-known and most successful example of this is the "Gardiner late hunt" in HD 313 and a portion of HD 314 that harvests elk from the Northern Yellowstone elk population. Other examples occur in HDs 310, 311, 360 and 362. For areas with substantial access controlled by private landowners, success varies with the amount of access allowed. For example, on the same piece of land in one HD, late season antlerless harvest averaged 269/year with landowner "A"s ownership, zero with landowner "B"s ownership and 85/year with landowner "C"s ownership. Even under landowner "A"s access program and hunter tolerance, a harvest of 269 antlerless elk per year only slowed the growth of the population. The elk population grew by approximately 50% after landowner "B" assumed ownership and ended late hunts.

Archery Hunting

Archery hunting has generally been considered to provide hunter recreation rather than population management. In Montana, the archery season has generally been 6-weeks long, beginning in early September and extending into mid-October, through the rut. In 1995, 15,769 archers harvested an estimated 1,268 elk in Montana comprised of 973 bulls (76.7%), 229 cows (18.1%) and 65 calves (5.1%). Sex and age composition is unavailable for recent years, but archers harvested similar totals for elk statewide in 1999 and 2000 (1,505 and 1,445, respectively). If sex and age composition were similar in 1999 and 2000 to that of 1995, archers would have harvested an average of 11.1% of bull

elk and 2.3% of antlerless elk harvested in Montana during 1999 and 2000. Antlerless harvest by archers contributes little to antlerless population management, perhaps being important only where safety concerns dictate no rifle hunting. Recently, however, it has become apparent that archery harvest impacts management of bull elk, at least in some areas.

Archery harvest of elk (especially bulls) is disproportionately by non-resident hunters. Archery kills for 1999 and 2000 averaged 6.4% of the statewide elk harvest (Table 3) and made up a higher portion of non-resident (13.6%) than resident elk harvest (5.0%). Sex and age composition of the kill for these years is not available, but likely it was heavily skewed toward bulls as it was in 1995 (see above). Of total elk archery harvest in Montana, 34.1% was by non-resident hunters compared to 14.7% of total rifle kill of elk by non-residents (Table 3). Non-residents averaged about 15% of total elk hunters in Montana during 1999-2001.

Archery kill of elk is highest on a percentage basis in central and eastern Montana where the majority of general season elk hunting is by limited-entry (permit only) (Table 3). Numerically, archery harvest is highest in Region 3 where total elk harvest is highest, though on a percentage basis, it is lowest there (4.2%). Harvest of elk by archery is most important in the Missouri River Breaks (MRB) hunting districts where 25.9% of total elk harvest was by archery in 1999 and 2000. For 1998, when sex/age composition was available, 31.1% of bull harvest in MRB districts was by archery and 40.9% of this archery bull harvest was by non-resident hunters. Most of the non-resident kill of elk in these LE areas is by archery (Table 3).

Of new entries to the Montana Boone and Crockett and Pope and Young records for elk between 1990 and 2000, a disproportionate share of record class bulls were taken by archers. Fifteen (30.6%) of 49 new entries of bull elk in either book scoring ≥ 360 points Typical or ≥ 370 points Non-typical between 1990 and 2000 were taken by archers, who comprise about 15% of elk hunters. Archers may hunt every year in areas like the Missouri River Breaks and are also able to hunt during the rut.

Because some hunters expressed dissatisfaction about the elk archery season in the MRB hunting units, during 2000 an opinion survey was conducted of archers who hunted this area (Lewis and King 2001). The archers surveyed were asked to respond to 6 proposed management actions that addressed a perceived crowding/competition among hunters in MRB archery hunting units. Nearly 60% of respondents supported or strongly supported making NO changes to current season types/structures. About 70% of respondents opposed or strongly opposed changes that would prevent MRB archery hunters from also hunting elk in other parts of the state by either archery or rifle or to limit MRB archers to specific time periods that were less than the full archery season. The 2 most frequently mentioned comments in open-ended responses were: 1.) make no changes to current season types/structure; and 2.) place some limit on the number of non-resident archery hunters (Lewis and King 2001). Only archers were surveyed; hunters that apply for general season permits that allow hunting by rifle in the MRB hunting units were not surveyed.

Table 3. Elk harvest statistics for archery and resident/non-residents averaged for 1999 and 2000 by Region in Montana and for the Missouri River Breaks hunting districts.

Area	% of total elk kill by archery	% of elk archery kill by non-residents	% of elk rifle kill by non-residents	% of non-resident elk kill by archery	% of resident elk kill by archery
Region 1	8.8	28.0	16.9	13.8	7.7
Region 2	5.3	18.0	8.7	10.4	4.8
Region 3	4.2	31.8	17.5	7.4	3.5
Region 4	9.4	35.5	14.3	20.4	7.2
Region 5	5.5	37.8	12.9	14.5	4.0
Region 6	29.3	47.9	4.2	82.7	18.4
Region 7	18.8	62.2	11.3	56.0	9.0
STATE	6.4	34.1	14.7	13.6	5.0
	Missouri River Breaks Hunting Districts				
HD 410	25.6	39.9	2.9	82.5	17.6
HD 417	23.8	30.4	6.7	58.6	18.9
HD 621	42.5	37.0	5.8	66.7	17.3
HD 622	46.4	51.0	3.6	92.5	30.5
HD 631	34.3	21.3	5.6	66.7	30.3
HD 632	27.1	18.8	4.7	60.0	24.1
HD 700	13.8	65.3	8.9	54.2	5.8
Total MRB	25.9	40.6	5.0	74.1	17.9

Hunting Access

The effectiveness of elk population management in Montana depends on public access to those elk during hunting seasons. Any elk hunting season or regulation, no matter how innovative, will not successfully achieve its intended harvest results without adequate hunter access to elk. In some cases for bull elk management, too much hunter access, leading to heavy harvest rates and low numbers of bulls in the population have posed problems. However, recent management problems more frequently deal with inadequate access to achieve the antlerless elk harvest necessary to control populations in some areas. FWP biologists estimate that up to 35% of Montana's elk may be on private lands that are inaccessible to the general public hunter during the 5-week general season. Most hunters may not have access because of no hunting allowed by anyone, outfitting, leasing, blocked access, or other factors. Some of these elk, however, are available to family and friends of landowners and outfitted clients, though few antlerless elk are harvested. See Table 9 on page 61 for a summary of "unavailable" elk by EMU.

FWP Programs

For years, FWP has worked with private landowners to maintain hunter access to private lands to help achieve adequate harvests, reduce game damage, and provide recreation to hunters. More recently, these efforts have been formalized into three programs under

Montana's overall Hunting Access Enhancement Program (see "Keys to the Treasure" by Alan Charles, Montana Outdoors, November/December 2002, pages 7-10 for more information). This program received a funding boost in 1995 (effective 1996) with implementation of the variable-priced outfitter-sponsored nonresident elk and deer license. In 2001 (effective 2002) all hunters, including residents, were assessed a Hunting Access Enhancement Fee which will help increase the number and types of hunter access projects implemented.

The best-known hunting access program, Block Management (BM), has been formally in existence since 1985. Growth of the program since 1986 in terms of landowners, acres, hunter days and dollars spent has been more than 10-fold (Table 4). As of 2002, the amount of acreage in the Block Management Program is larger than the state of Maryland, is equal to 9.5% of the land area of Montana, and the private land component is slightly less than 12% of all private land in Montana. Of Block Management hunters surveyed in 2003 (Charles and Lewis 2004), 31% reported hunting for elk on BM lands.

Table 4. Landowners, acres, hunter days and costs of the Montana Block Management Program, 1986-2002.

Year	Number of Landowners	Acres	Hunter Days	Weed Mgmt. Costs	Total Contract Cost[a]
1986	86	799,360			$30,418
1987	141	1,692,080			$58,230
1988	188	2,550,000			$82,550
1989	349	3,773,188			$203,445
1990	443	5,177,764			$238,000
1991	449	5,653,867			$363,006
1992	521	5,023,516	175,577		$156,335
1993	482	4,069,455	137,121		$138,874
1994	501	5,011,722	222,455		$185,917
1995	471	5,076,831	212,301		$225,055
1996	882	7,130,119	345,896		$2,757,103
1997	937	7,545,606	260,797		$2,571,358
1998	923	7,273,723	248,314		$2,541,863
1999	931	7,155,783	248,129		$2,545,761
2000	1004	7,696,500	279,918		$2,792,854
2001	1076	8,666,436	347,639	$80,212	$3,200,561
2002	1147	8,809,757	378,444	$142,757	$3,556,452

[a] Landowner Contract cost only. Does not include landowner/hunter services such as FWP patrollers, signs, materials, tabloids, maps, etc. In 2002, these costs were an additional $1,007,890.00.

Substantial numbers of hunter days occur on BM lands in Regions 1-4, the primary Administrative Regions of elk harvest (Table 5). Although elk harvest from BM Areas as a percentage of total statewide harvest is unknown, some BM areas were created specifically to help reduce elk depredation and elk numbers in local areas.

Table 5. FWP Regional Block Management statistics for 2001.

Region	Number of Landowners	Acres	Hunter Days
1	12	782,388	46,989
2	126	497,153	23,543
3	86	720,678	46,002
4	177	1,274,609	51,508
5	129	889,806	31,480
6	237	1,152,654	59,010
7	308	3,350,809	89,474

Results of the 2003 survey (Charles and Lewis 2004) indicated that 93% of landowners and 89% of hunters were satisfied or very satisfied with the Block Management Program. Also, substantial majorities of landowners and hunters believed that the BM Program had improved or substantially improved landowner/hunter relationships. All of the figures reported above were increases from those reported in 1996.

Another FWP access program is Access Montana. This program was developed to help reduce land access conflicts and help maintain and improve access to the more than 35 million acres of **public** land in Montana. FWP works with public land management agencies and private landowners to establish access corridors across private land to reach inaccessible public land, mark public land boundaries, contribute to map production and document where public land access conflicts exist.

The Special Access Projects Program, the third formal program, focuses on regional species-specific hunting access needs. For example, in 2002, elk hunt coordinators were hired to help the public access lands associated with special elk reduction hunts. Additionally, this program has covered some costs of the Elkhorn Working Group, which is studying issues related to management of elk in the Elkhorn Mountains.

Two other FWP programs, although primarily related to providing habitat and habitat management for wildlife, including elk, also provide hunter access to elk. State-owned Wildlife Management Areas either purchased for elk range or having substantial elk usage currently total 21 areas with 306,083 acres. Conservation easements acquired with elk management in mind total 19 with 77,507 acres.

The Private Land/Public Wildlife Council (PL/PW Council) is a group of 15 members appointed by the Governor who are charged with defining common goals, including, but not limited to: 1.) achieving optimum hunter access; 2.) protecting wildlife habitat; 3.) minimizing impacts on and inconvenience to landowners; 4.) encouraging continuance of a viable outfitting industry and; 5.) providing additional tangible benefits to landowners who allow hunter access. The PL/PW Council provides recommendations to FWP regarding funding, modifications, or improvements necessary to achieve the objectives of the Hunting Access Enhancement Program. Composition of the membership includes 4 members representing landowner interests, 4 members representing outfitter interests, 4 members representing hunter interests, 2 legislators, and 1 FWP Commissioner (see http://fwp.state.mt.us/hunting/plpw/default.asp).

On 15 June 2004, the Council recommended re-authorizing the Hunting Access Enhancement Program by repealing sunset provisions and continuing the citizens' review committee. They also made 5 recommendations as possible new sources of additional funding for the Program and 5 recommendations for improvements to the existing Block Management Program.

Community Working Groups

Community Working Groups (e.g., Devil's Kitchen, Elkhorn, Bears Paw, Madison Valley Ranchlands) have been formed to help solve a variety of elk management problems, including hunter access. Typically, these working groups are composed not only of landowners in the area and FWP, but also sportspersons and other members of the affected community. Issues such as appropriate elk population levels, hunter access to elk, habitat management, and other issues may be discussed. Success has varied, but positive results have been achieved and further success is anticipated as discussions continue.

These groups have much potential in some areas, however Community Working Groups will not work everywhere. For example, if a landowner purposefully creates a "refuge" for personal or leased hunting, they often have no desire to be a member of a "community" working to resolve the problem of excess numbers of elk on adjacent landowner's lands after the hunting season. They may only "live" in the area during hunting season. If all affected parties do not recognize and/or desire to solve a "problem" or consider themselves "members of a community", an effective Working Group cannot be formed.

Private Hunting Ranches/Leased Hunting

Increasingly, hunting rights to private ranchlands have been leased to outfitters by the acre, animal harvested, per hunter, or a flat fee. Also, some landowners have become outfitters on their own lands. As the agricultural community has faced increasing economic difficulties, this option for extra income has become more attractive. Once established, the economic incentive for the landowner and outfitter is to maintain elk on their lands, at least during hunting season, with restricted hunting. If maintaining a livestock operation, the economic incentive is to have as few elk as possible on their lands at times other than during the hunting season.

In 1992, Duffield et al. (1993) conducted a survey of hunting outfitters in Montana. A subsample of 50 (12%) of 416 contacted outfitters leased or owned private lands for hunting. The size of 97 land tracts leased varied from 500 to 140,000 acres, averaging 27,262 acres for a total of 2,644,414 acres of private lands leased by outfitters for hunting in 1992. Ninety-seven percent were exclusive leases. Distribution of these leases was concentrated in FWP Region 3 (33.0%), Region 4 (26.8%), and Region 7 (16.5%).

Per acre charges were the most dominant (64%) form of payment to landowners; per animal, per hunter, flat yearly rate, and percent of gross were other methods of payment.

However, an additional 31 parcels (55%) were owned by the outfitter/rancher and no fees were incurred. The key variables explaining lease rates were the presence of elk and the size of the leased area (Duffield et al. 1993). The average for deer/antelope or bird hunting leases was $0.33/acre and the average for leases that included elk hunting was three times as high ($0.99/acre). DNRC State lands are also leased to outfitters and although use may be exclusive to other outfitters, it is generally not exclusive of the public unless it is an isolated parcel within private lands.

In 2003, licensed hunting outfitters were authorized to operate on 6.1 million acres of private lands in Montana (Montana Board of Outfitters and FWP). This is a little more than twice the total estimated for 1992. Montana Board of Outfitters (MBO) does not record the species hunted on the "authorized for operation" private lands, so no estimate of the acreage used for elk hunting can be made. MBO would not authorize intersection of maps that could calculate distribution of these lands by FWP Region, however, a gross look at the map indicates that the largest increases in "private lands where outfitters are authorized to operate" were in FWP Regions 7, 5, and 6.

Another increasingly common occurrence is for wealthy hunters or groups of hunters to purchase or lease a ranch primarily as a "private hunting ranch". Some real estate brokers are advertising certain ranches specifically for this purpose and further advising clients on how certain properties can block access to adjoining public lands, further enhancing landowner hunting/leasing opportunity (Hall & Hall website, Fall 2002 newsletter).

These situations often result in little or no harvest of antlerless elk during the 5-week general season. After the general hunting season, elk often graze on the lands of adjacent landowners who did allow public access. These landowners with "hunting ranches" may feel no obligation to contribute toward a general elk reduction that may benefit their neighbors. FWP has not successfully established effective Community Working Groups in these situations. See the Economics and Commerce section for further discussion of outfitting/leasing/commercial use of wildlife.

ORVs/Retrieval

The use of ORVs/ATVs (Off-Road/All Terrain Vehicles) has generated substantial controversy, and the public is relatively evenly split on this issue. Many are concerned about damage to habitat and disturbance to elk and hunters caused by these vehicles, including movement of elk to private land "refugia". Others would like to be able to use ORVs/ATVs for retrieval of harvested game.

The majority of trails within Montana are on federal public land. FWP only has authority over trails on Departmen-owned lands such as Wildlife Management Areas. However, FWP can make recommendations to private landowners and land management agencies for motorized access options that might affect elk and elk hunting. Examples of this coordination include Forest Travel Plans/ maps and access agreements on Block Management Areas and conservation easement properties. FWP can also contribute toward responsible ATV use by educational materials. A brochure entitled "Off-Road

Montana" that summarizes laws, regulations and ethical guidelines is available at FWP offices. Also, FWP contributed toward a publication summarizing known effects of recreation, including ORVs/ATVs, on wildlife. This publication is entitled: "Effects of Recreation on Rocky Mountain Wildlife: A Review for Montana" and is available at the following website: www.montanatws.org.

Some increased harvest of antlerless elk might be achieved by access options that allow some designated time period for retrieval by ORVs/ATVs. However, three areas of concern make this proposal problematic. Harvest rates for bull elk are already adequate or more than desirable and additional access or retrieval options that increase harvest of bulls are undesirable. Problems with enforcement of existing ORV/ATV regulations cause concern with any increase in use of these vehicles or enforcement of new regulations. In some areas, any ORV/ATV use appears to redistribute elk to adjacent private land "refuges", reducing their availability to hunters on public lands.

Estimating Elk Population Parameters

In November 2002 the Legislative Audit Division of the state of Montana reported on a performance audit of FWPs big game inventory and survey process (Legislative Audit Division, 02P-05, 2002). Conclusions and recommendations in the report included:

- The department employs game management methods that compare to accepted standards, but can improve its process.
- The current techniques used to assess game population status have evolved from compromise among needs for accuracy, financial restrictions, and personnel availability.
- The department could refine its techniques for all species to better incorporate strategies that relate to more thorough and objective analyses.

More specifically, "We recommend the department refine its survey and inventory techniques for all species to better incorporate the concepts of:

A. Repetitive surveys of representative management areas;
B. Standardized and documented protocol that is easily transferable;
C. Use of visibility bias adjustments and required sample sizes;
D. Tying survey results directly to management objectives and subsequent recommendations; and
E. Understandable and concise presentation to the public based on objective analysis.

FWP concurs with the recommendation (1 November 2002 letter from FWP Director Hagener to Deputy Legislative Auditor Pellegrini). The letter further states: …"Our concurrence is made with the understanding that full implementation of the recommendation is a long-term commitment. Implementing repetitive surveys to increase survey accuracy is costly and will require prioritization with other activities."

Items B., D. and E. above will be implemented by adopting the proposed AHM approach in this revised Elk Plan. Items A. and C. will be discussed below and referenced in individual EMU plans where appropriate.

Attempting to estimate wildlife population numbers is one of the most difficult and expensive aspects of wildlife management. Seldom, except for in special research projects in certain areas, do wildlife agencies attempt other than very broad estimates of wildlife numbers. Rather, for important areas and populations, trend counts are conducted that attempt to determine the **relative** change in population numbers between years. It is known that these counts underestimate total numbers, but by trying to conduct the counts under the same conditions every year (or other period of count), we hope to determine if the population is up, down, or stable relative to the past year or trend count objective. By comparing these trend counts to population goals, we determine direction of population trend and whether the hunting regulation has been effective in maintaining the population goal or turning the population in the direction of that goal. If the regulation has been ineffective over a several year period, a new regulation should be tested. Recommended new regulations have not always been acceptable to the public and have not been implemented. The use of harvest estimates for prior years, an index of recruitment of new elk to the population (calf:100 cow ratios) and prior and current weather conditions are often used to try and predict future direction of the population trend. For example, a low level of calf recruitment (low calf:100 cow ratios) and heavy harvest the prior year indicates the population will likely decrease or be stable the next year. Conversely, high calf recruitment coupled with low harvests indicate the population will likely increase the next year. These predictions may also lead to recommendations for hunting regulation changes.

Aerial Surveys/Trend Counts

Trend counts are usually conducted by aerial survey, either by helicopter or fixed-wing aircraft, although in some areas counts may be conducted from the ground. Most flights are conducted on relatively open winter ranges. For parts of thickly timbered northwest Montana, aerial census or trend count flights are impractical. Data on calf:100 cow and bull:100 cow ratios may be recorded at the same time as counts on aerial surveys. However, for some areas, ratios may be determined by surveys from the ground, separate from aerial counts. In most areas, bulls counted are separated into “spikes” (yearlings) and brow-tined bulls (BTB). In some other areas, an attempt may be made to further separate BTB into 2-year-olds and bulls 3-years and older. Not all areas of the state containing elk can be surveyed. However, almost all significant winter concentrations are surveyed, possibly accounting for about 60-70% of the elk in Montana (Figure 19). For most important areas, trend counts are conducted every year during early to late winter or early spring. In some areas, due to budget constraints and the availability of pilots, trend counts may be conducted every 2 or 3 years. Even where trend count flights are attempted every year, a variety of factors may result in flights not being completed.

Budget constraints, the lack of qualified pilots, the lack of appropriate and safe weather conditions, competition with flights for other species such as deer at the same time, and

competition for pilots' time with other, more lucrative projects all make conducting trend flights and especially upgrading our efforts difficult. Thus, increased money for surveys does not guarantee improved aerial surveys for elk or other species.

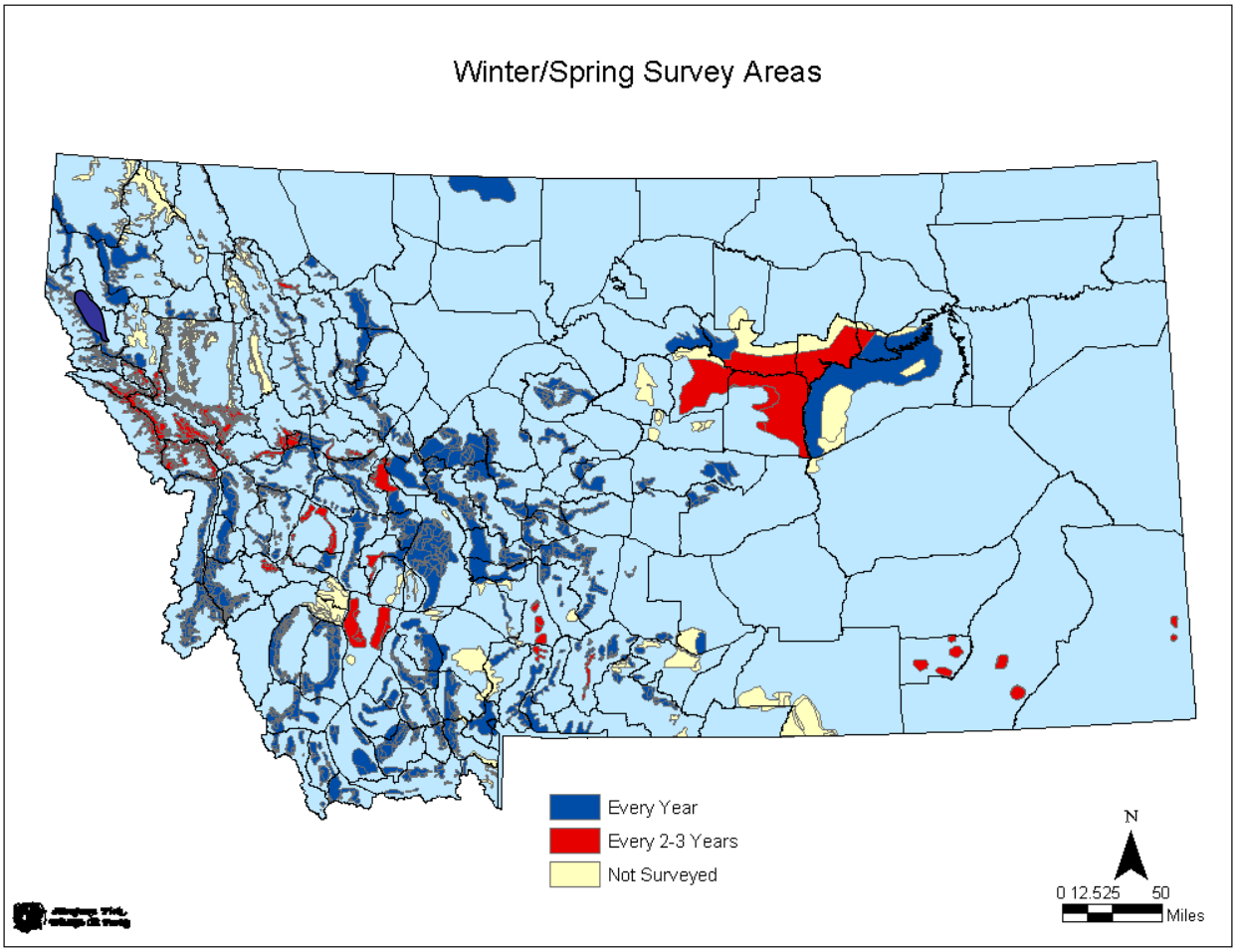


Figure 19. Location of post-season aerial elk survey areas and the frequency of surveys for elk in Montana.

Limited information is available for estimating total population size from counts obtained on trend count aerial surveys. Despite the difficulties of accomplishing estimates of total population sizes, ideally, they would be useful to compare with our estimates of total harvest.

Both mark-recapture (Rice and Harder 1977) and sightability (Samuel et al. 1987) estimates of elk population numbers were made on 2 heavily forested/shrubland winter ranges adjacent to Hungry Horse Reservoir in northwestern Montana (Casey and Malta 1993, Vore and Malta 1994). Results from the 2 sites were combined because they were

almost identical, but conclusions are tentative pending final analysis. Biologists observed an average of 30.5% of marked elk known to be on the area during 11 mid to late winter census flights from fixed-wing aircraft. Range of observability was 19-45%, standard deviation (SD) was 8.9% and coefficient of variation (CV) was 29%, which is quite high. Average observability during 4 helicopter surveys was 33% (range, 22-46%), not much different than for the fixed-wing aircraft. Surprisingly, neither SD (10.8%) nor CV (32.5%) was lower when using the helicopter. These results indicated that in this heavily timbered northwest Montana environment an average of about 30% of total elk on the survey area were observed and counted during aerial trend counts. Unfortunately, the wide range of variation in observability among flights makes it difficult to detect all but substantial changes in population size among years. Estimates of sightability averaged 22% of elk groups over 5 years (Vore and Malta 1994). Most elk groups in this environment were very small, which substantially reduced sightability compared to more open habitats. This result is consistent with the observability figure of 30% because missing small groups of 1 or 2 elk does not substantially add to total numbers missed.

Census flights done with a helicopter on other timbered winter ranges in northwest Montana (Henderson, Sterling and Lemke 1993) indicated slightly higher rates of observability than for the Hungry Horse area. For 6 late winter flights flown over 2 years in HD 123, an average 45.8% of marked elk was observed. Range of observability was 25-67%, SD was 12.6% and CV was 27.5%. For 9 late winter flights flown over 3 years in HD 200, an average of 35% of marked elk was observed. Range of observability was 25-45%, SD was 6.5% and CV was 18%. These results are consistent with those of the Hungry Horse area and with the fact that winter ranges in HD 200 are more heavily timbered than in HD 123. Population estimates made with mark-recapture techniques (observability) averaged 19% higher than those made by sightability techniques in HD 123 and 18% higher in HD 200.

For more open winter ranges with larger elk groups in northwest Montana, sightability estimates were much higher. Observed elk were about 90% of total population estimated using a sightability model on the National Bison Range (Unsworth et al. 1990) and about 95% on the Blackfoot-Clearwater winter range (M. Thompson, unpublished data). However, Hamlin and Ross (2002) maintain that sightability models substantially overestimate the proportion of elk observed on open winter ranges where group sizes are commonly over 20 elk. Many replications are necessary to determine the “true’ correction factor for large groups, and even then the “average” correction factor used results in errors for all years. Mark-recapture estimates were not made for either area. When a fire in fall 1991 and snow conditions in 1996-1997 resulted in elk distribution changes, elk counts in 1992 and 1997 on the Blackfoot-Clearwater winter range were 40% and 50%, respectively, below counts for the previous and following years of the survey.

Data from the large, open winter ranges of the Northern Yellowstone elk herd (Singer et al. 1997) indicated that over a 12 year period, aerial fixed-wing trend flights counted an average of 74% of the elk estimated to be present by population reconstruction. The range was 53-91%, SD was 13% and CV was 17%. Generally, the lower values were

associated with flights known to be conducted under less than ideal conditions. During 5 years of the period 1986-1987 through 1991-1992, population estimates were also made by the sightability technique. In those years, 67% of the population estimated to be present by sightability corrections was counted (range 50-83%, SD 13% and CV 19%). For the same flights, an average 71.5% of the population estimated present by population reconstruction was counted (range 53-87%, SD 16% and CV 23%). When the 3 flights with known poor survey conditions were excluded, an average of 80% of the population estimated by population reconstruction was counted on trend flights.

Hamlin and Ross (2002) estimated percent of the elk population counted on trend flights in the Gravelly-Snowcrest Mountains by comparing counts with total population estimated by population reconstruction during 9 years. For the entire period, an average of 71% of the estimated population was observed on trend count flights. Range was 56-89%, SD was 11% and CV was 16%. For the 5 years of good to excellent flight conditions, an average of 80% of the estimated total population was counted (range 74-89%, SD 5.6% and CV 7.1%). For the 4 years of poor flying conditions an average of 60.5% of the estimated population was counted (range 56-64%, SD 3.3% and CV 5.5%). A large portion of the lower estimate for the years of poor flying conditions occurred because elk were widely dispersed and many were not on the areas counted (Hamlin and Ross 2002). The sightability correction factor for group size used on the Northern Yellowstone range (Singer and Garton 1994) applied to the Gravelly-Snowcrest flights would have produced an average sightability of 97%. Data were not available from the Gravelly-Snowcrest flights to correct for other factors such as cover and activity, but because winter ranges were very open, the additional correction would have been slight.

The literature and our experience indicated that animals in large groups are usually undercounted. Freddy (1998, 2000) considered this factor a major explanation of underestimation error in a Colorado elk population. Cogan and Diefenbach (1998) estimated that elk counts by helicopter in Pennsylvania undercounted elk that were observed by about 20%. This factor likely accounted for much of the average 20% undercounts during even good flying conditions on the open winter ranges of southwestern Montana. During years of poor flying conditions, some elk are missed because of lack of good snow background or poor light conditions, but most are likely missed because mild winter conditions result in widely dispersed elk of which many are not on the areas flown.

From the above, there is some information to generally categorize correction factors for trend counts in some areas of Montana. However, given the variability observed, even within areas, annual estimates of total population would only be “ballpark” estimates. Determining significant changes among years would be problematic. Increasing the rigor of elk census flights by adding more areas where we would determine observability estimates over a range of conditions and adding replicate flights similar to the mule deer AHM program would be necessary to attempt estimates of “true” elk population numbers. An estimated $1,000,000 or more would be necessary for developmental costs to establish observability estimates for additional areas. An estimated additional $300,000 more than is currently expended (a little more than $1.8 million in FY 2001-2002) would

be necessary annually to fly increased numbers of aerial surveys. This would also increase the number of biologist days for flying and analysis by at least 280 days annually. As stated earlier, even given the money, it is unlikely that there are enough qualified pilots and good flying weather available during the census window of time (late December – mid-April) to totally accomplish a program for elk similar to that for mule deer.

Population objectives listed under individual EMU plans are for number of elk counted on trend counts, **NOT** for an estimated total population. At this stage of our knowledge and logistic and financial capabilities, estimating total elk populations for all EMUs would only introduce more uncertainty than currently exists into elk management in Montana. Use of consistent and rigorously collected trend count information will allow us to determine whether individual elk populations are at, above, or below objective levels.

Calf Recruitment

Determining the ratio of calves recruited in spring (calf:100 cow ratio) is an important parameter for management decisions. For example, if classification surveys found that 40 calves survived winter for every 100 cows in the population and half of the calves were females, then about 20 of 120 (100 cows + 20 new cows) or 16.7% of the cow population would have to die of hunting or natural causes over the course of a year for the population to remain stable. This percentage varies with the recruitment rate (calves:100 cows) each year and hunting prescriptions will vary with this figure, estimates of natural mortality, total population, hunter success rate, and population goals (stable, decrease or increase).

In the 1992 elk plan, FWP provided goals or minimum criteria for recruitment (35 calves:100 cows east of the continental divide and 20 calves:100 cows west of the continental divide). These criteria were based on past history for the 2 areas. Generally, with little natural mortality, about 60-70 calves:100 cows might be expected to be recruited. However, recruitment level is almost always below that because of predation, nutritional deficiencies, accidents, weather or other factors. The combination of these factors by area was such that traditionally, recruitment rates averaged lower in northwestern and western Montana than in southwestern and central Montana. Thus, 35 calves:100 cows in southwestern and central Montana and 20 calves:100 cows in northwestern and western Montana were at the lower end of expected average recruitment rates. Recruitment below these rates for any extended period could result in "overharvests" if standard hunting regulations for the respective areas were maintained. The 1992 elk plan called for "corrective action" when recruitment fell below these levels.

Traditionally, wildlife managers believed that the usual cause for lower than expected recruitment was poor nutrition related to high elk densities (too many elk for the available habitat/forage). The usual "corrective action" prescribed for low calf:100 cow ratios was to reduce elk numbers by increasing hunting pressure, thereby reducing competition for food. Poor calf recruitment related to poor nutrition because of too many elk can occur.

However, factors other than density-related nutritional deficiencies can also result in low calf recruitment. Some weather conditions can result in nutritional deficiencies for elk and low calf survival regardless of numbers of elk. Similarly, under some conditions, predation can result in lower than average calf recruitment, unrelated to nutrition. Addition of another large predator (wolves) to ecosystems may reduce average recruitment rates from those traditionally observed. Reduction of total elk numbers will not increase calf recruitment if low calf recruitment is the result of non-nutritionally related predation or non-density related nutritional deficiencies. In these situations, the "corrective action" of reducing elk numbers will not increase calf recruitment rates.

We do not list "goals" for calf recruitment in this revision of the elk plan because in many or most cases, we can do little by management action to affect recruitment level. Also, restoration of wolves to Montana may change expected long-term average recruitment rates. It will be important to continue to monitor calf recruitment rates to determine if wolf restoration is contributing to lower recruitment rates through additive predation mortality or if recruitment is mainly affected by density-dependent (related to numbers of elk) or density-independent (such as weather) factors. Also, regardless of factors affecting recruitment rate, hunting season prescriptions must reflect recruitment rates in relation to the goal for total population numbers.

Numbers and Ages of Bulls

Some areas of Montana are managed for maximum sustained harvest, others are managed for diverse or older bull age structure, "trophy bull" harvest, quality hunting and viewing experiences and others are somewhere in between. Areas managed for older bulls are usually managed by limited entry permits. However, some areas with much secure hiding cover and/or difficult access provide "trophy" bull hunting with a 5-week general hunting season. Areas with poor hiding cover and/or excessive access by roads and trails usually provide a very young bull age structure and low total bull numbers if managed within a 5-week general hunting season.

FWP records bull:100 cow ratios or percent bulls in the population during aerial trend counts or classifications from the ground to monitor bull survival/mortality during the hunting season and expected numbers of bulls available during the next hunting season. Trends in these ratios or percentages over time help determine whether harvest rates are stable, declining or increasing and whether harvest regulations are meeting goals for hunting and viewing experiences. Ages of harvested bulls and antler characteristics are recorded at check stations to document age and size of bulls, relative change among years, and whether age-structure goals are being met.

Most older bulls tend to be distributed away from the cow/calf/spike groups during the time of the winter surveys. These bulls may occur as "bachelor groups" or as singles, or groups of 2 or 3 and are proportionally more often missed than the larger groups of mostly antlerless elk. Also, numbers and proportions of spikes recorded during aerial fixed-wing surveys of large groups tend to be lower than recorded during ground classifications (Hamlin and Ross 2002). Therefore, ratios and percentages of bulls

recorded during surveys are usually minimum figures and "true" ratios/percentages of bulls are somewhat above those reported.

In a penned study, Noyes et al. (1996) found that significantly earlier conception dates occurred for cows bred by bulls ≥3 years of age than for cows bred by bulls ≤2 years old. These earlier born calves are more likely to survive than later born calves. Therefore, there is a biological reason to maintain some level of older bulls in the breeding population. However, in a wild population, Hamlin and Ross (2002) found no effects on calf survival with total post-season bull:100 cow ratios as low as 3:100 and BTB:100 cow ratios as low as 0.6:100. The probable reason for this was 2-fold. Even at these low ratios, because of the dominance of older bulls in the elk breeding system, adequate numbers of older bulls were present to accomplish the actual breeding. Also, as explained above, because the recorded ratios were minimal, especially for older bulls, more older breeding bulls were present in the breeding population than recorded during post-season aerial surveys. In areas of low habitat security and high access, the BTB regulation appears to maintain adequate breeding bulls in the population.

Despite the fact that high numbers of old bulls may not be necessary for population maintenance, Montana manages multiple areas for diverse bull age structure, older bulls, and aesthetic hunting and viewing experiences. FWP monitors success of regulation strategies and effects of habitat/access management by recording bull:100 cow ratios or percent bulls in the population during population surveys.

Harvest Surveys

Montana resident hunters are surveyed primarily by telephone and non-resident hunters are surveyed by mail. FWP attempts to contact a stratified random sample of approximately 71% of resident elk license holders (83% of special license holders) and 69% of non-resident license holders (97% of special license holders). The usable response rate for residents in 2002 was 70% and for non-residents was 49%. Thus, the effective sample rate was 47% for residents and 34% for non-residents. Results from these surveys are multiplied by the appropriate expansion factor to represent the kill by 100% of elk hunters.

Some of the public have expressed distrust of the results of Montana's harvest survey and prefer a mandatory report card. An independent investigation and analysis of the harvest survey methods of 12 western states (Bate et al. 1995) indicated that Montana, Colorado and Idaho (all using the telephone survey) had the most accurate, reliable and well-designed harvest survey methods. Mandatory report card systems were found to work well only in states such as Nevada where there were only a limited number of hunters and all hunts were by limited entry (drawings for permits). A mandatory hunter report card system to estimate big game harvests would result in at least a 3-fold increase in costs to FWP and probably provide less reliable information (Bate et al. 1995). Hamlin and Erickson (1996) discussed a variety of other problems with mandatory report systems, including non-response bias, low compliance rates and enforcement. Despite results of the study by Bate et al. (1995), Idaho Department of Fish and Game was forced by the

public to go to a mandatory report system in 2000. Response rates are low (must conduct telephone survey to estimate non-response bias), information is untimely (now not available prior to season-setting), and data is of poor quality (hunters reported harvest in over 2,200 hunting units – of only 90 actually present)(M. Hurley, personal communication).

Disease

Chronic Wasting Disease

Chronic Wasting Disease (CWD) is an always-fatal, contagious disease affecting elk, white-tailed deer and mule deer. The disease debilitates the nervous system. Other states have discovered that once the disease infects a wild population, it is difficult, if not impossible to eradicate. CWD appears to be a slow-moving disease and although more time is necessary to determine long-term impacts on wildlife populations, the disease does not appear to decimate entire populations.

There is no evidence that the disease can be transmitted to humans or livestock, but the public is concerned about the potential for cross-species transmission, including humans, as well as with the implications for wildlife populations and hunting.

FWP has tested 2,700 free-ranging deer and elk and 2,300 captive deer and elk associated with Montana's alternative livestock facilities (game farms) since 1996. FWP surveillance has not detected CWD in any of Montana's free-ranging deer or elk. CWD was detected in 1 captive elk at a game farm near Philipsburg in 1999. Infected herds of free-ranging cervids border Montana in South Dakota, Wyoming and Saskatchewan. It is reasonable to assume that the disease will eventually enter Montana or that a Montana deer or elk is infected but not yet detected.

Montana has prepared a draft CWD action plan for free-ranging wildlife. This plan includes 1.) surveillance and detection, 2.) control and management of CWD upon detection, 3.) a public information plan, 4.) research, and 5.) estimates for costs and funding of management action. The surveillance program emphasizes regular monitoring and testing of animals in high-risk zones adjacent to infected states and provinces. This includes the northern border with Saskatchewan and the southeastern border with South Dakota and Wyoming. Additionally, testing occurs among scattered locations throughout the remainder of Montana where hunter check station locations make collection cost effective and logistically feasible. Any symptomatic deer or elk observed by FWP personnel or the public is also tested. Coordination of efforts with other concerned states also occurs. (Most information on CWD and Brucellosis provided by K. Aune, FWP Research and Technical Services supervisor).

Brucellosis

Brucellosis is a contagious bacterial disease that affects free-ranging elk and bison in the Greater Yellowstone Area (GYA). The sero-prevalence and infection rates in free-

ranging elk from Montana are less defined than for bison but are considerably lower (Rhyan et al. 1997). Although the risk for transmission is perceived to be very low, brucellosis is a threat to livestock and could impact the ability of cattle producers to market cattle if transmission does occur between elk and livestock.

FWP has conducted opportunistic serologic surveys on elk captured during research projects or harvested during hunting seasons since 1981. From January 1990 through February 2002, 36 of 3,721 (0.97%) individual elk tested throughout all of Montana indicated positive reactions for brucellosis. All 36 elk were from the Northern Yellowstone or Gallatin/Madison EMUs , near Yellowstone National Park. Within these EMUs, the 36 positive of 2,772 samples represents a 1.3% sero-prevalence rate. Tests of 913 elk captured in the Gravelly-Snowcrest Mountains during 1984-1995 indicated 4 (0.44%) sero-positive elk. Portions of this elk population are also associated with Yellowstone National Park. Sero-positive elk have not been found in portions of Montana other than these EMUs near Yellowstone National Park.

The Greater Yellowstone Interagency Brucellosis Committee (GYIBC) was formed in 1995 to coordinate management and control of brucellosis in the GYA. This Committee involves the states of Wyoming, Montana and Idaho as well as the Departments of Agriculture and Interior. Montana has completed an elk-brucellosis management plan as part of its obligations under the strategic plan of the GYIBC. This plan encompasses the Northern Yellowstone and Gallatin/Madison EMUs.

Because the sero-prevalence in Montana remains low and effective risk management strategies are currently limited, the Montana Brucellosis Management Plan for elk emphasizes an active surveillance program. The action plan assumes that brucellosis can not be maintained (a self-maintaining epidemiologic cycle) in a free-ranging elk population at an infection rate of less than 7%. At or above that level, the risk for transmission of brucellosis becomes a greater management concern. At the current low infection rates in Montana elk populations, we assume that infected animals are spill-over from infected YNP populations or Wyoming feedgrounds rather than indicating self-maintaining, infected Montana populations. For surveillance, statistically reliable samples will be collected on a three-year rotational basis at check stations near Gardiner, in the Gallatin River drainage and near Ennis, representing elk from the Northern Yellowstone and Gallatin/Madison EMUs. Should surveillance reveal a sero-prevalence greater than 5% in any year, an Epidemiologic Review Team will be convened to consider any actions that might be necessary.

Also, as part of the Brucellosis Management Program, FWP will encourage habitat management programs that emphasize healthy habitat, dispersion of elk, and minimal spatial-temporal overlap of elk and cattle. FWP will also maintain elk population densities at objectives described later in this Plan to help minimize transmission probabilities. Similarly, one of the intentions of the supplemental feeding policy of FWP (NO feeding) is to reduce the risk of disease transmission that occurs with artificially dense elk populations at feedgrounds (Weigand and Mackie 1985).

Game Damage

The general hunting season is FWPs primary tool for regulating wildlife populations. However, hunter access, weather and other factors can reduce the effectiveness of the general season harvest in controlling wildlife populations in any year or series of years. Some areas may experience chronic wildlife damage to agricultural products regardless of elk population levels, but damage complaints may increase in other areas when elk populations have increased over several years.

Two Montana Supreme Court decisions have ruled that private landowners are expected to accommodate a certain amount of wildlife use of their lands. However, if a combination of circumstances result in wildlife use of private land at "unreasonable levels" that cause problems for landowners, the state, with some exceptions, assumes responsibility to help eliminate, prevent or resolve these problems. By law (87-1-225 MCA) FWP is required to respond to all big game damage complaints. MCA 87-1-225 states: (1) Subject to the provisions of subsection (2), a landowner is eligible for game damage assistance under subsection (3) if he:

(a) allows public hunting during established hunting seasons; or
(b) does not significantly reduce public hunting through imposed restrictions.

(2) The department may provide game damage assistance when public hunting on a landowner's property has been denied because of unique or special circumstances that have rendered public hunting inappropriate.

(3) Within 48 hours after receiving a request or complaint from any landholder or person in possession and having charge of any land in the state that wild animals of the state, protected by the fish and game laws and regulations, are doing damage to the property or crops thereon, the department shall investigate and arrange to study the situation with respect to damage and depredation. The department may then decide to open a special season on the game or, if the special season method be not feasible, the department may destroy the animals causing the damage. The department may authorize and grant the holders of said property permission to kill or destroy a specified number of the animals causing the damage. No wild ferocious animal damaging property or endangering life shall be covered by this section.

FWP Game Damage Policy states that the following definitions (A) and (B) shall be used to determine game damage assistance eligibility.

(A) "allows public hunting" is defined as **"allows hunting without charge or consideration and without restrictions (as defined in (B)) to members of the general public during established seasons. For purposes of game damage assistance eligibility, hunting must be allowed for the species for which the complaint has been made."**
(B) "does not significantly reduce public hunting through imposed restrictions" is defined as **"does not impose restrictions which**

prevent the general public hunter harvest of the species for which the complaint is made. Such restrictions may include:

(1) species of animals hunters are allowed to hunt;
(2) **portion of land open to hunting;**
(3) **time period during which land is open to hunting;**
(4) **fees charged; or**
(5) **other restrictions which render harvestable animals inaccessible.**

FWP Game Damage Policy further indicates that field personnel should respond quickly and effectively to game damage situations, employing game damage abatement activities on a progressive scale of intensity, from the least dangerous or harmful to the wildlife doing the damage up to and including lethal methods such as damage hunts and kill permits. Generally speaking, the progressive steps for the use of game damage techniques are:

(1) Dispersal through the use of noise makers and repellants, or other activities agreed upon which would serve to haze animals away from an area;
(2) Physical barriers such as snow fence, mesh wire, panels, permanent stackyards or electric fence used to protect harvested, stored crops; fence barriers will not be provided for protection of unharvested crops standing in the field;
(3) Damage hunts during the periods of August 15th to the opening of fall Commission-established seasons and from the close of fall Commission-established seasons through February 15th;
(4) Kill permits used by landowners or, in rare instances, department persons.

Most damage complaints related to elk occur in late summer/early fall and early winter, to haystacks, in FWP Regions 2 and 3, and the most common response is to supply panels/fences (Tables 6, 7 and 8). As might be expected, most damage complaints occur in the Regions with the most elk. Also, the fact that supplying panels/fencing is the most common FWP response is related to the prevalence of haystack damage. Ideally, FWP would prefer to reduce total elk numbers through regular season hunts in many of these areas. In some areas that solution has not been successful, and in other situations the damage is chronic and not related to total numbers of elk, but to location and situation.

Table 6. Elk game damage complaint summary by FWP Administrative Region, July 2000 through June 2001.

Month	R-1	R-2	R-3	R-4	R-5	R-6	R-7	Statewide
July		1	4	1	2	1		9
August		12	14		9	1	1	37
September		3	6		1			10
October		2	1	1	2			6
November		4	3		1			8

December	3	8	9	3	1		2	26
January	4	3	3		1			11
February	2	1	3	2	1			9
March	1			1				2
April								0
May	1	1	2					4
June		4	3	1		2	1	11
Total	11	39	48	9	18	4	4	133

Table 7. Type of elk game damage reported by FWP Administrative Region, July 2000 through June 2001.

MFWP Region	Haystack	Alfalfa/Other Crop	Pasture	Fence
1	10		1	
2	21	9	8	
3	21	6	9	7
4	8		1	
5	5	11	1	
6		1	3	
7	2	2		
Total	67	29	23	7

Table 8. FWP action related to elk game damage reports reported by FWP Administrative Region, July 2000 through June 2001.

Area	Panels/Fencing	Scare guns/cracker shells	Herding	Kill Permits	Hunting	None
R-1	6	3				2
R-2	19	6	10	5	5	
R-3	28	8	3	6	5	
R-4	6	2				
R-5	5	5	4	5		1
R-6		3	2			
R-7	2	3				
Total	66	30	19	16	10	3

Typically, A-7 licenses, early and late season extensions or hunts, and antlerless permits targeted to non-public lands have all been regulations that were an attempt to deal with game damage situations. In some cases, they were also proposed for general population reduction. The new authority for A-9/B-12 licenses (B-tags) may also be useful in game damage situations.

Elk Habitat

Yearlong ranges of elk may encompass lands administered by several federal and state land management agencies and private and corporate landowners/managers. Some elk herd ranges also extend into other states and Canadian provinces. Thus, management of elk habitat, including conflicts with other resources, game damage, hunting access and competition for elk hunting opportunity is very complicated.

Management of elk habitat on public lands is under the authority of federal and state land management agencies, specifically the U. S. Forest Service (USFS), Bureau of Land Management (BLM), U. S. Fish and Wildlife Service (USFWS) and Montana Department of Natural Resources and Conservation (DNRC). The latter two agencies have more narrowly focused management mandates than the USFS or BLM. Management of elk habitat and hunter access by any of these agencies will not necessarily or usually consider elk as top priority. Habitat management on private and corporate lands is the prerogative of the landowner. FWP is directly involved in management of elk habitat only on FWP administered WMAs and on private and public lands included in cooperative habitat management programs or agreements such as conservation easements or grazing systems. Of total elk distribution in Montana, 45.3% is on lands managed by USFS, 37.3% by private/corporate owners, 7.1% by BLM, 4.3% by DNRC, 3.5% are Indian/Tribal lands, 1.8% by USFWS, and 0.6% by FWP.

Wildlife, including elk, are a product of the land, a renewable resource that depends on healthy habitat, including the basics of soil, water and vegetation. Thus, although the primary responsibility of FWP regarding elk is managing populations through designing and enforcing hunting regulations, we cannot ignore issues dealing with the habitat that supports and perpetuates elk populations. As FWP Director Hagener stated in the May/June 2003 issue of Montana Outdoors: …"should the (conservation) plans address land use, even though FWP has no authority over private property or other agencies' lands?" … "FWP does not have authority over land use, but our ability to conserve Montana's fish and wildlife depends on habitat just as the species themselves do. That's why we constantly seek to involve those who do have authority over land – both private property owners and land management agencies – to join with us in our shared task of ensuring the future abundance of Montana's wildlife treasures." As part of their duties, FWP biologists provide technical assistance to land managers regarding elk habitat issues affecting elk populations and management.

FWP concerns with habitat/land management relative to elk fall into 2 categories: 1.) preserving important wildlife habitats and maintaining/enhancing the basic productivity of the land – soil, water and vegetation and; 2.) land management activities that influence elk management prescriptions. Under the first category, FWP works with landowners/land management agencies to promote management that does not lead to erosion, deterioration of riparian habitat, or overuse of vegetation that leads to plant loss, or permanent loss of habitat through housing development. For direct FWP action, this may mean recommending hunting seasons intended to reduce elk numbers below levels where there is impact on vegetation health. FWP action might also include fee-title

acquisition or purchase of a conservation easement. For domestic livestock, it may include promotion of grazing systems such as rest-rotation systems and exchange of use agreements. Any land management activity such as logging, grazing, burning, plowing, or housing development may have a variety of impacts (negative, positive, or neutral) on wildlife and the land that may vary by species and activity. Thus, FWP recommendations will vary on a case-by-case basis. Acceptance of any recommendations by FWP is entirely up to the land management agency, landowner or in some cases, city or county governments. Government land management agencies must balance recommendations by FWP with those of other groups or individuals and with their agency mandate/mission. Successful programs or agreements with private landowners must produce benefits for both parties. FWP will not support any habitat management that it perceives as detrimental to the long-term health of the soil, water and vegetation or that permanently reduces the amount of elk habitat.

Many habitat management recommendations by FWP are relative to actions that may not permanently affect productivity of the land, but could impact effects of hunting seasons and regulations. For example, relative to elk, land management activities that reduce the amount of hiding cover increases the likelihood of hunter harvest under a given hunting season type. Similarly, an increase or decrease in access related to roads or trails will also affect the likelihood of harvest. Much research has shown that there is a direct relationship between level of road access and bull elk mortality (Leptich and Zager 1991, Unsworth and Kuck 1991). In areas with substantial hiding cover, elk security can be controlled by road management alone (Unsworth et al. 1993). In areas with less hiding cover and relatively gentle terrain, the patch size, connectiveness and total amounts of hiding cover are very important components of elk security (Hillis et al 1991, Lyon and Canfield 1991, and Hamlin and Ross 2002). Road density is also important in these areas (Hamlin and Ross 2002) and hunter density and terrain ruggedness are important in all areas.

Montana has maintained the longest general elk-hunting season (5-weeks) of all western states the fewest areas with restrictive limited-entry hunts. In survey after survey, Montana hunters indicate they wish to preserve this tradition. At some point, cumulative effects of cover reduction and/or increased roads and trails would make it unlikely that FWP could maintain a 5-week general bull elk hunting season and maintain objectives for post-season bull:100 cow ratios. Thus, to continue a 5-week general bull elk season popular among the hunting public, FWP biologists have generally recommended against or asked for mitigating actions or modifications to habitat management projects that substantially or cumulatively reduce hiding cover or increase access to previously secure areas. A variety of current and proposed land management activities might not be beneficial for elk and elk hunting. FWP recognizes that elk considerations will not often be the primary deciding factor in habitat management prescriptions. However, FWP will recommend modifications that either benefit elk and elk hunting or that will reduce the harm done to elk and elk hunting by those habitat management prescriptions.

“The Healthy Forest Initiative”, emphasizing fire prevention and habitat manipulations at the urban interface, will have a variety of implications to elk management. This initiative

may primarily affect elk winter range as written, but it's application on the ground is yet to be determined. Some current proposals will affect yearlong elk habitat. Habitat manipulation projects related to this initiative may have potentially beneficial, neutral, or negative consequences for elk.

Housing development in some cases may not substantially reduce the amount of elk habitat. However, development may hinder effective harvest and population control, which contributes to overabundance and game damage. Also, rural subdivision development may adversely affect elk movement patterns and distribution. FWP will be very concerned with habitat developments or manipulations that hinder hunting as a population control technique or significantly change elk behavior.

FWP Habitat Plan

In 1987, the sportspeople of Montana proposed legislation to provide a stable, earmarked funding source for wildlife habitat acquisition. The law (HB 526) provided for an earmarking of a portion of hunting license dollars for protecting wildlife habitat. FWP had a wildlife habitat acquisition program since 1940 that had acquired important elk winter ranges, but funding was not stable. In 1991, the Montana legislature mandated a study of the FWP habitat program. As a result, in 1995, the FWP Commission as part of their Habitat Montana Policy adopted a Statewide Habitat Plan. Although fee-title acquisitions remained an option, much greater emphasis was placed on use of conservation easements, management agreements and leases. Because of the level of threat, a goal of conserving 10% of the intermountain grassland, shrub-grassland and riparian ecosystems was established. Criteria were also established for determining suitable projects and type of conservation action.

Through FWP, the state of Montana has acquired 21 Wildlife Management Areas (WMAs) totaling 306,083 acres (fee-title and leased) of elk habitat (primarily winter range). About 17,500 elk winter on these WMAs. Because of strategic location, acquisition of about 0.3% of Montana's land supports about 18% of the elk counted in Montana during winter. Additionally, 77,507 acres of elk habitat have had housing development precluded, managed grazing systems implemented, and hunter access guaranteed through FWP acquisition of conservation easements. FWP has developed a policy for fencing specifications relative to elk and other wildlife on WMAs. These specifications can serve as recommendations for other lands with elk use.

Habitat Monitoring

House Bill 42, passed by the 2003 Montana Legislature requires FWP "to manage elk, deer and antelope populations in a sustainable manner that keeps animal populations at a number that does not adversely affect Montana land". Calculations of "sustainable numbers shall consider the specific concerns of private landowners" and "average carrying capacity and use generally accepted animal unit factors for each species in each commission region".

FWP does not monitor vegetation on a widespread scale throughout elk habitat. However, FWP has vegetation-monitoring programs (permanent standard measurement plots and photo plots) established on some of its WMAs. These are monitored on a long-term basis to determine whether the plant community is stable, declining, or improving relative to time of purchase and to current elk numbers. FWP also has monitored condition of woody vegetation in wildlife habitat (Keigley and Frisina 1998, Thompson 2002). An option for FWP to explore is cooperation in design and monitoring of vegetation monitoring programs by land management agencies. Another potential habitat monitoring technique is the use of allantoin:creatinine ratios in elk urine in snow (Pils et al. 1999, Hamlin and Ross 2002) to monitor energy content of the elk diet over time. Short-term changes will relate to immediate conditions such as snow depth. Consistent deterioration over long periods, however, could indicate a decline in vegetation (forage) composition and condition.

Forage production and use is extremely variable across Montana among years. For example, elk forage production estimated for usable habitat on the Sun River WMA was 537 lbs/acre in 1989, 851 lbs/acre in 1990, 1,125 lbs/acre in 1991, 517 lbs/acre in 1992 and 844 lbs/acre in 1993, an increase of 2.1-fold from low to high (Jorgensen 1994). Production of forbs varied by 15.7-fold from low-to-high over 11 years from 1976 through 1986 in the Missouri River Breaks, grass production varied by 4.5-fold over the same period and shrub production varied 5.3-fold over 7 years, 1976-1982 (Hamlin and Mackie 1989). Quantity of forage was not a limiting factor there (Hamlin and Mackie 1989). These data indicate that “carrying capacity” based on forage varies substantially and unpredictably from year-to-year.

Nelson and Leege (1982) reported that adult elk consumed 1.5 to 2.5 lbs of air-dry weight forage per day per 100 lbs of body weight during winter. If we use 570 lbs for live weight of an average cow elk and 2.25 lbs of forage/100 lbs body weight (both figures at the high end), then an average cow elk would consume 12.8 lbs air-dry weight forage/day during winter. Over a 151-day winter period (December-April), the 7,139,104 lbs of forage produced in 1992 on the Sun River WMA would have supported 3,694 elk. During 1991, the high production year, enough forage was produced to support 8,035 elk. In recent years, 2000-2500 elk have used the Sun River WMA, with an objective of 2,000 observed elk. Thus, elk numbers were no more than 68% of forage capabilities during the worst year and 31% during the most productive year.

The vegetation data collected thus far at monitoring transects on WMAs do not indicate deteriorating range conditions despite increasing elk numbers on some areas over the years (B. Harrington, personal communication). Weight and condition data collected from harvested elk at check stations throughout Montana do not indicate that elk are in “poor” condition or facing nutritional deficits, even where elk are above objective numbers. Data for the energy content of elk diets on the Wall Creek WMA and the Hungry Horse elk herd during the severe winter of 1996-1997 (Pils et al. 1999, Hamlin and Ross 2002) indicated that diet quality was greater for these populations than for populations in Yellowstone National Park and equal to that of the artificially fed population on the National Elk Refuge in Wyoming. Limited data suggests that the

quality of winter elk diets in the Gravelly-Snowcrest Mountains were even greater than those of the artificially fed population during milder winters (Hamlin and Ross 2002). Also, we have not observed "winter-kills" of elk in portions of Montana not associated with YNP that might be attributed to poor forage conditions.

The limited habitat/forage/elk condition information currently available to FWP indicates that "shall consider the specific concerns of private landowners" may be the most operative factor in determining "sustainable numbers" of elk at this time.

Wolves and Other Predators

Wolves, grizzly bears, and mountain lions (cougars) can all be effective predators of adult elk. They, along with black bears and coyotes are also effective predators of newborn elk calves through their first few months of life. The hunting/foraging strategies of these predators differ. In Montana, bears are typically a major predator of newborn calves that are concentrated in predictable "calving areas, with wolves and lions becoming more important predators as calves become more mobile. Coyotes usually are minor but consistent predators of elk calves during the first few weeks of life. The fact that these predators do kill young and adult elk is not debatable. However, scientists, hunters and laypeople have debated the impact of this predation on elk population numbers and its influence on numbers of "huntable animals" for many years. The restoration of wolves to the Greater Yellowstone Area, and the natural dispersal of wolves into northwestern Montana, have stimulated this debate to new heights and has resulted in the initiation of new studies of potential impacts of wolves on elk and other ungulate populations. Impacts of individual species of predators on prey have been studied in a variety of locations and situations, but the impact of a combination of large, effective predators will likely be greater.

The effects of wolves and other predators on elk populations was one of the top issues of concern to the public in our scoping for issues relative to this Elk Management Plan revision. A small amount of concern about this issue was evident during preparation of the 1992 Elk Management Plan, but it was not one of the top concerns that it is today. Tabulation of unsolicited comments by hunters interviewed for Montana's Statewide Harvest Questionnaire telephone survey indicated that during the last 2 years, the issue of wolves and predation in general has reached a level beyond any other issue since records were kept beginning in 1996. In 2002, 81.1% of interviewers listed wolves as one of the top 3 issues mentioned by hunters compared to 3.8% in 1996. No other issue was mentioned by more than 50% of interviewers since 1996. For the 2002 hunting season, 13.6% of hunters reported observing a wolf or wolves at one location and 8.9% reported observing multiple wolves at more than one location (Brooks, unpublished).

Wolves are currently managed by the U. S. Fish & Wildlife Service (USFWS) under the authority of the Endangered Species Act and wolves in southwestern Montana are managed under the rules of experimental population status. Effective 1 April 2003, wolves in the Western Distinct Population Segment (includes northwestern Montana) were down-listed from endangered to threatened status. The experimental population in

southwestern Montana, Yellowstone National Park/Wyoming and central Idaho were unaffected by this ruling. The new threatened status for wolves in northern Montana allows wolf management very similar, but slightly more flexible than allowed in the experimental population areas. Currently, FWP and the state of Montana have no management authority for wolves. However, as of spring 2004, through a cooperative agreement with USFWS, Montana and FWP has "Designated Agent" status in northwestern Montana and "Cooperator" status for the experimental area. Thus, FWP can make wolf management decisions in northwestern Montana that are consistent with Federal guidelines. In the experimental area, FWP has no decision authority, but can assist the USFWS in wolf management.

Wolves in the experimental population area have met the numerical and distributional requirements necessary to be de-listed from management under the Endangered Species Act. The USFWS proposes to de-list wolves in this area and turn management over to the states upon completion of acceptable state wolf management plans by Montana, Idaho and Wyoming. When that process is completed, the state of Montana, through FWP, will manage wolves according to the recently completed Montana Gray Wolf Conservation and Management Plan. Under this plan, "FWP would manage gray wolves and ungulates in an integrated ecological manner and within the context of other environmental factors. If a local prey population were significantly impacted by wolf predation in conjunction with other environmental factors, FWP would consider reducing wolf pack size. If there were fewer than 15 breeding pairs (in Montana), relocation would be considered. If there are more than 15 breeding pairs, FWP will reduce pack size through liberal management tools, which could include regulated hunting or trapping. Wolf management actions would be paired with other corrective measures to reduce ungulate mortality or enhance recruitment such as decreasing hunter opportunity for antlerless animals."

When Montana receives management authority for wolves, management of wolves and elk could be somewhat integrated as described above. Currently, and throughout the period when FWP has no management authority for wolves, FWP will manage elk according to the prescriptions in this revised elk management plan. These management prescriptions consider any observed changes in elk population level and recruitment of new elk (calf:100 cow ratios). Should significant reductions in the above factors occur for any reason, including wolf predation, FWP will recommend restrictive regulation packages that generally include reduction or elimination of antlerless harvest if trend counts fall below objectives.

Other predators of elk including grizzly bears, black bears, and mountain lions have completed species management plans. If predation on elk by black bear or mountain lions is considered excessive, adjustments in harvest regulations for these species could be made if considered in an ecological context. Revisions of the black bear and mountain lion management plans are scheduled after current research studies on these species are completed between 2007 and 2009. Grizzly bears are currently a federally protected species managed under the Endangered Species Act. Like wolves, grizzly bears are being considered for delisting by the USFWS. Montana has completed a grizzly bear

management plan for southwestern Montana and is working on a management plan for the rest of the state.

HB 262, passed by the 2003 Montana Legislature establishes policy for FWP regarding management of large predators. That policy is as follows:

Policy for management of large predators – legislative intent.

(1) In managing large predators, the primary goals of the department must be to:

(a) preserve citizens' opportunities to hunt large game species;

(b) protect humans, livestock, and pets; and

(c) preserve and enhance the safety of the public during outdoor recreational and livelihood activities.

(2) As used in this section:

(a)"large game species" means deer, elk, mountain sheep, moose, antelope, and mountain goats; and

(b)"large predators" means bears, mountain lions, and wolves.

(3) With regard to large predators, it is the intent of the legislature that the specific provisions of this section concerning the management of large predators will control the general supervisory authority of the department regarding the management of all wildlife.

Surveys of Hunter Attitude, Opinion, Preference, and Characteristics

FWP has conducted a variety of statewide and more focused surveys of hunters for attitude, opinion, preference, and characteristics over the years through its Responsive Management Unit. Statewide samples of resident and non-resident hunters were surveyed in 1988 (Allen and FWP 1988), 1998 (King and Brooks 2001) and residents only in 2002 (Brooks, unpublished). We presented some results in earlier sections and will cover more general results here and within the following Economics and Commerce section.

Average age of all elk hunters increased from 38 years in 1988 to 46 years in 1998 and for residents only, remained stable at 42 years in 2002. In 1988, 5% of the sample was women, 6% in 1998, and 12% in 2002. Participation in archery hunting increased from 1% of the sample in 1988 to 15% in 1998. The percent of resident hunters that used an ATV increased from 4% in 1988, to 8% in 1998, and 9% in 2002. Non-resident hunter use of ATVs increased from 4% in 1988 to 11% in 1998. Resident hunter use of horses decreased from 22% in 1988, to 15% in 1998, and 14% in 2002. Non-resident hunter use of horses declined from 37% in 1988 to 26% in 1998.

Opinions of hunters on the use of roads for retrieval of elk did not change much in the 1988, 1998, and 2002 surveys. For 1988, 1998, and 2002, 53, 51%, and 47% respectively, of hunters said that only open roads should be used for vehicle retrieval of harvested elk. For the same years, 31%, 32%, and 37% said that closed roads should also be available for retrieval by vehicle. Similarly, 22%, 18%, and 17% said that hunters should be allowed to drive vehicles off-road for retrieval purposes.

In 1998, resident hunters were willing to pay about equal amounts more than current expenditures to double their chances of harvesting a 6-point or greater bull or see half as many hunters on their trip. Non-resident hunters were willing to pay about 50% more for the opportunity to harvest a 6-point or greater bull compared to the opportunity to see half as many hunters.

In 1998 and 2002, resident hunters were asked to choose among 3 bull elk regulation types: 1.) no permits required, hunt every year anywhere in the state, odds of harvesting a bull less than 1 in 10; 2.) unlimited permits, must choose hunting district, can hunt every year; and 3.) limited permits, may only receive permit 1 of 5 years, much better chance of harvesting a bull. Option 1 was favored by 39% of hunters in both 1988 and 2002, option 2 by 18% in 1988 and 17% in 2002, and option 3 by 10% in 1988 and 16% in 2002. Including the response of "do not favor, but would accept it", 63% of resident hunters in 1988 and 57% in 2002 chose option1, 50% and 44% option 2, and 28% and 31% option 3. These results indicate that resident hunters prefer the opportunity to hunt every year to an improved chance to harvest a bull when they do hunt. It also indicated that they prefer the opportunity to hunt in multiple locations in the state within a year to an increased opportunity to harvest a bull. In 1988, non-residents favored option 2 (unlimited permits by hunting district).

Resident hunters were also asked in 2002 to rank order 5 options (1 to 5) for increasing antlerless elk harvest where population reductions were necessary. A combined ranking of 1st or 2nd choice was: lengthen season – 55.0%; increase A-7/antlerless permits – 50.9%; use a quota and season remains open until quota is met – 43.7%; use a "B-tag" for a second antlerless elk – 28.9% and; temporarily open closed roads for retrieval – 28.4%. The last 2 options had high (61.0% and 57.7%, respectively) negative rankings (4 or 5). Lengthen the season had the lowest negative ranking (12.4%).

Of resident hunters surveyed in 2002, 42% had attempted to gain permission to hunt elk on private lands. Of those, 59.6% were successful in obtaining permission (25% of all resident hunters). Of those residents actually hunting elk on private lands, 5.1% paid for the privilege (2.1% of all resident hunters). Block Management lands were hunted for elk by 25.3% of resident hunters.

Resident elk hunters were also asked in 2002 to rank priorities for FWP spending if additional funding became available. The following categories were targeted for more money spent by FWP by a majority of respondents: Hunting Access – 71.4%; Habitat Improvement – 59.6%; Habitat Acquisition – 51.8%; and Predator Management – 50.1%.

Economics and Commerce

Elk are well known for their cultural and aesthetic importance to Montana, but they are economically very important as well. In 2001, hunters spent an estimated $237,605,000 in Montana (USDI, FWS and Dept. of Commerce, U.S. Census Bureau 2003). Of this, non-residents spent $63,771,000. Big game hunting accounted for about 80% of this total. Wildlife watching activities resulted in an estimated expenditure of $350,335,000

and $157,750,000 of this was spent by non-residents. Thus hunting and wildlife watching accounted for an estimated $587,940,000 in expenditures in Montana, of which $221,521,000 (37.7%) was by non-residents. This expenditure was equivalent to about 1.6% of total economic output in Montana during 1999 (Minnesota IMPLAN Group 2002). Inclusion of expenditures for fishing ($292,050,000) raises the total to about 2.3% of all economic output in Montana. Based on the USFWS survey, hunting and wildlife watching generated about 23% of the economic output that farming, ranching, and agricultural services combined produced in Montana during 1999. Similar percentages were 62% of the combined economic output of all mining, 38% of the output of the petroleum industry, and 32% of the combined output of forestry products, wood products, and pulp and paper.

Studies of the Net Economic Value of elk hunting in Montana (Duffield 1988, King and Brooks 2001, and Brooks unpublished 2004) estimated expenditures per day by resident elk hunters of $40.50 in 1988, $47.20 in 1998, and $53.82 in 2002. For non-residents, the comparable figures were $186.56 in 1988 and $207.42 in 1998. Estimates for non-residents were not made in 2002, but if expenditures increased at the same rate as for residents, the equivalent figure for non-residents in 2002 would have been $236.00. These figures are expenditures for food, travel, and equipment (purchased for that trip only) and exclusive of license fees. An estimate of $38,088,898 in resident and $29,622,956 in non-resident expenditures, or $67,711,854 total elk hunting expenditures are derived when expenditures per day are multiplied by number of days hunted for elk in Montana in 2002.

In 2002, elk license sales to Montana residents generated $1,861,925 in income to FWP and non-resident elk license sales generated $11,715,222 in income to FWP. This total of $13,577,147 was about 53% of all license fees received by FWP and equal to the entire budget for the Wildlife Division. It also accounts for a high proportion of FWPs discretionary spending because much other FWP funding is earmarked for specific purposes. This total does not include elk permit drawing fees, archery license fees, or conservation licenses fees not included in license packages. It also does not include a share of $5.6 million in Federal Pittman-Robertson funds that could be attributed to elk hunting/hunters. Thus, elk and elk hunting are of major importance to FWP funding and conservation and management programs for much more than elk.

Outfitting is a major industry in Montana and outfitted elk hunting is an important part of that industry. The majority of clients are non-residents; only about 1.5% of resident elk hunters utilize the services of outfitters (King and Brooks 2001). Although outfitter sponsored licenses form a stable base of income for outfitters, some holders of the non-resident big game combination non-sponsored license also use the services of outfitters. Statistics compiled by Sime (2003) for a sample of elk hunting counties (Lincoln, Flathead, Gallatin, Beaverhead, Sweetgrass, and Madison) indicated that during 1999-2001 non-sponsored license holders averaging 44% of the number of sponsored license holders used the services of outfitters. Numbers of non-sponsored license holders using outfitters may be a slightly lower percentage than the above figure because of multiple

reporting of the same client for multiple species. Thus in subsequent calculations, we use 35% of sponsored licenses as a multiplier.

Websites of Montana Outfitters and Guides Association (MOGA) listing elk hunting and prices for services were surveyed (http://www.moga-montana.org/guide.html). Seventy-two different businesses provided information relevant to elk hunting and fees on their websites. Notation was made if the site specifically mentioned availability of owned or exclusively leased private land or special private land hunts. If fees were different for different types of hunts, 2 hunters – one guide, one hunter – one guide, wilderness, lodge, etc., they were recorded separately and later averaged. Thus, for example, one business could provide 4 different fees for averaging costs of an outfitted elk hunt in Montana. For 86 hunting fee options that did not specifically mention the availability of owned or leased private land, the average price for an elk hunt was $3,183.14 (range: $1,695 - $4,200). For 21 hunting fee options that mentioned the availability of owned or leased private land, the average price for an elk hunt was $4,657.14 (range: $2,950 - $11,000). Thus the availability of owned or leased private land with a lightly hunted bull population added an average of about $1,500 or 46% to the price of an outfitted elk hunt. The average for all 107 different price options recorded was $3,472.43 for an outfitted elk hunt.

During 2002, 4,359 non-resident big game combination outfitter sponsored licenses and 652 non-resident elk combination outfitter sponsored licenses (5,011 total) were sold. Addition of 35% (1,754 non-sponsored hunters – see above) to that total indicates that 6,765 hunters may have used the services of outfitters to hunt elk in Montana during 2002. At an average price of $3,472 per elk hunt, 6,765 elk hunters may have provided about $23,488,080 in income to Montana outfitters. Thus outfitting elk hunters contributes substantially to bringing income to Montana from outside the state.

Much income to the state provided by elk is “hidden” in the retail and real estate sectors, among others. Many real estate ads in Montana trumpet the presence of elk in or near the subdivision or ranch as a prime attractant. Many products use the image of elk as an attractant or are designed to improve elk hunting and viewing. The Rocky Mountain Elk Foundation has its international headquarters in Missoula, Montana. Although most of it’s $34,935,891 expenditures in 2002 was outside Montana, likely much of the $4,724,704 management, general, and fundraising expenditures were spent in Montana along with at least some on the ground expenditures for habitat acquisition and improvement, etc.

Research

FWP recently completed a 12-year study of: “Effects of hunting regulation changes on elk and hunters in the Gravelly-Snowcrest Mountains, Montana” (Hamlin and Ross 2002). This study examined the effects of changing bull elk regulations from AB to BAB to BTB over the period. It also examined the effects of changing antlerless permit levels.

Effects on elk sex and age structure, reproduction, mortality, habitat use, distribution, movements and hunter numbers, success and attitudes were reported.

Currently, FWP is involved in 2 research projects related to elk. The first is a cooperative study with Montana State University – Ecology Department, USFWS, and NPS-Yellowstone National Park. This study is a long-term project to examine effects of wolf restoration on ungulates (especially elk) in the Greater Yellowstone Area of southwestern Montana. The study areas include the Northern Yellowstone range, the Madison-Firehole area of YNP, and the Gallatin, Madison and Gravelly-Snowcrest Mountains. Our study approach allows for comparisons among demographics of elk herds subject to wolf predation, but no hunting, herds affected by both wolf predation and hunting, and elk herds affected by hunting, but little or no wolf predation. As time progresses, expansion of the study outside the GYA may be necessary to find areas with no impact by wolf predation. By working in areas with differing ecological characteristics, including wolf abundance, we can make comparisons to identify factors that most impact wolf-elk dynamics. Because of the historical data on elk, we can make pre- and post-wolf comparisons among sites.

FWP and the University of Montana initiated a multi-year study in 2002 to document rates and causes of mortality of newborn elk calves in the east half of HD 292 in the Garnet EMU. Initiation of this study was in response to observed declining calf:100 cow ratios across much of FWP Region 2. This study also allows coordination with FWP's mountain lion research in the same area, following any changes in elk calf mortality coincident with known and manipulated changes in mountain lion densities. The study will also serve as an area without significant presence of grizzly bears or wolves for comparison with an elk calf mortality study on the Northern Yellowstone elk range where grizzly bears and wolves are a significant component of the elk predator complex.

The Elk Plan and Other Species

Elk distribution and habitat requirements overlap those of a variety of other wildlife species and domestic livestock. Native predators may also influence elk population dynamics and management. Management objectives in this elk plan represent a balance with management objectives for other wildlife populations and landowner tolerance relative to domestic livestock operations and agricultural crops. To the extent possible, the needs of a variety of non-game and threatened and endangered species were also considered in formulation of management objectives for elk. FWP also considered the needs of plant species, habitat communities, soil, water and humans as individuals, groups and communities in this elk plan.

Management objectives for elk considered objectives in FWP species management plans for mule deer, black bear, mountain lion, grizzly bear in southwestern Montana and the Montana gray wolf conservation and management plan. A management plan for white-tailed deer is in preparation, a management plan for bighorn sheep is in the planning stage and updates of the black bear and mountain lion plans will be completed when current

research projects are completed. As discussed earlier, HB 262 establishes FWP policy regarding managing large predators in relation to large game species.

Establishing Number Objectives for Elk

The public questions how number objectives for elk populations and EMUs are established. For specific EMUs and populations, some believe the number objectives are too low and some believe they are too high. Without a firm biological basis for setting the objective, one opinion is as valid as another. In the 1950s, 1960s and early 1970s, specific number objectives were not set, but a biological based method was used to classify the elk population as too high, too low or "about right" based on forage use transects. After about 30 years, it became apparent that this method was not realistic. Subsequent elk population and forage changes have generally indicated that in many areas elk populations could be sustained at much higher numbers than our assumptions about forage indicated. We have not established alternative forage-based models.

An alternative model based on calf recruitment rates as a surrogate for the forage quantity/quality/nutrition model has also been followed, at least in some areas. The premise behind this model was that recruitment at levels below about 20 calves:100 cows west of the continental divide and 35 calves:100 cows east of the continental divide indicated nutritional deficiencies and overuse of the forage resource. Thus, at observed recruitment below these levels an elk population reduction was indicated to reduce competition for forage. Although in theory this model has potential, in practice, it has not been very predictive. Hindsight has shown that some early periods of low calf recruitment occurred at elk densities a quarter or half of later elk densities with much higher recruitment. With this model, low recruitment due to density-independent effects of weather and predation may often falsely indicate that long-term forage effects have occurred. Another problem with both models mentioned is that the substantial annual variation in forage production obscures potential elk number/forage relationships. Substantial reductions in elk numbers proposed for some areas in this elk plan revision would allow further testing of density effects on calf recruitment.

In practice, elk number objectives have been or will be established by the following processes.

1. The history of long-term trend counts and discussions with landowners on many areas indicate to biologists at what count level and under what conditions agricultural damage complaints become more frequent or excessive. Objectives for number of elk counted will be established below levels of excessive damage problems. For other areas, especially on public lands in northwestern Montana, elk numbers are below levels sustained in the past. There, FWP objectives for elk numbers may be above current levels.
2. Increasingly, in problem areas, Community Working Groups are formed to help all stakeholders come to consensus about objectives for elk numbers and potential solutions to elk management problems in the area.
3. FWP has come to recognize that in some areas and for some elk populations, demand for antlerless harvest with current regulations is less than is necessary to

reduce the elk population from current levels to the objective. A substantially more liberal regulation package than traditionally used may be necessary to reduce the elk populations to objective levels. Once objective levels are met, regulations can be modified to maintain stable populations under average environmental conditions. These objective levels may be lower than ecological potential and driven more by sociological tolerance.

4. Elk populations in portions of some EMUs may be almost entirely inaccessible to hunters during the general hunting season or accessible to only a few hunters. To avoid over-harvest of accessible elk on public lands or private lands open to hunting, the inaccessible elk may not be included in objective numbers. Trend count number objectives may include only elk normally accessible to general hunting (if they are a distinct segment), though hunter access negotiations will continue. Elk occupying these "refuges" may be counted separately where practical (if they are a distinct segment) and sub-objectives established that could be operative if access negotiations are successful. If significant harvest of these "refuge" elk is possible with special management at some times and locations, they should be included in objective levels.

During winter and spring 2004, FWP biologists contacted many members of the public in various ways to discuss drafts of Elk Management (EMU) objective numbers for elk and proposed regulation packages. Comments received through these discussions were considered in writing the EMU Plans. EMU objectives and regulation packages were discussed at 54 meetings related to the 2004 season-setting process, with 18 Sportspersons Groups, with 7 Working Groups, with 45 individual sportspersons, with 23 outfitters, with 4 landowner/outfitters, and with 288 landowners in elk habitat.

It is apparent in many areas, especially with significant elk use of private land, that the ecological potential for elk numbers is substantially above the numbers sustainable based on landowner tolerance. For these areas, the expectations of private landowners will be an important component in establishing objectives for elk numbers.

MISSION OF FWP

Montana Fish, Wildlife & Parks, through its employees and citizen commission, provides for the stewardship of the fish, wildlife, parks and recreational resources of Montana, while contributing to the quality of life for present and future generations.

Guiding Principles

We understand that serving the people of Montana to achieve this vision is both a privilege and a responsibility. We also understand that we cannot achieve our vision alone. The following principles will guide FWP as we begin our second century:

- We will maintain the long-term viability of Montana's natural, cultural and recreational resources.
- We will actively involve people in decisions that affect them; help people to participate by providing them with credible and objective information, and

develop programs with a clear understanding of public expectations for FWP service.

- We will serve as an advocate for responsible management and for equitable allocation of public use of the limited resources that we are entrusted to manage.
- We will manage fish and wildlife resources with pride in Montana's hunting and angling heritage.
- We will create and strengthen working partnerships with individuals, organized groups and other natural, historic and cultural resource management agencies.
- We will use innovation and technology to improve our services.

Goals Relevant to Elk Management Plan

1) FWP will complete strategic and six-year plans for fish, wildlife and parks programs to clarify public expectations, allocate resources and define a common direction for FWP and our partners.
2) FWP management decisions will equitably balance the interests of hunters, anglers and other outdoor recreationists, visitors to historic sites, landowners, the general public and the needs of Montana's fish, wildlife and parks resources.
3) FWP will manage its wildlife program to balance game damage, human/wildlife conflicts and land-owner/recreations conflicts with the perpetuation and protection of wildlife populations.
4) FWP management decisions recognize that Montana's agricultural community is integral to the management of Montana's fish and wildlife populations and the habitats that support them.
5) FWP will provide diverse and equitable opportunities for people to experience a variety of outdoor recreation and historic and cultural experiences on public lands and in cooperation with private landowners.
6) FWP programs will be consistent with ecologically sound and sustainable practices and managed within funding capabilities.
7) FWP will provide and support programs to conserve and enhance Montana's terrestrial ecosystems and the diversity of species inhabiting them.
8) FWP will help Montana citizens to understand and participate in FWP's decision-making processes.
9) FWP will provide regulations, program information and educational materials that are accurate, reliable and easy for people to use and understand.
10) FWP will help people to be aware of and appreciate Montana's fish, wildlife, cultural, historic and natural resources.
11) FWP will provide family-oriented educational opportunities to help all ages learn to participate in and enjoy Montana's many and varied outdoor recreation opportunities.
12) FWP will encourage high standards of outdoor behavior by recreationists who participate in FWP regulated activities.

STATEWIDE OBJECTIVES

The most specific objectives are presented in 44 individual Elk Management Unit (EMU) Plans that follow. Specific statewide objective numbers for elk counted, hunters, and days of recreation are not presented because they do not contribute to problem solving. For example, half of the EMUs might total 10,000 elk counted above objective and the other half, 10,000 below objective. The net result would be that we were at statewide objectives for numbers of elk counted, when in fact; elk management problems existed in all EMUs.

Statewide Elk Population Management Objective

Maintain elk population numbers at levels producing a healthy and productive condition and that also reduces elk conflicts on private and public lands.

Statewide Elk Habitat Objective

Promote conservation and improvement of habitats that support the state's elk populations.

Statewide Elk Recreation Objective

Provide for a diverse elk hunting opportunity within, as much as possible, a 5-week general season and a 5 to 6-week archery season. Further, provide for quality viewing experiences and general enjoyment of elk by the public.

Statewide Access Objective

Maintain or improve public hunting access such that hunting is an effective population management tool that will maintain elk populations below levels causing damage to their habitat (vegetation, soil, and water) or excessive economic harm to the landowners that allow public hunting. Enhancing existing access programs and developing Community Working Groups will be a priority for FWP. For areas where elk security problems exist, promote access management that will reduce excessive harvests or movements of elk from public to private lands.

Statewide Game Damage Objective

Manage elk populations at levels commensurate with other land uses and, to the extent possible, prevent game damage from occurring. Where damage to standing or stored agricultural crops has occurred, implement timely and effective actions to provide relief to landowners meeting qualifications outlined in FWP's game damage policy.

Statewide Population Monitoring Objective

Enhance elk population monitoring to provide more accuracy and reliability in detecting population changes that require an adaptive regulation change to maintain population objectives.

SUMMARY OF MAJOR CHANGES FROM 1992 ELK PLAN

The biggest change of this revision of the Elk Plan from the 1992 Plan is the proposal to use Adaptive Harvest Management (AHM). The principles of AHM were discussed in the Introduction to the Elk Plan. Essentially, AHM consists of: 1) objectives for numbers of elk counted and numbers/ratios/percentages of bulls in the populations, 2) a strong monitoring program (post-season aerial surveys) to measure total numbers of elk and bulls counted and calf:100 cow ratios, and 3) sets of hunting regulation alternatives to implement when elk are at (Standard), above (Liberal), or below (Restrictive) objectives. Monitoring will follow the results of implementation of regulation alternatives to determine if objectives are achieved. If monitoring indicates that regulation packages do not achieve objectives, the AHM process will require design and implementation of new regulation packages. The Plan will evolve as learning from the AHM process occurs. Objectives can also change as learning occurs. At this stage of implementation, the AHM process for elk management assumes only the additive mortality/non-density dependent reproduction model.

There are 44 Elk Management Units (EMUs) in this revised Elk Plan compared to 35 in the 1992 Plan. The Teton River, Birdtail Hills, and Custer Forest EMUs were new EMUs added between 1992 and 2001. During the preparation of drafts of this plan, some previous EMUs were split, some were combined, and new EMUs were created. In this Plan, all hunting districts in Montana are now within an EMU. This includes hunting districts in central and eastern Montana where few or no elk are present and few are desired because of agricultural conflicts. Thus some new EMUs plan for the prevention of establishment of large elk populations in these areas.

Population Objectives

Objectives for elk numbers in the 1992 Plan were a mixture of inconsistently estimated total numbers and actual counted numbers. For this Plan, all objective numbers are for counted numbers without expansion to estimations.

Objective numbers are presented as a point estimate, but usually with a range around the point. This range may be expressed as a fixed range or as a percentage variation from the point objective (usually 20%). The major reason for this range is that counting elk is an inexact science and counting conditions vary from year-to-year and a range is necessary to take this variation into account and determine whether a real change has occurred. Therefore, we also generally use a 2-year period to make changes if counts are below objectives because of the possibility of poor survey conditions. However, because

seldom, if ever, do we count more elk than actually exist, we will recommend regulation changes immediately when the number of elk counted are above the objective range.

Population Monitoring

One new elk population survey area is proposed for the Salish EMU should funding become available. The Bridger and Missouri River Breaks EMUs will begin coordinating surveys such that non-annual surveys are conducted in the same year throughout the EMUs. Related to Wolf-Ungulate studies, increased elk population surveys will be conducted in the Gallatin/Madison, Elkhorn, and Garnet EMUs. Additionally, for HDs 360 and 362 within the Gallatin/Madison EMU, the normal fixed-wing survey will be accomplished by helicopter every other year. A potential increase in survey frequency is proposed for the Bull Mountain EMU and we will investigate establishment of a reliable, cost-effective survey area for the Custer Forest EMU.

Additional enhancement of elk population monitoring will depend on increased funding, availability of pilots, and work time of biologists. Should these factors be positive, we propose additional enhancements prioritized as follows:

1) Areas with high survey/population variability, consistent problems (over/under objective, damage complaints, etc.), of major importance (high hunter harvest, high viewer interest), or those with no current surveys would have high priority.
2) Areas that are only surveyed every 2-3 years should be upgraded to every year.
3) Studies should be established that would estimate the average and range of observability for aerial elk surveys in cover types/habitats for which that information is currently unavailable.
4) Census areas with repetitive surveys, similar to those for mule deer, should be established for representative, important elk populations.
5) Should the above be accomplished, modeling of elk populations should begin, with testing of competing models of dynamics tested relative to affects of Regulation Packages.

Regulation Packages

The reader should look to the individual EMU Plans for the proposed regulation packages that apply there. Below, however, is a very general summary of proposed regulation packages. For bulls, the Standard package is generally limited permits in 9 EMUs and a portion of another. The Standard package is antlered bull (AB) in 16 EMUs or portions of EMUs and brow-tined bull (BTB) in 22 EMUs or portions of EMUs. The Standard regulation is spike bull with BTB on permits in one EMU and a portion of another EMU. For the Restrictive package, unlimited or limited permits is the option in 31 EMUs. There is generally no Liberal regulation package for bulls except in several EMUs where much of the game damage problem is caused by bulls. We believe that in most cases, if "too many bulls" becomes a problem in most areas, the temporary shift of hunting pressure that would occur would make it unnecessary to liberalize regulations. For antlerless elk,

the Standard regulation is generally limited permits in 22 EMUs, a general antlerless regulation of varying length with limited permits for the remainder of the season in 19 EMUs, and either-sex regulations in 2 EMUs. Eighteen of the EMUs also have the option of issuing A-9/B-12 licenses (B-tags) within the Standard regulation. For the Restrictive package, generally all EMUs propose implementing limited antlerless permits. For the Liberal package, 37 (nearly all) EMUs have a general antlerless regulation of some length, up to the full 5-weeks of the general season. Within the Liberal package, 27 EMUs contain the option for issuing A-9/B-12 licenses (B-tags) and 16 EMUs contain an option for an Antlerless Only regulation if objectives are not met with all other Liberal options.

If it becomes necessary to recommend a Restrictive Regulation for bulls that includes unlimited or limited permits, ALL hunters, including archers will be required to apply for the permits in most cases.

Although the preference of FWP is to manage elk within the framework of a 5-week general season, where game damage criteria apply, all EMUs have the option of special early seasons, an extended general season, or special late seasons.

It is the intention of FWP, as part of the hunter recruitment program, to maintain Special Youth Hunts in all hunting districts where general bull hunting (areas without limited permits for bulls) occurs. These Special Youth Hunts, for youths 12-14 years of age, allow the harvest of antlerless elk (without a special permit) or a legally defined bull for that HD. This Special Youth Hunt is not written into the AHM regulation packages of individual EMUs, but will apply wherever criteria are met.

Elk Management Unit (EMU) Location and Summary Statistics

Figure 20 indicates locations of EMUs and Table 9 displays summary statistics for EMUs. Further indication of location of EMUs is provided in a map at the beginning of each EMU Plan.

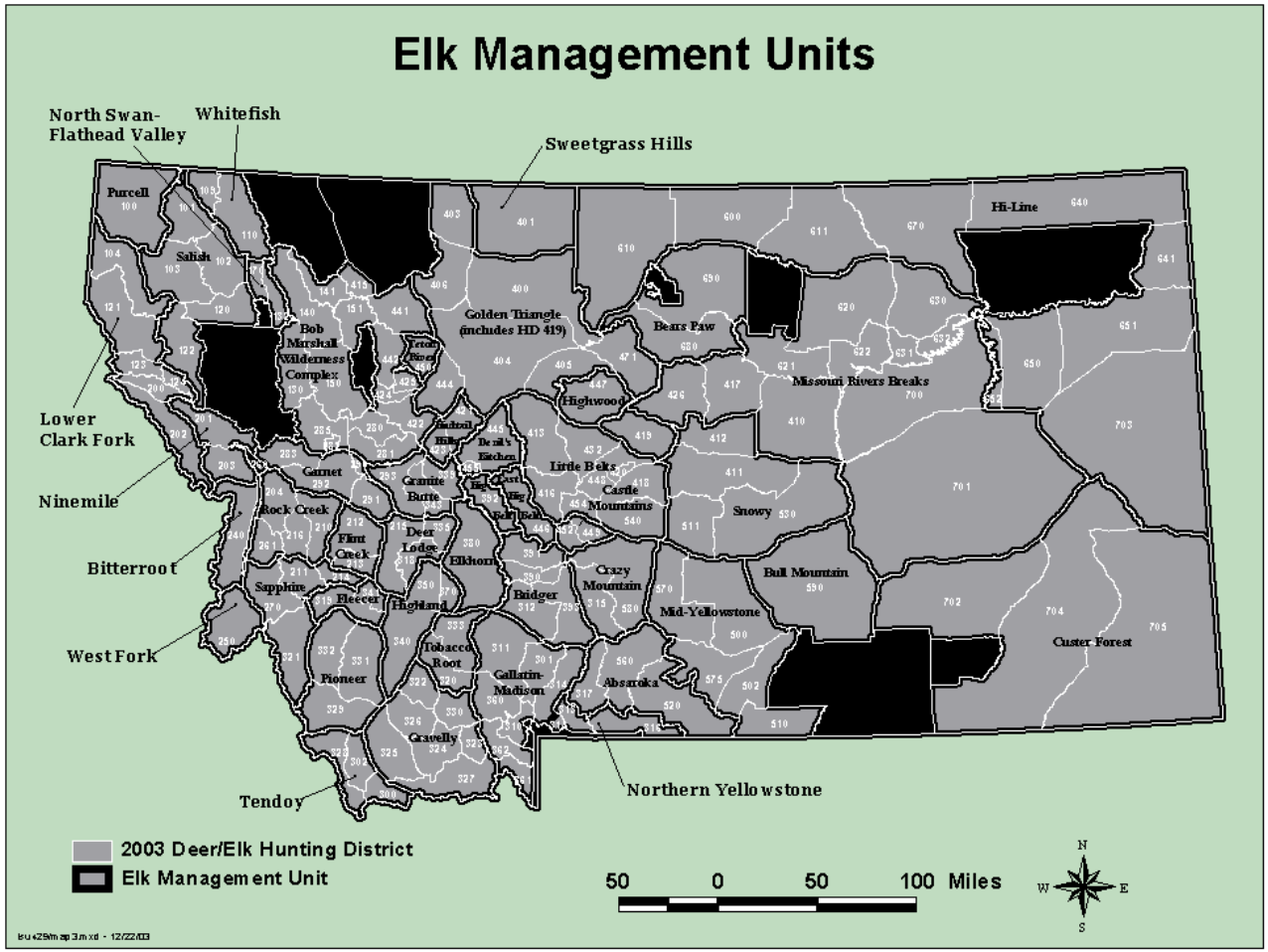


Figure 20. Location and names of Montana Elk Management Units (EMUs).

Table 9. Summary statistics for number of elk counted, objective number, elk unavailable for general season management, hunter numbers, and average annual elk harvest by Elk Management Unit (EMU).

Name of EMU	Area (mi^2)	Number of Elk Counted[a]		Estimated No. of Elk not available for general public hunting[c]	Ave. Hunter Numbers (1999-2001)[d]	Average Elk Harvest (1999-2001)[d]	
		Current	Objective[b]			Bulls	Antlerless
Purcell[e]	1,414	120	300	0	2,115	64	17
Salish[e]	3,350	466	700	0	8,000	141	49
Whitefish[e]	1,067	358	600	0	1,040	50	16
North Swan-Flathead Valley[e]	410	250		100	420	11	8
Lower Clark Fork[f]	2,896	2,829	2,400	70	6,700	295	205
Bob Marshall Complex[g]	6,280	7,112	5,925	1,330	8,006	531	222
Ninemile	1,055	1,551	1,550	145	2,193	83	51
Bitterroot	927	1,016	750	305	1,738	58	83
Garnet	1,349	3,279	2,200	1,530	3,951	348	198
Flint Creek	772	1,384	1,500	495	2,723	216	268
Rock Creek	1,490	3,044	2,500	1,060	4,747	314	352
Sapphire	1,985	3,745	3,400	1,090	6,472	550	417
West Fork	707	1,703	1,400	340	1,519	84	46
Deer Lodge	1,086	1,749	2,100	485	3,655	243	360
Granite Butte	1,113	2,232	2,100	780	3,731	220	275
Fleecer	630	1,747	1,475	50	2,694	181	234
Pioneer	2,040	2,575	2,950	445	6,537	682	633
Tendoy	1,028	2,641	2,050	500	3,200	388	366
Gravelly	3,044	9,050	6,500	2,135	11,825	990	1,543
Tobacco Root	955	1,343	1,000	780	2,365	183	243
Highland	1,385	921	1,600	500	3,450	247	228
Elkhorn	1,241	1,787	2,000	180	3,574	263	302
West Big Belt	444	1,183	1,100	175	1,870	119	140
Bridger	1,826	5,591	3,550	3,760	4,100	451	478
Gallatin/Madison	3,006	11,121	11,200	7,745	11,279	941	719
Northern Yellowstone[h]	700	3273[h]	4000[h]	325	3,200	275	1,125
Absaroka	2,420	2,817	2,650	1,455	2,558	266	200
Crazy Mountains	1,708	3,043	1,975	1,965	2,158	267	266

(continued next page)

Table 9 (continued) Summary statistics for number of elk counted, objective number, elk unavailable for general season management, hunter numbers, and average annual elk harvest by Elk Management Unit (EMU).

