UTAH DIVISION OF WILDLIFE RESOURCES
STATEWIDE MANAGEMENT PLAN FOR ELK

I. PURPOSE OF THE PLAN

A. General

This plan was developed by a fourteen person advisory committee commissioned by the Wildlife Board to revise the statewide elk management plan. The committee consisted of a member of the Wildlife Board, one member from each of the five regional advisory councils, one member from each of four sportsmen groups, and one representative each from the US Forest Service, Bureau of Land Management, Utah Farm Bureau and CWMU Association.

This groups met several times from May 2004 until January 2005. The group identified issues to be addressed in the plan and then developed goals, objectives and strategies to address the issues. The objectives and strategies in this plan relating to hunting were taken to the Wildlife Board in November of 2004 for adoption and implementation in the 2005 big game proclamation. At that meeting, the Wildlife Board approved the strategies in the plan relating to hunting.

This document will provide overall guidance and direction for Utah's elk management program for five years from the date of approval by the Utah Wildlife Board. This plan briefly describes general information on elk natural history, management, habitat, and population status. It also discusses issues concerning elk management in Utah identified by the elk committee. Goals, objectives and strategies for managing elk populations are identified. The plan will be used to help set priorities for elk management programs and will provide overall guidance for individual unit management plans.

B. Dates Covered

This plan was approved on March 31, 2005 and will be in effect for five years from this date.

II. SPECIES ASSESSMENT

A. Natural History

Elk (*Cervus elaphus*) are members of the deer or cervid family along with deer, moose, and caribou. Elk are considered to be the same species as European red deer, even though they look quite different. North American elk are also commonly called wapiti to distinguish them from European red deer. Wapiti is the Shawnee name for elk and means white rump or white deer. There are six recognized subspecies of elk in North America. All of the elk in Utah are of the subspecies known as Rocky Mountain elk (*Cervus elaphus nelsoni*). In 1971, the Rocky Mountain elk was designated as Utah's state animal.

Elk males, females and young are known as bulls, cows and calves respectively. Calves are born as singles after a gestation period of approximately 8 to 8.5 months. Twins are extremely rare. Calves are normally born from mid May until early June and weigh approximately 13 pounds at

birth. Elk are gregarious animals and often gather into large nursery bands of cows and calves in early summer. During this time, it is common to see groups of several hundred elk. Within a few weeks these nursery bands disperse into smaller groups across the summer range.

The antlers of bulls begin to grow as soon as the old antlers are shed in late winter or early spring. Bulls generally live apart from the cows and calves through the summer antler growing period. Bulls often band together in small groups during this time. The velvet that covers and provides nourishment to the growing antlers begins to shed in early August. The rut or breeding period for elk begins in early September and continues until mid October in Utah. The peak of the breeding occurs in mid to late September. In early September, bulls begin to bugle and gather cows into harems of approximately 10-20 females. Breeding bulls vigorously defend these harems from other "satellite" bulls who will attempt to steal cows for themselves.

After the rut, bulls leave the cows and calves and either become reclusive or band together with other bulls. It is common to see large groups of bulls in the late fall and winter. In late spring, cows seek solitude for calving. At this time, yearlings from the previous year are aggressively driven away by the cows and forced to find new home ranges. Yearling or spike bulls have been shown to disperse very large distances after leaving their mothers. As new calves are born, the cycle of life begins again.

B. Management

Elk along with bighorn sheep were probably the most common game animals in Utah prior to settlement times. Indians, trappers, and pioneers all utilized elk as a source of food and clothing. Unrestricted hunting eliminated most of the elk in Utah by the end of the nineteenth century. Elk were first given protection in Utah with closed hunting seasons in1898.

Interstate transplants of elk occurred from 1912 to 1925 to reestablish elk to their native habitats. During this period elk were transplanted from Yellowstone National Park and released on the Fishlake, Oquirrh Mountains, Mount Nebo, Logan Canyon and Manti. A few elk were also obtained from Montana and released in Smithfield Canyon during this period. The last interstate transplant program was completed in 1925 when elk were released on Mount Timpanogas.

Elk have been transplanted to many other mountain ranges in Utah from instate sources of elk. Numerous transplants were conducted in the late 1970s and 1980s to mountain ranges in southern and eastern Utah.

Elk herds in Utah were managed by the Board of Big Game Control from 1925 until 1996. In 1996, the Board of Big Game Control was abolished and replaced with five Regional Advisory Councils and a Wildlife Board that regulate the management of all wildlife in Utah.