Name of EMU	Area (mi^2)	Number of Elk Counted[a]		Estimated No. of Elk not available for general public hunting[c]	Ave. Hunter Numbers (1999-2001)[d]	Average Elk (1999-2001)[d]	Harvest
		Current	Objective[b]			Bulls	Antlerless
East Big Belt	609	1,177	900	900	1,228	124	198
Castle Mountains	341	636	625	320	600	89	89
Little Belt	3,585	3,040	3,600	1,370	8,516	517	483
Devil's Kitchen	751	1,237	2,200	370	1,702	130	242
Birdtail Hills	542	848	500	510	644	62	56
Teton River	318	94	85	30	464	10	10
Sweetgrass Hills	1,891	343	350	120	366	29	113
Golden Triangle[i]	7,964		few	0	391	20	8
Highwood	748	510	550	230	958	69	32
Snowy	4,705	1,900	1,100	475	947	101	122
Mid-Yellowstone	4,665	273	445	200	630	27	64
Bull Mountain	2,877	1,331	1,050	730	507	66	118
Bears Paw Mountains	2,821	259	250	40	100	25	23
Missouri River Breaks	17,239	7,553	4,725	1,280	4,600	507	647
Hi-Line[i]	21,104	100	few	50	82	11	2
Custer Forest[j]	14,378	900	500	360	757	58	97
TOTAL	130,866	94,858	86,355	34,730	138,312	10,306	11,348

[a] Total counts NOT attempted for all EMUs - see individual EMU superscripts. Count data generally for 2004 - 2002/2003 if no flights in 2004.

[b] Midpoint used if Objective is a range in numbers.

[c] Number of elk estimated not available for general public hunting during 5-week general season due to no hunting allowed, outfitting, leasing, blocked access, or other factors. Some of these elk are available to outfitted clients, family, and friends.

[d] Hunter numbers and harvest averaged for 1999-2001 except for some new EMUs where 2002 data are used.

[e] Complete counts NOT attempted because of heavy timber cover and scattered winter range - numbers represent counts of small sample areas.

[f] Portions of EMU counts are small sample areas only.

[g] Region 1 portion of counts are small sample areas only.

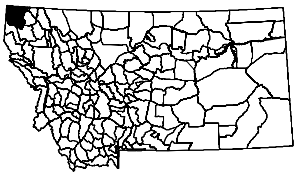
[h] Numbers for elk wintering north of Yellowstone National Park ONLY.

[i] No population counts attempted - ground observations and public reports only.

[j] Because of costs of surveying widely scattered elk, total counts have not been attempted. Estimates based on general observations.

INDIVIDUAL
ELK MANAGEMENT UNIT
(EMU)
PLANS

PURCELL EMU
(Hunting District 100)



Description: Located in the extreme northwest corner of the state, this 1,414-square-mile EMU is bounded on the north by British Columbia, Canada, on the west by Idaho, and on the south and east by the Kootenai River and Lake Koocanusa, respectively. The terrain is mountainous and heavily timbered, featuring some of the wettest forest habitat types in Montana. Lands administered by the Kootenai National Forest comprise 95% of this EMU. The remaining 5% of the land base consists of small private holdings located primarily along the major stream corridors (2%), and corporate timberlands (3%), primarily Plum Creek Timber Company (PCT). The 172-acre Kootenai Falls Wildlife Management Area is situated along the north shore of the Kootenai River in the extreme southern portion of the EMU, and the 900-acre West Kootenai Wildlife Management Area is situated in the extreme northeast corner of the EMU adjacent to the Canadian Border. Several small roadless areas including Northwest Peaks, Buckhorn Ridge, Grizzly Peak, Roderick Mountain and Gold Hill exist as scattered islands of unroaded habitat totaling approximately 82,000 acres. Timber management is the dominant land use in the area.

Public Access: Approximately 3,000 miles of logging roads (about 2.1 miles of road per section) currently exist on USDA - Forest Service (USFS) lands in this EMU. Several hundred additional miles of road exist as private logging roads (PCT), and county roads. Most of the National Forest System Roads are closed to motorized travel either seasonally (145 miles, 5%) or yearlong (1,885 miles, 63%), with 967 miles (32%) remaining open yearlong (0.68 miles per section of open roads). Most of the road closures were implemented as a result of grizzly bear habitat security issues. All USFS system roads closed to motorized traffic are open to use via foot, horseback, bicycle or other non-motorized means. With the exception of small private holdings (2%), the remainder of the area (98%) remains open to public use for recreational pursuits, including big game hunting. Remnants of a once extensive pack trail system remain in isolated locations throughout the EMU, and provide foot access to the few remaining unroaded areas.

Elk Population: An unknown number of elk inhabit approximately 85% of the unit during spring, summer and fall. Good winter range is lacking, comprising no more than 15% of the total area. Elk numbers and distribution increased during the 1980's and early 1990s, but have stabilized and remained relatively constant over the last decade. The severe winter of 1996-97 reduced the elk population and compromised calf production and recruitment until 1998. The elk population appears to be recovering slowly since that time (Figure 1).

Recreation Provided: This EMU provided an average of 15,117 days of hunting recreation for approximately 2,115 hunters annually during 1999-2001. These figures represent a reduction of about 15% in hunter numbers and hunter recreation days compared to the early 1990's. More conservative hunting regulations during the past several years are probably responsible for these declines. Most elk hunting in this unit is accomplished by driving open roads, walking roads with motor vehicle restrictions or hiking from roads for partial to full day hunts. Backcountry hunting opportunity is limited because the few remaining roadless areas are relatively small (5,000 to 20,000 acres). Due to heavily forested terrain and scattered distribution of elk, viewing opportunities are limited to incidental encounters by people pursuing other activities. Some opportunity for viewing elk in their natural habitat is available in late winter/early spring when they congregate in open grassy areas such as the Horse Range along state Highway 37 between Libby and Libby Dam. Hunting for shed antlers has also become a popular activity for some individuals during April and May each year.

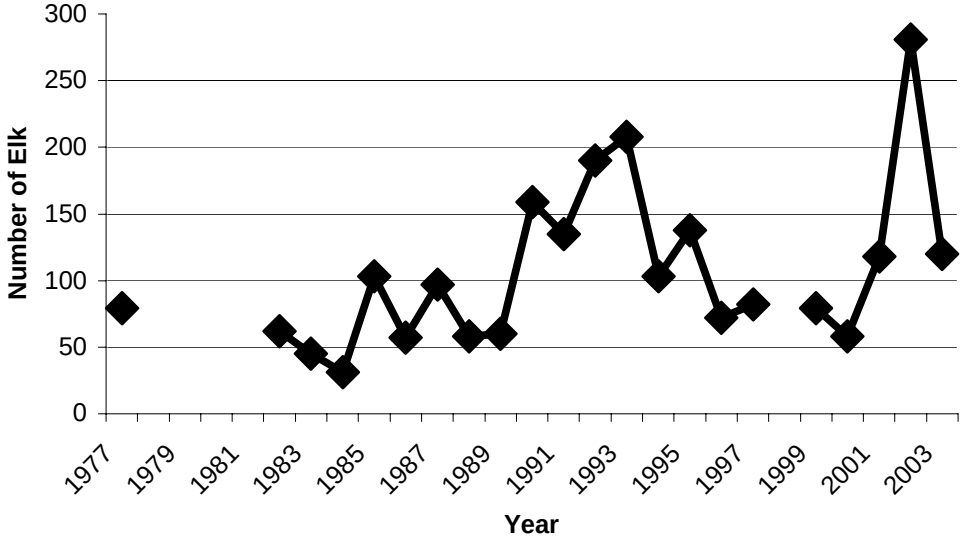


Figure 1. Number of elk observed during post-season aerial trend surveys in the Horse Range and Pipe Creek/Seventeenmile Creek areas, 1977-2003.

Annual Elk Harvest: The average annual elk harvest for this EMU during 1999-2001 was 81 animals consisting of 17 antlerless elk and 64 bulls. Currently, bull harvest is restricted to brow-tined bulls, and limited permits control antlerless harvest. Approximately 38% of the annual bull harvest is comprised of bulls with 6 points or more on at least one antler.

Accomplishments: Forage production for elk has been improved. During the past decade, major wildfires (1994 and 2000) have altered over 56,000 acres of forestlands in the Purcell EMU. The 1994 fire event burned 33,200 acres in the following major elk habitat areas: Pink Mountain to Zimmerman Hill; Big Creek to Webb Mountain; Seventeenmile Creek; O'Brien Creek and; Quartz Creek to Banfield Mountain. The 2000 fire event burned an additional 23,000 acres of elk habitat in the following areas: Young Creek; Big Creek to Boulder Creek; O'Brien Creek; Beaver Creek to Kelsey Creek; Grubstake; Lucky Point to Roderick Mountain and; Runt Creek. In addition to wildfires, big game habitat improvement projects, including prescribed burning,

were conducted on national forest lands by the three Ranger Districts on the Kootenai National Forest that have management responsibilities in the Purcell EMU. Utilizing funding from BPA Libby Dam Mitigation Trust Fund, Sikes Act, RMEF and USFS Wildlife Budgets, an additional 7,850 acres of elk habitat were treated in the following areas: Alexander/Jackson/Barron/Bristow/Ziegler/Parsnip/Dodge/Sullivan/ Young Creek areas along the west side of Lake Koocanusa; Horse Range to Rainy Creek just downstream from Libby Dam; Gold Hill and; Turner Mountain in the upper Pipe Creek drainage. In the Yaak River drainage, over 1,100 acres of elk habitat were treated in the following areas: Seventeenmile Creek; Bunker Hill; Roderick; West Yaak; Wood/Rat; Whitetail and; Rausch Point.

Management Challenges: The major portion (95%) of this EMU is public land, managed by the Kootenai National Forest and hunter access for elk hunting activity is generally non-restrictive. Plum Creek Timber Company (PCT) holds ownership on approximately 3% of this EMU and they have historically allowed public hunting on these lands. In recent years, PCT has been selling some of their timberlands in this EMU to private land developers who, in turn, are subdividing these properties for sale to private homeowners. Most of the PCT properties being marketed are in low elevation areas along water-ways, which are also wintering areas for big game animals, including elk. Although elk use some of these private development areas, the overall impact to elk winter range is minimal in this 900,000 acre EMU. Other small private housing developments, such as one on the Horse Range, are locally important to elk, and have impacted hunter access to National Forest Lands, but on a small scale.

Noxious weed invasion onto important elk winter ranges is having increasing impacts on winter range forage production. Prescribed burning on ungulate winter ranges to reduce conifer encroachment onto open foraging areas is an important habitat enhancement tool in the heavily forested environment of northwest Montana. The USFS prescribed burning policy precludes prescribed fires on winter ranges heavily infested by noxious weeds. A good example of this problem in the Purcell EMU is the Horse Range winter range east of Libby and just downstream from Libby Dam. We encourage noxious weed control activities by the USFS on important big game wintering areas so that other forms of habitat improvement, such as prescribed fire, will not be precluded.

Wolf reintroductions and recovery in the Purcell EMU will likely become an increasingly important issue over the next decade. Dispersing wolves from Canada have appeared more frequently in the Purcell EMU over the past decade. On two occasions over the past few years, the US Fish and Wildlife Service has released wolves into the EMU. Currently, there is no verified breeding pack activity in this area. However, it is probable that wolf packs will establish and become active in the near future. The Purcell EMU currently has healthy populations of mountain lions and black bears and increasing populations of grizzly bears and wolves. All of these large carnivores, collectively, will likely have a depressing influence on the elk population with a subsequent reduction in elk hunter opportunity.

Population Monitoring: Population monitoring through aerial surveys continues to be a challenging endeavor in the heavily forested landscape in northwestern Montana. Windows of opportunity for collecting trend data in population composition are generally restricted to brief periods in winter with continuous snow cover or during spring green-up of grasses when elk

become more visible for short periods of time. Due to limited budgets and scheduling conflicts with the FWP helicopter, less than 2% of the Purcell EMU is surveyed. Nonetheless, annual population composition samples in conjunction with EMU harvest statistics and hunter check station data provide information on elk population status. Because aerial trend count surveys cover such a small portion of winter range and they may not be flown every year due to scheduling conflicts, we emphasize use of observed calf:100 cow ratios for management direction. Increasing ratios or ratios above 35 calves:100 cows indicate the potential for population increase and decreasing ratios or those below about 20 calves:100 cows indicate the potential for population declines.

SUMMARY OF PUBLIC COMMENT

During the 1992 public scoping process conducted for the first Elk Management Plan, public comment indicated general satisfaction with the existing recreational character of this EMU. At that time, there was public preference for implementing road restrictions rather than shortening the hunting season to reduce elk vulnerability. Other comments indicated interest in instituting sex and antler point restrictions in the hunting regulations. Public comment suggested a preference among hunters for the opportunity to harvest an elk for the meat. However, some hunters also expressed a desire for the opportunity to harvest older bulls. In the recently completed Region One Elk Hunter Survey Report (2003), the majority (47%) of hunters surveyed in Lincoln County chose “any antlered bull throughout Region One” as their preferred hunting regulation. The majority (46%) of Lincoln County hunters responding to the survey also indicated a preference for general season antlerless elk hunting for a portion of the hunting season. They were also the most dissatisfied (49%) of all Region 1 hunters with the current brow-tined bull regulation in this area. Generally, public comment in 1992 and the 2003 Region One Elk Hunter Survey Report indicated that Lincoln County hunters preferred hunting elk of either-sex for a portion of the season, and then hunting any antlered bull during the remainder of the season.

MANAGEMENT GOAL

Manage for a stable elk population in a healthy condition consistent with available habitat on public and private land, with emphasis on maintaining a diverse bull age structure. Coordinate with land management agencies to provide diverse hunting opportunities.

HABITAT OBJECTIVES

Maintain elk distribution over 800,000 acres, and elk winter range on 100,000 acres throughout the EMU. Maintain or improve elk habitat security so that elk harvest is distributed throughout the hunting season so that no more than 40% (3 year average) of the bull harvest occurs during the first week of the general hunting season.

HABITAT MANAGEMENT STRATEGIES

FWP will work cooperatively with state, federal and corporate landowners to:

- Achieve increased consideration for elk habitat productivity and elk security needs in the planning of timber sales, transportation systems, and habitat enhancement projects.
- Identify and map elk winter ranges.
- Manage limited winter range to accommodate the current elk population.
- Achieve open road densities not to exceed 0.75 miles of road per section of land in big game summer/fall range, and no open roads on key winter ranges.
- Maintain about 90,000 acres of roadless elk security areas in the Northwest Peaks, Buckhorn Ridge, Grizzly Peak, Roderick Mountain, and Gold Hill areas, which also provide roadless elk hunting recreation.
- Maintain or enhance approximately 5,000 acres of elk winter range annually, to include the following key areas: West Kootenai, Bristow Creek, Barron Creek, Alexander Creek, Horse Range, Rainy Creek, Sheldon Mountain, Quartz Creek, Bobtail Creek, Pipe Creek, Teepee Mountain, Seventeenmile Creek, Whitetail Face, Grubstake Mountain, and Zimmerman Hill.

GAME DAMAGE STRATEGIES

Game damage is not an issue in this EMU.

ACCESS STRATEGIES

Because 95% of this EMU is National Forest Land, hunter access is generally not an issue. However, to insure continued hunter access opportunities, FWP will:

- Identify important points of access to public lands and provide recommendations for acquisition, maintenance, and development to the appropriate land management authority.
- Continue to review USFS road management and travel plans and provide input that encourages maintenance of elk habitat security and provide hunters with current levels of access.
- Work with public and private entities to discourage land exchanges and/or developments that would exclude lands from public hunting.

POPULATION OBJECTIVES

1) Achieve post-season classifications of 300 elk annually on 2 primary trend areas, the Horse Range and the Pipe Creek/Seventeenmile Creek area.
2) Maintain at least 8% bulls in the total elk observed during the post-season classification sample.
3) Manage for a bull harvest averaging at least 25 bulls with 6 points or more on at least one antler.

POPULATION MANAGEMENT STRATEGIES

Calf:100 cow ratios observed during post-season aerial trend surveys will play an important part in determining the status and trajectory of the elk population in this EMU. Because of high

variability in surveys in this area, the number of total elk observed during post-season aerial trend surveys will contribute to management decisions, but in a lesser role than calf:100 cow ratios.

REGULATION PACKAGES

Six-week archery regulation for brow-tined bulls/antlerless elk or either-sex elk, depending on regulations for the general season EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits (currently 100 antlerless permits for this EMU).

The Standard Regulation will be recommended if: 1.) numbers of elk observed during post-season trend area samples are within 20% of the objective (300 elk) OR; 2.) calf:100 cow ratios observed during post-season trend samples remain between 20-40:100 OR; 3.) success for antlerless elk permit holders is between 20-40%. **Two consecutive years outside the range for 2 of the 3 criteria required for change in regulations.**

The Liberal Regulation is: **1)** increase antlerless permit levels (more than 100) OR; **2)** a general antlerless regulation for a portion of the 5-week general season.

1.) Increased antlerless permits will be recommended if: a) numbers of elk observed on post-season trend flights are more than 20% above the objective (300 elk) OR; b.) calf:100 cow ratios observed during post-season survey samples are more than 40:100 OR; c.) success for antlerless elk permit holders is more than 40%. **Two consecutive years outside the range for 2 of the 3 criteria required for change in regulations.**

2.) a general antlerless regulation for a portion of the 5-week general season will be recommended if: after 2 consecutive years of increased antlerless permits (more than 100) a) number of elk observed on post-season trend flights remain more than 20% above the objective (300 elk) OR; b.) calf:100 cow ratios observed during post-season survey samples remain more than 40:100 OR; c.) success for antlerless elk permit holders is more than 40%. **Two consecutive years outside the range for 2 of the 3 criteria required for change in regulations.**

The Restrictive Regulation is: no antlerless elk hunting or a very limited number of antlerless elk permits (less than 25).

The Restrictive Regulation will be recommended if: 1.) numbers of elk observed during post-season trend area flights are more than 20% below the objective (300 elk) OR; 2.) calf:100 cow ratios observed during post-season trend survey samples are less than 20:100 OR; 3.) success for antlerless elk permit holders is less than 20%. **Two consecutive years outside the range for 2 of the 3 criteria required for change in regulations.**

Antlered:

The Standard Regulation is: **1.)** 5-week general season brow-tined bull regulation OR; **2.)** 5-week general season antlered bull regulation.

1.) A brow-tined bull regulation will be recommended if: a.) the percent bulls observed during post-season aerial surveys is at least 8% of total elk OR; b.) the number of bulls in the harvest with 6 points or more on at least one antler reported in the Statewide Harvest Questionnaire exceeds 30 for two consecutive years.

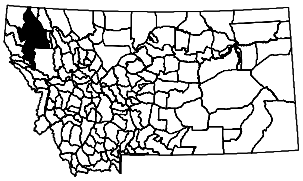
2.) An antlered bull regulation will be recommended if, in addition to a) and b) above: the majority of the public desires an antlered bull regulation AND; the adjacent EMUs also have antlered bull regulations.

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls or **2.)** limited permits for antlered bulls. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED OR LIMITED PERMITS.

1.) Unlimited permits for brow-tined bulls will be recommended if: the percent bulls observed during post-season aerial surveys is less than 8% of total elk for 2 consecutive years OR; b.) the number of bulls in the harvest with 6 points or more on at least one antler reported in the Statewide Harvest Questionnaire is less than 30 for two consecutive years.

2.) Limited permits for antlered bulls will be recommended if: objectives for bulls (a. and b. above) have not been met after 2 consecutive years of unlimited permits for brow-tined bulls.

SALISH EMU
(Hunting Districts 101, 102, 103, 120, 122)



Description: The Salish EMU is located in northwestern Montana and encompasses approximately 3,350 square miles of land from Eureka to the west side of the Flathead Indian Reservation. This unit encompasses the western portion of the Flathead National Forest, the eastern portion of the Kootenai National Forest, and the northwestern portion of the Lolo National Forest. More than half of the land base is owned and managed by large timber corporations, primarily Plum Creek Timber Company (PCT). Extensive timber harvesting has occurred throughout the area, including lands managed by the U.S. Forest Service (USFS) and Department of Natural Resources and Conservation (DNRC). FWP's Kuhn's Wildlife Management Area lies within this EMU.

Public Access: Most areas within this EMU are accessible by road, although road closures by both private and public entities have reduced motorized access considerably in the last decade. There are no established wilderness areas and few large blocks (>5,000 acres) of unroaded habitat within this EMU. The largest conservation easement in Montana is in the Thompson and Fisher Rivers drainages in this EMU. This easement between FWP and PCT protects over 142,000 acres of habitat from residential development and guarantees access to hunters and anglers in perpetuity. In addition, other PCT lands within this EMU are enrolled in FWP's Block Management Program which allows hunters continued access.

Elk Populations: The majority of the area is elk habitat, although individual herds tend to be small and scattered. Due to forested cover, this EMU has a low sightability for elk. Some of the greater concentrations of elk are in the Fisher and Thompson River areas. Formal surveys for elk in this EMU are conducted only in HDs 103 and 120. During 1999-2002, between 283 and 455 total elk were counted annually in the 2 survey areas (Figures 1 and 2). In addition to the aerial survey areas, ground observations indicate that 150-200 elk spend winter near the Dancing Prairie Preserve and more than 50 elk winter in the Pinkham Creek/Black Butte areas in HD 101.

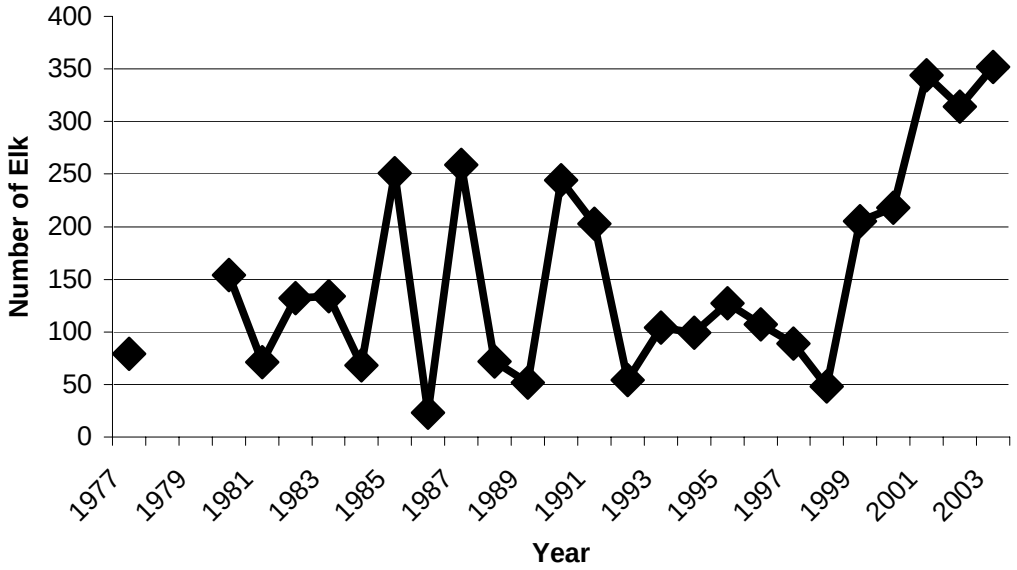


Figure 1. Number of elk observed during post-season aerial trend survey samples in HD 103, 1977-2003.

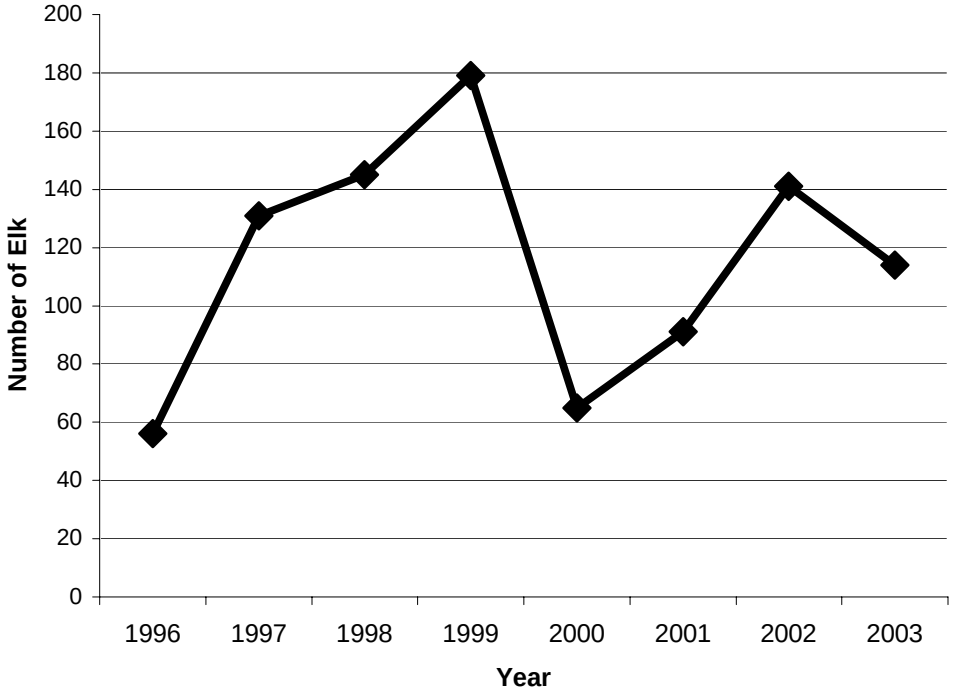


Figure 2. Number of elk observed in post-season aerial survey samples in HD 120 during 1996-2003.

Recreation Provided: This EMU provided about 58,800 days of elk hunting recreation annually for 8,000 hunters during 1999-2001. Annual hunter success for 1999-2001 varied from 2-3 %, with 275-430 days of effort required/elk harvested. Most hunters drawn to this area are pursuing white-tailed deer and will harvest an elk if the opportunity presents itself. Elk viewing opportunities are generally limited with the exception of the Lost Trail Ranch and several other areas. Elk viewing opportunities are usually best during winter and the spring green-up periods.

Annual Elk Harvest: The 3-year average harvest from 1999-2001 was 190 elk (122-160 antlered and 41-56 antlerless). Approximately 27% of the bull harvest was comprised of bulls with 6 points or more on at least one antler.

Accomplishments: FWP successfully coordinated the largest conservation easement in Montana, thereby protecting over 142,000 acres of PCT land in the Fisher and Thompson River areas from future development and guaranteeing access to hunters and anglers. FWP also coordinated with PCT the largest Block Management Area in Montana, guaranteeing hunters access to an additional 774,000 acres, the vast majority of it in this EMU. An FWP conservation easement held with The Nature Conservancy on Dancing Prairie Preserve (680 acres) in HD 101 is becoming an increasingly important wintering area for elk, with over 170 elk wintering there in 2002-2003. In 1999, the U.S. Fish and Wildlife Service acquired Lost Trail Ranch in HD 103, a 7,885-acre National Wildlife Refuge that provides important habitat for wintering elk and provides hunters access to adjacent State and PCT lands.

Several large wildfires in the past decade have inadvertently improved habitat conditions for elk. The Little Wolf and Hand Creek Fires in HDs 102 and 103 burned approximately 15,000 acres in 1994. In 2000, the Lydia and Stone Hill fires burned an additional 16,000 acres in HD 101. Numerous smaller fires occurred in the EMU during those same periods. Through the BPA Mitigation Program, FWP helps fund the burning of approximately 1,500 acres annually along Koocanusa Reservoir that provides benefits to elk, mule deer, and bighorn sheep.

One of the greater threats to elk habitat within this EMU is the proliferation of noxious weeds. The USFS is taking aggressive action to control an outbreak of Tansey Ragwort in the Hand Creek area. PCT, the USFS, and Stoltze Land and Lumber Company are all taking aggressive steps to control Spotted Knapweed by using herbicides on infested areas and requiring the cleaning of equipment before transport to new areas.

Management Challenges: A serious threat to hunting access and elk population management in this EMU is posed by new and expanding residential subdivisions. Of special concern are the thousands of acres in Plum Creek Timber (PCT) ownership. PCT lands have historically been open to the public, and hunters tend to take this privilege for granted. However, in recent years PCT has been marketing parcels for sale. The loss of hunting access on PCT lands, and the possible concurrent loss of elk habitat, would eliminate significant public hunting opportunities for elk and might negatively impact elk numbers.

The impact of predators on elk populations is poorly understood and often the center of controversy. Predators within this EMU capable of killing elk include black bears, wolves, and mountain lions. A few grizzly bears also are present within this area, and coyotes likely kill some

newborn elk calves. Black bears and mountain lions are under FWP management and are considered trophy animals with high value among many sportsmen, which further encourages greater numbers. Predators federally listed under the Endangered Species Act (grizzly bears and wolves) cannot be controlled to increase elk numbers. Balancing predator and elk numbers is an issue that will not be resolved to everyone's satisfaction. Given the variety and number of predators within this area, as well as environmental and habitat conditions, it is unlikely hunters will see a liberal antlerless elk harvest anytime soon.

Winter range productivity is threatened by an increasing invasion of noxious weeds, increased conifer encroachment, and an increase in decadent shrubs. Continued declines in forage productivity can lead to lower calf recruitment, lower populations, and greater elk use of private lands.

Although logging may increase most types of forage production for elk, it also may decrease the ability of canopies to intercept snow on winter range areas, resulting in additional stress on elk during periods of deep snowfall. This was especially evident during the severe winter of 1996-97. Private and public land managers should continue to exercise caution in the logging of winter range areas to ensure that adequate thermal and snow interception cover for elk exists.

Use of off-highway vehicles, particularly 4-wheelers, for hunting and retrieving elk has increased significantly during the past decade. Increasingly, hunters complain of 4-wheelers illegally accessing areas behind closed gates. This may be not only be a social and legal problem, but use of 4-wheelers reduces the effectiveness of security areas for elk and may contribute to additional bull harvest.

Population Monitoring: Elk classification surveys are generally conducted during spring to correspond with the "greenup" of vegetation. This window of opportunity is short but remains the best time to locate and classify elk in northwestern Montana. We use helicopters with a single observer and pilot to complete surveys. Currently, we only survey 2 areas on a regular basis in this EMU and they are in HDs 103 and 120. The number of surveys for elk that can be conducted in this EMU is limited by an abundance of forested cover and money and time available for surveys. If funding can be obtained, we propose addition of a new aerial survey area in the lower Pinkham Creek/Black Butte area in HD 101. The instrumentation and monitoring of radio-collared elk may be necessary to better define winter range areas, seasonal movements, and survival.

Because aerial trend count surveys cover such a small portion of winter range and they may not be flown every year due to scheduling conflicts, we emphasize use of observed calf:100 cow ratios for management direction. Increasing ratios or ratios above 35 calves:100 cows indicate the potential for population increase and decreasing ratios or those below about 20 calves:100 cows indicate the potential for population declines.

SUMMARY OF PUBLIC COMMENT

In 1992, the public indicated a desire for changes in the management of elk populations and elk habitats. Support was indicated for more road closures and some sex and antler-point restrictions

in the harvest – if restrictions were necessary to accomplish population objectives. Strong opposition to road closures was also heard. Public comment also indicated a desire for expansion of the Block Management program. Although hunters expressed a desire for the opportunity to harvest an elk for meat, they also expressed a desire for improved opportunities to harvest older bulls.

In the recently completed Region One Elk Hunter Survey Report, 43% of the responding public expressed some satisfaction with the current brow-tined bull hunting regulations and 31% were dissatisfied. When asked for their preferred bull elk hunting regulation, 33% supported the brow-tined bull regulation, 31% preferred an any antlered bull regulation, and 24% preferred a mix of the two regulations. The majority of respondents was satisfied with current antlerless elk hunting regulations and favored antlerless elk hunting by permit only over a general antlerless season for a portion of the hunting season.

MANAGEMENT GOAL

Manage the elk population in a healthy condition at levels commensurate with available habitat on public and private land, with emphasis on maintaining a diverse bull age structure. Cooperate with land managers in the management of elk habitat to provide a diversity of elk hunting experiences.

HABITAT OBJECTIVES

Develop cooperative programs that encourage public and private land managers to maintain productive and occupied elk habitat within this EMU. Maintain or enhance elk security so that elk harvest is distributed throughout the hunting season, with no more than 40% (3-year average) of the harvested bulls are taken during the first week of the general season.

HABITAT MANAGEMENT STRATEGIES

FWP will provide technical assistance to and cooperate with state and federal land management agencies to pursue the following:

- Planning and design of timber sales and road management systems to maintain elk security areas and secure travel corridors, particularly in remaining roadless areas and on winter ranges.
- Encourage protection of existing roadless areas in Le Beau Creek, Richards Mountain, Big Hole Peak, Priscilla Peak, and Cube Iron Mountain to provide security for elk during summer and fall.
- As important elk wintering areas continue to be identified, pursue additional protection of wintering areas through conservation easements.
- Continue cooperation with the USFS and Rocky Mountain Elk Foundation in the accomplishment of Sikes Act projects that benefit elk habitat.
- Cooperate with the USFS to establish a schedule to treat 300-600 acres of winter range annually with prescribed burning for improved forage production.

- Work with the USFS to identify areas where road closures are necessary to enhance elk security and to ensure that current open road densities are not increased.
- Review residential subdivision and other development proposals for potential impacts to elk and elk management and provide input to local government authorities responsible for approval of proposals.

GAME DAMAGE STRATEGIES

FWP will:

Pursue harvest strategies that help alleviate game depredation by reducing elk populations where chronic problems occur. Some strategies which may be used include issuing permits for early antlerless-only seasons which may start around 1 September, late season private land only permits for antlerless elk which run from 15 December through 31 January, and designation of portions of hunting districts for increased harvest through increased antlerless permits valid during the general season.

ACCESS STRATEGIES

FWP will:

- Identify important points of access to public lands and provide recommendations for acquisition, maintenance, and development to the appropriate land management authority.
- Continue to review USFS road management and travel plans and cooperate to maintain the current level of hunter access.
- Identify opportunities for additional Block Management projects and walk-in areas.
- Cooperate with private landowners to identify areas where elk numbers have increased so that more hunting opportunities may be realized outside the Block Management Program.
- Continue to work with private, state and federal entities to identify areas to allow motorized access for disabled hunters.
- Identify opportunities to provide points of access to public land through private lands through the Access Montana program.
- Work with public and private entities to discourage land exchanges and/or developments that would exclude lands from public hunting.

POPULATION OBJECTIVES

Due to the forested nature of this EMU, less than 3% of the area is surveyed annually. This EMU contains much corporate timberland with the potential to support more elk. Few depredation reports are received from landowners in this EMU, also indicating a potential for more elk, at least on public and corporate lands.

1) Achieve observation of 700 elk during post-season aerial surveys. These objectives include approximately 260 elk observed in HD 103 and 110 elk observed in HD 120. Additional elk would be added from a new upper Pinkham/Black Butte survey area.

2) Maintain at least 8% bulls in the total elk observed during post-season helicopter surveys.

POPULATION MANAGEMENT STRATEGIES

Calf:100 cow ratios observed during post-season aerial trend surveys will play an important part in determining the status and trajectory of the elk population in this EMU. Because of high variability in surveys in this area, the number of total elk observed during post-season aerial trend surveys will contribute to management decisions, but in a lesser role than calf:100 cow ratios.

REGULATION PACKAGES

Six-week archery regulation for brow-tined bulls/antlerless elk EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits (some valid beyond the close of the general season depending upon game damage).

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial trend surveys is within 20% of the trend count objective, OR the calf:100 cow ratio observed during post-season helicopter flights is between 20 and 40:100 and the trend count is between 50% below and 20% above the objective.

The Liberal Regulation is: **1.)** increased antlerless permits, permits may be valid past the end of the general season, OR; **2.)** a general antlerless regulation for portions of the 5-week general season.

1.) increased antlerless permits will be recommended if: the total number of elk observed during post-season aerial surveys is more than 20% above the population objective for 2 consecutive years OR, the calf:100 cow ratio observed during post-season helicopter surveys is more than 40:100 for 2 consecutive years.

2.) a general antlerless regulation for portions of the 5-week general season will be recommended if: the total number of elk observed during post-season aerial surveys remains more than 20% above the population objective after 2 consecutive years of application of increased antlerless permits.

The Restrictive Regulation is: limited antlerless permits valid for portions of the 5-week general season.

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is more than 50% below the population objective for 2 consecutive years OR, the calf:100 cow ratio observed during post-season aerial surveys is less than 20:100 for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

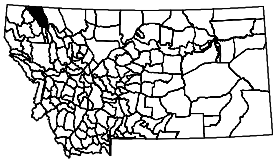
The Standard Regulation will be recommended if: at least 8% of the total elk observed during post-season aerial surveys is bulls, OR; a majority of the other hunting districts in the EMU are under brow-tined bull regulations.

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls or **2.)** limited permits for antlered bulls. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED OR LIMITED PERMITS.

1.) Unlimited permits for brow-tined bulls will be recommended if: objectives for bulls (8% of total elk observed) have not been met after 2 consecutive years of a 5-week general season for brow-tined bulls.

2.) Limited permits for antlered bulls will be recommended if: bulls remain less than 8% of total elk observed after 2 consecutive years of unlimited permits for brow-tined bulls.

WHITEFISH EMU
(Hunting Districts 109 and 110)



Description: The Whitefish EMU is located in northwestern Montana and encompasses 1,067 square miles of land from Columbia Falls to the Canadian border. Most of the area is drained by the North Fork of the Flathead River, and this EMU was formerly called the North Fork EMU. However, in 2002 a new hunting district (HD 109) was created from that portion of HD 101 located on the east side of Highway 93. This area was combined with HD 110 to create this new EMU. The EMU encompasses 2 mountain ranges – the Whitefish Range and the smaller Galton Range. It is bordered on the east by Glacier National Park and contains the Ten Lakes Scenic area and several other areas under Wilderness consideration. Most of this area is administered by the USDA – Forest Service (USFS) Flathead National Forest, with the Kootenai National Forest administering the public lands within HD 109. Substantial areas administered by Department of Natural Resources and Conservation (DNRC; Stillwater and Coal Creek State Forests), Plum Creek Timber Company (PCT), and by Stoltze Land and Lumber Company (SLLC) also are within this EMU. FWP's 1,400-acre Woods Ranch WMA is located in the northwest corner of this EMU. Scattered parcels of private lands are located along the fringes of this EMU, especially in the northwest and southern portions.

Public Access: Although most of this EMU has undergone some level of timber harvesting, concerns over grizzly bear security has resulted in the closure of many roads during the past 2 decades. Many hunters considered this change negative, but habitat security for elk and other wildlife has increased. Most of the major drainages in this EMU contain at least 1 open road that provides access to hunters. Both PCT and SLLC have Block Management Agreements with FWP that allows hunters continued access to their lands.

Elk Populations: The vast majority of the EMU is elk habitat. Although elk numbers are probably lower than they were 10 years ago, they currently appear to be increasing. Formal surveys for elk are conducted annually in both HD 109 and HD 110. However, due to heavily forested cover, this EMU has a low sightability for elk. In spring 2003, 358 total elk were counted annually in the 2 survey areas (Figures 1 and 2). Although few game damage complaints are received for HD 110, problems exist in HD 109 that are addressed with extended late season hunts and by other means.

Recreation Provided: This EMU provided 6,227 days of hunting recreation for 1,040 hunters during 2002. Annual hunter success during 1999-2001 varied from 2.0 – 4.0%, with 179-427 days of effort required/elk harvested. Elk viewing opportunities are generally limited with the exception of the Home Ranch Bottoms in the North Fork and in the vicinity of the Woods Ranch WMA. Elk viewing opportunities are usually best during winter and the spring green-up periods.

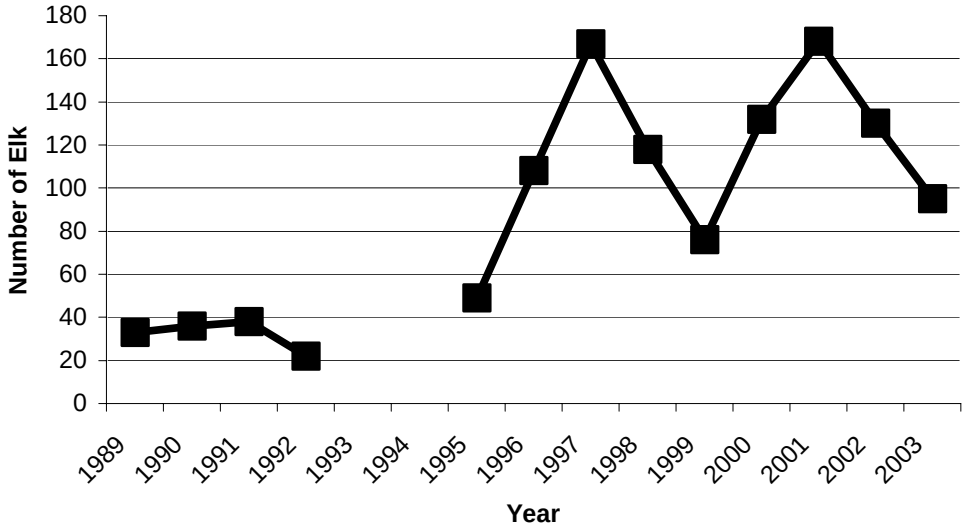


Figure 1. Number of elk observed during post-season aerial survey samples in HD 109 during 1989-2003.

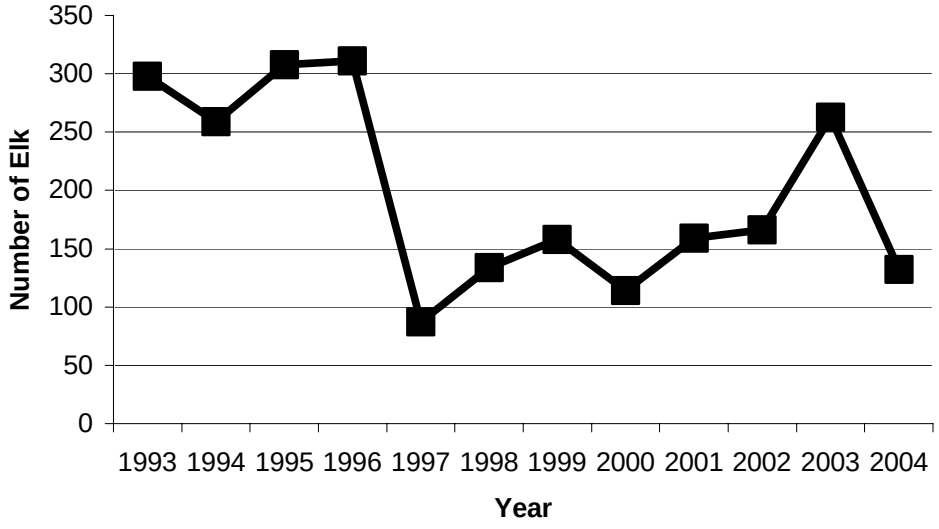


Figure 2. Number of elk observed during post-season aerial survey samples in HD 110 during 1989-2004.

Annual Elk Harvest: During 2002, 50 antlered and 16 antlerless elk were harvested in the EMU. Approximately 35% of the bull harvest is comprised of bulls with 6-points or more on at least one antler.

Accomplishments: FWP manages the 1,400-acre Woods Ranch WMA in the northwest corner of this EMU for the primary benefit of elk. The Nature Conservancy has been an active partner and has made protection of elk habitat in the North Fork of the Flathead River drainage one of their top 3 focal areas in the state of Montana. Thus far, they have placed several thousand acres of privately owned habitat along the North Fork, including a large portion of the famed Home Ranch Bottoms, under conservation easement.

Several large wildfires in recent years have inadvertently improved habitat conditions for elk. The Red Bench fire burned approximately 30,000 acres in the North Fork of the Flathead River drainage in 1988. In 2000, the Werner Peak and Moose Fires burned an additional 72,000 acres. In 1996, the Kopsi Fire burned approximately 1,000 acres in the Galton Range. Numerous smaller fires also occurred during those same periods.

FWP currently has block management agreements with both PCT and SLLC that allow hunters continued access on some of their lands within this EMU. These 2 agreements total approximately 28,000 acres, or 3% of this EMU.

Management Challenges: One of the greater threats to elk habitat within this EMU is the subdivision of key winter range areas for residential development. This is especially true in HD 109 along the west slope of the Galton Mountains and in the southern portion of HD 110. The sale and subdivision of 28,000 acres of corporate timberlands in these and other areas could also severely affect elk numbers and elk hunting opportunity.

The impact of predators on elk populations is poorly understood and often the center of controversy. Predators within this EMU capable of killing elk include wolves, grizzly bears, black bears, mountain lions, and coyotes. This EMU probably has among the highest predator densities of any EMU in Montana. Predators under FWP management (e.g. black bears and mountain lions) are considered trophy animals and have a high value among many sportsmen. Predators federally listed under the Endangered Species Act (grizzly bears and wolves) cannot be controlled to increase elk numbers. Balancing predator and elk numbers is an issue that will not be resolved to everyone's satisfaction. Given the variety and number of predators within this area, as well as environmental and habitat conditions, it is unlikely hunters will see a liberal antlerless harvest anytime soon.

Winter range forage productivity is threatened by an increasing invasion of noxious weeds, increased conifer encroachment, and an increase in decadent shrubs. Continued declines in forage productivity can lead to lower calf recruitment, lower populations and greater elk use of private lands. Continued vigilance and management of weeds is necessary if existing habitat is to be maintained. The proper use of prescribed burning and logging should be continued to provide necessary elements of habitat diversity for elk.

Although logging may increase most types of forage production for elk, it also may decrease the ability of canopies to intercept snow on winter range areas, resulting in additional stress on elk during periods of deep snowfall. This was especially evident during the severe winter of 1996-97. Private and public land managers should continue to exercise caution in logging winter range areas to ensure that adequate thermal and snow interception cover for elk exists.

Use of off-highway vehicles, particularly 4-wheelers, for hunting and retrieving elk has increased significantly during the past decade. Increasingly, hunters complain of 4-wheelers illegally accessing areas behind closed gates. This may be not only be a social and legal problem, but increased use of 4-wheelers reduces the effectiveness of bull security areas and may contribute to additional bull harvest.

Population Monitoring: Elk classification surveys are generally conducted during the spring to correspond with the "green-up" of vegetation. This window of opportunity is short but remains the best time period to locate and classify elk in northwestern Montana. We use helicopters with a single observer and pilot to complete surveys. Currently, we only survey 2 areas on a regular basis in this EMU and they are the Galton Foothills in HD 109 and the North Fork bottoms in HD 110. Most of the North Fork survey actually occurs within Glacier National Park. However, many of these elk spend summer and fall in the Whitefish Range. An abundance of forested cover and limited survey dollars restricts the surveys that can be conducted in this EMU for elk. Due to the forested nature of this EMU, less than 2% of the area is surveyed annually. However, given the abundance and history of predators within this EMU and the importance of elk within this EMU to resident hunters, continued population monitoring is critical.

A second type of population monitoring within this EMU is conducted indirectly through Region One's big game check stations. Hunter check stations located in Olney and the North Fork monitor numbers and sex and age of elk killed in this EMU.

SUMMARY OF PUBLIC COMMENT

In 1992 the public indicated a desire for changes in the management of elk populations and elk habitats. Support was indicated for more road closures and some sex and antler-point restrictions in the harvest – if restrictions were necessary to accomplish population objectives. Strong opposition to road closures was also heard. Public comment also indicated a desire for expansion of the Block Management program. Although hunters expressed a desire for the opportunity to harvest an elk for meat, they also expressed a desire for improved opportunities to harvest older bulls.

In the recently completed Region One Elk Hunter Survey Report, 33% of the public supported the brow-tined bull regulation, 31% preferred an antlered bull regulation, and 24% preferred a mix of the two regulations. The majority of respondents was satisfied with current antlerless elk hunting regulations and favored antlerless elk hunting by permit only over a general antlerless season for a portion of the hunting season.

MANAGEMENT GOAL

Manage the elk population in a healthy condition at levels commensurate with available habitat on public and private land, with emphasis on maintaining a diverse bull age structure. Cooperate with land managers in the management of elk habitat to provide a diversity of elk hunting experiences.

HABITAT OBJECTIVES

Develop cooperative programs that encourage public and private land managers to maintain 660,000 acres of productive and currently occupied elk habitat within this EMU. Maintain elk habitat security so the elk harvest is distributed throughout the hunting season, with no more than 40% of the harvested bulls (3-year running-average) taken during the first week of the general season.

HABITAT MANAGEMENT STRATEGIES

FWP will provide technical assistance to and cooperate with state and federal land management agencies to pursue the following:

- Planning and design of timber sales and road management systems to maintain elk security areas and secure travel corridors, particularly on winter ranges.
- Pursue additional protection of important elk habitat through conservation easements with PCT and other private entities.
- Continue cooperation with the USFS and Rocky Mountain Elk Foundation in the accomplishment of Sikes Act Projects that benefit elk habitat.
- Cooperate with the USFS to establish a schedule to treat 300-600 acres of habitat annually with prescribed burning.
- Work with the USFS, PCT and DNRC to ensure that current open road densities are not increased.
- Review residential subdivision and other development proposals for potential impacts to elk and elk management and provide input to local government authorities responsible for approval of proposals.
- Cooperate with ranchers and other landowners to minimize conflicts with elk.
- Cooperate with Burlington Northern – Santa Fe and Montana Department of Highways on strategies that will minimize the number of elk killed by collisions with trains and other vehicles.

GAME DAMAGE STRATEGIES

FWP will pursue harvest strategies that help alleviate game depredation by reducing elk populations where chronic problems occur. Some strategies which may be used include issuing permits for early antlerless-only seasons which may start around 1 September, late season private land only permits for antlerless elk which currently run from 1 December through 31 January, and designation of portions of hunting districts for increased harvest through increased antlerless permits valid during the general season.

ACCESS STRATEGIES

FWP will:

- Identify important points of access to public lands and provide recommendations for acquisition, development, or maintenance to the appropriate land management authority.
- Continue to review USFS, DNRC and PCT road management and travel plans and cooperate to maintain the current level of hunter access.
- Identify opportunities for additional Block Management projects and walk-in areas.
- Cooperate with private landowners to identify areas where elk numbers have increased so that more hunting opportunities may be realized outside the Block Management Program.
- Continue to work with private, state and federal entities to identify areas to allow motorized access for disabled hunters.
- Work with public and private entities to discourage land exchanges and/or developments that would exclude lands from public hunting.
-

POPULATION OBJECTIVES

3) Increase to 600, the number of elk observed during post-season aerial surveys. This objective was partially established based on recent fires in the EMU that should eventually provide much increased forage for elk on public and corporate lands. Also, many elk use areas near the border of the EMU and counts can vary considerably among years.
4) Maintain at least 8% bulls in the total elk observed during post-season aerial surveys.

POPULATION MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week archery regulation for brow-tined bull/antlerless elk EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

<u>The Standard Regulation is:</u> limited antlerless permits (possibly valid past the end of the general season).

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is within 20% of the trend count objective OR, the calf:100 cow ratio observed during post-season aerial surveys is between 20 and 40:100 AND, the trend count is between 50% below and 20% above the objective.

The Liberal Regulation is: **1.)** increased antlerless permits, permits may be valid past the end of the general season OR; **2.)** a general antlerless regulation for portions of the general season.

1.) increased antlerless permits will be recommended if: the total number of elk observed during post-season aerial surveys is more than 20% above the population objective for 2 consecutive years OR, the calf:100 cow ratio observed during post-season helicopter surveys is more than 40:100 for 2 consecutive years.

2.) a general antlerless regulation for portions of the general season will be recommended if: the total number of elk observed during post-season aerial surveys remains more than 20% above the population objective after 2 consecutive years of application of increased antlerless permits.

The Restrictive Regulation is: limited antlerless permits valid for portions of the general season.

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is more than 50% below the population objective for 2 consecutive years OR, the calf:100 cow ratio observed during post-season aerial surveys is less than 20:100 for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

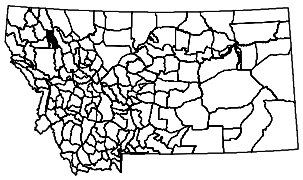
The Standard regulation will be recommended if: at least 8% of the total elk observed during post-season aerial surveys is bulls, OR; the proportion of bulls with 6 points or more on at least one antler reported in the Statewide Harvest Questionnaire is more than 25%, OR; a majority of the other hunting districts in the EMU are under brow-tined bull regulations.

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls OR; **2.)** limited permits for antlered bulls.

1.) Unlimited permits for brow-tined bulls will be recommended if: objectives for bulls (8% of total elk observed) have not been met after 2 consecutive years of a 5-week season for brow-tined bulls OR, the proportion of bulls with 6 points or more on at least one antler reported in the Statewide Harvest Questionnaire is less than 25% for 2 consecutive years.

2.) Limited permits for antlered bulls will be recommended if: bulls remain less than 8% of total elk observed OR, the proportion of bulls with 6 points or more on at least one antler reported in the Statewide Harvest Questionnaire is less than 25% after 2 consecutive years of unlimited permits for brow-tined bulls.

NORTH SWAN – FLATHEAD VALLEY EMU
(Hunting Districts 132 and 170)



Description: This 410-square-mile EMU encompasses the heart of the Flathead Valley and the northern ends of the Swan and Mission Mountains. In 1992, agriculture was the principal land use in this unit, with emphasis on timber, grain, and hay farming, and specialty crops such as mint, seed potatoes, and Christmas trees. Kalispell, Bigfork, Somers, and associated rural residential subdivisions occupied a significant portion of the land area. In the decade following the initial writing of the management plan for this EMU, the amount of land in residential subdivisions has increased dramatically. From 1992-1997 alone, over 60,000 acres of farmland (this does not include timberlands) were taken out of production based on a Census of Agriculture – over 20% of the available agricultural lands. The rate of subdivision has been increasing over the past 5 years with private and corporate timberlands being developed as well. The Flathead National Forest manages the federal lands that occur at higher elevations within this EMU. Approximately 62% of this EMU is in private, non-corporate ownership with the balance in federal/state (32%) or corporate (1%) ownership.

Public Access: The bulk of the Flathead and Swan valley floor is in private non-corporate ownership with limited hunting access. Much of the valley floor that was once in agricultural or timber production is now split into numerous residential subdivisions, small developed acreages, and other types of development, with a few scattered farms and ranches still intact.

Public roads currently provide reasonable vehicle access to the forested portions of the unit (primarily USFS and DNRC lands) along the east side of the valley and Crane Mountain (south of Bigfork). The exception to this is USFS lands in the northernmost portion of the Swan Range where access is more restricted. However, in much of the remaining area, road closures due to endangered species management have lowered open road densities. In addition to roads, numerous trails provide additional access to public lands not accessible via vehicles. There is also public ownership of numerous islands in the Flathead River between Columbia Falls and Flathead Lake.

Elk Populations: Based on reports and observations over the last decade, elk numbers in the Flathead Valley portion of this EMU have increased while those in the Swan Valley portion (Swan Lake and Crane Mountain area) are stable to slightly increasing.

Complaints about groups of elk (>20) getting into haystacks, foraging on green-up in hayfields and on other crops, and impacting fences have increased in the last 5 years. Elk have moved into the valley from the foothills along the Swan range to agricultural lands in the valley floor in areas where they have found a degree of security. Previous to the 1990s, no or few elk were harvested in HD 170 (which is located entirely in the valley bottom of the Flathead River).

During spring surveys for white-tailed deer along the valley floor in 2003, FWP observed 3 groups of elk (along with one concurrent public sighting) totaling nearly 100 individuals on private agricultural lands. In April 2004, FWP observed 177 elk in HD 132. Additional elk also utilize the foothills and valley bottom south of Columbia Falls. Elk can now be found in the Flathead Valley from Echo Lake north to Columbia Falls. Standard elk surveys are not conducted for this EMU, nor are there estimates for elk populations in the forested/public land portion of this EMU.

Recreation Provided: During 1999-2001, an average of 420 hunters spent an average of 2,600 days hunting elk in this EMU. Elk can be viewed and photographed from Highway 206 and Highway 35, and along associated county roads in agricultural lands between the Flathead River on the west and the foothills to the east between Columbia Falls and Bigfork. The presence of elk has become an issue in land use planning.

Annual Elk Harvest: During 1999-2001, an average of 19 elk per year were harvested in the EMU (11 antlered and 8 antlerless). For HD 132 the annual average was 8 bulls and 2 antlerless elk, and in HD 170 the average annual harvest was 3 bulls and 6 antlerless elk.

Recently, regulations allowed for the harvest of either-sex elk in the Flathead Valley portion of this EMU (HD 170) and brow-tined bulls only along with 20 antlerless elk permits in the foothills portion of this EMU (HD 132). The harvested bulls represented all age classes including spikes (legal in HD 170).

Accomplishments: Road closures implemented by the USFS, DNRC, and corporate timber interests in response to endangered species management have reduced road densities in forested areas to a point where elk security is no longer a concern. Prescribed burns were conducted in the EMU for the purpose of improving habitat productivity. Also, elk have benefited in some areas from habitat changes brought about by timber management. F.H. Stoltze Land and Lumber Company (SLLC) and Plum Creek Timber Company (PCT) have continued to provide public access for hunting on lands owned in the southeastern portions of the EMU.

Management Challenges: In the decade following the initial writing of the management plan for this EMU the amount of residential subdivisions has increased dramatically. The development of lands for housing has greatly reduced public access to the valley and foothill portions of this EMU. The ability of traditional elk hunting opportunities to control elk populations has been compromised and has the potential of being lost altogether in the future. Monitoring game damage and populations in the valley portion

of this EMU will be a challenge because this type of information can be either overstated or understated by landowners or neighbors. Because some people like to see elk, they will not report observations of new groups or increasing numbers. Others with game damage may complain even when only a few elk are infrequently on their property.

Limited suitable trend monitoring areas in the EMU along with funding and logistical constraints to conduct surveys impairs our ability to gather the data on elk populations that are considered basic information in other portions of Montana.

Population Monitoring: ***Formal aerial surveys are not conducted in this EMU. Observations of elk are made from the ground while conducting surveys of white-tailed deer. Additionally, observations made by the public are recorded as well as those made while investigating game damage reports.***

SUMMARY OF PUBLIC COMMENT

In 1992 the Elk Management Plan stated, "Little public comment was received for this unit, reflecting the relatively limited potential of this area to produce elk or provide elk-related recreation." Also, "both support and opposition to road closures was registered" in 1992. Public comments over the last 5 years specific to this EMU have focused primarily on game damage.

In the recently completed Region One Elk Hunter Survey Report, 44% of the public residing in Flathead County expressed satisfaction with the current brow-tined bull hunting regulations, while 27% were dissatisfied. When asked for their preferred bull elk hunting regulation, 32% supported the brow-tined bull regulation, while 23% preferred an any antlered bull regulation and 30% preferred a mix of the two regulations. In Lake County, 40% of the public was neutral in their opinion of the current brow-tined bull hunting regulations while 11% were dissatisfied. When asked their preferred bull elk hunting regulation, 33% supported the brow-tined bull regulation, while 33% preferred an antlered bull regulation and 19% would like to see a mix of the two regulations. The majority of respondents was satisfied with the current antlerless elk hunting regulations and favored general season antlerless elk hunting for a portion of the general season over antlerless elk hunting by permit.

MANAGEMENT GOAL

Discourage growth of elk populations that primarily reside on private land (typically from as early as late August through April) by creating opportunities, sensitive to neighborhood concerns, for hunters to harvest elk. Manage elk that reside primarily on public lands for relative stability and long-term productivity to ensure recruitment of brow-tined bulls for harvest commensurate with the available habitat for elk. However, elk populations on public lands will be managed such that they do not become a constant source of game damage on neighboring private lands.

HABITAT OBJECTIVES

1) Support programs that encourage public land managers to continue to restore and maintain mule deer and elk winter ranges along the Swan front.
2) Increase the awareness of landowners, developers, and county officials of elk and elk-related problems in agricultural or suburban settings.

HABITAT MANAGEMENT STRATEGIES

FWP will cooperate with state and federal land management agencies, corporate land managers, and private landowners to pursue the following habitat strategies:

Valley/Foothill Portions: In the private land/valley and foothill portion of this EMU:

- Provide educational information to landowners, Natural Resources & Conservation Service (NRCS) office, and planning offices on land management practices that can affect elk use on private lands.
- Encourage neighbors to visit with neighbors about land management activities that might either attract or discourage elk use in the neighborhood to help avoid game damage problems.
- Review residential subdivision and other development proposals and provide input relative to elk and elk management to local government authorities responsible for development approval.

Mountain/Foothill: In the Swan and Crane Mountain areas of this EMU:

- Provide technical input to land managers, and cooperate in the planning of timber sales, road management, recreational management, habitat projects, and enforcement across the entire EMU.
- Encourage fire management that improves elk habitat on roadless public lands.
- Participate with federal agencies, state agencies, and corporate interests in perpetuating elk/wildlife habitat and traditional public uses of those lands.

GAME DAMAGE STRATEGIES

FWP will pursue harvest strategies that help alleviate game depredation by reducing elk populations where chronic problems occur. Some strategies that may be utilized include:

- Help landowners and others in local communities with chronic game damage to work cooperatively on elk management goals and strategies that can be applied across property boundaries to the elk population.
- Prescribe antlerless harvest pressure in excess of estimated calf recruitment rates.
- Apply unique hunting opportunities that attempt to allow elk populations to be controlled in mixed agricultural/subdivision areas.

- Should strategies fail to reduce game damage problems to acceptable levels, develop programs that will encourage elk to not utilize the Flathead valley portion of the EMU.

ACCESS STRATEGIES

- Nonmotorized access for hunters should be maintained in the roadless areas of this EMU by assuring trail access on public lands outside of these areas.
- Continue to review USFS road management and travel plans, and cooperate to maintain the current level of hunter access.
- Identify important points of access to public lands and provide recommendations on acquisition, development, or maintenance to the appropriate land management authority.
- Identify opportunities to provide points of access to public lands through private lands through the Access Montana program.
- Work with public and private entities to discourage land exchanges and/or developments that exclude lands from public hunting.
- Work with private landowners to provide access for hunters that target known populations of elk causing damage.
- Use the Block Management program, special permits, special seasons, weapon restrictions, and other types of strategies to make hunter harvest palatable to nonhunting public/neighbors and those providing access or suffering from game damage.
- Use neighborhood workshops to develop elk management strategies and evaluate success.

POPULATION OBJECTIVES

No consistent elk survey data are collected for this EMU. Biologists will continue to report numbers of elk observed on white-tailed green-up survey routes. No trend or monitoring area exists for the mountainous portions of this EMU.

1) On public lands, maintain a small elk population capable of sustaining an annual harvest.
2) On private lands, maintain elk numbers at a level that provides for some public viewing and general enjoyment, but below population densities that result in significant game damage problems.

POPULATION MANAGEMENT STRATEGIES

- Continue to utilize observational data/ground classifications, public reports, check station data, and harvest data to monitor population trends.
- Increase opportunities for hunters to harvest elk in the valley/foothills area of the Flathead Valley.
- Enhance opportunities for youth to hunt elk.

REGULATION PACKAGES

Six-week archery regulation for brow-tined bulls/ antlerless elk.

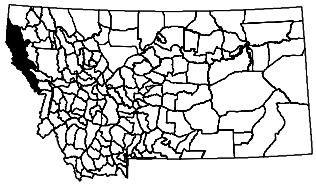
Antlerless:

For both HD 170 and HD 132 the objective is to provide as much opportunity as possible for hunters to harvest antlerless elk. There are many small-sized private properties located in this area so hunter access is extremely difficult. For that reason, for the majority of these two districts, **general season and extended season antlerless elk hunting opportunity on private land will be provided**. Essentially, this opportunity would be from the opening day of the general season until 15 February of each year. The exception is for the public land of the Swan Divide and southern part of HD 132 (primarily National Forest and DNRC lands) where no general season antlerless elk hunting is proposed.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

LOWER CLARK FORK EMU
(Hunting Districts 104, 121, 123, 124, 200, and 202)



Description: This 2,896-square-mile EMU is located along the Montana-Idaho border in northwestern Montana. It is bounded by the Cabinet and Bitterroot mountains, and includes the Cabinet Mountain Wilderness. The Kootenai and Lolo national forests administer more than 70% of the land base. The 1,552-acre Mount Silcox Wildlife Management Area is located within the EMU. The quality of elk winter ranges is declining due to conifer encroachment, aging of shrub field, and increasing densities of noxious weeds. Although the majority of elk use is on U. S. Forest Service (USFS) lands, elk also utilize private lands through the year.

Public Access: Roads currently provide reasonable vehicle access to much of the unit. Numerous trails provide additional access to areas not accessible via vehicles. With the exception of the Cabinet Mountain Wilderness, the proposed Great Burn Wilderness, the proposed Scotchman Peak Wilderness, and the Trout Creek Roadless Area, increased construction of logging roads has provided additional hunter access to several areas in the past 10 years. The national forests, however, have established road management systems that limit vehicle access. Road obliteration is increasingly used to decrease open road density in the EMU.

Elk Populations: An elk population estimated between 4,800-6,000 animals (based on sightability analysis from the Lower Clark Fork Elk Study, Henderson et al. 1993) seasonally occupies all drainages in the unit. The number of elk counted during post-season aerial surveys averaged about 2,400 during 1999-2001 (Figures 1, 2, 3, and 4). During the same period, bulls have averaged 10% of total elk observed for the EMU with individual herd segments ranging from 5-12% bulls.

Recreation Provided: This EMU provides about 49,500 days of hunting recreation for approximately 6,700 hunters annually. From winter through spring, elk may be readily viewed from highways and county roads near St. Regis and Thompson Falls, including such areas as Cherry Creek, Dry Creek, Little Beaver Creek, Prospect Creek, West Fork of Elk Creek, and Boyd Mountain. During summer visits to backcountry areas, many recreationists view and photograph elk and other wildlife species.

Annual Elk Harvest: The 3-year average harvest from 1999-2001 was 500 elk (295 antlered and 205 antlerless). All of the bull harvest was comprised of brow-tined bulls.

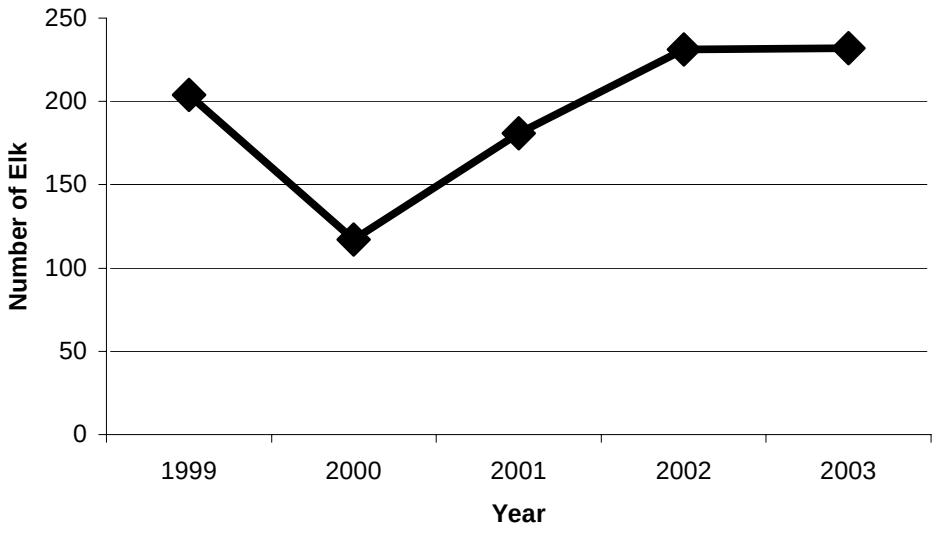


Figure 1. Number of elk counted during post-season aerial trend surveys in HD 104, 1999-2003.

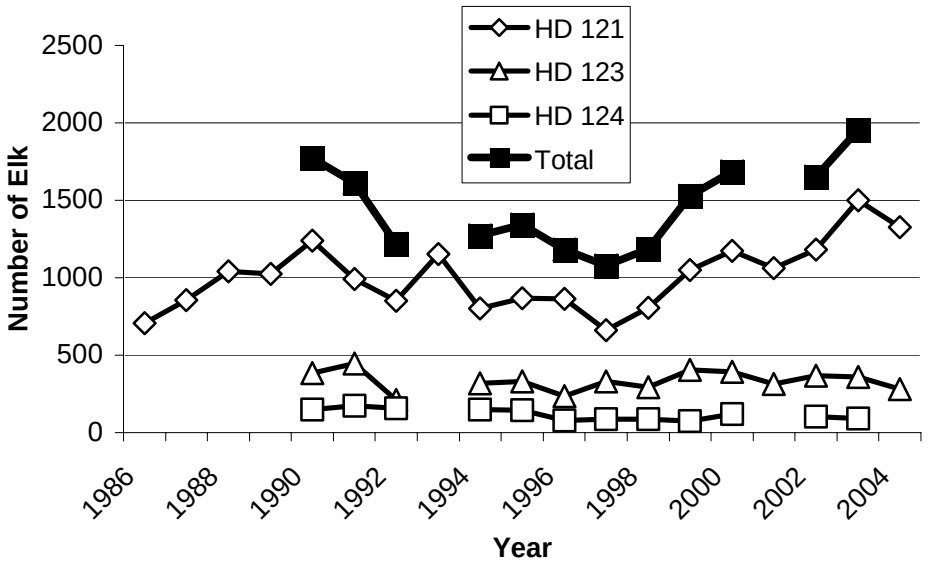


Figure 2. Number of elk counted during post-season aerial trend surveys in HDs 121, 123, and 124 during 1986-2004.

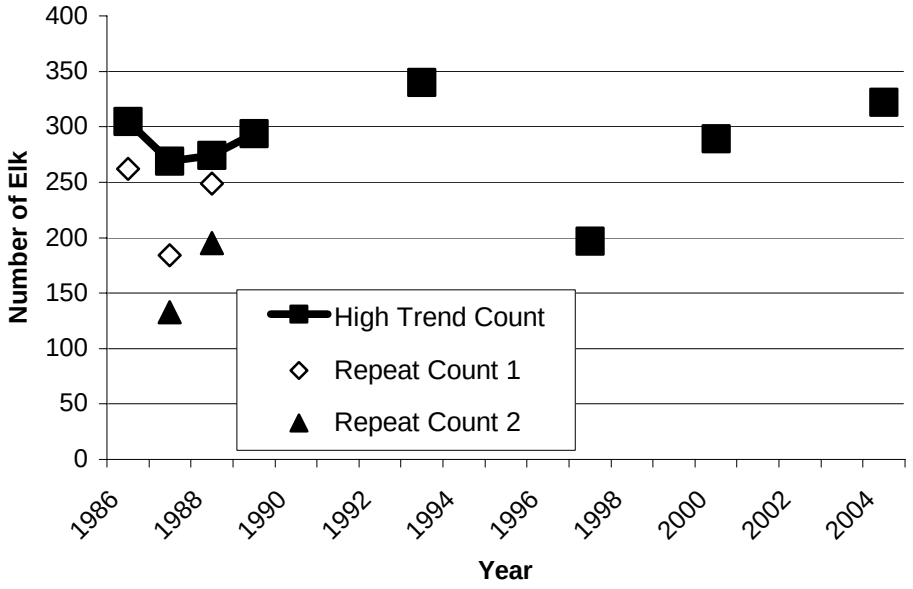


Figure 3. Number of elk counted during post-season aerial trend surveys in HD 200 during 1986-2004.

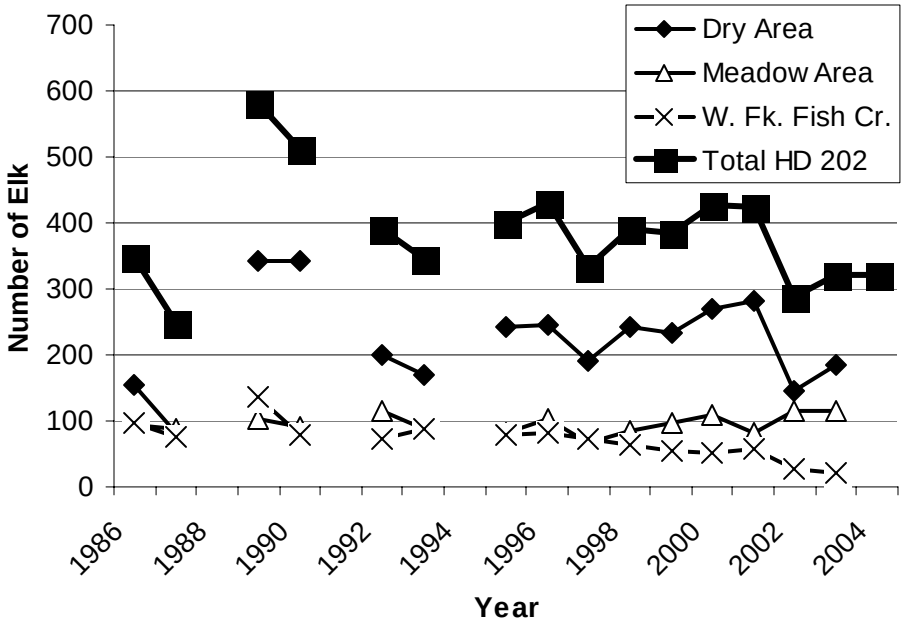


Figure 4. Number of elk counted during post-season aerial trend surveys in HD 202 during 1986-2004 (only partial surveys of HD).

Accomplishments: FWP cooperated with Lolo National Forest in planning and funding prescribed burning to rejuvenate decadent shrubs and set back conifer invasions on winter ranges to increase forage production for elk on Boyd Mountain, Donlan Flats, Thompson Creek, North Fork of Fish Creek, Clark Mountain, Wilkes Creek, Clear Creek, Cherry Creek, Deep Creek, and several areas in the Prospect Creek drainage. The Kootenai National Forest completed prescribed burning projects in Beaver Creek, Trout Creek, Vermilion River, Twenty-Odd drainage, and Green Mountain.

FWP cooperated with Lolo National Forest in planning and funding herbicide applications to control noxious weed infestations of winter ranges in Mayo Gulch, Thompson Creek, and Prospect Creek.

FWP and other land conservation organizations completed conservation easements on the Harlow Ranch (Squaw Creek) and Cavill Ranch (Swamp Creek). These easements protect important elk winter and spring ranges in this EMU.

Management Challenges: A serious threat to hunting and elk population management in portions of this EMU is the future disposition and management of thousands of acres in Plum Creek Timber Company (PCT) ownership. This EMU has limited PCT land except for areas south of Plains, in HD 124, and south of Tarkio, in HD 202. PCT lands have historically been open to the public, and hunters tend to take this privilege for granted. However, in recent years PCT has been marketing parcels for sale and may not be a longtime landowner in this EMU. The loss of hunting access on PCT lands, and possible concurrent loss of elk habitat, would eliminate significant public hunting opportunities for elk in this heavily hunted EMU. We estimate that, currently, 95% of elk in this EMU are accessible to hunters. The cumulative effect of small residential subdivisions on winter range will severely hamper the ability to manage elk in these areas, including increasing the percentage of elk that are unavailable to hunters.

Calf:100 cow ratios on winter ranges in this EMU have declined steadily over the past decade where data were collected. This appears to have also occurred in other areas of western Montana as well. Public concern has centered on the potentially increasing role of predation in the past decade. Low calf recruitment can result in fewer antlerless permits and greater reliance on conservative season structures and/or maintaining hunting season habitat security to meet bull population objectives.

Wolf restoration in western Montana is an emerging factor in elk population management. Wolves are increasingly evident in this EMU since the early 1990s. Wolves are well established in the Fish Creek area, where 3-4 packs may have impacted calf recruitment and affected elk distribution. Another pack recently formed near McKay Creek. It is possible that additional packs may form elsewhere in this EMU during the next decade. We anticipate some level of additive elk mortality with more wolf packs, which may necessitate a corresponding reduction in antlerless elk permits.

Residential subdivisions continue to be developed on or near elk habitat, particularly near Superior, St. Regis, Plains, and Thompson Falls. In some cases, such subdivisions have restricted public access to hunting elk and have contributed to chronic elk damage

complaints in those areas. In other cases, winter range productivity has been reduced by housing developments. We expect this trend to continue.

Winter range forage productivity is threatened by an increasing invasion of noxious weeds, conifer encroachment of shrub fields and grasslands, and an increase in decadent shrub plants. Continued declines in forage productivity can lead to lower calf recruitment, lower populations, and greater elk use of private lands.

Use of off-highway-vehicle, particularly 4-wheelers, for hunting and retrieving elk has increased significantly during the past decade. Increasingly, hunters complain of 4-wheelers illegally accessing areas behind closed gates. This may be not only a social and legal problem, but use of 4-wheelers reduces the effectiveness of bull security areas and may contribute to additional bull harvest.

Population Monitoring: Elk count and classification surveys are generally conducted during the spring to correspond with the "greenup" of vegetation. This window of opportunity is short, but remains the best time period to locate and classify elk in northwestern Montana. Some herd units within this EMU are surveyed during winter when elk are located on the winter range. We use fixed-wing aircraft or helicopter with a single observer and pilot to complete surveys. The observation/sightability rate varies by aircraft, seasonally, annually, and between herd units. Complete surveys are attempted on an annual basis for HDs 121, 123, and 124. Partial surveys are conducted annually for HDs 104 and 202. HD 200 is surveyed every 3-4 years, as budgets allow.

SUMMARY OF PUBLIC COMMENT

In 1992 the public expressed support for maintaining the current recreational character of the EMU, but preferred to see more bulls reach older age classes. Support was voiced for additional road closures and more aggressive habitat management actions directed toward enhancement of elk winter range and protection of elk security areas. Comments protesting additional road closures were also received. Landowners expressed concern about levels of elk use on private lands. Some concern was expressed that archery hunters may adversely affect elk populations by either harvesting too many bulls or disturbing the rut and lowering reproductive success. Many respondents also believed increasing numbers of outfitters were becoming incompatible with non-outfitted recreational use.

In the recently completed Region One Elk Hunter Survey Report, 47% of the public residing in Sanders County expressed satisfaction with the current brow-tined bull hunting regulations and 28% were dissatisfied. When asked about their preferred bull elk hunting regulation, 38% supported the brow-tined bull season, 28% preferred an any-antlered-bull season, and 28% preferred a mix of the two regulations. The majority of respondents was satisfied with the current antlerless elk hunting regulations and favored antlerless elk hunting by permit only over a general antlerless season for a portion of the hunting season.

MANAGEMENT GOAL

Manage the elk population in a healthy condition at levels commensurate with available habitat on public and private land, with emphasis on maintaining a diverse bull age structure. Cooperate with land managers in the management of elk habitat to provide a diversity of elk hunting experiences.

HABITAT OBJECTIVES

Develop cooperative programs that encourage public and private land managers to maintain 1.8 million acres of productive, secure, and currently occupied elk habitat.

HABITAT MANAGEMENT STRATEGIES

FWP will cooperate with state and federal land management agencies to pursue the following:

- Planning and design of timber sales and road management systems to maintain elk security areas and secure travel corridors, particularly in remaining roadless areas and on winter ranges where bulls become vulnerable to hunting pressure with increased snow accumulation. Protection of existing roadless areas in Dry Creek, Cedar Creek, Big Creek, Trout Creek, Cataract Creek, Pellick Ridge, and drainages around Mount Bushnell is a priority of FWP because these areas provide important upper-elevation security during the summer and fall seasons.
- Protection of the Little Beaver Creek and Cherry Creek wintering areas through conservation easements or fee title acquisition will also be a priority in the event that current land ownership or ranch management philosophy changes.
- Cooperate with the Forest Service to establish a schedule to treat 1,000-2,000 acres of winter range annually with prescribed burning to increase forage production for elk.
- Work with the USFS to identify areas where road closures are necessary to enhance elk security and to ensure that current open road densities are not increased. Encourage mitigation of any new road building through obliteration or through the closure of an equivalent number of miles of existing roads.
- Review subdivision and other development proposals for potential impacts to elk and elk management and provide input to local government authorities responsible for approval of proposals.

GAME DAMAGE STRATEGIES

Most game damage reports are registered during the spring, with a lesser number of complaints during the summer and winter months.

FWP will:

Pursue harvest strategies that help alleviate game depredation by reducing elk populations where chronic problems occur. Some strategies which may be used include issuing permits for early antlerless-only seasons which may start around 1 September,

late season private-land-only permits for antlerless elk which currently run from 15 December through 31 January, and designation of portions of hunting districts for increased harvest through increased antlerless permits valid during the general season.

ACCESS STRATEGIES

FWP will:

- Identify important points of access to public lands and provide recommendations on acquisition, maintenance, and development to the appropriate land management authority.
- Pursue additional walk-in access to public land on the north side of Pellick Ridge and on the south side of Green Mountain.
- Continue to review USFS road management and travel plans, and cooperate to maintain the current level of hunter access.
- Identify opportunities for additional block management projects and walk-in areas.
- Identify opportunities to provide points of access to public land through private lands through the Access Montana program.
- Work with public and private entities to discourage land exchanges and/or developments that would exclude lands from public hunting.

POPULATION OBJECTIVES

5) Maintain the number of elk observed during post-season aerial surveys within 20% of 2,400 elk in the EMU or HD objective. This objective was established based on the 3-year average for numbers of elk observed during surveys conducted in the EMU during 1999-2001. Comments by private landowners and sportsmen were also considered, as was the number of game depredation complaints received in recent years. Individual, observed herd count objectives by hunting district are as follows: (helicopter survey unless noted)

HD 104 – 225 elk (partial survey)
HD 121 – 1,355 elk
HD 123 – 365 elk
HD 124 – 130 elk
HD 200 – 300 elk
HD 202 – 350 elk (partial survey)
[50-100 elk in the North Fork of Fish Creek (fixed-wing aircraft)]
[50-100 elk between Quartz Creek and Cougar Gulch (fixed-wing)]
[200-300 elk between Thompson Creek and Cold Creek (fixed-wing)]

2) Maintain at least 8% bulls in the total elk observed during post-season aerial surveys OR, an observed bull count of:

HD 104 – 16 bulls
HD 121 – 88 bulls
HD 123 – 28 bulls
HD 124 – 10 bulls

HD 200 – 24 bulls
HD 202 – 28 bulls

POPULATION MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week brow-tined bulls/antlerless archery regulation for elk EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits (may be valid past the end of the general season).

The Standard Regulation will be recommended if: the total number of elk observed by herd unit during post-season aerial trend surveys is within 20% of the HD objective.

Below is the range of permits necessary to maintain the herd unit within the objective range for the Standard Regulation.

HD 104	50-150 permits
HD 121	200-650 permits
HD 123	50-250 permits
HD 124	25-75 permits
HD 200	50-275 permits
HD 202	100-400 permits

The Liberal Regulation is: **1.)** increased antlerless permits, permits may be valid past the end of the general season OR; **2.)** a general antlerless regulation for portions of the general season OR; **3.)** A-9/B-12 antlerless licenses (B-tags) in addition to the above regulations.

1.) Increased antlerless permits will be recommended if: the total number of elk observed by herd unit during post-season aerial trend surveys is more than 20% above the herd unit objective.

Below is the estimated number of permits necessary to reduce herd unit numbers by 20% to the stated population objective.

HD 104	200 permits	26% avg. success
HD 121	800 permits	34% avg. success
HD 123	300 permits	28% avg. success
HD 124	100 permits	28 % avg. success
HD 200	350 permits	22% avg. success
HD 202	500 permits	18% avg. success

Assumed permit success is based on the 3-year average from 1999-2001.

2.) A general antlerless regulation for portions of the general season AND/OR; **3.)** A-9/B-12 antlerless licenses (B-tags) in addition to the above regulations will be recommended if: the total number of elk observed by herd unit during post-season aerial trend surveys remains more than 20% above the HD objective after 2 consecutive years of increased antlerless permits.

The Restrictive Regulation is: no antlerless permits or a limited number of antlerless permits targeted to areas of game damage and valid for various portions of the EMU.

The Restrictive Regulation will be recommended if: the total number of elk observed by herd unit during post-season aerial trend surveys is more than 20% below the herd unit objective for 2 consecutive years.

Below is the number of permits necessary to address local elk depredation problems.

HD 104	< 50 permits
HD 121	< 200 permits
HD 123	< 50 permits
HD 124	< 25 permits
HD 200	< 50 permits
HD 202	< 100 permits

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: The percent bulls observed during post-season aerial surveys is at least 8% of total elk OR; the number of bulls observed during post-season aerial surveys is at least the numeric bull objective.

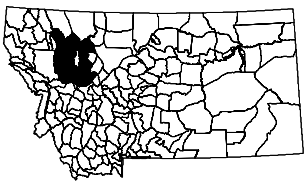
The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls or **2.)** limited permits for antlered bulls. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED OR LIMITED PERMITS.

1.) Unlimited permits for brow-tined bulls will be recommended if: the percent bulls observed during post-season aerial surveys is less than 8% of total elk for 2 consecutive years OR; the number of bulls observed during post-season aerial surveys is more than 20% below the numeric bull objective for 2 consecutive years.

2.) Limited permits for antlered bulls will be recommended if: objectives for bulls are not achieved after 2 years of application of unlimited permits.

BOB MARSHALL WILDERNESS COMPLEX EMU

(Hunting Districts 130, 140, 141, 150, 151, 280, 281, 282, 285, 415, 422, 424, 425, 441, and 442)



Description: The 6,280-square-mile Bob Marshall Wilderness Complex (BMWC) EMU straddles the Continental Divide and includes the Bob Marshall, Great Bear and Scapegoat Wilderness Areas, and the Sun River Game Preserve. This EMU consists of 15 hunting districts (HDs) within FWP administrative regions 1, 2, and 4 and includes portions of the Lewis and Clark, Flathead, Helena, and Lolo National Forests. It is bounded on the north by Glacier National Park, the Blackfoot Indian Reservation to the northeast, and the Confederated Salish and Kootenai Tribes to the west.

About 5,750-square-miles (92%) of the EMU is elk habitat. USDA-Forest Service (USFS) lands comprise 72.6% of the EMU and 79.2% of elk habitat in the EMU. Although private land comprises only 14% of the EMU, 29% of elk winter range is on private lands. The largest amount of elk habitat on private lands is in HDs 281, 422, and 441. Eighty-five percent of elk winter range is on private land in HD 422 and 52% in HD 441. Four FWP Wildlife Management Areas (WMAs) are in this EMU: the Blackfoot-Clearwater WMA (B-CWMA), Sun River WMA (SRWMA), Blackleaf WMA (BLWMA), and Ear Mountain WMA (EMWMA).

Wilderness status of much land, FWP WMAs, and forest fire history are very important in the ecology and management of elk in this EMU.

Public Access: Public access to or through some private lands along the eastern slope of the Rockies and the Blackfoot River drainage is limited or non-existent. Excessive open-road densities in the Blackfoot, Seeley-Swan, and South Fork of the Flathead portions of the EMU were a concern in the 1992 Elk Plan. Currently, however, road closures due to endangered species management have reduced open road densities in most areas to the point where security for elk is no longer a significant concern. Public access to the Wilderness portion of the EMU is provided by more than 60 maintained trails.

Access in the HDs in Region 1 is very good and limitations are mostly because of the remoteness of the terrain and the means by which it must be accessed.

HD 280 is backcountry and roadless, but publicly accessible to hikers and those who use horses during the hunting season. HD 280, along with HDs 150 and 151 are managed for a traditional backcountry rifle hunting opportunity during the rutting (bugling) season from mid-September through early October.

Most of HD 281 is publicly accessible during hunting season. Access to elk hunting is most significantly affected by the remote character of Lolo and Helena National Forest lands outside the Wilderness boundary and walk-in hunting on heavily roaded lands owned by Plum Creek Timber Company (PCT) and other private parties managed through the Block Management Program.

Most of HDs 282 and 285 is publicly accessible during hunting season. Access to elk is most significantly affected by "permit-only" access for elk hunting in HD 282 during the general season, the remote character of Lolo National Forest lands around the Wilderness boundary, and widespread closures to motorized vehicles that PCT instituted on its roads in the mid-1990s.

Most public access to USFS property in HD 422 utilizes only three formalized trailheads with a fourth entry point persisting with informal private landowner permission. These trailheads are Smith/Goss Creek, Elk Creek, Dearborn River, and Falls Creek. Other entry points exist but are used less extensively or are less effective. Most use of public land is non-motorized foot or horse traffic. Although backcountry areas are remote, day hunting does occur near established trailheads. Access to private land is extremely limited. Dependent upon daily elk distribution, approximately 90% of these elk may be unavailable to the general public hunter.

Public access in HD 424 is secured by a Forest road system in the Benchmark and Willow Creek areas. Although there are remote backcountry areas in this HD, considerable day hunting occurs as well. Most access is non-motorized foot or horse traffic from open roads. Access to private land is limited.

Public access to areas within HD 425 is through an open road system across the SRWMA. From these roads, non-motorized access is mostly foot traffic. Access to private land is limited.

Public access in HD 442 is facilitated by an open road system in the Sun Canyon area. From these open roads, most access is non-motorized, with both day hunting on foot and remote backcountry camping with horses represented. Access to private property is very limited.

Public access to the Lewis and Clark National Forest (LCNF) in HD 415 occurs mainly from five trailheads: Birch Creek at Swift Dam, Little Badger via the Blackfeet Reservation, and three sites along U.S. Highway 2 from East Glacier to Marias Pass. Roughly 50% of the area is accessible by ATV or motorcycle on existing trails; the remainder is traveled by horse or on foot. Both day hunting and extended backcountry trips are common. ATVs are used to haul hunting camps, hay, and other equipment into

the interior of the hunting district on motorized trails. Private lands comprise less than 5 % of this hunting district, and access is moderately limited on those tracts. All of the elk in this area are available to the general public.

Hunting access to public lands in HD 441 occurs from trailheads along the Teton River, Blackleaf Canyon, and Birch Creek at Swift Dam. Very little of the LCNF and adjacent BLM lands are authorized for motorized use; however, both day trips and extended backcountry trips on foot or horseback are common from these trailheads. Access to private lands for hunting varies from limited to severely limited. Hunting that does occur on private property is mainly day use, with little camping available. Roughly 50% of the elk in this hunting district are unavailable to the public during the hunting season. Only 5% of the private acreage is completely open to public hunting. On private lands, approximately 5% are completely unavailable for public use, another 40% severely restricted, and 50% moderately restricted.

Elk Populations: More than 80% of the elk observed in this EMU use Wilderness habitats during at least a portion of the year. Eighty percent of the elk that utilize the Wilderness areas migrate to non-Wilderness winter ranges (Figure 1). Forty major winter ranges, comprising 65% of the available winter range in the unit, are located outside of Wilderness boundaries. Privately owned winter and spring elk range is located along the East Front of the Rockies and throughout the Blackfoot, Clearwater, and Swan River drainages.

The potential for elk production varies among portions of the EMU. Elk that occupy the south and east peripheries consistently exhibit higher calf survival than do the elk that occupy the South and Middle Fork of the Flathead in the interior of the BMWC. Bulls that reside yearlong within the Wilderness boundaries exhibit higher survival through hunting season than those in non-Wilderness areas.

Elk populations wintering in HDs 140, 141, 150, and 151 are currently lower in number than in past decades. Forest succession in the absence of wildfires is likely the predominant factor influencing this decline. The heavily forested habitats in much of FWP Region 1 result in considerable year-to-year variability in observed elk numbers that is independent of actual population trends. Only portions of the winter ranges in HDs 140 and 150 are suitable for aerial surveys, and the data indicates that elk populations there have been relatively stable over the last decade (Figure 2). Although no surveys are conducted in HD 130, field observations indicate that numbers of elk wintering in the Swan Valley have increased over the last few years.

There is no winter range in HD 280. Based on radio telemetry data, up to 50% of the elk wintering in HDs 281, eastern 285, and 422 migrate into HD 280 in early summer and accomplish the reverse migration in early winter.

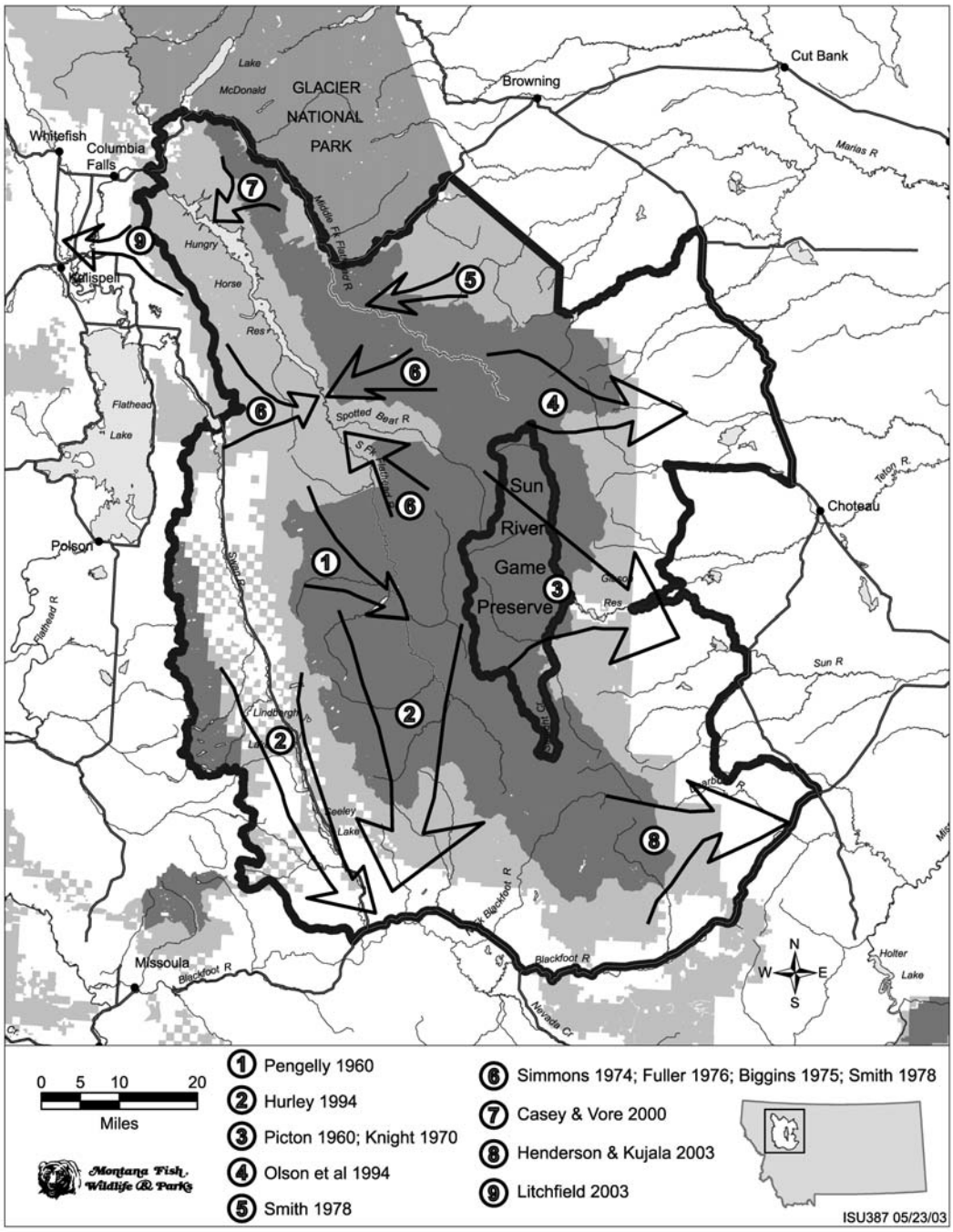


Figure 1. Known patterns of movement to winter range for elk using the Bob Marshall Wilderness Complex during summer and fall.

Elk populations wintering in HD 281, 282, and 285 are near modern day highs. About 650 elk were counted in HDs 281 and 285 (Figure 3) and 1,153 elk were counted in HD 282 during 2004 (Figure 4). About 1,000 elk winter in HD 422 (Figure 5), and more than 500 of these elk migrate through Alice Creek and the lower Landers Fork to summer/fall ranges in HD 280. About 30% of the cows and 50% of the bulls that winter in HD 282 use the upper South Fork of the Flathead drainage (HD 150) as summer-fall range.

Declining calf recruitment in the 1990s has moderated increases in elk numbers and opportunities for antlerless harvest. Late-winter calf:100 cow ratios in HD 281 ranged between 30 and 40 calves per 100 cows in the1980s; between 25 and 35 calves in the 1990s, with a low of 12 in 1998; and from 16-22 calves per 100 cows since 1999. Mid-winter calf:100 cow ratios in HD 282 ranged from a high of 46 calves per 100 cows in 1993 to a low of 12 in 1998, and ranged from 22-33 calves:100 cows in 1999-2003.

Late-winter bull:100 cow ratios have ranged from 9-33 bulls:100 cows in HDs 281 and 282 since 1990, averaging about 20 bulls:100 cows.

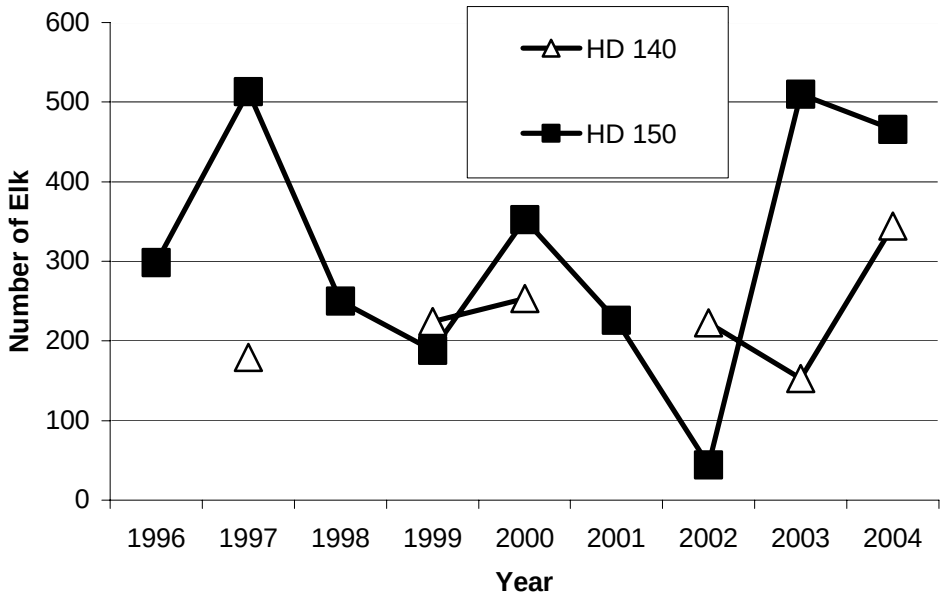


Figure 2. Number of elk counted during post-season aerial trend surveys in small sample areas of HDs 140 and 150 during 1996-2004.

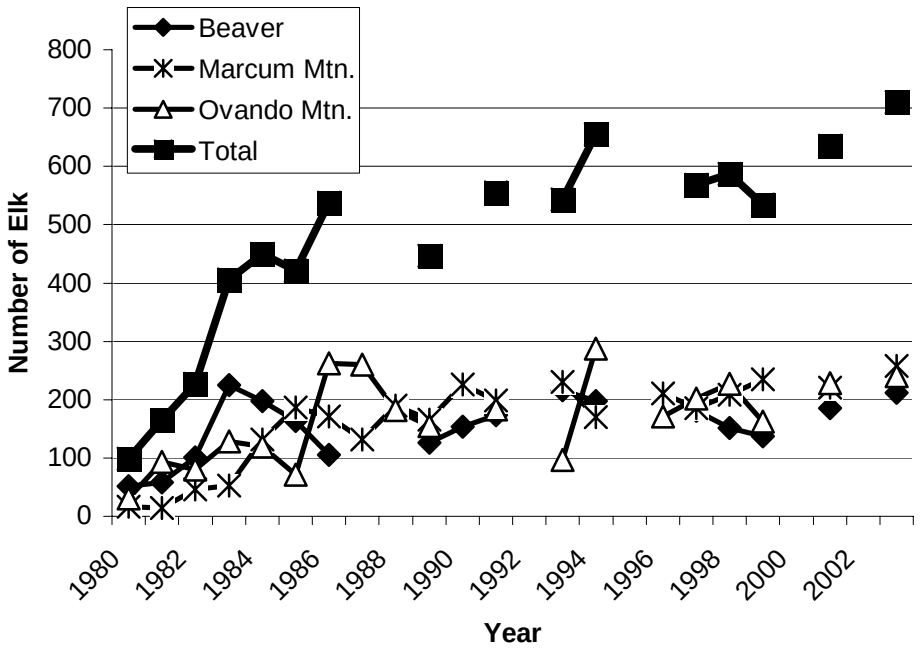


Figure 3. Number of elk counted during post-season aerial trend surveys in HD 281, 1980-2003.

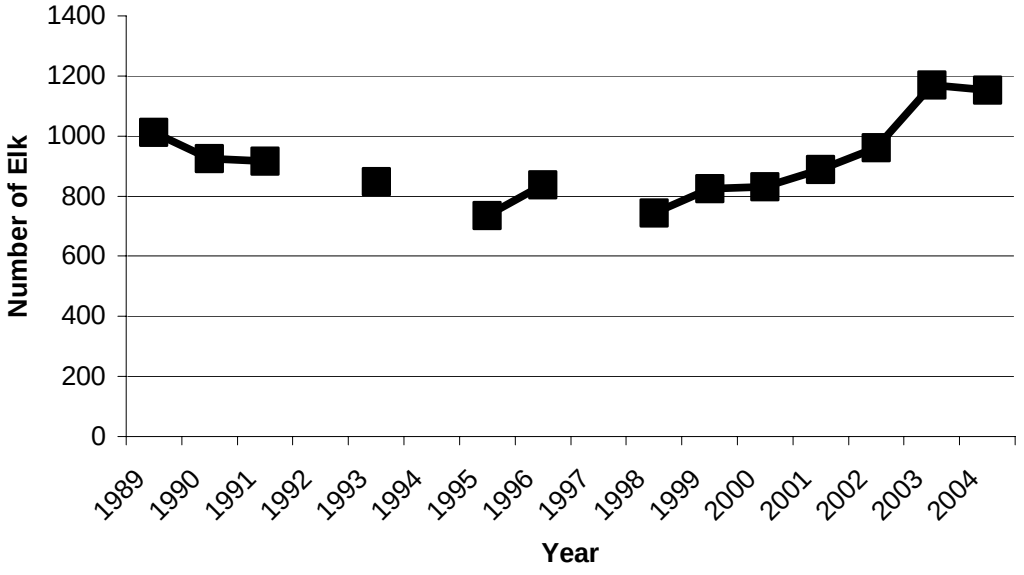


Figure 4. Number of elk counted during post-season aerial trend surveys in HD 282, 1989-2004.

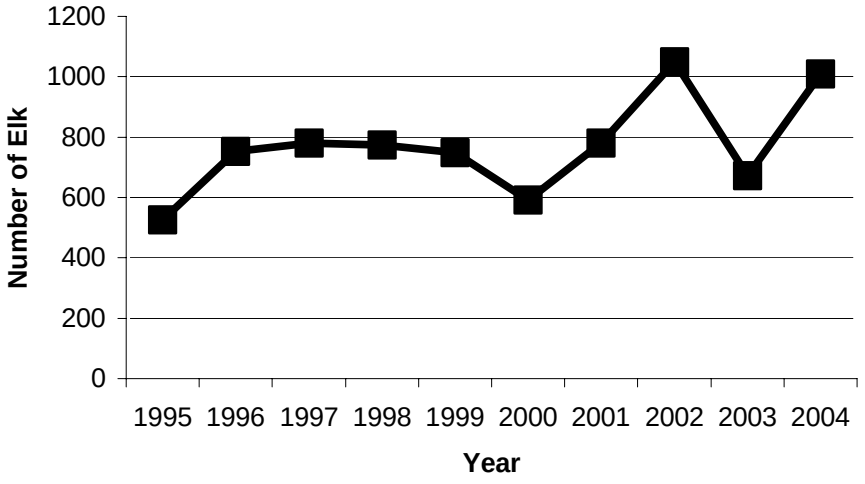


Figure 5. Number of elk counted during post-season aerial trend surveys in HD 422, 1995-2004.

Few elk spend winter in HD 424. Recently, the number of elk observed in HD 425 has ranged between 2,000-2,500. Most of these are typically observed on the SRWMA. The number of elk wintering in HD 442 ranges from 100-500. Some (100-200) are usually found near the Ear Mountain Wildlife Management Area and are partially managed via management prescriptions in HD 450. Combined trend counts for HDs 424, 425 and 442 are presented in Figure 6.

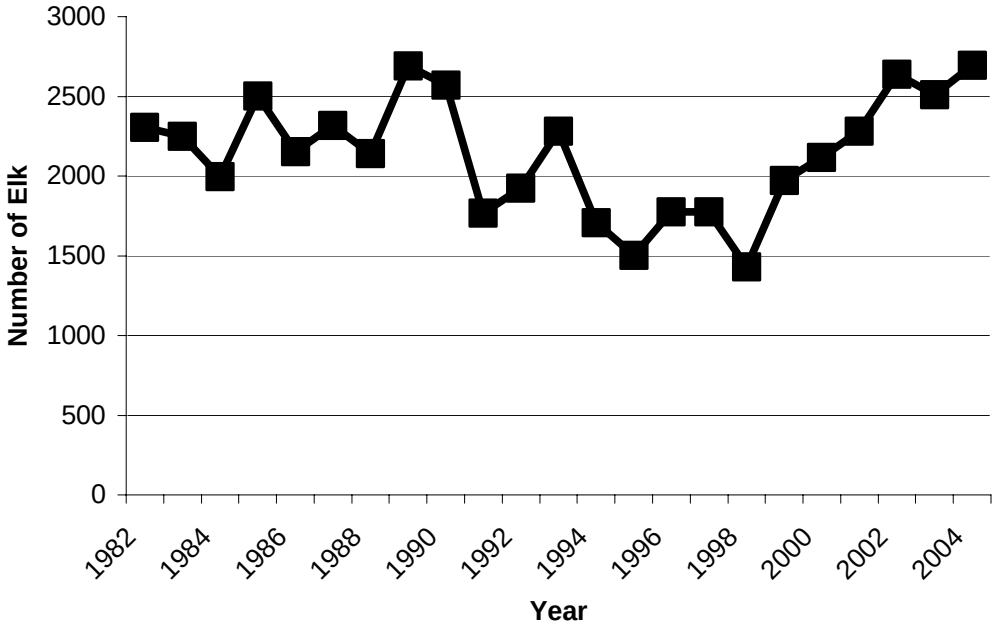


Figure 6. Number of elk counted during post-season aerial trend surveys in HDs 424, 425, and 442 (primarily SRWMA), 1982-2004.

Annual counts of wintering elk in HD 415 vary depending upon snow cover and flying conditions, but generally 100-200 elk are observed in the head of Hyde Creek, Mettler Coulee, and on Lubec Ridge. Severe winter conditions may move some scattered groups of elk onto the Blackfeet Indian Reservation in the vicinity of Dog Gun Lake and on the east end of Lubec Ridge. Until recently, Tribal members were allowed to hunt elk year-round, which precluded substantial use of the Blackfeet Reservation by this elk herd. Currently, elk hunting is prohibited between Heart Butte and East Glacier. Calf recruitment ranges from 21-35 calves:100 cows and bull:100 cow ratios range from 14-25:100 cows. Numbers of elk counted during post-season aerial trend surveys are presented in Figure 7 for HDs 415 and 441 combined.

Two herd units exist in HD 441, one of about 100-150 elk in the Blackleaf WMA - Teton River area and another of approximately 500 elk further north in the Dupuyer Creek - Birch Creek area. The Blackleaf group is stable in numbers, but spend an increasingly greater amount of the year in adjacent Hunting District 450. Winter cow/calf use of the Blackleaf WMA is sporadic, but groups of 10-40 bulls are often observed west of Antelope Butte. The northern herd in this HD has increased to over 500 elk in recent years. Winter elk use is uniformly spread across the unit, particularly in the area between Scoffin Butte, the Theodore Roosevelt Memorial Ranch, and the Broken O Ranch. Severe winter conditions tend to increase elk herd size and push them eastward several miles from more traditional wintering areas mentioned above. This winter movement has prompted depredation complaints from local grain farmers and a Hutterite Colony. Calf recruitment ranges from 27-34 calves:100 cows and bull:100 cow ratios range from 6-25 bulls:100 cows.

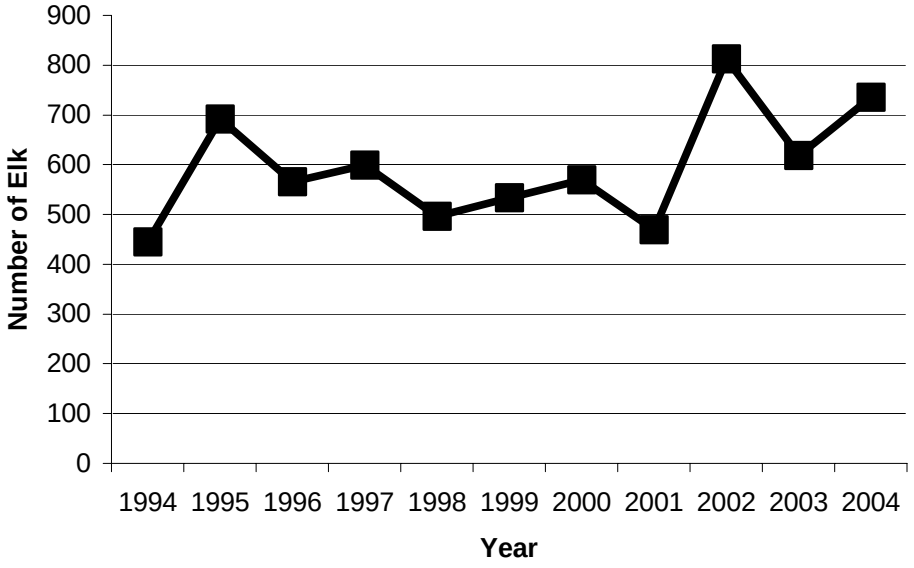


Figure 7. Number of elk counted during post-season aerial trend surveys in HDs 415 and 441 combined, 1994-2004.

Recreation Provided: During 1999-2001, this EMU provided an annual average of 47,356 days of hunting recreation to about 8,006 hunters. Thirty-two percent of the hunters and hunter days were in FWP Region 1, 41% of hunters and hunter days were in Region 2, and 27% of hunters and hunter days were in Region 4. The EMU also provides a diversity of elk viewing opportunities, ranging from viewing elk in high alpine and other wilderness settings during summer to viewing large concentrations of wintering elk on the Sun River and the Blackfoot-Clearwater WMAs.

Annual Elk Harvest: During 1999-2001, an annual average of 753 elk (222 antlerless and 531 bulls) was harvested in this EMU. Fifty-five percent of the antlerless harvest in this EMU was from Region 4, 43% from Region 2, and 2% from Region 1. Of bull harvest, 30% each was from Regions 1 and 4 and 40% was from Region 2. Generally, most hunters, hunter days, and harvest occur in HDs 281, 285, 422, and 442.

Accomplishments: FWP and private landowners cooperated in addressing conflicts involving elk on private land in the Ovando area and in portions of HDs 281 and 285. Accomplishments and solutions also applied to the Garnet EMU (HDs 283, 290, 291, and 292) and are more thoroughly discussed in the description of that EMU.

Masters theses in HDs 282/285 on elk migration patterns, responses to hunting pressure, vulnerability to harvest, habitat preferences, competition with sympatric deer populations, diets, and population estimation were completed since the 1992 Elk Plan (Hurley 1994, Baty 1995, and Ward 1999). Findings from these studies were implemented in the form of: (1) hunting district boundary changes to match herd-units; (2) an annual helicopter census using sightability methodology; (3) an area closure to motorized vehicles during hunting season from Morrell Mountain to Dunham Creek; (4) acquisition (by the Lolo Forest) of Plum Creek Timber Company parcels in an elk migration corridor; (5) input on timber sales, particularly in the Horseshoe Hills and Cave Creek areas; (6) acquisition of PCT inholdings within the Blackfoot-Clearwater Wildlife Management Area (BCWMA); and (7) cooperative forest management across FWP and DNRC lands on the BCWMA.

Plum Creek Timber Company enhanced elk habitat security independent of FWP in the mid-1990s by gating all but selected cost-share and collector roads. These gated roads were in addition to lands managed for walk-in hunting in the Block Management Program. Access can be accomplished by foot, horseback, and mountain bicycle. As a result of PCT's actions and Block Management walk-in areas, security for elk is widespread across HDs 130, 281, and 285, with low security areas for elk more localized in distribution. Road closures on public lands have also provided widespread security areas in HDs 130, 140, 141, 281, and 285. Hunting access also was enhanced since 1992 with the addition of the Dick Creek BMA.

The Reinoehl Ranch and FWP agreed in 1998 to protect important elk winter habitat and the traditional ranch operation with a conservation easement on a 600-acre portion of the ranch in HD 282. Significant elk habitat was also protected since 1992 in HDs 281, 282, and 285 with conservation easements granted by private landowners and acquired by the U. S. Fish and Wildlife Service (primarily).

Control of noxious weeds increased as a priority among FWP, private landowners, DNRC, the Forest Service, and the BLM in many of the HDs since 1992. Weed control efforts, particularly those directed toward spotted knapweed, have maintained or improved elk forage on thousands of treated acres in localized portions of this EMU. Perhaps more importantly, weed awareness among land managers is at an all time high, which could prevent the establishment of new exotic species in this EMU.

The Blackfoot-Clearwater WMA Citizens Advisory Council has remained active since 1992, providing valuable input on property and population management in relation to local community needs. Also during this period, the Blackfoot Challenge emerged as an exceptionally effective forum for coordinating resource management issues, concerns, and opportunities among local communities and agencies in the Blackfoot Valley. As a result, communication and cooperation between FWP and others in the Blackfoot has improved considerably on a variety of topics, including elk management, since 1992.

The occurrence of natural fire in the North Fork of the Sun River has improved elk habitat. We completed a livestock grazing plan review on the Ear Mountain WMA and significantly reduced grazing by horses on the Sun River WMA. FWP purchased a conservation easement on approximately 300 acres adjacent to the north edge of the Sun River WMA. Hunting season adjustments, increased communication with landowners, and more focused elk herding efforts have enhanced the climate surrounding game damage conversations if not the actual problems along the Rocky Mountain Front. Extended camping opportunities for hunters in the Beaver Creek area were maintained to help ensure adequate harvest.

Management Challenges: Motorized access for hunters was reduced by extensive road closures in the past decade. Road closures that PCT and the Forest Service implemented in the mid-1990s went beyond FWP objectives for maintaining and enhancing elk habitat security, bull survival, and walk-in hunting opportunities in many of the Region 1 and 2 HDs within the EMU. As a result, hunters have complained about lost vehicular access to favored hunting destinations. Although factors such as weather and variably restrictive hunting regulations were also involved, declining hunter participation as measured at the Bonner Check Station has coincided with the road closures.

Habitat management in an EMU with such a large percentage of designated Wilderness and roadless area presents challenges that ultimately influence population management. Many segments of the elk populations are influenced by the successional stages of vegetation in the wilderness and by roadless habitats. Much of this area is not at a successional stage of vegetation that is conducive to producing abundant forage and dense elk populations. Extensive habitat-altering events, such as forest fires, must occur before increased elk populations could be realized. Some natural fires have occurred in appropriate areas recently, but positive results for elk may not occur for 10 years or more.

A serious threat to hunting and elk population management in HDs 130, 281, 282, and 285 is the future disposition and management of hundreds of thousands of acres in Plum Creek Timber Company ownership. PCT lands historically have been open to the public,

and hunters tend to take this privilege for granted. However, in recent years PCT has been marketing parcels for sale, and there are no guarantees that PCT will remain a landowner in this EMU. The loss of hunting access on PCT lands, and possible concurrent loss of elk habitat, would eliminate important public hunting opportunities for elk in the EMU. FWP and others have been in discussion with PCT to consider ways of perpetuating elk habitat and public access. Currently, the Blackfoot Challenge, an organization of public agencies and private landowners in the Blackfoot Watershed, is working with PCT and The Nature Conservancy on strategies for the future disposition of certain PCT lands in the middle and upper watershed, with an effort to perpetuate historic land uses and lifestyles. In the Swan Valley (HD 130), the Swan Lands Coordination Committee comprised of private, state, federal, corporate, and nonprofit interests is also investigating alternatives/opportunities with regards to PCT lands and overall development in the valley as well. The scope of current discussions with both groups would affect a fraction of PCT lands in this EMU.

Calf:100 cow ratios have declined over the past decade in much of this EMU. Decreased recruitment rates: (1) reduce numbers of antlered bulls available for harvest, (2) reduce opportunities to prescribe antlerless hunting on publicly accessible lands, (3) temper increases of elk and game damage on and around private lands, and (4) reduce the capacity of heavily exploited population-units to recover from severe winters or other additive mortality. Public concern has centered on the potentially increasing role of predation in the past decade. FWP initiated a multi-year study of elk calf mortality rates just south of HD 281 in 2002 to identify causes of decreased recruitment rates.

Potential impacts of large predators such as mountain lions, black bears, grizzly bears, and wolves need to be taken into account in elk population management. The combined impacts of these predators will be difficult to predict and will vary among habitats and through time. Black bears, grizzly bears, and mountain lions are common throughout the EMU. Since 1992, at least 2 wolf packs have been present in the EMU and dispersing individual wolves are observed throughout the EMU.

Snowmobile use of elk winter ranges continues to be a problem. Despite the cooperative efforts of the Lincoln snowmobile club and closures on BLM lands in the Marcum and Kershaw winter ranges, many snowmobile users continue to recreate on elk winter ranges in the Lincoln Valley. Snowmobile activity on elk winter ranges can lead to greater energy expenditures by elk, displacement to less productive habitat, and greater elk use of private lands.

Extremely limited hunter access to private property in HD 422 makes control of elk populations there difficult. Several large key properties allow essentially no harvest. Some private properties provide elk “refuges” that reduces elk presence and management/harvest potential on neighboring public properties. Additionally, a significant number of elk migrate from west of the Continental Divide only after the general fall hunting season. We have experienced the same difficulty with the “refuge” effect and varying levels of hunter access and in trying to conduct late hunts.

Overuse of forage by elk resulting in degraded forage conditions has long been a concern on the SRWMA and adjacent areas of the National Forest.

Elk depredation occurs on private lands across the East Front of the Rockies. Most of this elk use is on standing pasture or crop, especially at green-up or seed ripe. The most acute problem is on private lands adjacent to the SRWMA, where tolerance of elk is extremely limited. Other areas of elk depredation include Elk and Smith Creek and the Sunrise/Sunset area, where large numbers of elk from west of the Continental Divide spend winter.

HD 415 lies adjacent to the Blackfeet Indian Reservation, where different traditions, regulations, and philosophies apply. Cooperative efforts at managing elk should be initiated between FWP and the Blackfeet Fish and Wildlife Department.

Hunter access to elk on private lands in HD 441 continues to be a management problem, resulting in less than desired harvest. Although elk harvest on the public lands portion of the hunting district continues to be important, it is increasingly obvious that the elk herd will continue to increase unless hunters have more and better access to private land.

Population Monitoring: Mid- to late-winter aerial surveys are conducted on most winter ranges in the EMU to obtain trends in total elk numbers and sex and age classifications. Because winter ranges in HDs 140,141, 150, and 151 are heavily timbered, neither fixed-wing, nor helicopter trend flights are an attempt to obtain complete counts of elk on all winter range. Only occasional sex/age classifications from the ground are obtained in HD 130.

Post-season aerial trend counts are conducted in HD 281 by fixed-wing aircraft and in HDs 282/285 by helicopter. Total numbers and sex and age are recorded. Based on previous work, helicopter counts are adjusted by sightability calculations.

Post-season aerial trend counts are conducted in HD 422 by fixed-wing aircraft and in HDs 424, 425, and 442 by a combination of fixed-wing aircraft and helicopter. Generally, the helicopter is used to count and classify bulls. Winter calf:100 cow ratios are determined by classifications from the ground on the SRWMA. During summer, we conduct a helicopter survey of summer range to obtain calf:100 cow ratios and trend in total numbers.

Post-season aerial trend counts of elk (usually in March) are conducted in HDs 415 and 441 by helicopter in conjunction with the mule deer trend survey. Locations of observed elk groups are recorded with a GPS unit. We classify elk to sex and age category by surveys from the ground during mid- to late-winter.

SUMMARY OF PUBLIC COMMENT

Public input provided for the 1992 Elk Management Plan for this EMU came from individuals and organizations, spanned a wide spectrum of viewpoints, and is listed below:

- The most frequently expressed topic of concern pertained to elk habitat relationships and habitat management. The public expressed a desire for additional habitat management actions (such as prescribed fire in the Wilderness and on winter ranges) and expanded wintering areas along the East Front and in the Blackfoot-Clearwater drainages. Maintenance of west side winter ranges was also a concern.
- The public believed that more attention should be directed to private landowners that support wintering elk, with the objectives of minimizing game damage, promoting elk population increases, and expanding hunting opportunity on private lands.
- The issue of competition between archers and gun hunters for bull elk surfaced, primarily in hunting districts outside the Wilderness.
- The public voiced concern about potential competition between early backcountry rifle hunters and general season hunters along the periphery of the Wilderness, competition between outfitted and non-outfitted hunters, and overuse of the Wilderness by commercial interests.
- Although hunters expressed a desire to hunt elk for meat, they also wanted to harvest older bulls. They frequently commented that too much hunting pressure was applied on bigger bulls. However, hunters also wanted to maintain a five-week general big game hunting season, even if that resulted in survival of fewer bulls.
- The public expressed a preference for land management actions (such as road management and enhancement of elk habitat) rather than more restrictive regulations to reduce elk vulnerability during hunting season.
- Concern was expressed about impacts of snowmobile use in proximity to elk winter ranges and for elk security needs to be fully considered in the planning of commercial snowmobile recreation developments.
- Public comment supported use of A-7 licenses to regulate the antlerless harvest and brow-tined bull (BTB) hunting regulations (with the perception that these regulations would result in increased numbers of older bulls postseason).
- Public comments indicated opposition to permit-only hunting, except for circumstances involving migratory elk herds and publicly owned elk winter ranges (such as in HDs 282 and 425).
- The issues of wolf recovery and potential abolishment of the preserve status of the Sun River Game Preserve were controversial, subject to the full spectrum of public opinion.

MANAGEMENT GOAL

Manage elk populations in a healthy condition at levels commensurate with available habitat on public and private land to provide a variety of recreational experiences, including hunting and general enjoyment by the public. FWP will emphasize managing for mature bull elk available for hunting and viewing in a backcountry setting.

HABITAT OBJECTIVES

1) Maintain the current distribution of elk over three million acres of habitat.

2) Increase private landowner tolerance for wintering elk and improve management of critical elk winter range to benefit elk.

HABITAT MANAGEMENT STRATEGIES

FWP will cooperate with state and federal land management agencies, corporate land managers, and private landowners to pursue the following habitat strategies:

- Provide input and cooperate in the planning of timber sales, road management, recreational management, habitat projects, grazing, and enforcement across the entire EMU.
- Participate with Plum Creek Timber Company, other corporate interests, and state and federal agencies in perpetuating elk/wildlife habitat and traditional public uses of those lands.
- Use natural and prescribed fire on Wilderness and roadless public lands to improve elk habitat.
- Maintain elk habitat security and associated walk-in hunting opportunities (via enforcement of existing road closures and retention/recruitment of effective cover blocks) in selected areas of HDs 281 and 285.
- Complete ongoing 50th Anniversary Project to transfer some 7,800 acres of PCT inholdings within the Blackfoot-Clearwater WMA into public ownership.
- Cooperate as a landowner partner in the work of organized weed management groups in areas of FWP ownership, and continue to cooperate with the counties and other land managers in the development of integrated strategies to improve the prevention and control of exotic, invasive plants.
- Participate with PCT, community working groups, and other agencies in continuing talks to perpetuate elk/wildlife habitat and traditional public uses on PCT lands in the future.
- Review housing and other development proposals for potential impacts to elk and elk management and provide input where necessary to local government authorities responsible for development approval.
- Continue to pursue a prescribed burning program in HD 415 by the USFS to help open up dense stands of lodgepole pine and Douglas fir to provide additional year-round and winter elk habitat. Efforts to date have met considerable public resistance.
- Pursue development of a habitat management agreement between the USFS, Blackfeet Tribe, and FWP.

GAME DAMAGE STRATEGIES

FWP will pursue harvest strategies that help alleviate game depredation by reducing elk populations where chronic problems occur. Some of the strategies that may be utilized include:

- Help landowners and others in local communities with chronic game damage to work cooperatively on elk management goals and strategies that can be applied to the elk population unit across property boundaries.

- Prescribe and/or develop antlerless harvest pressure in excess of estimated calf recruitment rates.
- Apply strategies, such as the HD 298 regulation, that alleviate the legitimate concerns of private landowners with managing the general hunting public.

ACCESS STRATEGIES

- Non-motorized access for hunters must be maintained in the wilderness areas of this EMU by assuring trail access on public lands outside of these areas.
- Continue to cooperate and review USFS road management and travel plans to maintain the current level of hunter access.
- Identify important points of access to public lands and provide recommendations to the appropriate land management authority.
- Identify opportunities to provide points of access through private lands through the Access Montana program.
- In some HDs within the EMU, FWP will work with PCT and other affected landowners to reopen selected access roads in key locations (outside of designated elk security areas) to motorized access during the hunting season.
- Work with public and private entities to ensure hunting access when land exchanges and/or developments occur.

POPULATION OBJECTIVES

REGION ONE:

Due to heavily forested habitats associated with the Region 1 portion of the EMU, the majority of the HDs there have no elk population trend surveys associated with them. Aerial trend survey areas in HDs 140 and 150 account for only a portion of the available elk winter range in these districts and historically, counts have been highly variable. Counts from survey areas in Region 1 portions of the EMU must be interpreted over a long series of years rather than used to respond to year-to-year changes in observed numbers.

HDs 130, 140, and 141: **Maintain an average (3-year) of 225 elk observed during post-season aerial surveys.**

HDs 150 and 151: Maintain an average (3-year) of 400 elk observed during post-season aerial surveys.

REGION TWO:

HD 281:

1) Maintain 500-700 elk observed during post-season aerial surveys. Objectives by subunits: 200-300 elk in Ovando Mountain area from fixed-wing aerial surveys; 150-200 elk in Marcum-Kershaw area; and 150-200 elk in the Beaver-Keep Cool area.

2) Maintain less than 200 elk observed on private ranches in HD 281 during post-season aerial trend surveys.
3) Maintain at least 15 bulls:100 cows or 8% bulls among total elk observed during post-season aerial trend surveys.

HDs 282 and 285:

1) Maintain 900 - 1,100 elk observed during post-season aerial surveys.
2) Maintain less than 100 elk observed on private ranches during post-season aerial trend surveys in HD 285.
3) Maintain at least 20 bulls:100 cows observed during post-season aerial trend surveys.
4) Maintain the percent of bulls greater than 3-years-old (as indicated by antler size) observed during post-season aerial trend surveys in HD 282 at 25% or more.

REGION FOUR:

HDs 424, 425, and south half of 442:

1) Maintain the total number of elk observed during post-season aerial trend surveys within 10% of 2,500 elk (2,250-2,750 elk). No more than 2,000 observed elk should be on the SRWMA.
2) Maintain at least 200 brow-tined bulls observed during post-season aerial trend surveys.
3) Maintain 15% of harvested bulls at least 6-years-old (as measured at the Augusta check station).

HD 422:

1) Maintain the total number of elk observed during post-season aerial trend surveys within 10% of 500 elk (450-550 elk).
2) Maintain at least 5 bulls:100 cows observed in post-season aerial trend surveys.

HDs 415 and 441:

1) Maintain the total number of elk observed during post-season aerial trend surveys in HD 441 within 20% of 500 elk (400-600 elk) and maintain the number of elk observed in HD 415 within 20% of 200 elk (160-240 elk).
2) Maintain 15 bulls:100 cows observed during post-season aerial trend surveys in both HDs 415 and 441.

REGULATION PACKAGES

HDs 130, 140, and 141:

Six-week archery regulation for brow-tined bull/antlerless elk EXCEPT, see Restrictive Regulation for antlerless elk.

Antlerless:

The Standard Regulation is: brow-tined bull/antlerless regulation during the general season for **youth ages 12-14 ONLY**.

The Standard Regulation will be recommended if: the most recent 3-year running average for number of elk counted during the post-season aerial trend survey in HD 140 is at least 225 elk.

The Liberal Regulation is: limited antlerless permits for the 5-week general season AND, brow-tined bull/antlerless elk during the general season for **youth ages 12-14**.

The Liberal Regulation will be recommended if: the most recent 3-year running average for number of elk counted during the post-season aerial trend survey in HD 140 is at least 450 elk

The Restrictive Regulation is: NO archery or general season hunting for antlerless elk.

The Restrictive Regulation will be recommended if: the most recent 3-year running average for number of elk counted during the post-season aerial trend survey in HD 140 is less than 115 elk

Antlered:

A 5-week general season brow-tined bull regulation will be recommended for all packages.

HDs 150 and 151:

Antlerless:

The Standard Regulation is: 1-week, early September archery season (prior to 15 September) for brow-tined bull/antlerless elk AND, 5 days to 2 weeks of general season antlerless elk regulations.

The Standard Regulation will be recommended if: the most recent 3-year running average for number of elk counted during the post-season aerial trend survey in HD 150 is at least 400 elk AND, aerial trend counts on winter ranges surrounding the wilderness area (Regions 2 and 4) indicate stable to increasing populations.

The Liberal Regulation is: 1-week, early September archery season (prior to 15 September) for brow-tined bull/antlerless elk AND, more than 2 weeks of general season antlerless elk regulations.

The Liberal Regulation will be recommended if: the most recent 3-year running average for number of elk counted during the post-season aerial trend survey in HD 150 is at least 800 elk OR, trend counts on winter ranges surrounding the wilderness areas (Region 2 and 4) indicate a strongly increasing population, and FWP believes that increased antlerless harvest in the wilderness areas would help address objectives for those winter ranges.

The Restrictive Regulation is: NO hunting for antlerless elk.

The Restrictive Regulation will be recommended if: the most recent 3-year running average for number of elk counted during the post-season aerial trend survey in HD 150 is less than 200 elk.

Antlered:

The Standard Regulation is: 1-week, early September archery season (prior to 15 September) for brow-tined bull/antlerless elk and a 10-week season for brow-tined bulls beginning 15 September will be recommended for **all** packages. During many years hunting is effectively closed down by winter storms before the end of the 10-week period).

HD 280:

Antlerless:

The Standard Regulation is: 1-week, early September archery season (prior to 15 September) for brow-tined bull/antlerless elk AND, moderate numbers of general season antlerless permits (± 150).

The Standard Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys in HDs 281, 282, 285, and 422 are within their objective range (see objectives) AND, calf:100 cow ratios observed during post-season aerial trend surveys in HDs 281, 282, 285, and 422 are more than 20:100.

The Liberal Regulation is: 1-week, early September archery season (prior to 15 September) for brow-tined bull/antlerless elk AND, high numbers of general season antlerless permits (more than 200) OR, 1-week of general season antlerless elk regulations.

The Liberal Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys in HDs 281, 282, 285, and 422 are above their objective range or more than 20% above the point objective (see objectives) AND, calf:100 cow ratios observed during post-season aerial trend surveys in HDs 281, 282, 285, and 422 are more than 30:100 for 2 consecutive years.

The Restrictive Regulation is: 1-week, early September archery season (prior to 15 September) for brow-tined bull/antlerless elk AND, NO-to-low numbers of antlerless permits (less than 100).

The Restrictive Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys in HDs 281, 282, 285, and 422 are below their objective range or more than 20% below the point objective (see objectives) and restrictive regulations in those districts will not accomplish the objectives without a more restrictive regulation in HD 280 OR, calf:100 cow ratios observed during post-season aerial trend surveys in HDs 281, 282, 285, and 422 are less than 20:100 for 2 consecutive years.

Antlered:

The Standard Regulation is: 1-week, early September archery season (prior to 15 September) for brow-tined bull/antlerless elk and a 10-week season for brow-tined bulls beginning 15 September will be recommended for **all** packages. During many years hunting is effectively closed down by winter storms before the end of the 10-week period).

HD 281:

Antlerless:

The Standard Regulation is: 6-week archery regulation for brow-tined bull/antlerless elk and moderate numbers of general season antlerless permits (± 150).

The Standard Regulation will be recommended if: number of elk observed during post-season aerial trend surveys is between 500 and 700 elk AND, more than 20 calves:100 cows are observed during post-season aerial trend surveys.

The Liberal Regulation is: 6-week archery regulation for brow-tined bull/antlerless elk AND, high numbers of general season antlerless permits (more than 200) AND, unlimited numbers of A-7 antlerless licenses for private-land portions of districts with chronic, increasing game damage problems, and where impacts of high harvest rates on publicly accessible elk herd-units are minimized.

The Liberal Regulation will be recommended if: number of elk observed during post-season aerial trend surveys is more than 700 elk AND, more than 30 calves:100 cows are observed during post-season aerial trend surveys.

The Restrictive Regulation is: 6-week archery regulation for spike bull/antlerless elk and no or low numbers of general season antlerless permits (less than 100).

The Restrictive Regulation will be recommended if: number of elk observed during post-season aerial trend surveys is less than 500 elk OR less than 20 calves:100 cows are observed during post-season aerial trend surveys for 2 consecutive years.

Antlered:

The Standard Regulation is: 6-week archery regulation for brow-tined bull/antlerless elk and 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 15 bulls:100 cows or, bulls are at least 8% of total elk observed.

The Restrictive Regulation is: 6-week archery regulation for spike bull/antlerless elk and 5-week spike bull only general season regulation with limited permits for either-sex elk.

The Restrictive Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 15 bulls:100 cows or, bulls are less than 8% of total elk observed for 2 consecutive years.

HDS 282 and 285:

Antlerless:

The Standard Regulation is: 6-week archery season for either-sex elk and moderate numbers of general season antlerless permits or A-7 licenses in HDs 282 (75-125) and 285 (150-200).

The Standard Regulation will be recommended if: number of elk observed during post-season aerial trend surveys in HD 282 is between 900-1,100 elk AND, more than 20 calves:100 cows are observed during post-season aerial trend surveys in HD 282.

The Liberal Regulation is: 6-week archery regulation for either-sex elk and high numbers of A-7 licenses in HD 282 (more than 125) and antlerless or either-sex permits in HD 285 (more than 200), possibly valid for groups of hunting districts including HD 285 AND, unlimited numbers of A-7 antlerless licenses for private-land portions of districts with chronic, increasing game damage problems, and where impacts of high harvest rates on publicly accessible elk herd-units are minimized.

The Liberal Regulation will be recommended if: number of elk observed during post-season aerial trend surveys in HD 282 is more than 1,100 elk.

The Restrictive Regulation is: 6-week archery regulation for brow-tined bull/antlerless elk and no or low numbers of general season antlerless permits or A-7 licenses (less than 75 permits in HD 282 and less than 150 permits in HD 285).

The Restrictive Regulation will be recommended if: number of elk observed during post-season aerial trend surveys in HD 282 is less than 900 elk OR, if less than 1,000 elk are observed during the post-season survey AND, less than 20 calves:100 cows are observed during post-season aerial trend surveys in HD 282 for 2 consecutive years.

Antlered:

The Standard Regulation is: 6-week archery regulation for either-sex elk and 5-week general season antlered bull regulation in HD 285 AND, 1-3 either-sex permits in HD 282.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 20 bulls:100 cows. Either-sex permits in HD 282 will be recommended if, additionally, at least 25% of the bulls observed during post-season aerial surveys are classified as 3-years-old or older.

The Restrictive Regulation is: 6-week archery regulation for brow-tined bull/antlerless elk and 5-week general season brow-tined bull regulation in HD 285. No general season hunting for bulls in HD 282.

The Restrictive Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 20 bulls:100 cows for 2 consecutive years.

HD 422:

Antlerless:

The Standard Regulation is: 6-week either-sex archery regulation and 5-week general season either-sex regulation AND, limited antlerless permits valid from the end of the general season to 15 February.

The Standard Regulation will be recommended if: number of elk observed during post-season aerial trend surveys is within 10% of 500 elk (450-550 elk).

The Liberal Regulation is: 6-week either-sex archery regulation and **1.)** 5-week general season either-sex regulation AND, limited antlerless permits valid from the end of the general season to 15 February AND, unlimited, over-the-counter A-9/B-12 antlerless licenses (B-tags) valid on private and DNRC lands during archery and the general season and also when paired with limited late permits OR; **2.)** 5-week antlerless elk ONLY AND, limited antlerless permits valid from the end of the general season to 15 February AND, unlimited, over-the-counter A-9/B-12 antlerless licenses (B-tags) valid on private and DNRC lands during archery and the general season and also when paired with limited late permits.

Liberal Regulation **1.) (above)** will be recommended if: number of elk observed during post-season aerial trend surveys is more than 550 elk.

Liberal Regulation **2.) (above)** will be recommended if: number of elk observed during post-season aerial trend surveys remains above 550 elk despite 2 consecutive years of liberal antlerless harvest package 1.) (above).

The Restrictive Regulation is: 6-week brow-tined bull/antlerless archery regulation and 5-week general season brow-tined bull/antlerless regulation.

The Restrictive Regulation will be recommended if: number of elk observed during post-season aerial trend surveys is less than 450 elk for 2 consecutive years.

Antlered:

The Standard Regulation is: 6-week either-sex archery regulation and 5-week either-sex general season regulation.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial surveys is at least 5 bulls:100 cows.

The Restrictive Regulation is: 6-week brow-tined bull/antlerless archery regulation and 5-week general season brow-tined bull/antlerless regulation.

The Restrictive Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial surveys is less than 5 bulls:100 cows for 2 consecutive years.

HDs 424 and 442:

Antlerless:

The Standard Regulation is: 6-week brow-tined bull/antlerless archery regulation and antlerless elk ONLY during the first 4 days of the general season. THEN, brow-tined bull/antlerless regulation until quotas for all elk harvested on a general license in HDs 424 and/or HD 442 (intended to maintain population size) are checked through the Augusta check station. NO harvest of antlerless elk after respective quota(s) are reached in either or both hunting district(s). Brow-tined bulls remain legal from quota closure to the end of the general season. Standard quotas have been about 50 elk in HD 424 & 400 elk in HD 442. A-9/B-12 antlerless licenses (B-tags) valid during the archery and general seasons on private and state DNRC lands may also be recommended.

The Standard Regulation will be recommended if: number of elk observed during post-season surveys in HDs 424, 425 and 442 is between 2,250 and 2,750 elk.

The Liberal Regulation is: 6-week brow-tined bull/antlerless archery regulation and antlerless elk ONLY during the first 4 days of the general season. THEN, brow-tined bull/antlerless elk until increased quotas (intended to reduce population size) of all elk harvested on a general license in HDs 424 and/or HD 442 are checked through the Augusta check station. NO harvest of antlerless elk after respective quota(s) reached in either or both hunting district(s). Brow-tined bulls remain legal from quota closure to the end of the general season. A-9/B-12 antlerless licenses (B-tags) valid during the archery and general seasons on private and state DNRC lands may be recommended.

The Liberal Regulation will be recommended if: number of elk observed during post-season surveys in HDs 424, 425 and 442 is greater than 2,750 elk.

The Restrictive Regulation is: 6-week brow-tined bull/antlerless archery regulation and antlerless elk ONLY during the first 4 days of the general season. THEN, brow-tined bull/antlerless elk until reduced quotas (intended to foster population growth) of all elk harvested on a general license in HDs 424 and/or HD 442 are checked through the Augusta check station. NO harvest of antlerless elk after respective quota(s) reached in either or both hunting district(s). Brow-tined bulls remain legal from quota closure to the end of the general season.

The Restrictive Regulation is will be recommended if: number of elk observed during post-season surveys in HDs 424, 425 and 442 is less than 2,250 elk for 2 consecutive years.

Antlered:

The Standard Regulation is**:** 6-week brow-tined bull/antlerless archery regulation and antlerless elk ONLY during the first 4 days of the general season. THEN, brow-tined bull/antlerless elk until quotas of all elk harvested on a general license in HDs 424 and/or HD 442 are checked through the Augusta check station. NO harvest of antlerless elk after respective quota(s) reached in either or both hunting district(s). Brow-tined bulls remain legal from quota closure to the end of the general season.

The Standard Regulation will be recommended if: at least 200 brow-tined bulls are observed during post-season aerial surveys and at least 15% of harvested bulls are at least 6 years old.

Restrictive Regulation is: 3-week brow-tined bull/antlerless archery regulation and antlerless elk ONLY during the first 4 days of the general season. THEN, brow-tined bull/antlerless elk until quotas of all elk harvested on a general license in HDs 424 and/or HD 442 are checked through the Augusta check station. All elk harvest will close after respective quota(s) reached in either or both hunting district(s).

The Restrictive Regulation will be recommended if: less than 200 brow-tined bulls are observed during post-season surveys OR, less than 15% of harvested bulls are at least 6 years old for 2 consecutive years.

HD 425:

Six-week brow-tined bull/antlerless archery regulation.

Antlerless:

The Standard Regulation is: 5-week general season antlerless regulation (Sun River WMA excluded) AND, limited antlerless permits valid throughout the HD for the week before the general season and the first two weeks of the general season (3 sets of permits, each set valid for one week—permit levels intended to maintain population).

The Standard Regulation will be recommended if: number of elk observed during post-season surveys in HDs 424, 425 and 442 is between 2,250 and 2,750 elk.

The Liberal Regulation is: 5-week general season antlerless regulation (Sun River WMA excluded) AND, limited A-9/B-12 antlerless licenses (B-tags) valid during the archery and general seasons on private and state DNRC lands.

The Liberal Regulation will be recommended if: number of elk observed during post-season surveys in HDs 424, 425 and 442 is above 2,750 elk.

The Restrictive Regulation is: 5-week general season antlerless regulation (Sun River WMA excluded) AND, limited antlerless permits throughout the district for the week before the general season and the first two weeks of the general season (3 sets of permits, each set valid for one week—reduced permit levels intended to foster population growth).

The Restrictive Regulation will be recommended if: number of elk observed during post-season surveys in HDs 424, 425 and 442 is below 2,250 elk for 2 consecutive years.

Antlered:

The Standard Regulation is: limited either-sex permits valid for weekly intervals during the general season (not valid on the Sun River WMA).

The Standard Regulation will be recommended if: at least 200 brow-tined bulls are observed during post-season surveys and at least 15% of harvested bulls are at least 6 years old (as measured at the Augusta check station).

The Restrictive Regulation is: no general season opportunity for bulls.

The Restrictive Regulation will be recommended if: less than 200 brow-tined bulls are observed during post-season surveys OR, less than 15% of harvested bulls are at least 6 years old for 2 consecutive years.

HD 415:

Six-week either-sex archery regulation.

Antlerless:

The Standard Regulation is: first week of the general season either-sex regulation, remainder of season any bull regulation.

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is within 20% of 200 elk (160-240 elk).

The Liberal Regulation is: first 2-weeks (up to the full 5-weeks) of general season either-sex regulation.

The Liberal Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 240 elk.

The Restrictive Regulation is: limited antlerless permits.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is less than 160 elk for 2 consecutive years.

Antlered:

The Standard Regulation is: first week of the general season either-sex regulation, remainder of season any bull regulation.

The Standard Regulation will be recommended if: at least 15 bulls:100 cows are observed during post-season aerial trend surveys.

The Restrictive Regulation is: limited permits for antlered bulls.

The Restrictive Regulation will be recommended if: less than 15 bulls:100 cows are observed during post-season aerial trend surveys for 2 consecutive years.

HD 441:

Six-week either-sex archery regulation.

Antlerless:

The Standard Regulation is: limited antlerless permits (± 150).

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is within 20% of 500 elk (400-600 elk).
The Liberal Regulation is: either-sex regulation for a portion of the general season (up to the full 5-weeks).

The Liberal Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 600 elk.

The Restrictive Regulation is: few limited antlerless permits (less than 100).

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is less than 400 elk for 2 consecutive years.

Antlered:

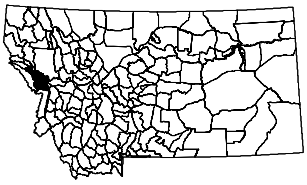
The Standard Regulation is: an antlered bull regulation for wilderness portion of the HD and limited permits for antlered bulls in the remainder of the HD.

The Standard Regulation will be recommended if: at least 15 bulls:100 cows are observed during post-season aerial trend surveys.

The Restrictive Regulation is: limited permits for antlered bulls in the entire HD.

The Restrictive Regulation will be recommended if: less than 15 bulls:100 cows are observed during post-season aerial trend surveys for 2 consecutive years.

NINEMILE EMU
(Hunting Districts 201 and 203)



Description: This 1,055-square-mile EMU lies west of Missoula and borders the southwest boundary of the Flathead Indian Reservation. The Lolo National Forest (LNF) administers the majority (about 60%) of the EMU, and Plum Creek Timber Company (PCT) owns approximately 15%. The quality and quantity of winter range forage is declining, as shrubfields, created by the wildfires in the early 1900s, become more decadent with age and are invaded by conifer reproduction. Wolves are now established in the Ninemile and Fish Creek areas, where they may have reduced calf recruitment and affected elk distribution.

Public Access: Public access remains good because of the public lands and because PCT allows free public hunting on its lands. Roads constructed for timber harvest and the BPA Powerline pathway provide access to most of the unit. Road construction on public lands has been minor since 1992. Although construction of logging roads has increased on corporate timberlands, PCT has effectively gated most of its roads, reducing vehicular access substantially in many areas since 1992. The Block Management Program has opened blocks of private land to hunting access in the Ninemile and Fourmile areas. Most portions of the EMU offer opportunities for day hunts by vehicle, by horseback, or on foot.

Elk Populations: Numbers of elk observed on post-season aerial trend surveys increased dramatically from 1980 to 1990 (Figure 1). Since then, observed numbers of elk have been relatively stable, and approximately 1,600 elk are observed during fixed-wing aerial surveys of this EMU. Sex/age ratios have not been collected since the early 1990s in this EMU because of budget constraints.

Recreation Provided: During 1999-2001, this EMU provided an annual average of 14,482 days of hunting recreation to 2,193 elk hunters annually, compared to about 26,000 hunter days and 3,900 hunters in the early 1990s. This decline may be the result of implementation of the brow-tined bull regulation (since 1995) and the unusually warm, dry fall seasons since 1998. Winter, spring and summer elk viewing opportunities are available in several areas, including excellent elk viewing in Lolo Creek, Ninemile Creek, and Nemote Creek.

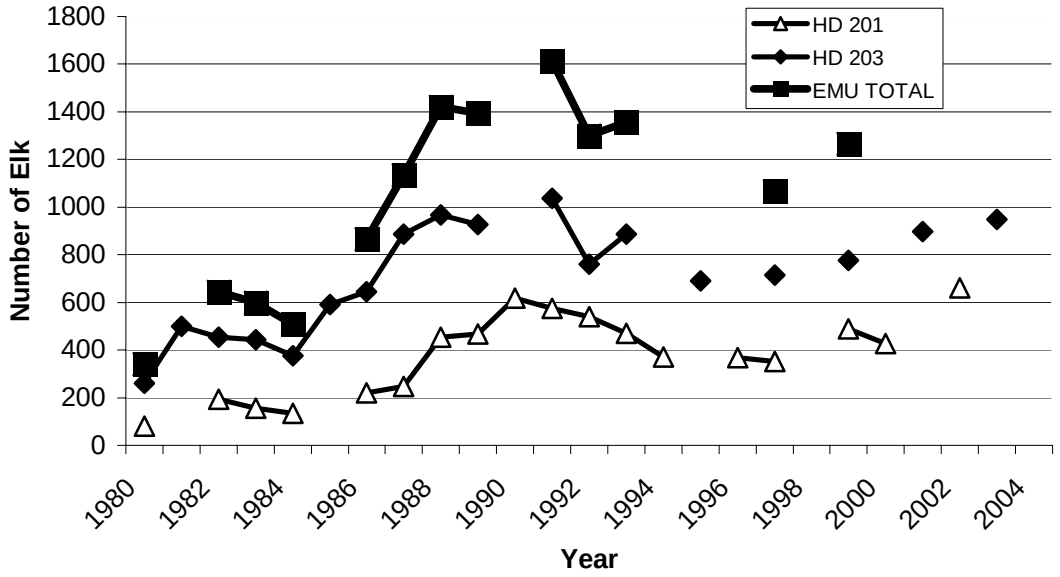


Figure 1. Number of elk observed during post-season aerial trend surveys in HDs 201 and 203, Ninemile EMU, 1980-2004.

Annual Elk Harvest: During 1999-2001, hunters harvested an average 134 elk (83 antlered and 51 antlerless) annually, compared to about 300 elk (200 antlered and 100 antlerless) annually during the early 1990s. Although elk numbers are comparable to previous highs in the late 1980s and early 1990s, fewer hunters, the brow-tined bull regulation (implemented in 1995) and the warm, dry hunting seasons are likely responsible lower harvests in recent years. Because of the brow-tined-bull regulation, nearly 100% of the bull harvest is comprised of BTBs. About 25% of the harvested bulls have 6 or more antler points on at least one side.

Accomplishments: FWP cooperated with the Lolo National Forest, in facilitating a land exchange that protected approximately 3,500 acres of elk winter range in the O'Brien Creek area from residential development.

FWP and private landowners cooperated in addressing conflicts involving elk on private land in the St. Regis, Tarkio and Ninemile areas. A combination of tools was used to direct hunters and increase harvests in those areas. The Fourmile Creek portion of HD 201 has additional antlerless permits for the general hunting season to control local elk populations. A late season damage hunt was employed in Nemote Creek.

Block Management insured continued hunter access in Fourmile and Ninemile Creeks, where 1,949 acres of private land are enrolled.

FWP cooperated with the Lolo National Forest to control of noxious weeds on winter ranges in Pardee, Eddy and Madison and O'Brien Creeks. FWP also cooperated with LNF in prescribed

burning projects to rejuvenate shrubfield winter ranges in Mill, Pardee, Deep, Burdette, Petty and O'Brien Creeks.

Management Challenges: The future disposition and management of hundreds of thousands of acres in Plum Creek Timber ownership may result in a serious threat to hunting access and elk population management in the Ninemile EMU . PCT lands have historically been open to the public, and hunters tend to take this privilege for granted. However, in recent years PCT has been marketing parcels for sale, and PCT may not be a longtime landowner in this EMU. The loss of hunting access on PCT lands, and possible concurrent loss of elk habitat, would eliminate significant public hunting opportunities for elk in this heavily hunted EMU.

Residential subdivisions continue to be developed on or near elk habitat, particularly near Lolo, Missoula, Frenchtown, and Huson. In some cases, such subdivisions have restricted public access to hunting elk and have contributed to chronic elk damage complaints in those areas. In other cases, winter range productivity has been reduced by housing developments. We expect this trend to continue.

Calf:100 cow ratios in nearby EMUs have declined steadily over the past decade, and recruitment in this EMU probably has declined also. Although deteriorating winter range quality may contribute to this, public concern has centered on the potentially increasing role of predation in the past decade.

The restoration of wolves to western Montana is an emerging factor in elk population management. In the Ninemile EMU, where at least three wolf packs are now established, we anticipate some level of additive elk mortality with more wolf packs, which would necessitate a corresponding reduction in antlerless elk permits.

Use of OHVs, particularly 4-wheelers, for hunting and retrieving elk has increased significantly during the past decade. Increasingly, hunters complain of 4-wheelers illegally accessing areas behind closed gates. This may be not only a social and legal problem, but 4-wheeler use may also contribute to increased bull harvest in some areas, displacement of elk to areas where they are less accessible to hunters, soil erosion, and spread of noxious weeds.

Winter range forage productivity is threatened by conifer invasions of shrubfields and grasslands, aging shrub plants, and weed invasions of grasslands. Continued declines in forage productivity may lead to lower calf recruitment, lower elk populations, and greater elk use of private lands.

Population Monitoring: We conduct biannual elk trend counts during spring greenup with fixed-wing aircraft in HDs 201 and 203. During these surveys, we also record percent bulls in the population. As budgets allow, we sample bull:100 cow and calf:100 cow ratios during late winter by helicopter.

SUMMARY OF PUBLIC COMMENT

In 1992, public comment was supportive of providing a diversity of elk hunting experiences. Some believed elk numbers should be increased, while others thought that elk numbers should be reduced to thwart increasing game damage incidents. The public also expressed a desire for better opportunities to harvest older bulls and supported increased efforts to protect elk security through additional road closures.

Based on recent comments at meetings and in individual conversations, the 1992 summary still accurately reflects the range of public views. However, now there is an increased concern about wolf predation relative to the possible effects on elk populations and hunting opportunities, an increased desire for higher elk numbers, and increased opposition to new road closures, particularly those on PCT lands.

MANAGEMENT GOAL

On publicly accessible lands, maintain current elk population levels, provide a diversity of elk hunting experiences, and offer opportunities for a maximum sustainable annual elk harvest. In areas of chronic game damage, facilitate increased involvement of local communities in developing elk population objectives, and, where possible, decrease elk population levels with hunting regulations that increase hunter effectiveness in harvesting elk and increase landowner tolerance for hunters on their properties.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain 662,400 acres of productive elk habitat.
2) Maintain at least 80% of existing elk habitat security.

HABITAT MANAGEMENT STRATEGIES

FWP will provide technical assistance and cooperate with the Lolo National Forest and other public and private landowners/managers to:

- Improve vegetation diversity and increase forage carrying capacity of winter ranges by prescribed burning, weed management, and timber harvest. Facilitate conifer encroachment reduction, shrub stimulation, and weed management projects already underway in Eddy Creek, Deep Creek, Petty Creek, Ninemile Creek, O'brien Creek and Fish Creek.
- Maintain open road densities at current levels.
- Identify and open selected roads where increased hunter access might reduce crop depredation by elk.

- Maintain elk security so that elk harvest is distributed throughout the hunting season, with no more than 40% of harvested bulls taken during the first week of the general season.
- Review subdivision and other development proposals and provide input relative to elk management to local government authorities responsible for development approval.
- Review timber sales, road management, and other projects on public lands that might affect elk populations and elk hunting opportunities.
- Acquire conservation easements from willing landowners on elk range at greatest risk of permanent habitat loss due to future development or other factors.
- Work with private and public entities to protect important elk winter ranges from residential development (e.g. Lolo Creek, Albert Creek, Fish Creek, Petty Creek and Deep Creek).

GAME DAMAGE STRATEGIES

FWP will:

- Attempt to manage game damage through adjustment of numbers of general season antlerless permits.
- Use A-9/B-12 "B" licenses for a second antlerless elk in portions of the district with chronic crop depredation
- Increase antlerless harvest in chronic depredation areas by establishing portions of districts with extra antlerless permits, by adopting special early and late season damage hunts, and by establishing special permits for private lands only.
- Pursue efforts to increase the carrying capacity of winter ranges on USFS lands adjacent to chronic problem areas.

ACCESS STRATEGIES

FWP will:

- Identify important points of access to public lands and provide access recommendations to the appropriate land management authority. Access programs will generally be designed to allow vehicle access to the boundary of USFS lands with non- vehicular traffic allowed beyond that point.
- Identify opportunities for additional Block Management projects and walk-in areas
- Identify opportunities to provide points of access through private lands to public lands through the Access Montana program
- Work with public and private entities to protect lands from land exchanges and/or developments that would exclude lands from public hunting.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 1,550 elk (600 elk in HD 201, 950 elk in HD 203).

2) Maintain at least 10 bulls:100 cows observed during post-season helicopter surveys (if budgets allow these surveys), or at least 7% antlered bulls in the total elk observed.

POPULATION MANAGEMENT STRATEGIES

- Prescribe antlerless harvest equal to estimated calf recruitment rates for elk populations not responsible for chronic crop depredation.
- Focus elk population reductions where game damage problems exist, rather than reducing numbers uniformly across the EMU.
- Utilize the brow-tined bull regulation to maintain a minimum number of breeding bulls.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless elk archery regulation EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

Note: Between 1990 and 2002, the number of antlerless permits issued for this EMU varied from 150 to 725 corresponding to the 1,150 to 1,700 elk observed during fixed-wing aerial surveys during the same period.

The Standard Regulation is: limited antlerless permits (100-375 in HD 201 and 100-450 in HD 203 varying with the post-season aerial trend count) during the 5-week general season.

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial trend surveys are between 480 and 720 in HD 201 and between 760 and 1,140 in HD 203.

The Liberal Regulation is: **1.)** increased numbers of antlerless permits (more than 400 in HD 201 and more than 500 in HD 203) OR; **2.)** brow-tined bull/antlerless regulation during a portion (up to the full 5-weeks) of the general season with limited antlerless permits or A-9/B-12 antlerless licenses (B-tags) valid during the rest of the season (antlerless permits and A-9/B-12 licenses may be valid to 1 January).

Liberal Regulation **1.) (above)** will be recommended if: the total numbers of elk observed during post-season aerial trend surveys are more than 720 elk in HD 201 and more than 1,150 elk in HD 203 .

Liberal Regulation **2.) (above)** will be recommended if: after 2 years of application of Liberal Regulation 1.) (above) the total number of elk observed during post-season aerial trend surveys remains more than 720 elk in HD 201 and more than 1,150 elk in HD 203 .

The Restrictive Regulation is: limited antlerless permits (less than 100 each in HDs 201 and 203) valid for a portion of the district or portion of the season.

The Restrictive Regulation will be recommended if: the total numbers of elk observed during post-season aerial trend surveys are less than 480 elk in HD 201 and less than 760 elk in HD 203 for 2 consecutive survey years.

Antlered:

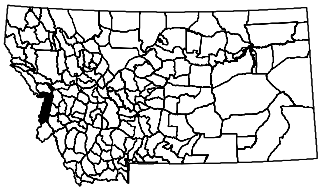
The Standard Regulation is: 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: at least 7% of total elk observed during post-season aerial surveys are bulls or, at least 10 bulls:100 cows are observed during post-season aerial surveys.

The Restrictive Regulation is: unlimited permits for antlered bulls. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED PERMITS.

The Restrictive Regulation will be recommended if: the % bulls observed during post-season aerial trend surveys is less than 7% (or bull:100 cow ratios are less than 10:100) for 2 consecutive years in both HDs OR, calf:100 cow ratios are less than 20 calves:100 cows for 2 consecutive years.

BITTERROOT EMU
(Hunting Districts 240 and 260)



Description: The 927-square-mile Bitterroot EMU is located on the west side of the Bitterroot Valley in western Montana. The Lolo and Bitterroot National Forests administer 77% of the 770-square-miles in HD 240. Most of the backcountry portions of HD 240 are in the Selway-Bitterroot Wilderness while most of the valley floor portion of HD 240 is in private ownership. HD 260 is a long narrow district of 157-square-miles running a few miles on either side of the Bitterroot River and includes the 2,626-acre Lee Metcalf National Wildlife Refuge. Ninety-two percent of HD 260 is private land.

Twenty-one percent (123,420 acres) of the total EMU is elk winter range that lies along the west side of the valley near the National Forest boundary in HD 240. Elk have become year-round residents of the area between Roaring Lion and Blodgett Creeks just west of Hamilton and do not migrate into the Bitterroot Mountains. Elk use the 48% of the winter range that is private land more than they do winter range on public land. On spring 2002 flights, 86% of observed elk were on privately owned winter range.

Elk security is good to excellent because of the ruggedness of wilderness terrain. The capacity of available elk winter range is limited by its general east slope exposure, tree canopy coverage, landowner tolerance, and housing development.

Public Access: There is good public access to every drainage in HD 240 but travel into the backcountry is limited to non-motorized methods. Public access to private lands along the Bitterroot River in HD 260 is limited.

Elk Populations: Because of seasonal movement patterns, elk in HD 260 have been traditionally counted as part of the HD 240 population. Numbers of elk observed during spring fixed-wing aircraft flights in HD 240 averaged 280 from 1965 to 1979. Because of more conservative antlerless harvests, the population began growing about 1980, and reached a high count of 1,016 observed elk in 2004 (Figure 1). Counts were over objective in 2003 and 2004. During 1999-2003, bull:100 cow and calf:100 cow ratios averaged 11:100 (range 7-16:100) and 31:100 (range 19-48:100), respectively.

Recreation Provided: During 1999-2001, this EMU provided an average of 10,755 days of hunting recreation for 1,738 hunters annually. Wildlife viewing and photography are major uses of the elk population during the summer. Opportunities for viewing elk on winter ranges are available at McClain Creek, Brooks Creek and Sweathouse Creek (Victor Hill).

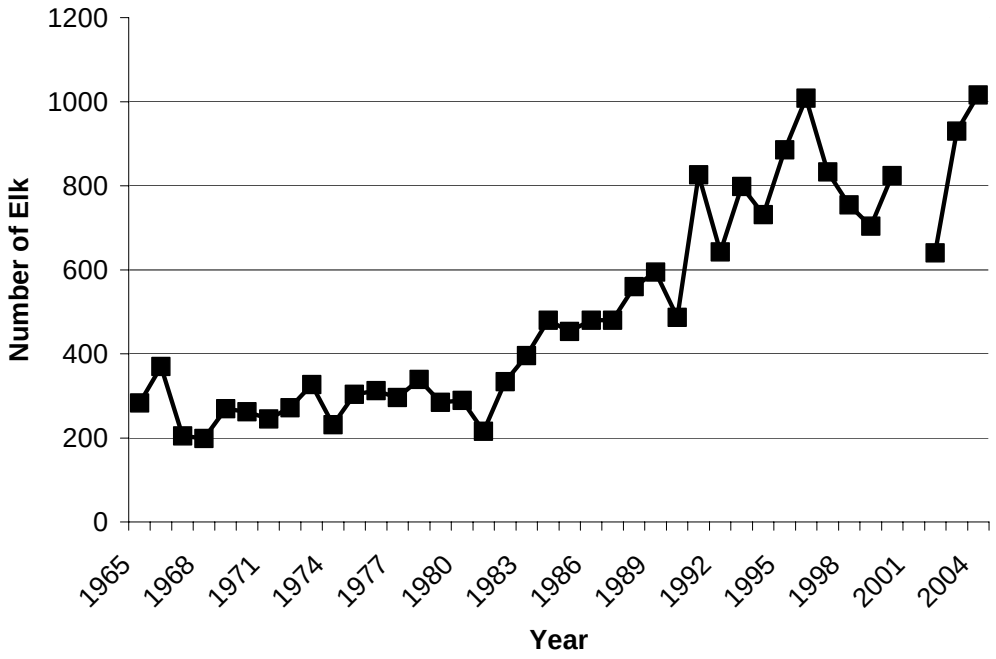


Figure 1. Elk observed during spring fixed-wing flights in HD 240, 1965-2004.

Current Annual Elk Harvest: Average annual harvest during 1999–2001 was 141 elk comprised of 58 bulls (41%) and 83 antlerless elk (59%). An average 27% of harvested bulls had at least one 6-point antler and 33% of bulls were killed during the first week of the general season. Harvest rate for A-7 licenses during this period was 18% of the number issued and ranged from 8-24%.

Accomplishments: FWP has assisted landowners who allow public hunting and have chronic elk damage problems with temporary and permanent hay stackyards, fencing materials, herding, and occasionally, kill permits.

This EMU contains 6 Block Management Areas (BMAs) totaling 3,370 acres and 7,717 acres in lands with conservation easements. Existing and new BMAs enhance public access and have helped in focusing harvest, particularly north of One Horse Creek, where elk depredation has been a chronic problem.

Management Challenges: Land use/habitat changes because of housing developments and limited access for hunters to or through private land are the major elk management

challenges in HD 240. For about the last 15 years Ravalli County has been one of the counties with greatest increase in human population in Montana. Housing development on elk winter range affects elk management in 3 ways:

1) Physical loss of winter range including areas outside of home sites but within sight, sound and smell of people and the range of domestic pets, especially dogs.
2) Landowners may not allow hunting or access through their property thus limiting the ability to get an adequate harvest.
3) The "refuge effect" created by limited access or harvest can concentrate elk and allow them to increase in number. This in turn can increase elk depredation on the immediate and surrounding properties.

Much of the private lands in this EMU, some of it in relatively small acreages (5 – 40 acres), are de facto elk refuges. Such refuges attract and concentrate elk, allow elk populations to grow, limit hunter opportunity, and result in chronic elk depredation problems. An example is the area between Roaring Lion and Blodgett Creeks just west of Hamilton. These elk also range into the Bitterroot River bottom in HD 260.

Wolves restored to Yellowstone National Park and central Idaho in 1995 have since become established in this EMU. Currently there are 2 packs in this EMU: Big Hole and Lake Como. Wolves may have some impact on elk management, but the kind and degree of impact is unknown at this time.

Population Monitoring: Annual trends in numbers of observed elk and sex and age classifications are measured by spring fixed-wing aircraft flights on and near winter ranges.

SUMMARY OF PUBLIC COMMENT

In 1992, public comment indicated support for maintaining the current management goal of providing a diversity of hunting experiences, a desire to improve the opportunity to harvest older bulls, and concern that postseason bull:cow ratios were too low. The public also voiced strong support for establishing cooperative programs between public and private land managers to maintain and improve elk security. Specifically, many comments favored additional road closures.

There has been little specific reaction to drafts of the current EMU plan by contacted individuals thus far.

MANAGEMENT GOAL

Maintain the elk population in a healthy condition and cooperate in the management of elk habitat to provide a diversity of hunting experiences and diverse elk harvests.

HABITAT OBJECTIVES

1) Participate in cooperative programs with public and private land managers to maintain 496,640 acres of occupied elk habitat.
2) Maintain and enhance the current amount of elk winter range.
3) Maintain elk security so that elk harvest is distributed throughout the hunting season, with no more than 35% of the bull harvest occurring during the first week of the general season.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to county planning boards and commissions regarding impacts of housing development on important elk winter range. If limiting development is not possible, then provide input to mitigate the effects of development. Work toward conserving existing elk winter range through conservation easements.
- Recommend/support a program to burn 100 acres of winter range annually to reduce tree canopy coverage, stimulate growth of browse species, and increase available winter forage.
- Seek increased consideration of elk security requirements (elk security areas and secure travel corridors) in the planning and design of timber sale cutting units and road systems. This is particularly important in remaining roadless areas adjacent to winter ranges where bulls become vulnerable to hunting pressure with the onset of snow accumulation (such as Brooks Creek, Mill Point and Ward Mountain).
- Recommend changes in road management on winter ranges to improve elk security. Areas in need of changes include wintering areas in McClain Creek, Mormon, Brooks, Sweathouse and Gash Creeks.
- Provide technical assistance to land managers that identifies areas where road closures are necessary to protect elk security.

GAME DAMAGE STRATEGIES

FWP will use A-7 licenses, A-9/B-12 licenses (B-tags), and antlerless permits to attempt to reduce game damage in the Brooks Creek, McClain-Mormon Creek, and Roaring Lion-Blodgett Creek areas to levels that are tolerable to private landowners. FWP may direct antlerless harvest to specific portions of HD 240 or institute late hunts in areas with game damage problems.

FWP will:

- Maintain observed elk numbers within plan objectives while targeting local wildlife depredation sites with game damage hunts, stack yard materials, and aversive conditioning for landowners who allow adequate public hunting access.
- Cooperate with public land managers to change activities/conditions on public lands that contribute to redistribution of wildlife onto private lands.

- Evaluate the number of A-7 licenses or antlerless permits allocated for each hunting district or portions thereof and redistribute as necessary to achieve desired harvest.
- Explore creative means to encourage landowners who currently do not allow hunting, to consider limited access for at least certain groups of hunters (e.g. youth, disabled).
- Encourage dialogue between landowners with differing land management strategies.

ACCESS STRATEGIES

FWP will:

- Identify desirable access points to public lands and provide recommendations to the appropriate land management authority (Access Montana Program).
- Identify additional opportunities for Block Management projects.
- Pursue conservation easements on important elk ranges found on private land.
- Assist landowners with hunter management.
- Explore creative means to encourage landowners who currently do not allow hunting to open their lands to increase public access.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season aerial trend surveys within a 20% range of 750 (600-900).
2) Maintain at least 10 bulls:100 cows observed during post-season aerial trend surveys.
3) Maintain an annual bull harvest composed of 100% BTBs, including at least 15% of the bull harvest comprised of bulls with 6 points on at least 1 antler.

POPULATION MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for antlered elk.

HD 240:

Antlerless:

The Standard Regulation is: limited antlerless permits and A-7 licenses issued in quantities sufficient to achieve an annual harvest of 65 to 100 antlerless elk depending on the number of elk counted on spring surveys. Assuming a harvest rate of 18% of the number of licenses issued this means issuing 360–545 A-7 licenses.

The Standard Regulation will be recommended if: the number of elk counted during post-season aerial surveys is between 600 – 900 AND, calf:100 cow ratios are at least 25 calves:100 cows.

The Liberal Regulation is: **1.)** more than 545 A-7 licenses and/or antlerless permits. A-7 licenses will be specially directed to address problem areas without affecting elk herd units that are not causing problems. A-7 licenses or antlerless permits may be valid beyond the end of the 5-week general season. OR; **2.)** a brow-tined bull/antlerless regulation for a portion or all of the general season, in addition to 1.) (above).

Liberal Regulation **1.) (above)** will be recommended when more than 900 elk are counted on post-season aerial surveys.

Liberal Regulation **2.) (above)** will be recommended if the post-season aerial trend count remains above 900 elk after 2 years of application of Liberal Regulation 1.) (above).

A Liberal Regulation will be maintained until the number of elk counted during post-season aerial surveys is reduced to 750, at which time the Standard Regulation will be recommended.

The Restrictive Regulation is: no antlerless harvest if the most rapid population increase is desired OR, limited A-7 licenses or antlerless permits issued in quantities to result in an annual harvest of less than 65 antlerless elk. This means fewer than 360 A-7 licenses or antlerless permits (assuming a harvest rate of 18% of the number of licenses issued).

The Restrictive Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is less than 600 for 2 consecutive years OR, trend counts are within the objective range, but post-season calf:100 cow ratios are less than 25 calves:100 cows for 2 successive years.

A Restrictive Regulation will be maintained until the number of elk counted during post-season aerial surveys has increased to 750, at which time a Standard Regulation will be recommended.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: bull:100 cow ratios observed during post-season aerial trend surveys are at least 10 bulls:100 cows AND, at least 15% of harvest bulls have 6 or more points on at least one antler.

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls. OR; **2.)** limited permits for antlered bulls. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED AND LIMITED PERMITS.

Restrictive Regulation **1.)** unlimited permits for brow-tined bulls will be recommended if: bull:100 cow ratios observed during post-season aerial trend surveys are less than 10 bulls:100 cows OR, less than 15% of harvested bulls have 6 or more points on at least one antler for 2 successive years.

Restrictive Regulation **2.)** limited permits for antlered bulls will be recommended if bull:100 cow ratios remain below 10 bulls: 100 cows OR, less than 15% of harvest bulls have 6 or more points on at least one antler after 3 years of application of unlimited permits.

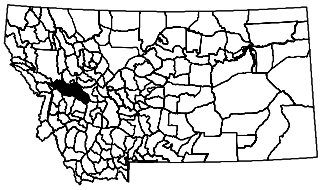
HD 260:

Because of safety and access concerns, there is NO general elk regulation in HD 260.

The Archery Regulation is: brow-tined bull/antlerless archery regulation 1st Saturday in September to 15 January.

Regulations for shotgun, traditional handgun, muzzleloader, or crossbow ONLY: limited antlerless permits, from opening of general season to 1 January.

GARNET EMU
(Hunting Districts 283, 290, 291 and 292)



Description: This 1,349-square-mile EMU is located within the Blackfoot and Clark Fork River drainages, east of Missoula. Key features include the Rattlesnake Wilderness and National Recreation Area, Lubrecht Experimental Forest, Garnet Range, Blackfoot River, Clark Fork River, Little Blackfoot River, and Nevada Valley. Land ownership varies widely among hunting districts in the unit, with large blocks of corporate and private agricultural ownership, as well as substantial public acreage. About 30% of the unit is administered by the USDI – Bureau of Land Management (BLM) and Lolo National Forest (LNF), about 25% is owned by Plum Creek Timber Company (PCT), and 40% by other private landowners. The area is characterized by more intensive timber management than is generally found in surrounding EMUs.

Public Access: Publicly accessible property in mixed LNF, BLM, PCT, and State (DNRC) ownership dominates the west half of the EMU (HDs 283 and west 292). These lands generally have been extensively roaded for timber harvest; however, all but selected cost-share and collector roads were closed to motorized vehicles shortly after Plum Creek Timber Company purchased lands from Champion International Corporation in the mid-1990s. With the exception of the Missoula and Potomac Valleys and Ninemile Prairie, drainage bottoms in this portion of the EMU are narrow and private landholdings are limited. Conversely, private ranches dominate land ownership in the east half of the EMU (HDs 290, 291 and east 292) and access for the general public is more limited. Block Management is of longstanding importance across this EMU, where 12 Block Management Areas covered approximately 100,000 acres in 2002. Regulated public access for hunting is also guaranteed in perpetuity on a 4,600-acre conservation easement that was purchased by FWP in 2001.

Elk Populations: Elk populations are at or near modern day highs. A total of 2,327 elk was observed from fixed-wing aircraft on trend areas across HDs 283, 291 and 292 in spring 2002 (Figure 1). Elk numbers have steadily increased on private lands since 1990 in two portions of this EMU: 1) in the broad valley between Ovando and Drummond, particularly west of Helmville, and 2) in the North Hills of the Missoula Valley. Elk numbers on public lands generally have been stable. Declining calf recruitment during the 1990s has moderated elk population increases and opportunities for antlerless harvest.

Late-winter and early spring calf:100 cow ratios in HD 292 ranged from a high of 47 calves:100 cows in 1990 to a low of 18:100 in 1997, and ranged from 18 to 22:100 during 1996-2001. The percentage of bulls in early spring elk counts averaged 7% across the EMU from 1990-2001. West of Helmville, where hunting access is restricted and difficult, bull:100 cow ratios as high as 38 bulls:100 cows were recorded in a sample of 313 elk.

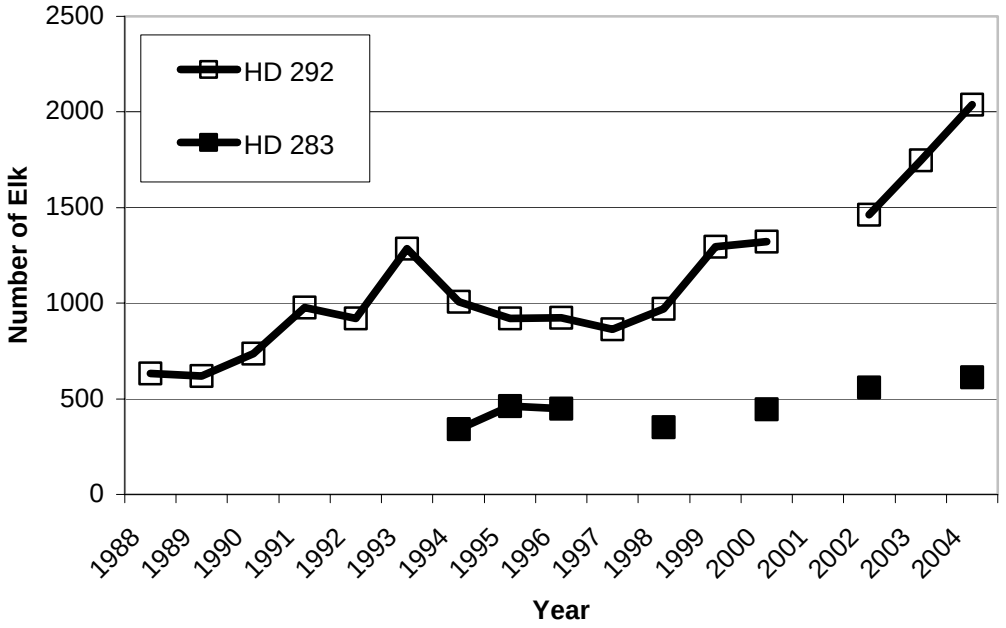


Figure 1. Number of elk counted on post-season aerial trend counts in HDs 292 and 283, 1988-2004. Boundary for HD 283 was different prior to 1994. Counts in HD 291 are not valid trend counts and are not included (629 elk were counted in HD 291 during 2003).

Recreation Provided: This EMU provided an estimated 23,936 hunter-days of elk hunting for 3,951 hunters in 2001. HD 292 ranked third in hunter numbers and fourth in hunter-days in Region 2 due to its proximity to Missoula and availability of highway access around its entire perimeter. Hunter density was about 2.9 per square mile across the EMU. Wildlife viewing and photography are the major uses of the elk population during the summer, particularly in the Rattlesnake Wilderness. Elk may also be observed along roadsides year-round.

Current Annual Elk Harvest: A total of 546 elk (348 antlered, 198 antlerless) were harvested in the EMU in 2001.This suggested a total population size of about 2,700 elk, assuming a stable population and recruitment of 20 calves:100 cows. Actual population size is probably closer to 3,000 because population trend has been gradually increasing, rather than stable.

Accomplishments: FWP and private landowners cooperated in addressing conflicts involving elk on private land in the Ovando-Helmville area, in portions of HDs 290, 291,

and 292. In 1994 the Rocky Mountain Elk Foundation provided funding for FWP and several ranchers to capture and radio-track elk on private land to identify yearlong ranges of resident herd-units that could be subjected to accelerated harvest without impacting elk herd-units on public lands. Resident herds were identified, with the assistance of students from the Ovando and Helmville schools.

Coincident with these findings, FWP and local landowners developed a new hunting season structure to apply maximum harvest pressure on resident private-land herd-units. A new hunting district (HD 298) was superimposed over private-land portions of HDs 290, 291 and 292 in the Ovando-Helmville area. Unlimited numbers of A-7 elk licenses (antlerless) were offered for the areas included in HD 298. This allowed landowners to solicit participation by hunters of their acquaintances as a means of resolving landowner concerns about managing the general hunting public. All first-choice applicants who submitted a properly completed application were selected for the HD 298 license. Upon notification of their successful application, and prior to exchanging A-5 licenses for the A-7s, successful applicants were sent a letter by FWP that encouraged hunters to keep their A-5 and reject the A-7 if they had not already secured access to hunt on private land. This protected the hunting public from mistakenly accepting a restricted-access license without a reasonable opportunity to hunt. The effect of this season structure was to allow landowners to direct as much antlerless hunting pressure to their properties as they desired. Therefore, FWP hunting regulations were no longer a limitation on elk population control in this area.

FWP has provided assistance to landowners with chronic elk damage problems in the form of temporary and permanent hay-stackyards, pasture fencing materials, and herding. Special or regularly scheduled “early” or “late” hunts, such as the one that was conducted for several years in the Potomac valley, have been applied as needed to harvest elk on private land at times of the year when damage is occurring, and damage has been abated. Under severe snow conditions in the winter of 1996-1997, many landowners in this EMU willingly tolerated unusual levels of elk damage to help elk survive.

Factors influencing the vulnerability of bull elk to harvest on publicly accessible lands in the Elk and Chamberlain Creek drainages were investigated with radio-collared elk under the direction of the University of Montana during 1993-1996. Hunting pressure was controlled by regulations of the longstanding Blackfoot BMA (walk-in hunting area). The importance of large blocks of forest cover and unroaded habitat was reinforced by this study. The increasing use by elk of a private land sanctuary near Greenough during hunting season was also documented. BLM was the principal funding institution for this study and the majority public landowner in the study area.

Elk habitat security and walk-in hunting opportunities were maintained in several areas across the EMU where Champion/Plum Creek, BLM, DNRC, LNF, and ranchers cooperated to close roads to motorized vehicles and allow walk-in hunting access. Plum Creek Timber Company further enhanced elk security independent of FWP in the mid-1990s by gating all but selected cost-share and collector roads. Access by foot, horseback and mountain bicycle was still provided. There were few effective elk security

areas in the Garnet EMU in 1992. Principally as a result of PCT actions, elk security is now widespread across the EMU, and areas of low elk security are more localized.

Hunting regulation changes were implemented to address localized security problems. The west half of HD 292 is one area of seriously reduced elk habitat security, due to intensive timber harvest and the Ryan Gulch Fire of 2000. Low observed bull survival coincided with chronic, lowered calf recruitment, decreasing the capacity of this population to rebound from a severe winter or other future environmental event. The FWP Commission approved FWP's recommendation for a brow-tined bull regulation in the west half of HD 292 in 2002 as a means of safeguarding this population without restricting public entry to this hunting area.

Hunting access was enhanced with the addition of 8 Block Management Areas since 1992. Plum Creek Timber Company continued to keep its expansive holdings in the Garnet EMU open to the public for hunting and other activities.

In 2001, a private ranch and FWP agreed to protect important elk habitat, public hunting, and the traditional ranch operation with a conservation easement on a 4,600-acre portion of the ranch in HD 291. FWP purchased 120 acres as part of a 1,600-acre public acquisition of elk winter range on Mount Jumbo, in the Missoula Valley, in 1996. Significant elk habitat also has been protected in this EMU since 1992 with conservation easements granted by private landowners and acquired by the U. S. Fish and Wildlife Service, The Nature Conservancy, Five Valleys Land Trust, Montana Land Reliance, and The Conservation Fund. In a series of land exchanges around 2000, the BLM acquired approximately 9,600 acres and the Forest Service acquired about 950 acres of elk habitat, mostly winter range, from PCT along the Blackfoot River in HD 283.

In 2002 FWP and the University of Montana initiated a multi-year study to document rates and causes of mortality of newborn elk calves in the east half of HD 292. This was in response to declining calf:100 cow ratios observed across much of Region 2. It also represented an opportunity to coordinate with FWP's mountain lion research in the same area, allowing the study of calf mortality coincident with known and manipulated lion densities over time. Landowners' cooperation with these studies has been exceptional.

The control of noxious weeds increased as a priority among ranchers and the BLM in this EMU since 1992. Weed control efforts, particularly those directed toward spotted knapweed, have maintained or improved elk forage on thousands of treated acres in localized portions of this EMU. Perhaps more importantly, weed awareness among land managers is at an all time high, which could prevent the establishment of new exotic species in this EMU.

Management Challenges: Approximately 40-45% of the elk in this EMU are wholly or partly unavailable to hunters due to restricted access to private property during the hunting season.

Despite the availability of unlimited numbers of A-7 licenses to harvest elk on private land, elk numbers and elk-caused damage continues to increase on ranches between Ovando and Drummond. This has resulted from insufficient hunting access and harvest allowed on one or more large landholdings in this area. Elk congregate on certain private lands in hunting season, and disperse onto neighboring ranches after hunting season, causing damage. Elk observed in spring counts in the heart of the problem area (a portion of HD 292) have steadily increased from 313 in 1994 to 548 in 2002. Estimates of elk numbers on the private land refuge during hunting season vary around 700. An annual harvest of at least 85 antlerless elk is needed to stabilize this population but only 30-40 were killed across all affected ownerships in 2001. Concerns in addition to game damage include habitat damage, disease spread within abnormal concentrations of elk, and a potential increase in elk numbers beyond practical means of control in the future (i.e., too many hunters required in too small an area). The solution to this problem is in the hands of the private landowner(s), with assistance as appropriate from FWP. Hunting access and harvest is gradually increasing where needed in response to recent fine-tunings of hunting season length and structure by FWP and the landowner community. Continued landowner cooperation is critical, and is greatly appreciated.

Access to manage elk populations by hunting is seriously threatened elsewhere in the Garnet EMU. In the Missoula Valley, elk winter near and within rural residential subdivisions between O'Keefe Creek and Rattlesnake Creek. Numbers of elk counted here have increased from approximately 100 in 1990 to about 250 in 2002, about 37% of the elk observed in HD 283. Both residential developments and elk numbers are expected to expand in this area, where hunting access is already poor. Developable lands across the EMU are being subdivided, very rapidly in the Missoula Valley. Certain lands under conservation easement and in new ownership are also being converted from commercial ranching to other uses, with hunting access prohibited.

Vehicular access has also been significantly reduced by extensive road closures in the past decade. Road closures that PCT implemented independently in the mid-1990s went far beyond FWP objectives for maintaining and enhancing elk habitat security, bull survival, and walk-in hunting opportunities in this EMU. As a result, hunters have complained about lost vehicular access to favored hunting destinations. Although factors such as weather and variably restrictive hunting regulations are also involved, declining hunter participation as measured at the Bonner Check Station has coincided with the road closures.

Off-Highway-Vehicle, particularly 4-wheeler, use for hunting and retrieving elk has increased significantly during the past decade. Increasingly, hunters complain of 4-wheelers illegally accessing areas behind closed gates. This may be not only a social and legal problem, but 4-wheeler use may contribute to additional bull harvest and displacement of elk to less accessible areas.

A serious threat to hunting and elk population management in the Garnet EMU is the future disposition and management of hundreds of thousands of acres in PCT ownership. PCT lands have historically been open to the public, and hunters tend to take this

privilege for granted. However, in recent years PCT has been marketing parcels for sale. The loss of hunting access on PCT lands, and possible concurrent loss of elk habitat, would eliminate the majority of public hunting opportunities for elk in this heavily-hunted EMU.

Calf:100 cow ratios on winter ranges have declined steadily over the past decade where data have been collected in HD 292, which appears to be part of a more widespread phenomenon in this EMU and elsewhere in western Montana. Observed pregnancy rates in mature cows remain greater than 90%. Decreased recruitment rates: (1) reduce numbers of antlered bulls available for harvest, (2) reduce opportunities to prescribe antlerless hunting on publicly accessible lands, (3) temper increases of elk and game damage on and around private lands closed to hunting, and (4) reduce the capacity of heavily exploited population-units to recover from severe winters or other additive mortality. These mixed results contribute to an increasing complexity of hunting regulations across this EMU to meet area-specific needs, and an overall conservative harvest strategy outside of game damage situations. Public concern has centered on the potentially increasing role of predation in the past decade.

The restoration of wolves to western Montana is an emerging factor in elk population management, the effects of which will be variable and difficult to predict. In the Garnet EMU, we anticipate some level of additive elk mortality upon the establishment of one or more wolf packs, which would necessitate a corresponding reduction in antlerless elk permits. Individual wolves are known to occur in this EMU, but the U. S. Fish and Wildlife Service has not documented the persistence of any wolf packs in this EMU to date.

Population Monitoring: We conduct annual elk trend counts during spring green-up by fixed-wing aircraft across most of the EMU. We will continue to sample late-winter calf:100 cow ratios by use of helicopter or fixed-wing aircraft in HD 292. We sample bull:100 cow ratios in late winter by helicopter in conjunction with mule deer trend flights, and obtain percent bulls from annual trend counts during spring green-up (fixed-wing aircraft).

SUMMARY OF PUBLIC COMMENT

Initial comments on drafts of the current EMU plan have generally been positive. Some landowners, however, are concerned that objective numbers may be too high. There is also recognition that elk distribution in relation to hunting pressure may be more of a problem than numbers of elk.

MANAGEMENT GOAL

On publicly accessible lands, maintain current elk population levels and provide opportunities for the maximum sustainable annual elk harvest. In areas of chronic game damage, facilitate increased involvement of local communities in developing elk population objectives, and, where possible, decrease elk population levels with hunting

regulations that increase hunter effectiveness in harvesting elk and landowner tolerance for hunters on their properties.

HABITAT OBJECTIVES

Develop cooperative programs that encourage public and private land managers to:

1) maintain current levels of elk habitat;
2) maintain at least 80% of existing levels of elk habitat security.

HABITAT MANAGEMENT STRATEGIES

FWP will cooperate with state and federal land management agencies, corporate land managers and private landowners to pursue the following habitat strategies:

- Acquire conservation easements from willing landowners on the highest priority seasonal ranges at greatest risk of permanent habitat loss due to future development or other factors.
- Maintain elk habitat security and associated walk-in hunting opportunities (via enforcement of existing road closures and retention/recruitment of effective cover blocks) in the Rattlesnake Wilderness Area, Arkansas/Ashby Creek, Bonner Mountain, Blackfoot/Chamberlain BMA, Dutton BMA, and Hoodoo Mountain roadless area.
- Maintain the quality of the hunt by minimizing elk and hunter concentrations during hunting season. One index traditionally used to monitor this at the level of the hunting district or EMU is the percentage of the bull elk harvest that occurs in the first week of the general hunting season. Poor elk habitat security may be indicated if, for a 3-year average, more than 40% of the bull harvest occurs during the first week, or perhaps more reliably if this percentage shows an increasing trend over time. Remedies would be applied on a case-by-case basis, with local hunter and landowner participation, and might include prescribed road closures, road openings, adjustments in hunting season opening or closing dates, limited permits for a portion of the hunting district, or other measures.
- Restore winter habitats on state and federal lands in the Elk Creek and Wales-Yourname Creek drainages by cooperating with land managers in planning treatments of advanced forest succession with harvest and prescribed fire.
- Review and provide technical assistance in the planning of timber sales, road management, and grazing allotments on public lands across the entire EMU.
- Cooperate as a landowner-partner in the work of organized Weed Management Groups in Missoula, Powell and Granite Counties, and continue to cooperate with the counties and other land managers in the development of integrated strategies to improve the prevention and control of exotic, invasive plants.
- Participate with Plum Creek Timber Company, community working groups and other agencies in continuing talks to perpetuate elk habitat and traditional public uses on Plum Creek lands in the future.

GAME DAMAGE STRATEGIES

FWP will:

- Help landowners and others in local communities with chronic game damage to work cooperatively on elk management goals and strategies that can be applied to the elk population unit across property boundaries.
- Prescribe antlerless harvest pressure in excess of estimated calf recruitment rates.
- Apply strategies such as the HD 298 season structure that alleviate the legitimate concerns of private landowners with managing the general hunting public.
- Explore all reasonable avenues of assisting in applying effective and efficient harvest pressure to the locations where depredating elk occur in hunting season, while recognizing that access control rests with owners of private-land refugia in the Garnet EMU.
- Replace A-7 licenses with A-9/B-12 licenses (B-tags) as needed to increase hunter participation and harvest effectiveness in game damage situations.

ACCESS STRATEGIES

FWP will:

- Expand public hunting access on private ranches by at least 5%, using the Block Management Program.
- Obtain public hunting access as one benefit of conservation easements acquired by FWP.
- Work with Plum Creek Timber Company and other affected landowners to reopen selected access roads in key locations (outside of designated elk security areas) to motorized access during hunting season.
- Respond with proposals for appropriate road management (closure of spur roads) as needed to address local issues of excess vehicular access and elk displacement from public hunting areas (such as in the Tenmile drainage in HD 292).

POPULATION OBJECTIVES

Maintain 1,900-2,500 elk observed during post-season aerial surveys. This objective incorporates a decrease from 2003 levels in herd units and portions of hunting districts with game damage problems, and allows a corresponding slight increase in portions of the EMU where elk and elk hunting occur mostly on public land. Corresponding objectives for elk numbers observed by hunting district are 400-600 in HD 283, 500-700 in HD 291 and 1,000-1,200 in HD 292. (Trend counts are not regularly accomplished in HD 290.)

1) Reduce the elk population in eastern HD 292 from Dunigan Mountain to Sturgeon Mountain to 400 elk counted in post-season surveys.
2) Maintain an observed post-season bull:100 cow ratio of at least 10 bulls:100 cows, or at least 7% antlered bulls in the late-winter population.

POPULATION MANAGEMENT STRATEGIES

- Identify causes of elk calf mortality by completing the Garnet Elk Calf Mortality Study during 2003-2006, and address principal causes that are within appropriate management control.
- Prescribe antlerless harvest at slightly above estimated calf recruitment rates in elk population units that are not responsible for chronic game damage, and monitor population parameters to test for a compensatory response. Respond by promptly reducing antlerless harvest if needed to meet population objectives.
- Replace antlerless permits with A-9/B-12 licenses to increase hunter opportunity during periods when elk populations are high.
- If necessary, use restrictive bull harvest strategies to maintain a minimum reservoir of breeding bulls in cases where a combination of chronically low and declining bull:100 cow ratios coincide with low calf survival. Use the brow-tined bull regulation as the first preference when restrictive bull harvest strategies are called for.
- Restrictive bull harvest strategies will not be employed to manage for "trophy" bulls in this EMU.
- Focus elk population reductions where problems exist, such as game damage or inaccessibility for hunting, rather than reducing elk populations uniformly across the EMU.

REGULATION PACKAGES

Six-week either-sex archery regulation; EXCEPT, should the Restrictive antlered regulation be implemented; six-week brow-tined bull/antlerless archery regulation.