Elk were hunted under a limited entry type hunt until 1967 when the Board of Big Game Control adopted an "open bull" hunt strategy on most large elk units. Smaller elk units continued to be managed as "restricted permit" or "limited entry" type hunts. This hunting strategy continued until 1989 when a "yearling only" regulation was initiated on the two largest elk herds, the Manti and Fishlake. Yearling only was later replaced with a "spike only" regulation and expanded to

other units. Elk herds in Utah are current managed under a combination of "spike only", "any bull", and "limited entry" hunting regulations.

C. Habitat

Elk have an extremely variable diet and therefore live in a variety of habitats in Utah. Elk live in all of the mountains of Utah, but can also be found in the low deserts. Elk consume a combination of grasses, forbs, and shrubs. The percentage of each food type in the diet depends on its availability. Elk that live in grasslands consume mostly grasses while elk in shrublands may consume large quantities of browse. Food consumption is also related to the season of use. Elk eat mostly grasses and forbs during summer. In winter, they consume mostly browse.

Water is also an important part of elk habitat. Elk must have a source of available water on all seasonal ranges. Elk prefer to live within one half mile of a water source. However, some herds will travel longer distances for water.

Cover is an important component of elk habitat. Elk require some element of cover for escape and protection. Elk will move long distances to avoid disturbance from humans. Elk that are disturbed usually move to areas of dense cover for seclusion and security away from roads and people. Elk also use thick cover to escape winter storms as well as summer heat.

Elk are generally migratory animals that are known to travel large distances between summer and winter ranges. Travel corridors and migration routes are important components of elk habitat. Transitional ranges along these routes are important to elk populations. There are some herds of elk, however, that do not migrate and can be found in the same general area year-round.

D. Population Status

Elk herds have increased dramatically in Utah over the past 30 years (Figure 1). However, in the past 10 years, the elk herd has been relatively stable (Figure 2). The 2003 post-season population estimate for elk in Utah was just over 58,000 elk, well below the management objective of 68,400 elk (Table1). Elk herds were intentionally reduced in many areas of the state from 2000 to 2003 because of a persistent drought and poor range conditions. Elk herds will be allowed to expand to the population objective as the drought subsides and range conditions improve.

III. ISSUES AND CONCERNS

A. Habitat

Healthy and productive elk herds require good habitat. Both the quantity and quality of habitat are important to sustaining elk populations. Loss and degradation of elk habitat will likely result in fewer elk. Critical elk habitat is continuously being lost in many parts of Utah and severely fragmented in others due to human expansion and development. Urbanization, road construction, OHV use, and energy development have all impacted elk habitat. Mitigation for loss of elk habitat due to human causes is critical to maintaining and improving elk populations.

The quality of habitat is a major factor in determining elk herd size. Habitat improvement projects are essential to maintaining healthy herds and expanding populations where appropriate. When habitat improvement projects are completed, all ungulates benefit including elk, deer and livestock.

Habitat quality for elk has declined in some areas of Utah due to a variety of causes. Many high quality elk summer ranges such as aspen habitat has been gradually replaced by conifers. In addition, many shrub dominated winter ranges have been replaced by annual grasses or invasive weeds that are not beneficial to elk. Achieving elk population objectives will require a continued aggressive habitat improvement effort.

B. Population Size

In the past, elk herd size has been a source of considerable controversy. Most sportsmen would like to see more elk while some landowners and livestock operators would like to see less. Controversy about elk herd size has been greatly reduced since the establishment of elk unit management plans that specify the number of elk for each herd unit in the state. Involving landowners and livestock operators in helicopter elk counts has resulted in more confidence in population estimates. Elk have also become more tolerable to landowners since the creation of the CWMU and landowner permit programs allowing them to benefit from elk herds on their properties. Expenditures by sportsmen organizations and others for habitat improvement projects have also made elk more acceptable.

C. Hunting Issues

Utah currently has a high quality elk hunting program that is producing many older age bulls in the harvest. Numerous record book elk have been produced in Utah in recent years. Hunting issues dominated most of the discussions of the elk plan committee. The committee looked thoroughly at every aspect of Utah's elk hunting program. The committee agreed that Utah should continue with a program that provides a diversity of hunting opportunities including both general and limited entry hunting seasons. The committee also looked for ways to increase hunting opportunity for mature bulls without greatly reducing the quality of bulls in the harvest.