Antlerless :

The Standard Regulation is: Sufficient antlerless permits to result in the annual harvest of 180-240 antlerless elk across the EMU, assuming an annual female recruitment rate of 10%. (Higher harvest will be prescribed if recruitment rates increase.) This translates into the issuance of 540–720 antlerless permits annually (assuming an average 33% harvest success rate among antlerless permit holders) AND, specially directed A-7 licenses or A-9/B-12 antlerless licenses (B-tags) to address problem areas without affecting elk herd units that are not causing problems.

The Standard Regulation will be recommended if: post-season aerial trend counts are 400-600 elk in HD 283, 500-700 elk in HD 291, and 1,000-1,200 elk in HD 292. (Trend counts are not regularly accomplished in HD 290.) AND, post-season calf:100 cow ratios are 20-30 calves:100 cows.

The Liberal Regulation is: **1.)** Sufficient antlerless permits to result in the annual harvest of more than 240 antlerless elk across the EMU, assuming an annual female recruitment rate of 10%. (Higher harvest will be prescribed if recruitment rates increase.) This translates into the issuance of more than 720 antlerless permits annually (assuming an

average 33% harvest success rate among antlerless permit holders) AND, specially directed A-7 licenses (these may be unlimited) or A-9/B-12 antlerless licenses (B-tags) to address problem areas without affecting elk herd units that are not causing problems. **2.)** In addition to 1.) (above), late seasons developed in cooperation with Community Working Groups AND/OR, an either-sex regulation for a portion of the general season.

Liberal Regulation **1.)** (above) will be recommended if: post-season aerial trend counts are higher than 600 elk in HD 283, 700 elk in HD 291, and 1,200 elk in HD 292. (Trend counts are not regularly accomplished in HD 290.); OR, trend counts are within objective, but post-season calf:100 cow ratios average greater than 30 calves:100 cows over 2 consecutive years.

Liberal Regulation **2.)** (above) will be recommended if: after 2 consecutive years of Liberal regulation 1) (above), post-season aerial trend counts remain above objectives.

The Restrictive Regulation is: no antlerless permits (if the most rapid population increase is desired), or lowered antlerless permits to result in the annual harvest of less than 180 antlerless elk across the EMU, assuming an annual female recruitment rate of 10%. This translates into the issuance of less than 540 antlerless permits annually (assuming an average 33% harvest success rate among antlerless permit holders) AND, specially directed A-7 licenses to address problem areas without affecting elk herd units that are not causing problems.

The Restrictive Regulation will be recommended if: trend counts are below 400 elk in HD 283, 500 elk in HD 291, and 1,000 elk in HD 292 for 2 consecutive survey years that population trend data is gathered. (Trend counts are not regularly accomplished in HD 290.); OR, trend counts are within objective, but post-season calf:100 cow ratios are below 20 calves:100 cows for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season antlered bull regulation.

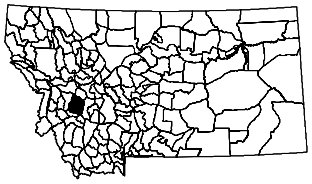
The Standard Regulation will be recommended if: post-season bull:100 cow ratios are at least 10 bulls:100 cows, or at least 7 % percent of the post-season population is bulls AND, post-season calf:100 cow ratios are greater than 20 calves:100 cows.

- For districts or portions of districts to move to the standard regulation package from the restrictive package, post-season bull:100 cow ratios must average at least 25 bulls:100 cows, or percent bulls in the post-season population must average at least 16%. This accounts for the effect of the BTB regulation, plus survival of at least 10 additional bulls:100 cows through hunting season and winter. A sustained level of at least 25 bulls:100 cows indicates a change in habitat security, hunting pressure, or calf recruitment, that might allow the return to an antlered bull regulation without immediately driving the bull:100 cow ratio back below the objective under the standard regulation.

The Restrictive Regulation is: 5-week general season brow-tined bull regulation in the districts or portions of districts that are below objectives for bull:100 cow and calf:100 cow ratios.

The Restrictive Regulation will be recommended if: post-season bull:100 cow ratios are less than 10 bulls:100 cows, or less than 7% percent of the post-season population is bulls in that district or herd unit for 2 consecutive years AND, post-season calf:100 cow ratios are below 20 calves:100 cows for 2 consecutive years.

FLINT CREEK EMU
(Hunting Districts 212 and 213)



Description: The 772-square-mile Flint Creek EMU is bounded on the north by Interstate 90 between Garrison and Drummond, on the east by Interstate 90 between Opportunity and Garrison, on the south by Highway 1 between Opportunity and Georgetown Lake, and on the west by Highway 1 between Georgetown Lake and Drummond. The Flint Creek EMU includes HD 212 (353,377 acres), which makes up the northern 72% of this EMU and HD 213 (140,816 acres) in the southern portion of this EMU, just north of Anaconda.

Public Access: The Flint Creek EMU is characterized by extensive roading, associated primarily with past mining activity. USDA-Forest Service (USFS), USDI-Bureau of Land Management (BLM), and Montana Department of Natural Resources and Conservation (DNRC) lands make up approximately 53% of this EMU. Accessibility to public lands is good for hunting and other forms of recreation as well. Motorized travel on public lands is regulated through USFS and BLM travel plans. There are currently 10 ranches in this EMU that are enrolled in FWP's Block Management Program, ensuring public hunting access to more than 43,500 acres, plus access to adjacent public lands. Three of these ranches are in HD 213 (12,800 acres) and 6 are in (or partially in) HD 212 (26,700 acres). Public access to 3,500 acres in HD 213 is provided through FWP's Blue Eyed Nellie, Lost Creek and Warm Springs Wildlife Management Areas (WMAs). Private properties that do not allow public access for hunting continue to be an issue in elk management.

Recreation Provided: Yearlong recreational use of elk in the EMU includes hunting, photography and wildlife viewing. During 1999-2001, the EMU provided an annual average of 17,999 days of hunting recreation to 2,723 hunters. This represents a 59% increase in hunters and a 50% increase in hunter days compared to 1992.

Elk Populations: We believe that about 300 elk were missed during trend flight surveys in HD 213 during 2004. If so, the number of elk observed during post-season aerial surveys remains within 20% of the EMU objective of 1,500 elk (Figure 1). This objective is based on level of landowner tolerance of elk in the EMU balanced with providing adequate hunting opportunity.

Bull:100 cow ratios have remained relatively stable and currently average 15 bulls:100 cows for the EMU (13:100 in HD 213 and 17:100 in HD 212).

Current Annual Elk Harvest: During 1999-2001, the average annual harvest was 216 antlered and 268 antlerless elk in this EMU. In 2001, brow-tined bulls (BTB) averaged 82% of the bull harvest, exceeding the minimum objective of at least 50% BTBs in the harvest. Bulls with 6 points on at least one antler comprised 13% of the bull harvest, exceeding the minimum objective of 10% of the bull harvest. Forty-seven percent of the bull harvest occurred during the first week of the general season, exceeding the 40% maximum objective. If this trend continues, it indicates that adequate security cover for elk during hunting season is a concern.

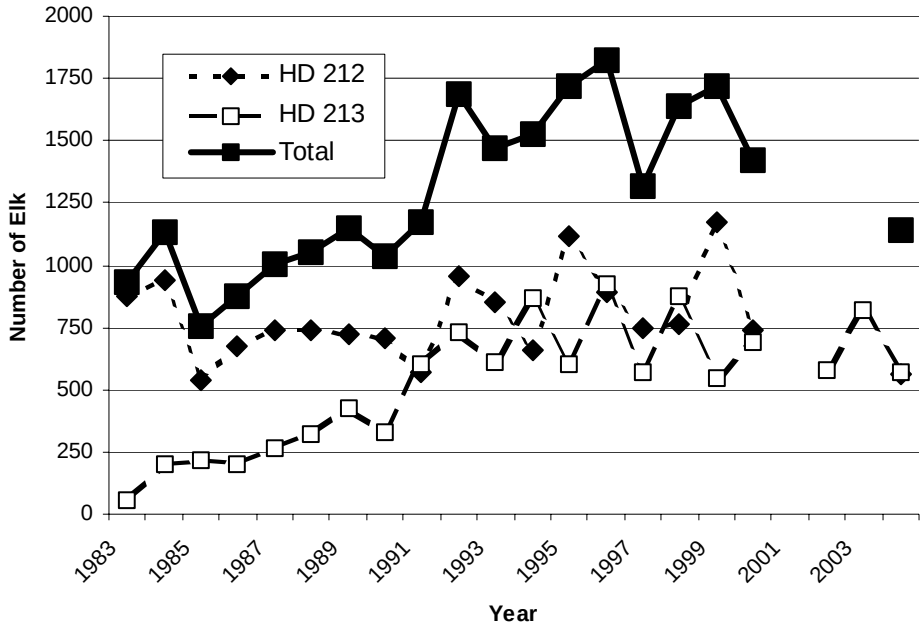


Figure 1. Number of elk observed during post-season aerial surveys in HDs 212 and 213, 1983–2004. About 300 elk may have been missed in HD 213 during 2004 flights.

Accomplishments: FWP has provided assistance to landowners (that allow public hunting access) with chronic elk damage problems in the form of temporary and permanent hay-stackyards, pasture fencing materials, and herding. Special or regularly scheduled "early" or "late" hunts have been applied as needed to harvest elk on private land at times of the year when damage is occurring. Under severe snow conditions during the winter of 1996-97, many landowners in this EMU willingly tolerated unusual levels of elk damage to help elk survive.

Hunting access was enhanced with the addition of 7 Block Management Areas (BMAs) since 1992, bringing the total to 10 BMAs covering more than 43,500 acres within this EMU. The Blue Eyed Nellie, Lost Creek and Warm Springs WMAs provide public hunting access to over 3,500 acres.

Significant elk habitat is protected in this EMU under multiple conservation easements granted by private landowners and held by various conservation groups.

In November of 1996, the Lost Creek Land Exchange took place when the President signed the Omnibus Parks and Public Lands Management Act of 1996. This land exchange between R-Y Timber Company and the USFS was approved and mandated by Congress. The exchange resulted in the conveyance of some USFS land to R-Y Timber, as well as the offering of timber-only resources from some USFS land (the management of which remains under the USFS). In turn, the USFS acquired 14,500 acres of land in the Lost Creek drainage from R-Y Timber.

In August of 2003, more than 32,000 acres of private lands west of Anaconda came under public ownership, of which more than 2,500 acres are in this EMU. This land deal, known as the Watershed Project, is the largest land acquisition effort by the Rocky Mountain Elk Foundation (RMEF) to date. The RMEF acquired the watershed land from R-Y Timber and then sold the lands to FWP and the USFS. The funds for this purchase primarily came from the Montana Natural Resource Damage Program and federally controlled Land and Water Conservation funds.

Management Challenges: Although hunting opportunities are generally good and restrictions are relatively minimal in the EMU, lack of public access on private land in the south end of the Flint Creek Range has resulted in a large increase in elk numbers occupying these lands during the general hunting season over the past 10 years. This has caused frustration among sportsmen, lack of an adequate elk harvest in this area, and increased game damage to adjacent landowners. Elk congregate on these lands with minimal or no hunting access during the hunting season but, once hunting season ends, move onto those lands that have traditionally been open to hunting. Numbers of elk unavailable to hunters because of lack of access to private lands ranges from 30-70% of the observed elk in this EMU (largely dependent on weather). This may explain why an average of only 24% of the antlerless permit holders in HD 213 were successful, compared to 30% in HD 212.

Elk security on public lands continues to be relatively good throughout most of HD 212, but security in the west half of HD 213 is limited due to past logging operations. Illegal Off Road Vehicle (OHV) and other vehicle use off of established roads/motorized trails have increased elk vulnerability and impacted elk security and habitat values on public lands.

Noxious weeds and other exotic plants are spreading throughout the EMU, creating problems with native plant species management goals.

Enforcement problems continue in HD 212 along the Prison Ranch boundary. The Prison Ranch property is managed as archery hunting only and a “firing line” situation with rifle hunters occurs when the elk are pushed off the Prison Ranch property. Most of the elk that use the Prison Ranch are cows, calves and spike bulls, thus rifle hunters harvest the spikes heavily when they cross the Prison Ranch boundary. One solution to this problem would be to change the

southern portion of HD 212 to a brow-tined bull (BTB) regulation for the general rifle season, eliminating the legal harvest of spikes as they cross the Prison Ranch boundary and thus, likely reduce the number of rifle hunters along the "firing line".

Some winter and summer elk ranges, particularly in HD 213 north of Georgetown Lake are at risk from housing development.

Individual wolves have been reported in the EMU in the past and there are increased sightings of wolves or their tracks. Wolves may have some impact on elk management in this EMU in the future, but the kind and degree of impact in unknown at this time.

Population Monitoring: We annually conduct post-season fixed-wing aerial trend counts of elk during winter/spring. We record total numbers and sex/age classification of observed elk.

SUMMARY OF PUBLIC COMMENT

1992: *"Limited public comment indicated a desire to reduce elk numbers, increase the number of mature bulls in the herd, and improve elk security levels through the use of road closures"*.

2004: Although some of the same concerns exist today, new issues have been raised. Public comment still indicates concern about possible over-harvest of bulls. A desire to increase bull:cow ratios, maintain the elk population level, while keeping game damage under control are currently major concerns. Ranchers and some hunters have expressed concern about the presence of wolves. There is concern regarding off-road motorized travel during the spring, summer and fall. Some people indicate that road closures have gone too far and that some roads should be re-opened to allow additional access to areas. There is increasing concern about closed private land providing sanctuaries for elk.

MANAGEMENT GOAL

Manage the elk population in a healthy condition and cooperate with private and public land managers in management of elk habitats to provide a diversity of elk hunting experiences.

HABITAT OBJECTIVES

1) Participate in cooperative programs that encourage public and private land managers to maintain the 476,000 remaining acres of usable elk habitat across the EMU.
2) Maintain at least 80% of existing levels of elk security so that the elk harvest is distributed throughout the hunting season, with no more than 40% of the harvested bulls being taken during the first week of the general season.
3) Maintain all public land winter ranges in a condition that will support wintering elk.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to the Beaverhead – Deer Lodge National Forest, DNRC, BLM, and corporate timberland managers in programs that will improve overall elk habitat, increase elk security, and improve quality of native forage.
- Acquire conservation easements from willing landowners on the highest priority seasonal ranges at greatest risk of permanent habitat loss due to future development or other factors.
- Cooperate with public and private land managers to maintain walk-in hunting opportunities and associated habitat security (via enforcement of existing road closures and retention/recruitment of effective cover blocks).
- Provide technical assistance to land managers to help re-establish elk winter habitats on state and federal lands in the EMU (e.g. controlled burns, timber thinning, reducing conifer encroachment, noxious weed control).
- Provide information on seasonal elk use patterns and requirements to public land managers related to revisions of grazing allotment management plans.
- Provide technical assistance to land managers relative to elk management issues in the planning of timber sales, road management, and enforcement across the entire EMU.
- Cooperate with federal, state, county and private land managers to address weed management/control within the EMU.
- Provide information to and dialogue with the public about wildlife habitat issues and importance through the media, publications, printed materials and personal contacts.
- Encourage land and travel management practices that maintain or improve elk security.

GAME DAMAGE STRATEGIES

Distribution of the elk in this EMU varies with winter severity. HDs 212 and 213 contain significant acreage of private land where public hunting allowed, thus elk concentrate on these properties during hunting season, increasing game damage complaints on adjacent lands after the season.

FWP will:

- Maintain observed elk numbers within plan objectives while targeting local wildlife depredation sites with game damage hunts, stack yard materials, and aversive conditioning for landowners who allow adequate public hunting access.
- Cooperate with public land managers to identify and change activities/conditions on public lands that contribute to redistribution of wildlife onto private lands.
- Evaluate the number of antlerless permits allocated for each hunting district (and portions of hunting district) and redistribute as necessary to achieve desired harvest.
- Explore creative means to encourage landowners who currently do not allow hunting, to consider limited access for at least certain groups of hunters (e.g. youth, disabled).
- Encourage dialogue between landowners with differing land management strategies.

ACCESS STRATEGIES

Public access in this EMU is very high due to significant amounts of public land and landowner cooperation. However, increased illegal use of OHVs has diminished wildlife security and habitat integrity. Also, some private lands are closed to hunting, resulting in post-season depredations on adjacent lands. Efforts will be made to obtain increased public access to private lands that do not currently allow public hunting.

FWP will:

- Identify desirable access points to public lands and provide recommendations to the appropriate land management authority (Access Montana Program).
- Identify additional opportunities for block management projects.
- Pursue conservation easements on important elk ranges found on private land.
- Assist landowners with hunter management.
- Explore creative means to encourage landowners who currently do not allow hunting to open their lands to increase public access.

POPULATION OBJECTIVES

The following objectives are based on maintaining a low level of game damage while providing adequate hunting and recreational opportunities:

1) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 1,500 elk (1200-1800) in the EMU. This EMU objective includes 850 elk (700-1000) observed in HD 212 and 650 elk (500-800) observed in HD 213. Within HD 213, reduce the number of elk observed from Lost Creek to Racetrack Creek to 500 elk.
2) Maintain the 2-year- average bull:100 cow ratio observed during post-season aerial trend surveys at a minimum of 10 bulls:100 cows OR, at least 7% bulls among observed elk.
3) Maintain an annual bull harvest comprised of at least 50% BTBs, of which no less than 10% have 6 points on at least one antler.

POPULATION MANAGEMENT STRATEGIES

The elk population within the Flint Creek EMU has traditionally been managed with antlerless permits and a variety of bull hunting strategies. Elk numbers observed on aerial surveys indicate that current management strategies are maintaining elk populations within the trend count objectives for this EMU.

To help maintain bull:100 cow ratios within EMU objectives, FWP will continue working with private and public land managers to maintain and improve elk security, particularly near winter ranges where bulls become increasingly susceptible to hunters as snow accumulates. Additional road closures will be considered when appropriate. Efforts will continue to be directed at improving public hunting access to private lands on the southeast end of the Flint Creek Range to

facilitate increased public harvest and decrease the problems associated with large elk numbers on private lands.

REGULATION PACKAGES

Six-week either-sex archery regulation in HD 213 and the south portion of HD 212. Six-week brow-tined bull/antlerless archery regulation in the north portion of HD 212. The Prison Ranch (west of Deer Lodge- HD 212) is open for archery ONLY from the start of the general rifle season to 1 January.

Antlerless:

The Standard Regulation is: sufficient antlerless permits to result in the annual harvest of 200-300 antlerless elk across the EMU, assuming an annual female recruitment rate of at least 10%. Within the objective range, this has meant the issuance of 600-900 antlerless permits annually (assuming an average 33% harvest success rate among antlerless permit holders) OR, a combination of antlerless permits and limited, specially directed A-7 licenses or other strategies to address problem areas without affecting elk herd units that are not causing problems.

The Standard Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys are 700-1000 elk in HD 212 and 500-800 elk in HD 213 AND, game damage problems are under control in the districts or portions of districts that would be subject to the standard regulation package AND, post-season calf:100 cow ratios are more than 20 calves:100 cows.

> The Liberal Regulation is: **1.)** sufficient antlerless permits to result in the annual harvest of more than 300 antlerless elk across the EMU, assuming an annual female recruitment rate of 10%. Higher harvest will be prescribed if recruitment rates increase. More than 900 antlerless permits would be recommended (assumes an average 33% harvest success rate among antlerless permit holders) AND, unlimited A-7 antlerless licenses for private-land portions of districts with chronic, increasing, game damage problems. **2.)** either-sex (or brow-tined bull/antlerless) regulations for a portion (or all) of the general hunting season and antlerless permits for the remainder of the general season AND, limited A-9/B-12 antlerless licenses (B-tags) in portions of the EMU.

Liberal Regulation **1.) (above)** will be recommended if: number of elk observed during post-season aerial trend surveys are more than 1,000 elk in HD 212 and more than 800 elk in HD 213.

Liberal Regulation **2.) (above)** will be recommended if: after 2 years of Liberal Recommendation **1.) (above)** the number of elk counted in post-season aerial trend surveys remains above 1,000 in HD 212 and above 800 in HD 213.

> The Restrictive Regulation is: no antlerless permits (if the most rapid population increase is desired), or fewer than 600 antlerless permits to result in the annual harvest of less than 200

antlerless elk across the EMU (assumes an average 33% harvest success rate among antlerless permit holders) AND, limited and specially directed A-7 licenses for portions of the EMU experiencing game damage.

The Restrictive Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys are less than 700 elk in HD 212 and 500 elk in HD 213 for 2 consecutive years OR, post-season calf:100 cow ratios are below 20 calves:100 cows for 2 consecutive years.

Antlered:

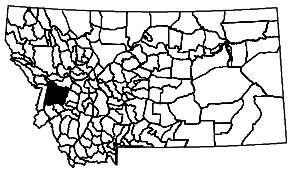
The Standard Regulation is: 5-week general season brow-tined bull regulation in the north portion of HD 212 and antlered bull regulation in the south portion of HD 212 and all of HD 213.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10 bulls:100 cows or at least 7% of the observed elk are bulls AND, annual bull harvest for the EMU is at least 50% BTBs, of which at least 10% have 6 or more points on one antler .

The Restrictive Regulation is: 5-week general season brow-tined bull regulation in entire EMU.

The Restrictive Regulation will be recommended if: the bull:100 cow ratios observed during post-season aerial trend surveys are less than 10 bulls:100 cows, or less than 7% of the elk observed are bulls in that district for 2 consecutive survey years OR, calf:100 cow ratios are less than 20 calves:100 cows for 2 consecutive survey years OR, annual bull harvest for the EMU is less than 50% BTBs, of which less than 10% have 6 or more points on one antler.

ROCK CREEK EMU
(Hunting Districts 204, 210, 216, 261)



Description: The 1,490-square-mile Rock Creek EMU is bounded on the north by Interstate 90 between Drummond and Missoula, on the east by Highway 1 between Drummond and Philipsburg, on the south by Highway 38 between Philipsburg and Hamilton, and on the west by Highway 93 from Missoula to Hamilton. Forty-seven percent of this EMU is USDA-Forest Service (USFS) land, and approximately 3% is USDI-Bureau of Land Management (BLM) and Montana Department of Natural Resources and Conservation (DNRC) lands. The remaining 50% is private property, which includes 6.1% of the EMU owned by Plum Creek Timber Company (PCT).

Elk summer range occurs mostly on public lands and fall areas of use are generally also on public lands unless weather induces elk to move to many private land winter ranges early. Approximately 70% of winter range occurs on private lands. Elk security on public lands continues to be relatively good throughout most of the EMU.

Public Access: Public lands (USFS, BLM and DNRC) make up approximately 50% of this EMU. Accessibility to USFS land is good, but there is a lack of access to some BLM and DNRC lands within this EMU. Motorized travel on public lands is regulated through USFS and BLM travel plans. There are currently 8 ranches enrolled in FWP's Block Management Program in this EMU, ensuring public hunting access to 28,590 acres. Five of these ranches are in HD 210 (24,830 acres), two are in (or partially in) HD 261 (2,840 acres), and one is in HD 216 (920 acres). No ranches in HD 204 are currently enrolled in Block Management. Three Mile (HD 204) and Calf Creek (HD 261) Wildlife Management Areas (WMAs), totaling over 8,000 acres, are in this EMU. There are currently 4 conservation easements monitored by FWP providing public hunting access to approximately 8,750 acres in this EMU. Even with the current amount of public access in this EMU, private properties that do not allow public access for hunting continue to be an issue in elk management.

Recreation Provided: Public recreational use of the EMU includes hunting, fishing, backpacking, snowmobiling, photography, and wildlife viewing. During 1999-2001, the EMU

provided an annual average of 27,739 days of hunting recreation to an average of 4,747 hunters. This represented a 23% increase in hunter days and a 26% increase in hunters compared to 1992.

Elk Populations: Elk observed during post-season aerial trend surveys have increased since 1983 (Figure 1), with the greatest percent increase occurring in HD 204. Numbers of elk observed during post-season aerial trend surveys have ranged from 2,149 to 3,165 in the EMU during 1998-2003. The 1992 FWP Elk Management Plan called for maintaining "a late winter observable elk count of about 2,200 elk, offsetting planned reductions in the south half of HD 261 with a population increase in HD 204 north of Ambrose Creek. Elk numbers will be maintained at current levels in HDs 210 and 216". Although there have been fluctuations in observed elk numbers in this EMU over the years, current hunting regulations generally have worked to maintain elk numbers near the objective until recently. The 1992 objective of 15 bulls:100 cows for this EMU was not met during the 2002 surveys but was met in 2003.

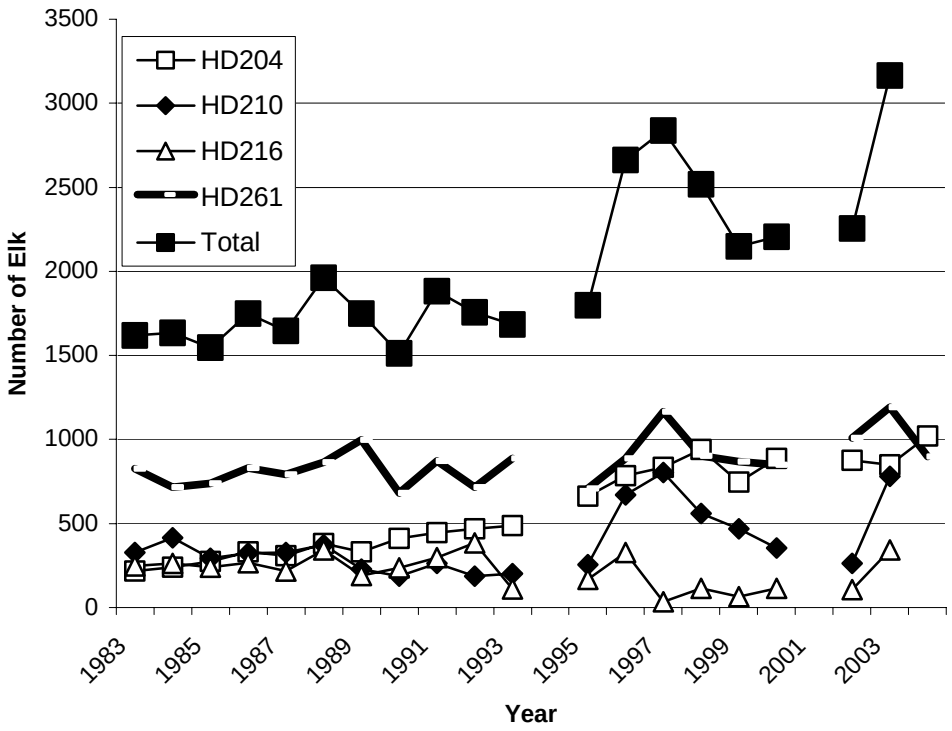


Figure 1. Number of elk observed by HD during post-season aerial surveys in the Rock Creek EMU, 1983-2004.

Current Annual Elk Harvest: From 1999-2001, an average of 314 bulls and 352 antlerless elk were harvested annually in the EMU. Brow-tined bulls (BTB) made up 58% of the average bull harvest, exceeding the minimum objective of at least 40-50% BTBs in the bull harvest. Bulls with 6 points on at least 1 antler averaged 23% of the bull harvest from 1999-2001, exceeding

the objective of at least 10% of the bull harvest comprised of 6-point bulls in the EMU. All HDs averaged more than 10% of the bull harvest comprised of 6-point-bulls. The objective of no more than 40% of the bull harvest occurring during the first week of the general season was met in each of the 4 HDs making up this EMU. The average harvest of 352 antlerless elk during 1999-2001 was not adequate to hold the observed elk numbers at current elk plan objective of 2,000-3,000 elk observed. During this same period, the harvest success of antlerless elk averaged 22% (range = 3–56%) of the A-7 licenses or antlerless permits issued.

Accomplishments: FWP has provided assistance to landowners (that allow public hunting access) with chronic elk damage problems in the form of temporary and permanent hay-stackyards and herding. Special or regularly scheduled "early" or "late" hunts have been applied as needed to harvest elk on private land at times of the year when damage is occurring. Under severe snow conditions in the winter of 1996-97, many landowners in this EMU willingly tolerated unusual levels of elk damage to help elk survive.

Hunting access was enhanced with the addition of 5 Block Management Areas (BMAs) since 1992, bringing the total to 7 BMAs consisting of more than 28,000 acres within this EMU. The Three Mile WMA in HD 204 and the Calf Creek WMA in HD 261 continue to provide public hunting access to over 8,000 acres.

In 1997, a private ranch and FWP agreed to protect important habitat, public hunting, and the traditional ranch operation with a conservation easement on a 1,554-acre portion of a ranch in HD 216. Significant elk habitat is also protected in this EMU under multiple conservation easements granted by private landowners and held by various conservation groups, which protect approximately 4,000 acres in the Rock Creek Drainage.

Management Challenges: **Hunting access and opportunities are generally good and restrictions are relatively minimal in this EMU. However, lack of public access to private land in the Rock Creek drainage and in HD 204 has resulted in a large increase in elk numbers occupying private lands during the general season over the past 5-10 years, causing frustration among sportsmen and increased game damage to adjacent landowners. The percentage of elk in this EMU not available to hunters because of the limited access to private land ranges from 20 to 40 % among years, largely dependent on weather. Elk congregate on lands closed to hunting during the hunting season but move onto lands that have traditionally been open to hunting, once hunting seasons end.**

Some winter and summer ranges on private land, particularly in the Flint and Rock Creek drainage bottoms and along the west slopes of the Sapphires are at risk because of housing development. If this trend continues, restrictions on the type of weapon(s) allowed may be appropriate for safety reasons, thus limiting the ability to harvest elk in and around these developed areas.

Illegal Off Road Vehicle (OHV) and other vehicle use off of established roads or motorized trails contribute to increased elk vulnerability. OHV users have created new travel routes by driving off of existing roads, impacting elk security and habitat values on public lands.

Individual wolves have been reported in the EMU in the past and there have been increased sightings of wolves or their tracks. Wolves may have some impact on elk management in this EMU in the future, but the kind and degree of impact in unknown at this time.

Noxious weed invasions on private and public lands create difficulties meeting native plant species management goals in this EMU.

Population Monitoring: **We annually conduct post-season fixed-wing aerial trend counts of elk during winter/spring. We record total numbers and sex/age classifications of observed elk.**

SUMMARY OF PUBLIC COMMENT

1992: "*Public comment indicated general satisfaction with the current management goal of providing a diversity of hunting experiences in the unit. Interest was also expressed in improving bull:cow ratios and for enhancing the opportunity to harvest older bulls. The public voiced support for reducing the antlerless portion of the population, especially in HD 261. Comments also supported improvement of elk security, including additional road closures in some areas. Many comments focused on a need to improve public access to private lands to render hunting as a means to effectively mange game damage*".

2004: Although some of the same concerns exist today, new issues have been raised. Public comment still indicates concern over possible past over-harvest of bulls, a need to improve bull:cow ratios, and maintenance of elk populations while keeping game damage under control. Ranchers and some hunters express concern about the presence of wolves. Some landowners have expressed their concern about the early-season antlerless rifle hunts and safety issues with archery hunters. Concerns over closed private land providing sanctuaries for elk are growing. Some believe that too many road closures have occurred and that some roads should be re-opened to allow additional access to areas.

MANAGEMENT GOAL

Manage the elk population in a healthy condition within 20% of the objective of 2,500 observed elk and cooperate with private and public land managers in management of elk habitats to provide a diversity of elk hunting experiences.

HABITAT OBJECTIVES

1) Participate in cooperative programs that encourage public and private land managers to maintain the 90% (~ 880,000 acres) of this EMU that is usable elk habitat.
2) Maintain at least 80% of existing levels of elk security so that the elk harvest is distributed throughout the hunting season.
3) Maintain all public land winter ranges in a condition that will support wintering elk at objective numbers.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to the Beaverhead – Deer Lodge, Lolo, and Bitterroot National Forests, DNRC, BLM, and corporate timber-land managers in programs designed to improve overall elk habitat, increase elk security, and improve quality of native forage.
- Acquire conservation easements from willing landowners of elk habitat at the greatest risk of permanent habitat loss due to future development or other factors.
- Cooperate with public and private land managers to maintain walk-in hunting opportunities and associated habitat security via enforcement of existing road closures and retention/recruitment of effective cover blocks.
- Provide technical assistance to land managers to help re-establish elk winter habitats on state and federal lands.
- Provide information on seasonal elk use patterns and requirements to public land managers related to revisions of domestic livestock grazing allotment management plans.
- Provide technical assistance to land managers relative to elk management issues in the planning of timber sales, road management, and enforcement across the entire EMU.
- Cooperate with federal, state, county and private land managers to address weed management/control within the EMU.
- Provide information to and dialogue with the public about wildlife habitat issues and importance through publications, printed materials, personal contacts, and the media.
- Encourage land and travel management practices that maintain or improve elk security.

GAME DAMAGE STRATEGIES

Distribution of the elk population in this EMU varies with winter severity. This EMU currently has significant acreage of private land where owners do not allow public hunting, thus elk concentrate on these properties during the hunting season, heightening game damage complaints on adjacent lands after the season.

FWP will:

- Maintain observed elk numbers within plan objectives.
- Target local wildlife depredation sites with game damage hunts, stack yard materials, and aversive conditioning for landowners who allow adequate public hunting access.

- Cooperate with public land managers to identify and change activities/conditions on public lands that contribute to redistribution of wildlife onto private lands.
- Evaluate the number of antlerless permits allocated for each hunting district (and portions of hunting district) and redistribute as necessary to achieve desired harvest.
- Explore creative means to encourage landowners who currently do not allow hunting, to consider limited access for at least certain groups of hunters (e.g. youth, disabled).
- Encourage dialogue between landowners with differing land management strategies.

ACCESS STRATEGIES

Public access in this EMU is high due to significant amounts of public land and landowner cooperation. However, the increased illegal use of OHVs has diminished wildlife security and habitat integrity. Also, some private lands are closed to hunting, resulting in depredations on adjacent lands.

FWP will:

- Identify desirable access points to public lands and provide recommendations to the appropriate land management authority (Access Montana Program).
- Work with public land agencies to reduce illegal OHV travel on public lands.
- Identify additional opportunities for Block Management projects.
- Pursue conservation easements on important elk ranges found on private land.
- Assist landowners with hunter management.
- Explore creative means to encourage landowners who currently do not allow hunting to open their lands to increase public access.

POPULATION OBJECTIVES

The following objectives are based on maintaining a low level of game damage while providing adequate opportunities for hunters:

1) Maintain the number of elk counted on post-season aerial trend surveys within 20% of 2,500 elk (2,000-3,000 elk) in the EMU. This EMU objective includes: 625 elk (500-750) observed in HD 204; 725 elk (600-850) observed in HD 210; 325 elk (200-450) observed in HD 216; and 825 elk (700-950) observed in HD 261. Reduce the number of elk observed in HD 204 north of Ambrose to 400 and the number of elk observed in HD 261 south of Willow Creek to 400.
2) Maintain a bull:100 cow ratio observed during post-season aerial trend surveys of at least 10 bulls:100 cows OR, at least 7% bulls among the total elk observed.
3) Maintain an annual bull harvest comprised of at least 40% BTBs, of which no less than 10% are bulls with 6 points on at least one antler.

POPULATION MANAGEMENT STRATEGIES

In 2003, 3,165 elk were observed in the EMU, above the maximum objective of 3,000. Elk counts in HDs 210 and 216 are within their objectives for observed elk, HDs 204 and 261 are above their objectives for observed elk. Making adjustments to antlerless regulations in HDs 204 and 261 should reduce the observed elk count to below the maximum objective of 3,000. Additionally, we will continue to attempt to improve public hunting access to private lands in the Flint Creek and Rock Creek drainages and the west side of the Sapphire range to increase harvest and decrease the problems associated with large elk numbers on private lands.

To help maintain bull:100 cow ratios within objectives, FWP will continue working with private and public land managers to maintain and improve elk security, particularly near winter ranges where bulls become increasingly susceptible as snow accumulates. Additional road closures will be considered when appropriate.

REGULATION PACKAGES

Six-week either-sex archery regulation in HDs 210 and 216 and six-week brow-tined bull/antlerless archery regulation in HDs 204 and 261. If Restrictive Regulation for antlered elk is implemented, then, 6-week brow-tined bull/antlerless archery regulation for ALL HDs.

Antlerless:

The Standard Regulation is: sufficient antlerless permits and A-7 licenses to result in the annual harvest of 200-350 antlerless elk across the EMU. Assuming an annual female recruitment rate of at least 15%, this translates into the issuance of 1,000-1,500 antlerless permits annually (also assumes a 22% harvest rate for issued A-7 licenses and antlerless permits). Antlerless permits and A-7 licenses may be specially directed to address problem areas without affecting elk herd units that are not causing problems.

The Standard Regulation will be recommended if: total numbers of elk counted during post-season aerial trend surveys are 500-750 elk in HD 204, 600-850 elk in HD 210, 200-450 elk in HD 216, and 700-950 elk in HD 261.

The Liberal Regulation is: **1.)** increased antlerless permits to result in the annual harvest of more than 350 antlerless elk across the EMU. This translates into the issuance of more than 1,500 antlerless permits annually (assumes an annual female recruitment rate of 15% and 22% harvest success rate) AND, unlimited A-7 antlerless licenses for private-land portions of districts with chronic, increasing, game damage problems, and where impacts of high harvest rates on publicly accessible elk herd-units are minimized OR; **2.)** either-sex (HDs 210 and 216) or brow-tined bull/antlerless (HDs 204 and 261) regulations for a portion of (up to the

full 5-weeks) the general hunting season AND, unlimited A-9/B-12 antlerless licenses (B-tags) valid ONLY on private land in portions of the EMU.

Liberal Regulation **1.) (above)** will be recommended if: numbers of elk counted during post-season aerial trend surveys are more than 750 elk in HD 204, more than 850 elk in HD 210, more than 450 elk in HD 216, and more than 950 elk in HD 261.

Liberal Regulation 2.) (above) **will be recommended if: after 2 years of Liberal Regulation 1.) (above) numbers of elk counted during post-season aerial trend surveys remain more than 750 elk in HD 204, more than 850 elk in HD 210, more than 450 elk in HD 216, and more than 950 elk in HD 261.**

A Liberal Regulation will be maintained until the number of elk counted during post-season aerial surveys is reduced to 625 elk in HD 204, 725 elk in HD 210, 325 elk in HD 216, and 825 elk in HD 261, at which time the Standard Regulation will be recommended.

The Restrictive Regulation is: no antlerless permits (if the most rapid population increase is desired), or lowered antlerless permits and A-7 licenses to result in the annual harvest of less than 200 antlerless elk across the EMU. This translates into the issuance of less than 1,000 antlerless permits annually (assumes an annual female recruitment rate of 15% and 22% harvest success rate). Antlerless permits and A-7 licenses may be specially directed to address problem areas without affecting elk herd units that are not causing problems.

The Restrictive Regulation will be recommended if: numbers of elk counted during post-season aerial trend surveys are less than 500 elk in HD 204, less than 600 elk in HD 210, less than 200 elk in HD 216, and less than 700 elk in HD 261 for 2 consecutive survey years OR, post-season calf:100 cow ratios are less than 20 calves:100 cows for 2 consecutive years.

A Restrictive Regulation will be maintained until the number of elk counted during post-season aerial surveys has increased to 625 elk in HD 204, 725 elk in HD 210, 325 elk in HD 216, and 825 elk in HD 261, at which time the Standard Regulation will be recommended.

Antlered:

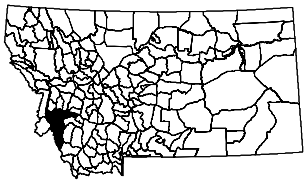
The Standard Regulation is: 5-week general season brow-tined bull regulation in HDs 204 and 261 and antlered bull regulation in HDs 210 and 216.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys in each HD is at least 10 bulls:100 cows or at least 7% of the observed elk are bulls AND, the annual bull harvest is at least 40% BTBs, of which at least 10% are bulls with 6 points or more on at least one antler.

The Restrictive Regulation is: 5-week general season brow-tined bull regulation in all HDs in the EMU.

The Restrictive Regulation will be recommended if: post-season bull:100 cow ratios are less than 10 bulls:100 cows, or less than 7% of the elk observed are bulls in a hunting district for 2 consecutive survey years OR, post-season calf:100 cow ratios are below 20 calves:100 cows for 2 consecutive survey years, OR, the annual bull harvest is less than 40% BTBs, and less than 10% are bulls with 6 points or more on at least one antler.

SAPPHIRE EMU
(Hunting Districts 211, 214, 270, and 321)



Description: The 1,985-square-mile Sapphire EMU includes the Sapphire Mountains between the Bitterroot River and Rock Creek and the north and west parts of the upper Big Hole Valley. It also includes the drainage heads of the Big Hole and Bitterroot Rivers and Rock Creek and a large portion of the Anaconda-Pintler Wilderness. This description of the Sapphire EMU differs from that in the 1992 Elk Plan in that it does not include HD 250, which is now the West Fork EMU. The USDA-Forest Service (USFS)-Bitterroot and Beaverhead-Deerlodge National Forests administer 69% of the land base, the Montana Department of Natural Resources and Conservation (DNRC) about 1% and the USDI-Bureau of Land Management (BLM) less than 1%. At present there are 7 Block Management Areas totaling 1%, 6 conservation easements totaling 2%, and 1 Wildlife Management Area totaling 1% of the EMU.

Public Access: The major portion of this elk management unit is moderately roaded, offering good public access. The northern half of hunting district (HD) 270 is heavily roaded and contains many "loop" roads. This EMU also encompasses some relatively large blocks of roadless security areas, several of which are outside the Anaconda-Pintler Wilderness boundary. Areas of private land that harbor elk and do not allow public access include the lower Rye Creek drainage and north to Tabor Mountain, French Basin in the Schoolmarm Lake vicinity, and the lower portions of the Middle and East Forks of Rock Creek.

Elk Populations: Numbers of elk observed during post-season aerial trend surveys in the Sapphire EMU remained stable from 1983 to 1990 at an average of 1,669 (Figure 1). After 1990, number of elk observed increased by 82% to an average of 3,037 during 1999-2002. Observed elk numbers peaked at 3,556 in 2000, the last year of complete survey coverage. However, counts made in HD 270 during 2001-2003 indicated an increase of 11% over the 2000 count. Elk have likely increased in the other HDs of the EMU as well. The average number of elk observed in each hunting district during 1999-2002 was: HD 211 = 547, HD 214 = 140, and HD 270 = 2,501. Most of the elk in this EMU, and most of the increase in numbers, have been in HD 270 (Figure 1). The lower count in HD 270 in 2004 was because of early spring migration. The elk population likely did not decline to the degree indicated by the 2004 aerial survey results.

Few elk winter in HD 321 due to its high elevation and snow accumulation. Elk that summer north of Highway 43 migrate into the East Fork of the Bitterroot in HD 270 to spend winter. Those that summer south of Highway 43 in HD 321 typically migrate to Idaho during fall and early winter and are usually available to Montana hunters for only part of the hunting season. Post-season survey numbers in this EMU presented here (Figure 1) do not include elk that winter in Idaho. Based on summer flights in HD 321 south of Highway 43, where 909 elk were counted in 1999 and 852 elk in 2002, we estimate that about 1,000 elk migrate to Idaho.

Population classification ratios observed in late winter and spring 2002 were 37 calves:100 cows and 7 bulls:100 cows in HD 211 and 31 calves:100 cows and 11 bulls:100 cows in HD 270.

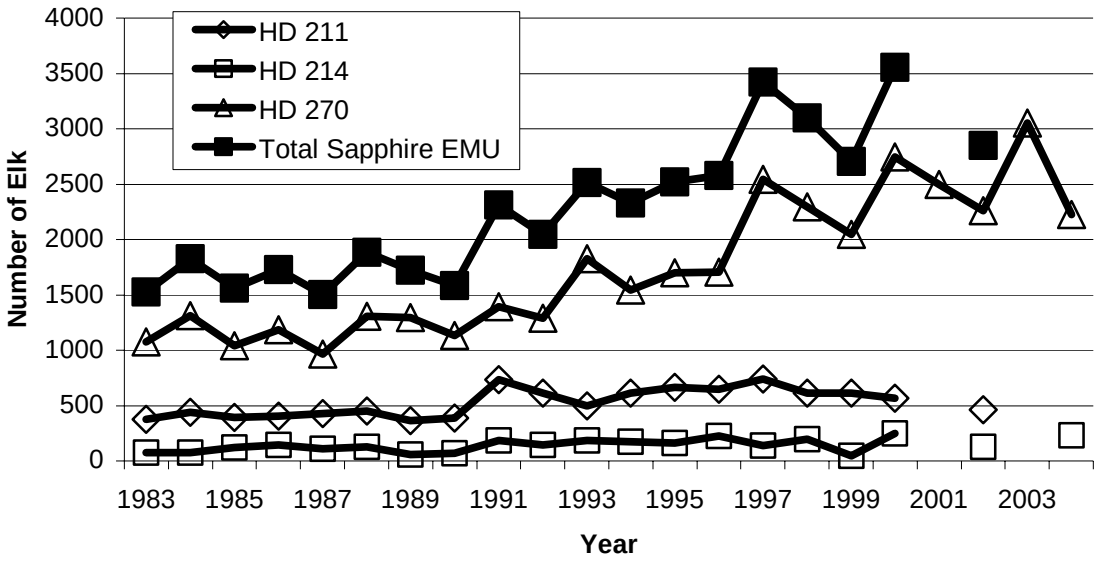


Figure 1. Number of elk observed during post-season fixed-wing flights in HDs 211, 214, and 270 of the Sapphire EMU, 1983-2004.

Recreation Provided: During 1999-2001, this EMU provided an average of 39,701 days of hunting recreation for 6,472 hunters annually with about 77% of hunters and hunter days in HDs 270 and 321. There is no estimate of the proportion of hunters and hunter days in HD 321 that occurs south of Highway 43.

There are opportunities to view elk on winter ranges in the Sula Basin and in Rock Creek during winter and spring. Viewing and photography make up the majority of elk-related recreation during summer.

Current Annual Elk Harvest: Average annual harvest during 1999–2001 was 967 elk made up of 550 bulls (57%) and 417 (43%) antlerless elk. During that period, 25% of harvested bulls had at least one 6-point antler and 27% of bulls were killed during the first week of the general

season. The number of antlerless elk killed using A-7 licenses and permits averaged 23% (range, 8-53%) of the number of licenses issued. Elk harvest in HD 270 greatly increases during years when severe weather causes elk to move out of the Anaconda-Pintler Wilderness during hunting season. When these conditions occur, the harvest from HD 270 can comprise about 50% of the harvest in the entire EMU. There is no estimate of what proportion of the harvest in HD 321 comes from south of Highway 43.

Accomplishments: We have increased the opportunity to harvest antlerless elk (number of permits) by 28% compared to 1992.

FWP has assisted landowners who allow public hunting and have chronic elk damage problems with temporary and permanent hay stackyards, fencing materials, herding and occasionally kill permits. Early or late hunts have been applied as needed to harvest elk on private land at times of the year when damage is occurring.

In November of 1996, the Lost Creek Land Exchange took place when the President signed the Omnibus Parks and Public Lands Management Act of 1996. This exchange between R-Y Timber Company and the USFS resulted in the conveyance of some USFS land to R-Y Timber, as well as the offering of timber-only resources from some USFS land (the management of which remains under the USFS). In turn, the USFS acquired 3,062 acres of land from R-Y Timber in the Storm and Twin Lakes area in HD 214.

In August of 2003, more than 32,000 acres of private lands came under public ownership west of Anaconda, of which more than 29,500 acres are in this EMU. Known as the Watershed Project, this was the largest land acquisition effort by the Rocky Mountain Elk Foundation (RMEF) to date. The RMEF acquired the watershed land from R-Y Timber and then sold the lands to FWP and the USFS. In this EMU, FWP obtained about 9,000 acres (Garrity Mountain WMA), while the USFS obtained more than 20,000 acres in HD 214. The funds for this purchase primarily came from the Montana Natural Resource Damage Program and federally controlled Land and Water Conservation funds.

The Hirshey conservation easements totaling 8,870 acres in HD 321 were completed in 1997.

Management Challenges: Private land elk “refuges” in HD 270 include the lower Rye Creek drainage north to Tabor Mountain and French Basin in the Schoolmarm Lake vicinity. The percent of the elk population harbored on these lands varies with the weather and timing of elk migrations. During spring 2002 aerial survey, 46% of elk observed in HD 270 were on private land. Private land in the lower portions of the Middle and East Forks of Rock Creek is another “refuge” area for elk. This refuge situation is also dependent on weather, but has been less of a problem in recent years. Elk “refuges” created by private land closed to hunting attract and concentrate elk, allow elk populations to grow, and limit hunter opportunity. Thus we have more elk, yet less opportunity for harvest and population management.

In summer, 90% of elk observed on flights in the south half of HD 321 are on private land. This has resulted in game damage complaints during summer.

Wolves restored to Yellowstone National Park and central Idaho in 1995 have since become established in this EMU. Currently there are 4 known packs within the Sapphire EMU. Wolves may have some impact on elk management decisions, but the kind and degree of impact is unknown at this time.

Population Monitoring: Fixed-wing aerial surveys are conducted during winter or the spring-green-up period in HDs 211, 214, and 270. Total numbers and sex and age classifications are recorded during flights. Fixed-wing aerial surveys are conducted during summer in HD 321 and total numbers and sex/age classifications are recorded.

SUMMARY OF PUBLIC COMMENT

In 1992, public comment indicated support for maintaining the current management goal of providing a diversity of hunting experiences and harvest opportunities. There was also interest in managing for more mature bulls in the Bitterroot portion of the unit through additional road closures and more restrictive hunting regulations. Comments opposing additional road closures were also received. The public voiced strong support for establishing cooperative programs with public and private land managers to maintain and improve elk security throughout the unit.

There has been limited, but generally positive response to drafts of the current EMU plan among those contacted. There is support for improving conditions on the new Garrity Mountain WMA to support more elk.

MANAGEMENT GOAL

Manage the elk population in a healthy condition and cooperate in the management of elk habitat to provide a diversity of hunting experiences.

HABITAT OBJECTIVES

4) Participate in cooperative programs that encourage public and private land managers to maintain 1.2 million acres of occupied elk habitat.
5) Maintain elk security so that elk harvest is distributed throughout the hunting season with no more than 40% of the bull harvest occurring during the first week of the general season. This objective may be exceeded in HD 321 because many elk migrate to Idaho during the hunting season, concentrating harvest during the early portion of the season.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to the Bitterroot and Beaverhead-Deerlodge National Forests that helps in the planning and design of timber sale cutting units and road management systems to maintain elk security areas and secure travel corridors. This is particularly important in remaining roadless areas, and on and adjacent to winter ranges.
- Cooperate with DNRC in managing the French Basin walk-in area to enhance elk security on winter range.
- Work with private landowners, particularly in the Rye Creek and French Basin areas, to maintain and increase hunter access that will facilitate population management.

GAME DAMAGE STRATEGIES

Distribution of the elk population in this EMU varies with winter severity. This EMU currently has significant acreage of private land where owners do not allow public hunting, thus elk concentrate on these properties during the hunting season, increasing game damage complaints on adjacent lands after the season.

In the past, elk damage problems have occurred southwest of Anaconda, in the Sula Basin, and west of Jackson. If problems recur, harvest pressure will be directed to these subpopulations to reduce numbers.

FWP will:

- Maintain observed elk numbers within plan objectives while targeting local wildlife depredation sites with game damage hunts, stack yard materials, and aversive conditioning for landowners who allow adequate public hunting access.
- Cooperate with public land managers to change activities/conditions on public lands that contribute to redistribution of wildlife onto private lands.
- Evaluate the number of antlerless permits allocated for each hunting district (and portions of hunting district) and redistribute as necessary to achieve desired harvest.
- Explore creative means to encourage landowners who currently do not allow hunting, to consider limited access for at least certain groups of hunters (e.g. youth, disabled).
- Encourage dialogue between landowners with differing land management strategies.

ACCESS STRATEGIES

Public access in this EMU is high due to significant amounts of public land and landowner cooperation. However, the increased illegal use of OHVs has diminished wildlife security and habitat integrity. Also, some private lands are closed to hunting, resulting in depredations on adjacent lands.

FWP will:

- Assist landowners with hunter management through establishment of walk-in areas or, where appropriate, block management agreements.
- Identify desirable access points to public lands and provide recommendations to the appropriate land management authority (Access Montana Program).
- Work with public land agencies to reduce illegal OHV travel on public lands.
- Pursue conservation easements on important elk ranges found on private land.
- Explore creative means to encourage landowners who currently do not allow hunting to open their lands to increase public access.

POPULATION OBJECTIVES

4) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 3,400 elk (2,720 – 4,080) distributed as 2,600 elk (2,080-3,120) in HD 270, 600 elk (480-720) in HD 211, and 200 elk (160-240) in HD 214. Establishment of the objective of 3,400 observed elk in this EMU was determined by level of landowner tolerance.
5) Maintain bull:100 cow ratios observed during post-season aerial trend surveys of at least 15:100 in HD 270 and at least 10:100 in HDs 211 and 214 OR, bulls are at least 10% of all observed elk in HD 270 and bulls are at least 7% of all observed elk in HDs 211 and 214.
6) Maintain at least 15% of harvested bulls 4.5-years-old or older and at least 15% of harvested bulls with 6-points on at least one antler as monitored at the Darby Check Station.

POPULATION MANAGEMENT STRATEGIES

Some initial public comment indicated that hunter crowding is an issue in HD 321. If further public comments indicate that hunter crowding at current levels (2000-2002 average) is a major issue, FWP will recommend issuing unlimited or limited permits based on hunter number criteria. The following criteria will be used to establish unlimited/limited permit regulations to reduce hunter crowding:

1) Average hunter numbers for 2000-2002 will be the “benchmark”.
2) Unlimited/Limited permits would be considered only for hunter numbers occurring in the Standard or Restrictive Packages
3) The goal of issuing unlimited permits would be to reduce hunter numbers by 10% from the 2000-2002 average.
4) Unlimited or limited permits would apply to both archery and the general season hunters.
5) Unlimited permits would be eliminated if a 15% reduction in hunters from the 2000-2002 average were achieved.
6) If unlimited permits were unsuccessful in achieving the desired reduction in hunter numbers after 2 years of application, then limited permits (numbers based on 10% reduction from 2000-2002 average) would be recommended.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation in HD 270 and six-week either-sex archery regulation in HDs 211, 214, and 321, EXCEPT, see Restrictive Regulation for Antlered elk.

HDs 211, 214, and 270:

Antlerless:

The Standard Regulation is: limited antlerless permits and A-7 licenses sufficient to achieve an annual harvest of 325 to 485 antlerless elk (depending on the number of elk observed during post-season surveys). Assuming an average success rate of 23% for the number of licenses issued this means issuing a combination of 1,410 to 2,110 A-7 licenses and antlerless permits.

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is between 2,700-4,080 and calf:cow ratios are at least 25 calves:100 cows.

The Liberal Regulation is: **1.)** increased antlerless permits and A-7 licenses in combination to more than 2,110. **2.)** brow-tined bull/antlerless (HD 270) or either-sex (HDs 211 and 214) regulation for a portion (up to the full 5-weeks) of the general season AND, singly or in combination, A-7 licenses, antlerless permits, and A-9/B-12 antlerless licenses (B-tags).

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 4,080 (more than 720 in HD 211, more than 240 in HD 214, and more than 3,120 in HD 270).

Liberal Regulation **2.) (above)** will be recommended if: after 2 years of application of Liberal Regulation 1.) (above), the number of elk observed on post-season aerial trend surveys remains more than 4,080 (more than 720 in HD 211, more than 240 in HD 214, and more than 3,120 in HD 270).

A Liberal Regulation will be maintained until the number of elk counted during post-season aerial surveys is reduced to 3,400, at which time the Standard Regulation will be recommended.

The Restrictive Regulation is: no antlerless harvest if the most rapid population increase is desired, or limited antlerless permits and A-7 licenses to result in an annual harvest of less than 325 antlerless elk. This means fewer than 1,410 A-7 licenses or antlerless permits combined (assuming a harvest of 23% of the number issued).

> The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is less than 2,700 (less than 480 in HD 211, less than 160 in HD 214, and less than 2,080 in HD 270) for 2 consecutive years OR, the number of elk observed is less than 3,400 (objective) (less than 600 in HD211, less than 200 in HD 214,

and less than 2,600 in HD 270) AND, calf:100 cow ratios are less than 25 calves:100 cows for 2 successive years.

A Restrictive Regulation will be maintained until the number of elk counted during post-season aerial surveys has increased to 3,400, at which time the Standard Regulation will be recommended.

Antlered:

The Standard Regulation is: 5-week general season any bull regulation in HDs 211 and 214 and 5-week general season brow-tined bull regulation in HD 270.

The Standard Regulation will be recommended if: bull:cow ratios observed during post-season aerial surveys are at least 10:100 or bulls are at least 7% of all observed elk in HDs 211 and 214 and the bull:100 cow ratio is at least 15:100 or bulls are at least 10% of all observed elk in HD 270, AND, at least 15% of harvested bulls are 4.5-years-old or older AND at least 15% of harvested bulls have 6 points or more on at least one antler as recorded at the Darby Check Station.

The Restrictive Regulation is: HDs 211 and 214 – **1.)** 5-week general season brow-tined bull regulation OR, ALL HDs - **2.)** unlimited brow-tined bull permits **3.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED AND LIMITED PERMITS.

1.) A brow-tined bull regulation will be recommended in HDs 211 and 214 if: bull:100 cow ratios observed during post-season aerial trend surveys are less than 10 bulls:100 cows (or 7% bulls in the population) for 2 consecutive years OR, less than 15% of harvested bulls are 4.5-years-old or older and less than 10% of harvested bulls have 6 points or more on at least one antler as recorded at the Darby Check Station for 2 consecutive years.

2.) unlimited brow-tined bull permits will be recommended if: in HDs 211 and 214, bull:100 cow ratios observed during post-season aerial trend surveys remain less than 10 bulls:100 cows (or 7% bulls in the population) after 2 consecutive years of a brow-tined bull regulations OR, in HD 270, less than 15 bulls:100 cows (or 10% bulls in the population) are observed for 2 successive years.

3.) limited antlered bull permits will be recommended if: after 2 consecutive years of unlimited brow-tined bull permit regulations, bull:100 cow ratios observed during post-season aerial trend surveys remain less than 10 bulls:100 cows (or 7% bulls in the population) in HDs 211 and 214 or less than 15 bulls:100 cows (or 10% bulls in the population) in HD 270.

HD 321:

Elk generally do not spend winter in HD 321. Of elk in HD 321 during summer and fall, about half winter in HD 270 and half in Idaho. Regulation Package changes for antlerless elk in HD 321 will occur when changes among Standard, Liberal, and Restrictive Packages are implemented in HD 270.

Six-week either-sex archery regulation.

Antlerless:

The Standard Regulation is: 1.) limited either-sex permits AND, limited numbers of A-9/B-12 antlerless licenses (B-tags)may also be recommended OR 2.) 1-2 weeks general season either-sex regulations AND, limited numbers of A-9/B-12 antlerless licenses (B-tags) may also be recommended.

The Standard regulation will be recommended if: HD 270 is in a Standard Regulation Package.

The Liberal Regulation is: 1.) 4-5 weeks general season either-sex regulations AND, limited A-9/B-12 antlerless licenses (B-tags) may also be recommended OR, 2.) 5-weeks antlerless ONLY general season AND, limited A-9/B-12 licenses (B-tags) may also be recommended.

Either of the Liberal Regulation options may be recommended if: HD 270 is in a Liberal Regulation Package.

The Restrictive Regulation is: limited either-sex permits.

The Restrictive regulation will be recommended if: HD 270 is in a Restrictive Regulation Package.

Antlered:

The Standard Regulation is: 5-week general season antlered bull regulations.

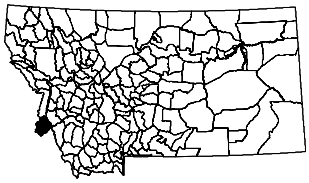
The Standard Regulation will be recommended if: HD 270 is in a Standard Regulation Package for antlered elk.

The Restrictive Regulation is: 1.) unlimited brow-tined bull permits; OR 2.) limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED AND LIMITED PERMITS.

Unlimited brow-tined bull permits will be recommended if: HD 270 is in a Restrictive Regulation Package for antlered elk.

Limited antlered bull permits will be recommended if: after 2 years of unlimited brow-tined bull permits, objectives for bulls remain unmet.

WEST FORK EMU
(Hunting District 250)



Description: The West Fork EMU is a new EMU, separated from the area designated as the Sapphire EMU in 1992. This 707-square-mile EMU encompasses the West Fork of the Bitterroot River drainage. The Idaho state line bounds the west and south sides, Tin Cup Creek the north side, and U.S. Highway 93 is the east boundary. The USDA-Forest Service-Bitterroot National Forest (USFS-BNF) administers 94% of this EMU and the northwest portion is in the Selway-Bitterroot Wilderness Area. Just 5% of this EMU is private land. About half of the private land is near U.S. Highway 93 in the northeast part of the EMU and the remainder is in parcels along the West Fork of the Bitterroot and Nez Perce Creek.

Thirty-five percent or 250 square miles of the West Fork EMU is elk winter range with 14% of winter range private, and 86% public land. However, elk use private land winter range proportionately more than they do public land winter range. Thirty nine percent of elk observed on the spring 2002 survey were on the 14% of winter range that is privately owned.

Elk security is good to excellent because of the ruggedness of terrain, road closures, and roadless and wilderness areas.

Public Access: About half of this EMU is moderately roaded, offering good public access. Most roads are within 5 linear miles of the West Fork of the Bitterroot River. Beyond 5 miles of the river and to the Idaho border there are some relatively large blocks of roadless security areas

Elk Populations: Number of elk observed during spring fixed-wing aircraft flights in HD 250 averaged 497 from 1965 to 1983 (Figure 1). The elk population began increasing after about 1983, coinciding with more conservative antlerless harvests, and reached a high count of 1,703 in 2003. During 1999-2003, calf:100 cow and bull:100 cow ratios averaged 24:100 and 12:100, respectively.

The 1992 Elk Plan called for a 20-30% increase in observed elk in this EMU. Using the 1987-1991 average of 868 observed elk as a starting point, this objective would have

been met at 1,042-1,128 observed elk. The 1992 objective for numbers of elk observed was exceeded in 8 of 9 post-season surveys since 1994. Numbers of elk observed during post-season aerial trend surveys in 2003 were 51% over the objective of 1992.

Recreation Provided: This EMU provided an average of 10,574 days of hunting recreation for 1,519 hunters annually during 1999-2001. Viewing and photography make up the majority of elk-related recreation during summer.

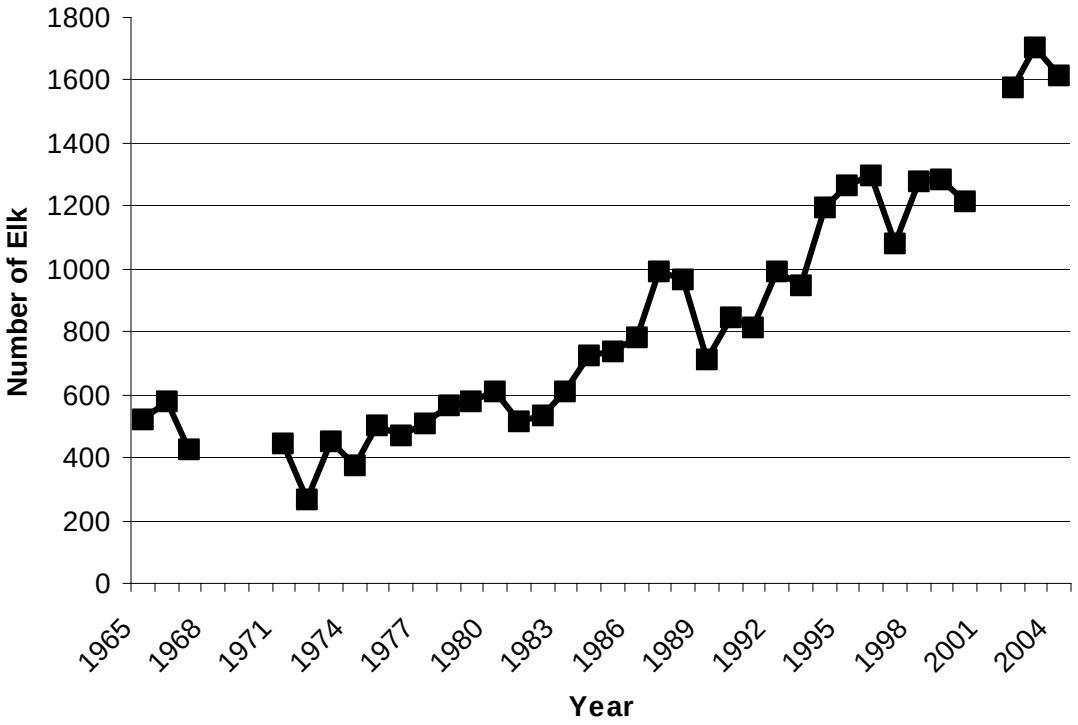


Figure 1. Numbers of elk observed during post-season fixed-wing aerial trend surveys in HD 250, 1965-2004.

Current Annual Elk Harvest: Average annual harvest during 1999-2001 was 130 elk, comprised of 84 (65%) bulls and 46 (35%) antlerless elk. Thirty five percent of bulls had at least one 6-point antler and 29% were harvested the first week of the general season. The harvest of antlerless elk during the same period averaged 50% (range 35-61%) of the number of A-7 licenses issued.

Accomplishments: FWP has assisted landowners who allow public hunting and have chronic elk damage problems with temporary and permanent hay stackyards, fencing materials, herding, and occasionally, kill permits.

The area around Bare Cone Ridge, previously closed to antlerless harvest, was opened for the 2003 season.

Management Challenges: Housing development on elk winter range is a management challenge in this EMU. For about the last 15 years Ravalli County has been one of the counties with greatest rate of increase in human population in Montana. Housing development on elk winter range affects elk management in 3 ways: 1) Physical loss of winter range including areas outside of home sites but within sight, sound and smell of people and the range of domestic pets, especially dogs; 2) Landowners may not allow hunting or access through their property thus limiting the ability to get an adequate harvest and; 3) The "refuge effect" created by limited access or harvest can concentrate elk and allow them to increase in number. This in turn can increase elk depredation on the immediate and surrounding properties.

Wolves restored to Yellowstone National Park and central Idaho in 1995 have since become established in this EMU. Currently, the Painted Rocks pack is the only pack known in this EMU. Wolves may have some impact on elk management in this EMU, but the kind and degree of impact is unknown at this time.

Population Monitoring: Annual fixed-wing aerial trend counts are conducted during early spring. Elk observed are recorded as bulls, cows, and calves to determine sex and age ratios.

SUMMARY OF PUBLIC COMMENT

In 1992, public comment indicated support for maintaining the current management goal of providing a diversity of hunting experiences and harvest opportunities. There was also interest in managing for more mature bulls in the Bitterroot portion of the unit, through additional road closures and more restrictive hunting regulations. Comments opposing additional road closures were also received. The public voiced strong support for establishing cooperative programs with public and private land managers to maintain and improve elk security throughout the unit.

MANAGEMENT GOAL

Manage the elk population in a healthy condition at 1,400 elk observed during spring aerial surveys and cooperate with public and private landowners in the management of elk habitat with emphasis on maintaining a diverse bull age structure.

HABITAT OBJECTIVES

6) Participate in cooperative programs with public and private land managers that will maintain 452,506 acres of occupied elk habitat.
7) Maintain elk security so that elk harvest is distributed throughout the hunting season with no more than 30% of the bull harvest occurring during the first week of the general season.
8) Maintain and enhance the current amount of elk winter range.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to county planning boards and commissions regarding impacts of housing development on important elk winter range. If limiting development is not possible, then provide input to mitigate the effects of development.
- Work toward conserving existing elk winter range through conservation easements.
- Provide technical assistance to the Bitterroot National Forest in the planning and design of timber sales and road management to maintain elk security areas and secure travel corridors. This is particularly important in remaining roadless areas and on and near winter ranges.

GAME DAMAGE STRATEGIES

FWP will:

- Maintain observed elk numbers within plan objectives while targeting local wildlife depredation sites with game damage hunts, stack yard materials, and aversive conditioning for landowners who allow adequate public hunting access.
- Cooperate with public land managers to change activities/conditions on public lands that contribute to redistribution of wildlife onto private lands.
- Evaluate the number of A-7 licenses or antlerless permits allocated for the hunting district or portions thereof and redistribute as necessary to achieve desired harvest.
- Explore creative means to encourage landowners who currently do not allow hunting, to consider limited access for at least certain groups of hunters (e.g. youth, disabled).
- Encourage dialogue between landowners with differing land management strategies.

ACCESS STRATEGIES

FWP will:

- Assist landowners with hunter management through establishment of walk-in areas or, where appropriate, actively pursue block management agreements.
- Identify desirable access points to public lands and provide recommendations to the appropriate land management authority (Access Montana Program).
- Pursue conservation easements on important elk ranges found on private land.
- Explore creative means to encourage landowners who currently do not allow hunting to open their lands to increase public access.

POPULATION OBJECTIVES

7) Maintain numbers of elk observed during post-season aerial trend surveys within 20% of 1,400 elk (1,120-1,680 elk).
8) Maintain at least 10 bulls:100 cows observed during post-season aerial trend surveys.

9) Maintain an annual bull harvest composed of 100% BTBs, including at least 15% with 6 points or more on at least 1 antler.

POPULATION MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

The Standard Regulation is: sufficient antlerless permits and A-7 licenses to achieve an annual harvest of 100 to 175 antlerless elk as number of elk observed vary within the objective range. Based on past harvest success of 50% of the number of licenses issued, this means issuing 200 to 350 A-7 licenses.

The Standard Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is 1,120 – 1,680 AND, calf:100 cow ratios are at least 25 calves:100 cows.

The Liberal Regulation is: **1.)** more than 350 A-7 licenses or antlerless permits or a combination of permits and specially directed A-7 licenses OR, **2.)** brow-tined bull/antlerless regulation for a portion (up to the full 5-weeks) of the general season AND, singly or in combination, A-7 licenses, antlerless permits, and A-9/B-12 antlerless licenses (B-tags).

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed on post-season aerial trend surveys is more than 1,680 OR, the number of elk observed is 1,120-1,680 AND, calf:100 cow ratios are more than 30 calves:100 cows for 2 consecutive years.

Liberal Regulation **2.) (above)** will be recommended if: after 2 years of application of Liberal Regulation 1.) (above), the number of elk observed on post-season aerial trend surveys remains more than 1,680.

A Liberal Regulation will be maintained until the number of elk counted during post-season aerial surveys is reduced to 1,400, at which time the Standard Regulation will be recommended.

The Restrictive Regulation is: no antlerless harvest if the most rapid population increase is desired OR, limited A-7 licenses or antlerless permits to result in an annual harvest of less than 100 antlerless elk (fewer than 200 licenses or permits).

> The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is less than 1,120 for 2 consecutive years OR, the number of elk observed is less than 1,400 AND, calf:100 cow ratios are less than 25 calves:100 cows for 2 successive years.

A Restrictive Regulation will be maintained until the number of elk counted during post-season aerial surveys has increased to 1,400, at which time the Standard Regulation will be recommended.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

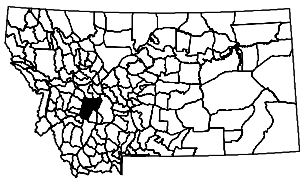
The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10 bulls:100 cows AND, at least 15% of harvested bulls have 6 points or more on at least one antler.

The Restrictive Regulation is: **1.)** unlimited brow-tined bull permits. **2.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED AND LIMITED PERMITS.

1.) Unlimited brow-tined bull permits will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10 bulls:100 cows for 2 consecutive years OR, less than 15% of harvested bulls have 6 points or more on at least one antler for 2 consecutive years.

2.) Limited antlered bull permits will be recommended if the bull:100 cow ratio remains below 10 bulls :100 cows OR, less than 15% of harvested bulls have 6 points or more on at least one antler after 2 years of application of unlimited permits.

DEER LODGE EMU
(Hunting Districts 215, 318, and 335)



Description: This 1,086-square-mile EMU is bounded by Interstate 15 and U.S. Highway 12. The communities of Helena, Boulder, Butte and Deer Lodge occur along the periphery of the EMU. The USDA-Forest Service (USFS) - Beaverhead-Deerlodge (BDNF) and Helena National Forests (HNF) administer about 45% of the unit's land base. The remaining lands are managed by the USDI – Bureau of Land Management (BLM) or Montana Department of Natural Resources and Conservation (DNRC), or are in private ownership. Approximately 92% of the EMU is elk habitat.

Summer range for elk occurs almost entirely on public lands. Fall use areas also are generally on public lands unless weather induces elk to move to private land winter ranges at lower elevations. As much as 70% of the winter range currently used occurs on private lands, although with public land management designed to encourage elk use, perhaps as much as 50% of winter elk habitat could be provided on public lands.

Public Access: Public access to public land is adequate. Four large landowners currently do not allow public access in HD 215, but there are no significant agricultural acreages that are closed to hunting in HDs 318 or 335. Motorized travel on public lands is regulated through National Forest and BLM travel plans. Off-road motorized travel has been largely unregulated in the past, resulting in pioneering of travel routes and thus reduced habitat security and habitat effectiveness. Travel plans for the HNF, BDNF, and the BLM are in various stages of revision, and will likely restrict motorized travel to designated routes. Much of the public land, and significant parcels of private land within the EMU is characterized by extensive timber harvest and roads. On public land, approximately 96% of elk habitat occurs within one mile of lands that are open to motorized travel.

Elk Populations: Historically, as many as 2,451 elk, representing 8 reasonably distinct elk herd units were counted in this EMU. The numbers of elk observed declined approximately 10% from an average of 1,845 elk in the EMU during 1993-1996 to an average of 1,663 during 1997-2000, and increased to 1,879 in 2003 (Figure 1). This is a density of approximately 1.8 observed elk per square mile of elk habitat. The most recent trend survey totals are below objective (2,100). Portions of the EMU are experiencing

local abundance and game damage complaints, largely the result of private land refugia where hunting is not allowed. The overall bull:100 cow ratio is approximately 8:100, ranging from 5:100 in HD 215 to 11:100 in HD 318 to 13:100 in HD 335. The recent observed bull:100 cow ratio is a decline from approximately 15 bulls:100 cows for the EMU during 1999-2001.

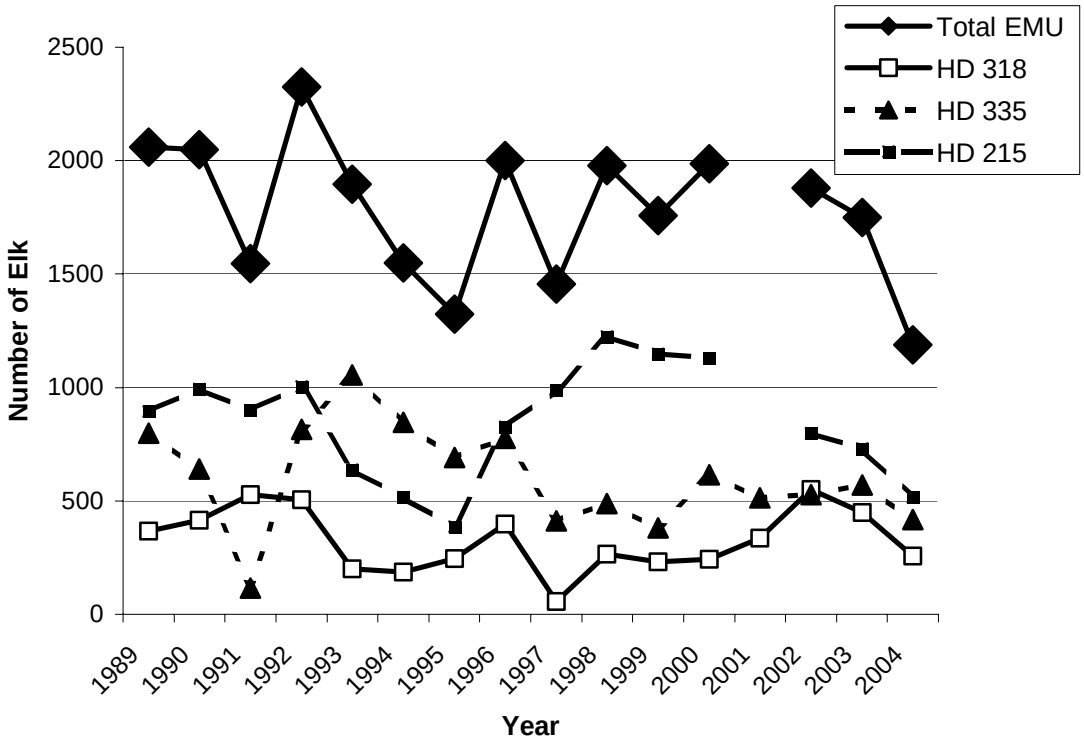


Figure 1. Number of elk observed during post-season aerial trend surveys in HDs 215, 318, and 335, 1989-2004.

Recreation Provided: In 2001 the EMU provided 26,225 days of hunting recreation to 3,655 hunters annually. This represented a decline in hunter participation of approximately 11% since 1996. Hunter days afield have also declined by about 7%. These figures reflect a downward trend compared to a 1992 to 1996 comparison when hunter numbers increased 5%, and recreation days increased 10%. Summer and winter recreational opportunities include photography and wildlife viewing. Wildlife viewing is an important aspect of winter recreational use in this EMU, particularly in HD 335 along U.S. Highway 12, and the Spring Creek Road where wintering elk can be observed, in HD 318 where elk can be observed from the Boulder River Road, and south of U.S. Highway 12 from Elliston to Garrison in HD 215. Antler gathering is becoming increasingly popular, but has potential stress-related consequences to herds if the activity is conducted during late winter or spring.

Current Annual Elk Harvest: Total elk harvest has declined 14% from the mid 1990s (698) to the average for the 3-year period 1999-2001 (603). However, approximately

19% more bull elk were harvested during 1999-2001 (average of 243) than 7 years ago (average bull harvest of 198), despite a decline of 16% in number of elk observed during post-season aerial surveys during that period. Harvest of bull elk by the end of the first week of the general season is exceeding the 40% maximum objective (average 42.2% -- with highs of 46% in HD 215, 52% in HD 318, and 60% in HD 335).

Accomplishments: Six ranches in HD 215 totaling more than 25,500 acres are enrolled in the Block Management Program. Also enrolled in the Program are 3 ranches in HD 318 (9,000 acres) and 2 ranches in HD 335 (5,200 acres), for a total of approximately 39,700 acres in the Block Management Program for the EMU.

Management Challenges: Winter ranges within this EMU are at risk because of housing developments and mining activity. Extensive subdivision developments in HD 335 and to a lesser degree in HD 318 and HD 215, threaten not only elk habitat, but create accessory impacts from adjacent recreation uses, uncontrolled pets, and removal of wildlife that is causing "damage" to property owners. Extensive gold mining and proposed expansion of the Apollo Gold (Montana Tunnels) Mine in HD 335 poses a risk to public and private land winter ranges. A variety of impacts to elk habitat may be resulting in reduced carrying capacity of the EMU. Extensive recreational use of snowmobiles throughout HD 318 on the BDNF (and to some degree in HD 335 on the HNF) is compromising public land big game winter ranges, and is contributing to redistribution of elk to private lands that in turn result in game damage complaints, and ultimately affects the elk population of the EMU.

Although hunting opportunities are good and restrictions are relatively minimal in HD 318 and HD 335, four large parcels of private land are closed to hunting in HD 215. These closures create local concentrations of elk that affect certain ranches, including those that do allow hunting. Hunting is not restricted on any significant parcels of agricultural land in HDs 318 and 335.

Extensive motorized use (full sized vehicles, OHVs, motorcycles) of public lands via USFS and BLM system roads as well as pioneered routes, and illegal off-road use has resulted in redistribution of elk from public lands onto private properties.

Individual wolves have been reported in the EMU since the late 1980s, and pack activity has been documented in this EMU since 1994. The establishment of a wolf pack or packs in this EMU may influence future elk populations and management.

Activities that can affect elk habitat and are occurring within the EMU are listed below:

a. Increases in both summer and winter motorized use of public lands.
b. HNF, BDNF, and BLM timber sales, grazing allotments, and recent fires (High Ore).
c. Private land timber sales.
d. Numerous and sizeable housing developments.
e. Trades of public land into private ownership.

f. Open pit hard rock mining and potential future expansion.
g. Spread of classified noxious weeds and other exotic plants.

Population Monitoring: Elk trend surveys are generally conducted between January and March, and all elk winter range habitat (adjustments are made to accommodate mild weather years) is surveyed from the air in each hunting district. Total numbers, sex and age class, and location data are recorded. Data are recorded in database files and a report is written for each hunting district surveyed.

SUMMARY OF PUBLIC COMMENT

Public comment encouraged continued management of elk at reasonably stable levels with emphasis on cooperation between FWP and public and private land managers in the management of elk habitats. Some landowners felt that elk numbers were too high in HD 215 and in a portion of HD 335, while hunters expressed general concern about low elk numbers throughout the EMU. Ranchers and some hunters have expressed concern about the presence of wolves. Hunters have expressed concerns about limited bull numbers; some have requested implementation of spike seasons with permits for older bulls. Shorter elk seasons are not favored. Reduced vehicle access is generally supported to promote fair-chase hunting. Some people have expressed concern over deteriorating elk habitat on public lands, particularly in light of concurrently diminishing habitat on private lands as they undergo changes due to development.

MANAGEMENT GOAL

Manage all components of the elk population in a healthy condition, at levels that meet plan objectives, and cooperate in the management of elk habitat to provide healthy habitats, and fair chase hunting experiences.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain 639,360 acres of productive and secure elk habitat.
2) Maintain elk security so that the elk harvest is distributed throughout the hunting season, with no more than 40% of the harvested bulls taken during the first week of the general season (a reflection of bull elk vulnerability).

HABITAT MANAGEMENT STRATEGIES

The BDNF revised their travel plan in 1996, the HNF revised theirs in 2002; both forests and BLM lands are under the administrative umbrella of the National Forest-BLM OHV EIS Decision (2000) that disallows off-road or off-trail motorized travel. Motorized use of existing pioneered roads and trails continue to be allowed under this provision, and thus still compromise both habitat effectiveness and security. Designated route travel management on public lands is being discussed and if route locations and densities are carefully considered, would improve the quality of seasonal elk habitats as well as

provide ethical hunting opportunities as called for by the Montana Hunter Behavior Advisory Council.

FWP will:

- Provide technical assistance to Helena and Beaverhead-Deerlodge National Forest and the BLM land managers in programs designed to improve overall habitat effectiveness, decrease elk vulnerability, and improve quality of native forage. Key strategies to achieve seasonal habitat objectives on public lands include:
    - Maintain no less than 50% habitat effectiveness of summer elk habitat.
    - Manage for no less than 70% habitat effectiveness within critical summer range (moist habitats and drainage heads) – these criteria are based on motorized road/trail densities.
    - Manage for no less than 80% habitat effectiveness (strive for 100%) on winter ranges – these criteria are based forage retention and minimal displacement of elk from winter ranges by recreationists.
    - Apply elk security guidelines so that at least 30% of each hunting district within the EMU meets the definition of "secure." Adequate cover must also be retained in order for motorized travel limitations to function. Studies indicate that areas with road/trail densities of no more than 1 mile per square mile of land significantly contribute to bull survivability.
- Identify winter range wherever it occurs on USFS and BLM managed lands, and cooperate with public land managers to protect, and where possible, enhance winter ranges with travel planning, noxious weed control, up-to-date grazing management plans, no-surface occupancy for oil and gas and mineral development, acute scrutiny of land trades, and timber management that meets elk habitat criteria. Such steps will: help alleviate private land depredation, tend to hold elk on public lands, create ethical hunting opportunity, and maintain the elk population.
- Provide elk seasonal use information and input to public land managers regarding revisions of allotment management plans.
- Encourage retention of all designated and defacto roadless areas for the benefit of undisturbed, quality elk habitats. Few such areas exist in this EMU and road construction into these areas should be discouraged. Effort will be made to preserve designated and de facto public land roadless areas to so they may contribute to effective summer ranges and secure fall habitat, and therefore help to minimize displacement of elk onto private property. The Electric Peak, Lazyman, and Jericho Roadless Areas comprise less than 4% of the Deer Lodge EMU.
- Pursue and monitor conservation easements on private lands where critical seasonal elk habitats are jeopardized.
- Provide technical assistance to land management agencies and county planning boards regarding land use plans and travel management with respect to elk habitat.
- Provide information to and communicate with the public about wildlife habitat through the media, publications, printed materials and personal contacts.

- Provide technical assistance to the HNF, BDNF, and BLM with planning and design of timber sale cutting units and road management systems with emphasis on maintaining elk security areas and secure travel corridors throughout the Little Blackfoot, Tenmile, Prickly Pear, and Boulder River drainages.
- Encourage land use and travel management practices that improve security so that no more than 40% of the bull harvest is taken by the end of the first week of the general hunting season. Security can be increased by minimizing motorized penetration of secure habitats while maintaining access to public lands.

GAME DAMAGE STRATEGIES

Elk numbers in the northern portion of HD 215 have increased to levels observed in the early 1990's, resulting in current landowner complaints. Apparent redistribution of elk within the EMU has resulted in more elk being observed in Fred Burr, Jake and O'Neill Creeks, and Helena Gulch, while fewer have been reported in the Hurd Creek, Spotted Dog and Trout Creek drainages. This apparent redistribution could have been related to wolf presence, however this wolf pack is no longer present.

Game damage depends on local conditions, but all hunting districts seasonally experience local game damage. Distribution of the elk population throughout the EMU shifts with varying severity of winters and human activities. Redistribution of elk from public land winter ranges onto private lands as a result of certain public land and travel management decisions, exacerbates game damage on private lands. Elk appear to have shifted their winter use from traditional winter range areas in HD 318 (Berkin Flats) to HD 215 where they are not disturbed by snowmobile use but where they also are not welcome on private lands.

FWP will:

- Maintain observed elk numbers within plan objectives while targeting local wildlife depredation sites with game damage hunts, stack yard materials, and aversive conditioning.
- Work with public land managers to alter human activities that occur on public lands that contribute to redistribution of wildlife onto private lands, and thus contribute to private land depredation.
- Evaluate the number of antlerless permits allocated for each hunting district (and portions of hunting district) and redistribute as necessary to achieve desired harvest in targeted areas.
- Explore creative means to encourage landowners who currently do not allow hunting, to consider limited access for at least certain groups of hunters (youth, disabled, seniors, graduates of advanced hunter education).
- Encourage dialogue between landowners with differing land management strategies where elk distribution is resulting in depredation to one or more landowners.
- Pursue efforts to increase the carrying capacity for elk of winter ranges on public lands.
- Participate in range improvement projects on public land winter ranges.

- Acquire critical winter ranges through fee title purchases or conservation easements using the Habitat Montana program.

ACCESS STRATEGIES

Access in this EMU is very high due to significant amounts of public land and landowner cooperation (with certain exceptions in HD 215). At the same time, excessive motorized use of public lands has diminished wildlife security and habitat integrity.

FWP will:

- Identify points where access is needed to public lands and provide recommendations to the appropriate land management authority.
- Recommend Designated Route access on public lands.
- Identify additional opportunities for block management projects.
- Pursue conservation easement implementation on important elk ranges.

POPULATION OBJECTIVES

The following objectives reflect approximate current conditions. These objectives have been acceptable to the hunting public as well as landowners within the EMU, with exceptions for local game damage situations where additional pressure is applied to local groups of elk.

1) Maintain the number of elk counted during post-season aerial trend surveys within 20% of 2,100 elk. Objectives by hunting district are: HD 215 – 1,000 elk; HD 318 – 500 elk and; HD 335 – 600 elk.
2) Maintain bull:100 cow ratios observed during post-season aerial surveys above a minimum of 10 bulls:100 cows.

POPULATION MANAGEMENT STRATEGIES

Elk numbers within the Deer Lodge EMU have been managed through antlerless permits and brow-tined bull regulations. Elk numbers have not exceeded objective and were below objective in 2002. Inadequate numbers of bulls are being recruited into the population to sustain current bull harvest levels (2001). If antlerless permits increase, this situation would be compounded through production of lower numbers of calves. Current (2001) annual harvest rates of approximately 360 antlerless elk appear to be depressing elk numbers below elk plan objectives. The annual harvest of 240 antlered elk is somewhat more than current annual male calf recruitment and the combined antlerless and antlered harvest in 2001 exceeded calf recruitment by about 150 animals.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits and/or A7 licenses. [The population is at the lower limit of the objective range with 150 antlerless permits in HD 318, 100 antlerless permits and 75 A7 licenses in HD 335, and 525 antlerless permits valid during portions of the season in HD 215.] (limited A-9/B-12 antlerless licenses (B-tags) may also be recommended).

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial surveys is between 20% above and 20% below objective (1,680 – 2,520 elk).

The Liberal Regulation is: brow-tined bull/antlerless regulation for a portion (up to the entire 5 weeks) of the general hunting season. (Limited A-7 and/or A-9/B-12 antlerless licenses (B-tags) may also be recommended).

The Liberal Regulation will be recommended if: the number of elk observed during post-season aerial surveys is more than 20% above objective (more than 2,520 elk).

The Restrictive Regulation is: limited antlerless permits and/or A-7 licenses.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial surveys is 20% or more below the EMU objective for 2 consecutive years.

Antlered:

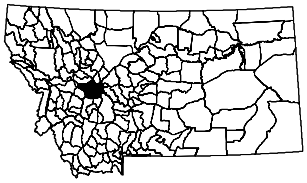
The Standard Regulation is: 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: bull:100 cow ratios observed during post-season aerial trend counts are at least 10 bulls:100 cows.

The Restrictive Regulation is: unlimited brow-tined bull/antlerless permits for a specific hunting district. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED PERMITS.

The Restrictive Regulation will be recommended if: bull:100 cow ratios observed during post-season aerial trend counts are less than 10:100 for 2 consecutive years. If a Restrictive regulation is implemented, and the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a standard season would again be recommended.

GRANITE BUTTE EMU
(Hunting Districts 284, 293, 339, and 343)



Description: The 1,113-square-mile Granite Butte EMU extends west from the Missouri River to Mineral Hill at the junction of State Route 200 and State Route 141, from Avon to East Helena along U.S. Highway 12 and north on Interstate 15 to the Causeway Road (Route 453) to the Missouri River and north to Holter Dam. About 50% of the unit is USDA – Forest Service (USFS) managed land and 10% is administered by USDI – Bureau of Land Management (BLM). The Continental Divide bisects the unit and includes MacDonald, Priest, Stemple, Flesher, and Rogers passes. The Granite Butte EMU includes Hunting District (HD) 284 (6,080 acres south of State Route 200), a small archery only hunting district along the Blackfoot River and adjacent to the town of Lincoln; HD 293 (304,966 acres) that is west of the Continental Divide extending from Rogers Pass south to MacDonald Pass, south of State Route 200, east of State Route 141 and north of U.S. Highway 12; HD 343 (189,613 acres) that is east of the Continental Divide extending from Flesher Pass to MacDonald Pass, south and west of State Route 279 and north of U.S. Highway 12 and; HD 339 (211,926 acres) that is west of HD 343 extending from near Rogers Pass south to the Lincoln Highway (State Route 279) and east to the Missouri River.

Approximately 79% of the EMU (563,112 acres) is available to elk. Summer range occurs almost entirely on public lands. Areas used during fall are generally also on public lands unless weather induces elk to move to the many private land winter ranges at lower elevations. Seventy to eighty percent of winter range occurs on private lands, although with public land management designed to encourage elk use (improved forage on winter range and avoidance of winter ranges by recreationists and others), perhaps as much as 40% of winter elk habitat could be provided on public lands. In the Granite Butte EMU, the Sleeping Giant Wilderness Areas occurs on BLM lands. Roadless Areas on the Helena National Forest (HNF) include Specimen Creek, Anaconda Hill, Crater Mountain, Ogden Mountain, and Nevada Mountain. Collectively these areas comprise less than 3% of the EMU. Although most of these areas provide quality elk habitat, in many cases the majority or all of the acreage in these roadless areas are within 1 mile of an existing road.

Public Access: The EMU is largely comprised of public lands (60%) and the majority of private lands (with some exceptions in HD 343 and HD 293) are also available to hunters with few or

only limited restrictions. Accessibility to public lands is good. Public access is plentiful for other forms of recreation as well. Motorized travel on public lands is regulated through USFS and BLM travel plans. Off-road motorized travel has been largely unregulated in the past, resulting in pioneering of travel routes and thus reduced habitat security and habitat effectiveness for elk. Much of the public land, and significant parcels of private land within the EMU is characterized by extensive timber harvest and roads. On public land, approximately 97% of elk habitat occurs within one mile of lands that are currently open to motorized travel.

Elk Populations: Numbers of elk counted have declined slightly from recent highs and currently 2,036 elk are distributed among 15 herd units (Figure 1). This is a density of about 2.3 counted elk per square mile of elk habitat. Current trend survey numbers (2,036) are at EMU objective (2,100). Portions of the EMU are experiencing local population abundance and game damage complaints, largely the result of private land refugia where hunting is not allowed. Composition of the population has shifted somewhat with decreases in the bull:100 cow and calf:100 cow ratios in HD 293 and increases in HDs 339 and 343. The average bull:100 cow ratio of 19:100 in 2002-2003 is an increase from 11:100, which was the average of the 3 HDs from 1999-2002.

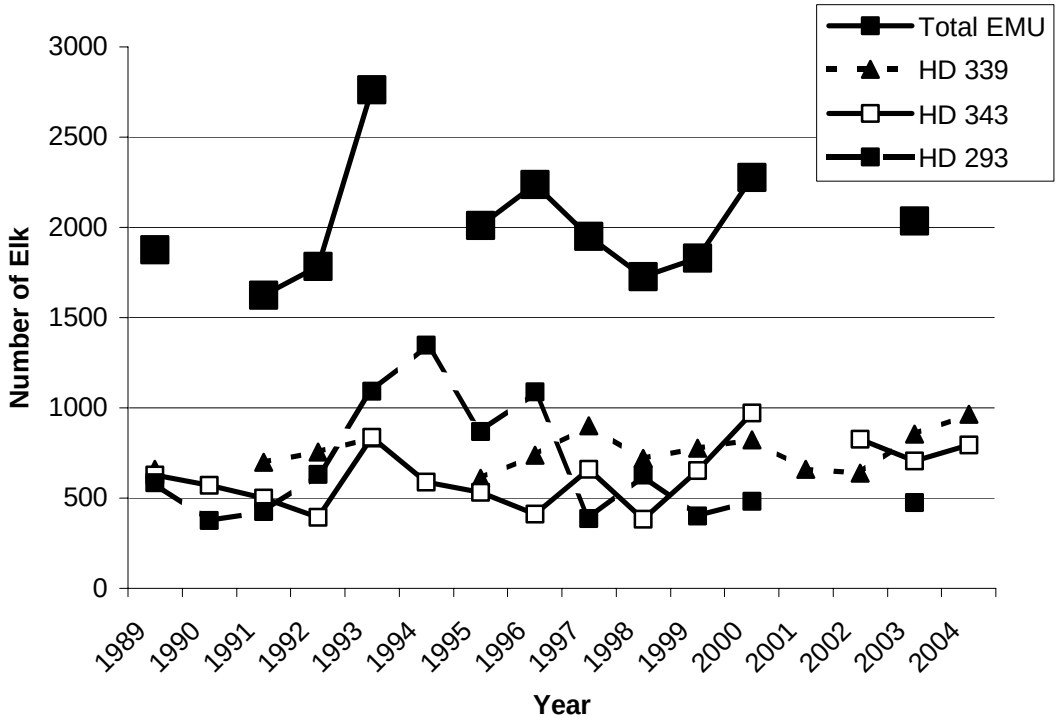


Figure 1. Number of elk observed during post-season aerial trend surveys in HDs 293, 339, and 343 during 1989-2004.

Recreation Provided: Yearlong recreational use of the EMU includes hunting, photography, and wildlife viewing. In 2001, the EMU provided 23,282 days of hunting recreation to 3,731 hunters. This represented a decline in hunter participation of 13% and a decline in hunter days afield of 17% since 1999. Limited backcountry-hunting opportunities occur in the Granite Butte

EMU. Wildlife viewing is featured by a popular boat tour along the Missouri River. Summer and winter recreational opportunities include photography and wildlife viewing. Elk may be observed from a variety of locations throughout the EMU including Highway 12 near Avon, Highway 141 near Nevada Lake, Highway 200 from Lincoln to Mineral Hill, and Highway 279 in the vicinity of Canyon Creek. Antler gathering is becoming increasingly popular, but has potential stress-related consequences to herds if the activity is conducted during late winter or spring.