D. Poaching

Poaching has not resulted in major losses in elk populations. However, poaching of mature bulls has been significant and has reduced hunter opportunity in some instances. Units with few numbers of elk permits can be greatly affected by poaching. High grading of bulls may also be occurring on some units where hunters kill one bull elk and then abandon it to look for a larger bull. Continued law enforcement efforts are needed to maintain hunting opportunity.

E. Predator Management

Utah's elk populations have increased dramatically in Utah in the last 30 years despite the presence of several predators. Mountain lions, black bears and coyotes may all occasionally prey on elk. However, there are no known instances of predators causing elk herd declines in Utah.

Predator management occurs in some elk herd units due to declining or depressed mule deer populations on shared ranges. Predator management occurs when deer herds are chronically below population objectives. Elk herds may have benefited by this predator management that was initiated for deer and other ungulate species.

Recent studies in other states have implicated predation by grizzly bears and wolves as a reason for localized elk herd declines. As a result, the elk plan committee indicated that wolves and elk should be included in Utah's predator management policy.

F. Disease Issues

The impact of diseases on elk populations in Utah is not well understood. Elk herds have increased in Utah despite the presence of several diseases in other wild ungulates. These diseases include; blue tongue (BTV), epizootic hemorrhagic disease (EHD), chronic wasting disease, parasitic diseases and others.

Of special concern to elk management are three diseases that occur in elk other states, but not in Utah. These diseases are Chronic Wasting Disease (CWD), Brucellosis and Tuberculosis. CWD occurs in mule deer in Utah, but has not been detected in elk. Brucellosis and Tuberculosis occur in elk in some other western states, but not in Utah.

Utah is currently conducting surveillance for CWD in elk in areas where it is known to occur in mule deer. Utah has also done extensive testing for brucellosis in elk at Hardware Ranch and at Deseret Land and Livestock. Surveillance and research of disease issues is an important part of proper elk management. Utah needs to continue to be vigilant for disease problems.

G. Access Management

The use of off highway vehicles in Utah has dramatically increased in recent years. In 2003, there were more than 160,000 OHVs registered in Utah for use on public lands. Uncontrolled use of OHVs can cause damage to elk habitat and disturbance to elk populations.

Federal land management agencies are currently struggling with significant issues involving use of OHVs on public land. These agencies recognize OHV use as a legitimate use of public land, but they also recognize the potential problems associated with uncontrolled use. OHV use needs to be carefully planned and managed to prevent destruction of critical elk habitat and disturbance during critical seasons.

There is also an increased demand for more walk-in and horseback only access areas in the state. Limiting areas to foot and horse travel can limit hunter pressure and provide a high quality hunting experience. Opportunities should be sought to provide additional foot and horseback access only areas.

H. Depredation Issues

Depredation of private croplands continues to exist in some areas despite careful management of elk populations. In some localized areas depredation can be a significant problem. DWR has

committed substantial resources to address depredation concerns. There are numerous programs designed to assist land owners with depredation situations. Depredation problems need to be addressed in a timely and efficient manner so that landowners will better tolerate migratory populations of elk.

I. Private Land/ CWMU Issues

The value of private lands to the elk population cannot be overstated. Many critical elk habitats throughout the state are privately owned. Unfortunately, some of these private rangelands have been converted from elk habitat to housing developments, recreational properties, or other uses. Therefore, programs which provide incentives to private landowners to manage their properties for elk and other wildlife are critical to the success of the state's elk management program. Programs such as the Cooperative Wildlife Management Unit program and private landowner permit program currently provide incentives for landowners to manage for healthy habitat and elk population on their properties.

J. Winter Feeding

Supplemental feeding is often considered as a viable solution to a lack of suitable winter range. However, there is abundant evidence that the potential harm created by feeding elk can far outweigh the limited benefits. Winter feeding programs are generally very costly and can cause problems for elk including behavioral changes, range destruction, and expansion of disease problems. Research is currently underway to determine if current elk feeding programs in Utah can be reduced or eliminated without creating new problems.

It is also recognized that feeding may be necessary to sustain elk populations in emergency situations. It may also be necessary to temporarily feed elk to reduce depredation problems or to keep elk from impacting deer populations in extreme conditions. Winter feeding of big game in Utah is currently guided by a winter feeding policy (Appendix 1).

K. Competition

Competition occurs when two species use the same limited resource, and one of the two suffers in some way because of that use. Competition can potentially occur between elk and other ungulates such as livestock or deer. Competition would most likely occur where habitat is limited such as critical winter ranges or on the summer ranges of some drier units.

Concern has been expressed by some sportsmen and others that elk populations are responsible for declines in deer herds. There is currently little evidence to support that idea. Deer herd declines have occurred in areas where there are few or no elk and deer herd increases have occurred in areas where there are large elk populations.

There is also concern that elk and livestock compete for the same forage on shared ranges. Ranges where elk coexist with mule deer and livestock should be closely monitored to prevent over use and competition. Habitat improvement projects should target these areas to reduce competition and improve range conditions.

IV. USE AND DEMAND

Elk have become one of the most sought after big game animals in Utah. Geist in Deer of the World says the following of red deer, the elk of the old world:

> *It adorns coats of arms, crests and monuments and is the deer of legends, poetry, and songs. Castles were built in its honor and to display its antlers, and throughout history its hunting and management generated passions that transcended life, death, and reason…*

Sportsmen are no less passionate about elk and elk hunting in Utah today. Hunter demand and interest for limited entry permits has always been high and is increasing (Figure 3). In 2004, a total of 46,319 hunters applied for 1378 limited entry permits. That is an increase of 5,342 applicants over the previous year.

In addition to limited entry permits, Utah sold 34,193 general season elk permits for any bull and spike only hunts in 2004. The demand for general season elk permits has remained rather constant for the last five years (Figure 4).

Elk are also a high interest watchable wildlife species. Nearly everyone enjoys seeing elk in the wild. Units which produce large bulls are especially attractive not only to hunters but to wildlife watchers as well. Many thousands of hours and considerable money is expended each year in elk watching activities. At Hardware Ranch alone, 30,000 to 50,000 people participate in elk viewing each year. In addition, almost 1400 people participated in the Hardware Ranch elk festival in 2004.

V. CONCLUSION

The Rocky Mountain elk, Utah's state animal, is the second most abundant big game species in Utah. The state's elk herd has increased substantially in the last 30 years. Elk populations have become more stable since about 1995. The most important issues in elk management are habitat related. It is vital that the DWR, land managers, land owners, livestock operators, sportsmen and others work together to maintain and improve elk habitat. Disease issues can also become important to elk populations and need to be closely monitored.

Maintaining a diverse and high quality elk hunting program is important to Utah sportsmen. Hunter demand for opportunity to hunt mature bulls is high and increasing. How elk are hunted in Utah is matter of considerable interest and concern. Elk are also a high interest watchable wildlife species as evidenced by participation in viewing events. Proper management of Utah's elk herd will continue to provide expanded opportunities for hunting and viewing.

VI. ELK MANAGEMENT PLAN

A. Population Management Goal: Maintain healthy elk populations throughout the state that are managed within habitat capabilities and in consideration of other land uses.

Population Objective 1: Seek opportunities to increase population objectives in individual elk unit management plans to attain a total statewide population objective of 80,000 elk. Population objectives in unit management plans will not be increased without the recommendation of local committees established to review herd size and habitat objectives. Recommendations from these committees will then be forwarded to the Regional Advisory Councils and Wildlife Board for public input and approval. Population objectives in individual units will not be increased to the detriment of landowners, livestock operators or mule deer populations.

Implications: The total herd size objectives from all elk unit management plans is currently 68,400 elk. If local committees, Regional Advisory Councils and the Wildlife Board approve increases in herd size objectives on specific elk units to a total of 80,000 elk, it would represent a 17% increase in the statewide elk herd size objective.

Strategies:

a. Establish local committees to review individual herd unit management plans to see if herd size objective could be revised. These committees will consist of DWR biologists, land managers, private landowners, sportsmen, ranchers and others with interest in the plans.
b. Support objectives and strategies in this plan to protect elk habitat and mitigate losses.
c. Support habitat improvement projects that increase forage for both big game and livestock.
d. Utilize the Predator Management Policy where needed to help elk population achieve objectives including the management of wolves if necessary.
e. Investigate and manage disease outbreaks that threaten elk populations including Chronic Wasting Disease, Brucellosis, and Tuberculosis.
f. Utilize antlerless harvest as the primary tool to manage elk populations within herd size objectives and to target specific areas where range concerns or depredation problems exist.
g. Monitor all elk populations by helicopter survey on a three year rotational basis to evaluate herd size, calf production, herd composition, and habitat use.
h. Collect other elk population and habitat information as manpower and budgets permit on years units are not flown.
i. Utilize a standardized and reliable population model to evaluate herd size and population trends on an annual basis.
j. Support efforts to minimize highway mortality such as fencing and highway passage structures.
k. Implement research studies on specific herd units that are chronically below population objective to identify problems and recommend solutions.
l. Support incentive programs for landowners that will encourage elk populations on private land such as the CWMU and landowner permit programs.

m. Address all depredation problems in a timely and efficient manner to increase landowner tolerance of migratory elk populations in accordance with current laws, rules and policies.
n. Support law enforcement efforts to educate the public concerning poaching and reduce illegal taking of elk.