Current Annual Elk Harvest: During 1999-2001, an annual average of 220 bulls and 275 antlerless elk were harvested in the EMU. The percent of annual bull harvest occurring during the first week of the general season was 36%, meeting the objective of less than 40% of the bull harvest occurring during the first week of the general season.

Accomplishments: Eight ranches in HD 293 totaling more than 50,900 acres are enrolled in the Block Management Program. Six properties in HD 339 totaling 78,748 acres and 4 properties totaling 19,718 acres in HD 343 also are enrolled in the Block Management Program.

FWP has 5 conservation easements with elk habitat totaling 34,961 acres in this EMU including the Mannix Brothers (HD 293), Sieben Ranch (2 easements in HD 339), Grady Ranch (HD 343), and O'Connell Ranch (HD 339). All easements are designed to maintain and improve elk habitat, provide public hunting opportunity, and permanently protect elk habitat from development.

Management Challenges: Some winter ranges, particularly in HDs 343 and 339 are at risk as housing development spreads across open winter range slopes. Not only is elk habitat threatened, but accessory impacts from adjacent recreation uses, uncontrolled pets, and removal of wildlife that is causing "damage" to property owners also must be addressed. The North Hills elk herd unit in HD 339 is in jeopardy as the entire south face of the North Hills is experiencing proliferation of housing development.

Elk security on public and private lands has become limited in areas where timber harvest has temporarily reduced cover and roads and motorized trails have increased elk vulnerability. Recreationists have driven off of existing roads, creating pioneered travel routes that impact elk security and habitat effectiveness on public lands.

Classified noxious weeds and other exotic plants are spreading throughout the EMU, reducing forage for elk.

Although individual wolves have been reported in the EMU since the 1980's, pack activity was not documented in this EMU until 2002. The potential impacts of established wolf pack(s) may influence future elk populations and management.

Although hunting opportunities are generally good and restrictions are relatively minimal in HD 339 and HD 293, various parcels of private land closed to hunting are creating impacts to adjacent landowners. During the hunting season, elk congregate on properties

closed to hunting, but once hunting seasons end elk move onto and forage on adjacent properties that have traditionally been open to hunting.

Extensive motorized use (full sized vehicles, OHVs, motorcycles) of public lands via USFS and BLM system roads as well as pioneered routes, illegal off-road use, livestock grazing and other uses of public lands has resulted in redistribution of elk from public lands and onto private properties. This has occurred even in otherwise secure habitats within HD 293 and HD 343.

Population Monitoring: **Elk trend surveys are generally conducted between January and March, and all winter range elk habitat (adjustments are made to accommodate mild weather years) are surveyed from the air in each hunting district. Total numbers, sex and age class, and location data are recorded. Data are recorded in database files and a report is written for each hunting district surveyed.**

SUMMARY OF PUBLIC COMMENT

Public comment indicated concern about possible over-harvest of bulls, a need to improve bull:100 cow ratios in some portions of the EMU, and maintenance of elk populations. Ranchers and some hunters have expressed concern about the presence of wolves. Concern also was expressed regarding off-road motorized travel during the hunting season, over-grazing of public lands by domestic livestock, and disturbance of elk on winter ranges by antler hunters. Landowners who have complained of too many elk in the past, are now concerned about the presence of wolves. Shortening the general elk season is not favored and concerns over private land refugia are growing.

MANAGEMENT GOAL

Manage all components of the elk population in a healthy condition, at levels that meet plan objectives, and cooperate with private and public land managers in management of elk habitats to provide diverse elk harvests and fair chase hunting experiences.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain 563,112 remaining acres of productive and secure elk habitats across the EMU.
2) Maintain elk security so that the elk harvest is distributed throughout the hunting season, with no more than 40% of the harvested bulls taken during the first week of the general season (a reflection of bull elk vulnerability).

HABITAT MANAGEMENT STRATEGIES

The HNF is preparing to embark upon a forest-wide travel plan in the next few years and the BLM is addressing the Medicine Rock and Sleeping Giant travel management but the North Hills area has not been addressed. Both HNF and BLM lands are under the

administrative umbrella of the National Forest-BLM OHV EIS Decision (2000) that disallows off-road or off-trail motorized travel. Motorized use of existing pioneered roads and trails continue to be allowed under this provision, and thus still severely compromise both habitat effectiveness and security for elk. Designated route travel management on public lands is being discussed and if route locations and densities are carefully considered, this would improve the quality of seasonal elk habitats as well as provide ethical hunting opportunities as called for by the Montana Hunter Behavior Advisory Council.

FWP will:

- Provide technical assistance to Helena National Forest and BLM land managers in programs designed to improve overall habitat effectiveness, decrease elk vulnerability, and improve quality of native forage. Key strategies to achieve seasonal habitat objectives on public lands include:
    - Maintain no less than 50% habitat effectiveness of summer elk habitat.
    - Manage for no less than 70% habitat effectiveness within critical summer range (moist habitats and drainage heads) – these criteria are based on motorized road/trail densities.
    - Manage for no less than 80% habitat effectiveness (strive for 100%) on winter ranges – these criteria are based on forage retention and minimal displacement of elk from winter ranges by recreationists.
    - Apply elk security guidelines so that at least 30% of each hunting district within the EMU meets the definition of "secure." Adequate cover must also be retained in order for motorized travel limitations to function. Studies indicate that areas with road/trail densities of no more than 1 mile per square mile of land significantly contribute to bull survivability.
- Identify winter range wherever it occurs on USFS and BLM managed lands, and cooperate with public land managers to protect, and where possible, enhance winter ranges with travel planning, noxious weed control, up-to-date grazing management plans, no-surface occupancy for oil and gas and mineral development, acute scrutiny of land trades, and timber management that meets elk habitat criteria. Such steps will: help alleviate private land depredation, tend to hold elk on public lands, create ethical hunting opportunities, and maintain the elk population.
- Provide elk seasonal use information and input to public land managers regarding revisions of allotment management plans.
- Encourage retention of all designated and defacto roadless areas for the benefit of undisturbed, quality elk habitats.
- Pursue and monitor conservation easements on private lands where critical seasonal elk habitats are in jeopardy.
- Provide technical assistance to land management agencies and county planning boards regarding land use plans and travel management with respect to elk habitat.
- Provide information to and communicate with the public about wildlife habitat through the media, publications, printed materials and personal contacts.
- Provide technical assistance to the HNF and BLM with planning and design of timber sale cutting units and road management systems.

GAME DAMAGE STRATEGIES

Game damage depends on local conditions, but all hunting districts seasonally experience local game damage. Distribution of the elk population throughout the EMU shifts with varying severity of winters. Elk will winter in HD 293 during mild to moderate winters, but a significant portion will move into HDs 339 and 343 during more severe winters to take advantage of east slope Chinook winds. Currently, several landowners in HD 343 do not allow public hunting, thus elk concentrate on these properties, exacerbating game damage complaints.

FWP will:

- Maintain elk numbers within EMU plan objectives while targeting local wildlife depredation sites with game damage hunts, stack yard materials, and aversive conditioning.
- Work with public land managers to alter human activities that occur on public lands that contribute to redistribution of wildlife onto private lands, and thus contribute to private land depredation.
- Evaluate the number of antlerless permits allocated for each hunting district (and portions of hunting district) and redistribute as necessary to achieve desired harvest in targeted areas.
- Explore creative means to encourage landowners who currently do not allow hunting, to consider limited access for at least certain groups of hunters (youth, disabled, seniors, graduates of advanced hunter education).
- Encourage dialogue between landowners with differing land management strategies where elk distribution is resulting in depredation to one or more landowners.
- Pursue efforts to increase the carrying capacity for elk of winter ranges on public lands.
- Acquire critical winter ranges through fee title purchases or conservation easements using the Habitat Montana program.

ACCESS STRATEGIES

Public access in this EMU is very high due to significant amounts of public land and landowner cooperation (with notable exceptions in HD 343). At the same time, excessive motorized use of public lands has diminished wildlife security and habitat integrity. As of 2003, two large landowners in HD 293 do not allow public hunting, and in HD 339 and HD 343, hunting is not allowed on at least 5 properties, thus complicating elk management.

FWP will:

- Identify points where access is needed to public lands and provide recommendations to the appropriate land management authority.
- Recommend Designated Route access on public lands.
- Identify additional opportunities for block management projects.
- Pursue implementation of conservation easement on important elk ranges.

POPULATION OBJECTIVES

The following objectives reflect current conditions. The current status has been acceptable to the hunting public as well as landowners within the EMU, with exceptions for local game damage situations where additional pressure is applied to local groups of elk.

1) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 2,150 elk (1,720-2,580). Objectives by hunting district are: HD 293 – 750 elk; HD 339 – 700 elk and; HD 343 – 700 elk.
2) Maintain a minimum of 10 bulls:100 cows in HDs 293 and 343 and 15 bulls:100 cows in HD 339 observed during post-season aerial trend surveys.
3) Maintain the average age of bulls harvested on either-sex permits in HD 339 at 5.5 years of age or greater.

POPULATION MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week either-sex archery regulation in HD 284, 6-week brow-tined bull/ antlerless elk archery regulation in HD 293 and HD 343, and 6-week spike bull/ antlerless elk archery regulation in HD 339 EXCEPT, see Restrictive regulations for Antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits and/or A7 licenses (limited A-9/B-12 antlerless licenses (B-tags) may also be recommended). [The population currently is being held at objective with 300-400 antlerless permits in HD 339, 350 A7 licenses in HD 343, 325 antlerless permits and unlimited A7 licenses in HD 293 valid on private land only, and an either-sex archery season in HD 284.]

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial trend surveys is between 20% above and 20% below objective (1,720 and 2,580 elk).

The Liberal Regulation is: brow-tined bull/antlerless (HDs 293 and 343) or spike/antlerless (HD 339) regulation for a portion of (up to the entire 5 weeks) the general hunting season (Limited A-7 and/or A-9/B-12 antlerless licenses (B-tags) may also be recommended).

The Liberal Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys are more than 20% above objective (more than 2,580 elk).

The Restrictive Regulation is: limited antlerless permits and/or A-7 licenses.

The Restrictive Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys are 20% or more below objective (less than 1,720 elk) for 2 consecutive years.

Antlered: HD 293 and HD 343 (Brow-tined Bull Regulations)

The Standard Regulation is: 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: bull:100 cow ratios observed during post-season aerial trend surveys are at least 10 bulls:100 cows.

The Restrictive Regulation is: unlimited brow-tined bull permits for a specific hunting district. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED PERMITS.

The Restrictive Regulation will be recommended if: bull:100 cow ratios observed during post-season aerial trend surveys are less than 10:100 for 2 consecutive years. If a Restrictive regulation is implemented, and the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a standard season would again be recommended.

Antlered: HD 284 (Unlimited Archery-Only Either-Sex Elk)

The general hunting season for HD 284 will remain an **archery-only** hunting district, open for hunting of either-sex elk during the archery and general season to provide diversity in hunting opportunity. This is a small hunting district surrounding the town of Lincoln, and for safety reasons, is best suited for archery hunting.

Antlered: HD 339 (Spike Bull General Season with Limited Either-Sex Permits)

> The general hunting regulation for HD 339 will remain a Spike Bull regulation (with limited permits for either-sex elk) to provide diversity in the bull age structure as well as diversity of hunting opportunity in Montana. This hunting district is one of only 2 spike/either-sex permit hunting districts among the 159 hunting districts in the state. Spike Bulls are: "any elk having antlers which do not branch, or if branched, the branch is less than four inches long measured from the main antler."

The Standard Regulation is: 5-week general season Spike Bull regulation with 15-30 either-sex permits valid during the 5-week general season.

The Standard Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys are at least 600 elk AND, post-season calf:100 cow ratios are at least 25:100 AND, post-season bull:100 cow ratios are at least 10:100 AND, age of BTBs taken with the either-sex permits average 5.5 years or greater.

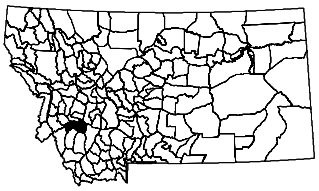
The Liberal Regulation is: 5-week general season Spike Bull regulation with 30-50 either- sex permits valid during the 5-week general season.

The Liberal Regulation will be recommended if: total numbers of elk observed during post-season aerial surveys are at least 700 elk AND, calf:100 cow ratios are at least 40 calves:100 cows AND, the bull:100 cow ratio is at least 15 bulls:100 cows for 2 consecutive years AND, the average age of harvested bulls on either-sex permits is more than 6.5 years old.

The Restrictive Regulation is: 3-week Spike bull general regulation with less than 15 either-sex permits valid for the 5-week general season.

The Restrictive Regulation will be recommended if: numbers of elk observed during post-season aerial trend surveys are below 600 for 2 consecutive years AND, post-season calf:100 cow ratios are below 25:100 for 2 consecutive years OR, post-season bull:100 cow ratios are less than 10:100 for 2 consecutive years OR, average age of BTBs taken with the either-sex permits is less than 5.5 years for 2 consecutive years.

FLEECER EMU
(Hunting Districts 319 and 341)



Description: This 630-square-mile EMU is southwest of Butte and encompasses the Fleecer Mountains and a portion of the Anaconda-Pintlar Range. About 80% of the unit is in public ownership, with the majority of acreage managed by the USDA Forest Service (USFS). The USDI Bureau of Land Management (BLM) manages important winter range near Wise River and Fleecer Mountain, and scattered parcels in the Big Hole. The FWP-owned Fleecer and Mount Haggin Wildlife Management Areas (WMAs) are also located in this EMU. About 20% of occupied elk habitat is in private ownership and some of this land provides important winter range for elk.

Public Access: Most of the EMU is easily accessible to the public. Land ownership changes in lower Willow Creek (HD 341) has created challenges to public land access and closed some previously open private land. Four Block Management Areas are currently maintained in the EMU. Cooperative road management programs are in effect over most of the area. Approximately 70% of the land base provides recreation characterized as "moderate to high levels of motorized access"; about 20% provides minimum motorized access, and 10% lies within the Anaconda-Pintlar Wilderness.

Elk Populations: The number of elk counted in the EMU during post-season aerial trend surveys is about 2,000 (Figure 1) with about 1,500 elk in Hunting District 319 and 500 in Hunting District 341. Substantial population increases during the past 7 years are the result of mild weather conditions not conducive to harvest, restrictive hunting seasons, secure fall habitat, and movement of elk from the Pioneers and Highlands to the Fleecer winter range in early 1997. Prior to 1997, the Fleecer elk herd was slowly increasing towards the objective of 1,100 elk observed. We counted more than 1,700 elk on the Fleecer winter range in 1997 and have consistently counted 1,400-1,500 elk since then. Although most of the unit is in public ownership, some important winter range on Fleecer Mountain is privately owned and high elk numbers have created conflicts that must be addressed through elk population reductions.

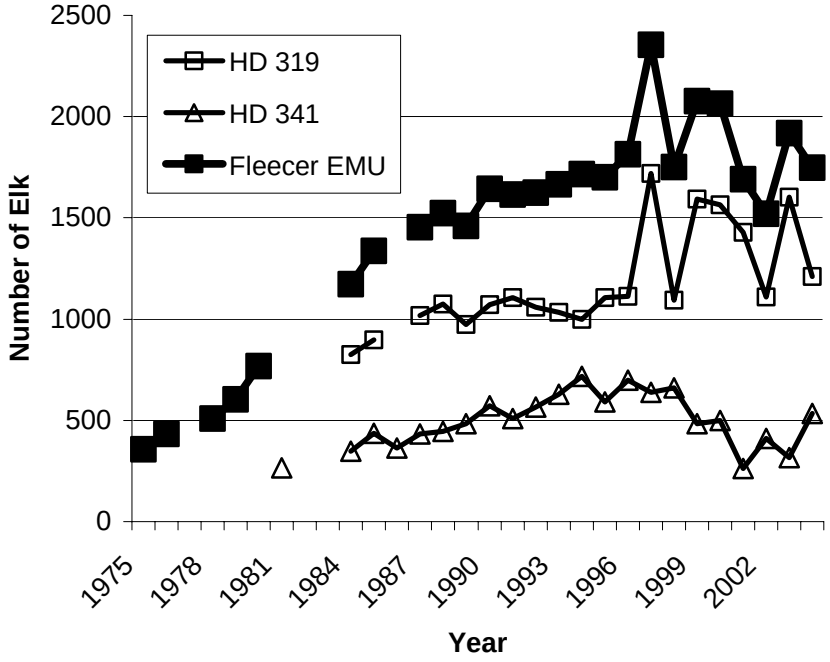


Figure 1. Number of elk counted during post-season aerial trend surveys in HD 319, HD 341, and Fleecer EMU Total, 1975-2004.

Recreation Provided: During 1999-2001, an annual average of 19,201 hunter days of recreation were provided to an average 2,694 hunters. These values represent an 8% increase in recreation days and an 11% increase in hunters from the 1991-1992 period. Seventy-three percent of EMU hunters and hunter days were in HD 319. Wildlife viewing opportunities occur throughout the EMU, in all seasons. Large numbers of wintering elk on the Fleecer WMA are easily observed from Interstate 15 and State Highway 43, near Divide.

Current Annual Elk Harvest: During 1999-2001, an annual average of 234 antlerless (164-322) and 181 antlered elk (120-271) were harvested in this EMU.

Accomplishments: Since implementation of the 1992 Elk Plan, FWP completed a conservation easement on the 1,600-acre Willow Glen Ranch. The easement allows hunting access, prohibits development, and prescribes livestock grazing. FWP also implemented and maintained several cooperative livestock grazing programs to ensure quality wildlife forage on FWP and private land. To address hunter access issues, FWP has maintained 4 Block Management areas in the EMU and coordinated travel management and other traditional land use concerns with the various state, federal, and private entities throughout the EMU.

Management Challenges: High numbers of elk on the Fleecer winter range are the greatest population management challenge. Elk numbers on the Fleecer face are currently 200-300 above the objective of 800 elk. Elk use public [BLM, USFS, FWP & Montana Department of Natural Resources and Conservation (DNRC)] and private land without regard to ownership and compete for forage intended for domestic livestock. FWP has tried to address high numbers of elk by increasing numbers of antlerless permits and issuing A-7 licenses valid to 15 December. This program has failed to reduce elk numbers and other options such as general season BTB/antlerless and antlerless hunting must be considered.

Damage to fences by elk is another concern. Grazing exchange agreements intended to create acceptance of some elk use on private land will continue with adjacent landowners. Other, indirect methods to create "elk friendly" fence crossings, provide clearly worded signs, and concise hunting permission instructions will ease the management burden that high elk numbers and associated hunting demand has created for private landowners in the Fleecer area.

Wolves are pioneering the Fleecer EMU and will likely establish packs that have the potential to rapidly increase. The degree of impact of wolves on elk populations is unknown at this time, but will be a consideration in future management decisions.

Population Monitoring: Annual trend surveys are conducted during winter by fixed-wing aircraft. Total numbers of elk observed, sex and age class, and location are recorded.

SUMMARY OF PUBLIC COMMENT

FWP was challenged by a neighboring landowner to address problems caused by high numbers of elk on the Fleecer winter range. Sportsmen expressed concern over road restrictions imposed on general season hunters, but not archery hunters. Interest in a vehicular retrieval program was also expressed. Extending the time of validity of antlerless permits following general seasons that do not produce adequate harvest was supported as a way to bring populations in line with objectives. Hunter crowding has intensified over the last decade and has frustrated many hunters.

MANAGEMENT GOAL

Reduce elk populations to stated objectives, commensurate with available public and private habitat. Cooperate with land managers in the management of elk habitat to provide a healthy elk population and a diversity of elk hunting experiences.

HABITAT OBJECTIVES

1) Develop and maintain cooperative programs that encourage public and private land managers to maintain 352,000 acres of occupied elk habitat.
2) Promote maintenance of elk security so that elk harvest is distributed throughout the season, with no more than 30% of the bull harvest taken during the first week of the general season (3-year average).

HABITAT MANAGEMENT STRATEGIES

FWP will work with the USFS and BLM to:

- Improve elk security throughout the transition range used by the Fleecer elk herd, especially in the Fishtrap, Mudd Creek, Seymour, Twelvemile and Bear Gulch drainages, where elk security has been substantially reduced through logging.
- Identify areas where either road closures or openings are necessary to enhance elk security or facilitate harvest and recommend appropriate changes to the Southwest Montana Interagency Access and Travel Plan.
- Provide technical assistance and information in revisions and updating of grazing allotment management plans.
- Cooperate with the Beaverhead-Deerlodge National Forest and BLM to improve elk habitat through projects designed to improve vegetative diversity and maintain or increase carrying capacity on winter range. Emphasize the importance of sagebrush-grassland communities through the use of current Memorandum of Understandings. Reduce conifer establishment on important shrub and grassland habitats on Mount Haggin and Fleecer WMAs.
- Represent wildlife habitat needs and hunting recreation issues in National Fire Plan projects.

GAME DAMAGE STRATEGIES

Each game damage situation will be addressed based on its own specific circumstances. The following management strategies will help to alleviate game damage complaints by maintaining high quality elk habitat on private lands and enhancing landowner tolerance for elk:

- Maintain the current cooperative livestock grazing agreement with a landowner adjacent to the Fleecer WMA. This agreement is designed to reduce game damage conflicts, enhance landowner tolerance for wintering elk, and improve the condition of elk winter range.
- Maintain the current rest-rotation livestock-grazing program on the Mount Haggin WMA, which is designed to provide high quality year-round elk habitat.
- Employ herders, haystack fencing and cooperative fence repair/replacement projects to minimize elk damage and rangeland competition on private land. Utilize late or special game damage hunts where appropriate.

ACCESS STRATEGIES

FWP will:

- Identify opportunities for Block Management or other cooperative access programs with landowners.
- Encourage and support federal and state agencies to secure access to public lands where appropriate.

POPULATION OBJECTIVES

1) Maintain 1,475 (range, 1,250-1,700) elk observed during post-season aerial trend surveys. For HD 319, the maximum is 1,100 observed elk, with no more than 800 wintering on the Fleecer face. For HD 341, the maximum is 600 observed elk (an increase from 500 currently).
2) Maintain bull:100 cow ratios observed during post-season aerial surveys of at least 10:100.

POPULATION MANAGEMENT STRATEGIES

Some initial public comment indicated that hunter crowding is an issue in this EMU. If further public comments indicate that hunter crowding at current levels (2000-2002 average) is a major issue, FWP will recommend issuing unlimited or limited permits based on hunter number criteria. The following criteria will be used to establish unlimited/limited permit regulations to reduce hunter crowding:

7) Average hunter numbers for 2000-2002 will be the "benchmark".
8) Unlimited/Limited permits would be considered only for hunter numbers occurring in the Standard or Restrictive Packages
9) The goal of issuing unlimited permits would be to reduce hunter numbers by 10% from the 2000-2002 average (from 2,844 to 2,560).
10) Unlimited or limited permits would apply to both archery and the general season hunters.
11) Unlimited permits would be eliminated if a 15% reduction in hunters from the 2000-2002 average were achieved (2,844 to 2,420).
12) If unlimited permits were unsuccessful in achieving the desired reduction in hunter numbers after 2 years of application, then limited permits (numbers based on 10% reduction from 2000-2002 average) would be recommended.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation; EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: 1.) limited brow-tined bull/antlerless permits (300-350 in HD 319 and 175-225 in HD 341) valid hunting district wide for the 5-week general season OR; 2.) 1-2 weeks general season brow-tined bull/antlerless regulations [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is within a range of 1,250-1,700 elk [(810-1,100 elk) in HD 319 and (445-600 elk) in HD 341].

The Liberal Regulation is: 1.) 4-5 weeks general season brow-tined bull/antlerless regulations OR; 2.) 5-week general season antlerless ONLY. [Limited A-7 and/or A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 1,700 elk (more than 1,100 in HD 319 and more than 600 elk in HD 341.

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above) the number of elk observed during post-season aerial trend surveys remains more than 1,700 elk (more than 1,100 in HD 319 and more than 600 elk in HD 341.

The Restrictive Regulation is: limited (less than 350 in HD 319 and less than 175 in HD 341) brow-tined bull/antlerless permits valid for the 5-week general season.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is less than 1,250 elk (less than 810 elk in HD 319 and less than 445 elk in HD 341 for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

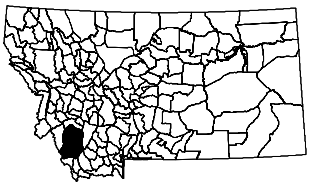
The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10:100.

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls by HD; OR **2.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) Unlimited permits for brow-tined bulls by HD will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10:100 for 2 consecutive years. If a Restrictive regulation is implemented, and the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a standard season would again be recommended.

2.) Limited permits for antlered bulls will be recommended if: the bull:100 cow ratio observed during the post-season aerial trend survey remains less than 10:100 after 2 consecutive years of application of unlimited permits.

PIONEER EMU
(Hunting Districts 329, 331, and 332)



Description: This EMU is located west and north of Dillon and extends to the Big Hole valley. The EMU encompasses approximately 2,040 square miles, and is moderately steep with generally good security cover. Approximately 55% of the land base lies within lands administered by the USDA U.S. Forest Service (USFS) - Beaverhead National Forest. The USDI Bureau of Land Management (BLM) administers several large blocks of land, located mostly in the Rocky Hills and in the southern portion of the East Pioneers.

Public Access: There is reasonable access to public land in most of the unit, although the area generally has a low open road density. However, access to public lands is quite limited along the southeastern portions of the Big Hole Divide, where several non-resident landowners have restricted access. Significant roadless areas exist in portions of HDs 331 and 332. An important unsecured access through private land is located in Lost Creek in the East Pioneers, and is the focus of ongoing negotiations with the landowner.

Elk Populations: Numbers of elk observed on aerial trend flights have decreased substantially since 1992 (Figure 1). Liberalized hunting seasons, combined with low calf recruitment and some overwinter mortality during the winter of 1996-1997 resulted in a decrease in numbers of elk observed during post-season aerial surveys. Survey conditions were poor during 2004, however, and elk numbers may not have declined to the extent portrayed in Figure 1.

Recreation provided: The EMU provided an annual average 26,217 days of hunting recreation for 6,537 hunters during 1999-2001.

Wildlife viewing opportunities exist along the entire west face of the West Pioneers. Additionally, elk are observable from U.S. Highway 278, in Upper Horse Prairie, and on Bachelor Mountain.

Annual Elk Harvest: During 1999-2001, an average of 1,315 elk were harvested in this EMU annually. This included an annual average of 682 bulls and 633 antlerless elk.

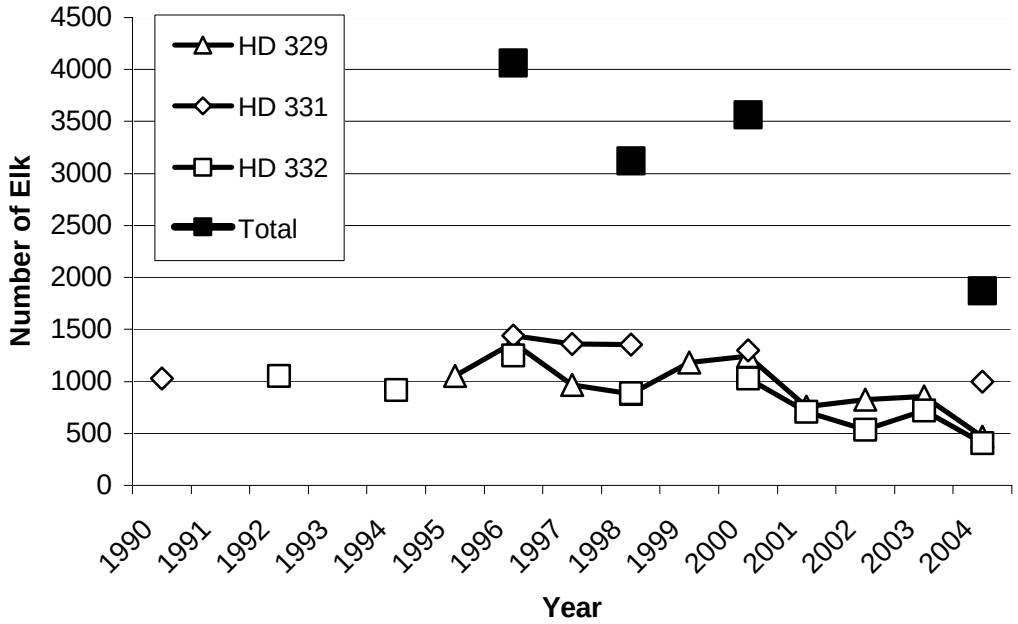


Figure 1. Number of elk counted during post-season aerial trend surveys of the Pioneer EMU, 1990-2004.

Accomplishments: The Hirschy Conservation Easement, also within the Sapphire EMU, was completed in January 1998, and protected 10,829 acres of important elk habitat.

Comment was provided to state and federal land management agencies on timber sales, grazing allotments, road management activities, and subdivision proposals in the area encompassing the EMU. Input also was provided relative to the Grasshopper fuels reduction project.

Desired reductions in elk numbers were achieved by changes in hunting regulations. Since 1992, elk numbers observed during post-season aerial surveys in HD 329 were reduced by 40% (from a high of 1,373 to 823). In HD 332, numbers of elk observed were reduced by approximately 44% (from a high of 1,251 to 705). In HD 331, where winter habitat is much less concentrated than the aforementioned HDs, elk numbers were reduced only slightly, from a high of 1,439 to 1,299 observed elk in 2000, the last year good survey conditions existed in this HD.

Management Challenges: Several nonresident landowners limit access to elk inhabiting Coyote Creek in the southeast portion of the hunting district. Although we have reduced elk numbers by over 40% during the last decade in HD 329, local game damage problems still exist because of this access situation, and will likely intensify.

Several traditional landowners in the area adjacent to Coyote Creek experience game damage some years. However, early and/or late hunts have not been successful in solving the problem,

because shortly after the initiation of the hunt, the elk move to areas where hunting is not allowed.

Additionally, several landowners in the lower Grasshopper Valley have restricted hunting to the point that elk are secure on their lands, and do not move to traditionally used public lands during the fall hunting season.

Approximately 75 elk cause summer crop damage on private land in the Lost Creek area. Also, during some years, local elk depredation occurs on private land in the Harriet Lou area as a result of a 'sanctuary' created by lands closed by a nonresident landowner.

Population Monitoring: Complete coverage surveys of elk winter range are conducted annually via fixed-wing aircraft for all hunting districts within the Pioneer EMU. In some years with very low snow pack and wide distribution of elk, results do not represent comparable trend counts, only classification data. In these years, even classification data may not accurately represent proportions of widely distributed bulls.

SUMMARY OF PUBLIC COMMENT

Hunter crowding has intensified in recent years in this EMU as a result of liberal hunting opportunities (any-bull seasons), numerous either-sex permits, A-7 licenses, and a number of special hunts. Crowding occurs during both the archery and general seasons. Significant concern is expressed among sportsmen and traditional landowners about loss of access, and the unavailability of elk on lands closed by nonresident landowners. Some game damage is occurring to some of these traditional landowners in these areas where elk are not available for harvest. Block management remains very popular among hunters, and strong support exists for the expansion of that program. A-7 licenses remain under-subscribed in hunting districts 331 and 332. However, strong support exists for A-7 licenses in hunting district 329, mainly as a result of excellent success there.

MANAGEMENT GOAL

Manage elk populations within biological and social tolerances, and cooperate with public and private land managers/landowners in the management of elk habitat with an emphasis on maximizing hunter opportunity to harvest all age classes of bulls in a backcountry setting.

HABITAT OBJECTIVES

1.) Develop cooperative programs that encourage public and private land managers to maintain over 951,000 acres of productive elk habitat.
2.) Work with land management agencies to maintain fall elk security areas so that elk harvest is distributed throughout the season, with no more than 30% of the harvest of bulls occurring during the first week of the season.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Evaluate and provide recommendations on proposed logging, burning, grazing, mining, housing and recreational developments with regard to their potential impacts to elk and their habitats. Concerns will focus on maintaining elk habitat security adjacent to fall/winter ranges, and along bull elk travel corridors.
- Provide technical assistance to appropriate state and federal agencies to evaluate the potential effects of the National Fire Plan on elk and their habitats.
- Provide technical assistance to all land management agencies regarding travel planning.
- Identify potential projects that will preserve open space and traditional agriculture through the use of conservation easements.
- Work with public and private entities to promote livestock grazing that benefits vegetation, soils and wildlife. Private landowner incentives should be considered to protect important wildlife habitats on private land.

GAME DAMAGE STRATEGIES

Each game damage situation will be addressed based on its own specific circumstances. FWP has a set of options including early and late hunts, stackyard protection, herding, directing hunters to specific areas where elk are causing problems, or kill permits. FWP game damage policy establishes the rules for eligibility to use these measures. Block management and A-9/B-12 licenses (B-tags) may also be utilized to increase elk harvest.

ACCESS STRATEGIES

FWP will:

- Continue working on the Lost Creek access. Also, continue to communicate with nonresident landowners to solve the 'sanctuary' situation.
- Identify and pursue new block management opportunities.

POPULATION OBJECTIVES

Population objectives were established at levels generally lower than many sportsmen desired, but higher than some landowners desired. The objective for numbers of elk therefore represents a landowner tolerance/sportsmen carrying capacity that considers both viewpoints. FWP recognizes that game damage may occur under some conditions even at low population levels.

1.) Maintain 2,700-3,200 elk observed during post-season aerial surveys in HDs 329, 331, and 332. This would include a maximum of 900 elk in HD 329, 1,400 elk in HD 331, and 900 elk in HD 332.
2.) Maintain a minimum of 10 bulls:100 cows observed in post-season aerial surveys.

POPULATION MANAGEMENT STRATEGIES

Some initial public comment indicated that hunter crowding is an issue in this EMU. If further public comments indicate that hunter crowding at current levels (2000-2002 average) is a major issue, FWP will recommend issuing unlimited or limited permits based on hunter number criteria. The following criteria will be used to establish unlimited/limited permit regulations to reduce hunter crowding:

13) Average hunter numbers for 2000-2002 will be the "benchmark".
14) Unlimited/Limited permits would be considered only for hunter numbers occurring in the Standard or Restrictive Packages
15) The goal of issuing unlimited permits would be to reduce hunter numbers by 10% from the 2000-2002 average (from 6,732 to 6,060).
16) Unlimited or limited permits would apply to both archery and the general season hunters.
17) Unlimited permits would be eliminated if a 15% reduction in hunters from the 2000-2002 average were achieved (6,722 to 5,720).
18) If unlimited permits were unsuccessful in achieving the desired reduction in hunter numbers after 2 years of application, then limited permits (numbers based on 10% reduction from 2000-2002 average) would be recommended.

REGULATION PACKAGES

Six-week either-sex archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

<u>The Standard Regulation is:</u> 1.) limited either-sex permits for the 5-week general season OR; 2.) 1-2 weeks general season either-sex regulations. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is within 2,700-3,200 elk in the EMU. This would include a maximum of 900 elk in HD 329, 1,400 elk in HD 331, and 900 elk in HD 332.

<u>The Liberal Regulation is:</u> 1.) 4-5 weeks general season either-sex regulations OR; 2.) 5-weeks general season antlerless ONLY. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 900 elk in HD 329, 1,400 elk in HD 331, and 900 elk in HD 332.

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above) the number of elk observed during post-season aerial trend surveys remains more than 900 elk in HD 329, 1,400 elk in HD 331, and 900 elk in HD 332.

The Restrictive Regulation is: limited either-sex or brow-tined bull/antlerless permits valid for the 5-week general season.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is less than 760 in HD 329, 1,180 in HD 331, and 760 in HD 332 for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season antlered bull regulation.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10:100.

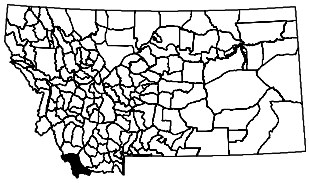
The Restrictive Regulation is: **1.)** 5-week general season brow-tined bull regulation OR; **2.)** unlimited permits for antlered bulls by HD OR; **3.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) A brow-tined bull regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10:100 for 2 consecutive years. If a Restrictive regulation is implemented, and the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a standard season would again be recommended.

2.) **Unlimited permits for antlered bulls by HD will be recommended if: after 2 consecutive years of application of a brow-tined bull regulation the bull:100 cow ratio observed during post-season aerial trend surveys remains less than 10:100. If the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a brow-tined bull regulation would be recommended.**

3.) ***Limited permits for antlered bulls will be recommended if: the bull:100 cow ratio observed during the post-season aerial trend survey remains less than 10:100 after 2 consecutive years of application of unlimited permits.***

TENDOY EMU
(Hunting Districts 300, 302, and 328)



Description: Located immediately southwest of Clark Canyon Reservoir, this 1,028-square-mile EMU extends from Interstate 15 to the Continental Divide along the Idaho border between Monida Pass and Lemhi Pass. Scattered timber cover, moderate road densities, and moderate to steep topography characterize most of the area. Elk use about 70% of this EMU at some time during the year. Of land used by elk, 56.6% is administered by the U. S. Forest Service – Beaverhead National Forest (USFS), 23.6% by USDI – Bureau of Land Management (BLM), 5.7% by Montana Department of Natural Resources and Conservation (DNRC), and 14.1% is private land.

Public Access: Public hunting access in the EMU is generally good, with several notable and significant exceptions. Recently, several nonresident landowners have closed large acreages of private land to public access, thus providing a "refuge" for elk.

Elk Populations: Elk population trend counts (Figure 1) indicate that elk numbers are within elk plan objectives, with the exception of HD 328, where the objective for elk counted is 700 elk and we observed 919 elk in 2003. However, about 500 of these elk have found a "sanctuary" on private land closed to hunting in Trail Creek and are not accessible to hunters to achieve the reduction in numbers targeted by any FWP harvest regulation. Trend counts were down considerably in 2004, however counting conditions were considered poor and the elk population likely did not decline to the extent portrayed in Figure 1.

Recreation Provided: This EMU provided an average of 15,515 days of hunter recreation for 3,200 elk hunters annually during 1999-2001. This is significantly higher than was recorded a decade ago, when a total of 8,500 days of hunter recreation was provided for 1,700 hunters. This increase in hunters and hunter days has not been able to affect a population reduction to objective level in HD 328 because of the private land "refuge" there.

Wintering elk can be observed from I-15 near Lima, State Highway 324, the Little Sheep Creek Road, and at various locations along the Medicine Lodge Scenic Byway.

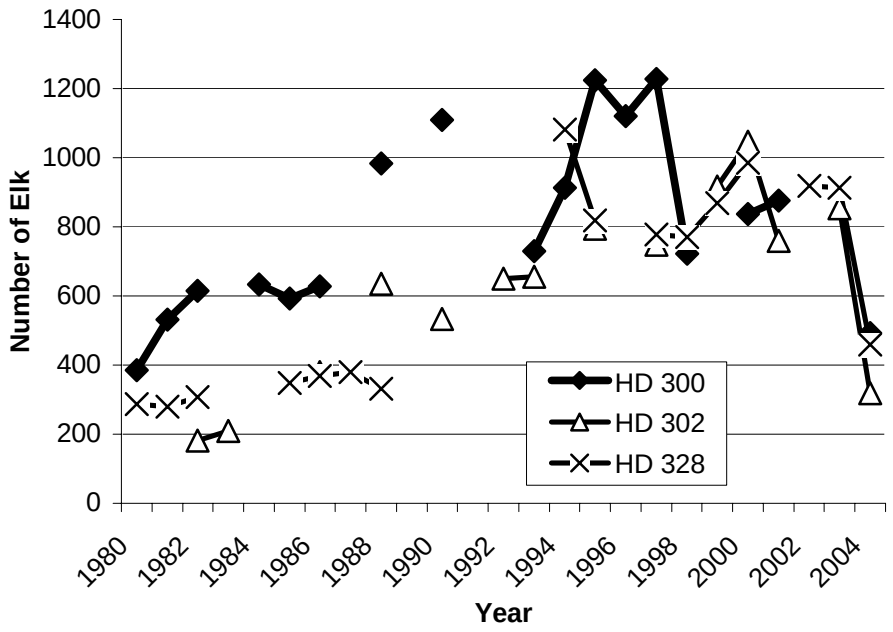


Figure 1. Number of elk counted during post-season aerial trend counts in HDs 300, 302, and 328, 1980-2004.

Current Annual Elk Harvest: During 1999-2001, an average 754 elk, including 388 antlered and 366 antlerless elk, were harvested in this EMU annually.

Accomplishments: A total of 6 Block Management Areas and one conservation easement were established in this EMU. A total of 62,000 acres are under Block Management contract, and 14,650 acres are included in the Dragging 'Y' Conservation Easement in the Tendoy and Pioneer EMUs.

Management Challenges: The primary management challenge is negotiating hunter access to elk inhabiting HD 328. Specifically, providing access to those elk finding "refuge" on private land in Trail Creek, where they are unavailable for management. Similarly, elk inhabiting private lands in the north end of the Lima Peaks are finding a de facto sanctuary there as well

A chronic depredation problem occurs in the southeast portion of HD 302, where elk cause crop damage in late summer/early fall during dry years. We have addressed this problem with a combination of herders and early and late seasons. These approaches have provided limited success.

Hunter crowding has increased during the last decade, with hunter numbers and hunter days nearly doubling during that period.

Population Monitoring: **Complete coverage fixed-wing aerial surveys of elk winter range are conducted annually in the three HDs comprising this EMU. During open winters, when elk are not concentrated on traditional winter ranges, or when some elk remained in Idaho, survey data was too incomplete to provide population trend information in both HDs 300 and 328. In those years, flight data were only useful for sex/age classifications. The proportion of bulls also may not be accurately represented in these years.**

SUMMARY OF PUBLIC COMMENT

Complaints about excessive numbers of hunters are one of the most common comments received for this EMU. Hunter shift into this EMU is a result of liberalized seasons, elk population density, the observability of elk in this open country, and increasingly restricted hunting seasons in other hunting districts and regions. Some hunters seem to be selecting for the particular hunting opportunities they find in this EMU, as evidenced by the significant increase in both hunters and hunters days over the past decade.

Another significant issue is the portion of the elk population in HD 328 (Trail Creek) that is spending the hunting season on property closed to hunting. Hunters express frustration about the loss of hunting opportunity and some neighboring landowners express frustration with the game damage that results from this situation.

MANAGEMENT GOAL

Manage elk populations within biological and social tolerances, and cooperate with land managers in the management of elk habitat with an emphasis on maximizing hunter opportunity while providing for the biological needs of elk.

HABITAT OBJECTIVE

Continue to participate in cooperative programs that encourage public and private land managers to maintain 504,000 acres of occupied elk habitat.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- **Evaluate proposed logging, grazing, mining, residential subdivisions, and recreational developments with regard to their potential impacts on elk and their habitat.**
- Provide technical assistance to appropriate State and Federal Agencies that will help evaluate the potential effects of the National Fire Plan on elk and their habitats.
- Cooperate with all land management agencies to provide input into travel planning.
- Identify potential projects that will preserve open space and traditional agriculture through the use of conservation easements.

- Work with public and private entities to promote livestock grazing practices that benefit vegetation, soils, and wildlife. A variety of private landowner incentives should be considered to protect important wildlife habitats on private lands.

- **Work with public land managers to maintain important security habitat in this low security environment.**

GAME DAMAGE STRATEGIES

FWP will:

- Address chronic game damage in a portion of HD 302 by the use of A-9/B-12 antlerless licenses valid during the period from 15 August to 15 February.
- **Maintain lines of communication with the private landowner or his manager on the "refuge" that exists in Trail Creek (HD 328), and also with the nonresident landowner in the Lima Peaks and Little Sheep Creek country. Through these conversations, try to gain access for hunters to achieve elk population reduction.**

ACCESS STRATEGIES

FWP will:

- **Continue to pursue potential solutions to the hunter access problem in Trail Creek of HD 328.**
- Continue as a cooperator in the development of the Southwest Montana Interagency Access and Travel Plan.

POPULATION OBJECTIVES

1.) Maintain the number of elk observed during post-season aerial surveys between 1,800 – 2,300 elk in hunting districts 300, 302, and 328. This EMU objective includes 700-900 elk in HD 300, 550-700 elk in HD 302, and 550-700 elk in HD 328 (this number does not include the approximately 500 elk unavailable to hunters in the Trail Creek area in HD 328). If hunter access to significant numbers of these elk could be obtained, the objective would be to reduce that segment by about half.
2.) Maintain at least 10 bulls:100 cows in the total elk observed during post-season aerial surveys.

POPULATION MANAGEMENT STRATEGIES

Some initial public comment indicated that hunter crowding is an issue in this EMU. If further public comments indicate that hunter crowding at current levels (2000-2002 average) is a major issue, FWP will recommend issuing unlimited or limited permits based on hunter number criteria. The following criteria will be used to establish unlimited/limited permit regulations to reduce hunter crowding:

19) Average hunter numbers for 2000-2002 will be the "benchmark".

20) Unlimited/Limited permits would be considered only for hunter numbers occurring in the Standard or Restrictive Packages
21) The goal of issuing unlimited permits would be to reduce hunter numbers by 10% from the 2000-2002 average (from 3,227 to 2,905).
22) Unlimited or limited permits would apply to both archery and the general season hunters.
23) Unlimited permits would be eliminated if a 15% reduction in hunters from the 2000-2002 average were achieved (3,227 to 2,740).
24) If unlimited permits were unsuccessful in achieving the desired reduction in hunter numbers after 2 years of application, then limited permits (numbers based on 10% reduction from 2000-2002 average) would be recommended.

REGULATION PACKAGES

Six-week either-sex archery regulation (HDs 300 & 328) or brow-tined bull/antlerless elk regulation (HD 302) EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: 1.) limited either-sex (HDs 300 and 328) or brow-tined bull/antlerless (HD 302) permits for the 5-week general season OR; 2.) 1-2 weeks general season either-sex (HDs 300 and 328) or brow-tined bull/antlerless (HD 302) regulations. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is within the HD objective range.

The Liberal Regulation is: **1.)** 4-5 weeks general season either-sex (HDs 300 and 328) or brow-tined bull/antlerless (HD 302) regulations OR; **2.)** 5-week general season antlerless ONLY regulation. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed during post-season aerial trend surveys is above the maximum HD objectives.

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above) the number of elk observed during post-season aerial trend surveys remains above the maximum HD objectives.

The Restrictive Regulation is: limited either-sex (HDs 300 and 328) or brow-tined bull/antlerless (HD 302) permits valid for the 5-week general season.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is below the minimum HD objectives for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season either-sex (HDs 300 and 328) or brow-tined bull/antlerless (HD 302) regulations.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10:100

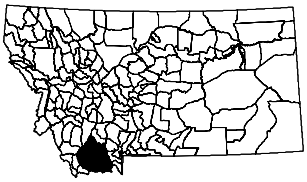
The Restrictive Regulation is: **1.)** 5-week general season brow-tined bull regulation (HDs 300 and 328) OR; **2.)** unlimited permits for brow-tined bulls by HD OR; **3.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) A brow-tined bull regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10:100 for 2 consecutive years. If a Restrictive Regulation is implemented, and the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a Standard Regulation would again be recommended.

2.) **Unlimited permits for brow-tined bulls by HD will be recommended if: after 2 consecutive years of application of brow-tined bull regulations the bull:100 cow ratio observed during post-season aerial trend surveys remains less than 10:100. If the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a brow-tined bull regulation would be recommended.**

3.) Limited permits for antlered bulls will be recommended if: the bull:100 cow ratio observed during the post-season aerial trend survey remains less than 10:100 after 2 consecutive years of application of unlimited permits.

GRAVELLY EMU
(Hunting Districts 322, 323, 324, 325, 326, 327 and 330)



Description: This 3,044-square-mile EMU [2,181 square miles (75%) are occupied by elk] encompasses the Gravelly, Greenhorn, Snowcrest, Centennial, and Blacktail mountain ranges of southwest Montana and includes 7 hunting districts (HDs). With the exception of the Snowcrest and Centennial Mountains, which are steep and rugged, the unit consists primarily of gentle, rolling terrain, even at high elevations. The USDA –Forest Service (USFS) Beaverhead-Deerlodge National Forest, administers about 24% of the EMU, about 20% is administered by the USDI – Bureau of Land Management (BLM), 13% by the Montana Department of Natural Resources and Conservation (DNRC), and about 37% is private land. The area of elk distribution includes 33.5% USFS land, 23.1% BLM land, 12.7% DNRC land, and 26.3% private land. However, weighted by numbers and time spent, about 71% of locations of radio-collared elk throughout the year were on USFS lands (Hamlin and Ross 2002). Three FWP-administered Wildlife Management Areas (WMAs) are located in this EMU (Blacktail, Wall Creek and Robb-Ledford WMAs) and about 45% of winter locations of radio-collared elk were on the WMAs and 37% on USFS land (Hamlin and Ross 2002).

Public Access: Most of the EMU is easily accessed by road. The Wall Creek, upper Elk River, and west half of the Snowcrest Range Area Closures are the primary areas without road access that provide elk security. Public hunting access is good in most of the unit except for portions of the west side of the Snowcrest and Greenhorn ranges, northeast side of the Gravelly Mountains, and the Blacktail Mountains.

Elk Populations: Elk populations increased in this EMU following FWP acquisition of elk winter ranges in the 1960s and 1970s. The acquisition of the Robb-Ledford WMA in 1988 has also fostered a continued population increase. In recent years, the number of elk counted during post-season aerial trend surveys has been 8,000-8,500 (Figure 1). This total (Figure 1) does not include HD 322, where 430 elk were counted during 2004. Thus for the entire EMU, about 9,000 elk were counted post-season 2004. Post-season bull:100 cow ratios have ranged from 11-18 bulls:100 cows recently.

Recreation Provided: The EMU provided an annual average of 60,836 days of hunting recreation to about 11,825 hunters during 1999-2001. Wintering elk can often be seen on the Wall Creek WMA, from U.S. Highway 287 just south of Indian Creek, and the public often drives the Blacktail road to observe elk on the Blacktail WMA, southeast of Dillon. Wintering elk can also be observed from the Ruby River road.

Current Annual Elk Harvest: An annual average of 2,537 elk (990 antlered and 1,543 antlerless) were harvested during 1999-2001 in this EMU. With a brow-tined bull regulation, the bull harvest has been almost entirely 2- year-old or older bulls. Bulls with 6 points on at least 1 antler averaged 15% of total bull harvest during 1999-2001.

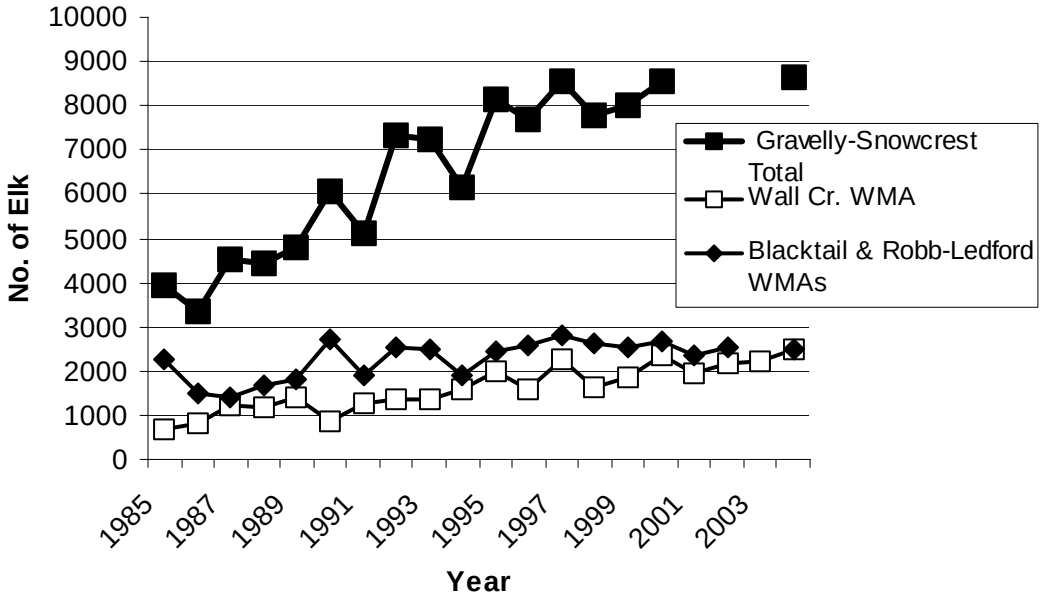


Figure 1. Number of elk observed during post-season aerial trend surveys in the Gravelly-Snowcrest Mountains, 1985-2004 (Total does not include 430 elk in HD 322).

Accomplishments: FWP has worked with land management agencies to review and evaluate potential impacts of timber sales and burn projects in sagebrush and aspen habitat on elk, elk habitat, and elk management. FWP has also worked with land management agencies and private landowners to review and evaluate potential impacts on elk, elk habitat, and elk management of new and existing livestock Allotment Management Plans. FWP has maintained rest-rotation grazing systems on the Wall Creek and Robb-Ledford WMAs in an attempt to improve vegetation condition, increase elk winter forage quality and quantity, and increase the tolerance for elk on the private lands of participating landowners. FWP has maintained one and

established 6 additional Block Management Areas that assist with maintenance of elk habitat and hunter harvest on private lands. FWP completed a 12-year field research study of elk ecology and management in the Gravelly-Snowcrest Mountains and the final report with results and management recommendations was completed in April 2002 (Hamlin and Ross 2002).

Management Challenges: A common challenge for all hunting districts in this EMU is reducing hunter crowding while maintaining hunter opportunity. Hunter crowding is occurring during both the archery and general seasons. As regulations have become more restrictive in adjoining EMUs and Regions, hunter participation in this EMU has increased, while declining in other Regions.

Another common management challenge has been that bulls are heavily harvested in this highly accessible, low-security (cover limited) EMU but adequate antlerless harvests have not been achieved.

ATV use in this EMU is high and there are considerable social conflicts associated with that use. Many hunters complain about ATV use of closed roads and closed areas.

HD 322 - Population management in this district has become much more difficult in the last ten years. One landowner has restricted access in Trout, Spring, and McHessor Creeks for more than 15 years. More recently, another landowner has also restricted access in McHessor Creek and several landowners have restricted access on the north end of the Ruby Mountains. This, along with recent mild weather conditions during the hunting seasons, has severely hindered achievement of adequate antlerless harvests. Limited access for hunters has also contributed to game damage on these same lands, as well as lands of neighboring landowners.

HDs 323 and 324 – FWP has not been able to achieve adequate harvests of antlerless elk to meet population goals, especially within HD 323. This has contributed to some increased problems with landowner tolerance of elk numbers on adjacent private lands, especially on a ranch adjoining the Wall Creek WMA. Fortunately, much of the winter range in HDs 323 and 324 are public lands so that game damage is not a large-scale problem. However, the reduced harvests resulting in increased elk numbers during winter may put elk numbers at or above capacity of the public winter ranges for an average, and certainly severe winter.

HD 325 – Achievement of adequate antlerless harvests to meet population goals is also a problem in this HD. Additionally, access for hunters to both private and public lands has become more restrictive in recent years. This limited access contributes to growing difficulty in managing the elk population. The primary landowner, Matador Ranch, has been as generous with access as anyone in the state, but growing elk numbers, game damage, concerns with the spreading of weeds, and increased hunter numbers are increasing their frustration. It is imperative that these trends be reversed to maintain the cooperation of this ranch. An additional problem with managing elk numbers on winter

range in the south portion of this district is the fact most of these elk spend the fall in Idaho where antlerless harvest is minimal. This contributes to insufficient antlerless harvest and the increasing elk numbers on Montana winter range.

HD 326 - A few landowners on the west side of this district have restricted access, contributing to the difficulty in obtaining sufficient antlerless harvest. This has contributed to some increased problems with landowner tolerance of elk numbers on adjacent private lands as well as some game damage concerns.

HD 327 – There has been some increase in limiting hunter access by a few landowners.

HD 330 - Several landowners have restricted access along the west slope of the Greenhorns and there is very little access across private land to public lands. Although there have not been recent game damage complaints on the west slope of the Greenhorns, the limited access contributes to growing difficulty in managing the elk populations that winter there. On the east slope of the Gravelly-Greenhorn complex, the major winter range and surrounding area as well as several other ownerships to the north are not accessible to hunters. This has contributed to game damage on these lands as well as those of neighboring landowners.

Population Monitoring: Annual mid-winter fixed-wing aerial surveys of winter ranges are conducted and total elk numbers and numbers and ages of bulls are recorded. During late winter, sex and age classifications that include calf:100 cow ratios are conducted from the ground on various winter ranges.

SUMMARY OF PUBLIC COMMENT

Public comments have indicated general support for maintaining or increasing the elk population and reducing hunter numbers. Some have expressed preference for maintaining elk populations at current levels. The majority of hunters have been satisfied with existing opportunities; only minor interest has been expressed in increasing numbers of older bulls harvested. There is strong support for improving elk security. However, there are limited opportunities to improve elk security because of limited timber cover and public desire to maintain current levels of road access.

MANAGEMENT GOAL

Manage for a stable elk population with a maximum sustained harvest of 2-year-old or older bulls, minimize illegal mortality, and cooperate with land managers in the management of elk habitat to maintain a healthy elk population.

HABITAT OBJECTIVES

1) Maintain or improve range condition on elk summer ranges, key calving areas, and winter ranges.

2) Maintain security conditions for elk during fall (adequate timber cover and limited road access) so that elk harvest is distributed throughout the hunting season with no more than 45-50% of harvested bulls are taken during the first week of the general season.
3) Manage FWP WMAs to maintain or improve vegetation condition.

HABITAT MANAGEMENT STRATEGIES

FWP will cooperate with public and private land managers to pursue the following habitat management strategies:

- Provide technical assistance in the evaluation of proposed timber sales and road building. FWP will discourage timber harvest and associated road building adjacent to key elk winter ranges where such development has the greatest potential to negatively impact survival of bull elk. If new road construction in such areas is considered, FWP will recommend that they be designed so they do not bisect important elk travel routes (e.g. between security areas and feeding areas) and accommodate closure by obstruction.
- Identify key blocks of elk security cover for which the Management Area (MA) designation in the Beaverhead-Deerlodge Forest Plan may result in land management actions that will reduce elk security. Areas currently of concern to FWP include French Gulch (MA 16), Pole Patch (MA 20), Clover Meadows (MA 20), Dry Fork of Ruby Creek (MA 16), Ruby Creek (MA 16), Horse Creek (MA 20), and Granite Mountain (MA 20).
- Work with land management agencies to accomplish an inventory of areas where past logging activities have resulted in areas of low security for elk and discourage second entry logging in those areas. Encourage delay of any second entry logging in less critical areas until cover is reestablished to a height of at least 10-15 feet.
- Provide technical assistance in the review and evaluation of existing livestock allotment management plans (AMPs). Encourage establishment and retention of managed grazing systems for livestock that address the needs of soil, vegetation, and elk.
- Provide technical assistance in evaluations of proposed burn projects for sagebrush, aspen, and Douglas fir communities on public or private lands. Where applicable, FWP will emphasize the value of such communities for elk calving, summer, or winter range.
- In response to the National Fire Plan, FWP will promote the application of the Sagebrush MOU between the Beaverhead-Deerlodge National Forest and FWP Region Three. FWP will encourage the maintenance of conifer establishment where forested habitat cover is limited. In addition, FWP will encourage maintaining or increasing cover in fall security and thermal cover areas, as well as travel corridors and adjacent to winter range.
- Encourage maintenance of sagebrush communities on public lands to maintain vegetation diversity, soil cover, elk forage quality and quantity, important elk winter range and important cover in elk calving areas.
- FWP will explore development of incentives to private landowners who agree not to destroy key sagebrush areas and allow a reasonable level of public elk hunting.
- Through use of conservation easements, leases, land trades and/or fee title acquisition, encourage owners of elk winter range to maintain those lands in an agricultural base rather than developing or subdividing their property.

- Encourage retention of Douglas fir (or other conifer) establishment on public rangelands in this EMU where security cover for elk is minimal.
- Utilize rest-rotation livestock grazing, where appropriate, to improve winter elk forage quality and quantity on WMAs. Cooperative rest-rotation grazing systems may include private lands adjacent to WMAs.

GAME DAMAGE STRATEGIES

FWP will:

- Work with private landowners in the Sweetwater Hills and on the east side of the Gravelly Mountains to achieve levels of hunter access that will help achieve harvests that will maintain elk numbers at levels within landowner tolerance.
- Maintain rest-rotation livestock grazing systems on the Wall Creek and Robb/Ledford WMAs to improve winter elk forage quality and quantity on all lands included in the system, reduce elk use of adjacent lands, and improve participating landowner tolerance for wintering elk.

ACCESS STRATEGIES:

FWP will:
Identify and pursue opportunities for block management agreements or other cooperative landowner programs, primarily on the west side of the Snowcrest and Greenhorn ranges, the east side of the Gravelly Mountains, and in the Blacktail Mountains. FWP will also support and encourage efforts by federal and state land management agencies to secure access to public lands in these areas.

- Cooperate with the USFS and BLM in evaluating the use of ORVs in specific areas. Assess the impacts of such activities on elk vulnerability and bull survival, and formulate necessary management actions.

POPULATION OBJECTIVES

1.) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 6,500 elk (5,200 – 7,800).
2.) Maintain at least 10 bulls:100 cows or 7% bulls observed in the post-season aerial trend surveys.

POPULATION MANAGEMENT STRATEGIES

Some initial public comment indicated that hunter crowding is an issue in this EMU. If further public comments indicate that hunter crowding at current levels (2000-2002 average) is a major issue, FWP will recommend issuing unlimited or limited permits based on hunter number criteria. The following criteria will be used to establish unlimited/limited permit regulations to reduce hunter crowding:

25) Average hunter numbers for 2000-2002 will be the “benchmark”.

26) Unlimited/Limited permits would be considered only for hunter numbers occurring in the Standard or Restrictive Packages
27) The goal of issuing unlimited permits would be to reduce hunter numbers by 10% from the 2000-2002 average (from 11,500 to 10,350).
28) Unlimited or limited permits would apply to both archery and the general season hunters.
29) Unlimited permits would be eliminated if a 15% reduction in hunters from the 2000-2002 average were achieved (11,500 to 9,775).
30) If unlimited permits were unsuccessful in achieving the desired reduction in hunter numbers after 2 years of application, then limited permits (numbers based on 10% reduction from 2000-2002 average) would be recommended.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for antlered elk.

Antlerless:

The Standard Regulation is: 1.) limited brow-tined bull/antlerless permits [limited A-9/B-12 (B-tags) licenses may also be issued] OR; 2.) 1-2 weeks general season brow-tined bull/antlerless regulation [limited A-9/B-12 (B-tags) licenses may also be issued].

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is within 20% (5,200-7,800) of the objective.

The Liberal Regulation is: **1.)** 4-5 weeks general season brow-tined bull/antlerless regulation OR; **2.)** 5-week general season antlerless ONLY regulation.

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed during post-season aerial trend surveys is 20% or more above objective (more than 7,800 elk).

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above) the number of elk observed during post-season aerial trend surveys remains 20% or more above objective (more than 7,800 elk).

The Restrictive Regulation is: limited brow-tined bull/antlerless permits.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 20% below the objective (less than 5,200 elk) for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

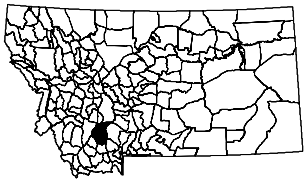
The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10 bulls:100 cows or bulls are at least 7% of the total population count.

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls by HD OR; **2.)** limited permits for antlered bulls. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) unlimited permits for brow-tined bulls by HD will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10 bulls:100 cows or bulls are less than 7% of the total population count for 2 consecutive years.

2.) **limited permits for antlered bulls will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys remains less than 10 bulls:100 cows or bulls are less than 7% of the total population count after 2 consecutive years consecutive years of application of unlimited permits.**

TOBACCO ROOT EMU
(Hunting Districts 320 and 333)



Description: The Tobacco Root Mountains are a small isolated mountain range that lies between the Madison, Jefferson and Ruby Rivers, south of Whitehall. This 955-square-mile EMU [727-square-miles (76%) occupied by elk] features a considerable amount of timbered habitat in steep and rugged terrain. The USDA-Forest Service Beaverhead-Deerlodge National Forest (USFS) administers 28% of the land in the EMU, the USDI-Bureau of Land Management (BLM) administers 8%, the Montana Department of Natural Resources and Conservation (DNRC) administers 5%, and 58% of the EMU is private land. Most elk winter range (69%) in the Tobacco Root EMU is on private lands managed for livestock and hay production.

Public Access: Due to its rugged terrain and high alpine peaks, the central portion of the unit has limited road access. Most of the periphery of the unit is easily accessible except for the east side, where landowner restrictions limit public access.

Elk Populations: Timber cover and rugged terrain provide good elk security. The elk population, winters almost exclusively on private lands and has been managed at levels below carrying capacity of elk habitats to avoid exceeding landowner tolerance for numbers of wintering elk. Recently, the number of elk observed during post-season aerial trend counts has ranged between 900 and 1,350 (Figure 1) and bull:100 cow ratios have ranged from 8-21:100.

Recreation Provided: The EMU provided an annual average 14,086 days of hunting recreation for 2,365 hunters during 1999-2001. Wintering elk can be viewed in the mornings and evenings just north of the Valley Garden Golf Course at Ennis.

Current Annual Elk Harvest: An annual average 425 elk (183 antlered and 243 antlerless) were harvested during 1999-2001. With a brow-tined bull regulation, the bull harvest has been composed of almost entirely 2-1/2-year-old or older bulls. Bulls with 6 points on at least 1 antler averaged 20% of total bull harvest during 1999-2001.

Accomplishments: FWP has worked with land management agencies to review and evaluate potential impacts of timber sales and burn projects in sagebrush and aspen habitat on elk, elk habitat, and elk management. FWP has also worked with land management agencies and private

landowners to review and evaluate potential impacts of new and existing livestock Allotment Management Plans on elk, elk habitat, and elk management.

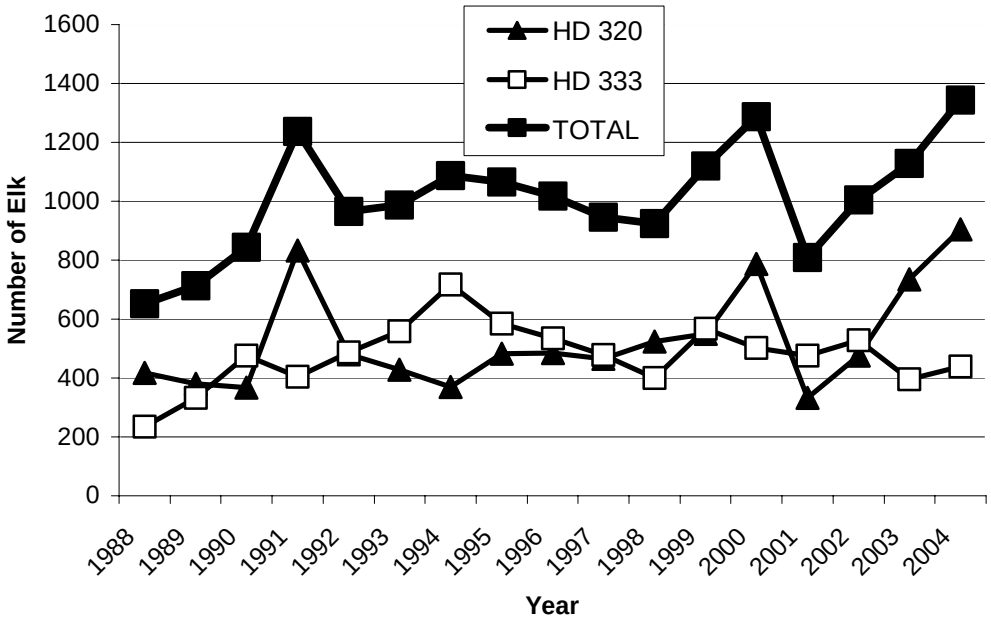


Figure 1. Number of elk observed during post-season aerial trend surveys in the Tobacco Root EMU, 1988-2004.

Management Challenges: A common challenge for both hunting districts in this EMU is reducing hunter crowding while maintaining annual hunter opportunity. Hunter crowding is occurring during both the archery and general seasons. As regulations have become more restrictive in adjoining EMUs and Regions, hunter participation in this EMU has increased, while declining in other Regions.

> HD 320 - Population management in this district is difficult because hunter access is severely limited by private landowners in the southeast corner where the primary winter range for about half the elk in the district is located. This has made achievement of adequate antlerless harvest difficult. Limited access for hunters has also contributed to game damage on these same lands as well as lands of neighboring landowners.
>
> HD 333 –Access for general public hunters is probably more limited in this hunting district than any other in either the Gravelly or Tobacco Root EMUs. Thus, ability to manage the elk population is minimal.

Population Monitoring: Aerial fixed-wing flights are conducted on elk winter ranges in the Tobacco Root EMU during mid-winter. Number of elk observed and sex and age ratios are recorded.

SUMMARY OF PUBLIC COMMENT

Limited public comment over the last several years has indicated general satisfaction with the current recreational character of the unit. Only minor interest has been expressed in increasing numbers of older bulls harvested. The majority of hunters have been satisfied with existing opportunities. There is strong interest among hunters for increased access to harvest elk. Interest has been expressed in reducing hunter numbers. Game damage has occasionally been an issue of concern. There is strong support for maintaining or improving elk security as well as maintaining existing levels of road access.

MANAGEMENT GOAL

Manage for a stable elk population with a maximum sustained harvest of 2-1/2-year-old or older bulls, minimize illegal mortality, and cooperate with land managers in the management of elk habitat to maintain a healthy elk population.

HABITAT OBJECTIVES

1.) Maintain or improve range condition on elk summer ranges, key elk calving areas, and sagebrush winter ranges.
2.) Maintain or improve security conditions for elk during fall (adequate timber cover and limited road access) so that elk harvest is distributed throughout the hunting season, with no more than 35-40% of the bull harvest taken during the first week of the general season.

HABITAT MANAGEMENT STRATEGIES

FWP will cooperate with public and private land managers to pursue the following habitat management strategies:

- Provide technical assistance in the evaluation of proposed timber sales and road building. FWP will discourage timber harvest and associated road building adjacent to key elk winter ranges where such development has the greatest potential to negatively impact survival of bull elk. If new road construction in such areas is considered, FWP will recommend that they be designed so they do not bisect important elk travel routes (e.g. between security areas and feeding areas) and accommodate closure by obstruction.
- Identify key blocks of elk security cover for which the Management Area (MA) designation in the Beaverhead-Deerlodge Forest Plan may result in land management actions that will reduce elk security.
- Work with land management agencies to accomplish an inventory of areas where past logging activities have resulted in areas of low security for elk. Recommend evaluation of elk security conditions before second entry logging of these areas. Encourage delay of any second entry logging in less critical areas until cover is reestablished to a height of at least 10-15 feet.

- Provide technical assistance in the review and evaluation of existing livestock allotment management plans (AMPs). Encourage establishment and retention of managed grazing systems for livestock that address the needs of soil, vegetation, and elk.
- Provide technical assistance in evaluations of proposed burn projects for sagebrush, aspen, and Douglas fir communities on public or private lands. Where applicable, FWP will emphasize the value of such communities for elk calving, summer or winter range.
- In response to the National Fire Plan, FWP will promote the application of the Sagebrush MOU between the Beaverhead-Deerlodge National Forest and FWP Region Three. FWP will encourage the maintenance of conifer establishment where forested habitat cover is limited. In addition, FWP will encourage maintaining or increasing cover in fall security and thermal cover areas, as well as travel corridors and adjacent to winter range.
- Encourage maintenance of sagebrush communities on public lands to maintain vegetation diversity, soil cover, elk forage quality and quantity, important elk winter range and important cover in elk calving areas.
- FWP will explore the possibility of developing incentives to private landowners who agree not to destroy key sagebrush areas, while agreeing to allow a reasonable level of public elk hunting.
- Through use of conservation easements, leases, land trades and/or fee title acquisition, encourage owners of elk winter range to maintain those lands in an agricultural base rather than developing or subdividing their property.
- Encourage retention of Douglas fir (or other conifer) establishment on public rangelands in this EMU where security cover for elk is minimal.

GAME DAMAGE STRATEGIES

FWP will:

- Continue to attempt to achieve antlerless harvests that will maintain the elk population within the constraints of landowner tolerance for elk on privately-owned winter ranges.
- Provide technical assistance to USFS and BLM land managers that will help develop and/or maintain domestic livestock grazing management strategies and forage utilization standards on public lands on or adjacent to elk winter ranges. The intent of this strategy is to reduce winter elk use on private lands by encouraging elk to use public lands.

ACCESS STRATEGIES

FWP will:

- Identify opportunities for block management projects or other cooperative landowner programs, primarily on the north and east sides of the unit.
- Support and encourage efforts by federal and state agencies to secure access to public lands in these areas.
- Cooperate with the USFS and BLM in evaluating use of off-road vehicles (ORVs) in specific areas; assess impacts of such activities on elk vulnerability and bull survival, and formulate necessary management actions.

POPULATION OBJECTIVES

1.) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 1,000 elk (800-1,200).
2.) Maintain at least 10 bulls:100 cows or 7% bulls observed in the post-season aerial trend surveys.

POPULATION MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: 1.) limited brow-tined bull/antlerless permits AND, limited numbers of A-9/B-12 (B-tags) licenses may also be issued OR; 2.) 1-2 week general season brow-tined bull/antlerless regulation AND, limited numbers of A-9/B-12 (B-tags) licenses may also be issued.

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is within 20% of the objective (800-1,200 elk).

The Liberal Regulation is: **1.)** 4-5 week general season brow-tined bull/antlerless regulation AND, limited numbers of A-9/B-12 (B-tags) licenses may also be issued OR; **2.)** 5-week general season antlerless ONLY regulation AND, limited numbers of A-9/B-12 (B-tags) licenses may also be issued.

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed during post-season aerial trend surveys is 20% or more above objective (more than 1,200 elk).

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above) the number of elk observed during post-season aerial trend surveys remains 20% or more above objective (more than 1,200 elk).

The Restrictive Regulation is: limited brow-tined bull/antlerless permits.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 20% below the objective (less than 800 elk) for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

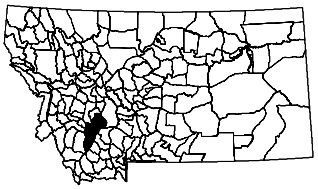
The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10 bulls:100 cows or bulls are at least 7% of the total population count.

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls by HD OR; **2.)** limited permits for antlered bulls by HD. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) unlimited permits for brow-tined bulls by HD will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10 bulls:100 cows or bulls are less than 7% of the total population count for 2 consecutive years.

3.) limited permits for antlered bulls will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys remains less than 10 bulls:100 cows or bulls are less than 7% of the total population count after 2 consecutive years consecutive years of application of unlimited permits.

HIGHLAND EMU
(Hunting Districts 340, 350, and 370)



Description: Located in the Butte-Boulder-Dillon vicinity, this 1,385-square-mile EMU encompasses the Highland, Boulder, and Bull Mountains. About a third of the EMU is in private ownership and two-thirds is in public ownership. The USDA Forest Service Beaverhead-Deerlodge National Forest (USFS) and USDI Bureau of Land Management (BLM) are the principal public land managers. Most of the private lands are in agricultural production.

Public Access: Most of the unit is easily accessible. However, public access to portions of the east side of the Highlands (Fish Creek–Big Ridge) is limited. FWP has maintained eight Block Management Areas in the EMU. Approximately 80% of the EMU provides hunting recreation characterized as "moderate to high levels of motorized access" and 20% provides backcountry recreational experiences.

Elk Populations: The number of elk counted in post-season aerial surveys increased to about 1,600 in the late 1990s (Figure 1). Numbers of elk counted declined to about 1,300 elk in 2000 because of a combination of favorable elk hunting conditions and liberal numbers of antlerless permits. Emigration to the Fleecer EMU also contributed to declines in elk counted in the Highland Mountains portion of this EMU. Valid trend counts were not accomplished during 2004. Portions of the unit are characterized by very low elk security, resulting in low numbers of antlered bulls surviving the hunting season. Elk winter on private lands in portions of the unit, where we have directed antlerless elk harvest in recent years.

Recreation Provided: The Highland EMU provided an average of about 23,300 days of hunting recreation annually for about 3,450 hunters during 1999-2001. These values represent an increase of 37% in hunter days and 5% in hunter numbers since 1992. Wildlife viewing occurs throughout the unit during all seasons of the year.

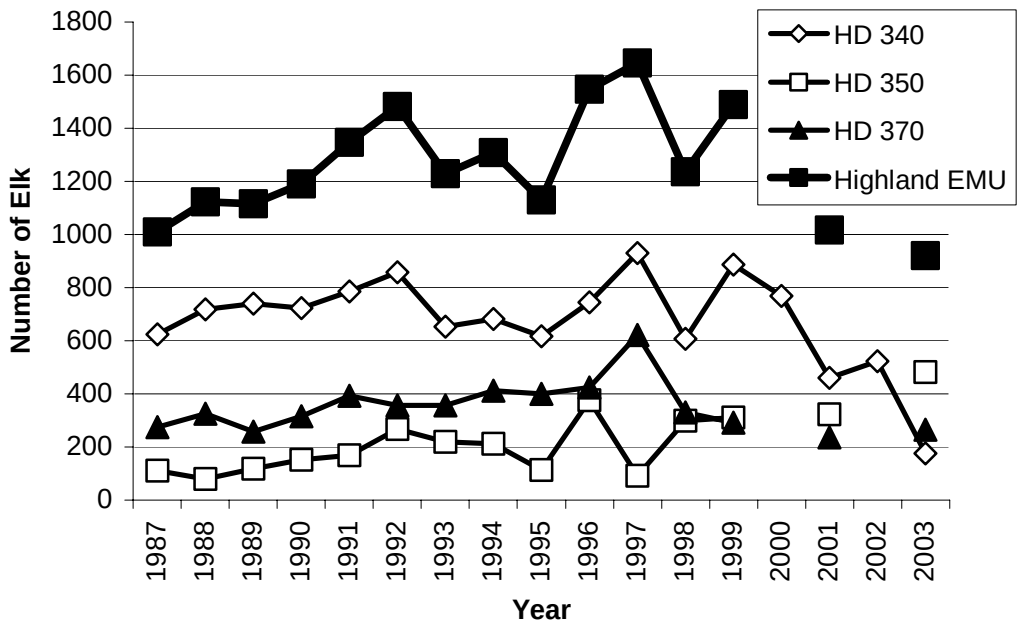


Figure 1. Number of elk counted during post-season aerial trend surveys in HDs 340, 350, 370, and the total Highland EMU, 1987-2003.

Current Annual Elk Harvest: During 1999-2001, an average 475 (365-686) elk were harvested annually in the EMU. Of these, 228 (161-346) were antlerless and 247 (197-340) were antlered. HD 340 accounted for about 60% of antlerless and antlered harvest in the EMU during the period.

Accomplishments: Since the implementation of the 1992 Elk Plan, FWP completed a conservation easement on the 7,106-acre Keogh Ranch in 1996. The easement provides hunting access, habitat protection, and restricts development. FWP also maintained increasing numbers of Block Management areas that provide a quality hunting opportunity and address the management needs of landowners. FWP provided technical assistance to help coordinate travel management and other traditional land uses with the various state, federal and private entities throughout the EMU.

Management Challenges: Travel management on public lands and access to public lands are the two greatest management challenges in the EMU. BLM and USFS lands in the vicinity of Whitehall are a destination for ATV enthusiasts and travel planning is necessary to meet the needs of wildlife in this area, particularly on USFS land. There is little access to Federal and other public lands on the east side of the Highlands. Existing access to BLM land on McCartney Mountain has been legally challenged in recent years.

Wolves are pioneering the Highland EMU and will likely establish packs that have the potential to rapidly increase. The degree of impact wolves have on elk populations is unknown at this time, but will be a consideration in future management decisions.

Population Monitoring: Annual trend surveys are conducted during winter by fixed-wing aircraft. Total numbers of elk observed, sex and age class, and location are recorded.

SUMMARY OF PUBLIC COMMENT

Public comment varies with the diverse landscapes in the Highland EMU. Widespread ATV use in the Whitetail-Pipestone areas of Hunting Districts 340 and 350 has created conflicts with other traditional land uses, including wildlife. In other areas, where seasonal road closures or private lands limit access, the public would like to see increased vehicular access to facilitate elk harvest and retrieval of downed game. Closed, restricted, or outfitted private lands that attract elk and act as a refuge during the hunting season frustrate the public. Hunter crowding has intensified over the last decade but not as severely as in other, adjacent Elk Management Units.

MANAGEMENT GOAL

Manage the elk population at current levels and cooperate with land managers in the management of elk habitat with emphasis on maintaining a diversity of elk hunting experiences.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain 500,000 acres of occupied elk habitat.
2) Promote maintenance of elk security so that elk harvest is distributed throughout the hunting season, with no more than 30% of the bull harvest taken during the first week of the general season (3-year average).

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to USFS personnel to help improve elk security throughout the unit, with special attention to HD 340 where timber harvest has substantially reduced elk security.
- Use the interagency access and travel planning process to identify areas where additional road and trail management is needed.
- Provide technical assistance to USFS and BLM on projects that will improve habitat and maintain or improve vegetation diversity. We will emphasize maintenance of Mountain Mahogany and sagebrush-grassland communities.
- Represent wildlife habitat needs and hunting recreation issues in National Fire Plan projects.

GAME DAMAGE STRATEGIES

Each game damage situation will be addressed based on its own circumstances. FWP will work with landowners to maintain a level of public hunting access necessary to maintain the elk population at objective level, employing block management agreements where appropriate.

ACCESS STRATEGIES

FWP will:

- Identify areas where additional public access is necessary to attain an adequate elk harvest.
- Continue as a cooperator in maintenance of the Southwest Montana Interagency Access and Travel Plan.
- Cooperate with the Beaverhead-Deerlodge National Forest and BLM to develop an access plan to identify and prioritize access needs for Federal lands.
- Work with private landowners to maintain as much public hunting opportunity as possible on private lands.
- Address landowner issues by continuing to work with the Headwaters Resource Conservation and Development (RC&D) Big Game Committee.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season aerial surveys within 20% of 1,600 elk (1,280 – 1,920).
2) Maintain bull:100 cow ratios observed during post-season aerial surveys of at least 10:100.

POPULATION MANAGEMENT STRATEGIES

Some initial public comment indicated that hunter crowding is an issue in this EMU. If further public comments indicate that hunter crowding at current levels (2000-2002 average) is a major issue, FWP will recommend issuing unlimited or limited permits based on hunter number criteria. The following criteria will be used to establish unlimited/limited permit regulations to reduce hunter crowding:

31) Average hunter numbers for 2000-2002 will be the "benchmark".
32) Unlimited/Limited permits would be considered only for hunter numbers occurring in the Standard or Restrictive Packages
33) The goal of issuing unlimited permits would be to reduce hunter numbers by 10% from the 2000-2002 average (from 3,337 to 3,005).
34) Unlimited or limited permits would apply to both archery and the general season hunters.
35) Unlimited permits would be eliminated if a 15% reduction in hunters from the 2000-2002 average were achieved (3,337 to 2,835).
36) If unlimited permits were unsuccessful in achieving the desired reduction in hunter numbers after 2 years of application, then limited permits (numbers based on 10% reduction from 2000-2002 average) would be recommended.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: 1.) limited brow-tined bull/antlerless permits valid for the 5-week general season OR; 2.) 1-2 week general season brow-tined bull/antlerless regulation. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial surveys is within 20% of 1,600 elk (1,280-1,920 elk).

The Liberal Regulation is: **1.)** 4-5 week general season brow-tined bull/antlerless regulation OR; **2.)** 5-week general season antlerless ONLY regulation. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

Liberal Regulation **1.) (above)** will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 20% above 1,600 elk (more than 1,920 elk).

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above) the number of elk observed during post-season aerial trend surveys remains more than 20% above 1,600 elk (more than 1,920 elk).

The Restrictive Regulation is: limited brow-tined bull/antlerless permits valid for the 5-week general season.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial trend surveys is more than 20% below 1,600 elk (less than 1,280 elk) for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is at least 10:100.

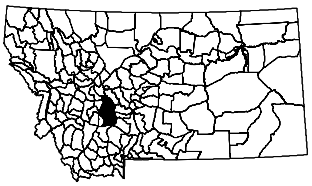
The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls by HD OR; **2.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) **Unlimited permits for brow-tined bulls by HD will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10:100 for 2 consecutive**

years. If a Restrictive regulation is implemented, and the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a standard season would again be recommended.

2.) Limited permits for antlered bulls will be recommended if: the bull:100 cow ratio observed during the post-season aerial trend survey remains less than 10:100 after 2 consecutive years of application of unlimited permits.

ELKHORN EMU
(Hunting District 380)



Description: The Elkhorn Elk Management Unit (EMU) contains approximately 1,241 square miles with 59% privately owned and 41% managed by various public land management agencies. The EMU encompasses the Elkhorn Mountains, which is a relatively small and isolated mountain range of about 391 square miles located about 16 miles southeast of Helena. Approximately 603 square miles of the EMU (49%) are occupied by elk during some portion of the year. Thirty-eight percent of the area occupied by elk is private land and 62% is public lands. There are approximately 235 square miles of elk winter range in this unit; 45% is private land and 55% public lands. Based on past telemetry data and recent observations, approximately 70% of the total elk population spend winter on public lands. About 250 square miles of this productive mosaic of mountain grasslands, forests and alpine vistas are managed by the USDA-Forest Service (USFS) - Helena (HNF) and Beaverhead-Deerlodge National Forests (BDNF). The portion of the range in Forest Service ownership, by virtue of special Forest Plan direction, are managed as the only Wildlife Management Unit in the National Forest System. According to the 1986 Helena National Forest Forest Plan, mangement goals for elk winter range on Forest lands include "Optimize elk winter range" and "Provide for other resources as long as their uses are compatible with maintaining elk winter range".

Additionally, 145 square miles of foothills, predominated by grassland/shrubland vegetation, are managed by the USDI-Bureau of Land Management (BLM). These adjacent BLM lands are managed under the Headwaters Resource Management Plan (RMP) which provides for multiple use management. Some of the major uses on BLM lands include a utility corridor occupied by the Colstrip 500-KV line, the National Guard training range, and the Graymont lime mine near Townsend.

Public Access: The Elkhorn EMU provides a good diversity of hunting experiences, including motorized hunting on the periphery and walk-in hunting in the interior. There is ample road access to the majority of the unit. Access to public land is relatively good and in addition, there were a total of 20 Block Management Areas in the Elkhorn EMU in 2003. The combination of good access to both public and private lands makes it possible to effectively manage elk numbers through hunter harvest. Travel Plan revision on USFS and BLM lands was implemented in 1995 with the primary objectives being the protection of the soil, water, and vegetation and

enhancement of elk security where it was low. Existing, and some new, winter range closures, and game retrieval areas were incorporated into this revision.

Elk Populations: The number of elk counted in the Elkhorn EMU has been relatively stable since the initial Elk Plan was published in 1992 and for the most part, has fluctuated around 2,000 elk observed on the winter ranges (Figure 1). Approximately 90% of the elk utilize public lands (USFS and BLM) during the summer and fall and 70% winter on public land (primarily USFS), making the Elkhorn population one of the largest to winter on land managed by the USFS.

Bulls, which made up less than 1 % of the post-season population in the mid 1980's, now comprise about 10% of the post-season population. Since implementation of the "Spike" season in 1987, more older bulls have both been harvested and survive hunting season. Bulls of all ages, up to 14-years-old, have been harvested. The average age of bulls harvested by permit holders has been 5 ½ - 6 ½ years old for the past several years and this represents the age and size of bull that permit holders expect to harvest. Generally, bulls of this age are mature animals with antler configuration of at least 6 points on each antler. Spikes (yearling bulls) comprised an average 77% of the total bull harvest during 1999-2002.

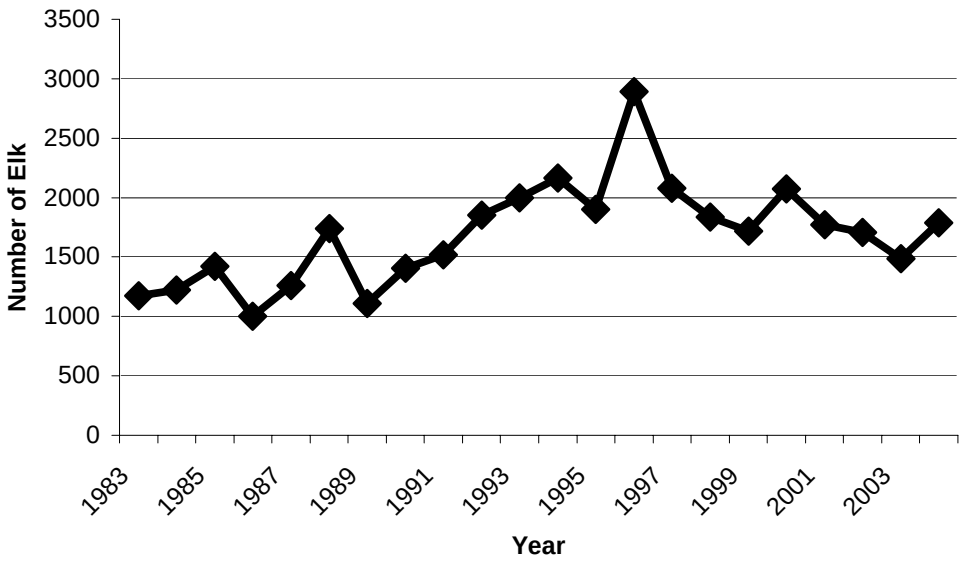


Figure 1. Total number of elk observed during post-season aerial trend surveys in the Elkhorn EMU, 1983-2004.

Recreation Provided: During 1999-2001, the EMU provided an annual average of 23,380 days of hunting recreation to an average of 3,574 hunters. Since the mid 1980s, hunter numbers in the Elkhorn EMU increased at a rate 4 times greater than the statewide average. The proximity of the Elkhorn Mountains to population centers, combined with good access by virtue of public ownership of much of the mountain range, and the popularity of the "Spike" season, has made the area popular for hunting and wildlife viewing during all seasons of the year. Popular areas

for wildlife viewing include Tizer Basin, Casey Meadows, the Elkhorn and Crow Peak areas and the winter ranges in lower Crow Creek.

Current Annual Elk Harvest: During 1999-2001, annual averages of 302 antlerless and 263 antlered elk were harvested.

Accomplishments: Because about 70% of the big game winter range is on public land in the Elkhorn EMU, unique opportunities for management exist. As a part of the Forest Plan direction for the Elkhorns, a partnership with Montana Department of Fish, Wildlife and Parks (FWP) was established to provide cooperation in the management and monitoring of wildlife in the Elkhorns. A FWP wildlife biologist position, with responsibilities only in the Elkhorns, was established in 1982. Through this position, intensive research and monitoring of elk was completed. During this study, more than 300 elk, including both sexes were fitted with radio collars and more than 10,000 relocations of these animals helped define herd segments, seasonal movement patterns of those segments, and patterns and causes of mortality.

In 1992, a Memorandum of Understanding (MOU) was developed between the 3 primary managing agencies in the Elkhorns, the USFS, BLM, and FWP. Shortly thereafter, the agencies completed the Elkhorns Landscape Analysis. This analysis established the historic and existing conditions of the soil, water, vegetation, and wildlife resources in the Elkhorn Mountains. The desired conditions for all the resources were then integrated and compared with existing conditions to establish general, mountain-range wide management direction. Projects completed include: a comprehensive Elkhorn Travel Plan, reintroduction of bighorn sheep, the revision of allotment management plans, vegetation treatments that reflect the landscape analyses in much of the mountain range, rehabilitation of historic mine sites, a mountain range wide “fire plan”, bighorn sheep habitat enhancements, westslope cutthroat trout restoration, a comprehensive recreation and travel map, and signing and interpretive projects.

In 1998, FWP acquired a Conservation Easement on the 1,600 acre Hahn Ranch in Kimber Gulch along the east slope of the Elkhorns. This important property is adjacent to USFS and BLM managed lands and is important seasonal range for a variety of animals including elk.

Management of the Elkhorns historically has been, and continues to be controversial. Primary issues continue to be the relationship between wildlife and management activities such as vegetation treatments, travel management, mining, grazing, timber harvest, and recreational uses. The number of elk and their management also is an on-going controversial issue. In early 2002, to address some of these controversial issues the agencies, along with other sponsoring partners, formed a Working Group comprised of individuals from a variety of interests. This diverse group attended several facilitated meetings that primarily addressed conflicts with elk and livestock management. The product of these meetings was a list of recommendations from the Working Group to the sponsoring agencies on how to address this issue including, information needs, habitat management strategies, and educational efforts.

Management Challenges: Limited public access to the Spokane hills and the Antelope Creek area in the northeast portion the unit makes it difficult to manage elk in these areas, and some private lands act as refuges to elk during the hunting season. Similarly, private land in the

Dutchman Creek area on the west side of the unit has sporadic-to-little hunter access and again, this makes it difficult to manage elk numbers through hunter harvest.

Housing development and subsequent human activities have occurred and continues around much of the mountain range and has had major impacts on elk winter range on the north portion, Spokane Hills portion, and the southwest portion near Boulder. These developments can also provide refuges for elk during the hunting season.

Population Monitoring: To monitor the elk population, aerial surveys are conducted annually using fixed-winged aircraft. Surveys are conducted in late winter and an attempt is made to conduct them under optimal conditions, i.e., fresh snow cover, cold temperatures, light wind, and when ground observations indicate elk are concentrated on winter ranges. The entire area occupied by elk during winter is flown, including public and private lands. Elk are counted and classified by age and sex and in most years an attempt is made to classify the proportion of the population that is calves by surveys from the ground.

SUMMARY OF PUBLIC COMMENT

Public comments in relation to the elk population and its management in this EMU indicate a high level of support for the current season structure including the permit system on the older bulls. Both hunters and non-hunters enjoyed seeing older bulls in the elk population. Some members of the Elkhorn's Working Group felt that flexibility in managing elk numbers was important and that using forage availability on an annual basis may be an appropriate trigger mechanism.

MANAGEMENT GOAL

Manage for a healthy and productive elk population with a diverse age structure at current numbers (see Elk Populations, above). Cooperate with public land management agencies and private individuals in the management of elk habitats, and maintain good opportunity for elk hunters to harvest elk.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain approximately 240,000 acres of occupied elk habitat (based on telemetry data) for the benefit of elk, other wildlife species, and other agency mandated uses.
2) Encourage improvement of habitat conditions on publicly owned winter ranges (primarily USFS) so that vegetation conditions on these winter ranges provide adequate forage for elk and other wildlife during the winter period.

3) Encourage maintenance and improvement of habitat conditions on public lands (USFS and BLM) so that elk continue to utilize these lands during summer and fall rather than moving onto private lands.

HABITAT MANAGEMENT STRATEGIES

- FWP has worked in cooperation with the USFS and BLM in developing a Landscape Analysis for all public land in this EMU. This analysis has determined the existing condition of soil, water and vegetation and developed specific projects to improve, maintain or enhance these resources. Additionally, the agencies, along with the Rocky Mountain Elk Foundation as a partner, are pursuing land exchanges, acquisitions, and conservation easements to acquire or protect important wildlife habitat. Allotment management plans have been revised where needed to enhance vegetation on these sites for wintering elk. Some vegetation manipulation through prescribed burning has also been implemented to make these winter ranges more attractive to wintering elk.
- A major effort has been under way the past couple of years by the agencies to control noxious weeds. This will continue and is expanding to include adjacent private lands. Much of this effort has been directed at areas on elk winter range.
- FWP has implemented harvest strategies designed to target elk that habitually move to irrigated croplands during late summer and early fall. Our objective is to reduce these problem elk to a more tolerable number.
- A number of recommendations, in relation to habitat, made by the Elkhorn Working Group are being evaluated by the agencies and may be implemented in the near future. Some of these involve vegetation monitoring, which would help direct future management direction and decisions.

GAME DAMAGE STRATEGIES

Hazing, herding, providing stackyard materials, and early and late hunts have been and will continue to be used as needed in this EMU in the future. Where problems are chronic, harvest strategies will be implemented to reduce elk numbers in areas of chronic depredation. Improved habitat management on public lands may help to reduce the use of private lands during some portions of the year. Beginning in 2002, a series of A-7 antlerless licenses were issued which were valid from 1 September to the beginning of the general season on private land, valid in the entire district during the general season, and again valid through 15 December on private land. The purpose of these permits is to target elk that move into the valley to utilize hay crops during late summer and early fall. Antlerless permits issued are specified valid for the north or south portion of the district to direct harvest on specific herd segments and these permits have facilitated a reduction of elk in those areas.