Population Objective 2: Achieve an average age of harvested bull elk within established objectives on all limited entry units to assure a balanced and diverse age structure of the bull segment of the population (Table 2).

Implications: The average age of harvested bull elk on most limited entry elk units is currently at or above objectives. Increased hunting opportunity will be created by managing within the objectives on all units.

Strategies:

a. Accurately monitor the age of harvested bull elk by collecting a statistically valid sample of teeth from all seasons on all limited entry units. Provide incentives to encourage hunters to submit teeth or implement mandatory tooth submission if necessary.
b. Accurately survey elk units by helicopter on a three-year rotation to provide additional information on the number of bulls and the age structure of the bull population.
c. Recommend limited entry bull permits on each unit to allow age class objectives to be met. If units fall below the objective, permits will be reduced. If units are consistently above the objective, permits will be increased.
d. Support law enforcement efforts to reduce the illegal kill of bulls.

Population Objective 3: Maintain a minimum post-season ratio of 15 bulls per 100 cows or 12 bulls per 100 antlerless elk on all "any bull" units.

Implications: All "any bull" units are currently meeting the minimum of 15 bulls per 100 cows. This increased objective will require additional management action on units that fall below 15 bulls per 100 cows or 12 bulls per 100 antlerless elk.

Strategies:

a. Monitor post-season bull/cow ratios by helicopter survey on all "any bull" units on a three year rotation.
b. Consider other management actions such as reduced season length, access management, and weapon or antler restrictions on units that fall below the objective.
c. Support law enforcement efforts to reduce the illegal kill of bulls.

B. Habitat Management Goal: Conserve and improve elk habitat throughout the state

Habitat Objective 1. Maintain elk habitat throughout the state by protecting existing critical elk habitat and mitigating for losses due to human impacts.

Implications: Loss of critical elk habitat will need to be minimized to achieve population objectives. Mitigation is essential for loss or degradation of all critical habitats due to human impacts.

Strategies:

a. Identify and characterize elk habitat throughout the state.
b. Work with land management agencies and private landowners to recognize and properly manage elk habitat, especially calving and wintering areas.
c. Minimize human disturbance in existing critical elk habitats.
d. Mitigate for losses of critical habitat due to human impacts and energy development.
e. Acquire additional important elk habitat to offset loss of habitat due to human encroachment.
f. Support programs that provide incentives to keep private rangelands as elk habitat.
g. Support the establishment of multi-agency OHV plans developed on a county level or planning unit level to prevent resource damage and to protect critical elk habitat.
h. Support and participate in efforts to establish and enforce OHV management in critical elk habitat.
i. Work with county, state, and federal agencies to limit the negative effects of roads by reclaiming unused roads, properly planning new roads, installing highway passage structures, and implementing temporary road closures during periods stressful to elk population.

Habitat Objective 2: Improve the quality of forage and vegetation on 100,000 acres of elk habitat with emphasis on calving habitat and upper elevation elk winter range by 2010.

Implications: Elk habitat will need to be improved throughout the state in order to sustain and increase unit population objectives. If habitat projects cannot be completed because of insufficient budget, environmental restrictions, or poor climatic conditions, population objectives will be difficult to reach.

Strategies:

a. Continue to support the division range crew in monitoring the long-term trend of critical big game ranges throughout the state.
b. Conduct an annual evaluation of range conditions to monitor range condition and trend as manpower and budget allow.
c. Work with land management agencies to identify and prioritize elk habitats that are in need of improvement.
d. Initiate broad scale vegetative treatment projects to improve elk habitat with emphasis on calving habitat and winter ranges.
e. Support and provide guidance for the Division's habitat initiative which emphasizes improving sagebrush-steppe and riparian habitats.
f. Seek opportunities to improve aspen communities on summer ranges which provides critical calving habitat.
g. Encourage land managers to manage portions of forests in early succession stages.

h. Emphasize improvement of upper elevation winter ranges to encourage elk to winter at higher elevation than mule deer.
i. Discourage the practice of winter feeding in most cases which can cause habitat degradation. Feeding of elk will be in accordance to division policy. Support research to determine how to reduce or eliminate current elk feeding programs.
j. Support land management agencies in the proper management of critical elk habitats.
k. Continue to support the conservation permit and habitat enhancement programs that provide critical funding for habitat improvement efforts.
l. Support the efforts of conservation groups to improve elk habitat.
m. Seek opportunities to obtain additional funding for habitat improvement projects.