ACCESS STRATEGIES

FWP has actively pursued new Block Management Areas (BMAs) on private land. In 2002, there were18 BMAs totaling 97,342 acres in Hunting District 380. These 18 areas provided a total of 7,362 hunter days of recreation during 2002. During 2003, there were a total of 20 BMAs in the Elkhorn EMU with access provided to approximately 105,000 acres of key private lands throughout the mountain range. This access is important in implementing both population management and game damage strategies.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season aerial surveys within 15% of 2,000 observed elk (1,700-2,300).
2) Maintain a bull:100 cow ratio observed during post-season aerial surveys of at least 15 bulls:100 cows OR, if bull:100 cow ratios are not obtained, maintain a minimum of 10% of the population comprised of antlered bulls.
3) Maintain the average age of bulls harvested on either-sex permits between 5 ½ and 6 ½ -years-of-age.

POPULATION MANAGEMENT STRATEGIES

Strategies to manage elk numbers have evolved over time as the elk population expanded during the 1970s through the 1990s. Initially, the population was managed through issuing a limited number of antlerless permits and the bull segment was hunted under an antlered-bull regulation. Bulls in the Elkhorn EMU were so heavily harvested on an annual basis that winter classifications conducted in 1985 indicated only about 1 bull:100 cows, and these surviving bulls were almost all yearling bulls. These conditions continued until 1987 when bulls were placed under a "Spike" regulation where hunters with a valid elk license could harvest a spike bull (unbranched antlers or a branch of less than 4 inches). Older bulls with branched antlers could be harvested only if a hunter received one of a limited number of special permits available through a drawing. Because some yearling bulls have small, branched antlers with more than a four-inch branch, these bulls are unavailable to the general license holder and are recruited into the older bull segment the following year. This regulation has been successful at producing an older bull segment and also in increasing the total number of bulls in the population. Typically, bulls comprise about 10 % of the post-season population, with about half of the bulls being brow-tined bulls. Bulls as old as 14 years have been harvested on the permits and the average age of bulls harvested on the permits has been 5 ½ to 6 ½ years old.

The population objective of 2,000 (± 15%) observed elk is essentially the same as the population objective in the 1992 version of the Elk Plan. This objective was derived by considering both the ability of public lands to provide forage for the majority of the wintering elk population and landowner tolerance for the remaining elk that winter on private lands. Population management strategies in the past have been, and will be in the future, directed at maintaining elk numbers consistent with landowner tolerance as well as maintaining the number of elk wintering on public lands within forage allocations established in allotment management plans.

Drought since the later part of the 1990s has caused some elk to move into agricultural cropland in late summer and early fall. To address this problem, A-7 antlerless elk licenses have been issued, which are valid on private land beginning 1 September. These same permits are valid in the entire district during the general season and again on private land after the general season until 15 December. Additionally, antlerless permits have been issued in the south and north portion of the district where herd reduction was desired. Because of the high average success rate (around 50%) on these permits in the past, these series of permits, along with good hunter access to public and private land, have made it possible to manage elk numbers effectively. By adjusting the number of permits on an annual basis, sufficient harvest of elk on private and public lands can be

obtained to either reduce or increase the population to meet objectives. Different season packages on the antlerless segment reflect slight variations of these permit types. The population objective of 2,000 (± 15%) observed elk allows the flexibility of managing towards the low end (1,700) of the objective during periods of drought when forage availability may be affected.

REGULATION PACKAGES

Six-week spike bull/antlerless archery regulation.

Antlerless:

The Standard Regulation is: limited antlerless permits valid for 3 different areas during the general season; the north portion, south portion, and the entire district AND, limited A-7 antlerless licenses valid outside national forest boundaries beginning 1 September and valid in the entire district during the general season.

The Standard Regulation will be recommended if: the number of total elk counted during post-season aerial surveys is within 15% (1,700-2,300) of the objective (2,000).

The Liberal Regulation is: increased antlerless permits valid for 3 different areas during the general season; the north portion, south portion, and the entire district AND, limited A-7 antlerless licenses valid outside national forest boundaries beginning 1 September, valid in the entire district during the general season AND, valid outside national forest boundaries again from the closing of the general season through 15 December.

The Liberal Regulation will be recommended if: the number of total elk counted during post-season aerial surveys is more than 15% above the objective (more than 2,300 elk).

The Restrictive Regulation is: limited antlerless permits valid in the entire district during the general season AND, limited A-7 licenses valid outside national forest boundaries beginning 1 September and valid in the entire district during the general season.

The Restrictive Regulation will be recommended if: the number of total elk counted during post-season aerial surveys is more than 15% below the objective (less than 1,700 elk) for 2 consecutive years.

Antlered:

The general hunting regulation for HD 380 will remain a Spike Bull regulation (with limited permits for either-sex elk) to provide diversity in the bull age structure as well as diversity of hunting opportunity in Montana. This hunting district is one of only 2 spike/either-sex permit hunting districts among the 159 hunting districts in the state. Spike Bulls are: “any elk having antlers which do not branch, or if branched, the branch is less than four inches long measured from the main antler.”

The Standard Regulation is: 5-week general season Spike Bull regulation with 75-100 either-sex permits valid during the 5-week general season.

The Standard Regulation will be recommended if: total numbers of elk observed during post-season aerial surveys are between 1,700-2,000 elk AND; calf:100 cow ratios are at least 25 calves:100 cows AND; post-season bull:100 cow ratios are at least 10 bulls:100 cows AND; the average age of bulls harvested on either-sex permits is at least 5.5-years-old.

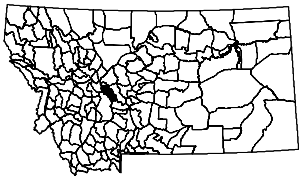
The Liberal Regulation is: 5-week general season Spike Bull regulation with 100-125 either- sex permits valid during the 5-week general season.

The Liberal Regulation will be recommended if: total numbers of elk observed during post-season aerial surveys are at least 2,000 elk AND; calf:100 cow ratios are at least 40 calves:100 cows AND; the bull:100 cow ratio is not less than 15 bulls:100 cows for 2 consecutive years AND; the average age of harvested bulls on either-sex permits is more than 6.5 years old.

The Restrictive Regulation is: 3-week general season Spike Bull regulation with 50-75 either-sex permits valid for a 5-week period.

The Restrictive Regulation will be recommended if: total numbers of elk observed during post-season aerial surveys are less than 1,700 for 2 consecutive years AND; calf:100 cow ratios are below 25 calves:100 cows for 2 consecutive years OR; the bull:100 cow ratio is less than 10 bulls:100 cows for 2 consecutive years OR; average age of brow-tined bulls harvested by holders of either-sex permits is less than 5.5 years for 2 consecutive years.

WEST BIG BELT EMU
(Hunting District 392)



Description: This 444-square-mile Elk Management Unit (EMU) is located along the west slope of the Big Belt Mountains near the towns of Helena and Townsend. Approximately 74% of the elk habitat is on public lands (USFS and BLM). There are about 135,000 acres of elk winter range in this EMU and about 73% of the winter range is in public ownership. In the 1992 Elk Plan, the Big Belt EMU included Hunting District (HD) 392 (HD 892 at that time) and HD 446, which is on the east Side of the Big Belt Mountains. We made HD 392 a separate EMU in this Elk Plan because there are major differences in the 2 hunting districts including, extensive use of private land by elk in HD 446, considerably different hunting regulations, and less public land, especially public land winter range in HD 446. This change was made with the realization that there is some overlap of elk from the 2 districts and this fact will be considered in developing regulation packages as well as habitat objectives, particularly on public lands.

In 1994 the Helena National Forest (HNF) developed a Landscape Analysis for the Big Belt Mountains describing the past, current and desired condition of the landscape. Since then a major forest fire occurred in the year 2000, originating in the Cave Gulch drainage and burning approximately 30,000 acres. This fire has had major impacts on elk habitat including the initial loss of winter range and major reduction in security. Because of the impacts of the fire, habitat management related projects, including prescribed fire and travel plan revision projects were temporarily delayed.

Public Access: Road and trail access is good in most of the EMU. However, areas of the EMU, primarily in the southern portion of the unit from Whites Gulch to Duck Creek, are closed to the general public as a result of leased or outfitted hunting. Currently there is only one Block Management Area (BMA) in this District.

Elk Populations: Numbers of elk observed have been relatively stable for the past 10 years with about 1,200 elk observed on winter ranges during 2001-2004 (Figure 1).

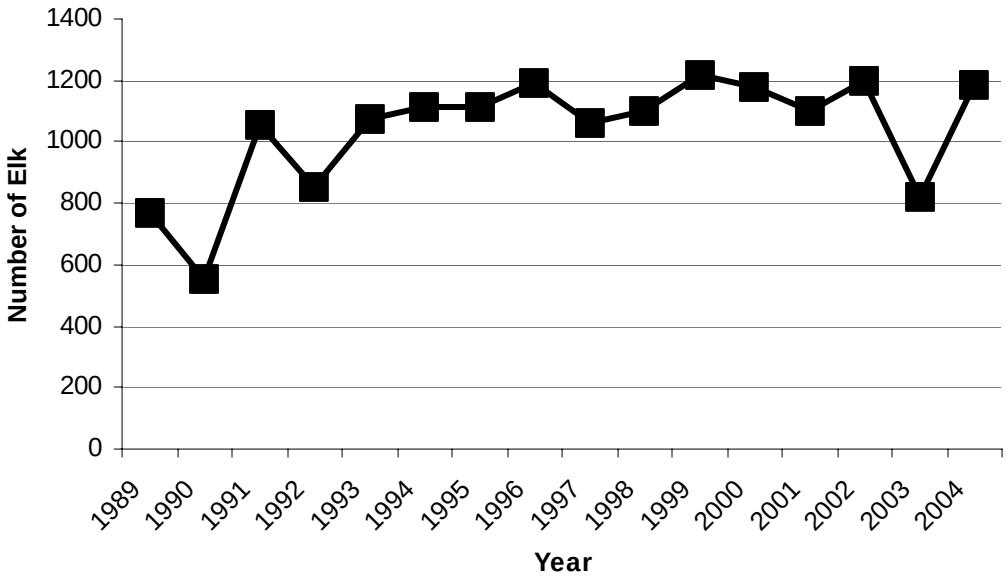


Figure 1. Number of elk counted during post-season aerial trend surveys in HD 392, 1989-2004.

Recreation Provided: During 1999-2001, an annual average of 12,500 hunting recreation days were provided for an average 1,870 hunters in this EMU. Wildlife viewing and photography are important uses of the elk resource in the portions of the EMU that offer backcountry settings, including Gates of the Mountains Wilderness and the Mount Edith area.

Current Elk Harvest: During 1999-2001 an annual average of 119 antlered and 140 antlerless elk were harvested in the EMU.

Accomplishments: There was a major fire in this EMU during summer 2000 and FWP worked closely with the Forest Service in relation to fire rehabilitation and interim travel management to benefit wildlife. Comprehensive travel planning on Forest Service lands is on-going and FWP continues to be involved in this process.

Management Challenges: The area from Whites Gulch south to Duck Creek has limited hunter access to private land. This makes it difficult to manage elk numbers through hunter harvest. Late hunts have been conducted in this portion of the district in the past to reduce elk numbers utilizing private lands.

Noxious weed infestations on publicly owned winter ranges degrade the quality and productivity of forage in these areas. These weed infestations are and will continue to be a challenge for land managers.

Population Monitoring: Elk surveys are flown annually during the winter using fixed-winged aircraft and elk observed are classified to sex and age class.

SUMMARY OF PUBLIC COMMENT

Public comment favors maintaining "status quo" for regulation types. Most hunters in this EMU are satisfied with the opportunity of hunting and potentially harvesting a BTB during a 5-week general season. There is some support for increased motorized travel restrictions on public lands although most hunters are satisfied with the current level of motorized access.

MANAGEMENT GOAL

Manage the elk population in a healthy condition with emphasis on cooperating with public land managers and private landowners in the management of elk habitats to provide a diversity of elk hunting experiences.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain an estimated 250,000 acres of occupied elk habitat.
2) Maintain elk security at levels that will assure that elk harvest is distributed throughout the hunting season, with no more than 40% of harvested bulls taken during the first week of the general season.

HABITAT MANAGEMENT STRATEGIES

FWP will work with state and federal land management agencies, and private landowners to pursue the following habitat strategies:

- Monitor soil and vegetation condition on publicly owned winter ranges and implement programs designed to maximize the attractiveness of these areas to elk.
- Assist in developing a comprehensive road management plan that will enhance elk security levels and improve hunter opportunity on the public land portion of the EMU while providing security and lack of disturbance during the winter period. This includes reclamation of unnecessary roads on public lands.
- Help design and implement livestock grazing allotment plans which will benefit vegetation, watershed values, wildlife and livestock.
- Pursue opportunities, as they arise, to protect important habitats on private lands through either Department programs or appropriate partnerships with other agencies or private sector programs.

GAME DAMAGE STRATEGIES

Where feasible, efforts will be made to attract elk currently using private lands to public lands. Providing stackyard materials to the landowner has rectified most past depredations problems that included elk utilizing haystacks. Some damage situations are not easily resolved because landowners do not qualify for game damage assistance under current guidelines.

ACCESS STRATEGIES

FWP will pursue opportunities to work with landowners who currently lease hunting access, with the objective of obtaining public access to their lands and/or adjacent public lands utilizing the block management program.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season aerial surveys within 20% of 1,100 elk (880-1,320).
2) Maintain at least 10 bulls:100 cows observed during post-season aerial surveys OR, if age classifications are not made, maintain at least 7% bulls in the observed elk.

POPULATION MANAGEMENT STRATEGIES

Elk numbers will be reduced or stabilized, depending on the survey data, in areas where winter range is in private ownership. Elk numbers will be stabilized in suitable habitats on publicly owned winter ranges.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: Options include: 1.) limited antlerless or brow-tined bull/antlerless permits OR; 2.) 1-2 week general season brow-tined bull/antlerless regulation. [Limited A-7 and/or A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is within 20% (880-1,320 elk) of the objective (1,100 elk).

The Liberal Regulation is: **1.)** 4-5 weeks general season brow-tined bull/antlerless regulation [limited A-9/B-12 (B-tags) antlerless licenses may also be recommended]. If 4-week general season BTB/antlerless, then 5th week is antlerless ONLY. **2.)** 5-week general season antlerless ONLY [limited A-9/B-12 antlerless licenses (B-tags) may also be recommended].

Liberal Regulation **1.) (above)** will be recommended if: the total number of elk observed during post-season aerial surveys is more than 20% above the EMU population objective (more than 1,320 elk).

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above), the total number of elk observed during post-season aerial surveys remains more than 20% above the HD elk objective.

The Restrictive Regulation is: few or no general season antlerless or brow-tined bull/antlerless permits.

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is more than 20% below the EMU population objective (less than 880 elk) for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

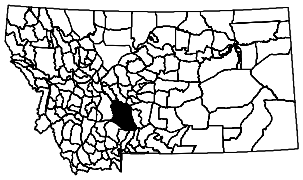
The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial surveys is at least10 bulls:100 cows OR, at least 7% of the elk observed during the survey is bulls.

The Restrictive Regulation is: The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls OR; **2.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) **Unlimited permits for brow-tined bulls will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 10:100 OR, less than 7% of the elk observed during the survey is bulls for 2 consecutive years. If a Restrictive regulation is implemented, and the post-season aerial classification reaches 15 bulls:100 cows or greater for 2 consecutive years, a standard season would again be recommended.**

2.) Limited permits for antlered bulls will be recommended if: the bull:100 cow ratio observed during the post-season aerial trend survey remains less than 10:100 OR, less than 7% of the elk observed during the survey is bulls after 2 consecutive years of application of unlimited permits.

BRIDGER EMU
(Hunting Districts 312, 390, 391, and 393)



Description: This 1,826-square-mile Elk Management Unit (EMU) encompasses the Bridger Mountains and the south end of the Big Belt Mountains and is bounded by the towns of Bozeman, Three Forks, Livingston, Ringling, and Townsend. Approximately 83% of this EMU is in private land ownership. The remaining 17% is in public ownership managed by the USDA-Forest Service (USFS), USDI-Bureau of Land Management (BLM), Montana Department of Natural Resources and Conservation (DNRC), and US Bureau of Reclamation. Most of the occupied elk habitat, particularly elk winter range, is in private ownership, with a limited amount of spring, summer, and fall elk habitat in public ownership, primarily USFS lands. Most private land is rangeland and irrigated hay meadows, with some dry-land farming in the western and eastern portions of the EMU.

This EMU contains approximately 770,000 acres of elk habitat (66% of EMU), of which an estimated 345,000 acres is elk winter range. The majority of elk habitat, particularly elk winter range, is in private ownership managed as portions of small to large cattle ranches. Because only 17% of the EMU is in public ownership, and much of that is in small isolated parcels, there is little state or federal habitat management within this EMU. During summer 2000, a forest fire consumed approximately 70,000 acres of winter and summer elk habitat, largely on private land and included large portions of the Bar None, CA, and Brainard Ranches in hunting districts (HDs) 312, 390, and 391.

Public Access: Because most elk habitat is in private ownership and in some places outfitters have leased large blocks of private land, elk-hunting opportunity for the general public is limited. Public access issues continue to affect elk harvest numbers and elk regulation type. During the 2002 hunting season, there were 5 Block Management Areas (BMAs) in the EMU, accounting for a small elk harvest.

In HD 393, only 14% of the land base is in public ownership with 2 small areas of accessible USFS land in the Bangtails and on Elkhorn Ridge. In recent years the Gallatin NF has traded out of land in this hunting district as part of larger land consolidation efforts elsewhere on the Gallatin NF. In addition, the private/USFS checkerboard landownership pattern in the Bangtails was consolidated so that generally, east of Bangtail Ridge became USFS and west became

private. During the elk-hunting season, fewer than 10% of the elk occur on public lands. Due to leasing of private land by outfitters and very restrictive or closed elk hunting on other large private holdings, the majority of elk are not available to the general public during the hunting season.

In HD 390, access to elk during the hunting season is largely controlled by 2 large ranches, which are managed for trophy bulls and receive very little hunting pressure. In HD 312, 42 % of the occupied elk habitat is in public ownership, however elk use private land to a greater extent than public lands in the district. Hunting district 391 has almost 50,000 acres of Forest Service lands, which are mostly spring, summer, and fall range and provide relatively good access to elk hunters.

Elk Populations: Approximately 5,000 elk were observed in this EMU during aerial surveys in 2003. The estimate of 5,000 elk in the EMU was made by compiling 2003 survey information from all districts (Figure 1) and adding elk counted while conducting mule deer surveys in portions of HDs 312 and 393 in areas not flown for elk. Starting in winter 1990, a 3-year elk radio telemetry study was initiated which, in part, was designed to help identify seasonal movements in HD 390 and portions of HDs 312 and 393 in the Sixteenmile Creek Corridor. Based on this study, and annual surveys, there are 9 reasonably distinct wintering elk herd units. Historically, elk numbers have fluctuated, increasing until elk numbers exceed landowner tolerance, then declining as a result of special elk management efforts, typically late-season antlerless elk reduction hunts. Despite special elk seasons and liberal regulations, hunting access restrictions on private land have made it difficult for FWP to manage elk numbers through the use of annual hunter harvest. In the last 10 years, elk numbers have increased substantially in portions of this EMU, particularly in HD 393, exceeding previous EMU elk population objectives.

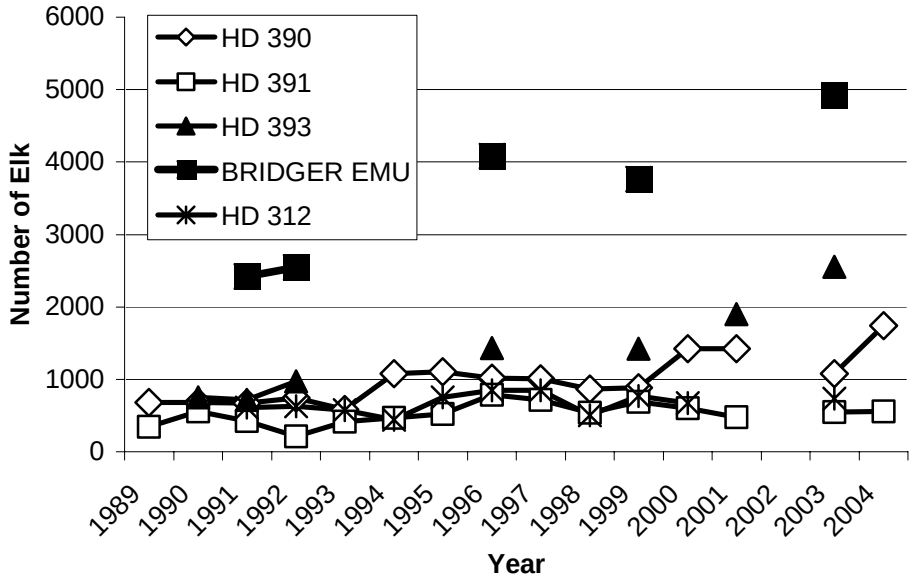


Figure 1. Number of elk observed during post-season aerial trend surveys in the Bridger EMU, 1989-2004.

Recreation Provided: During 1999-2001, this EMU provided an annual average of 19,600 days of hunting recreation for about 4,100 hunters. Expanding elk numbers and distribution in the Bridger Mountains have increased opportunities for the public to view and photograph elk.

Annual Elk Harvest: During 1999-2001, an average of 929 total elk comprised of an average of 451 antlered and 478 antlerless elk were harvested annually in this EMU.

Accomplishments: Although public lands inhabited by elk are somewhat limited in this EMU, FWP has worked with public land managing agencies in revising travel plans in relation to fires during summer of 2000 and continues to be involved in on-going travel plan revisions on the Helena National Forest portion of the EMU. FWP has worked closely with major landowners in an effort to increase elk harvest through liberalizing season structures.

Management Challenges: Limited public elk hunting on private land reduces the annual elk harvest, particularly of antlerless elk. Limited access and reduced harvests are in part due to large private ranches that are leased to outfitters. Reducing or even stabilizing elk numbers in this EMU will take cooperation from several major landowners in HDs 312, 390, and 393 in allowing some form of additional public hunting.

There is relatively little public (National Forest) land that provides elk hunting opportunities and the trend in National Forest land trades, sales, and consolidation is towards less public land in HD 393.

The limited hunting on lands leased or owned by outfitters has created "refuges" where few elk, particularly antlerless elk, are harvested. This has resulted in game damage concerns from landowners who are trying to make a living by ranching. In some cases, outfitting on adjacent ranches leads to increased elk numbers and to game damage problems on neighboring ranches after the hunting season.

Noxious weed infestations on publicly owned winter ranges degrade the quality and productivity of forage in these areas. These weed infestations are and will continue to be a challenge for land managers.

Population Monitoring: Aerial surveys for elk are flown in portions of this EMU every year and portions are flown only every 2-3 years. To better monitor elk in this EMU, surveys will be coordinated so that all occupied elk winter habitat is flown during the same years. These surveys would be accomplished every other year unless increased budgets allow surveys every year.

SUMMARY OF PUBLIC COMMENT

General comments include a desire for more public access to private lands that harbor elk during the hunting season. Many sportsmen believe there should be more access to the publicly owned wildlife resource, including bull elk in this EMU. Some landowners, with land where elk spend winter, expressed concern about lack of opportunity to harvest elk on private lands adjacent to them. They are concerned that the lack of harvest and increasing elk numbers hinders their ability to properly manage their property.

MANAGEMENT GOAL

Manage elk populations within the range of habitat availability and social tolerance. Work with the USFS to make public lands more attractive to elk while attempting to manage elk at levels consistent with landowner tolerance on private lands (increased elk harvest on private lands).

HABITAT OBJECTIVES

Develop cooperative programs that encourage public and private land managers to maintain an estimated 770,000 acres of occupied elk habitat.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Evaluate proposed logging, burning, grazing, mining, subdivision, and recreational development with regard to their potential impacts on elk habitat and elk populations.
- Encourage the Gallatin and Helena National Forests to maintain forest road densities at acceptable levels for wildlife.
- Encourage the USFS to consider the effects of previous timber sales and fires on elk habitat when planning future resource management projects.
- Help identify and facilitate purchase of conservation easements that will protect elk habitat and improve public access for hunting.
- Provide information to private landowners that are interested in protecting or enhancing wildlife habitat.

GAME DAMAGE STRATGIES

Each game damage situation will be addressed based on its own individual circumstances. FWP has a set of possible options that include stack yard protection, herding, early or late season special hunts, directing hunters to the area during the general season, kill permits, use of A-7 elk licenses, liberalizing the general antlerless harvest, and the use of A-9/B-12 licenses (B-tags). Where it can be productive and where landowners meet game damage guidelines, special late season winter hunts for antlerless elk may be useful in this EMU. In addition to these game damage strategies, increasing public elk hunting on private land is crucial to helping reduce game damage problems. In this EMU, traditional ranches located adjacent to or between leased ranches typically experience the most elk problems.

ACCESS STATEGIES

Because most of the elk in this EMU reside on private land during the hunting season, FWP will pursue every opportunity to increase public access to elk on private land. Access strategies include expanding the number of BMAs, implementing liberal hunting season regulations (e.g., either-sex general season hunting, antlerless only hunting, extended season permit hunting) that will encourage some landowners to provide access for antlerless elk hunting, and supporting state and federal agencies in efforts to secure additional access to public lands.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season aerial surveys in the EMU within 20% of 3,550 elk (2,840-4,260). Individual late winter herd count objectives are:

- HD 312
  Horseshoe Hills and Bridgers – 600 elk
- HD 390
  (A) Toston Herd segment – 400 elk
  (B) Middle Fork Sixteenmile – 250 elk
  (C) Ryegrass – 250 elk
- HD 391
  (A) East Portion of District – 275 elk
  (B) West Portion of District – 275 elk
- HD 393
  (A) North of Flathead Creek – 500 elk
  (B) Flathead and Looking Glass Creek – 400 elk
  (C) South of Brackett Creek - 600 elk

These herd objectives are considered to be reasonable numbers of elk for each herd segment, compatible with the amount of habitat available and tolerance for elk by the landowners in this EMU that allow reasonable public hunting on their land.

2) Maintain a minimum of 255 bulls observed during post-season aerial surveys in the EMU. This number represents 7% of the total number of elk listed as the objective for observed elk in the EMU. Objectives by HD for minimum numbers of bulls observed post-season are as follows:

- HD 312 - 45 bulls
- HD 390 - 65 bulls
- HD 391 - 40 bulls
- HD 393 – 105 bulls

POPULATION MANAGEMENT STRATEGIES

In the past, a variety of season types were employed in portions of this EMU in an attempt to harvest more elk on private lands. The complexity of past regulations was primarily a result of negotiations with outfitted private landowners. In the future, development of regulations will be community based, rather then individual landowner based. Based on elk numbers and population objectives, FWP will explore new ways to harvest more antlerless elk in this EMU to include the use of general either-sex elk regulations, A-9/B-12 licenses (B-tags), and antlerless only regulations.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: 1.) limited antlerless or brow-tined bull/antlerless permits OR; 2.) 1-2 week general season brow-tined bull/antlerless regulation. [Limited A-7 and/or A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is within 20% of the HD elk objective [HD 312 (480-720 elk), HD 390 (720-1,080 elk), HD 391 (440-660 elk) and, HD 393 (1,200-1,800 elk)].

The Liberal Regulation is: **1.**) 4-5 week general season brow-tined bull/antlerless regulation [limited A-9/B-12 (B-tags) antlerless licenses may also be recommended]. If 4-week general season brow-tined bull/antlerless regulation, then 5th week is antlerless ONLY. **2.)** 5-week general season antlerless ONLY regulation [limited A-9/B-12 antlerless licenses (B-tags) may also be recommended].

Liberal Regulation **1.) (above)** will be recommended if: the total number of elk observed during post-season aerial surveys is more than 20% above the HD elk objective [HD 312 (more than 720 elk), HD 390 (more than 1,080 elk), HD 391 (more than 660 elk) and, HD 393 (more than 1,800 elk)].

Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above), the total number of elk observed during post-season aerial surveys remains more than 20% above the HD elk objective [HD 312 (more than 720 elk), HD 390 (more than 1,080 elk), HD 391 (more than 660 elk) and, HD 393 (more than 1,800 elk)].

The Restrictive Regulation is: few or no general season antlerless or brow-tined bull/antlerless permits.

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is more than 20% below the HD elk objective [HD 312 (less than 480 elk), HD 390 (less than 720 elk), HD 391 (less than 440 elk) and, HD 393 (less than 1,200 elk)] for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

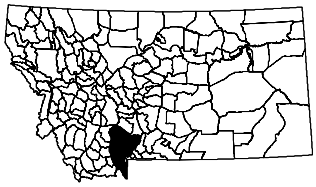
The Standard Regulation will be recommended if: the total numbers of bulls counted during post-season aerial surveys is at or above the HD objective [HD 312 (45 bulls), HD 390 (65 bulls), HD 391 (40 bulls) and, HD 393 (105 bulls).

The Restrictive Regulation is: **1.)** unlimited permits for brow-tined bulls by HD OR; **2.)** limited antlered bull permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR THE UNLIMITED AND LIMITED PERMITS.

1.) **Unlimited permits for brow-tined bulls will be recommended if: the total numbers of bulls counted during post-season aerial surveys is more than 20% below the HD objective for 2 consecutive years [HD 312 (36 bulls), HD 390 (52 bulls), HD 391 (32 bulls) and, HD 393 (84 bulls)].**

2.) Limited permits for antlered bulls will be recommended if: the total numbers of bulls counted during post-season aerial surveys remains more than 20% below the HD objective after 2 consecutive years of application of unlimited permits for brow-tined bulls.

GALLATIN/MADISON EMU
(Hunting Districts 301, 310, 311, 314, 360, 361, and 362)



Description: This 3,006-square-mile EMU straddles the Gallatin/Yellowstone and Gallatin/Madison River Divides. It encompasses the Gallatin Range (including a wilderness study area), Madison Range, Lee Metcalf Wilderness Area, and Lionhead roadless area. There are 2,245-square-miles of elk habitat in the EMU (about 75% of the EMU). The USDA-Forest Service (USFS), Gallatin National Forest (GNF) administers 46% of the EMU and 61.5% of elk habitat. Forty-eight percent of the EMU and 35% of elk habitat is privately owned. Fifty-five percent of elk winter range is privately owned. The Gallatin (Porcupine) Wildlife Management Area (GWMA) and Bear Creek Wildlife Management Area (BCWMA) are in the EMU.

Portions of the EMU are characterized by extensive previous logging activity with some current commercial logging in a portion of the existing private/public checkerboard areas along the Yellowstone face. Since 1993, there have been several land trades and acquisitions that have consolidated most of the corporate checkerboard lands in the Gallatin and south half of the Madison Mountain Ranges into public ownership. These land trades and acquisitions have protected wildlife habitat, improved public access, and increased the use of public lands in the EMU. There have been 3 forest fires since 2001, the Beaver Creek fire in the south portion of the Madison Range in hunting districts (HDs) 362 and 310, the Squaw Creek fire in north portion of the Gallatin Range in HD 301, and the Fridley Creek fire (about 20,000 acres) along the Yellowstone face in HD 314.

Public Access: Since 1993, public access has improved on the Yellowstone River side of the EMU, but has decreased on the Madison River side. Excellent public access occurs in the Gallatin Drainage portion of the EMU. However, there is still no public access to the GNF between Big Creek and Dry Creek (HD 314) on the Yellowstone River side, and between Mill Creek and Jack Creek (HD 360) and between Indian Creek and Papoose Creek (HD 362) on the Madison River side. The USFS and a private conservation group are working on an easement opportunity near Deadman Creek (HD 362) that would provide additional access to National Forest lands. Since 1993, the general hunting public lost access to private lands in Jack Creek (about 20,000 acres) and the Yellow Mules (about 20,000 acres). Plum Creek Timber Corporation sold these lands to private development interests.

Elk Populations: Numbers of elk counted during post-season aerial surveys in the Yellowstone (HD 314) and Madison portion (HD 360 and 362) of the EMU have reached record high numbers (Figures 1 and 2). However, wintering elk numbers in the Gallatin (HD 310), have declined in recent years from 1,400-1,600 pre- 1995, to about 1,000 elk (Figure 3). Elk numbers in HD 301 (Figure 4) are increasing from reductions in the early 1990s and numbers in HD 311 (Figure 5) are relatively stable since declining from a peak in 1995.

Recreation Provided: During 1999-2001, this EMU provided an annual average of 11,279 hunters with 55,556 days of hunting recreation beginning with archery season in early September and extending through the Gallatin and Madison late hunts in January. Wildlife viewing, photography, educational tours, antler gathering, and a variety of winter activities dependent on snow are major recreational pursuits in this EMU, particularly in the Gallatin drainage portion.

Annual Elk Harvest: During 1999-2001, an average 1,660 elk (941 bulls, 719 antlerless elk) were harvested annually during the archery and general seasons. In addition, 4 of the HDs (310, 311, 360, and 362) had regularly scheduled late antlerless elk hunts, with very limited numbers of either-sex permits. Late hunts in HDs 310, 360, and 362 are conducted to manage elk that migrate from Yellowstone National Park to winter in the Gallatin and Madison drainages. The average annual harvest in these late hunts was 444 elk (7 bulls) during 1999-2001.

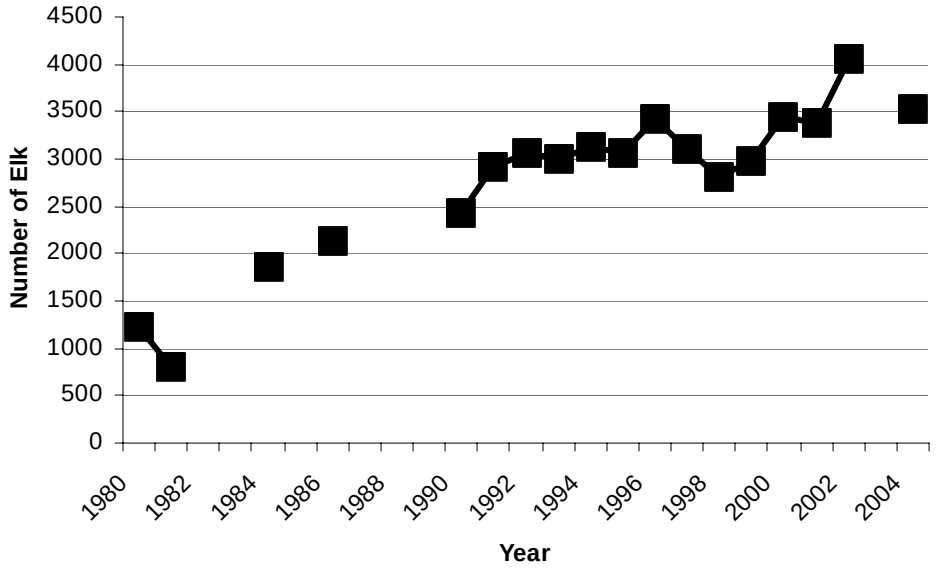


Figure 1. Number of elk observed during post-season aerial trend surveys in HD 314, 1980-2004.

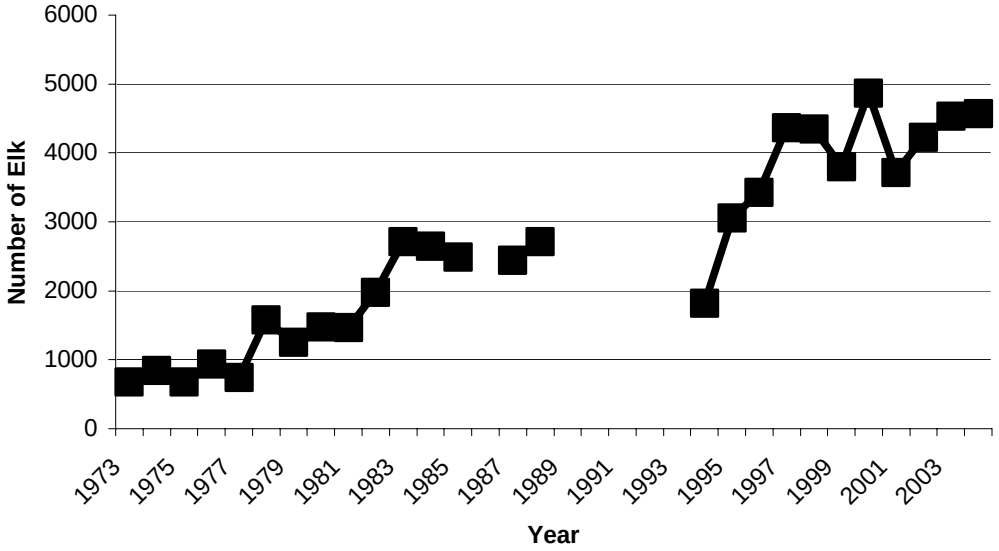


Figure 2. Number of elk observed during post-season aerial trend surveys of the west slope of the Madison Range (HDs 360 & 362), 1973-2004.

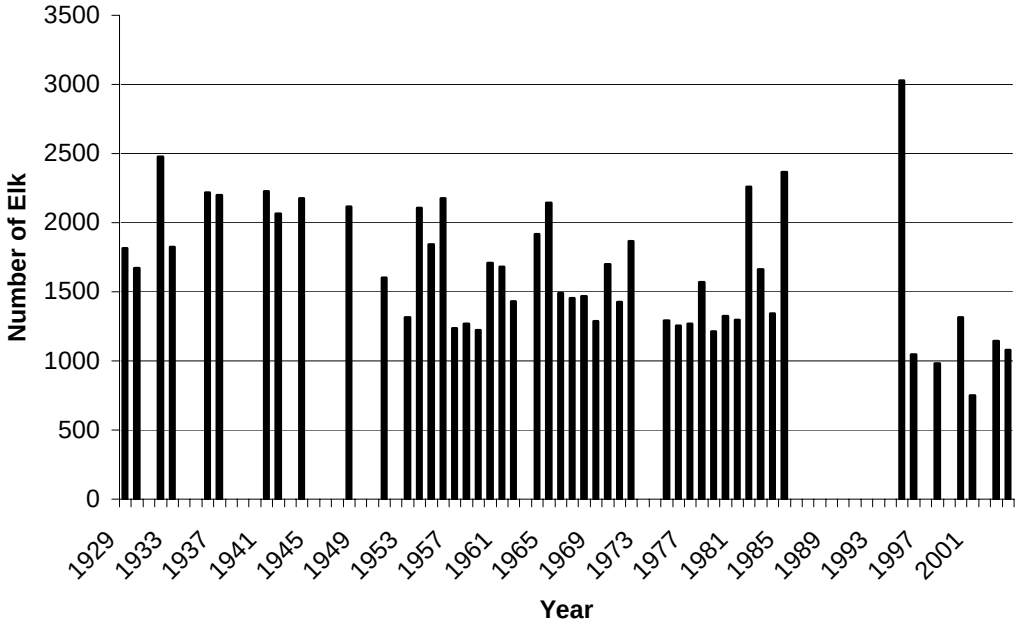


Figure 3. Number of elk observed during post-season aerial trend surveys in HD 310, 1929-2004.

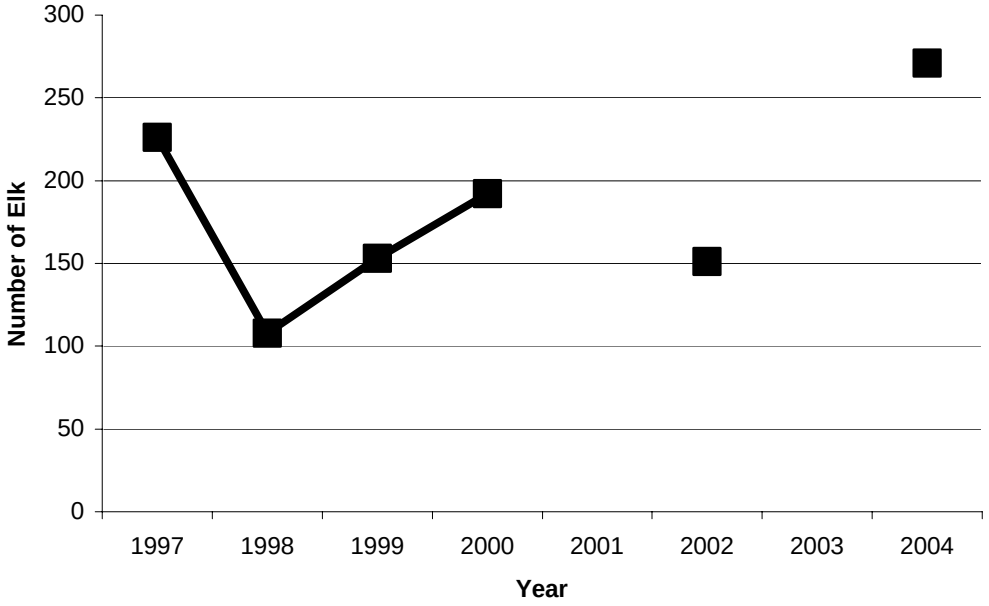


Figure 4. Number of elk observed during post-season aerial trend surveys in HD 301, 1997-2004.

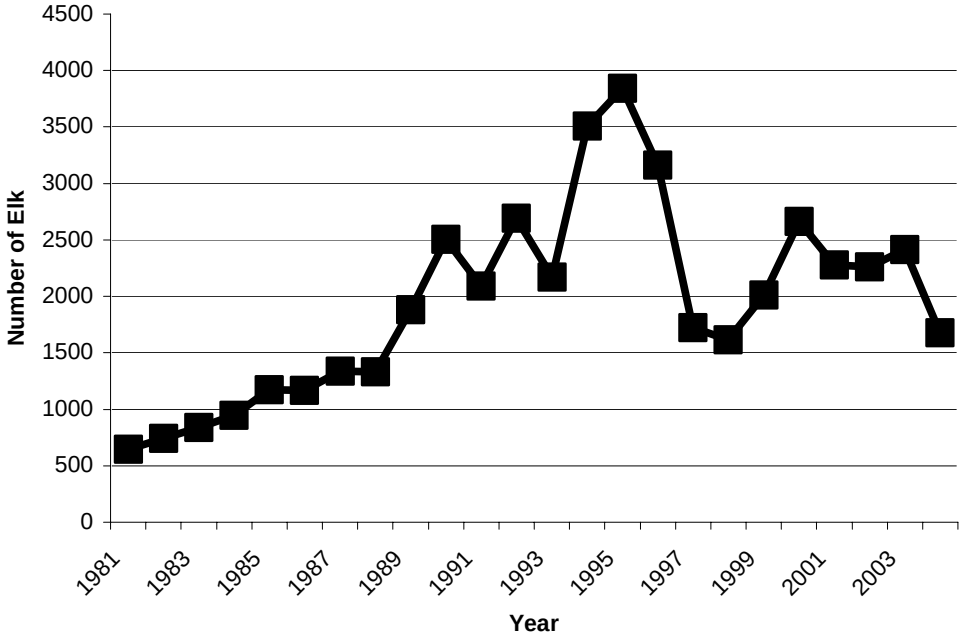


Figure 5. Number of elk observed during post-season aerial trend surveys on the Flying D Ranch, HD 311, 1981-2004.

Accomplishments: The Gallatin and Madison Mountain Ranges have been in a private/public checkerboard ownership pattern since the building of the railroads. Beginning in1992, efforts were made to consolidate public lands in these two mountain ranges. As of the summer of 2003, about 100,000 acres of private land was placed in public ownership through a series of purchases, land trades and timber receipt for land deals, consolidating blocks of public and private lands.

Beginning in 2000, a cooperative Wolf-Ungulate study centering in this EMU was begun with FWP, Montana State University, the U. S. Fish & Wildlife Service, and the National Park Service –YNP as cooperators. These cooperative studies are designed to gather information that will assist FWP in managing wolves and ungulates after the State of Montana assumes authority for wolf management.

Management Challenges: There is limited access to public land and adjacent private land in some portions of the EMU due to changes in land ownership. This has resulted from a change in landownership toward landowners who do not make their primary living from ranching. These new owners have a higher tolerance for elk and a different perspective on public hunting and elk numbers than traditional landowners. These factors contribute to reductions in the potential hunter harvest. These reductions in hunter access are particularly true for portions of HDs 314, 360, and 362.

There is growing concern about the impact of wolf reintroduction on elk numbers, distribution, and behavior throughout this EMU. Wolf activity and pack formation is increasing in the area and some hunters and landowners believe wolves have changed the behavior and distribution of elk, making it more difficult to harvest elk.

In portions of HDs 311, 314, and 360, commercial outfitting on private property restricts public access to both private and public land, reducing potential elk harvest, particularly of antlerless elk.

Elk that migrate out of Yellowstone National Park (YNP) to winter in Montana present unique management challenges. Some travel through the Gallatin to winter in Tom Miner Basin in HD 314 and several thousand travel through the Gallatin drainage and along the Madison River to winter along the west face of the Madison Range in HDs 362 and the southern portion of HD 360 (BCWMA). In general, the combination of “non- Park” and “Park” elk that winter in those districts are at very high levels. In the past, late season hunting has been an effective tool at controlling numbers. However, in the Yellowstone and Madison valleys, it is becoming more difficult to attain adequate harvest even with late season hunts.

Elk that migrate out of YNP and winter in the Gallatin drainage are below population objective and recruitment of calves has been consistently low since the late 1990s. The number of permits issued for late season hunts have been reduced dramatically. Concern about wolf predation in this deep snow wintering environment, bear predation on newborn calves, and long-term drought combine to cause FWP to be cautious regarding the harvest of antlerless elk in HD 310. This cautious approach includes the elimination of the Gallatin late elk hunt for the 2004-2005 season.

The late hunt in HD 311 is not associated with elk migrating from YNP. Most of the late season hunting that occurs is on a large outfitted ranch that manages bull harvest in a very restrictive manner to maintain high bull:100 cow ratios of about 50 bulls:100 cows. This ranch has agreed to a population objective for numbers of wintering elk. However, even with regularly scheduled late season hunts and some limited general season antlerless hunting, it has been difficult to maintain the population at the objective level. Maintaining elk near the population objective is difficult when the period of hunter access does not coincide with weather that produces favorable conditions for adequate harvest.

The north half of HD 360 has a high prevalence of outfitted hunting on ranches that control elk winter range. Based on telemetry data from the 1980s, a majority of elk wintering here spends the summer and fall in Jack Creek and Yellow Mules. The increase in elk populations in this portion of HD 360 is directly linked to the loss of public hunting access to Jack Creek and the Yellow Mules. Elk population management options are limited because of little access for hunters to these private lands.

Population objectives for elk wintering in HDs 360 and 362 are tentative. During winter, these elk are primarily on private land owned by a very diverse range of landowners with different economic interests, cultural backgrounds, and management objectives. The Madison Valley Ranch Lands Group and FWP sponsors the Madison Valley Wildlife Working Group (landowners, hunters, local business people, FWP, USFS and other private conservation organizations). A purpose of this group is to work toward developing population objectives for elk based on informed consent. Community-based problem solving takes time to evolve and decisions are not reached immediately. The Working Group intends to submit population objectives for approval by the FWP Commission. If approved, these objectives will replace the tentative objectives listed in this Plan.

Elk winter range continues to be lost to rural housing development along the north end of the Gallatin Range south of Bozeman in HD 301. Human safety issues and conflicts with traditional agriculturalists intermixed with these housing developments make it difficult to obtain the desired harvest of elk. We expect some segments of these elk, especially those that are becoming accustomed to human presence, to increase under these circumstances.

Generally, no general hunting has occurred in the Gallatin Closed Area since 1910 when it was established as a preserve under state statute. Preserve status was abandoned in 1957 and the area was open to public hunting for a very brief period and eventually became known as the Gallatin Closed Area. FWP closed this area to all big game hunting during the archery and general seasons, but hunting occurred on the winter range portions of the closed area during the Gallatin late elk season. A purpose of this closed area was to encourage elk to leave YNP and migrate toward winter ranges. Once movement occurred, opening this area during the late hunt allowed hunters to harvest elk that were unavailable during the general season. A unique opportunity exists on this 44,000-acre area to provide limited entry (permit only) hunting for trophy bull elk for a minimal number of license holders without displacing hunters to other areas. Even with wintering elk populations below objective for this HD, the harvest of a small number of bulls would not have a significant impact on the recovery of this elk herd.

We propose to the public and FWP Commission for the 2005 hunting season to rename the Gallatin Closed Area to the Gallatin Special Management Area. The objective will be to provide a unique limited entry, high quality hunting experience defined as: 1) an opportunity to harvest a mature bull elk; 2) a very low hunter density and; 3) an opportunity to hunt from archery through the general season (with the appropriate weapon). Compared to other limited entry options for trophy bulls, opening this new area will not displace hunters to other areas. It also increases opportunity for the general hunting public.

Brucellosis a concern for elk management because of the occurrence of free-ranging bison and elk from YNP in this EMU. FWP responses include maintenance of relatively low elk densities, continuing efforts to preserve open space on key wintering areas, enforcement of the ban on artificial feeding, and continuing serologic surveys of elk.

Livestock grazing, using specific grazing systems, continues to be an integral part of forage and habitat management on some WMAs. Similar systems may be appropriate for the Bear Creek WMA as a means of encouraging elk use and presence on public winter ranges in the Madison Valley. Also, FWP supports the present efforts in the Madison Valley toward developing a collaborative grazing program promoting quality range management practices and balancing the needs of private livestock producers and wildlife.

Movement of wintering elk in the Madison Valley suggests there is interchange between elk wintering in HD 360 and 362. At times, the majority of wintering elk could be found in either hunting district. Also, there is growing evidence that elk wintering in the Gallatin, especially the Taylor Fork drainage, move to the Madison during some winter months. These movements present challenges to interpreting survey information and formulating management decisions based on the established population objectives.

Population Monitoring: A mid-winter fixed-wing aircraft flight is made to obtain a trend count and sex/age classifications in HD 301. For HD 310, complete coverage helicopter surveys for counts and classifications are flown in late December and late March – early April. Additionally, as part of the Wolf-Ungulate Study, a flight with fixed-wing aircraft to classify calves:100 cows is conducted in mid- to late-July. An early to mid-winter helicopter survey for trend count is made on the Flying D Ranch in HD 311 by Turner Enterprises in cooperation with FWP. A late winter fixed-wing aircraft survey is flown each year in HD 314 to obtain a trend count and bull classification. A small sample of the elk observed in the HD 314 trend count is classified for calf:100 cow ratio. A late March – early April fixed-wing aircraft trend count and bull classification survey is conducted on east Madison winter ranges in HDs 360 and 362. We plan to fly this survey with a helicopter every other year to enhance classifications and test counting efficiencies. Calf:100 cow classifications in HDs 360 and 362 are conducted from the ground in late winter. Occasionally, a mid-winter fixed wing aircraft survey for trend count and bull classification is made on the Sheep Creek to Mile Creek winter range in HD 361.

SUMMARY OF PUBLIC COMMENT

Public comment strongly reflects the desire to maintain the diverse, high quality recreational opportunities found in this EMU. With the changes in private land ownership there is less

concern expressed about high elk numbers and their impacts on ranching. There continues to be strong public support for protecting key elk habitats, both on private and public lands. Many people support the use of fee title acquisition, land trades, conservation easements, and conservation buyers as tools to protect and preserve wildlife habitat. Considerable debate occurs about the appropriate proportion of motorized and non-motorized use of the Gallatin Crest Divide and the South Madison. People are very concerned about the possible impacts of increasing predator populations on elk, particularly the impacts of wolves and grizzly bears. There is a perception that wolves have already made it more difficult for hunters to harvest elk. Many people would also like improved access to the GNF in HD 314 between Dry Creek and Big Creek and also along the Madison Face north of Mill Creek (HD 360) and south of Indian Creek (HD 362). Many are concerned about the potential effects of large-scale forest fires on elk habitat. Many have expressed interest in exploring opportunities for limited entry bull hunting.

MANAGEMENT GOAL

Manage elk populations within the constraints of habitat availability, expanding predator populations, and diverse social and agricultural interests. Encourage and cooperate in the wise management and conservation of elk habitat on public and private land and provide diverse hunting and non-hunting, elk-related recreational opportunities.

HABITAT OBJECTIVES

Develop and promote cooperative programs that encourage public and private land managers to maintain and conserve 1,437,000 acres of productive elk habitat.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Work collaboratively with other state and federal agencies, private non-profit land trusts, and agricultural interests like the Madison Valley Ranch Lands Group to conserve the agricultural base and elk winter range in the Madison, Gallatin and Yellowstone areas. Use State (FWP's Habitat Montana program), federal, county, and private funding sources to achieve this effort. FWP considers conservation easements, leases, land trades, and/or fee title acquisition as tools to protect and conserve elk habitat.
- Evaluate logging, burning, grazing, mining, and housing (subdivision) and recreational development proposals with regard to their potential impacts on elk habitat and elk populations.
- Cooperate with the GNF in their efforts to rewrite their forest wide travel management plan and to maintain forest road densities at acceptable levels for wildlife.
- Encourage the GNF to consider the effects of previous timber sales and fires on elk habitat when planning future resource management projects.

GAME DAMAGE STRATEGIES

FWP will:

- Changing land ownership trends, particularly in HDs 301, 311, 314, 360 and 362, have lead to increased tolerance of high elk numbers and fewer game damage complaints.
- Each game damage situation will be addressed based on its own individual circumstances. FWP has a set of possible responses that include stack yard protection, herding, early or late season special hunts, directing hunters to the area during the general season, kill permits, use of A-7 elk licenses, and liberalizing the general antlerless regulations by use of either-sex regulations or A-9 licenses. In addition to these game damage strategies, increasing public elk hunting on private land is necessary to help reduce game damage problems.

ACCESS STRATEGIES

FWP will:

- Identify important public access needs and provide recommendations to the GNF, the Access Montana Program, and landowner groups.
- Identify and pursue new Block Management contract opportunities as they become available.

POPULATION OBJECTIVES

HD 314:

1) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 3,000 elk (2,400-3,600). Individual herd count objectives are as follows:
   A) Wineglass Mountain to West Pine Creek. – 1,000 elk.
   B) West Pine Creek to Eight-Mile Creek - 300 elk.
   C) Eight-Mile Creek to Big Creek - 500 elk.
   D) Big Creek to Point of Rocks – 250 elk.
   E) Point of Rocks to Rock Creek – 450 elk.
   F) Rock Creek to Tom Miner Basin – 500 elk.
2) Maintain a minimum of 7% bulls in the total elk observed during post-season aerial trend surveys.

HD 301:

1) Maintain the number of elk observed during post-season aerial trend surveys from the mouth of the Gallatin Canyon east to Bear Canyon within 20% of 500 elk (400-600).
2) Maintain a minimum of 7% bulls in the total elk observed during post-season aerial trend surveys.

HD 310:

1 Maintain the number of elk observed during post-season aerial trend surveys in the upper Gallatin drainage within 20% of 1,500 elk (1,200-1,800).
2) Maintain a minimum of 10% bulls in the total elk observed during post-season aerial trend surveys.

HD 311:

1) Maintain the number of elk observed during post-season aerial trend surveys within 20% of 2,700 elk (2,160-3,240). Individual herd count objectives are as follows:

A) North end of the Spanish Peaks – 2,500 elk.
B) Gallatin Canyon from Karst to Big Sky Spur Road – 200 elk.

HD 360:

1) Maintain the number of elk observed during post-season aerial trend surveys in the south half of the HD, from Indian Creek to Shell Creek within 20% of 1,000 (800-1,200) and the number of elk observed in the north half of the HD, from Cedar Creek to the Jumping Horse area within 20% of 1,200 elk (960-1,440).
2) Maintain a minimum of 10% bulls in the total elk observed during post-season aerial trend surveys.

HD 362:

1) Maintain the number of elk observed from Indian Creek to Quake Lake during post-season aerial trend surveys within 20% of 2,500 elk (2,000-3,000) and maintain 100 elk observed in the Hebgen Lake Basin portion of the HD.
2) Maintain a minimum of 10% bulls in the total elk observed during post-season aerial trend surveys.

HD 361:

Winter elk populations in this district are highly dependent on winter weather conditions. The more severe the weather the more they move to the Wall Creek and HD 362 winter ranges. Typically, in moderate winters we expect to observe 150 – 200 wintering elk in this HD.

POPULATON MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week either-sex (HD 314) or brow-tined bull/antlerless (HDs 301, 310, 311, 360, 361 and 362) archery regulations EXCEPT, see Restrictive Regulations for Antlered elk.

Antlerless:

Entire EMU:

The Standard Regulation is: 1.) limited either-sex (HD 314) or brow-tined bull/antlerless permits OR; 2.) 1-2 weeks general season either-sex (HD 314) or brow-tined bull/antlerless regulations AND; regularly scheduled limited entry late season elk hunts or limited A-9/B-12 licenses (B-tags) valid during and after the general season (see late hunt criteria below).

The Standard Regulation will be recommended if: the total post-season aerial trend survey count is within 20% of the HD elk objective.

The Liberal Regulation is: 4-5 week general season either-sex (HD 314) or brow-tined bull regulations AND; regularly scheduled limited entry late season elk hunts or limited A-9/B-12 licenses (B-tags) valid during and after the general season (see late hunt criteria below).

The Liberal Regulation will be recommended if: the total post-season aerial trend survey count is more than 20% above the HD objective.

The Restrictive Regulation is: few or no general or extended season either-sex (HD 314) or brow-tined bull/antlerless permits AND; no regularly scheduled limited entry late season hunts (see late hunt criteria below).

The Restrictive Regulation will be recommended if: the total post-season aerial trend survey count is more than 20% below the HD objective.

Criteria for recommending the late elk hunt in the Gallatin (HD 310)

The Gallatin late elk hunt began in 1965 as a method to manage elk that migrated from YNP, toward winter ranges in the upper Gallatin Drainage. Following a three-year closure, FWP biologists reestablished the hunt in 1971. Since that time, permit levels ranged from 2,800 either-sex permits in 1978 to 80 antlerless and 4 brow-tined bull/antlerless permits in 2003. Elk harvests during this period ranged from 750 elk (197 bulls, 370 cows, and 183 calves) in 1965 to 35 antlerless elk in 2003.

Our objective for numbers of elk on winter ranges in HD 310 is 1,400-1,600 observed elk. These wintering areas are primarily public lands and include FWP's Gallatin Wildlife Management Area near Big Sky, Montana. A late hunt in the Gallatin drainage (HD 310) will be recommended only when necessary to maintain wintering elk numbers at or near the objective of 1,500 elk.

<u>FWP will recommend a late elk hunt in the Gallatin drainage (HD 310) if:</u> 1) the number of elk observed in the upper Gallatin Drainage during post-season aerial trend surveys is at least 1,500 elk for two consecutive years AND; 2) at least 20 calves:100 cows are observed for two consecutive years during post-season aerial trend surveys.

Antlered:

HD 314:

<u>The Standard Regulation is:</u> 5-week general season antlered bull regulation.

The Standard Regulation will be recommended if: at least 7% of elk observed during post-season aerial trend surveys are bulls.

<u>The Restrictive Regulation is:</u> 5-week general season brow-tined bull regulation.

The Restrictive Regulation will be recommended if: less than 7% of elk observed during post-season aerial trend surveys are bulls for 2 consecutive years.

HDs 301, 310, 311, 360, 361, and 362:

The Standard Regulation is: 5-week general season brow-tined bull regulation.

The Standard Regulation will be recommended if: at least 10% of elk observed during post-season aerial trend surveys are bulls.

The Restrictive Regulation is: unlimited brow-tined bull/antlerless permits by HD for both archery and the general season AND no late season either-sex permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED PERMITS.

The Restrictive Regulation will be recommended if: less than 10% of elk observed during post-season aerial trend surveys are bulls for 2 consecutive years OR, less than 20 calves:100 cows are observed during post-season aerial trend surveys for 2 consecutive years.

If the Gallatin Special Management Area is adopted by the FWP Commission, the following are additional recommended antlered bull regulations for HD 310:

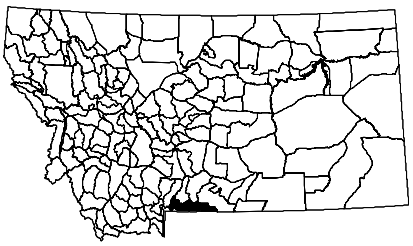
The Standard Regulation is: 5 either-sex permits valid in the Gallatin Special Management Area during the archery and general seasons.

The Standard Regulation will be recommended if: standard or liberal regulations for both antlerless and antlered elk are in place in at least two of the following three HDs: 314, 360 and 362.

The Restrictive Regulation is: no hunting in the Gallatin Special Management Area.

The Restrictive Regulation will be recommended if: two of the three HDs, 314, 360 and 362 are in the restrictive regulation for both antlered and antlerless elk.

NORTHERN YELLOWSTONE EMU
[Hunting Districts 313, 314 (S. portion), 316]



Description: This EMU includes the 700-square-mile area immediately north of Yellowstone National Park (YNP) between Cooke City and Gardiner and north to the Boulder River Divide, Mill Creek Divide, and Six-mile Creek east of the Yellowstone River and Sphinx Creek west of the Yellowstone River. Approximately 75% of the EMU lies within the Absaroka-Beartooth Wilderness Area. Overall, about 94% of the EMU is in public ownership [USDA Forest Service (USFS), Montana Department of Natural Resources and Conservation (DNRC), Montana Fish, Wildlife & Parks (FWP), USDI Bureau of Land Management (BLM)], and 6% is in private ownership. The Gallatin National Forest manages more than 95% of the public land. The terrain is moderately to extremely rugged with extensive areas of timber and high elevation sub-alpine and alpine habitats. Private land ownership is largely restricted to subdivisions and small ranches along the Yellowstone River between Gardiner and Six-mile Creek and in Cinnabar Basin.

The EMU contains almost 400,000 acres of elk habitat. Approximately 130,000 acres within the EMU is occupied elk winter range. Since 1989, over 16,000 acres of critical elk winter range have been transferred into public (USFS, FWP) ownership; most notably through the interagency Northern Yellowstone Elk Herd Project completed in 1993 and the Royal Teton Ranch Conservation Project Phase I and II completed in 1998 and 1999. Road densities are generally low over much of the EMU with little opportunity for future change due to Wilderness Area designations. Future opportunities for logging, grazing, mining, and subdivision are also very limited due to land ownership, and resource and management restrictions. Elk habitat in this EMU is relatively secure from significant modification.

Public Access: Most of the public land is legally accessible through numerous trailhead or secondary road access points. Approximately 75% of the EMU lies within the Absaroka-Beartooth Wilderness, where access is by foot or horseback only; there are no roads or vehicle access to about 530-square-miles of wilderness area.

Elk Populations: This EMU helps support the Northern Yellowstone elk herd, a large migratory population of 9,000-19,000 elk that occupies about 1.5 million acres of summer range inside and

north of YNP. This elk herd winters on about 380,000 acres, of which about 130,000 acres lies north of YNP within this EMU. During 2000-2004, total elk counts have ranged from 8,300-14,500 elk (Figure 1), with 3,500-5,000 elk wintering in this EMU. During severe winters, up to 8,600 elk have wintered in this EMU. Since 1968, the Northern Yellowstone elk population has fluctuated widely between 3,200 and 19,000 elk, often with annual changes of 10-20% and some annual changes of up to 40%, as a result of major winterkill events. Population fluctuations in the Northern Yellowstone elk herd are more dynamic than other elk populations in southwest Montana.

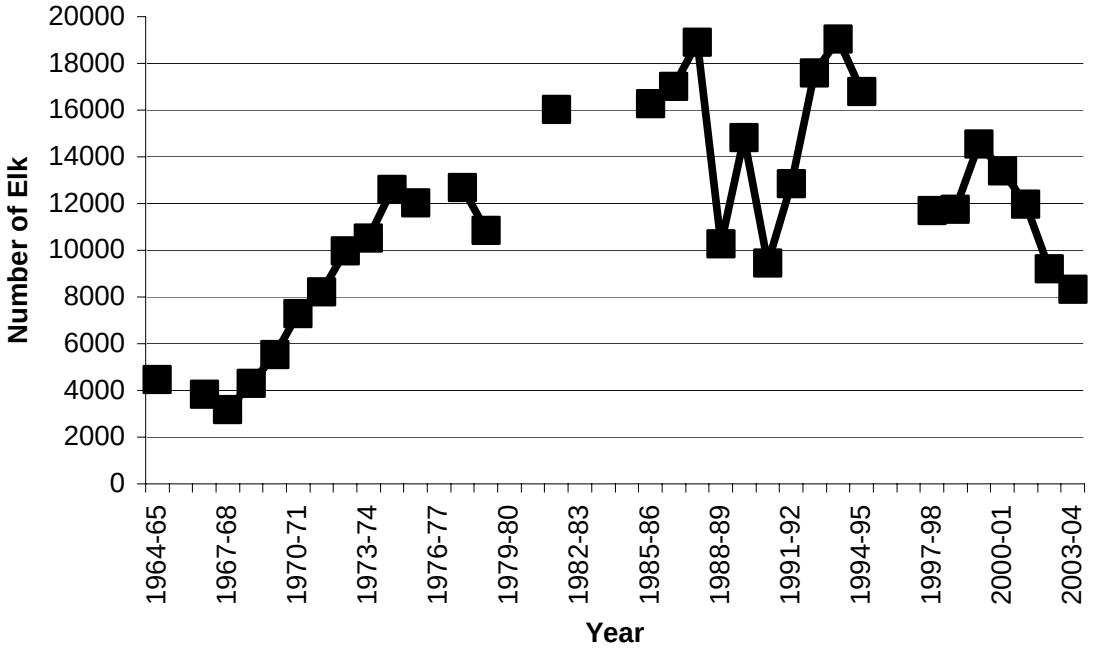


Figure 1. Number of elk counted during Cooperative early winter post-season trend surveys of the Northern Yellowstone elk winter range (includes elk wintering in Yellowstone National Park), 1964-1965 through 2003-2004.

Recreation Provided: This EMU provides longer and more diverse elk hunting opportunities than any EMU in Montana. Opportunities include a 6-week archery elk season, (HD 313, southern portion of HD 314), a 6-week early backcountry rifle season beginning 15 September in HD 316, a 5-week general rifle elk season (HD 313, southern portion of HD 314), and a very popular 6-week limited access Gardiner Late Hunt from early January to mid-February (HD 313, southern portion of HD 314). These diverse seasons provide approximately 8,000 days of hunting recreation to about 3,200 hunters annually. Exceptional big game viewing opportunities occur on winter ranges in the Dome Mountain WMA and Gardiner Basin areas. Wildlife viewing is also an important summer and fall recreational use on hundreds of miles of backcountry trails in the Absaroka-Beartooth Wilderness portion of this EMU. Much of this EMU experiences considerable year-round tourist activity because it is adjacent to YNP.

Current Annual Elk Harvest: During 1999-2001, an average estimated 175 elk (150 antlered and 25 antlerless) were harvested during the archery, early rifle and general season. Through the same period, an average estimated 1,200 elk (100 antlered, 1,100 antlerless) were harvested during the Gardiner late hunt. Late hunt harvest can be quite variable, depending on population level, weather conditions and migration. From 1988-1989 to 2002-2003, estimated late hunt harvest varied from 273 elk in 1993-1994 to 2,465 elk in 1996-1997. **Note:** the harvest data does not include the archery and general season elk harvest in the small portion of HD 314 (51 square miles) within this EMU; that harvest is estimated to be < 75 elk.

Accomplishments: About 7,000 acres of important wildlife habitat changed from private ownership to Gallatin National Forest (GNF) ownership in Phase I and II of the Royal Teton Ranch Conservation Project in 1998 and 1999. This effort helps to protect valuable big game winter range and migration routes from future development. Beginning in 2001, two new Gardiner Late Hunt either-sex elk permit types were issued for the first time. These permits provide new opportunities for youth and disabled hunters, to include special permits for severely handicapped hunters who are restricted to hunting from a vehicle. These permits have met with strong public support. In 1998 FWP developed and implemented a comprehensive monitoring plan for a conservation easement on the 160-acre Allen Nelson property adjacent to the Dome Mountain WMA.

Management Challenges: Wolf reintroduction and subsequent predation will reduce elk numbers and influence elk distribution and behavior. Elk management decisions and hunting opportunities are impacted by the effect of wolves on elk populations, movements, and behavior. When wolves are delisted and Montana assumes management authority for wolf populations, FWP will attempt to balance the needs of a healthy wolf population and a viable elk population, with the interest of hunters, non-hunters, and landowners. Until then, FWP can only manage the elk component of the equation and not the wolf component.

Monitoring and managing a relatively small "resident" portion of the Northern Yellowstone elk population that spends the entire year north of YNP is made difficult due to large early winter migrations of other Northern Yellowstone elk from YNP. It is impossible to accurately monitor the trend in population and recruitment in these resident elk when the only opportunity to count or classify large samples occurs when they are joined by large numbers of migrant YNP elk.

In some years migrant elk cause elk depredation problems adjacent to the Dome Mountain. WMA and may move onto private lands in HD 317 north of the Six-mile Creek Road.

Population Monitoring: An interagency Cooperative Elk Count is flown annually between mid to late-December. This is a aerial population trend count covering 68 winter range units inside and outside YNP accomplished with 4 fixed-wing airplanes flying simultaneously over the entire Northern Yellowstone winter range. No effort is made to correct for observability bias. FWP conducts 2-3 fixed-wing aerial elk counts north of YNP to estimate the number of elk that migrate onto winter ranges within HDs 313 and 314. This information is used to estimate trends in migration size/timing and potential impacts on winter range habitat. In late February to early March NPS biologists conduct a helicopter classification survey of Northern Yellowstone elk to document the trends in calf:cow:bull ratios. In addition to elk population monitoring there are

several elk/predator and elk/habitat research projects underway inside YNP. These studies help shed light on important questions related to elk mortality, behavior, and habitat use.

SUMMARY OF PUBLIC COMMENT

Much of the recent public comment revolves around concerns over declining Northern Yellowstone elk numbers and the impacts of wolf predation. People are very concerned about the loss of hunting opportunities, particularly the long-term viability of the Gardiner Late Hunt and the negative impact on the local economy.

MANAGEMENT GOAL

Maintain the carrying capacity and continued winter use by northern Yellowstone elk on winter ranges north of YNP and provide unique elk hunting opportunities to include an early season rifle hunt for older age bulls, and a special late elk season that offers high success antlerless elk hunting. Acknowledge and attempt to balance the needs of healthy and diverse predator populations (to include newly restored wolves) and a viable elk population with the diverse existing human interests.

Note: Management goals and objectives for the Northern Yellowstone EMU are somewhat different from most EMUs in that, (1) this EMU does not include the entire year-round home range of the Northern Yellowstone elk herd, (2) the majority of the Northern Yellowstone elk are seasonal migrants, spending only 4-5 months during the winter/early spring in the EMU, (3) a large proportion of the total elk population is not available to sport hunting, and the majority of elk that are available to hunters, are hunted during special winter restricted access late hunt, and (4) the Northern Yellowstone elk herd is subject to higher natural mortality than other EMUs. This natural mortality includes periodic major winterkill events and high predation rates from a full complement of major predators, including grey wolves in recent years.

HABITAT OBJECTIVES

Maintain healthy, productive elk habitat in the EMU, including quality winter range that contributes to the long-term viability of this nationally important elk population.

HABITAT MANAGEMENT STRATEGIES

FWP will provide technical assistance to and cooperate with state, federal, and private land managers to pursue the following:

- Evaluate proposed logging, burning, grazing, mining, subdivision, and recreational development with regard to their potential impacts on elk habitat and elk populations.
- Work with the GNF to maintain forest road densities at acceptable levels for wildlife.
- Encourage the GNF to consider the effects of previous timber sales and fires on elk habitat when planning future resource management projects.

- Protect and maintain major elk winter ranges on public and private lands to include the 16,000+ acres of winter range acquired by the interagency Northern Yellowstone Elk Herd Project and the Royal Teton Ranch Conservation Project.
- Monitor habitat and vegetation conditions on the 4,680-acre Dome Mountain WMA.

GAME DAMAGE STRATEGIES

Due to land ownership patterns and public acquisition of elk winter range, there are relatively few elk related game damage problems in this EMU. The only exceptions occur on relatively small parcels of private land adjacent to the Dome Mountain WMA and near Six-mile Creek. In some years, particularly during late winter or early spring, elk move off the Dome Mountain WMA and cause game damage concerns on private grazing land. FWP has addressed this issue through the use of herders, opening public access to the WMA 2 weeks earlier in spring (to encourage an earlier elk migration back to YNP), and providing assistance with fence repair. FWP and other groups have also secured conservation easements on private land that will facilitate continued winter range use by elk. There may be future opportunities for easements or acquisitions that would help address game damage issues.

ACCESS STRATEGIES

Over 90% of this EMU is in public ownership and is accessible to public hunting. As a result, there are few public access problems or concerns in this EMU.

POPULATION OBJECTIVES

1) Use the Gardiner late hunt to regulate wintering elk numbers to help ensure the long-term viability and productivity of winter range habitat.
2) Provide early and general season elk hunting opportunities commensurate with elk population levels.

POPULATION MANAGEMENT STRATIGIES

Early Backcountry Elk Hunt

This hunt, within portions of the Absaroka-Beartooth Wilderness Area north of YNP in HD 316, provides a backcountry elk hunting opportunity to hunt older age-class bull elk with a rifle during the rut. Due to the backcountry nature of the area, only 400-500 hunters participate and they harvest relatively few (75-150) elk, primarily bulls. This hunt is not a population management hunt, but rather a regulation type that provides an uncommon recreational experience. Considering the large size of the Northern Yellowstone elk herd and sex ratios of 40+ bulls:100 cows, this hunting season has very little biological effect on the elk population. This early season hunt can be offered over a wide range of population levels.

General Archery and Rifle Elk Season

FWP provides archery and general season elk hunting opportunities to harvest elk in HD 313 and a small portion of HD 314 (S. of Sphinx Creek). These hunting seasons depend on a relatively small portion of the Northern Yellowstone elk population (400-600 elk) that is north of YNP during fall. The last week or two of the general season, may also provide an opportunity to harvest migrant elk as they move out of YNP. This potential movement can attract a large number of hunters and increase the harvest substantially in some years. Due to the difficulty in monitoring the trends in this sub-population of elk, FWP is not able to set guidelines for different season types during the archery and general rifle seasons. Considering this situation, these seasons should be managed conservatively. FWP has established area closure guidelines to address hunter safety issues, if and when large general season elk migrations occur.

REGULATION PACKAGES

HD 316:

Antlerless and Antlered:

The Standard Regulation is: an either-sex regulation beginning 15 September and continuing to the opening of the general season. Antlered bull elk regulation during the 5-week general season.

The Standard Regulation will be recommended if: the number of elk observed during the Cooperative post-season aerial trend surveys remains above 5,000 elk AND observed bull:100 cow ratios are at least 25 bulls:100 cows.

The Restrictive Regulation is: a reduction in length or elimination of the early backcountry hunt.

The Restrictive Regulation will be recommended if: the number of elk observed during the Cooperative post-season aerial trend surveys is less than 5,000 elk OR, observed bull:100 cow ratios are less than 25 bulls:100 cows for 2 consecutive years.

HD 313 and a small portion of HD 314 (S. of Sphinx Creek):

Six-week brow-tined bull/antlerless archery regulation.

Antlerless and Antlered:

The Standard Regulation is: 5-week general season brow-tined bull regulation and a very limited number of brow-tined bull/antlerless permits **Note:** With the addition of a small portion of HD 314 into HD 313, the number of brow-tined bull/antlerless permits recommended during the general season may be split by portion of HD to regulate the antlerless harvest on the east and west side of the Yellowstone. This would allow for a more conservative antlerless elk harvest east of the Yellowstone River.

Gardiner Late Hunt (GLH)

Since the mid 1990's the GLH has been managed under an Adaptive Harvest Management (AHM) approach that attempts to match regulation type and elk harvest with current population and migration data in order to meet two primary management objectives:

Management Objective 1: FWP administers the GLH to help manage elk numbers on winter ranges north of YNP (primarily on public lands). Our objective is to provide winter range forage for migrant Northern Yellowstone elk on a sustainable basis. To accomplish this we regulate the number of elk that winter in this area by annually harvesting elk. The GLH is a wildlife management tool that uses hunters to help regulate elk numbers. The goal is to regulate elk numbers so they do not exceed the long-term carrying capacity of the range and cause long-term changes in plant communities or declines in forage production. The objective range in elk numbers counted during post-season aerial trend surveys is: 10,000-15,000 elk for the total cooperative Northern Yellowstone flights; 3,000-5,000 elk counted north of YNP to Six-Mile Creek, with 2,000-3,000 of these counted north of Dome Mountain. If migratory elk, that are protected inside YNP during the general elk hunting season, are not harvested annually, increasing numbers of wintering elk may potentially exceed the carrying capacity of the winter range.

Management Objective 2: Harvest elk during the GLH in ways that will minimize the effect of hunting on migratory behavior, allowing traditional elk winter use to be distributed over the winter range in proportion to forage availability. In particular, our objective is to allow or encourage elk use of recently acquired winter ranges to the north of YNP (e.g., OTO Ranch, Dome Mountain WMA).

Since 1996, changes in the GLH season have been systematically based on AHM guidelines related to changes in migration size, winter elk distribution north of YNP, total elk population trends, hunter participation, hunter success, elk recruitment trends, and other biological and environmental factors. GLH regulation types fall into 3 categories; Restrictive (less than 2,000 permits), Standard (2,000-2,700 permits), and Liberal (more than 2,700 permits). The decision-making framework for determining the level of permits appropriate based on elk migration size, winter elk distribution, and annual elk trend counts is provided in Table 1. The estimated range in elk harvest, based on long-term participation and hunter success rates, is also provided.

Other biological and environmental data (e.g., March recruitment rates, occurrence of major winterkill events, or prolonged drought conditions, etc.) come into play in determining how many permits are recommended within the range of Conservative, Standard or Liberal Packages. From 1996-2003, we were in the Liberal Regulation type 5 times, the Standard type 3 times, and Restrictive type once. Recently, based on trends in migration size, distribution, trend counts, and recruitment rates, the GLH has moved from Liberal Regulations to Standard Regulations to Restrictive Regulations, reducing the number of permits from about 3,000 to 1,400. **[The Restrictive Regulation package offers the greatest amount of harvest management flexibility ranging from issuing 0-1,999 permits, which may dramatically affect harvest rates. FWP would strongly consider a temporary closure of the GLH if, either the estimated number of elk wintering north of YNP was less than 1,500 for two consecutive**

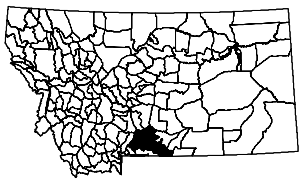
years or the total Cooperative Northern Yellowstone Elk Count was less than 4,000 for two consecutive years. If migration estimates and total numbers approach these figures, FWP will use existing AHM guidelines to significantly reduce permit levels.

Table 1. Adaptive harvest management guidelines for determining the range in numbers of permits recommended for the Gardiner Late Hunt.

Regulation Package	Total NY Coop. Elk Count[a]	Number elk north of YNP[b]	Number elk north of Dome Mtn.	Number antlerless permits	Number either-sex permits	Estimated Harvest[c]
Liberal	>15,000	>5,000	>3,000	**>2,700**	**≤ 7% of antlerless permits**	>1,227
Standard	10,000-15,000	3,000-5,000	2,000-3,000	**2,000-2,700**	**≤ 7% of antlerless permits**	909-1,227
Restrictive	<10,000	<3,000	<2,000	**<2,000**	**≤ 7% of antlerless permits**	<909

[a] Number of elk counted during annual cooperative interagency elk trend count inside and outside YNP; fixed-wing counts typically flown in mid to late December.
[b] Number of elk that attempted to winter between YNP and Six-Mile Creek; calculated annually based on 2-3 aerial counts and late hunt harvest numbers.
[c] Estimated harvest based on long-term average of 71% hunter participation and 64% harvest success rate.

ABSAROKA EMU
(Hunting Districts 317, 520 and 560)



Description: This 2,420-square-mile EMU is located on the north and west flanks of the Beartooth and Absaroka Mountains and includes the north portion of the Absaroka-Beartooth Wilderness. The area is a mixture of public (68%) and private (32%) lands. Much of the EMU (62%) falls within the boundaries of the Custer and Gallatin National Forests, however the majority of the 341 square miles of elk winter range occurs on small parcels of privately owned land used for cattle grazing and hay production. About 77% of the EMU is elk habitat.

Public Access: Fifty percent of HD 317 provides a backcountry hunting opportunity, with the rest of the HD in a minimum to moderately-high motorized access situation. Seventy percent of HD 520 provides a backcountry hunting opportunity. The remainder of the hunting district is evenly divided between minimum motorized access and moderate-high motorized access. Seventy percent of HD 560 provides a backcountry hunting opportunity while the remainder of the area is in the minimum motorized access category.

Essentially 100% of the elk in Line Creek-Grove Creek and Silver Run areas in HD 520 are available to the hunting public. The 2 primary landowners in the Line Creek-Grove Creek area are currently enrolled in the Block Management Program and the Silver Run herd unit occurs primarily on U. S. Forest Service (USFS) lands. Hunter access to the Butcher Creek herd unit is mixed with good access on 3 ranches (one in Block Management Program), but essentially no public access on 2 large ranches owned by non-resident landowners. In addition, hunting rights on the last remaining large ranch are leased to a private individual and hunting is extremely limited. These 3 ranches serve as elk "refuges" for this herd unit. Three USFS access points provide only limited access to elk. Overall, only about 30% of the elk in this herd unit are available to hunters during a portion of the season. Access to the Morris Creek herd unit is also mixed. One major ranch allows access to antlerless permit holders but charges bull hunters an access fee. Non-resident landowners control enough land to serve as an elk "refuge" for a portion of this herd unit. Public access to USFS land in the Benbow area and on 2 Block Management Areas provides only limited access to the remainder of this herd. Overall, about 60% of the Morris Creek elk are available to some level of harvest. The Horseman's Flat subunit of the Stillwater herd unit remains primarily on private land, which is outfitted, although some antlerless permit holders are allowed access during the late season. Only about 10-20% of these elk are available to the general elk hunter. The Trout Creek subunit resides primarily on USFS

land to which access is somewhat difficult. However, 100% of the Trout Creek elk are available to hunters who will expend the required effort.

In HD 560, about 70% of the Main Boulder elk herd are year-round residents to national forest lands and are available to hunters throughout the hunting season. The remaining 30% (the Green Mountain herd) spend part of the year on private lands off the national forest. Four landowners control access to these elk when they are off the national forest. One (a non-resident landowner) is basically closed to hunting. Two allow limited hunting (primarily for antlerless elk) and 1 is in the Block Management Program.

Sixty to seventy percent of the West Boulder/Greeley Creek elk herd spend the summer/early fall period on USFS lands. The remaining elk are year-round residents of private land. Once the hunting season begins, only about 30% of the elk in these herds are available to the general public, either on national forest lands or on the private lands where some hunting is allowed. One ranch is in the Block Management Program and does provide some elk hunting opportunity. However, 50-60% of the elk move onto 2 ranches in the Ellis Basin area, one of which allows no hunting and the other restricts hunting to the owners, their relatives and friends. One ranch in the McLeod Basin area is leased by an outfitter and a ranch in the Greeley Creek area charges to hunt bulls but does allow locals and friends with antlerless permits to hunt free.

In recent years, 70-80% of the elk in the Deer Creeks/Susie Creek herd have moved onto private lands bordering USFS land prior to the start of the hunting season. With sufficient pressure on the private lands, many of these elk do move back onto USFS lands where they are available to the general public. However, hunting on the private lands during the general season is usually restricted to the owners and ranch employees. In some years there is not enough pressure to move the elk back onto USFS lands during the general season. Most of these landowners, however, do allow access to hunters of antlerless elk after the general season.

About 50% of the elk in HD 317 remain on USFS land during most of the hunting season. The other 50% either move onto private land, move between private and public land, or occur where reasonable access to public land is restricted during the hunting season by private land ownership. Access to elk on or through private land during the hunting season is particularly difficult in the Mill Creek North and Mill Creek South herd units. In many cases hunting pressure on private land is insufficient to move elk back onto USFS land once they leave. Some landowners allow limited access to antlerless elk hunters during the general season or during the extended antlerless hunt period.

Elk Populations: Over 1,200,000 acres of elk habitat currently support approximately 2,900 elk, representing 12 reasonably distinct elk populations. Elk numbers have increased dramatically during the last 20+ years with many herds doubling or tripling in size (Figures 1 and 2).

In HD 520, we counted about 200 elk in the Line Creek-Grove Creek area during the early 1980s. Numbers of elk counted doubled to about 400 by 1990 and then dropped to less than 200 in 2003 as some of these elk pioneered into adjacent Hunting Districts 502 and 510.

Number of elk counted in the Silver Run area increased steadily from about 60 in 1978 to over 250 in 2002. Only 30 elk were counted in the Butcher Creek area in 1978. The number of elk counted there increased to just over 80 in 1990 and then declined to about 35 by the late 1990's following intense harvest management pressure. However, immigration of elk from the Morris Creek herd into Butcher Creek resulted in an increase in number of elk counted to nearly 150 by 2002.

In 1977, only 35 elk were counted on the Morris Creek winter range. By 1990 this number had increased to 230 and has remained stable since. However, this stability was enabled only because more than 100 elk emigrated to Butcher Creek and a similar number moved into adjacent portions of HD 575.

During the early 1970's only 35-40 elk were counted annually in the Stillwater area – all in the vicinity of Horseman's Flat. This elk herd has increased gradually with more than 75 elk remaining in the Horseman's Flat area and more than 120 elk moving north into Trout Creek.

There are 3 fairly distinct herd units in HD 560 based on summer/winter range areas: the Main Boulder herd, the West Boulder/Greeley Creek herd, and the Deer Creeks/Susie herd. There were 30-40 elk in the Deer Creeks/Susie Creek herd throughout the 1970s and early 1980s. The herd began increasing in the mid-1980s and by 1991 we estimated 120-130 elk were present. Increased antlerless harvest reduced elk numbers over the next few years and currently 75-100 elk winter in this area.

Throughout most of the 1970s there were less than 100 elk wintering along the Main Boulder River with virtually all being yearlong residents to USFS lands. The herd began increasing in the early 1980s and by the early 1990s the winter population peaked at an estimated 450-500 elk. By the early 1990s, nearly 30% of the population was resident to private lands adjacent to the national forest. More liberal hunting regulations have resulted in a somewhat reduced elk population. Currently, we estimate about 400 elk spend winter along the Main Boulder, of which nearly 30% spend much of the year (most of the winter) on private land.

In 1977, we counted only 51 elk on winter ranges in the West Boulder/Greeley Creek area. By 1987 that number had increased to 170, and we counted 241 elk on these same winter ranges in 1992. Sixty to seventy percent of these elk spend the summer/early fall period on USFS lands. The remaining elk are yearlong residents of private land. Virtually all of these elk winter on private lands. Over the last 10 years, numbers of elk in this herd have continued to increase. We counted 362 elk here in late winter 2002 and estimate the total population at more than 400 elk.

Throughout the 1970s, we counted 150-200 elk in HD 317. About 1,200 elk have been counted annually in the same area since 1998. Number of elk counted in the Livingston Peak herd unit has increased from less than 50 elk in the early 1990s to about 150 elk in 2003. Numbers of elk counted in the Mill Creek North herd unit have increased from 200 elk in 1990 to 700 elk in 2002. Counts of the Mill Creek South herd unit have fluctuated between 75 and 150 elk over the past 10 years. Number of elk wintering on the Emigrant Face has varied considerably from 150 to 550, depending on the amount of influx of migrant northern Yellowstone elk in some years.

The number of elk wintering on Emigrant Face will depend largely on trends in the northern Yellowstone population and winter severity. There are perhaps 100-150 "resident" elk (non-Northern Yellowstone elk) that use this winter range.

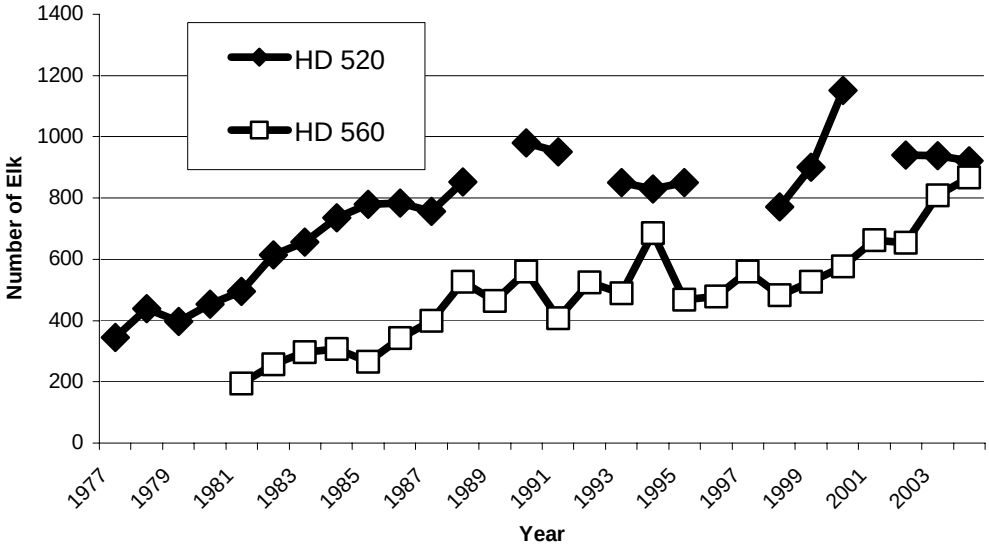


Figure 1. Number of elk counted during post-season aerial trend surveys in HDs 520 and 560, 1977-2004.

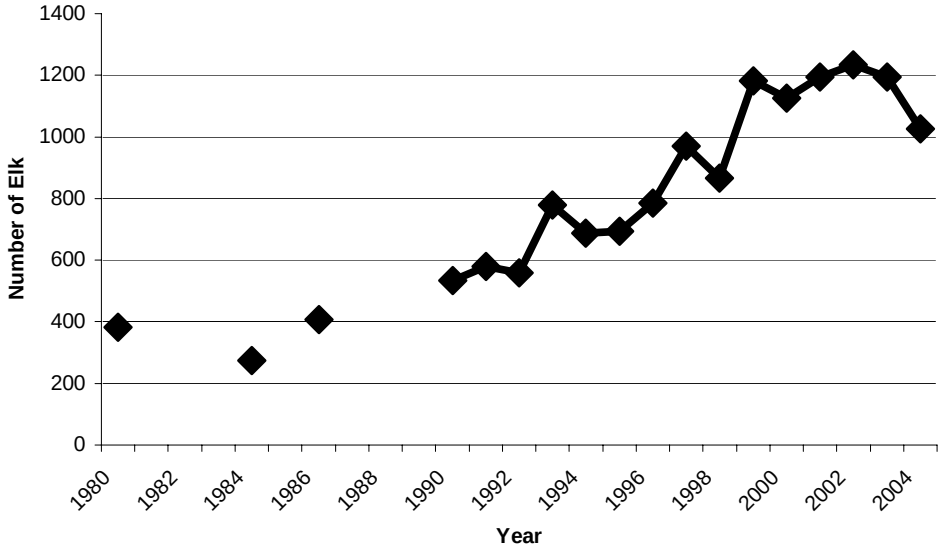


Figure 2. Number of elk counted during post-season aerial trend surveys in HD 317, 1980-2004.

Recreation Provided: This EMU provided an annual average of 13,587 days of hunting recreation to an average 2,558 hunters during 1999-2001. Hunter numbers have remained stable over the last 10 years while hunter days have increased by 11%. Winter elk viewing is also an important recreational use of the Boulder, Emigrant Face and Stillwater herds and is particularly prevalent on the Silver Run winter range (located adjacent to the heavily used West Fork Rock Creek road and the Beartooth Highway). Wildlife viewing is an important aspect of summer recreational use in this EMU, particularly on the open plateaus in the Line Creek, Silver Run, Main Boulder and East Boulder areas as well as the backcountry in Mill Creek. Typically, large numbers of mature migrant bull elk winter on Emigrant Face, which attracts a great deal of late winter/early spring antler hunting activity.

Annual Elk Harvest: The average annual harvest was estimated at 470 elk during 1999-2001, very similar to the average annual harvest during 1990-1992. During1999-2001, bulls comprised 57% of the elk harvested (average = 266) and the number of bulls harvested during 1990-1992 averaged 255. Thirty percent of the harvested bulls were spikes during both periods. Residents accounted for approximately 70% of the bull harvest during each period. The average harvest of antlerless elk was approximately 200 animals during 1999-2001, 11% below the average antlerless harvest during 1990-1992.

Accomplishments: We have successfully worked with the Custer and Gallatin National Forests to develop programs designed to improve vegetation diversity and increase carrying capacity of winter ranges by burning (Line Creek, Silver Run, Stillwater, Mill Creek and Emigrant Face), aspen enhancement (Main Boulder, Elk Creek, Butcher Creek, Morris Creek, Stillwater) and maintaining wildlife openings by reducing conifer encroachment (Deer Creeks, Cherry Creek/Castle Creek, Butcher Creek, Morris Creek and Emigrant Face). A conifer encroachment reduction program is also underway on the Silver Run WMA and adjacent Custer National Forest lands. FWP will continue to cooperate with the Custer and Gallatin National Forests in developing and implementing these programs.

We currently have 8 Block Management Areas in the EMU and are working to expand on this number.

Management Challenges: There has been an increase in landowners who do not make their primary living from ranching. These landowners have less interest than traditional landowners in allowing elk hunting. This situation has created elk “refuges”, reduced elk harvest, and resulted in increasing elk populations. A primary management challenge will be to find ways to increase hunter access and elk harvest in these situations.

Wolf activity and pack formation is increasing in the EMU. There is growing concern among some of the public over the impact of wolves on elk numbers, distribution and behavior. There is a perception among hunters and landowners that wolves have changed the behavior and distribution of elk, making it more difficult to harvest elk. Further, the changes in distribution appear to be resulting in elk spending more time occupying areas in or near agricultural croplands, thereby increasing damage complaints.

Population Monitoring: Dependent on weather conditions and aircraft/pilot availability, each elk herd unit in this EMU is counted at least once each year between 1 January and 15 May. Total numbers of elk and numbers of bulls observed are recorded.

SUMMARY OF PUBLIC COMMENT

Traditional landowners feel elk populations are excessive and support reduction in numbers. Non-traditional (typically non-resident) landowners feel substantial numbers of elk increase the value of their land, generally do not support reduction in elk numbers and are resistant to elk harvest even if such harvest is in the best interest of their neighbors. Sportsmen generally enjoy the increased number of elk that are available to them, but they are willing to support reduction in numbers where traditional landowners are being negatively impacted or where elk numbers appear to be too high for available winter range.

MANAGEMENT GOAL

Stabilize elk populations at current levels for most herd units (commensurate with available habitat on private and public land), while attempting to reduce elk numbers to meet objectives in other herd units (Silver Run, West Boulder/Greeley Creek, Livingston Peak, Mill Creek North and South, and Emigrant Face). Successfully reducing elk numbers will depend largely on increasing/improving hunter access to elk.

HABITAT OBJECTIVES

Continue to participate in cooperative programs that encourage public and private landowners to maintain or improve existing elk habitat.

HABITAT STRATEGIES

The Custer and Gallatin National Forests have developed programs designed to improve vegetation diversity and increase carrying capacity of winter ranges by burning (Line Creek, Silver Run, Stillwater, Mill Creek and Emigrant Face), aspen enhancement (Main Boulder, Elk Creek, Butcher Creek, Morris Creek, Stillwater), and maintaining wildlife openings by reducing conifer encroachment (Deer Creeks, Cherry Creek/Castle Creek, Butcher Creek, Morris Creek and Emigrant Face). A conifer encroachment reduction program is also underway on the Silver Run WMA and adjacent Custer National Forest lands. FWP will continue to cooperate with the Custer and Gallatin National Forests in developing and implementing these programs.

Over the past decade, no more than 40% of the bulls harvested in this EMU were taken during the first week of the season. An increase in this percentage could indicate deteriorating elk habitat security. This percentage will be monitored to detect and assess any possible deterioration of elk security. To help ensure elk habitat security, FWP will continue to work with the USFS on road management and travel plans.