C. Recreation Management Goal: Provide a diversity of high-quality hunting and viewing opportunities for elk throughout the state.

Recreation Objective 1: Maintain a diverse hunting program for elk that allows for both general season and limited entry hunting opportunities.

Implications: Utah currently has a diverse elk hunting program that provides for a variety of hunting interests.

Strategies:

a. Continue to recommend "spike only" and "any bull" general seasons as well as limited entry elk hunting opportunities.
b. Provide varied levels of quality by maintaining three categories of age class harvest objectives.
c. Continue to support the cooperative wildlife management unit and landowner permit programs that provides incentives for private landowners to manage for elk and their habitat.

Recreation Objective 2: Increase opportunities for hunting of mature bulls on units with limited entry permits without greatly reducing quality.

Implications: Implementation of the strategies listed below will result in increased hunting opportunity without greatly reducing quality.

Strategies:

a. Reduce the cap on spike bull units and consider reducing season length to allow more yearling bulls to advance to older age classes.
b. Maintain three categories of age class objectives and reduce the age class objective on the middle and highest categories.
c. Provide a late season rifle elk hunting opportunity away from the rut that will reduce harvest rates and thereby increase future hunting opportunity.
d. Continue to encourage primitive weapon opportunities that provide hunting opportunity with reduced harvest rates.

e. Provide a premium limited entry hunting opportunity that would allow a specified percent of the limited entry rifle hunters to hunt all seasons for a premium fee.
f. Seek opportunities to expand youth hunting opportunities on any bull units.

Recreation Objective 3: Increase opportunities for viewing of elk while educating the public concerning the needs of elk and the importance of habitat.

Implications: Increased viewing opportunities for elk should be should be accompanied by efforts to educate the public on the importance of habitat. Education should be a component of all viewing opportunities.

Strategies:

a. Install interpretive signs in elk viewing areas emphasizing the importance of habitat.
b. Produce written guides and brochures to educate the public on how and where to view elk and the importance of critical habitats.
c. Promote public tours and spring range rides on critical elk winter ranges to demonstrate the importance of winter range to elk.
d. Work with the media to promote interest and educate the public concerning elk and their habitat needs.

References and Additional Reading

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Table 1. Elk herd population estimates 2000-2004.

Unit	Plan Population Objective	Population Estimate post-2000	Population Estimate post-2001	Population Estimate post-2002	Population Estimate post-2003
Box Elder	675	330	330	330	330
Cache	2300	2,100	2300	1950	1950
Ogden	1200	700	670	650	650
Morgan, So. Rich	3500	3,500	3440	4500	4300
East Canyon	1000	600	750	800	1500
Chalk Creek	1900	2,400	2080	2200	2100
Kamas	650	650	400	500	600
North Slope, Summit	300	101	120	120	270
North Slope, W. Daggett	1300	923	1350	1400	950
North Slope, 3-Corners	500	236	450	420	435
South Slope, Yellowstone	5500	5600	5700	5300	5000
South Slope, Vernal/Diam Mtn	2500	3150	3000	2600	2470
Book Cliffs	7500	3000	3000	3200	2850
Nine Mile, Anthro	700	830	810	810	750
Nine Mile, Range Creek	1000	1850	1850	1780	1350
San Rafael	0	50	50	50	50
La Sal	2650	2650	2575	2650	2600
San Juan	1300	1300	1300	1130	1140
Henry Mountains	0	25	25	25	25
Central Mtns., Manti	12000	10300	11100	11100	8800
Central Mtns., Nebo	1450	2000	1650	1450	1530
W. Mountains, Currant Crk	1200	1270	1750	1440	1200
W. Mountains, Avintaquin	1000	1040	1300	1250	1150
W. Mountains, Central Reg	2850	2700	3550	3160	2850
Oquirrh/Stansbury	800	680	700	700	700
West Desert, Deep Creek	200	310	200	200	200
Southwest Desert	975	925	950	970	1400
Fillmore	1425	1000	1400	1400	1400
Beaver	950	400	300	300	300
Monroe	1800	1800	1150	1300	1430
Mt. Dutton	1500	1630	1400	1400	1635
Plateau, Fish Lake/1000 Lakes	4800	5400	1850	2700	3070
Plateau, Boulder	1500	1900	1350	1500	1540
Kaiparowitz	25	15	20	20	25
Paunsaugunt	200	50	50	60	80
Panguitch Lake	900	900	900	900	1065
Zion	300	300	300	300	300
Pine Valley	50	20	30	30	30
STATEWIDE TOTALS	68400	62635	60150	60595	58025

Table 2. Average age of harvested bull elk 2000-2004.

Hunt	Age Objective	2000	2001	2002	2003	2004
Box Elder, Pilot Mtn.	**5-6**	6.4	7.0	6.7	5.5	7
Box Elder, Grouse Creek	**3-4**	5.0	6.0	4.0	ND	5
Cache, North	**3-4**	3.3	3.4	4.4	4.0	3.8
Cache, South	**4-5**	5.4	4.7	6.4	6.3	4.7
Cache, Meadowville	**4-5**	ND	ND	ND	6	6
North Slope, Three Corners	**3-4**	4.5	3.1	4.3	4.6	5.1
South Slope, Diamond Mtn.	**4-5**	3.5	4.2	4.4	5.7	5.2
Book Cliffs, Bitter Creek/South	**4-5**	5.9	5.6	6.5	5.8	6.4
Book Cliffs, Little Creek	**5-6**	7.3	7.3	N/A	7.6	6.8
Nine Mile, Anthro	**4-5**	6.3	8.3	6.9	8.0	6.7
LaSal	**4-5**	4.0	4.2	5.8	6.3	5.7
San Juan	**5-6**	6.4	8.1	7.7	8	7.7
Central Mountains, Manti	**4-5**	6.4	5.9	7.0	7.1	6.7
Central Mountains, Nebo	**4-5**	ND	5.6	6.0	6.3	6.3
Wasatch Mountains	**4-5**	5.7	6.0	6.1	6.4	6.8
Oquirrh-Stansbury	**4-5**	4.5	4.5	5.0	5.7	5.9
West Desert, Deep Creek	**5-6**	7.3	6.5	7.8	6.5	6.9
Southwest Desert, Indian Peaks	**5-6**	7.5	7.9	8.1	7.2	7.7
Fillmore, Oak Creek	**3-4**	5.6	5.0	5.8	4.5	4.8
Fillmore, Pahvant	**5-6**	8.7	8.2	7.6	7.1	7.5
Beaver	**4-5**	ND	6.0	7.0	6.0	7.5
Monroe	**4-5**	6.2	6.0	7.5	7.1	7.2
Mount Dutton	**4-5**	4.8	5.7	6.5	5.9	6.2
Plateau, Fish Lake-1000 Lakes	**4-5**	6.7	7.2	7.2	6.8	6.3
Plateau, Boulder/Kaipairowitz	**4-5**	6.0	5.5	6.0	5.9	7.2
Paunsaugunt	**4-5**	5.8	6.2	6.6	4.8	5.5
Panguitch Lake	**4-5**	5.7	6.6	6.3	7.1	6.1