GAME DAMAGE STRATEGIES

Cooperate with the USFS to pursue efforts to increase the carrying capacity of winter ranges on USFS lands adjacent to chronic problem areas on private lands. Range improvement projects are a priority for the Mill Creek, Emigrant Face, Line Creek, Silver Run, Stillwater and Main Boulder areas.

Each game damage situation will be addressed based on its own individual circumstances. FWP has a set of possible options that include stack yard protection, herding, early and late season special hunts, directing hunters to the problem area during the general season, kill permits, use of A-7 elk licenses, or liberalizing the general antlerless harvest. The A-9/B-12 license for a second elk (antlerless only) is also another management tool. In many cases, increasing public hunting on private land will be necessary to help reduce game damage problems.

ACCESS STRATEGIES

FWP will identify important points of access to public lands that do not now exist and provide recommendations to the appropriate land management authority for acquisition/development. Access programs will generally be designed to allow vehicle access to the boundary of USFS lands, with only non-vehicular traffic allowed beyond that point. Greater access to public land is needed between Pine Creek and Mill Creek in HD 317 and in the Bad Canyon/Trout Creek and Fishtail/Fiddler Creek areas of HD 520.

FWP will identify opportunities to increase block management projects and walk-in areas. A walk-in program will be maintained in the Line Creek/Grove Creek area and the Willow Creek area in HD 520.

POPULATION OBJECTIVES

1) Maintain the number of elk counted during post-season aerial surveys within 20% of 2,650 elk (2,120-3,180) in the EMU. Individual hunting district and herd unit count objectives are as follow:

   Hunting District 520 total count objective – 1,050 elk
   a) Line Creek – 250 elk
   b) Silver Run – 200 elk
   c) Butcher Creek – 150 elk
   d) Morris - Ingersol Creeks – 250 elk
   e) Stillwater (Horseman Flat/Trout Creek) – 200 elk

   Hunting District 560 total objective – 700 elk
   f) Deer Creeks – 100 elk
   g) Main Boulder – 300 elk
   h) West Boulder/Greeley Creek – 300 elk

   Hunting District 317 total objective – 900 elk
   i) Livingston Peak – 100 elk

j) Mill Creek North – 550 elk
k) Mill Creek South – 100 elk
l) Emigrant Face – 150 elk

2) Maintain an overall observed late winter bull elk count of 175. Bull count objectives by Hunting District are as follow:
   Hunting District 317 – 50 bulls (Exclusive of migratory bulls on Emigrant Face)
   Hunting District 520 – 70 bulls
   Hunting District 560 – 55 bulls

POPULATION MANAGEMENT STRATEGIES

REGULATION PACKAGES

Six-week either-sex archery regulation EXCEPT, should Restrictive regulation for antlered elk be adopted, six-week brow-tined bull/antlerless archery regulation.

Antlerless:

The Standard Regulation is: 1.) limited either-sex or brow-tined bull/antlerless permits (if in restrictive antlered package). 2.) 1-2 week general season either-sex or brow-tined bull/antlerless (if in restrictive antlered package) regulation. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options].

The Standard Regulation will be recommended if: the combined total post-season aerial trend counts for all herd units in a hunting district are within 20% of the hunting district objective.

The Liberal Regulation is: ***1.)*** *either-sex regulation for a portion of (or the entire) 5-week general season AND, in HD 520 and 560, antlerless permits valid past the end of the general season OR;* ***2.)*** *5-week general season antlerless ONLY regulation. [Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended].*

Liberal Regulation **1.) (above)** will be recommended if: the combined total post-season aerial trend counts for all of the herd units in a hunting district are more than 20% above the hunting district objective.

In HD 317, Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above), the total number of elk observed during post-season aerial surveys remains more than 20% above the HD elk objective.

The Restrictive Regulation is: limited either-sex or brow-tined bull/antlerless permits valid for a portion of the season.

The Restrictive regulation will be recommended if: the combined total post-season aerial trend counts for all herd units in a hunting district are more than 20% below the herd objective for 2 consecutive years.

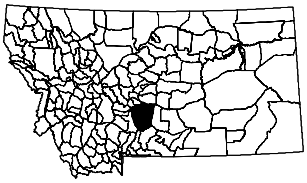
Antlered:
The Standard Regulation is: 5-week general season antlered bull regulation.

The Standard regulation will be recommended if: the post-season aerial trend count of bulls is within 50% of the HD objective.

The Restrictive Regulation is: 5-week general season brow-tined bull regulation.

The Restrictive regulation will be recommended if: the post-season aerial trend count of bulls is less than 50% of the HD objective for 2 consecutive years.

CRAZY MOUNTAINS EMU
(Hunting Districts 315 and 580)



Description: This 1,708-square-mile EMU includes the Crazy Mountain Range and adjacent foothill and prairie habitats in south central Montana. The area is a mixture of private (78%) and public (22%) lands, including portions of both the Gallatin and Lewis and Clark national forests (16%), state school trust lands (DNRC – 5%), and USDI Bureau of Land Management (BLM – 0.2%). Land ownership patterns within the boundary of the national forests are characterized by checkerboard ownership. The EMU contains two roadless areas encompassing 149,467 acres of public and private lands that offer wilderness-type recreation. However, much of this roadless area is not elk habitat.

This EMU contains over 590,000 acres of occupied elk habitat (54% of EMU). National forest lands provide a large portion of spring, summer and fall elk habitat, but private lands in mountain foothill and sagebrush-grassland habitats provide over 80% of elk winter range during normal winters and virtually all of the available winter range during severe winters.

Public Access: Access by road to elk habitat is limited in most of HD 580 where the checkerboard pattern of land ownership complicates management of access. With few exceptions, public access to elk habitat on the north and east slopes of the Crazies is controlled entirely by private landowners. There are only 3 points in HD 580 where the public may legally access national forest lands – the Big Timber Canyon road in the southeast corner, the Cottonwood Creek/Forest Lake road on the north end and Sixteenmile Creek in the northwest corner of the hunting district. Public access to national forest lands is somewhat better in HD 315 with 5 legal access points including Smith Creek, the upper Shields River, Porcupine Creek, Cottonwood/Ibex, and Rock Creek.

Outfitters currently control access to much of the privately owned elk habitat. Free public access to these lands is generally limited to individuals with permits for antlerless elk and most of this access occurs after the general season. Limited public access causes frustration among hunters and concentrates hunting pressure in the vicinity of the few existing public access points. The Block Management Program has provided some new elk hunting opportunities in HD 315, but a recent private land purchase of several ranches totaling 44,000 acres effectively closed access to much of the southwest corner of the Crazy Mountains.

Elk hunters can expect backcountry type recreational opportunities in about 40% of HD 315 and about 20% of HD 580. Areas with a minimum level of motorized access account for about 40% of the area in HD 315 and 70% in HD 580 and areas with a moderate-high level of motorized access account for 20% of HD 315 and only 10% of HD 580. Motorized access on national forest lands is very limited with the most miles of open roads in the upper Shields River area of HD 315 and the Cottonwood Creek/Forest Lake area in HD 580. Open road densities on public lands have declined slightly over the last decade with the closure of a number of spur roads associated with the USFS land purchase in the upper Shields/north Crazy Mountain area in the early 1990s.

Elk Populations: Observed numbers of elk in this EMU have more than doubled in the last 10 years from just over 1,500 elk in 1992 to nearly 3,100 in 2002 (Figure 1). Counts on winter ranges in HD 315 have more than tripled from less than 400 elk in 1992 to over 1,500 in 2004. The elk population in HD 580 increased 45% from 1,144 elk in 1992 to 1,655 in 2002, declining slightly to 1,520 elk in 2004.

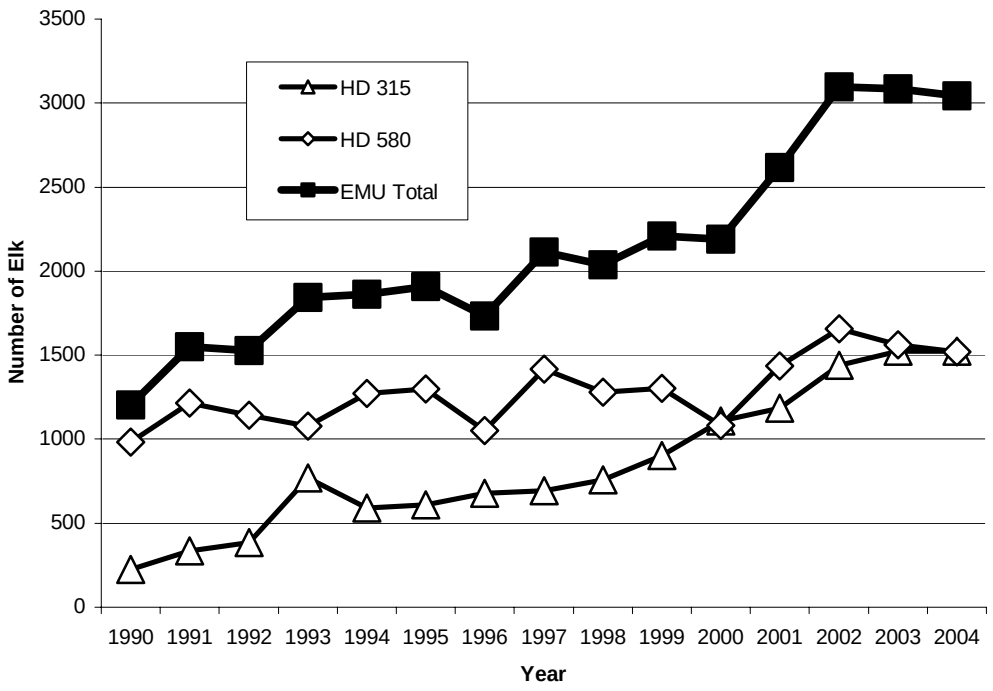


Figure 1. Number of elk observed during post-season aerial trend surveys in HDs 315 and 580, 1990-2004.

Recreation Provided: This EMU provided an average of 10,885 days of elk hunting recreation to 2,158 elk hunters each year during 1999-2001. This represented a 61% increase in hunter numbers and a 63% increase in elk hunter days of recreation from the average for 1990-1992. Lack of roaded access to much of the area limits wildlife viewing primarily to backcountry users. Wildlife viewing and photography by hikers, hunters, anglers and other recreationists comprise the majority of summer/fall use. There is little opportunity for the public to view elk during winter.

Annual Elk Harvest: The average annual elk harvest in this EMU during 1999-2001 was 534 elk. This represented a 48% increase from the average annual harvest of 360 elk during 1990-1992. The average bull harvest for 1999-2001 was 36% higher than during 1990-1992 (267 bulls harvested/year vs. 196 bulls harvested/year). Brow-tined bulls accounted for an average of 65% of the total bull harvest during 1999-2001 compared to 60% during 1990-1992. The harvest of antlerless elk averaged 266 animals/year during 1999-2001, a 62% increase from the average harvest of 164 antlerless elk/year during 1990-1992. During 1999-2001 non-resident hunters accounted for 19% of total elk harvested in the EMU and 36% of the total bull harvest. The proportion of bulls harvested by non-residents was slightly higher in HD 580 (39%) than in HD 315 (32%).

Accomplishments: Since 1992 we have implemented an extension of the elk permits to allow for the harvest of antlerless elk to 15 December, which has improved hunter access on private land and increased the harvest. We have also established 2 Block Management Areas in H.D. 315 that provide access to elk, one of which consistently provides a significant elk harvest. Beginning in fall, 2002, the first 8 days of the general season has been open to either-sex elk hunting without a special permit.

Management Challenges: Limited public access to national forest lands and lack of public access on or through private lands reduces the potential harvest, particularly of antlerless elk. Outfitters currently control access to much of the privately owned elk habitat resulting in limited public access. This limited access causes frustration among hunters and concentrates hunting pressure in the vicinity of the few existing public access points. Several ranches on the south and west side of the Crazy Mountains are owned by absentee landowners who do not depend on ranching for their income. Their perspective on public hunting and elk numbers results in creation of elk "refuges" which reduces the effectiveness of hunting seasons designed to reduce or stabilize elk populations. In these situations, liberalizing hunting regulations alone will not significantly increase the total elk harvest.

POPULATION MONITORING

Aerial surveys are conducted in each elk herd unit at least once each year between 1 January and 15 April. Total numbers of elk and numbers of bulls observed are recorded.

SUMMARY OF PUBLIC COMMENT

Maintenance of the current elk habitat base is a major public concern. Since the majority of elk winter range is in private ownership it is important that landowners maintain their ranches in productive agricultural use. There is strong public interest in improving access to public land, particularly in HD 580. Many hunters support expanding the Block Management Program. Public comment regarding population levels is mixed, with some people supporting maintenance of current elk numbers, some wanting more elk, and others calling for fewer elk. Landowners generally prefer that elk be maintained at current levels or reduced. Many people express concern that outfitters and leasing operations are restricting elk hunters too much while catering to wealthy or non-resident hunters. There is frustration among hunters that a large portion of the

bull harvest is taken by outfitters. There has been support for allowing more general season either-sex hunting. Allowing either-sex permit holders to harvest antlerless elk after the general season has closed has met with considerable support. Some hunters and landowners would like to see the permits valid through 31December (currently valid through 15 December). Landowners that do allow public hunting have expressed frustration that they contend with too many hunters during the general season.

MANAGEMENT GOAL

Manage elk populations within the range of habitat availability and social tolerance while providing diverse hunting and non-hunting elk-related recreational opportunities.

HABITAT OBJECTIVE

Work cooperatively with public and private land managers to maintain quality elk habitat on presently occupied lands and maintain elk security so that elk harvest is distributed throughout the hunting season.

HABITAT MANAGEMENT STRATEGIES

High quality elk habitat has generally been maintained throughout the EMU as evidenced by the tremendous increase in elk numbers over the last decade.

The percent of the total bull harvest occurring during the first week of the general season may be an indicator of elk security (lower percentage equals higher security). During the 1999-2001 hunting seasons an average of 38% of the total bull harvest occurred during the first week of the season.

FWP will continue to:

- Monitor the percentage of bull elk harvested during the first week of the hunting season to assess any possible deterioration of elk security.
- Evaluate proposed logging, burning, grazing, mining, and housing and recreational developments with regard to their potential impacts on elk habitat and elk populations.
- Work with the Gallatin and Lewis and Clark national forests to maintain forest road densities at levels that balance concerns with elk security and hunter access.
- Encourage the USFS to consider the effects of previous timber sales and fires on elk habitat when planning future resource management projects.
- Help identify and facilitate purchase of conservation easements that will protect elk habitat and improve public access.

GAME DAMAGE STRATEGIES

Considering the significant increase in elk numbers wintering primarily on private land, there have been relatively few game damage complaints in this EMU.

Each game damage situation will be addressed based on its individual circumstances. FWP has a set of possible options that include stackyard protection, herding, early and late season special hunts, directing hunters to the problem area during the general season, kill permits, use of A-7 and A-9/B-12 elk licenses (B-tags), and liberalizing the general antlerless harvest. In addition to these strategies for addressing game damage, increased access to private land for public hunting will be necessary to minimize game damage problems.

ACCESS STRATEGIES

FWP will:

- Identify important points of access to public lands and provide recommendations to the appropriate land management authority (Gallatin and/or Lewis and Clark National Forest) and the Access Montana Program.
- Encourage the USFS to obtain a trail easement to existing blocks of public land in the Swamp Creek area of the south Crazy Mountains and to pursue access into Sweet Grass Creek and South Fork of American Fork as outlined in the forest plan for the Gallatin National Forest. Purchase of a long-term access easement from a willing seller may be required to improve public access in these areas.
- Identify and pursue opportunities for new Block Management projects, which could improve access to public lands or provide additional opportunities for elk harvest on private lands.

POPULATION OBJECTIVES

1) Maintain numbers of elk observed during post-season aerial trend surveys within 20% of 1,975 elk in the EMU (1,580-2,370) with an objective of 1,000 elk in HD 315 and 975 elk in HD 580. Individual post-season herd count objectives are as follows:
   A) Falls Creek (HD 315) – 400 elk.
   B) Cottonwood Creek to Porcupine Creek (HD 315) – 150 elk.
   C) Oil/Reese Hills (HD 315) – 450 elk.
   D) Otter Creek/Wheeler Creek (HD 580) – 100 elk.
   E) Big Timber Creek to West Fork Duck Creek (HD 580) – 125 elk.
   F) Sweet Grass Creek to Cottonwood Creek (HD 580) – 500 elk.
   G) Cottonwood Creek to Sixteenmile Creek (HD 580) – 250 elk.

2) Maintain an observed post-season count of 225 bull elk in the EMU. Bull count objectives by Hunting District are as follows:
   A) Hunting District 315 – 80 bulls.
   B) Hunting District 580 – 145 bulls.
      a) Portion of district north of Sweet Grass Creek – 80 bulls.
      b) Sweet Grass to West Fork Duck Creek – 65 bulls.

POPULATION MANAGEMENT STRATEGIES

A portion of this EMU (the part of HD 580 between Sweet Grass Creek and West Fork of Duck Creek) has permit-only rifle hunting. The remainder of the EMU has a general elk season.

Management strategies are presented separately for the 2 areas. Management strategies (regulation types) will be implemented by hunting district or portion of a hunting district, not necessarily for the EMU as a whole.

REGULATION PACKAGES

Portion of the EMU with a general elk season (HD 315 and HD 580 north of Sweet Grass Creek):

Six-week either-sex archery regulation, EXCEPT, should Restrictive regulation for antlered elk be adopted, six-week BTB/antlerless archery regulation.

Antlerless:

The Standard Regulation is: 1.) limited either-sex permits. 2.) 1-2 weeks of general season either-sex regulations. (Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options).

The Standard regulation will be recommended if: the combined total post-season aerial trend counts for all herd units in a hunting district are within 20% of the hunting district objective.

The Liberal Regulation is: 1.) **either-sex regulation for a portion of (or the entire) 5-week general season AND, in HD 580, antlerless permits valid past the end of the general season OR;** 2.) **5-week general season antlerless ONLY. (Limited A-9/B-12 antlerless licenses (B-tags) may also be recommended in combination with the above options).**

Liberal Regulation **1.) (above)** will be recommended if: the combined total post-season aerial trend counts for all of the herd units in a hunting district are more than 20% above the hunting district objective.

In HD 315, Liberal Regulation **2.) (above)** will be recommended if: after 2 consecutive years of application of Liberal Regulation 1.) (above), the total number of elk observed during post-season aerial surveys remains more than 20% above the HD elk objective.

The Restrictive Regulation is: limited either-sex or BTB/antlerless permits. Few or none of the permits will be valid for antlerless elk after the general season.

The Restrictive Regulation will be recommended if: The total post-season survey count for a hunting district is more than 20% below the objective for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season antlered bull regulation.

The Standard regulation will be recommended if: the post-season count of bulls is within 50% of the hunting district objective.

The Restrictive Regulation is: 5-week general season brow-tined bull regulation.

The Restrictive Regulation will be recommended if: the post-season count of bulls for a hunting district is less than 50% of the objective for 2 consecutive years.

Permit-only portion of the EMU (the portion of HD 580 between Sweet Grass Creek and West Fork of Duck Creek):

Six-week either-sex archery regulation, EXCEPT, if Restrictive Regulation is adopted, all hunting, INCLUDING archery is by limited permit.

Antlerless:

The Standard Regulation is: limited either-sex AND antlerless permits issued for the general 5-week season. Antlerless permits may be valid beyond the general season.

The Standard Regulation will be recommended if: the total post-season herd count is within 20% of the objective.

The Liberal Regulation is: an increased number of either-sex AND antlerless permits will be issued for the general 5-week season [Antlerless permits will be valid for a period beyond the general season (at least through 15 December)] OR, a portion (or all) of the general season may be open for general hunting of antlerless elk (no permit required).

The Liberal Regulation will be recommended if: the total post-season herd count is more than 20% above the objective.

The Restrictive Regulation is: limited antlerless permits valid for the archery and the 5-week general season.

The Restrictive Regulation will be recommended if: The total post-season herd count is more than 20% below the objective for 2 consecutive years.

Antlered:

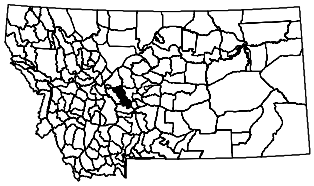
The Standard Regulation is: limited either-sex permits.

The Standard Regulation will be recommended if: the total post-season bull count for the permit area is within 50% of the objective.

The Restrictive Regulation is: limited permits for brow-tined bulls valid during for the archery and general season.

The Restrictive Regulation will be recommended if: The total post-season bull count for the permit area is less than 50% of the objective for 2 consecutive years.

EAST BIG BELT EMU
(Hunting District 446)



Description: This 609-square-mile-EMU is located west of White Sulphur Springs on the eastside of the Big Belt Mountains. About 391 square-miles of the EMU (64%) is seasonal or yearlong elk habitat. Approximately 28% of elk habitat in the EMU is on public land. The majority (83%) of the winter range in the EMU is on private land. In addition to winter use, many elk are on private land during other seasons of the year as well. Hunting district (HD) 446 along with HD 392 on the west side of the Big Belt Mountains comprised the Big Belt EMU in the 1992 Elk Plan (HD 892 in the 1992 Plan). Because of major differences in the amount of private land, public access for hunting, and options for elk population management in the two hunting districts, we separated the old Big Belt EMU into two separate EMU's. This separation was made with the realization that there is some overlap of elk from the 2 hunting districts. This overlap will be considered in developing regulation packages and habitat management strategies, particularly on public land.

The elk population in the East Big Belt EMU contains multiple herd units, best described by the location of the 6 main wintering concentrations of elk. These elk wintering concentration areas are as follows: the Hussy Creek-Badger Creek area just north of U.S. Highway 12 and east of the Broadwater-Meagher county line; the Birch Creek area; the Thomas Creek area; the Freighters Gulch-Rocky Hollow area, the Lingshire area, and the Dry Range area. Elk from these wintering concentration areas may mix during summer and fall throughout all the hunting districts in the Big Belt Mountains, and elk may move between the Big Belt Mountains and the west side of Little Belt Mountains as well.

Public Access: Access for public hunting is severely limited in the EMU due to the relative lack of public land and restricted access to private land. There are 4 public access roads to land administered by the Helena National Forest (HNF) from the east side of the Big Belt Mountains, although there is additional access from the west side. Over 90% of the private land in the EMU is closed to hunting by the general public for either all or a significant portion of the hunting season. Outfitting or fee hunting is prevalent. There are 2 small FWP Block Management Areas in the EMU.

Elk Populations: Observed numbers of elk have increased dramatically since the 1992 Elk Management Plan (Figure 1), due in large part to the relative lack of hunting pressure on private land compared to public land. The relative lack of hunting pressure has resulted in the creation of elk "refuge" areas on private land, which has reduced the opportunity to harvest elk. The average number of elk observed during post-season (late winter-early spring) aerial surveys in 2001-2003 was 2,280 (range 1,403-3,052), but the trend has been down for the last 3 years (Figure 1).

Recreation Provided: Hunting, camping, hiking and snowmobiling are the primary forms of recreation in the EMU. Road restrictions on much of the east-side of the HNF have created relatively large blocks of national forest land that have limited motorized access, resulting in walk-in type hunting situation in many areas. During 1999-2001, the EMU annually averaged 1,228 hunters (range 1,166-1,297) and 6,003 hunter days (range 5,566-6,493).

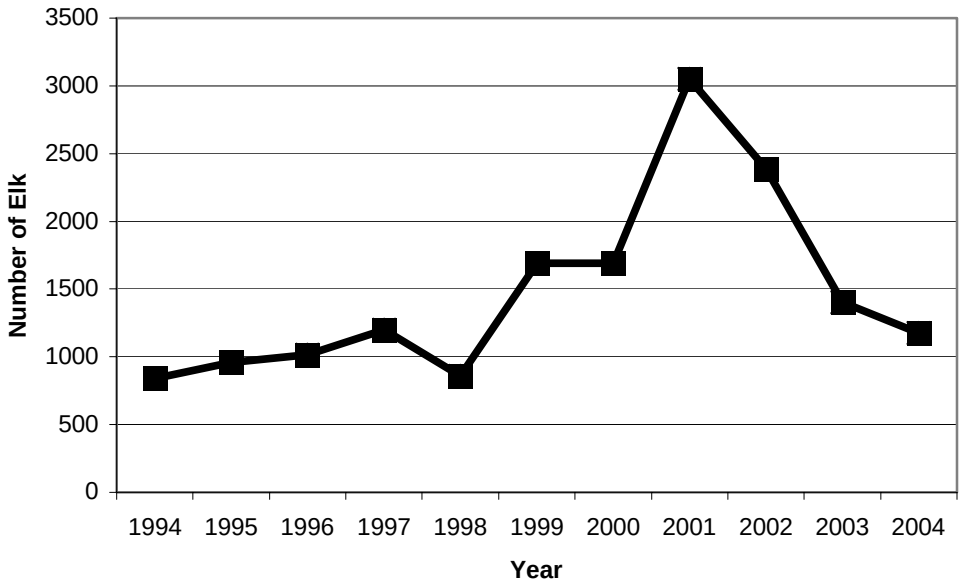


Figure 1. Number of elk counted during post-season aerial trend counts in the East Big Belt EMU, 1994-2004.

Annual Elk Harvest: The average annual harvest during 1999-2001 was 323 elk (124 antlered, 198 antlerless).

Accomplishments: Regulations for antlerless elk were liberalized in 1994 to try to help control the number of elk in the EMU. A general season either-sex youth hunt was implemented in the EMU in 2002.

Management Challenges: The majority of the elk in the hunting district are on private land that is outfitted during the general hunting season. Additionally, about 15-20% of the elk in the hunting district are in areas where hunting access is restricted to family or a few close friends. We estimate that less than 25% of the elk population in HD 446 is

available to the general public during the general hunting season. The prevalence of outfitting and areas of restricted access makes it difficult to manage elk numbers through hunter harvest. In 2001, nonresidents harvested more bulls in HD 446 than did residents (60 non-residents, 53 residents). A continuation of this trend may lead to the public perception that antlered animals are being sold to nonresidents, while the resident hunters are left to clean up the antlerless population for population control. As a result, resident hunters may become disgruntled.

There are currently no known wolves established in the Big Belt Mountains. However, wolves moving either north or south from areas that currently have wolves may eventually colonize the area.

Population Monitoring: Aerial trend surveys are accomplished on an annual basis between 1 January and 15 April using fixed wing aircraft. Because of budget limitations, generally only one survey is made annually. Conditions during the annual survey may vary considerably among years, thus results of single annual surveys are variable. Due to the difficulty of differentiating between cows and calves from fixed wing aircraft, often only the number of bulls (differentiated between yearlings and brow-tined bulls) and total number of antlerless animals are recorded. Additional funds will be necessary to accomplish additional fixed wing flights, or to allow for helicopter surveys.

SUMMARY OF PUBLIC COMMENT

Lack of public access to private lands that hold elk during the hunting season is a major concern among the hunting public. Hunters feel that the majority of the elk in the EMU are generally unavailable to them. The view of some resident hunters is that bull elk are being sold to nonresident hunters, and resident hunters are left to being the "cow cleanup crew". Some private landowners feel that they have too many elk and would like to see numbers reduced. The general opinion of the hunting public is that landowners who either outfit or allow limited to no access for hunting should not complain about having too many elk if they won't let people in to harvest elk. Some landowners view hunters as being as much or more of a problem than having too many elk.

MANAGEMENT GOAL

1) Provide a hunting regulation structure to allow for management of the elk population through hunter harvest, so that the number of elk observed post-season is within the desired objective range.
2) Work with private landowners to increase access for public hunting that will reduce observed elk numbers to the objective level.
3) Continue to cooperate with public and private land managers to provide optimum elk habitat, and manage for a diversity of elk hunting experiences.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain 391 square miles of occupied elk habitat.
2) Maintain or enhance elk security levels so that the elk harvest is distributed throughout the general hunting season, and more elk remain on national forest land during the general hunting season. Maintain or enhance elk security levels so that no more than 40% of the bull harvest occurs during the first week of the general season.
3) Maintain more elk on USFS land during the hunting season, so that elk do not seek out private land "refuge" areas; thereby, improving opportunity for hunters to harvest elk on national forest land in the EMU.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to the HNF in developing a comprehensive road management plan that will maintain or enhance elk security on national forest land during the hunting season, while still allowing adequate access for hunters.
- Provide technical assistance to federal land management agencies on projects that may enhance elk habitat.
- Encourage federal land management agencies to mitigate for any project that may have a negative impact on elk habitat or elk security levels.
- Provide technical assistance to the HNF on elk habitat and hunter opportunity issues related to any future land exchanges involving national forest lands in the Dry Range.

GAME DAMAGE STRATEGIES

Game damage complaints are limited in this EMU because the majority of private landowners lease hunting rights or restrict hunting access. As a result, most landowners do not qualify for game damage assistance under current FWP guidelines. The few damage complaints usually involve elk grazing rangeland during some season of the year, or grazing alfalfa fields in the early fall. There have been problems with elk getting into haystacks in the winter in the past, but these have generally been resolved by fencing the haystacks. Maintaining observed elk numbers within the objective range is the best way to deal with and to prevent game damage problems.

ACCESS STRATEGIES

FWP will:

- Assist the HNF in developing a comprehensive road management plan that enhances elk security on national forest land while still allowing adequate access for hunters to harvest elk on federal land.
- Work with private landowners to try and enhance opportunities for additional public hunting on private property or increased access through private property to public land.

- Provide information to the Helena National Forest regarding enhancement of hunter access to public lands prior to any land exchange of national forest land in the Dry Range.
- Use the Department's Block Management and Access Montana programs where appropriate.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season (late winter-early spring) aerial surveys within 20% of 900 elk (720-1,080). This objective number, along with the objective (1,100) for the West Big Belts EMU (HD 392) would result in an overall observed objective of 2,000 elk for the Big Belt Mountains. Because the majority of the hunting district is private land, the objective set for the East Big Belts EMU is based on a concern for landowner tolerance of elk. The EMU objective of 900 observed elk is a total of the following desired distribution of observed wintering elk: Hussy Creek-Badger Creek area – 225 elk; Birch Creek area – 150 elk; Thomas Creek-Freighter's Gulch area – 250 elk; Lingshire area – 150 elk; and Dry Range area – 125 elk.
2) Maintain a minimum observed post-season ratio of 10 bulls:100 cows; or a minimum of 7% bulls in the observed post-season elk population.

POPULATION MANAGEMENT STRATEGIES

Managing to maintain the total number of observed elk within the objective range will be the priority. Cooperation in hunter access management from private landowners will be necessary to achieve this goal.

REGULATION PACKAGES

Six-week brow-tined bull/antlerless archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless

The Standard Regulation is: brow-tined bull/antlerless regulation last 9 days of general season in all or portion of hunting district. Limited antlerless elk permits and over-the-counter antlerless A-9/B-12 licenses (B-tags) valid on private or DNRC lands may be available as well, and may be valid prior to and/or after the general 5-week general season.

The Standard Regulation will be recommended if: the total post-season count of elk in the EMU is within 20% of the objective of 900 observed elk (720-1,080).

The Liberal Regulation is: **1.)** brow-tined bull/antlerless regulation for longer than the last 9 days of the general season (up to the full 5-weeks) in all or a portion of the hunting district. Limited antlerless elk permits and over-the-counter antlerless A-9/B-12 licenses

(B-tags) valid on private or DNRC lands may be available as well, and may be valid prior to and/or after the general 5-week general season. OR, **2.)** antlerless ONLY regulation for a portion or all of the general season.

Liberal Regulation **1.) (above)** will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU is more than 20% above the objective of 900 observed elk (more than 1,080).

Liberal Regulation **2.) (above)** will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU remains more than 20% above the objective of 900 observed elk (more than 1,080) after 2 years of application of Liberal Regulation 1.) (above).

The Restrictive Regulation is: limited antlerless permits (used to address local damage problems).

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU is more than 20% below the objective of 900 observed elk (720) for 2 consecutive years.

Antlered

The Standard Regulation is: 5-week general season brow-tined bull regulation.

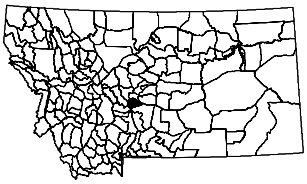
The Standard Regulation will be recommended if: the post-season bull:100 cow ratio is at least 10 bulls:100 cows; or, the post-season count of bulls is at least 7% of the total observed elk count.

The Restrictive Regulation is: **1.)** unlimited brow-tined bull or brow-tined bull/antlerless permits OR; **2.)** limited antlered bull or either-sex permits (including zero if necessary). ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED OR LIMITED ARCHERY ONLY PERMITS.

1.) Unlimited brow-tined bull or brow-tined bull/antlerless permits will be recommended if: the post-season bull:100 cow ratio is less than 10 bulls:100 cows for 2 consecutive years; or the post-season count of bull is less than 7% of the total observed elk count for 2 consecutive years.

2.) Limited antlered bull or either-sex permits (including zero if necessary) will be recommended if: The post-season bull:100 cow ratio remains less than 10 bulls:100 cows, or the post-season count of bull remains less than 7% of the total observed elk count after 2 consecutive years of unlimited brow-tined bull permits [Regulation 1.) (above)].

CASTLE MOUNTAINS EMU
(Hunting Districts 449, 452)



Description: This 341-square-mile EMU is located south and east of White Sulphur Springs and is comprised of the area in and around the Castle Mountains. The Castle Mountains and the Little Belt Mountains were combined into one EMU in the 1992 Elk Plan. However, we separated the two mountain ranges into two EMU's for this elk plan to provide for more management flexibility. The principal land manager in the EMU is the USDA-Forest Service - Lewis & Clark National Forest (USFS). About 270 square miles of the land area (79%) is seasonal or yearlong elk habitat. Approximately 45% of the elk habitat in the EMU is public land. The majority of the winter range in the EMU (75%) is on private ranch land, which surrounds the Castle Mountains.

The elk population in this EMU is distributed among several herd units within hunting districts (HDs) 449 and 452. These herd units can best be described by the location of wintering concentrations of elk within each hunting district. In HD 449, wintering groups of elk are generally located on the southeast end of the Castle Mountains, from the area east of the Thomas Creek drainage west to the Bonanza Creek drainage, and on the north side of the Castle Mountains, from the Fourmile creek drainage east to the Eightmile and Hall Creek drainages. In HD 452, wintering groups of elk are generally located on the east and south sides of the Castle Mountains, from the Fords Creek drainage to the Warmsprings Creek drainage. Groups of elk are occasionally seen on the northwest end of the Castle Mountains from the Lone Willow Creek drainage east to the Fourmile Creek area.

Elk from these wintering concentration areas may mix during the summer and fall in the Castle Mountains. Some elk also move between the Castle Mountains and the north end of the Crazy Mountains during the year. Elk may also move back and forth between the Little Belt and Castle Mountains year round, particularly between the southwest corner of HD 454 and the north end of HDs 449 and 452 during winter. Elk may also occasionally move between HDs 452 and 391 during the year, particularly in the winter. Although most elk use of private lands occurs during winter, in recent years elk have begun to spend more time on private lands during other seasons of the year. This is true particularly in HD 452, where most of the private land is either outfitted, has restricted access, or is totally closed to hunting.

Public Access: The USFS road (USFS Rd #211-581) that is the boundary between hunting districts 449 and 452 is the primary access to the Castle Mountains and to the two hunting districts, and is in fact, the only public access to HD 452. All other public access to national forest land in the EMU is in HD 449. In addition to USFS Rd. #211-581, national forest land in HD 449 may be accessed via the Bonanza Creek Rd. (USFS Rd. #585) on the south side of the Castle Mountains, the Pasture Gulch Rd. (USFS Rd. #694) on the northeast end of the Castle Mountains, and by the Brooks Creek Rd. (USFS Rd. #581) out of Checkerboard on the north side of the Castles. All other access to national forest land in the EMU is across private land and is by landowner permission only.

Access to private land is somewhat less restricted in HD 449 compared to HD 452. Two small FWP Block Management Areas currently exist in HD 449.

Elk Populations: The number of elk observed in the Castle Mountains declined in the mid-to-late 1990's, but numbers have since increased to levels observed at the time of the 1992 Elk Management Plan (Figure 1). The primary reason for the recent increase has been the relative lack of hunting pressure on private land, which has resulted in the creation of elk "refuges" on private land. The average number of elk observed in the EMU during post-season aerial surveys (late winter-early spring) in 2001-2003 was 693 elk (range 633-793). The 3-year average was 519 elk (range 449-624) for HD 449 and 204 elk (range 168-275) for HD 452.

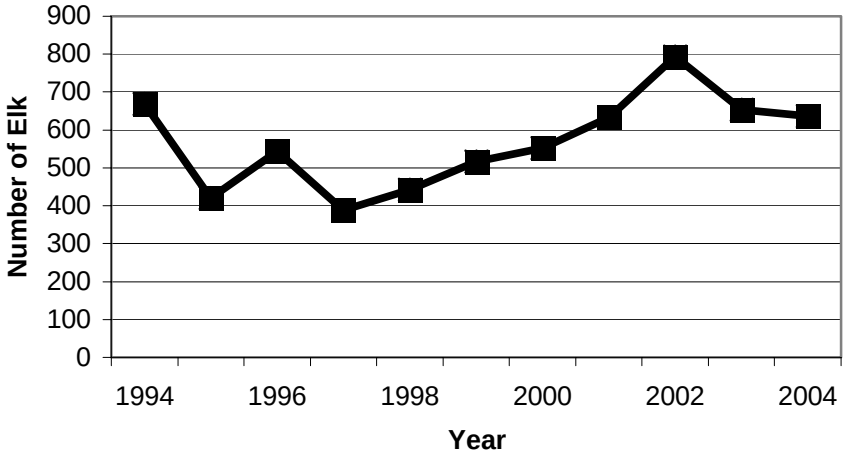


Figure 1. Number of elk counted during post-season aerial surveys in the Castle Mountain EMU, 1994-2004.

Recreation Provided: Hunting, camping, hiking, and trail riding are the primary forms of recreational use in the EMU. A significant portion of the extensive trail system in HD

452 is for non-motorized use only, which provides somewhat of a backcountry type setting. More of HD 449 is open to motorized use when compared to HD 452. During 1999-2001, an annual average of 572 elk hunters hunted in HD 449 with an average of 2,827 hunter days of recreation. For HD 452, the annual average was 528 elk hunters and 2,440 hunter days of recreation during 1999-2001.

Current Annual Elk Harvest: Hunting district 452 has been managed under an antlered bull (either-sex the last 9 days) hunting regulation since 1994. Hunting district 449 was managed the same as HD 452 until 1996, when the either-sex portion of the season was eliminated. Since 1996, HD 449 has been managed with an antlered bull regulation for the entire hunting season. Both hunting districts have also had a variable number of antlerless permits available each year. The average annual harvest for 1999-2001 was 78 elk in HD 449 (30 antlered, 47 antlerless). In HD 452, the annual harvest for 1999-2001 was 100 (59 antlered, 42 antlerless).

Accomplishments: The last 9 days of the general season was made either-sex in 1994 in the EMU to help control the number of elk in the EMU. A general season either-sex youth hunt was implemented in 2002 in the EMU.

Management Challenges: Limited public hunting access to private land where large numbers of elk are located during the hunting season is the primary management challenge in this EMU. It is difficult for FWP to manage elk numbers through hunter harvest when substantial numbers of elk are concentrated on private lands due to outfitting or because access for hunters is severely restricted or in some cases nonexistent.

We estimate that only about 50% of the elk in the EMU (30-35% in HD 452 and 60% in HD 449) are available to the general public during the general hunting season. The rest of the elk in the EMU are on private property that is either outfitted, restricted to hunting by family and friends only, or is entirely closed to hunting during the general season. In 2001, nonresidents harvested more bulls in HD 452 than did residents (39 nonresidents compared to 30 residents). Continuation of this trend may lead to the public perception that antlered animals are being sold to nonresidents, while the resident hunters are left to clean up the antlerless population for population control. As a result, resident hunters may become disgruntled.

There are currently no wolves established in the Castle Mountains. However, wolves moving either north or south from areas that currently have wolves may eventually colonize this area.

Population Monitoring: Aerial trend surveys are accomplished on an annual basis between 1 January and 15 April using fixed wing aircraft. Because of budget limitations, generally only one survey is made annually. Conditions during the annual survey may vary considerably among years, thus results of single annual surveys are variable. Due to the difficulty of differentiating between cows and calves from fixed wing aircraft, often only the number of bulls (differentiated between yearlings and brow-tined bulls) and total

number of antlerless animals are recorded. Additional funds will be necessary to accomplish additional fixed wing flights, or to allow for helicopter surveys.

SUMMARY OF PUBLIC COMMENT

Lack of public access to private lands that hold elk during the hunting season is a major concern among the hunting public. Hunters feel that in some areas of the EMU that the majority of the elk are unavailable to them. The view of some resident hunters is that bull elk are being sold to nonresident hunters, and resident hunters are left to being the "cow cleanup crew". Some landowners view hunters as being as much or more of a problem than having too many elk. Private landowners in the EMU seem to be fairly content with the current elk population. However, the consensus seems to be that they don't want the population to increase and a reduction in elk numbers in some areas of the EMU would be desirable.

MANAGEMENT GOAL

1) Provide a season structure to allow for management of the elk population through hunter harvest, so that the number of elk observed during post-season aerial surveys is within the desired objective range.
2) Work with private landowners to try and increase the amount of public access to private land or access through private land to national forest land for hunting.
3) Continue to cooperate with public and private land managers to provide optimum elk habitat, and manage for a diversity of elk hunting experiences.

HABITAT OBJECTIVES

4) Develop cooperative programs that encourage public and private land managers to maintain 270 square miles of occupied elk habitat.
5) Maintain or enhance elk security levels, so that the elk harvest is distributed throughout the general hunting season, and more elk remain on national forest land during the general hunting season. Maintain or enhance elk security levels, so that no more than 40% of the bull harvest occurs during the first week of the season.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to the Lewis & Clark National Forest to develop a comprehensive road management plan that will maintain or enhance elk security on national forest land during the hunting season, while still allowing adequate access for hunters. The goal is to keep more elk on USFS land during the hunting season, so that elk do not seek out private land refuge areas; thereby, improving the opportunity for hunters to harvest elk on national forest land in the EMU.
- Provide technical assistance to state and federal land management agencies on projects that may enhance elk habitat.

- Encourage federal land management agencies to mitigate for any project that may have a negative impact on elk habitat or elk security levels.

GAME DAMAGE STRATEGIES

Game damage complaints in this EMU are limited, as most landowners do not qualify for game damage assistance under current FWP guidelines because they lease their hunting rights or restrict hunting access. The few damage complaints received usually involve elk grazing rangeland during some season of the year. Other types of damage may occur on a local basis as well. Maintaining observed elk numbers within the objective range is the best way to deal with and to prevent game damage problems.

ACCESS STRATEGIES

FWP will cooperate with the Lewis & Clark National Forest to help develop a comprehensive road management plan that enhances elk security on national forest land while still allowing adequate access for hunters to harvest elk. FWP will work with private landowners to try and enhance opportunities for additional public hunting on their property or increased access through their lands to public land, particularly in HD 452. FWP will use the Block Management and Access Montana programs where appropriate.

POPULATION OBJECTIVES

The objective for observed elk numbers in the EMU is based on landowner tolerance level, as the majority of the winter range in the EMU is on private land. The majority of the landowners contacted expressed the sentiment that the current elk population level is acceptable, however, they do not want the population to increase.

1) Maintain the number of elk observed during post-season (late winter/early spring) aerial surveys within 20% of 625 elk (500-750).
2) Maintain a minimum post-season observed bull to cow ratio of 8 bulls:100 cows, or a minimum of 5.5% bulls observed in the post-season elk population.

POPULATION MANAGEMENT STRATEGIES

Managing to maintain the total number of observed elk within the objective range will be the priority in setting the season structure. Cooperation from private landowners in regards to access management will be necessary to help prevent the current elk population from increasing past the desired objective.

REGULATION PACKAGES

Six-week either-sex archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: either-sex regulation last 9 days of the general season in all or portion of the EMU AND, limited antlerless elk permits and over-the-counter antlerless A-9/B-12 licenses (B-tags) valid on private and DNRC lands may be available.

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU is within 20% of the objective of 625 observed elk (500-750).

The Liberal Regulation is: **1.)** either-sex regulation for longer than the last 9 days of the general season (up to the full 5-weeks) in all or a portion of the EMU AND; limited antlerless permits valid before and after the general season and over-the-counter antlerless A-9/B-12 licenses (B-tags) valid on private and DNRC lands may be available OR, **2.)** antlerless ONLY regulation for a portion or all of general season.

Liberal Regulation **1.) (above)** will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU exceeds the objective of 625 observed elk by more than 20% (more than 750 elk).

Liberal Regulation **2.) (above)** will be recommended if: after 2 years of Liberal Regulation 1.) (above) the total number of elk observed during post-season aerial surveys in the EMU remains above the objective of 625 observed elk by more than 20% (more than 750 elk).

The Restrictive Regulation is: limited antlerless permits (used to address local damage problems).

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU is 20% or more below the objective of 625 observed elk (500 or fewer) for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season antlered bull regulation.

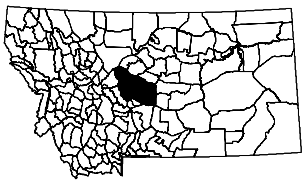
The Standard Regulation will be recommended if: the post-season bull to cow ratio is at least 8 bulls:100 cows or number of bulls observed is at least 5.5% of the total observed elk count.

The Restrictive Regulation is: **1**.) unlimited antlered bull or either-sex permits OR; **2**.) limited antlered bull or either-sex permits (zero if necessary). ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED OR LIMITED ARCHERY ONLY PERMITS.

1.) Unlimited antlered bull or either-sex permits will be recommended if: the post-season bull:100 cow ratio is less than 8:100; or the number of bulls is less than 5.5% of the total observed elk count for 2 consecutive years.

2.) Limited antlered bull or either-sex permits (zero if necessary) will be recommended if: after 2 consecutive years of unlimited antlered bull permits [1.) (above)], the post-season bull:100 cow ratio remains less than 8 bulls:100 cows, or the number of bulls observed remains less than 5.5% of the total observed elk counts.

LITTLE BELT EMU
(Hunting Districts 413, 416, 418, 420, 432, 448, 454, 540)



Description: This 3,585-square-mile EMU encompasses the area in and around the Little Belt Mountains, which are located south and east of Great Falls, and north and east of White Sulphur Springs. In the 1992 Elk Plan the Castle Mountains and the Little Belt Mountains were combined into one EMU. However, we have separated the two mountain ranges into 2 EMUs for this elk plan to provide for more management flexibility. The principal land manager in the EMU is the USDA-Forest Service-Lewis & Clark National Forest (USFS). Approximately 65% of the 1,648 square miles of occupied elk habitat in the EMU is public land. About 66% of the winter range is located on private land, with the remainder on public land and FWPs Judith River (JRWMA) and Haymaker Wildlife Management Areas (HWMA). Although most elk use of private land in the EMU occurs during the winter, elk in recent years have begun to increasingly use private lands more during other seasons of the year as well. Private land, including coniferous elk habitat, surrounds the Little Belt Mountains and is primarily used for cattle ranching.

The elk population contains multiple herd units in the EMUs eight hunting districts best described by the location of wintering concentration areas of elk. In hunting district (HD) 413, elk are primarily concentrated in the Black Butte vicinity, usually north or east of Black Butte and in the Riceville-Nasen area to the north and east of Tiger Butte. Occasionally, wintering elk may be seen in the Deep Creek Park area. In HD 432, wintering elk are primarily concentrated in the Otter Creek area east of Otter Mountain, and in the Jackson Coulee area west of Lone Tree Creek. Elk may also occasionally cross U.S. Highway 89 from HD 413 during the winter into the Rattlesnake Butte area of HD 432. The primary concentration area of wintering elk in HD 448 is the Mary's Knoll area. In HD 420, the primary elk wintering area is the 9,840-acre JRWMA and the private and public land in close proximity. The majority of the elk wintering on the JRWMA disperse throughout the Little Belt Mountains. The main migration routes for elk leaving the JRWMA are the Lost Fork and Middle Fork drainages of the Judith River, and the Yogo Creek drainage. The primary elk wintering area in HD 418 is in the vicinity of the Antelope Creek drainage, just north of the national forest boundary. In HD 540, the primary elk wintering concentration areas are between Antelope Creek and

Roberts Creek on the southeast side of the Little Belts, the HWMA and surrounding area, and the Baxter Gulch-Alkali Creek area between Findon Lane and the Spring Creek Road. The largest concentration is usually found from the HWMA to Findon Lane. In HD 454, wintering concentrations of elk are found in the Volcano Butte area, and from the Ice Creek drainage west to the Butler Hill area. Elk wintering in HD 454 may also move across U.S. Highway 12 into the northeast corner of HD 452 or the northwest corner of HD 449. Wintering concentrations of elk in HD 416 are found in the Park Hills area, the area northeast of Sheep Mountain south of Sheep Creek, and in the northwest corner of the hunting district from the Strawberry Gulch area west to the Smith River. Elk wintering in the Butler Hills area of HD 454 and in the Park Hills area of HD 416 may occasionally move between the two hunting districts across U.S. Highway 89. Elk from all wintering concentration areas mix on summer-fall range in the Little Belt Mountains. In addition, some elk move between the Little Belt and Castle Mountains.

Public Access: Access varies across the EMU and among hunting districts. Portions of the EMU currently have high road densities, providing easy access by vehicle, but other areas are reasonably remote and better suited to backcountry types of recreation. Public access to private lands on the periphery of the Little Belt Mountains has become very restricted in recent years, resulting in increased hunting pressure on adjacent national forest lands, as well as private lands still open to the public. Some landowners have leased hunting rights to outfitters, and many landowners have just closed their property to hunting altogether or to anybody other than immediate family and friends. Access to private lands that have elk during the hunting season is especially limited in HDs 413, 416, 540, and the west half of HD 454. In some areas, reductions in elk security on public lands and the closure of large blocks of private land to the general public have resulted in concentrations of elk on private lands during the hunting season where they are unavailable to the general public.

Elk Populations: Numbers of elk observed during post-season aerial surveys in this EMU have increased since the 1992 Elk Management Plan (Figure 1). The average number of elk observed in the EMU during post-season (late winter-early spring) aerial surveys in 2001-2003 was 3,828 elk (range 3,170-4,448). The 3-year average by hunting district was: HD 413 - 536 elk (range 383-657); HD 432 – 374 elk (range 326-424); HDs 420/448 - 1,093 elk (range 772-1,323); HD 418 – 170 elk (range 147-210); HD 540 - 729 elk (range 647-838); HD 454 – 305 elk (range 258-378); and HD 416 – 616 elk (range 326-942).

Recreation Provided: Hunting, camping, hiking, and winter recreational sports such as riding snowmobiles and skiing are the primary forms of recreation in the Little Belt Mountains. Four-wheeling is also a popular sport in the Little Belts. The Little Belt Mountains are heavily utilized for recreational activities because of their proximity to two of Montana's largest cities, Billings and Great Falls. In addition, the Little Belt Mountains is one of the first areas with general elk hunting encountered by hunters traveling west from eastern Montana. It is also one of the last large contiguous geographic areas open to any antlered bull hunting. Hunting experience opportunities vary in the Little Belts from areas that currently have fairly high road densities to areas

that are reasonably remote and more suited to a backcountry type hunting experience. The average number of hunters and hunter days for the hunting districts in the Little Belts EMU during 1999-2001 were as follows: HD 413 – 1,340 hunters, 6,790 hunter days; HD 432 – 1,206 hunters, 6,044 hunter days; HD 448 – 1,349 hunters, 6,003 hunter days; HD 420 – 234 hunters, 1,239 hunter days; HD 418 – 818 hunters, 4,196 hunter days; HD 540 – 873 hunters, 4,524 hunter days; HD 454 – 984 hunters, 4,739 hunter days; and HD 416 – 1,712 hunters, 8, 993 hunter days.

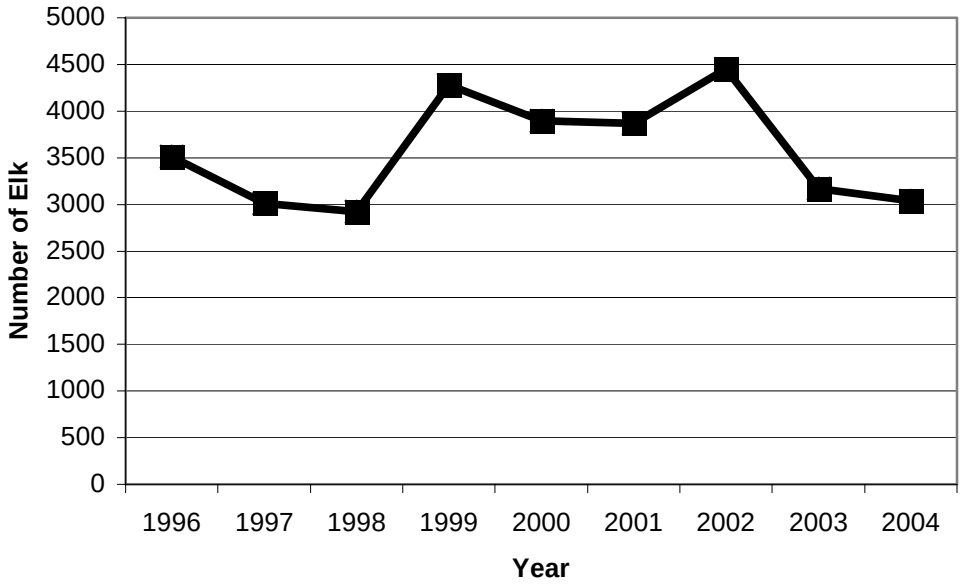


Figure 1. Number of elk counted during post-season aerial trend surveys in the Little Belt EMU, 1996-2004.

Current Annual Elk Harvest: The average total annual harvest for the Little Belts EMU during 1999-2001 was 1,009 elk (517 antlered, 483 antlerless). The 3-year average harvest by hunting district was: HD 413 - 185 elk (83 antlered, 100 antlerless); HD 432 – 142 elk (78 antlered, 63 antlerless); HD 448 - 146 elk (60 antlered, 84 antlerless); HD 420 - 41 elk (21 antlered, 19 antlerless); HD 418 - 71 elk (33 antlered, 37 antlerless); HD 540 - 111 elk (66 antlered, 44 antlerless); HD 454 - 88 elk (55 antlered, 32 antlerless) and; HD 416 - 226 elk (122 antlered, 103 antlerless).

Accomplishments: Increased opportunity for the general hunter to harvest antlerless elk (last 9 days either-sex) was implemented in 1994 in much of the EMU to help control the number of elk. A general season either-sex youth hunt was implemented in 2002 in most of the EMU. The size of the Judith River Wildlife Management Area was increased by approximately 4,036 acres through two separate land acquisitions in the 1990s, increasing the amount of publicly owned winter range.

Management Challenges: Limited public hunting access to private land where large numbers of elk are located during the hunting season is the primary management

challenge in this EMU. It is difficult for FWP to manage elk numbers through hunter harvest when substantial numbers of elk are concentrated on private lands due to outfitting or because access for hunters is severely restricted or in some cases nonexistent.

We estimate that only about 25% of the elk in HD 413 are available to the general public throughout the general hunting season. The majority of the elk in the hunting district are in areas where public hunting opportunities are limited, especially for bulls. Opportunities for harvest of antlerless elk are somewhat more available than for bulls in the hunting district. Outfitting is fairly limited in HDs 432, 448, 418, and 540, although, there is quite a bit of private land where hunting access is restricted to mainly family and friends. However, the vast majority of elk in these hunting districts are available to the general public during at least a portion of the general hunting season mainly because of generally small ranch sizes. Even in those areas that are outfitted, or where hunting access is limited to family and friends, enough hunting pressure is usually applied to periodically move elk back onto public land, or onto other private property that is open to hunting by the general public. As a result, elk often move between public and private land during the hunting season in these hunting districts. Therefore, private land "refuge" areas are limited to nonexistent in these hunting districts.

Hunting district 420 is open to hunting by permit only, but the majority of the elk in this hunting district are available to permit holders. However, the number of elk present in the hunting district during the general season is often weather dependent. A large percentage of HD 454 is open for public access, but 50% or more of the elk in the hunting district are unavailable to the public during the general season because of a large block of private land that currently has restricted hunting access. The relative lack of hunting pressure on this large block of private land has resulted in the creation of a "refuge" for elk.

General public access to private land for hunting in HD 416 is currently limited. However, we estimate that a little more than 50% of the elk in the hunting district are on national forest land during some portion of the general hunting season and are available to the public. The majority of the rest of the elk in the hunting district are in areas where access for hunting is generally limited to family and friends. There is some outfitting in this hunting district as well, and as a result, there are some elk that are generally only available to clients of outfitters.

There are currently no known wolf packs established in the Little Belt Mountains. However, wolves moving either north or south from areas that currently have wolves may eventually colonize the area.

Population Monitoring: Aerial trend surveys are accomplished on an annual basis between 1 January and 15 April using fixed wing aircraft. Because of budget limitations, generally only one survey per hunting district is made annually. Conditions during the annual survey may vary considerably among years, thus results of single annual surveys are variable. Due to the difficulty of differentiating between cows and calves from fixed

wing aircraft, often only the number of bulls (differentiated between yearlings and brow-tined bulls) and total number of antlerless animals are recorded. Additional funds will be necessary to accomplish additional fixed wing flights, or to allow for helicopter surveys.

SUMMARY OF PUBLIC COMMENT

Lack of public access to private lands that hold elk during the hunting season is a major concern among the hunting public. Private landowners in some areas of the EMU feel that they have too many elk and would like to see numbers reduced. Hunters consider the majority of the elk to be unavailable to them in some areas of the EMU. The view of some resident hunters is that in areas of the EMU, bull elk are being sold to nonresident hunters, and resident hunters are left to being the "cow cleanup crew". The general opinion of the hunting public is that landowners who either outfit or allow limited to no access for hunting should not complain about having too many elk if they won't let people in to harvest elk. Some landowners regard hunters as being as much or more of a problem than having too many elk. Some of the public feels that USFS road closures limit access and opportunity to harvest elk, while others feel that there are too many roads. Lastly, some of the hunting public believes that ATV use has ruined the quality of hunting in areas of the EMU.

MANAGEMENT GOAL

4) Provide hunting regulations that allow for management of the elk population through hunter harvest, so that the number of elk observed during post-season aerial surveys is within the desired objective range.
5) Work with landowners in areas where hunter access is limited to try and increase the amount of public access to private land and/or through private land to national forest land for hunting.
6) Continue to cooperate with public and private land managers to provide optimum elk habitat, and manage for a diversity of elk hunting experiences.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain 1,648 square-miles of occupied elk habitat.
2) Maintain or enhance elk security levels, so that the elk harvest is distributed throughout the general hunting season, and more elk remain on national forest land during the general hunting season. Maintain or enhance elk security levels so that no more than 40% of the bull harvest occurs during the first week of the season.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to the Lewis & Clark National Forest to help develop a comprehensive road management plan that will maintain or enhance elk security on national forest land during the hunting season, while still allowing adequate

access for hunters. The goal is to keep more elk on USFS land during the hunting season, so that elk do not seek out private land "refuge" areas; thereby, improving the opportunity for hunters to harvest elk on national forest land in the EMU.

- Provide technical assistance to federal land management agencies on projects that may enhance elk habitat.
- Encourage federal land management agencies to mitigate for any project that may have a negative impact on elk habitat or elk security levels.
- Provide technical assistance to the Lewis & Clark National Forest in developing forest livestock grazing standards, so that forest livestock grazing practices do not negatively impact elk.
- Develop a new management plan for the Judith River Wildlife Management Area to include management practices that will potentially enhance habitat on the WMA for elk. Such management practices may include reseeding of existing stands of smooth brome and other grass species unpalatable to elk, prescribed burning, livestock grazing, timber harvest, and noxious weed control.

GAME DAMAGE STRATEGIES

Game damage complaints in this EMU occur primarily on the north side of the Little Belt Mountains. The few damage complaints received usually involve elk grazing rangeland during some season of the year. There have been problems with elk getting into haystacks in the winter in the past, but these have generally been resolved by fencing the haystacks. Game damage complaints are limited on the south side of the EMU because the majority of private landowners lease hunting rights or have restricted hunting access. As a result, most landowners on the south side of the Little Belt Mountains do not qualify for game damage assistance under current FWP guidelines. FWP will work with private landowners to try and increase access to private land in areas where game damage may be a problem on the north side of the Little Belt Mountains. Reducing observed elk numbers to the objective level by hunting will best prevent future game damage problems.

ACCESS STRATEGIES

FWP will:

- Work with the Lewis & Clark National Forest to help develop a comprehensive road management plan that enhances elk security on national forest land while still allowing adequate access for hunters to harvest elk on federal land.
- Continue to work with private landowners to try and enhance opportunities for additional public hunting on their property or increased access through their property to public land.
- Use the Department's Block Management and Access Montana programs where appropriate.

POPULATION OBJECTIVES

1) Maintain the number of elk observed during post-season (late winter-early spring) aerial surveys within 15% of 3,600 elk (3,060-4,140). Because a high percentage of elk winter range in the EMU is on private land, the objective for observed numbers of elk in the Little Belts EMU is based on concern for private landowner tolerance of elk. The EMU objective of 3,600 observed elk is derived from the following desired distribution of observed wintering elk for each hunting district within the EMU: HD 413 – 500 elk; HD 416 – 475 elk; HD 418 – 150 elk; 420/448 – 1,300 elk; HD 432 – 325 elk; HD 454 – 250 elk; and HD 540 – 600 elk.
2) Maintain a minimum post-season bull:100 cow ratio of 8 bulls:100 cows, or a minimum of 5.5% bulls in the observed post-season count.
3) Upon successful implementation of a new JRWMA management plan, the objective for number of observed elk utilizing the JRWMA will be 1,250 elk.

POPULATION MANAGEMENT STRATEGIES

Managing to maintain the total number of observed elk within the objective range will be the priority. Cooperation in hunter access management from private landowners will be necessary in some hunting districts in order to achieve this goal.

REGULATION PACKAGES

Six-week either-sex archery regulation EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: either-sex regulation last 9 days of general season in all or a portion of the EMU AND, limited antlerless elk permits and over-the-counter antlerless A-9/B-12 licenses (B-tags) valid on private and DNRC lands may be available and may be valid before and after the 5-week general season.

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU is within 15% of the objective of 3,600 observed elk (3,060-4,140).

The Liberal Regulation is: **1.)** either-sex general season regulation for longer than the last 9 days of the general season (up to the full 5-weeks) in all or a portion of the EMU AND, limited antlerless elk permits valid before and after the general season and over-the-counter antlerless A-9/B-12 licenses (B-tags) valid on private and DNRC lands may be available OR, **2.)** antlerless ONLY regulation for a portion or all of the general season in all or a portion of the EMU.

Liberal Regulation **1.) (above)** will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU exceeds the objective of 3,600 observed elk by more than 15% (more than 4,140 elk).

Liberal Regulation **2.) (above)** will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU remains above the objective of 3,600 observed elk by more than 15% (more than 4,140 elk) after 2 consecutive years of Liberal Regulation 1.) (above).

The Restrictive Regulation is: limited antlerless permits (used to address local damage problems).

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys in the EMU is more than 15% below the objective of 3,600 observed elk (less than 3,060 elk) for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season antlered bull regulation.

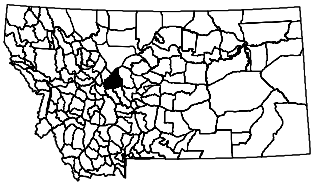
The Standard Regulation will be recommended if: the post-season bull:100 cow ratio is at least 8 bulls:100 cows; or, the number of bulls is at least 5.5 % of the total observed elk count.

The Restrictive Regulation is: **1.)** unlimited antlered bull or either-sex permits OR, **2.)** limited antlered bull or either-sex permits (zero if necessary). ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR UNLIMITED OR LIMITED ARCHERY ONLY PERMITS.

1.) Unlimited antlered bull or either-sex permits will be recommended if: the post-season bull:100 cow ratio is less than 8 bulls:100 cows; or the number of bull is less than 5.5% of the total observed elk count for 2 consecutive years.

2.) Limited antlered bull or either-sex permits will be recommended if: the post-season bull:100 cow ratio remains less than 8 bulls:100 cows; or the number of bull remains less than 5.5% of the total observed elk count after 2 consecutive years of Restrictive Regulation 1.) **-** unlimited antlered bull or either-sex permits.

DEVILS KITCHEN EMU
(HD's 445, 455)



Description: This 751-square-mile EMU encompasses the north portion of the Big Belt Mountains between Great Falls and Helena. The EMU includes the Beartooth Wildlife Management Area (BTWMA) and a portion of the Gates of the Mountains Wilderness Area (together comprising most of HD 455). Several large ranches operate in the vicinity of these public lands. Elk occupy about 534 square miles (71%) of the land base, of which 137 square miles (26%) are public land. Habitat consists of foothill-grassland communities and the forested Big Belt Mountain range.

Public Access: There is good access to public lands in this EMU. Some landowners in HD 445 have increased public elk hunting opportunities on private land through the FWP Block Management Program. Others also provide access to public lands. The 277,000 acres of private land fall into one of three access categories: closed, limited or open to public hunting opportunities. Approximately 5% of the private land is closed, 55% is limited and 40% is open to public hunting. Private landowners play a critical role in proper management of the elk herd in this EMU.

Elk Populations: There are five distinct wintering areas in HD 445: the Jones Hills, the Smith River corridor, the Bird Creek area, Sheep Creek, and the head of Hound Creek. There are also a few small wintering groups scattered throughout the HD. Numbers of elk observed during post-season aerial surveys have declined since the mid-1990s by prescription (Figure 1). During post-season aerial surveys in 2002-2003, 662 elk were observed in HD 445 (Jones Hills - 258; Smith River corridor - 203; Bird Creek - 98; Sheep Creek - 62; Hound Creek - 41). The BTWMA serves as a winter range for elk from HD 455 and some elk migrating from HD 445. In winter 2002-2003, 505 elk were observed during post-season aerial surveys on the BTWMA in HD 455. An additional 400-500 elk are part time residents of both HD 445 and HD 446, and spend winter months near the boundary of these two HDs.

Recreation Provided: During 1999-2001, the EMU provided an annual average of 7,576 hunter days of recreation for 1,702 hunters. Opportunities to view wildlife on public lands abound during summer and fall months. Winter elk viewing opportunities are limited due to migration of elk onto public winter ranges, on which public access is restricted from 1 December to 15

May to minimize wildlife disturbance. Elk and wildlife viewing occurs from public roads in HD 445 throughout the year.

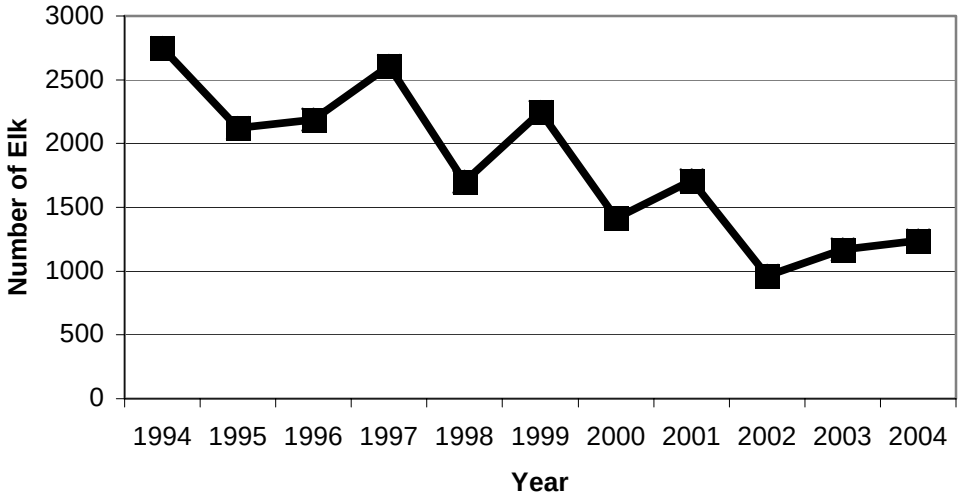


Figure 1. Number of elk counted during post-season aerial trend surveys in the Devil's Kitchen EMU, 1994-2004.

Annual Elk Harvest: During 1999-2001, the average annual harvest in HD 445 was 261 elk, of which, 100 (62%) were bulls. Forty-four percent of these harvested bulls had antlers with at least 6 points on at least one side. Eighty four percent (84%) of these harvested bulls were brow-tined bulls (BTBs). The average annual harvest was 111 elk in HD 455 during 1999-2001. An average of 30 (27%) were bulls, of which, 39% had antlers with at least 6 points on at least one side. Eighty four percent (84%) of these harvested bulls were BTBs.

Accomplishments: "The Devil's Kitchen Working Group" addresses issues regarding elk, wildlife and land management, and public hunting opportunities on private land in the EMU. Members of the group include landowners, sportsmen, outfitters, and FWP personnel. The group has successfully developed and pursued elk management goals and objectives for HD 445 and the BTWMA. The Block Management program has also helped landowners manage elk herds within tolerable limits, while providing public hunting opportunities in HD 445. Habitat enhancement projects have been developed, such as a rest-rotation grazing system between the BTWMA and a private landowner to enhance range productivity and winter range conditions for elk, both on the BTWMA and on private lands.

Management Challenges: Observed numbers of elk wintering on the BTWMA have been below objective levels the past five years. This decline may be due to distributional changes resulting from lack of heavy winter snow cover the past few years, high hunting pressure and harvest in past liberal hunting seasons, or some movement onto private lands. Observed numbers of wintering elk also declined in HD 445 from an average of 1,005 elk during 1993-2000 to an average of 628 elk during 2001-2002. This decline was probably the result of the liberal antlerless regulations that were in place from 1994-2001 in the HD and EMU.

Challenges will include allowing the wintering elk herd on the BTWMA to grow to the objective levels of 1,500 elk and stabilizing numbers of wintering elk in HD 445 at 700 animals.

Population Monitoring: We survey elk winter ranges 1-2 times annually by fixed-wing aircraft during January-March. The BTWMA is surveyed 2-3 times per year during the same period. During aerial surveys, total numbers of elk, location, and sex and age composition are recorded.

SUMMMARY OF PUBLIC COMMENT

Public comment has generally been favorable regarding the EMU objectives and plan. Most agree with slowly increasing elk numbers toward the objective, but would like to see more of the fall and winter distribution of elk occur on the BTWMA rather than on private lands.

MANAGEMENT GOALS

Maintain total elk numbers within habitat capability and at a level acceptable to both landowners and sportsmen. Produce older age class bulls, while maintaining a diverse age structure.

HABITAT OBJECTIVES

Develop cooperative programs that encourage public and private land managers to maintain and/or enhance productive elk habitat. Enhance wintering habitat conditions on the BTWMA through habitat manipulation techniques to attract elk from neighboring private lands during the late winter months to relieve future game damage problems.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Continue to cooperate with the Helena National Forest in planning future management actions that may arise in the Gates of the Mountains Wilderness Area (HD 455).
- Continue to improve the quality and quantity of elk habitat on the Beartooth WMA by means of habitat manipulations such as grazing programs, hay field renovations, aspen stand enhancement, and recreation management.
- Develop cooperative livestock grazing programs with private landowners to maintain and/or enhance habitat conditions on the BTWMA and adjacent private land winter ranges.
- Develop, and periodically update, management guidelines and a management plan for the BTWMA.
- Coordinate with, and seek recommendations from, interest groups and advisory committees concerning elk management issues on private lands.

GAME DAMAGE STRATEGIES

Only one game damage complaint has been reported during the past three years. To keep game damage complaints minimal, we will continue to seek cooperative solutions to elk related

problems on both private and public land in the EMU. This includes participating on the Devil's Kitchen Working Group, (which includes representatives from the landowner community in HD 445, sportspersons, and representatives from other public land management agencies). Also, provide forage on the BTWMA for 1,500 wintering elk through management of public use, proper grazing practices, and habitat manipulation techniques. Habitat manipulation and rest-rotation grazing on the BTWMA will be used as a tool to attract wintering elk from neighboring private lands to minimize game damage complaints.

ACCESS STRATEGIES

Hunting opportunity on private land is a major factor influencing proper elk management in this EMU. Many landowners in the EMU allow elk hunting opportunities during the archery and general seasons. We intend to work with public and private land managers to increase walk-in public hunting access to public lands. This includes use of the Access Montana Program. We also will work with private landowners to continue and/or increase Block Management Programs and walk-in hunting opportunities on private lands.

POPULATION OBJECTIVES

1.) Maintain the number of elk observed during post-season aerial surveys in the EMU within 20% of 2,200 elk (1,760-2,640). Population objectives by area are 1,500 elk on the BTWMA (HD 455) and 700 elk in HD 445.
2.) In HD 445, provide a bull harvest comprised of at least 75% BTBs, while maintaining a diverse age structure. In HD 455 (BTWMA), provide a bull harvest comprised of at least 60% BTBs, while maintaining a diverse age structure.

POPULATION MANAGEMENT STRATEGIES

A liberal season structure was in place in the EMU from 1994-2001 to reduce antlerless elk numbers. Seven hundred antlerless permits were issued annually in HD 455 from 1994 to 1999. We reduced antlerless permit numbers to 500 in 2000 and to 325 permits in 2001. In 2002, we reduced antlerless permits to 25 and to 20 in 2003 to allow elk numbers to increase to objective levels. Currently, elk numbers in HD 445 are at a level more tolerable landowners.

REGULATION PACKAGES

Six-week either-sex archery regulation, EXCEPT see Restrictive Regulation for Antlered elk.

HD 445:
Antlerless:

<u>The Standard Regulation is:</u> either-sex general season regulation of variable length (up to 5-weeks) AND, additional limited antlerless permits may be recommended.

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial surveys is within 20% (560- 840 elk) of the population objective number (700 elk).

The Liberal Regulation is: general season antlerless ONLY regulation of variable length (up to 5-weeks).

The Liberal Regulation will be recommended if: the number of elk observed during post-season aerial surveys is more than 20% above (more than 840 elk) the population objective number (700 elk).

The Restrictive Regulation is: limited antlerless permits.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial surveys more than 20% below (less than 560 elk) of the population objective number (700 elk) for 2 consecutive years.

Antlered:

The Standard Regulation is: 5-week general season antlered bull regulation.

The Standard Regulation will be recommended if: more than 75% of harvested bulls are brow-tined bulls.

The Restrictive Regulation is: limited either-sex permits. ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR LIMITED ARCHERY ONLY PERMITS.

The Restrictive Regulation will be recommended if: less than 75% of harvested bulls are brow-tined bulls for 2 consecutive years.

HD 455:

Antlerless:

The Standard Regulation is: limited (250-350) antlerless permits.

The Standard Regulation will be recommended if: numbers of elk observed during post-season aerial surveys within 20% (1,200-1,800 elk) of the population objective number (1,500 elk).

The Liberal Regulation is: limited (more than 350) antlerless permits also valid earlier and/or later than existing general season.

The Liberal Regulation will be recommended if: numbers of elk observed during post-season aerial surveys are more than 20% above (more than 1,800 elk) the population number objective (1,500 elk).

The Restrictive Regulation is: no antlerless harvest, or a very limited number of antlerless permits (less than 250).

The Restrictive Regulation will be recommended if: numbers of elk observed during post-season aerial surveys are more than 20% below (less than 1,200 elk) the population objective number (1,500 elk).

Antlered:

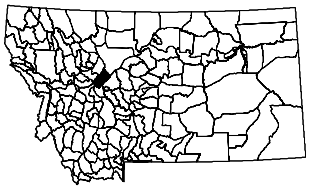
The Standard Regulation is: limited either-sex permits (approximately 70).

The Standard Regulation will be recommended if: more than 60% of harvested bulls are brow-tined bulls.

The Restrictive Regulation is: limited either-sex permits (less than 70). ARCHERS WILL ALSO BE REQUIRED TO APPLY FOR LIMITED ARCHERY ONLY PERMITS.

The Restrictive Regulation will be recommended if: less than 60% of harvested bulls are brow-tined bulls for 2 consecutive years.

BIRDTAIL HILLS EMU
(Hunting Districts 421 and 423)



Description: This 542-square-mile EMU contains about 273 square miles of elk habitat. About 90% of this EMU is private land. Throughout the year, nearly all elk are associated with private land. The western edge of HD 423 is the Continental Divide as it comes south from the Rogers Pass area on Highway 200. Moving east through timbered ridges to open reefs and grasslands, the rolling and timbered Birdtail Hills north of Interstate 15 in HD 421 represent the easternmost extent of elk habitat in these districts. Agriculture production includes grain, hay production and pasture.

Public Access: Access in these districts is extremely limited. Several large properties are essentially closed to hunting and act as refuge for large numbers of elk. Hunter outfitting operations keep several properties closed to non-outfitted hunters. Dependent on daily distribution, over 90% of these elk may be unavailable to the general public hunter because of private land refuges, leased hunting, and other similar factors.

Elk Populations: Near the common boundary between HDs 421 and 423 (Highway 287), winter observations of elk typically number approximately 850 animals (Figure 1). The elk are relatively evenly distributed between the two hunting districts with elk moving east into the Birdtail Hills and west towards the Continental Divide during nonwinter months.

Recreation Provided: During 1999-2001, an annual average of 2,940 hunter days of recreation were provided for 644 hunters in the EMU. Outfitted day hunting is prevalent throughout the EMU with limited non-outfitted day hunting. Because of the presence of outfitting and/or trespass fees and essentially no public lands, the elk in this EMU are largely unavailable to the general public. Elk presence near Highway 287 during winter months provides some viewing opportunities.

Current Annual Elk Harvest: During 1999-2001, an annual average of 118 elk, comprised of an average 56 antlerless and 62 antlered elk, was harvested in the EMU. Given average sex/age composition of the approximately 850 observed elk, an annual harvest of at least 100 antlerless elk is required to hold the population stable. Substantially greater antlerless harvest than in the past will be necessary to reduce the population to the objective level.

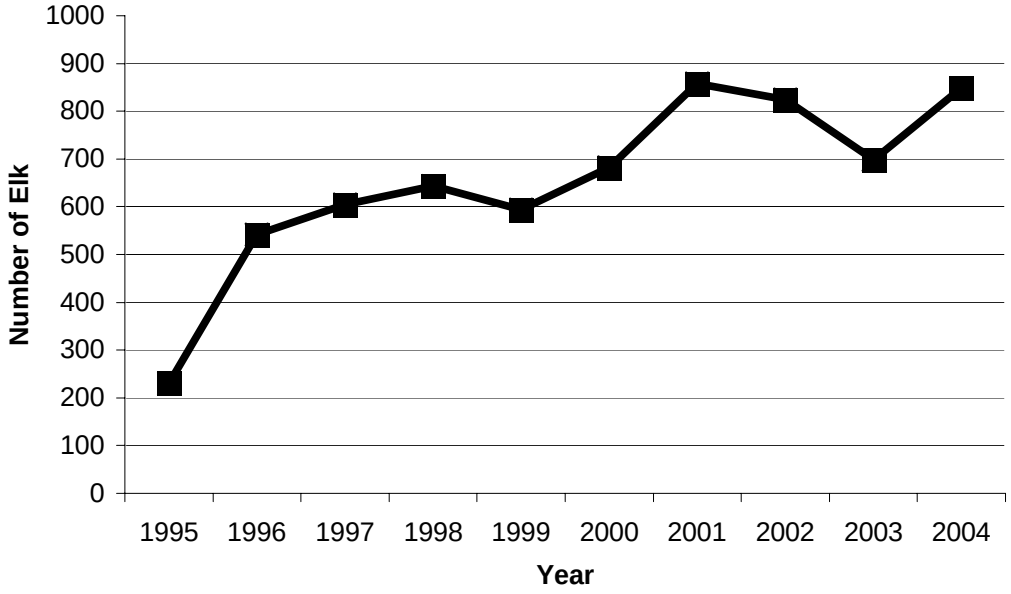


Figure 1. Number of elk counted during post-season aerial trend surveys in the Birdtail Hills EMU, 1995-2004.

Accomplishments: FWP acquired a conservation easement on over 3,000 acres of the Bay ranch in HD 423. Easement terms provide public elk hunting access, dictate grazing prescription and limit housing/commercial development. FWP has improved communication with some landowners in this EMU and potential solutions to game damage problems are being addressed.

Management Challenges: Lack of significant hunter access associated with properties either outfitted or closed to hunting have essentially ensured that levels of antlerless harvest necessary to reduce the elk population cannot be achieved under past regulation types. Seasons for antlerless elk (permits) and/or the A-9/B-12 license (B-tags) for antlerless elk extended outside the outfitted general season offer some hope for increased antlerless harvest.

Population Monitoring: We annually accomplish post-season aerial trend surveys during winter by fixed-wing aircraft. We record total elk numbers and bull numbers.

SUMMARY OF PUBLIC COMMENT

Most public comment has been from landowners relative to game damage. Public comment has been minimal because of extremely limited public hunting access and thereby, limited interest from hunters.

MANAGEMENT GOAL

Within landowner tolerance levels, maintain some presence of elk for public enjoyment. Through use of creative regulations, attempt to provide maximum use of general public hunting to manage elk population level.

HABITAT OBJECTIVES

Maintain quality habitat for elk and preserve/improve soil, water and vegetation quality.

HABITAT MANAGEMENT STRATEGIES

Habitat management is the prerogative of the private landowner (about 90% of the EMU) or public land manager. FWP will provide technical assistance as requested on elk habitat issues. FWP will also maintain communication with landowners to provide technical assistance on any elk habitat issues that might be addressed by conservation easement programs.

GAME DAMAGE STRATEGIES

Game damage occurs as late spring, summer and early fall use of pastures and agricultural crops by large groups of elk. The availability of antlerless permits valid starting 1 September has helped alleviate some late summer/early fall game damage. Use of A-9/B-12 antlerless elk licenses valid on private land outside the general season may also reduce game damage.

ACCESS STRATEGIES

Maintain communication with landowners to explore possibilities of increased public hunting access.

POPULATION OBJECTIVES

1.) Maintain the total number of elk observed during post-season aerial surveys in the EMU within 20% of 500 total elk (400-600).
2.) Maintain more than 5 bulls:100 cows observed during post-season aerial surveys.

POPULATION MANAGEMENT STRATEGIES

Develop and/or maintain an appropriate level of antlerless harvest, access to private land will be key. Priority will be given to developing regulation types and season formats that encourage landowners to allow public hunting access and provide incentives for harvest of antlerless elk.

REGULATION PACKAGES

Six-week either-sex archery regulation [A-9/B-12 license (B-tag) also valid if issued].

Antlerless:

The Standard Regulation is: 5-week general season either-sex (HD 421) or brow-tined bull/ antlerless (HD 423) regulation AND, limited antlerless permits valid in either HD 421 or 423 before the general season and a 2nd group of limited antlerless permits valid in either HD 421 or 423 after the general season.

The Standard Regulation will be recommended if: Total elk numbers observed during post-season aerial surveys are in the range of 400-600.

The Liberal Regulation is: **1**.) 5-week general season either-sex (HD 421) or brow-tined bull/ antlerless (HD 423) regulation with limited antlerless permits valid in either HD 421 or 423 before the general season and another set of limited antlerless permits valid in either HD 421 or 423 after the general season AND, unlimited over-the-counter antlerless A-9/B-12 licenses (B-tags) available for use in either district during the archery and general seasons. Holders of the limited antlerless permits could also utilize an elk A-9/B-12 license during the extended period their antlerless permit was valid OR, **2**.) 5-week general season antlerless ONLY regulation in HDs 421 and 423 with limited antlerless permits valid in either HD 421 or 423 before the general season and another set of limited antlerless permits valid in either HD 421 or 423 after the general season AND, unlimited over-the-counter A-9/B-12 licenses (B-tags) available for use in either district during the archery and general seasons. Holders of the limited antlerless permits could also utilize the elk A-9/B-12 licenses during the extended period their antlerless permit was valid.

Liberal Regulation **1.) (above)** will be recommended if: number of elk observed during post-season aerial surveys is above 600.

Liberal Regulation **2.) (above)** will be recommended if: number of elk observed during post-season aerial surveys remains above 600 despite 2 consecutive years of application of liberal antlerless harvest package 1.) (above).

The Restrictive Regulation is: 5-week general season either-sex (HD 421) or brow-tined bull/ antlerless (HD 423) regulation.

The Restrictive Regulation will be recommended if: number of elk observed during post-season aerial surveys is below 400 for 2 consecutive years.

Antlered:

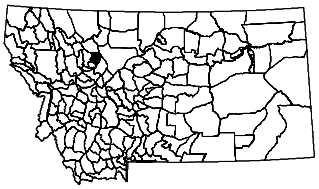
The Standard Regulation is: 5-week general season either-sex (HD 421) or /brow-tined bull/antlerless (HD 423) regulation.

The Standard Regulation will be recommended if: The bull:100 cow ratio observed during post-season aerial surveys is greater than 5 bulls:100 cows.

The Restrictive Regulation is: 5-week general season brow-tined bull/ antlerless regulation in both HDs 421 and 423.

The Restrictive Regulation will be recommended if: The bull:100 cow ratio observed during post-season aerial surveys is at or below 5 bulls:100 cows for 2 consecutive years.

TETON RIVER EMU
(Hunting District 450)



Description: This 318-square-mile EMU contains about 40 square miles of elk habitat and 76% of the EMU is private land. Montana Department of Natural Resources and Conservation (DNRC) land is another 17% of the land base. Elk habitat in HD 450 is dominated by the riparian corridor and flat agricultural floodplain of the Teton River upstream from Choteau. Riparian cover and agricultural production (grain and hay) provide nonwinter security and forage. During fall, winter, and early spring these elk utilize upland habitats in this hunting district (HD) and others HD 441 near the Blackleaf Wildlife Management Area (BWMA) and HD 442 near the Ear Mountain WMA (EMWMA).

Public Access: Public access to elk habitats in this hunting district is fair although some key properties are severely restricted. Most access is non-motorized foot traffic from available public roads. Dependent upon daily distribution, about 90% of the elk in this EMU may be unavailable to the general public hunter.

Elk Population: Approximately 100-200 elk are observed (Figure 1) between the BWMA in HD 441 and Deep Creek in HD 442 (north to south across the western edge of HD 450). Most of these elk appear to be resident and, although they use HDs 441 and 442, are not considered to be backcountry elk associated with the upper Teton drainage or the Sun River. However, they are exposed to the harvest prescriptions of HDs 441 and 442 when distributed outside HD 450.

Recreation Provided: During 1999-2001, an annual average of 464 hunter days were provided for an average 92 hunters in this EMU. Most hunting for these elk is day hunting. Due in part to the presence of many white-tailed deer, archery hunting (for elk and deer) is very popular in this district. These elk provide considerable wildlife viewing opportunities during summer because they are near Choteau and often visible from the Teton River road. Although advertised outfitting is limited, there likely are some trespass or gate fees assessed. Because public land is limited relative to the distribution of these elk, most are usually not widely and consistently available to the general hunting public.

Current Annual Elk Harvest: Approximately 10 bull elk and less than 10 antlerless elk are estimated to be harvested annually in HD 450. Some additional harvest of these elk likely occurs in HDs 441 and/or 442. Greater antlerless harvest than currently occurs will be necessary to reduce the population to objective level.

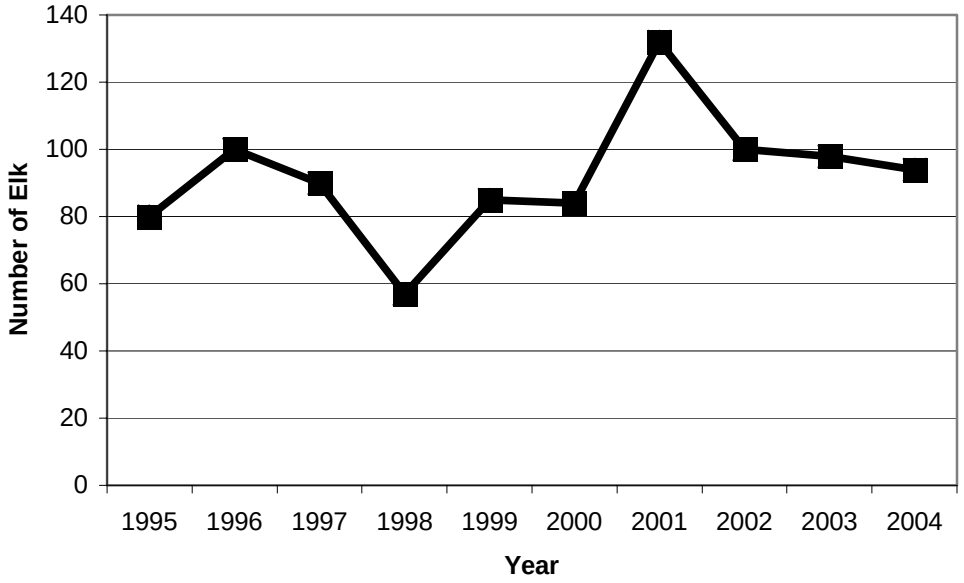


Figure 1. Number of elk counted during post-season aerial trend surveys in the Teton River EMU, 1995-2004.

Accomplishments: FWP has improved communication with some landowners in this EMU and potential solutions to game damage problems are being addressed. Current efforts to abolish the Teton Spring Creek Bird Preserve near Choteau may limit unwanted elk presence that area.

Management Challenges: Dense cover and restricted access to several key properties limits harvest potential. Thus, unwanted population growth of elk is a perennial concern. Along the Teton River, across flat terrain, and close to the community of Choteau, there is always the threat of development of agricultural land for housing.

Population Monitoring: We annually accomplish post-season aerial trend surveys during winter by fixed-wing aircraft to count total numbers of elk. Counts and classifications of bulls are made by a helicopter, which is used in conjunction with surveys to the south.

SUMMARY OF PUBLIC COMMENT

Most comments are from landowners relative to game damage. Most do not want more elk, but do not want fewer elk either. Both landowners and the public are concerned with bull age structure and potential over harvest of bulls. There is public concern about equity of opportunity between general archery hunting and limited general season hunting.

MANAGEMENT GOAL

Within landowner tolerance levels, maintain some presence of elk for public enjoyment. Through use of creative regulations, attempt to provide maximum use of general public hunting to manage elk population level.

HABITAT OBJECTIVES

Maintain quality habitat for elk and preserve/improve soil, water and vegetation quality.

HABITAT MANAGEMENT STRATEGIES

Habitat management is the prerogative of the private landowner (about 76% of the EMU) or public land manager (17% DNRC). FWP will provide technical assistance as requested on elk habitat issues. FWP will also maintain communication with landowners to provide technical assistance on any elk habitat issues that might be addressed by conservation easement programs.

GAME DAMAGE STRATEGIES

Game damage occurs as late spring, summer and early fall use of pastures and agricultural crops. The availability of antlerless permits valid starting 1 September has helped alleviate some late summer/early fall game damage. Use of the A-9/B-12 antlerless elk license valid on private land outside the general season may also reduce game damage.

ACCESS STRATEGIES

Maintain communication with landowners to explore possibilities of increased public hunting access.

POPULATION OBJECTIVES

1.) Maintain 75-100 total elk observed during post-season aerial surveys.
2.) Maintain 25-35 total bulls observed during post-season aerial surveys, of which not less than 15 are brow-tined bulls.

POPULATION MANAGEMENT STRATEGIES

To develop and/or maintain an appropriate level of antlerless harvest, access to private land will be key. Priority will be given to developing regulation types and season formats that encourage landowners to allow public hunting access and provide incentives for harvest of antlerless elk

REGULATION PACKAGES

Six-week either-sex archery regulation [A-9/B-12 licenses (B-tags) also valid if issued], EXCEPT, see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits valid before, during and after the general 5-week season (estimated to be about 10 permits when within the population objective range).

The Standard Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is between 75 and 100 elk.

The Liberal Regulation is: limited antlerless permits valid before, during and after general season AND, limited antlerless A-9/B-12 licenses (B-tags).

The Liberal Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is more than 100.

The Restrictive Regulation is: very limited (less than 5) antlerless permits valid before, during and after general season.

The Restrictive Regulation will be recommended if: the total number of elk observed during post-season aerial surveys is less than 75 elk for 2 consecutive years.

Antlered:

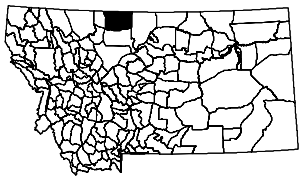
The Standard Regulation is: limited either-sex permits (estimated to be about 5 permits when within bull population objective range).

The Standard Regulation will be recommended if: the total number of bulls observed during post-season aerial surveys is more than 25 AND, at least 15 are brow-tined bulls.

The Restrictive Regulation is: 1-2 either-sex permits valid during the archery and general seasons (No general license archery season).

The Restrictive Regulation will be recommended if: the total numbers of bull observed during post-season aerial surveys is less than 25 OR, less than 15 brow-tined bulls are observed for 2 consecutive years.

SWEETGRASS HILLS EMU
(Hunting District 401)



Description: This 1,891-square-mile EMU is located in Toole and Liberty Counties, adjacent to the Canadian border. It is comprised of 90% privately owned lands in and around the Sweetgrass Hills, a series of three small mountainous areas surrounded by native grassland and dryland grain farms. Public lands include Montana Department of Natural Resources and Conservation (DNRC) and USDI-Bureau of Land Management (BLM) administered tracts. BLM lands are mainly at higher elevations, in the rugged terrain of the Sweetgrass Hills.

Elk use of the area is centered on the Sweetgrass Hills, but herds of varying sizes are commonly observed in adjacent agricultural areas. Movements of elk, especially bulls, into and out of Alberta and Saskatchewan have been documented with telemetry data collected in the late 1980s and early 1990s. Migration movements appear to be limited to dispersal of sub-adult animals; herds generally occupy the same ranges yearlong. Elk occupy approximately 60% of this hunting district on a yearlong basis; however, reports and observations of elk have come from every corner of the hunting district over the past 10 years.

This EMU has an occasional mountain lion, but no grizzly bears, black bears, or wolves; coyotes are common. Lack of several predators in this system likely allows for the high rate of elk recruitment observed.

Public Access: A successful Block Management Program was developed in the East Buttes and Gold Buttes areas of the hunting district through the cooperative efforts of local landowners, hunters, and FWP in the mid-1990s. Hunter access is more limited in the West Buttes portion of HD 401, but increasing numbers of elk in recent years have caused landowners in that area to be much more liberal with hunting access. At present, most of the elk in the hunting district are available to the general public. Recreationists, primarily hunters, access the more rugged portion of the hunting district (the Sweetgrass Hills) on foot or horseback. Hunting by use of vehicle/ATV is common on private lands surrounding the Hills. No outfitters that hunt elk operate in this hunting district at present.

Elk Populations: Elk numbers increased during the late 1990s to an observed high of 558 during winter-spring of 2000 (Figure 1). An aerial survey during July 2002 recorded

332 elk. Although elk travel between the West and East Buttes areas, numbers are about the same in the two mountain complexes. Elk are known to move into and out of Alberta and Saskatchewan on a seasonal basis, but cow/calf groups are predictably found on the West and East Buttes. Calf production and recruitment is high in this elk herd, with late winter ratios of 40-60 calves:100 cows commonly observed over the past 10 years.

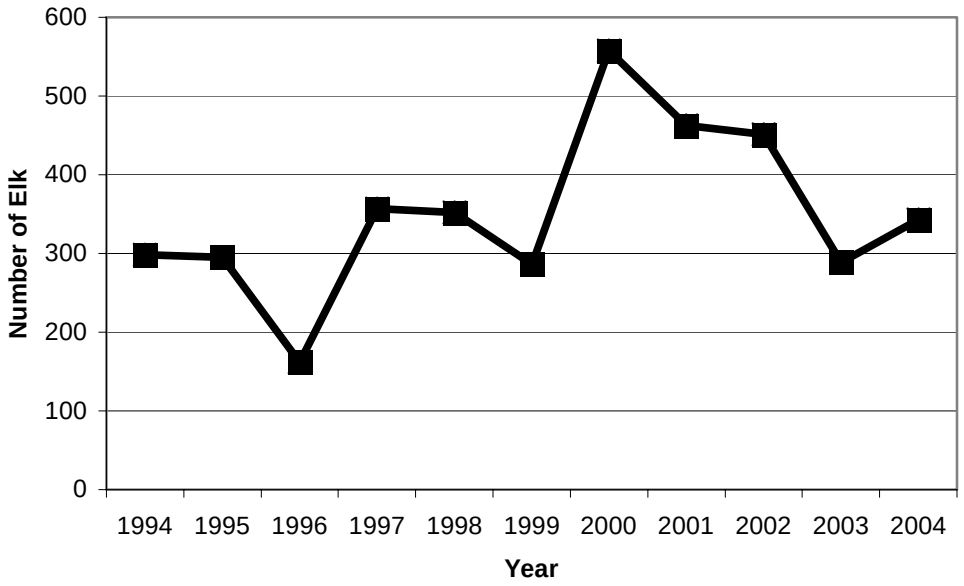


Figure 1. Number of elk counted during post-season aerial trend surveys in the Sweetgrass Hills EMU during 1994-2004.

Recreation Provided: Hunting District 401 is permit-only during the general season, with no outfitting for elk at present. During 1999-2001, elk hunting provided an annual average of 1,767 hunter-days of recreation to an average of 366 hunters.

Hunter harvest and hunter-days have increased recently, due to increased efforts by FWP to reduce elk numbers, particularly in the West Buttes area. Elk hunting recreation will decline to 1990-1995 levels as elk numbers are reduced. Wildlife viewing is also significant in the Sweetgrass Hills due to proximity to the communities of Shelby, Chester and Cut Bank.

Current Annual Elk Harvest: During 1999-2001, an annual average of 29 antlered and 113 antlerless elk were harvested in the EMU. Either-sex archery hunting occurs during the general archery season and archers take 5-8 elk each year.

Accomplishments: Twelve landowners have enrolled approximately 95,000 acres of DNRC and privately owned property in the Block Management Program, mostly in the

Middle Buttes and East Buttes portion of HD 401. Deeded property in the program accounts for 76,400 aces of accessible elk habitat.

Four landowners in the West Buttes area have cooperated in a 4-year effort (1999-2002) to reduce elk numbers through the use of early and late game damage seasons, and increased general hunting season effort.

Management Challenges: Because the area is mostly private land, opinions about elk hunter access and harvest can vary over time, primarily dictated by precipitation patterns, perceived or actual depredation, access issues, and hunting season recommendations. As a result, hunter access to elk can be limited until herds have grown considerably, as has happened in the late 1990s and into 2002. Hunter access to the West Buttes area may become increasingly difficult as elk numbers are reduced. This will continue the cycle of fluctuating between high and low elk numbers. Portions of the hunting district with an active Block Management Program have had little or no problem with increasing elk numbers. Generally, however, landowner tolerance for elk tends to keep herds below forage carrying capacity.

Population Monitoring: The trend flight is usually conducted by helicopter in January. During some years, we conduct an additional survey by fixed-wing aircraft in February or March. Total numbers, cows, calves, and bulls are recorded as well as location data with a GPS unit.

SUMMARY OF PUBLIC COMMENT

There has not been any public comment regarding this EMU plan. See Management Challenges section.

MANAGEMENT GOAL

Maintain the number of elk observed during post-season aerial surveys within 20% of 350 and cooperate with private and public land managers in the management of elk habitat to provide a diversity of elk hunting experiences.

HABITAT OBJECTIVES

Continue to develop cooperative land management programs that encourage private and public land managers to maintain and improve a minimum of 75,000 acres of suitable elk habitat.

HABITAT MANAGEMENT STRATEGIES

Management activities will include coordination with BLM, DNRC, and private landowners to ensure that grazing, mining and timber harvesting do not degrade important elk habitats. Emphasis will be placed on maintaining high-quality rough

fescue grasslands for forage production and Douglas fir-lodgepole pine stands for escape and thermal cover.

GAME DAMAGE STRATEGIES

Game damage occurs during all seasons, including complaints about excessive utilization of native forage and damage to alfalfa, small grains, haystacks, and fences. Two landowners, in particular, in the West Buttes portion of the hunting district contact FWP several times each year about crop damage. Some landowners are more tolerant than others, but elk numbers should be kept below their potential to reduce such complaints.

ACCESS STRATEGIES

Existing Block Management areas will be monitored for hunter and landowner satisfaction, and adjustments made where necessary. Opportunities for additional recreational access through the Block Management program or other similar agreements with landowners will be explored.

POPULATION OBJECTIVES

To keep elk numbers in line with landowner tolerance, that is, to minimize depredation complaints, the observed herd size in this EMU should be kept within a range of 280-420 elk (350 ± 20%). Counts of bulls in the EMU are particularly difficult due to their movements into and out of Canada, sometimes on a daily or weekly basis, with little predictability. This results in observed bull:100 cow ratios that are probably lower than what actually occurs in the population on a yearlong basis. However, a minimum observed late winter ratio of 15 bulls:100 cows should be maintained.

POPULATION MANAGEMENT STRATEGIES

This EMU has traditionally utilized a limited entry system (permits) to accomplish herd management objectives. More recently, A-7 antlerless licenses have been authorized in addition to antlerless elk permits to help reduce elk numbers. This system has worked well by varying permit levels with observed elk population numbers and working with landowners to improve hunter access during elk population reduction phases. A-9/B-12 elk licenses (B-tags), recently authorized by the Montana legislature, are another tool to harvest antlerless elk, especially when elk populations are over objective.

REGULATION PACKAGES

Six-week either-sex archery regulation.

Antlerless:

<u>The Standard Regulation is:</u> limited antlerless permits (75-125 within objective range).

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial surveys ranges from 280-420.

The Liberal Regulation is: more than 125 general season antlerless permits with additional permits targeted to specific areas prior to and/or after the general season as necessary AND, antlerless A-9/B-12 licenses (B-tags) may be utilized in combination with antlerless permits and/or A-7 licenses.

The Liberal Regulation will be recommended if: the number of elk observed during post-season aerial surveys is more than 420.

The Restrictive Regulation is: less than 50 antlerless permits.

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial surveys is less than 280.

Antlered:

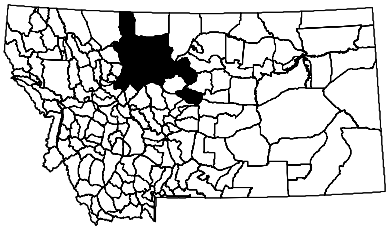
The Standard Regulation is: 30-50 either-sex permits.

The Standard Regulation will be recommended if: the observed post-season bull:100 cow ratio is at least 15 bulls:100 cows.

The Restrictive Regulation is: less than 30 either-sex permits.

The Restrictive Regulation will be recommended if: the observed post-season bull:100 cow ratio less than 15 bulls:100 cows.

GOLDEN TRIANGLE EMU
(Hunting Districts 400, 403, 404, 405, 406, 419, 444 and 471)



Description: This EMU contains 7,964 square miles and essentially consists of land that currently has very few elk and generally encompasses what is known locally as the "Golden Triangle" of wheat production. It is a new EMU since the 1992 Elk Plan. The EMU lies immediately north of Great Falls, east of Highway 89 (Fairfield-Choteau-Dupuyer) and the Blackfeet Indian Reservation and west of the Liberty-Hill County line and the Missouri River. Hunting districts 405, 444 and 471 are outside the described boundary but adjacent to it. Dryland grain production and cattle ranching are the major land uses. Landownership is 87.7% private, 8.4% Montana Department of Natural Resources and Conservation (DNRC) (much in grain production), and less than 2% USDI-Bureau of Land Management (BLM) lands.

Public Access: Good access exists to public lands for deer hunting.

Elk Populations: Elk presence is usually limited to the occasional passage of lone animals or small groups through the area. Limited exceptions to that scenario have occurred. Elk occasionally move out of the Sweetgrass Hills into hunting district (HD) 403. Elk also are occasionally reported/sighted on the western periphery of HD 444 near Augusta. Small groups of elk seasonally occupy the Arrow Creek drainage at the east boundary of HD 471 and a portion of the west boundary of HD 419, but generally occupy more secure habitat in adjacent, limited-entry hunting districts.

Recreation Provided: Due to limited presence, little elk-related recreational opportunity exists. However, the Statewide Harvest Questionnaire reported an annual average 391 hunters during 1999-2001. A general, either-sex archery season currently exists in these districts, providing extremely limited opportunities for hunting, should elk be observed.

Annual Elk Harvest: During 1999-2001, an annual average of 20 antlered and 8 antlerless elk were reported harvested.

Population Monitoring: No population monitoring for elk occurs in this EMU.

SUMMARY OF PUBLIC COMMENT

This is a new EMU and most people realize that because of intensive agriculture, few elk can be tolerated.

MANAGEMENT GOAL

Because more than 90% of the EMU is devoted to agricultural production, the certain damage potential of elk is much greater than any recreational potential that would be provided by permanent elk occupancy. Therefore, our goal is to prevent permanent occupancy by elk in this EMU.

HABITAT OBJECTIVES

None. Permanently suitable or secure habitat does not exist in this EMU.

HABITAT MANAGEMENT STRATEGIES

None.

GAME DAMAGE STATEGIES

Maintain liberal harvest regulations.

ACCESS STRATEGIES

None.

POPULATION OBJECTIVES

Accept the occasional transitory elk in passage across these hunting districts, but tolerate no permanent occupancy by elk.

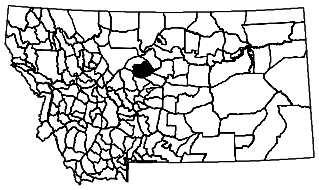
POPULATION MANAGEMENT STRATEGIES

Recognizing the lack of suitable or secure habitat, management strategies will acknowledge the irregular and unpredictable nature of elk passage and favor the opportunity for a hunter to occasionally sight or kill an elk.

REGULATION PACKAGES

Antlerless and Antlered: Six- week either-sex archery regulation and five-week either-sex general season regulation.

HIGHWOOD EMU
(HD 447)



Description: The main feature of this 748-square-mile EMU is the Highwood Mountains, an island mountain range directly east of Great Falls. This mountain range consists of a block of mountainous national forest land interspersed with, and surrounded by, privately owned rolling foothill-grassland habitats and croplands. There are approximately 317 square miles of elk habitat in the unit, of which 79% are in private ownership. The remaining 21% is primarily USDA-Forest Service (USFS) lands.

Public Access: The national forest in this unit is accessible by two public roads; one that bisects USFS land through the west and south sides and one that serves as an access point to the Forest boundary from the north. The FWP Block Management Program provides one access point to the National Forest from the southeast side. Of the 160,804 acres of elk habitat on private land, approximately 10% is closed to public hunting, 60% has limited public hunting opportunities and the remaining 30% of the private land is open to public hunting.

Elk Populations: The number of elk observed on winter ranges has been relatively stable over the past 10 years (Figure 1). Four-hundred-ninety-six elk were counted during winter 2002-2003, which included 101 elk in the Willow Creek area, 212 elk in the Cottonwood Creek area, 88 elk in the Square Butte area, and 95 elk scattered on the north side of the Highwoods. In 2004, 510 elk were counted.

Recreation Provided: From 1999-2001, the EMU provided approximately 5,457 hunter days for 958 hunters annually. Elk and wildlife viewing occurs along public roads and hiking trails throughout the year.

Annual Elk Harvest: For 1999-2001, the average annual harvest was 151 elk. An average of 46% of the harvest was bulls. Ninety percent of harvested bulls were brow-tined bulls and 71% of the bulls harvested had at least 6 points on at least one antler.

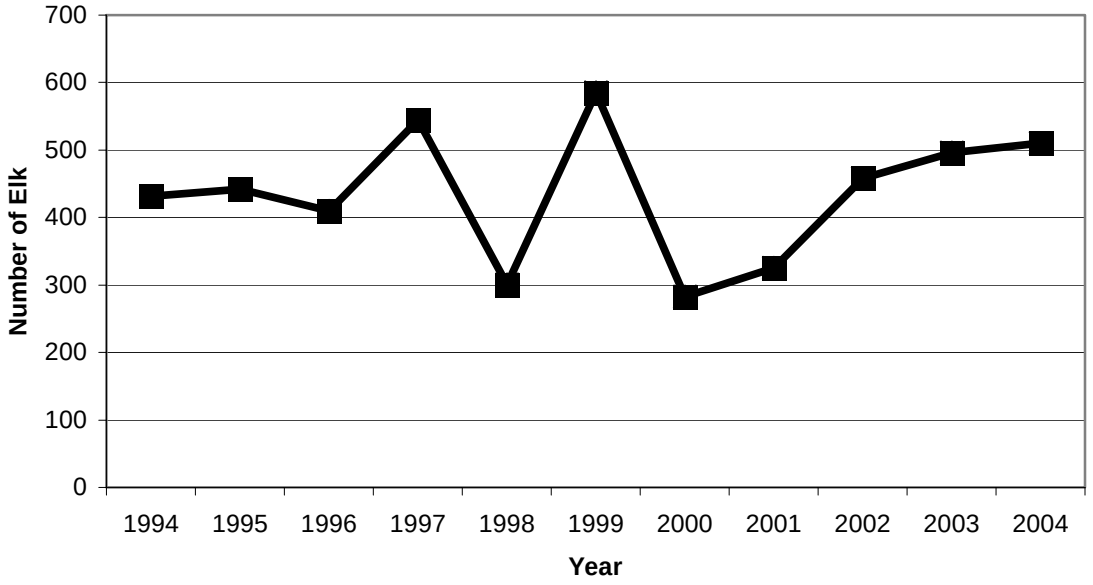


Figure 1. Number of elk counted during post-season aerial trend surveys in the Highwood EMU, 1994-2004.

Accomplishments: This EMU provides one of the most highly coveted either-sex elk permits in FWP administrative Region 4. The total elk population has been very stable for the past ten years.

Management Challenges: Our challenge is to obtain relatively equal harvest distribution of elk throughout the unit. The west and northwest sides of the Highwood Mountains have relatively good access to public land, along with public hunting opportunities on private land. However, because of limited public hunting access to private lands throughout much of the eastern side of the unit, harvest numbers are lower in this area and there is little dispersal of elk from these private "refuges" during hunting season.

Population Monitoring: We survey elk winter ranges 1-2 times annually by fixed-wing aircraft during January-March. During aerial surveys, total numbers of elk, location, and sex and age composition are recorded.

SUMMMARY OF PUBLIC COMMENT

The public, including landowners, were generally supportive of the EMU objectives and plan. Several sportsmen were concerned about the potential use of A-9/B-12 licenses and overuse of Block Management Areas.

MANAGEMENT GOALS

Maintain total elk numbers within habitat capabilities and at a level acceptable to landowners and sportsmen. Produce older age class bulls, while maintaining a diverse age structure.

HABITAT OBJECTIVES

Help develop new, and continue current programs such as cooperative grazing systems, timber harvest strategies, travel planning, and possible conservation easements that encourage public and private land managers to maintain and/or enhance suitable elk habitat.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Work with private landowners to increase public access on private lands during hunting seasons to effectively reduce elk security on private lands and to encourage elk use of neighboring public lands.
- Maintain and/or increase elk security on public lands through the use of cooperative travel planning with the USFS.
- Where appropriate, encourage proper use of prescribed fire, timber harvest management, and motorized access to enhance elk habitat on public lands.
- Encourage public land management agencies to protect and enhance elk winter range on public lands by increasing the availability of forage for wintering elk.
- Encourage protection and enhancement of elk winter range on private lands through the establishment of cooperative grazing systems and conservation easements when opportunities arise.

GAME DAMAGE STRATEGIES

There have been no elk game damage complaints during the past three years in this unit. Our goal is to stabilize elk numbers at levels that are acceptable to landowners while providing hunter harvest within historical ranges. Should future game damage situations arise, we will attempt to direct hunting pressure to landowners with depredation complaints.

ACCESS STRATEGIES

FWP will:

- Use the Access Montana Program to work with public and private land managers to increase walk-in public hunting access to public lands.
- Continue to work with private landowners to increase hunter access to private lands where elk currently find security during hunting seasons.

POPULATION OBJECTIVES

1.) Maintain the number of elk observed during post-season aerial surveys within 20% of 550 (440-660).
2.) Provide a bull harvest comprised of at least 75% brow-tined bulls (BTBs).

POPULATION MANAGEMENT STRATEGIES

The elk population in this unit has been relatively stable during the past ten years. We will maintain the successful management strategy through the use of Special Permits (No General Season).

REGULATION PACKAGES

Six-week either-sex archery regulation, EXCEPT; if the Restrictive Package is adopted for antlerless elk, archery hunting will be limited to bulls only.

Antlerless:

The Standard Regulation is: limited antlerless permits (250-350 within objective range).

The Standard Regulation will be recommended if: the number of elk observed during post-season aerial surveys is within the range of 440-660.

The Liberal Regulation is: more than 350 limited antlerless permits (also valid earlier and/or later than the 5-week general season).

The Liberal Regulation will be recommended if: the number of elk observed during post-season aerial surveys is more than 660.

The Restrictive Regulation is: no antlerless harvest (Archery regulation antlered bull only).

The Restrictive Regulation will be recommended if: the number of elk observed during post-season aerial surveys is less than 440 for 2 consecutive years.

Antlered:

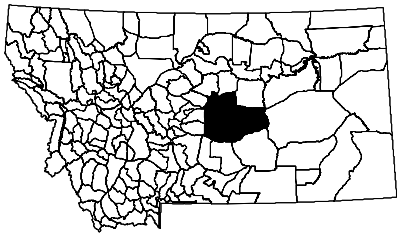
The Standard Regulation is: limited either-sex permits (approximately 75 permits at objective level).

The Standard Regulation will be recommended if: more than 75% of harvested bulls are brow-tined bulls.

The Restrictive Regulation is: reduced either-sex permits (less than 75 permits).

The Restrictive Regulation will be recommended if: less than 75% of harvested bulls are brow-tined bulls for 2 consecutive years.

SNOWY EMU
(Hunting Districts 411, 412, 511 and 530)



Description: Elk occupy 25% of this 4,705-square-mile EMU, which includes the Judith Mountains, the North and South Moccasin Mountains, and the Big and Little Snowy Mountains. These isolated mountain ranges in Central Montana form an island of timber surrounded by a large expanse of prairie. The primary land use in this area is ranching, with a limited amount of timber harvest. A large proportion of the occupied elk habitat is comprised of privately owned land, which the majority of elk use year-round. The USDI-Bureau of Land Management (BLM) is the major public land management agency in the Judith and North and South Moccasin Mountains and the USDA-Forest Service (USFS) is the major public land management agency in the Big and Little Snowy Mountains. A sizeable portion of the Big Snowy Mountains is roadless (96,522 acres) with a Wilderness Study Area (87,928 acres) that offers wilderness recreational opportunities.

Public Access: A network of USFS roads in the Little Snowy Mountains provides ample access to public lands. In the Big Snowy Mountains there are 5 legal access points/trailheads, numerous access points where landowners grant access permission, and a trail that traverses the entire south side foothills (the majority of which is on USFS land and open to all-terrain vehicles) providing a fair amount of access to public lands. In the Judith Mountains, a public road bisects the range and another public road runs along the top of the range, north for half its length, which provides a fair amount of access to the larger blocks of BLM and Montana Department of Natural Resources and Conservation (DNRC) lands. Access to public lands (BLM and DNRC) in the North and South Moccasin Mountains is largely via permission from private landowners.

The major portion of elk habitat in the Snowy EMU is on private lands, and year-round, the majority of elk are distributed on private lands. At least 85% of elk harvest occurs on private lands. During the hunting season (archery and rifle), at least 80% of the elk in the Snowy EMU occur on 2 large ranches in the Little Snowy Mountains, 1 large ranch on the west end of the Big Snowy Mountains, and 3 large ranches on the northeast end of the Judith Mountains. Access to these ranches is very restricted. The ranches that are located peripheral to these large ranches provide most of the hunter access. The access situation in the Snowy EMU has remained relatively stable over the past 10 years.

Elk Populations: The observed elk populations (2002-2003 winter aerial surveys) in the Snowy EMU were as follows: Big Snowy Mountains - 473; Little Snowy Mountains - 874; Judith Mountains (including the North and South Moccasin Mountains) - 360. Observed numbers of elk have steadily increased and have almost doubled in the past 10 years (Figures 1 and 2). The most significant increases in elk numbers have occurred in the Big and Little Snowy Mountains.

Recreation Provided: During 1999-2001, this EMU provided an annual average of 5,770 days of hunting recreation for 947 hunters. Most of the recreation this elk population provides is hunting-related, with archery hunting comprising about one-half of the hunter days. Wildlife viewing is popular with summer hikers and campers in the Judith and Big and Little Snowy Mountains.

Annual Elk Harvest: During 1999–2001, an annual average of 122 antlerless elk and 101 antlered elk were harvested in the EMU. At least 75% of the harvested bulls were brow-tined bulls. Between 40 and 50 percent of the antlered elk harvest was by archers. At least 85% of the elk that are harvested are taken on private lands. Over the past 10 years the number of elk permits issued, season length, and total elk harvested have increased with the increasing elk population.

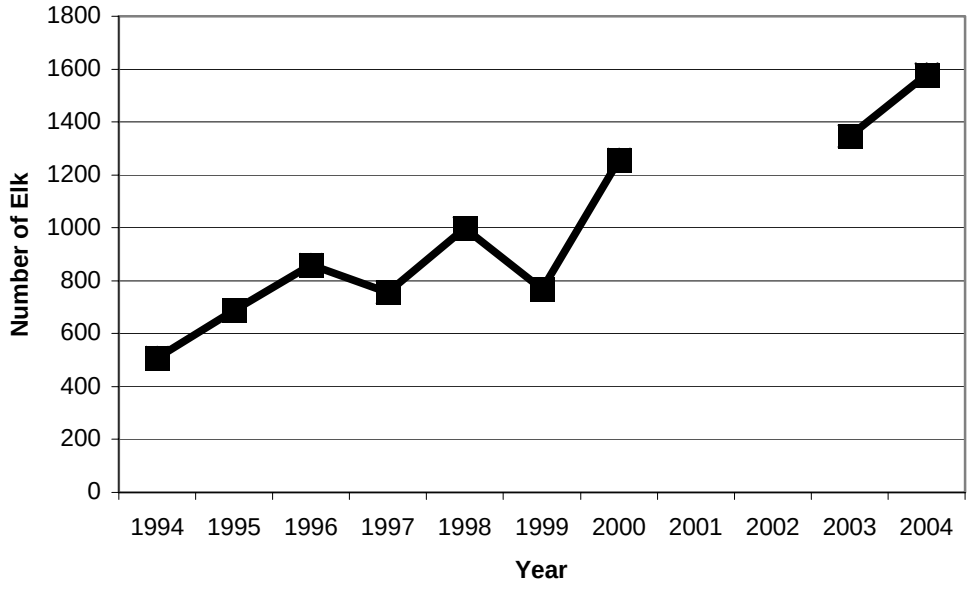


Figure 1. Number of elk counted during post-season aerial trend surveys, HD 411 and HD 530, 1994-2004.

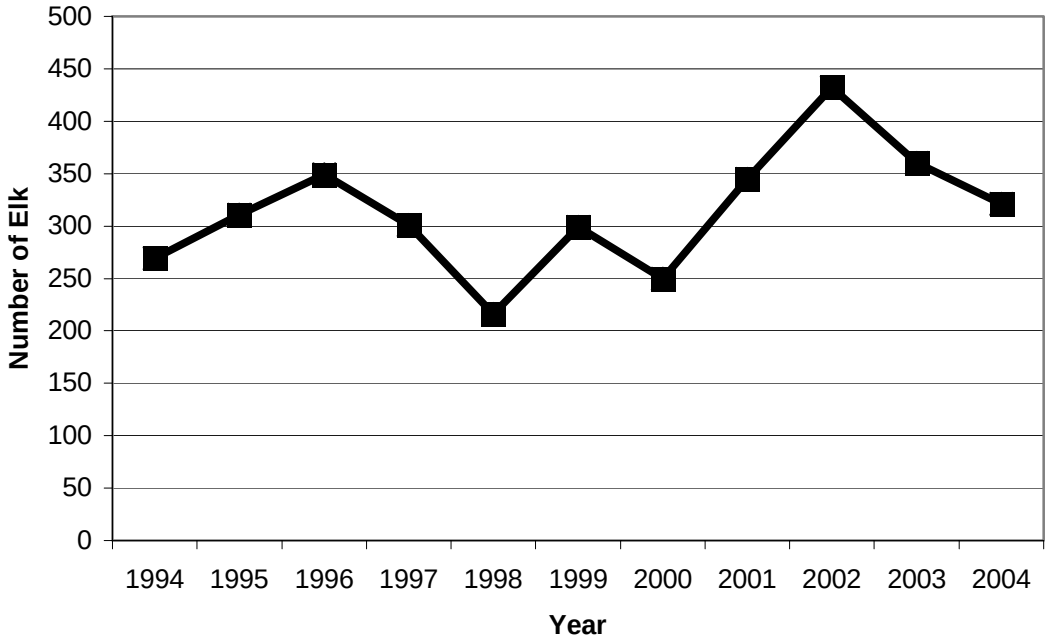


Figure 2. Number of elk counted during post-season aerial trend surveys, HD 412, 1994-2004.

Accomplishments: Over the past decade, numerous adjustments have been made to the hunting of elk in this EMU – all attempts to stabilize the population. The Big and Little Snowy Mountains elk population used to be managed as 2 separate areas. Hunting access was difficult in both areas and limited access discouraged hunters. Their efforts to gain access to additional elk hunting areas/properties were minimal. To rectify this, all permits issued for HDs 411, 511 and 530 were made valid for the entire area and elk population. This increased hunter effort and many hunters developed a rapport with additional landowners and access was improved.

In 1999, the east boundary of HD 411 was extended further east to include elk habitat in the Yellow Water Triangle (located southeast of Grass Range). Elk commonly crossed back and forth across Highway 87, the boundary between 2 different hunting districts, making permits less effective. The east boundary of HD 412 was also extended further east the same year to include elk habitat just across that hunting district border. Improved access and elk harvest resulted from the expansions of hunting districts boundaries in both HDs 411and 412.

Another strategy implemented in the Big and Little Snowy Mountains was making antlerless elk permits valid prior to the opening of the general rifle season. This change enabled rifle hunters to access elk attracted to the smaller ranches (primarily alfalfa hay fields) that are adjacent to the larger ranches that are restrictive and harbor elk during the general hunting season. Initially, antlerless permits became valid the day after archery season closed. This concept was expanded in 2000 when 50 of the 225 antlerless elk permits were made valid on private land starting 1 October. This allows more effective harvest because landowners can allow antlerless elk rifle hunters on their properties when the elk were still present.

In 2000, we also extended the time period for which the antlerless elk permits were valid in the Big and Little Snowy Mountains to 15 December. This allowed hunters additional opportunities when elk left the ranches where access was restricted after the general season closed. This concept was expanded to the Judith and North and South Moccasin Mountains in 2002. The time period was extended again, to 30 December in the Big and Little Snowy Mountains in 2003.

Management Challenges: The most important management challenge is to develop and implement strategies that will effectively increase the geographical distribution of elk within the Snowy EMU. Having elk widely distributed throughout the EMU would greatly facilitate meeting the management goal and harvest and population objectives.

Such strategies include significant increases in hunter access to the large ranches that are currently very restrictive to public hunting and thus harbor most of the elk, particularly during the archery and rifle elk hunting seasons. Unfortunately, current programs have been largely ineffective. For example, the Block Management program could improve access to these large ranches if those landowners felt a need to reduce elk numbers (for their, or their neighbors, agricultural operations), or wanted assistance in managing hunters, or wanted to provide public hunting opportunities. Most large ranch owners in this EMU, however, don't seem to desire a reduced number of elk.

Because the Snowy EMU has trophy bull elk that any archery hunter can pursue with a general elk license, archery hunters and outfitters of archery hunters lease many of the better elk hunting properties. This results in restricted access for other archery and rifle elk hunters. Leasing of ranches for archery elk hunting has not contributed to solving elk management problems.

Suitable elk habitat is currently available on public lands within the Snowy EMU. However, at current hunter numbers and access levels, increasing the quantity and/or quality of elk habitat on public lands is necessary if elk are to be drawn off the large privately owned ranches to public lands. Should ample public access became available on these large restricted ranches, increasing the quantity and or quality of elk habitat on public lands would also help hold elk on the public lands within the Snowy EMU.

Population Monitoring: We annually accomplish post-season aerial trend surveys by use of fixed-wing aircraft during winter. Survey timing is coordinated for HDs 411 and 530. We record total number of elk and number of bulls observed and record locations with GPS units.

SUMMARY OF PUBLIC COMMENT

Public comment has fallen into 2 major categories: those that want more elk, or no reduction in the number of elk or number of mature bulls and or those that want significantly fewer elk. The former group is largely comprised of archers. The majority of landowners strongly support having fewer elk in this EMU.

MANAGEMENT GOAL

Perpetuate viable elk populations and elk habitats; provide hunter opportunity for harvesting older bulls; and maintain population levels within the constraints of landowner tolerance (1,100 elk).

HABITAT OBJECTIVES

1. Develop cooperative programs with public land managers to maintain productive elk habitat on public lands.
2. Develop cooperative programs with public land managers to maintain elk security on public lands so that at least 50% of the elk harvest occurs on public lands.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Identify tracts of public land where habitat manipulations have the potential to attract elk and shift elk distribution to public land throughout the year, including during the hunting seasons.
- Where appropriate, encourage the use of prescribed fire and timber harvest management to enhance elk habitat on public lands, while insuring that the same habitat prescriptions do not cause a reduction in elk security on public lands.
- Encourage increased elk security on public lands through the use of seasonal road closures, and by working to prevent the establishment of new roads on public lands.
- Work with private landowners to increase public access to private lands during hunting seasons.
- Encourage public land management agencies to protect and enhance elk winter range on public lands. This includes increasing the availability of forage for wintering elk on public lands to reduce elk depredations on private lands.
- Protect and enhance elk winter range on private lands through the establishment of cooperative grazing systems and conservation easements when opportunities arise.

GAME DAMAGE STATEGIES

FWP will:

- Maintain elk populations at levels that are not detrimental to the majority of landowners.
- Direct hunting pressure to landowners with elk depredation problems.
- Implement more liberal season types in areas with the greatest depredation problems.

ACCESS STRATEGIES

The key to managing elk populations in this EMU is to increase public hunting access to private lands. Currently, access to some of the larger ranches is very limited.

FWP will:

- Increase efforts to inform landowners of the population status of elk in this EMU and the negative impacts the current number of elk are having on other private land agricultural operations.
- Work with public and private land managers to increase walk-in public hunting access to public lands, using the Access Montana Program where appropriate.
- Work with private landowners to increase hunting access to private lands where elk currently find refuge during hunting seasons.

POPULATION OBJECTIVES

The objective for numbers of elk observed during post-season aerial surveys was derived based on a landowner tolerance level and the amount of forage available during winter. When the elk forage capacity of the larger ranches that harbor elk and significantly limit public hunting is exceeded, elk depredate on neighboring private land agricultural crops. When total elk numbers exceed 400 in the Big Snowy Mountains, 400 in the Little Snowy Mountains, and 300 in the Judith Mountains, such depredations increase and landowner tolerance is exceeded.

1. Maintain the number of elk observed during post-season aerial trend surveys within 20% of 1,100 elk (880-1,320). Individual late winter herd count objectives are:
   Big Snowy Mountains – 400 elk
   Little Snowy Mountains – 400 elk
   Judith and North and South Moccasin Mountains – 300 elk
2. Maintain a minimum of 165 bulls observed in the post-season aerial surveys comprised of at least 50% brow-tined bulls. Individual, minimum observed late winter bull elk herd objectives are:
   Big Snowy Mountains – 60 bulls
   Little Snowy Mountains – 60 bulls
   Judith and N. and S. Moccasin Mountains – 45 bulls

POPULATION MANAGEMENT STRATEGIES

Regulation changes will be recommended when numbers of elk observed on post-season aerial surveys are more than 20% above (1,320) or below (880) the objective level (1,100 elk).

- One strategy for harvesting elk in the Snowy EMU is to have elk rifle seasons that are open before and after the 5-week season. During spring, summer and early fall elk are more widely scattered. Thus, early rifle permits are more effective before the vast majority of elk move on to the large refuge ranches. Following the 5-week general season, elk sometimes leave the larger refuge ranches, dependent on weather and forage availability. During this post-season period, rifle permits are again effective.
- Another strategy for harvesting elk is to provide a general antlerless season. This will provide landowners and their families and friends the opportunity to hunt antlerless

elk if they do not draw an either-sex (bull) elk permit. This could increase the antlerless elk harvest on ranches that are located peripheral to the large ranches that provide refuge to elk.

- Another strategy is to make available to archery and rifle elk hunters an additional antlerless elk license. Such (A-9/B-12) elk licenses would allow archery hunters who have access to good elk hunting areas the opportunity to kill an antlerless elk while he or she continues hunting for a bull. An additional antlerless elk license would also provide landowner's families and friends the opportunity to kill an extra antlerless elk.

REGULATION PACKAGES

Six-week either-sex archery regulation, EXCEPT, see Restrictive Regulations for Antlerless and Antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits, some or all of which may be valid prior to the beginning and beyond the end of the general season.

The Standard Regulation will be recommended if: numbers of elk observed on post-season aerial surveys are within 20% (880-1,320) of the EMU objective (1,100). Ranges for individual herds are: 320-480 elk in Big Snowy Mountains; 320-480 elk in Little Snowy Mountains and; 240-360 elk in Judith and North and South Moccasin Mountains.

The Liberal Regulation is: general antlerless regulation for a portion of (or the entire) 5-week general season AND, antlerless permits valid prior to the beginning and beyond the end of the general 5-week season and/or antlerless A-9/B-12 licenses (B-tags) may be recommended for the general 5-week season and 6-week archery season.

The Liberal Regulation will be recommended if: numbers of elk observed on post-season aerial surveys are more than 20% above (1,320) the EMU objective (1,100). Ranges for individual herds are: more than 480 elk in Big Snowy Mountains; more than 480 elk in Little Snowy Mountains and; more than 360 elk in Judith and North and South Moccasin Mountains.

The Restrictive Regulation is: limited antlerless permits (zero if necessary) AND, if necessary, no antlerless elk hunting on the general elk license during the archery season.

The Restrictive Regulation will be recommended if: numbers of elk observed on post-season aerial surveys are more than 20% below (880) the EMU objective (1,100). Ranges for individual herds are: less than 320 elk in the Big Snowy Mountains; less than 320 elk in the Little Snowy Mountains and; less than 240 elk in the Judith and North and South Moccasin Mountains.

Antlered:

The Standard Regulation is: limited either-sex permits issued at levels sufficient to maintain bull numbers between the minimum late winter bull herd objective and double the minimum late winter bull herd objective. During the past 5 years issuing 95 either-sex permits has maintained late winter bull numbers between 195 and 358. If bulls contribute to severe crop damage their numbers will be lowered to the minimum herd objective by increasing either-sex permit levels.

The Standard Regulation will be recommended if: numbers of bulls observed during post-season aerial surveys are 165-330. Ranges for individual herds are: 60-120 bulls in the Big Snowy Mountains, 60-120 bulls in the Little Snowy Mountains and, 45-90 bulls in the Judith and North and South Moccasin Mountains.

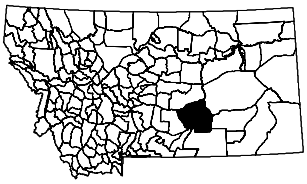
The Liberal Regulation is: antlered bull elk regulation for a portion of (or the entire) 5-week general season.

The Liberal Regulation will be recommended if: numbers of bulls observed during post-season aerial surveys are more than 330. Numbers for individual herds are: 120 bulls in the Big Snowy Mountains, 120 bulls in the Little Snowy Mountains and, 90 bulls in the Judith and North and South Moccasin Mountains. The Liberal Regulation will also be recommended if bulls contribute significantly to severe crop depredations.

The Restrictive Regulation is: limited either-sex permits (zero if necessary) AND, if necessary, no antlered elk hunting on the general elk license during the archery season.

The Restrictive Regulation will be recommended if: numbers of bulls observed during post-season aerial surveys are less than 165. Numbers for individual herds are: less than 60 bulls in the Big Snowy Mountains, less than 60 bulls in the Little Snowy Mountains and, less than 45 bulls in the Judith and North and South Moccasin Mountains.

BULL MOUNTAIN EMU
(Hunting District 590)



Description: This 2,877-square-mile EMU includes the Bull Mountains (BM), and the Pine Ridge Hills (PRH) of south-central Montana. The terrain and habitat of these two areas are similar, ponderosa pine hills with grassy meadows, and scattered dry land and irrigated agriculture. The PRH lie south of the Yellowstone River and west of the Bighorn River. Irrigated croplands are found near the foothills of the PRH. The Bull Mountains are bounded on the north by the Musselshell River and its associated irrigated lands. There is movement by elk across the Musselshell River into hunting district (HD) 530 but for the most part, elk are not found north of the Musselshell on a regular or permanent basis. The primary economic use of the area is cattle grazing, however in the past 10 years, a large amount of timber has been removed from both areas.

Public Access: Approximately 6% of the PRH annual herd range of 205 square miles and 12% of the Bull Mountains annual herd range of 858 square miles is comprised of public lands. Most of these public lands are scattered state school trust (DNRC) sections and small USDI - Bureau of Land Management (BLM) holdings, many of which are inaccessible to the public. The largest block of accessible public land in the PRH is a 3.4 square mile block of DNRC land in the center of elk distribution. The largest block of public lands in the Bull Mountain herd range is 9.5 square miles on the edge of the annual range of elk and it receives very little use by elk during the hunting season. Elk occupy private lands throughout the year and are most often found on private lands during the hunting season. In both areas, outfitters control access to a large amount of the private land during the elk archery season. Additionally, numerous ranches in the Bull Mountains have been purchased by non-resident landowners whose primary interest is elk hunting during the archery season. During the archery season nearly 100% of the land is outfitted, owned by people who do not allow any hunting, or only family of the landowners hunts the land. Although access to private lands in both areas is very limited, rifle permit hunters have enjoyed good success in most years.

Elk Populations: In 1992, we estimated (not based on flight surveys) that there were 70-100 elk in the PRH and 150-200 elk in the Bull Mountains. Since then, aerial trend counts indicate a rapidly expanding population with 900 elk counted in the BM during 2001-2002 and 484 elk counted in the PRH during 2002-2004 (Figure 1).

Recreation Provided: Almost all recreation provided by the elk in this EMU is hunting related; wildlife viewing is minimal. During 1990-1992 an average of 119 hunters hunted an average of 711 hunter days per year. This increased to an average of 507 hunters and an average of 3,093 hunter days per year during 1999-2001. Because the vast majority of HD 590 is private land, it is likely that there will be decreasing opportunity for the general public to harvest an elk, even with expanding populations. Residential development, coal mining, and land purchases by non-residents will also affect opportunities to hunt elk in the Bull Mountains.

Current Annual Elk Harvest: During 1999-2001, an annual average of 66 antlered elk and 118 antlerless elk were harvested compared to annual averages of 22 antlered and 23 antlerless elk during 1990-1992. In 2001, elk harvest in this EMU was 19% of total harvest in Region 5 compared to 6% of the Regional harvest in 1992. In 2001, 85.5% of all bulls harvested had more than three points on at least one antler. During 1999-2001, archery harvest averaged 19 bulls and 7 antlerless elk per year. It is possible, however, that our harvest surveys underestimate archery harvest.

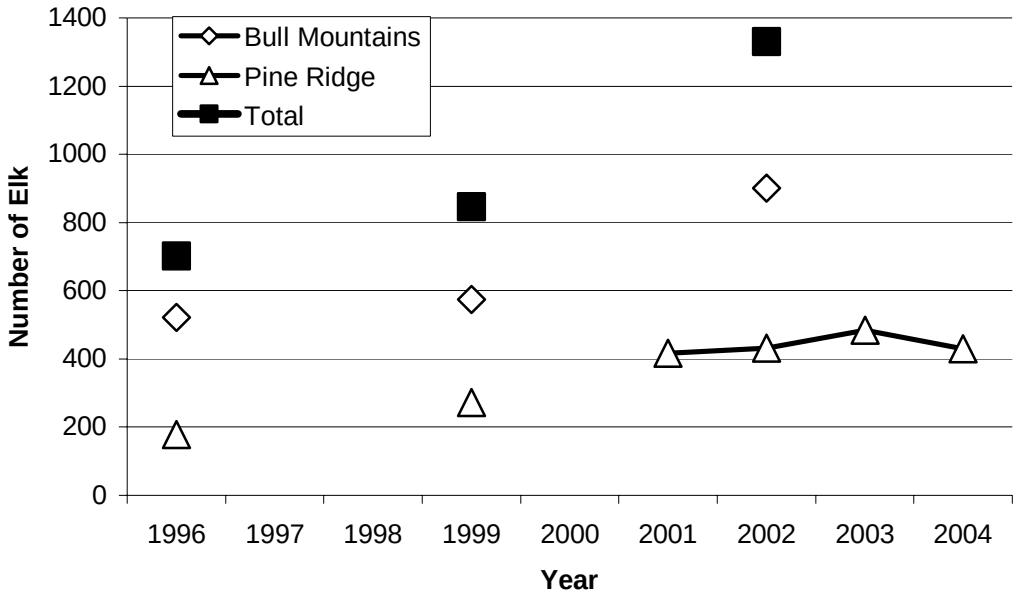


Figure 1. Number of elk counted during post-season aerial trend surveys in HD 590, 1996-2004.

Management Challenges: Changing land ownership patterns and outfitting during the archery season limit access to public and private land and will continue to affect our ability to manage elk in this hunting district. There has been a shift in land ownership toward owners who either do not make their primary living from ranching, or who have become dependant upon the additional income derived from outfitting. These owners have a different perspective on public hunting and elk numbers than traditional landowners, and have less personal interest in allowing elk hunting by the general public. Decreased hunting pressure on these lands creates elk "refuges" and reduces the total harvest.

Because of their proximity to Billings, there will be more pressure to subdivide tracts of land for residential development in the BM and PRH. It will be important to identify critical habitat on private land that may be protected through leases, conservation easements, purchase, or land exchanges and to meet with interested land mangers to review and evaluate activities that may affect elk habitat.

An additional management challenge exists in the PRH where elk bed and loaf in the ponderosa pine hills and feed in irrigated crops adjacent to bedding areas. The irrigated cropland and the ponderosa pine hills are often owned by different landowners, and landowners not suffering crop damage are much more tolerant of elk than landowners receiving game damage. This difference in tolerance levels among landowners has resulted in low harvests of elk, increased game damage complaints, and the issuance of several kill permits over the last three years. Without improved access to harvest elk within current “refuges”, this pattern of elk feeding in irrigated crops and bedding in adjacent elk "refuges" will lead to increased conflict in the future.

Population Monitoring: Elk populations will be monitored through post-season fixed-wing aerial trend surveys. The difficulty of surveying elk in this area is related to the fact that elk are scattered over a very large geographic area. Approximately 16-20 hours of flight time is necessary to survey the PRH and 45-60 hours of flight time to survey the BM. Three complete surveys were conducted in the BM and 5 complete surveys were conducted in the PRH between 1995-1996 and 2002-2003. Budget constraints restrict us to surveying each area at least once every three years. Because of damage problems, the PRH was surveyed three consecutive years between 2000-2001 and 2002-2004. If counts for either PRH or BM were below objective, we would commit to conduct another count there in the next year, outside the normal schedule.

SUMMARY OF PUBLIC COMMENT

Over the years public comment has fallen into 2 major categories: Those that want more elk, or no reduction in the number of elk; and those that want significantly fewer elk. The former group is largely comprised of archers, landowners with outfitters, and “new” landowners that have purchased land for recreational purposes. Those that would like fewer elk are those that receive significant amounts of game damage by elk. It is likely that there will be a significant amount of opposition to the proposed reductions in elk numbers.

MANAGEMENT GOAL

Perpetuate viable elk populations and habitat, provide opportunity for hunters to harvest older bulls, and maintain populations within the constraints of landowner tolerance. We will emphasize maintaining the numbers of elk in individual herds at levels that do not economically harm the majority of landowners who still allow public hunting.

HABITAT OBJECTIVES

1) Identify areas on public lands which may have the potential to hold elk during the hunting season if beneficial habitat manipulations are initiated.
2) Identify critical habitat on private land that may be protected through leases, conservation easements, purchase or land exchanges that may help to increase harvest.

GAME DAMAGE STRATEGIES

Stabilize elk populations at a level that is the least detrimental to the majority of landowners. Options include: 1) directing hunters to landowners with elk depredation problems, 2) increasing the number of antlerless permits, 3) extending antlerless elk seasons in areas with greatest depredation problems, 4) establishing early and late season hunts in areas where numbers of elk can be reduced and, 5) issuing landowner kill permits in areas where damage occurs on an annual basis, but where public hunting cannot be used as a tool to reduce elk numbers.

ACCESS STRATEGIES

The key to managing elk populations in this EMU is developing access to private lands for elk hunters but the reality is that we currently do not have the tools to achieve this objective. Presently, access to some of the larger ranches in this EMU is very restrictive because their goals for the elk populations differ considerably from that of FWP. We will discuss elk numbers, elk damage, and hunter access with landowners. In addition, hunters will be directed to those landowners requesting reductions in elk herds. We will also use the Block Management Program or other cooperative programs to attempt to establish increased access for hunters to elk populations, while maintaining existing access.

POPULATION OBJECTIVES

1) Maintain 1,050 elk observed during post-season aerial trend surveys. This represents a reduction in elk numbers of approximately 20% from spring 2002 levels. Individual post-season trend count objectives are 300 elk for the PRH and 750 elk for the Bull Mountains.
2) Maintain an observed post-season bull count of 60 in the PRH and 150 in the Bull Mountains.

POPULATION MANAGEMENT STRATEGIES

Trend in observed numbers of elk in the BM and the PRH will be considered independently so that hunting regulations north and south of the Yellowstone River may be different.

REGULATION PACKAGES

Six-week either-sex archery regulation, EXCEPT see Restrictive Regulation for Antlered elk.

Antlerless:

The Standard Regulation is: limited antlerless permits. Permits may be valid past the end of the general season. If we can reach our population objective, 170-250 permits north of the Yellowstone and 35-60 permits south of the Yellowstone on an annual basis should maintain numbers at objective levels.

The Standard Regulation will be recommended if: the number of elk observed by herd unit during post-season aerial surveys is within 20% of the objective.

The Liberal Regulation is: a general antlerless regulation for a portion (or all) of the general and archery seasons AND, a liberal number of antlerless permits valid as early as 15 August and as late as 15 February. Permit levels will likely remain near the current level of 180 north and 80 south of the Yellowstone. A-9/B-12 antlerless licenses (B-tags) may also be recommended.

The Liberal Regulation will be recommended if: the number of elk observed by herd unit during post-season aerial surveys is more than 20% higher than the herd objective.

The Restrictive Regulation is: limited antlerless permits.

The Restrictive Regulation will be recommended if: the number of elk counted by herd unit during post-season surveys is more than 20% below the herd objective for two consecutive flights[1] .

Antlered:

The Standard Regulation is: limited either-sex permits. If we achieve our population objective, 140-210 permits north of the Yellowstone and 45-75 south of the Yellowstone should harvest the annual recruitment.

The Standard Regulation will be recommended if: number of bulls observed by herd unit during post- season aerial surveys is within 40% of the objective.

The Liberal Regulation is: increased numbers of either-sex permits which may be valid before or after the general season.

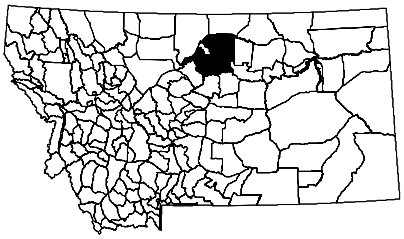
The Liberal Regulation will be recommended if: 1.) the number of bulls counted during post-season aerial trend surveys is more than 40% above objective OR; 2.) bulls are causing an inordinate amount of game damage.

The Restrictive Regulation is: limited or no either-sex permits (less than 70 permits north of the Yellowstone and less than 35 permits south of the Yellowstone) valid only during the general season. ARCHERS MAY ALSO BE REQUIRED TO APPLY FOR THE PERMITS.

The Restrictive regulation will be recommended if: the number of bulls counted during post-season aerial surveys is more than 40% below the objective level for two consecutive years[1].

[1] Note, if surveys are flown only once every three years (as currently) then a single count below objective could trigger a change in regulation packages.

BEARS PAW MOUNTAINS EMU
(Hunting Districts 680 and 690)



Description: Located in north-central Montana, this EMU encompasses 2,821 square miles. Elk habitat includes about 200-square-miles of the Bears Paw Mountains about 30 to 40 miles south of Havre and 100 square miles of the Missouri River Breaks in the Lion Coulee, Bullwhacker Cr., and Cow Cr. drainages 50 to 70 miles southeast of Havre. The majority of the EMU is in private ownership in the mountains and in public ownership [USDI - Bureau of Land Management (BLM)] in the breaks. Within the area of elk distribution, 64.5% is privately owned, 25.2% is managed by the BLM, and 10.1% by the Montana Department of Natural Resources and Conservation (DNRC).

Public Access: Because elk hunting in this unit is primarily a means to control game damage, access to private lands has traditionally been granted to elk permit holders. An elk hunter management coordinator has been used since 2001 and this has worked quite well in directing hunters onto private lands with elk. Access to elk hunting areas is largely by foot or horseback and vehicle retrieval is allowed with permission.

Elk Populations: We currently observe approximately 250 elk in this unit (Figure 1) and they are spread throughout the Bears Paw Mountains and the Missouri River Breaks southeast of these mountains. A small segment of the population spends a portion of the summer on or adjacent to the Rocky Boy Indian Reservation.

Recreation Provided: This unit provides about 450 days of hunting recreation for 85 rifle hunters and 105 recreation days for 15 archery hunters each year. Elk can occasionally be viewed throughout the year from county roads in the Bears Paw Mountains and along trails in the Missouri River Breaks.

Current Annual Elk Harvest: All elk hunting in this unit is by special permit, both for archery and the general seasons. During 1999-2001, there were 15 either-sex permits for the archery

season, 10 either-sex permits for the general season, and 50, 60 and 75 antlerless permits during the general season for 1999, 2000, and 2001, respectively. The 3-year average harvest for those years was 19 antlerless elk and 11 bull elk. In addition, 4 cows and 14 bulls were harvested on the Rocky Boy Indian Reservation in both 2000 and 2001.

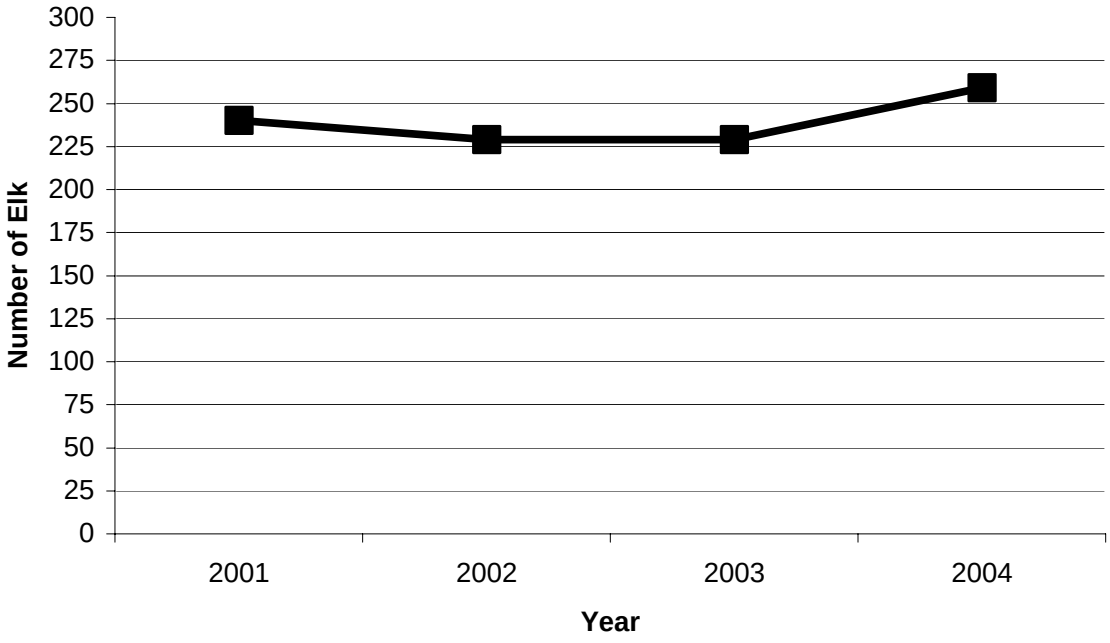


Figure 1. Number of elk counted during post-season aerial trend surveys in the Bears Paw EMU, 2001-2004.

Accomplishments: Some believe current elk numbers have been underestimated. In response to this perception and poor antlerless harvest success, the Bears Paw Mountains Elk Management Working Group was formed. The goal was to formulate a management strategy that was satisfactory to both landowners and hunters. As a result of this group meeting, more consistent and comprehensive elk surveys have been conducted and a more intensive hunter management system was developed to achieve higher harvest success rates for antlerless elk and form a more cooperative relationship between the landowners, hunters, and FWP.

Since 2001 an elk hunt coordinator has been hired to monitor the location of elk in these hunting districts and direct permit holders to the elk and how to gain permission from landowners for access. The coordinator also maintains daily contact with landowners, patrols the area, and monitors elk harvest throughout the general big game season.

During fall 2003, there were elk hunting opportunities on 14 Block Management Areas with a total of 112,846 deeded acres in Hill, Blaine, and Chouteau Counties.

Management Challenges: The majority of elk occur on private lands in the Bears Paw Mountains. Access to elk are at specific times during the hunting season can be limited on a daily basis. We have utilized an elk hunt coordinator to monitor elk movements and locations, respond to calls from antlerless permit holders, and direct them in how to gain access to the elk. This system has worked well, but we hope to improve on the average success of about 25 antlerless elk harvested with 75 permits.

A portion of this EMU includes a smaller segment of the elk herd on public lands (BLM) in the Missouri River Breaks in HD 680. This area provides a hunting location for hunters that have a hard time gaining access to private lands, but does not result in harvest of antlerless elk from areas where they are causing problems on private lands.

Some alternative hunting season strategies addressing these issues include:

1. Continue the current permit system and increase the number of antlerless elk permits.
2. Convert some antlerless elk permits to A-9/B-12 licenses (antlerless B-tags) so that permit holders concentrate their efforts on hunting antlerless elk in this area.
3. Recommend a general season for antlerless elk utilizing a quota system and maintain permits for bulls. The season would end or access to private lands would end when desired antlerless harvest is obtained. A limited number of antlerless permits valid for public lands would be maintained.

Population Monitoring: A full coverage aerial survey of occupied elk habitat is conducted annually using a FWP helicopter and pilot. These surveys are typically conducted in midwinter when animals are in large groups and in open habitat.

SUMMARY OF PUBLIC COMMENT

The draft management goal and objectives are acceptable to sportsmen. Landowners voiced strong opposition to an increase in elk numbers because game damage is excessive at existing numbers.

MANAGEMENT GOAL

The Bears Paw Mountains Elk Management Working Group has recommended a management goal of maintaining the elk population at its current level at about 250 observed elk and cooperation in the management of elk habitat to provide maximum elk hunting opportunities while controlling game damage. Because the Bears Paw Mountains is primarily a deer producing area, elk numbers will not be allowed to increase at the expense of the deer population.

HABITAT OBJECTIVES

1) Develop cooperative programs that encourage public and private land managers to maintain approximately 200,000 acres of occupied elk habitat.

2) Maintain elk habitat security levels that will facilitate attainment of population and harvest objectives.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Cooperate with BLM, DNRC, and private land managers to identify and prioritize critical habitats that could potentially be protected through conservation easements or fee title acquisition.
- Work with private landowners to maintain existing grazing systems, public access, and elk security levels.

GAME DAMAGE STRATEGIES

Permits for antlerless elk during rifle season will be used to accomplish a harvest adequate to prevent game damage. The position of Hunter Access Coordinator will be continued to direct hunters to locations of antlerless elk.

ACCESS STRATEGIES

Opportunities for Block Management projects will be identified. The hunter management coordinator position will be continued.

POPULATION OBJECTIVES

1) Maintain 250 elk observed during post-season aerial trend surveys.
2) Maintain at least 10 bulls:100 cows observed during post-season aerial trend surveys.

POPULATION MANAGEMENT STRATEGIES

To achieve the management objectives for this unit, emphasis must focus on coordination with private landowners to maintain hunting access to private lands and we will continue to use the hunter management coordinator. The hunting season format will include 6 weeks of archery hunting and a 5-week general season. Both archery and general season hunting will be by limited permit only.

REGULATION PACKAGES

Limited either-sex archery permits.

Antlerless:

<u>The Standard Regulation is:</u> 50-75 general season antlerless permits.

The Standard Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is between 225 and 275 elk.

The Liberal Regulation is: 1.) **more than 75 general season antlerless permits (A-9/B-12 licenses may be recommended as well) OR;** 2.) **a general season for antlerless elk on private lands utilizing a quota system. General season on private land ends when quota reached.**

Liberal Regulation 1.) (above) **will be recommended if: the number of elk counted during post-season aerial trend surveys is more than 275 elk.**

Liberal Regulation **2.) (above)** will be recommended if: after 2 years of application of Liberal Regulation 1. (above) the number of elk counted during post-season aerial surveys remains above 275 elk.

The Restrictive Regulation is: less than 50 general season antlerless permits.

The Restrictive Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is less than 225 elk for 2 consecutive years.

Antlered:

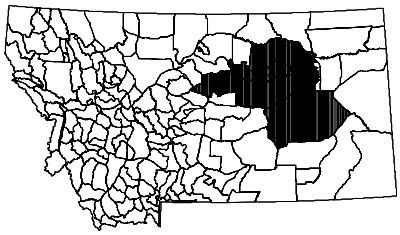
The Standard Regulation is: at least 15 either-sex archery permits and 10 general season either-sex permits.

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial surveys is at least 10 bulls:100 cows.

The Restrictive Regulation is: less than 15 either-sex archery and less than 10 general season either-sex permits.

The Restrictive Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial surveys is less than 10 bulls:100 cows for 2 consecutive years.

MISSOURI RIVER BREAKS EMU
(Hunting Districts 410, 417, 426, 620, 621, 622, 630, 631, 632, 700, and 701)



Description: The Missouri River Breaks (MRB) encompasses 17,239 square miles of Fergus, Petroleum, Garfield, Phillips and Valley counties in northeastern Montana. Approximately 63% of the elk habitat within this EMU is comprised of public lands administered by either the USDI Bureau of Land Management (BLM), the Charles M. Russell National Wildlife Refuge (CMR), or Montana Department of Natural Resources and Conservation (DNRC). Key portions of elk summer and winter ranges are located on privately owned lands. The general elk distribution occurs over 4,693 square miles and most of the available elk habitat is occupied. About 20.7% (620,787 acres) of total elk habitat occurs on the CMR. The best security areas are located in the timbered and riparian portions of the rough terrain along the Missouri River, known as the "Breaks". Elk habitat north of the Missouri River also extends into the Larb Hills. Elk habitat on the south side of the Missouri River is more extensive because of longer timbered drainages feeding into the Missouri and Musselshell Rivers. Hunting districts 620 and 630 consist of prairie habitat bordering the breaks, but small groups of elk will typically move into these areas in late summer and fall. Similarly, HD 701 is prairie habitat, but a small group of elk occupies about 52 square miles of this HD. HD 426 contains little elk habitat and much agricultural land.

Although elk could extend their range into the prairie, conflicts with agricultural land uses and lack of fall security areas makes this unfeasible. Elk utilize private lands throughout the year in portions of this unit. Game damage reports are most numerous during drought years and years of high elk population levels.

Public Access: The general elk distribution in the Missouri River Breaks includes 1,101,344 acres of private land, 30% of which is currently enrolled in FWP's Block Management Program. Public hunting opportunities are restricted on approximately 116,640 acres of private land, primarily as a result of fee hunting or outfitting. Good public road access exists throughout the unit and access is also possible by boat from the Missouri River and Fort Peck Reservoir. Vehicle access within the CMR has become

more restricted due to road closures over the past 10 years and in 2002, forty-four miles of trails were closed to all mechanized vehicles on proposed wilderness areas within the CMR.

Elk Populations: The number of elk observed during post-season aerial surveys currently numbers approximately 7,500 elk (Figures 1, 2, and 3). Average age of bull elk harvested has been stable to increasing since 1986 and typically ranges between 4- and 5-years-of-age as determined by analysis of cementum annuli of incisor root tips.

Recreation Provided: Rifle hunting generates 6,500 – 7,000 days of hunting recreation by around 1,500 hunters annually. During the archery season, approximately 3,100 archers spend around 21,100 hunter days pursuing elk. Excellent elk viewing opportunities are available in the Missouri River Breaks EMU. The Devil's Creek Road, Hell Creek Road, Slippery Ann Ridge and Bottom Road, Kendall Bottoms, Bell Bottoms, Rock Creek Road, Larb Hills Road, Harper's Ridge Road, Musselshell Trail, Horse Camp Trail, Crooked Creek Road, Dovetail Road and Dunn Ridge Road are some examples of public roads offering excellent elk viewing. There is also an educational, self guided wildlife viewing route along the Bell Ridge Road near the Fred Robinson Bridge. The Slippery Ann Wildlife Viewing Area on the CMR also offers the opportunity to observe large bulls and elk behavior during the rut.

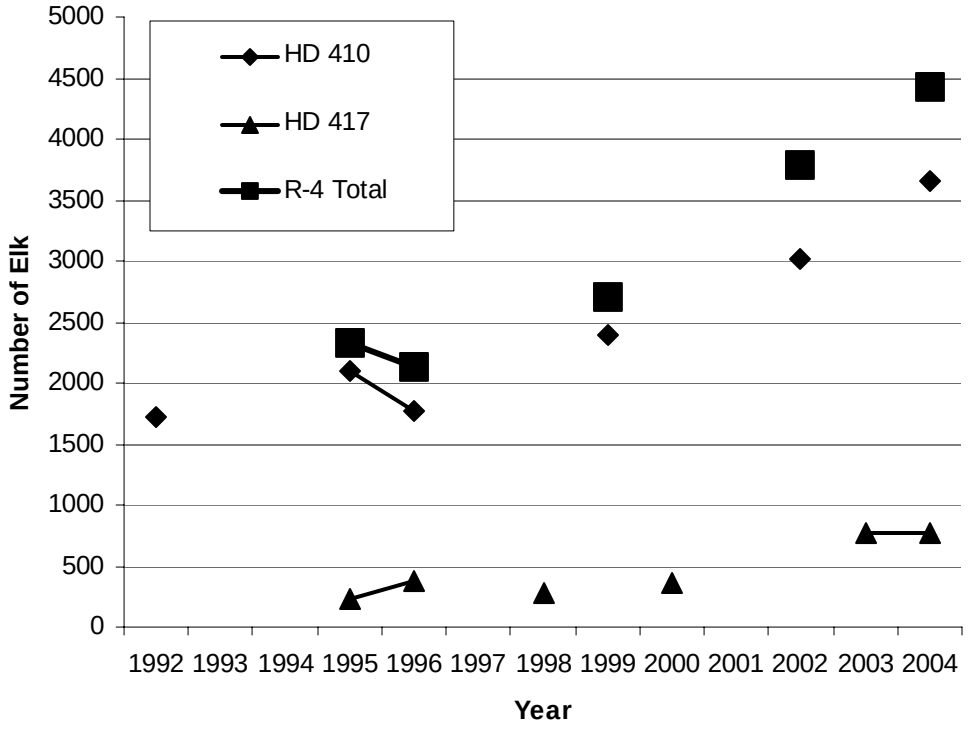


Figure 1. Number of elk counted during post-season aerial trend surveys in the Region 4 portion of the Missouri River Breaks EMU, 1992-2004.

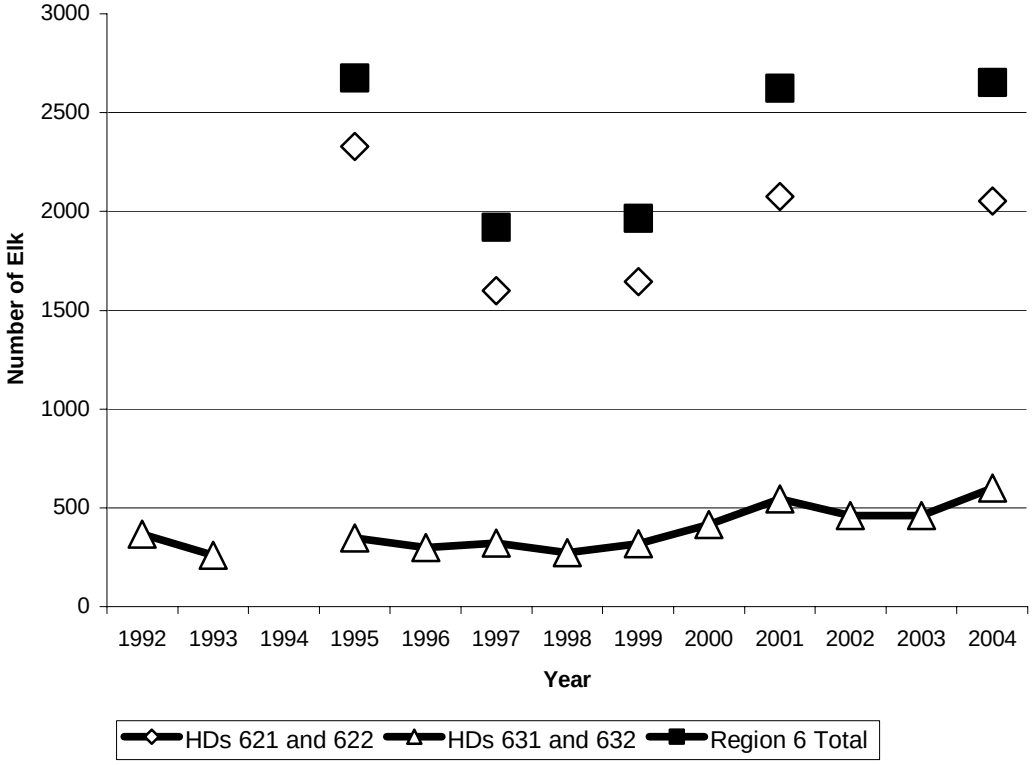


Figure 2. Number of elk counted during post-season aerial surveys of the Region 6 portion of the Missouri River Breaks EMU, 1992-2004.

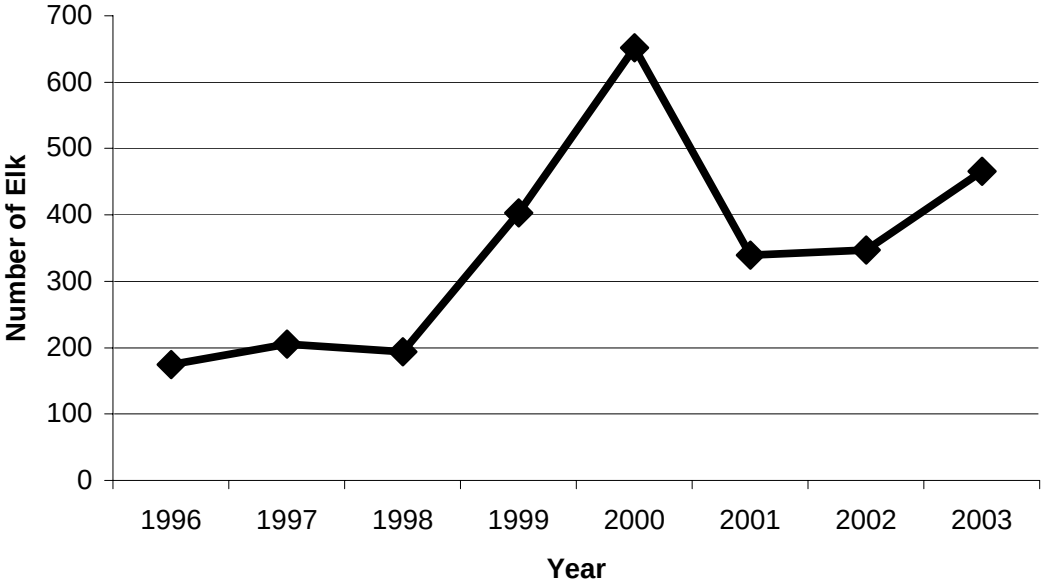


Figure 3. Number of elk counted during late summer aerial trend surveys in the Region 7 portion of the Missouri River Breaks EMU, 1996-2003.

Current Annual Elk Harvest: All elk hunting during the general season is by special permit, and most HDs also require that archers apply for a limited or unlimited number of special permits during the archery season as well. The average annual harvest during 1999-2001 was 647 antlerless elk and 507 bull elk.

Accomplishments: In 1990 the Department purchased a conservation easement in HD 631 on 19,189 acres belonging to the Page-Whitham Ranch. A 3-pasture rest rotation grazing system was established on this ranch and associated public lands to improve native range condition and wildlife habitat. Approximately 66,000 acres of elk habitat is impacted by this grazing system. This conservation easement also provides perpetual free hunting opportunities on this ranch.

In 1997, two habitat projects comprising 242 acres of cropland in HDs 622 and 631 with chronic elk depredation problems were seeded back to permanent grass cover. These projects were a joint partnership between FWP, the Rocky Mountain Elk Foundation, and the private landowners.

In 2001, FWP purchased a 4,489-acre conservation easement on the Cowell Ranch in HD 622. A 3-pasture rest rotation system on this land impacts 10,400 acres of elk habitat on the conservation easement and associated public lands. This easement also provides perpetual hunting opportunities.

During fall 2003, elk hunting opportunities were present on 10 Block Management Areas in Region 6 having a total of 153,500 deeded acres and 53,500 BLM acres. Region 4 had 34 landowner contracts, 156,000 deeded acres and 262,000 acres of state and federal lands within Block Management Areas in 2003. Within the Region 7 portion of the Missouri River Breaks EMU, seven cooperators totaling 27,253 deeded acres and 14,266 state and federal acres were enrolled in Block Management.

Management Challenges: Many parties have a stake in the Missouri River Breaks elk population, including federal and state land management agencies, private landowners, outfitters, hunters, and other outdoor recreationists. Working with all of these players while managing this elk population can, at times, be challenging. Some agencies and individuals would like to see elk managed at maximum numbers to provide more viewing and recreational opportunities. Meanwhile, private landowners within or near elk habitat suffer the economic consequences of elk utilizing their pastures, hay lands, and grain fields, primarily during late summer and fall. Also, other wildlife species, such as mule deer, may be negatively impacted by high numbers of elk due to increased competition for preferred forage species. It is also likely that wolves will move into the breaks at some time and rely on elk as their main prey base, especially if they are protected within the CMR, as are mountain lions.

Although the majority of elk occur on public lands, hunting access is restricted on some key private lands, primarily as a result of fee hunting or outfitting. In some areas large numbers of elk will move onto these lands during the hunting season. More than 400 elk commonly occupy one such ranch in the Larb Hills (HD 622) throughout the rifle season.

After the season closes, many of these elk move onto adjacent lands where they may compete with cattle for grazing in winter pastures or cause damage to haystacks. Partially as a result of these "refuges", elk populations have climbed above population objectives in some areas.

Managing hunter numbers and equitably dividing the bull harvest between archery and rifle hunters has also been a challenge. The Missouri River Breaks elk population is well known for its high numbers of bulls and large, trophy bull elk. Archery hunting in particular is very popular in the breaks and over 70% of elk hunting recreation occurs during the archery season. This distinction has not come without a price.

Some archers believe that overcrowding has greatly reduced the quality of archery hunting in the Breaks and would like to limit the number of archery hunters in all Breaks HDs. Similarly, some rifle hunters believe that archery hunters are taking more than their share of large bull elk. An analysis of bull harvest between 1999-2001 revealed that in HDs 620, 621 and 622 archery hunters accounted for 56% of the total bull elk taken and 46% of the six-point or larger bulls in these HDs. In the same years, in HD 410 and 417, archery hunters accounted for 63% of the total bull elk taken and 59% of the six-point or larger bulls. During that period in HD 700 and 701, archery hunters accounted for 33% of the total antlered harvest and 24% of the six-point or larger bulls.

Population Monitoring: Elk surveys are typically conducted in mid-winter when animals are in large groups and more often in open habitat. Surveys are conducted annually in HDs 631, 632, and 700 using a fixed-wing aircraft. Surveys are conducted every other year with fixed-wing aircraft in HDs 410 and 417 and with a helicopter in HDs 621 and 622. Late summer, fixed-wing surveys are also conducted in HD 700 to supplement mid-winter surveys and have been more reliable than winter surveys. Every other year surveys will be coordinated among Regions to be accomplished during the same year from this point forward.

SUMMARY OF PUBLIC COMMENT

Many archers believe that the high number of archery hunters has reduced the quality of the hunting experience in the Missouri River Breaks. These archers would like to see a reduction in hunter numbers. Some have proposed implementing a limited entry drawing, or a pick your area type season structure. In recent years, there appears to have been an increase in the number of archery hunters supporting a limited number of archery permits in HDs 621/622 and 410 to reduce crowding. Support for this idea was also voiced at the 2004 season-setting public meetings in Region 6 and in a petition signed by 72 archers and sent to the Region 6 FWP office in Glasgow in May 2004.

The complaint heard most often from archers is that there are too many nonresident archery hunters in the Breaks. During 1999 and 2000, about 41% of elk killed by archery in the MRB was by non-resident hunters. Some rifle hunters also believe that archers are harvesting the larger bulls because they have a longer season and can hunt bulls during the rut. These rifle hunters, too, would like to see the number of archery hunters limited.

This has been a very controversial topic for several years; however, there has also been very strong support for maintaining the current season structure. In a survey conducted following the 2000 hunting season, 2,350 randomly selected MRB archery hunters were sent a questionnaire regarding different hunting season options in the breaks. Of the 1,500 archery hunters who returned this questionnaire, 59% favored making no changes to the current season, 30% wanted to go back to an unrestricted archery season in HDs 410 and 700, and 25% favored limiting the number of archery hunters. Other alternative archery season strategies received even less support.

MANAGEMENT GOAL

Manage elk habitat in its most productive condition and elk numbers at levels that provide excellent recreational opportunities while minimizing game depredation on private land. All FWP management actions and recommendations concerning elk habitat will give equal consideration to other wildlife species.

HABITAT OBJECTIVE

Work cooperatively with public and private land managers to maintain and/or improve 3 million acres of productive elk habitat. The majority of elk habitat in this EMU occurs on BLM (37%), private lands (37%), and the CMR (21%). The DNRC manages about 5% of the elk habitat and less than 1% is managed by other federal agencies or consists of tribal lands.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Work with land management agencies and private landowners to improve forage quality and quantity for elk via various methods, such as rest rotation grazing systems, and develop strategies that encourage elk to use forage on public lands more than private lands.
- Use conservation easements to protect land from subdivision and guarantee public access.
- Work with BLM, CMR, and private landowners to identify important wildlife habitats impacted by prescribed fires and insure that these prescribed fires actually do benefit elk and elk habitat.
- Continue to coordinate with BLM, CMR, and private landowners to implement a cooperative road management program designed to curtail off-road travel and designate walk-in hunting areas to maximize elk security, while still providing good access to public lands.
- Maintain elk populations within the carrying capacity of their habitat and maintain that habitat in good to excellent condition.

GAME DAMAGE STRATEGIES

Historically most game damage has occurred on agricultural lands adjacent to the breaks; however, in recent years, more elk have moved into prairie habitats where there is more deeded land and more potential for depredation problems. Elk movement into the prairie is especially noticeable during years of high population levels in the breaks. In Regions 4 and 6, groups of elk start to move into nearby alfalfa and grain fields in mid-summer and many of the problems are a result of groups of bulls.

Management strategies FWP will use to deal with game damage include:

- Manage elk populations within population objectives by issuing a sufficient number of either-sex and antlerless rifle permits during the general big game season.
- If the Department, landowners, sportsmen, other agencies and special interest groups cannot come to a consensus on population objectives, or harvest strategies are not being met, then the establishment of Elk Working Groups may be necessary to openly discuss these issues. In 1995, the Breaks Elk Working Group was formed in Region 6.
- Encourage and provide incentives to landowners to convert cropland having a history of chronic elk depredation problems back into grassland.
- Landowners who allow free reasonable public hunting are eligible for game damage assistance from FWP. In some cases the Department has supplied haystack-fencing materials, propane scare guns and, in isolated cases, herders have been contracted to keep elk off cropland and alfalfa fields in Region 6 during critical periods.

ACCESS STRATEGIES

Hunting access is good in most parts of the Missouri River Breaks, thanks largely to the large proportion of public land in this area. Access to public land is a problem in some areas where outfitting is occurring. It is likely that access to private land will continue to become more difficult around the breaks as nonagricultural interests purchase more land for its recreational and scenic values.

Access strategies include:

- Acquire conservation or access easements to perpetually maintain elk hunting opportunities on private land and access to public lands.
- Enroll landowners into Block Management, Access Montana, and Hunter Enhancement programs to maintain and increase hunting opportunities.
- Work cooperatively with the BLM, CMR, and private landowners on road management strategies to curtail off road vehicle travel and provide secure elk habitat, while ensuring that a sufficient number of trails are kept open to provide good hunting access and a sufficient elk harvest.

POPULATION OBJECTIVES

These objectives are based on comments from both landowners and sportsmen and the number of game damage complaints received. We expect that the objectives will be periodically updated to account for changes in landownership and management practices. In Region 4, the population objectives were established as the number of elk in 1992 when the first Elk Management Plan was adopted. Objective numbers for observed elk are low for HD 426 because it contains mostly agricultural lands and little elk habitat. In Region 6, the population objective was determined in 1997 by the Breaks Elk Working Group, which consists of approximately 25 landowners and sportsmen along with representatives from MFWP, CMR, and the BLM.

1) Maintain 4,350-5,100 elk observed during post-season aerial surveys. Individual observed herd area objectives are:

HDs 620, 621, and 622:	1,400 – 1,650 elk.
HDs 630, 631, and 632:	300 – 350 elk.
HD 410:	2,000 – 2,300 elk.
HD 417:	350 – 400 elk.
HD 426:	50 elk.
HD 700:	200 – 300 elk.

2) Maintain 30-40 bulls:100 cows observed during post-season aerial trend surveys.
3) The elk management goal of the CMR is to reach or maintain a density of 2.5 elk per square mile of suitable habitat on refuge lands and maintain 28 brow-tined bulls:100 cows post-season. Recent counts and distribution indicate that density goals are being exceeded on the CMR, except possibly in HD 700. This is especially true given that perhaps only 50% of elk present are observed during summer flights in HD 700 compared to about 80% observability during winter flights in most other areas of the MRB.

POPULATION MANAGEMENT STRATEGIES

Elk numbers are currently being managed based on landowner tolerance to elk depredation on private lands and to maintain elk within the carrying capacity of their habitat. Management of total population numbers will primarily be achieved by varying permit numbers during the general “rifle season”. However, recently elk numbers have increased in some areas to the extent that some options in addition to permits may be necessary to reduce elk numbers to objective levels.

REGULATION PACKAGES

General Season Regulations

Antlerless:

The Standard Regulation consists of the following antlerless permit numbers:

HDs 410 and 417	350-500 antlerless permits
HD 426:	20-25 antlerless permits
HDs 620, 621 and 622	300-450 antlerless permits
HDs 631 and 632	75-100 antlerless permits
HDs 700 and 701	200-350 antlerless permits

The Standard Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is within the numerical population objective range for each hunting district or group of hunting districts.

The Liberal Regulation consists of the following three options **1.)** increased antlerless permit numbers:

HDs 410 and 417	more than 500 antlerless permits
HD 426:	more than 25 antlerless permits
HDs 620, 621 and 622	more than 450 antlerless permits
HDs 631 and 632	more than 100 antlerless permits
HDs 700 and 701	more than 350 antlerless permits

OR; **2.)** in addition to 1.) (above), limited A-9/B-12 licenses (B-tags) valid during archery and the general season OR; **3.)** a general antlerless regulation for a portion of (up to 5-weeks) the general season.

Liberal Regulation **1.) (above)** will be recommended if: the number of elk counted during aerial post-season trend surveys is above the population objective range for each hunting district or group of hunting districts.

Liberal Regulation **2.) (above)** will be recommended if after 2 years of application of Liberal Regulation 1.), the number of elk counted remains above the objective range.

Liberal Regulation **3.) (above)** will be recommended if after 2 years of application of Liberal Regulation 2.), the number of elk counted has not declined to within 10% above the objective range.

The Restrictive Regulation consists of the following antlerless permit numbers:

HDs 410 and 417	less than 350 antlerless permits
HD 426:	less than 20 antlerless permits
HDs 620, 621 and 622	less than 300 antlerless permits
HDs 631 and 632	less than 50 antlerless permits
HDs 700 and 701	less than 200 antlerless permits

The Restrictive Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is below the population objective range for each hunting district or group of hunting districts for 2 consecutive years.

Antlered:

The Standard Regulation consists of the following permit numbers:

HDs 410 and 417	100-125 either-sex permits
HD 426:	5 either-sex permits
HDs 620, 621 and 622	50-100 either-sex permits
HDs 631 and 632	20-30 either-sex permits
HDs 700 and 701	75-150 either-sex permits

The Standard Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is between 30-40 bulls:100 cows.

The Liberal Regulation consists of the following permit numbers:

HDs 410 and 417	more than 125 either-sex permits
HD 426:	more than 5 either-sex permits
HDs 620, 621 and 622	more than 100 either-sex permits

HDs 631 and 632	more than 30 either-sex permits
HDs 700 and 701	more than 150 either-sex permits

The Liberal Regulation will be recommended if: the bull:cow ratio observed during post-season aerial trend surveys is more than 40 bulls:100 cows.

The Restrictive Regulation consist of the following permit numbers:

HDs 410 and 417	less than 100 either-sex permits
HD 426:	less than 5 either-sex permits
HDs 620, 621 and 622	less than 50 either-sex permits
HDs 631 and 632	less than 20 either-sex permits
HDs 700 and 701	less than 75 either-sex permits

The Restrictive Regulation will be recommended if: the bull:100 cow ratio observed during post-season aerial trend surveys is less than 30 bulls:100 cows for 2 consecutive years.

Archery Regulations

The Standard Archery Regulations are:

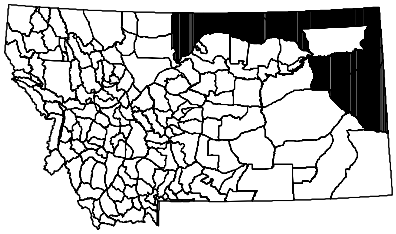
HDs 410, 417, and 426	Unlimited archery only permits; 1st, 2nd, or 3rd choice.
HDs 620, 621 and 622	Unlimited archery permits; first choice only.
HDs 631 and 632	Limited archery permits.
HDs 700 and 701	Unlimited archery only permits; 1st, 2nd, or 3rd choice.

The Standard Archery Regulation will be recommended if: less than 50% of the total antlered harvest in each HD (or HDs 620, 621, and 622 as a group) is attributed to archery hunting.

The Restrictive Archery Regulations are: all HDs - Limited archery permits, first choice only.

The Restrictive Archery Regulations will be recommended if: more than 50% of the total antlered harvest in a HD (or HDs 620, 621, and 622 as a group) is attributed to archery hunting for 2 consecutive years.

HI-LINE EMU
(Hunting Districts 600, 610, 611, 640, 641, 650, 651, 652, 670, and 703



Description: This EMU includes 21,104 square miles that have a very low elk density or are void of elk. It includes all of the land in FWP administrative Region 6 north of Highway 2 and the hunting districts in the eastern third of the Region. In FWP administrative Region 7, it includes the northeastern portion of the Region, encompassing all or portions of Richland, Dawson, McCone, Wibaux, Prairie, and Fallon Counties. All of this area is prairie habitat and at least 75% of this land is privately owned and much is intensively farmed. Terrain features, vegetation cover, landownership, and primary land use in most of this EMU do not provide suitable or secure elk habitat. This is a new EMU; none of these hunting districts were included in an EMU in the 1992 Elk Plan.

Public Access: There is fair to good hunting access in most of this area.

Elk Populations: Three small elk populations are present in this EMU. The population in the Rock Creek drainage of HD 670 typically numbers between 25 and 50 elk. A smaller and more seasonal elk population occurs in HD 610, where elk from the Milk River Valley and associated breaks in Alberta, Canada recently started moving into grain fields and pastures in Montana. The third population occurs in the southern portions of HD 651 and the northern portions of HD 703 in the vicinity of Lambert, Montana and typically numbers less than 50 elk.

Elk presence in the rest of this EMU is limited to the occasional sighting of lone animals or small groups of elk wondering through the country. These elk may come from the Missouri River Breaks, Bears Paw Mountains, Sweet Grass Hills, Canada, or from the Theodore Roosevelt Park area of North Dakota. The elk populations in all of these areas have been either increasing, or at high levels during the past 10 years, which has resulted in more elk periodically wandering out of these secure habitats and into adjacent prairie habitats. Elk historically occurred in the prairie and it appears that, if given a chance, they would reoccupy it. However, this is incompatible with existing agriculture practices

and also poses an increased threat of Chronic Wasting Disease (CWD) spreading into Montana from adjacent States and Provinces.

Recreation Provided: Some hunters go to HDs 670 and 610 specifically looking for an elk. However, most elk hunting in this EMU is opportunistic by hunters primarily looking for deer, but also possessing an elk license. Prior to 2003, only HDs 610 and 670 had a hunting season for elk.

Annual Elk Harvest: 20-50 elk.

SUMMARY OF PUBLIC COMMENT

Most hunters and landowners within this EMU realize that secure elk habitat is lacking in these hunting districts and understand the damage elk can do to agricultural crops. Little negative public comment was received regarding the general elk archery and rifle regulations in most of this unit and many local hunters have expressed an interest in harvesting an elk in this area with a bow or rifle. The North Valley County Elk Working Group, which consists of approximately 25 landowners and sportsmen, has also voiced support for this regulation. However negative comments have been received from some landowners and hunters residing in HDs 651 and 703, who would prefer a more limited elk harvest in this area.

MANAGEMENT GOAL

Maintain very low elk densities within these hunting districts compatible with individual landowner tolerance.

HABITAT OBJECTIVES

Permanently suitable or secure habitat does not exist in this EMU.

HABITAT MANAGEMENT STRATEGIES

None.

GAME DAMAGE STATEGIES

Game damage complaints will be handled on a case-by-case basis. General either-sex archery and general elk seasons should minimize depredation problems.

ACCESS STRATEGIES

Access to deeded land will generally depend upon private landowner discretion. Hunters should realize that few elk are present and landowner permission is required to hunt. FWP elk hunting regulations provide the means to control elk populations. Large tracts of public land are also present in the central portion of this unit.

POPULATION OBJECTIVES

Maintain elk numbers as low as possible to address landowner tolerance, the high potential for agricultural damage, and to minimize the possibility of CWD entering from Canada or the Dakotas.

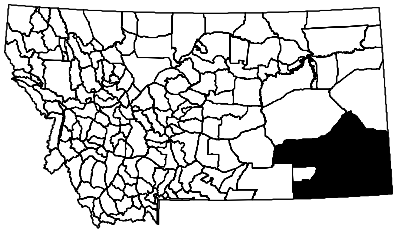
POPULATION MANAGEMENT STRATEGIES

Provide hunting regulations that will maintain very low elk densities within this EMU.

Antlerless and Antlered Elk Regulations:

The Standard Regulation is: 6-week either-sex archery regulation and 5-week general season either-sex regulation.

CUSTER FOREST EMU
(Hunting Districts 702, 704 and 705)



Description: The Custer Forest EMU encompasses 14,378 square miles of Big Horn, Treasure, Rosebud, Custer, Fallon, Powder River, and Carter counties in southeastern Montana. About 45% (6,400 square miles) of the EMU is elk habitat. Approximately 25% of the EMU is public land administered primarily by the USDA –United States Forest Service (USFS), USDI- Bureau of Land Management (BLM), and Montana Department of Natural Resources and Conservation (DNRC). Key portions of elk summer and winter ranges are located on privately owned lands. Current elk distribution occurs over 3,298 square miles, which is 23% of the EMU. About 63% of the area of current elk distribution is on private lands. The best security areas are located in the timbered and riparian portions of the rough terrain along the Powder and Tongue Rivers, the Little Wolf Mountains, and portions of the Custer National Forest. Elk habitat also occurs in the Long Pines and Ekalaka Hills in the eastern portion of the EMU.

Public Access: Of the private land currently supporting elk, 15% is currently enrolled in FWP's Block Management Program. Public hunting opportunities are restricted on 66% of the private land with elk, primarily as a result of fee hunting or outfitting. Public access to portions of the Custer National Forest (13% of the EMU) is good. Good public road access exists throughout the unit and motorized hunting access is fair to good.

Elk Populations: We estimate that approximately 800-1,000 elk are present in this EMU. These estimates include minimum numbers of 200 elk in HD 702, 500 elk in HD 704, and 100 elk in HD 705. Although elk could extend their range into the prairie, conflicts with agricultural land uses and lack of fall security areas makes this undesirable. Elk utilize private lands throughout the year in all portions of this EMU.

Recreation Provided: During 1999-2001, an annual average of 1,692 days of hunting recreation was provided for an average 313 hunters in this EMU. Both hunters and hunter days increased through the period. A little more than half of hunters and two-thirds of hunter days were during archery season. With the advent of the general antlerless rifle

season in 2002 (outside the Custer Forest boundary), a total of 757 hunters (archery and rifle) spent 3,951 days hunting elk. In 2002, 57% of hunters and 67% of hunter days in the EMU were in HD 704.

Current Annual Elk Harvest: Prior to 2002, all elk hunting in this EMU during the general season was by permit only. The average annual general season harvest during 1999-2001 was 23 antlerless elk and 17 bull elk. During the same period, the average annual archery harvest was 2 antlerless elk and 18 bull elk. In 2002, in addition to permit hunting, a general antlerless season outside Forest boundaries was instituted. Harvest during the general season was 93 antlerless elk and 31 bull elk. Eighty-four percent of the antlerless harvest and 46% of the bull harvest occurred outside forest boundaries. Fifty-seven percent of antlerless harvest and 53% of bull harvest was from HD 704.

Accomplishments: Within the EMU there are 167 Block Management Areas; 55 of these offer or have the potential to offer elk hunting opportunities on roughly a half million acres.

Management Challenges: Many parties have a stake in the Custer EMU elk population, including federal and state land management agencies, private landowners, hunters, outfitters, and other outdoor recreationists. Some would like to see elk managed at maximum numbers to provide more viewing and recreational opportunities. However, private landowners within or near elk habitat suffer economic consequences as a result of elk utilizing their pastures, hay lands, and grain fields. Satisfying the expectations of all of these players while managing this elk population can, at times, be challenging.

Public access by hunters to elk occupying private land is, at times and places, difficult. The reluctance of some landowners to allow the general public access for hunting recreation and population management presents a management challenge. Difficult challenges occur in areas where some landowners desire increased harvest of elk while adjacent landowners discourage harvest.

Hunting access is restricted on some key private lands, primarily as a result of fee hunting or outfitting. These lightly hunted areas provide a “refuge” for elk and large numbers of elk will move onto these lands during the hunting season. After the season closes, many of these elk move to adjacent lands where they may compete with cattle for grazing in winter pastures or cause damage to haystacks. These “refuge” situations have contributed toward elk populations increasing above the population objectives in some areas. Game damage reports could become numerous during drought years, severe winters, and years of high elk population levels.

Other wildlife species, such as mule deer, may be negatively impacted by high numbers of elk due to increased competition for preferred forage species. Balancing the needs of all wildlife in the area is another management challenge. FWP management actions and recommendations concerning elk will give equal consideration to other wildlife species.

Population Monitoring: Elk surveys are usually conducted in mid-winter when elk are typically in large groups and in open habitats. However, the scattered distribution of elk and their low densities in this EMU make population monitoring difficult and costly and few surveys have been accomplished. We currently estimate number of elk present based on occasional flights, ground observations, and reports by landowners and the public. We will explore the possibility of establishing a valid aerial trend area for this EMU.

SUMMARY OF PUBLIC COMMENT

The elk in this EMU are scattered and at low density and have not attracted a lot of public interest at this time. Most comments about elk are received from private landowners with concerns about increasing elk numbers and game damage. The majority of landowner and hunter comments received in the winter of 2002-2003 relative to the general antlerless season were neutral to positive.

MANAGEMENT GOAL

Manage elk habitat in its most productive condition and elk numbers at levels that provide good recreational opportunities while minimizing game depredation on private land.

HABITAT OBJECTIVE

Work cooperatively with public and private land managers to maintain and/or improve elk habitat.

HABITAT MANAGEMENT STRATEGIES

FWP will:

- Provide technical assistance to land management agencies and private landowners for programs such as rest rotation grazing systems that will improve forage quality and quantity for elk. Special emphasis will be placed on strategies that encourage elk to use forage on public lands more than private lands.
- Identify important wildlife habitats potentially impacted by prescribed burning and work with the BLM, USFS, and private landowners to ensure that planned prescribed fires benefit elk and elk habitat.
- Maximize security for elk by continuing to coordinate with BLM, USFS, and private landowners to implement a cooperative road management program designed to curtail off-road travel and designate walk-in hunting areas.
- Maintain elk populations within their carrying capacity to maintain elk habitat in good to excellent condition.

GAME DAMAGE STRATEGIES

Historically, most game damage has occurred on croplands. However, in recent years, more elk have moved into prairie habitats and, in some cases, stayed in these areas. Elk movement into the prairie is especially noticeable during years of high population levels.

FWP will use the following strategies to address game damage:

- Maintain elk populations at population objectives by issuing a sufficient number of either-sex and antlerless rifle permits and instituting a general antlerless regulation during the general big game season.
- The establishment of Elk Working Groups that includes landowners, hunters, FWP, and other agencies and groups may potentially be necessary to reach a consensus on population objectives or harvest strategies.
- Pursue development of incentives for landowners to convert cropland in or near occupied elk habitat back into grasslands.
- Employ standard methods of game damage relief including fencing, scare devices, herding, and kill permits.

ACCESS STRATEGIES

Hunting access ranges from poor to good across the Custer Forest EMU. Access to the Custer Forest is generally good. In other areas, public access is a problem where leasing and outfitting occur or where landowners are reluctant to allow general public access. It is likely that access to private land will continue to get more difficult as nonagricultural interests purchase more land for its recreational and scenic values.

FWP will:

- Pursue and acquire Conservation or Access Easements to perpetually maintain elk hunting opportunities on private land and access to public lands.
- Maintain liberal hunting regulations to provide landowners the opportunity to maintain elk numbers at acceptable levels on their land.
- Work with willing landowners to provide and manage public access and develop new access strategies.
- Enroll landowners into the Block Management Program to maintain and increase hunting opportunities. Pursue Access Montana projects to open, improve, and maintain access to public lands supporting elk.
- Work cooperatively with the BLM, USFS, and private landowners on road management strategies that provide secure elk habitat by curtailing off-road vehicle travel, while ensuring that enough trails are open to provide good hunting access and a sufficient elk harvest.

POPULATION OBJECTIVES

1) Maintain estimated post-season elk numbers at 500 elk. This objective number is based on comments from landowners, hunters, and the number of game

damage complaints received. The objective will be periodically updated to take into account changes in landownership, management practices and landowner tolerance. This objective is below the minimum number of 800 elk currently estimated in the EMU.

2) Maintain an observed post-season bull:100 cow ratio of 30-40 bulls:100 cows.

POPULATION MANAGEMENT STRATEGIES

Elk numbers are currently managed based on level of landowner tolerance to elk depredation on private lands. Depredation includes damage to privately owned cropland and alfalfa fields, stored forage, and damage to fences.

REGULATION PACKAGES

Six-week either-sex archery regulation.

Antlerless:

The Standard Regulation is: 50-100 either-sex permits valid in all EMU HDs AND, 50-100 antlerless permits valid in all EMU HDs AND, a 5-week general season antlerless regulation (outside the Custer Forest boundaries).

The Standard Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is within 20% of the population objective.

The Liberal Regulation is: more than 100 either-sex permits valid in all EMU HDs AND, more than 100 antlerless permits valid in all EMU HDs AND, a 5-week general season antlerless regulation throughout the EMU.

The Liberal Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is more than 20% above the population objective.

The Restrictive Regulation is: less than 50 either-sex permits valid in all EMU HDs AND, less than 50 antlerless permits valid in all EMU HDs. There will be NO general antlerless season.

The Restrictive Regulation will be recommended if: the number of elk counted during post-season aerial trend surveys is more than 20% below the population objective.

Antlered:

The Standard Regulation is: more than 50 either-sex permits valid in all EMU HDs.

The Standard Regulation will be recommended if: the bull:100 cow ratio is at least 30 bulls:100 cows.

The Restrictive Regulation is: less than 50 either-sex permits valid in all EMU HDs.
The Restrictive Regulation will be recommended if: the bull:100 cow ratio is less than 30 bulls: 100 cows.

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