Figure 1. Elk Population Estimates 1975-1995

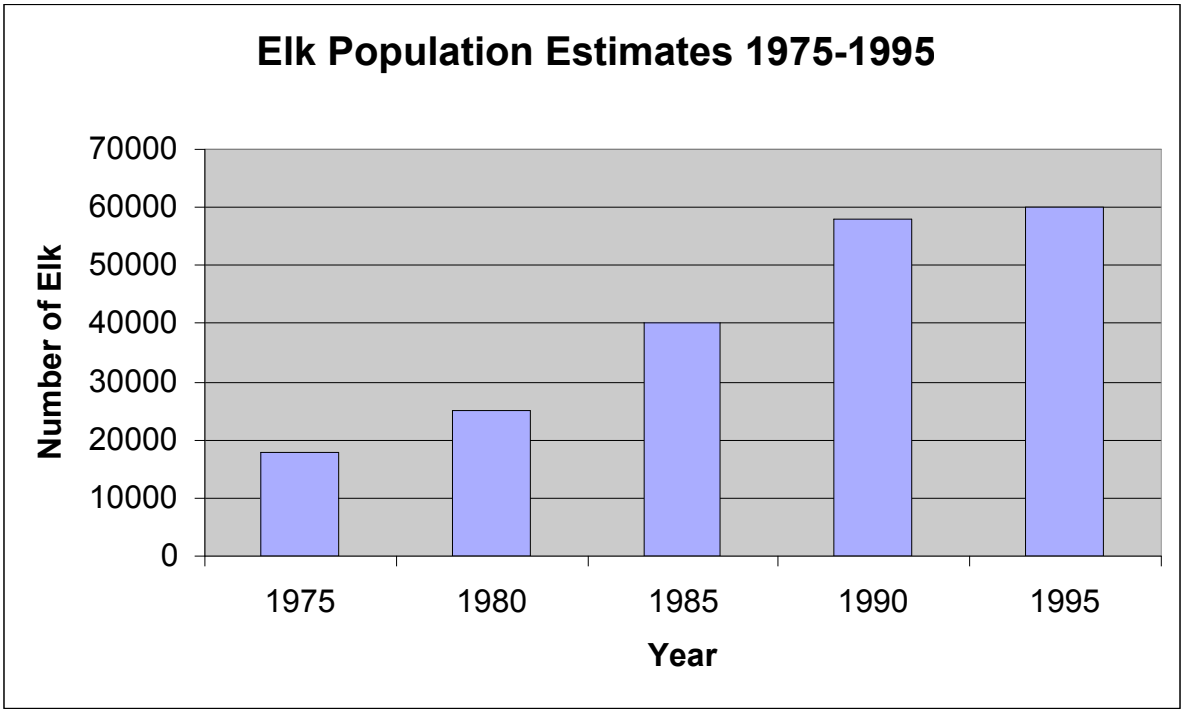


Figure 2. Elk Population Estimates 1995-2003

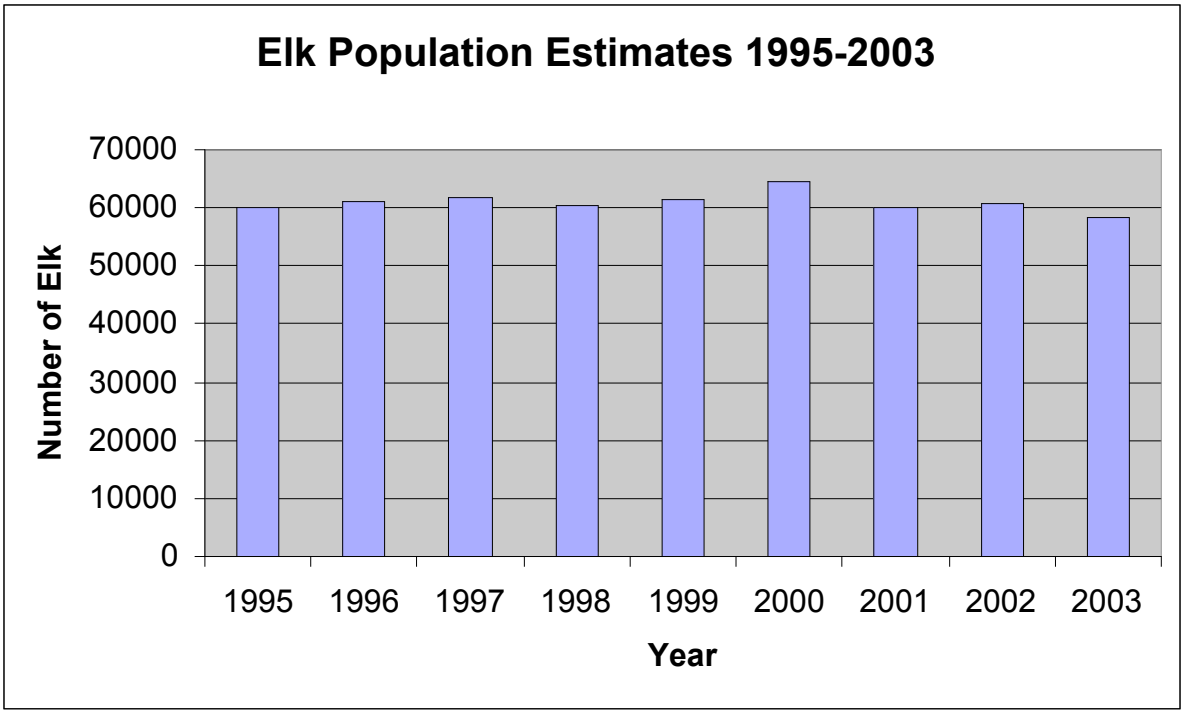

Elk Population Estimates 1995-2003
Number of Elk
70000
60000
50000
40000
30000
20000
10000
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
Year

Figure 3. Number of applications for limited entry elk permits 2000-2004.

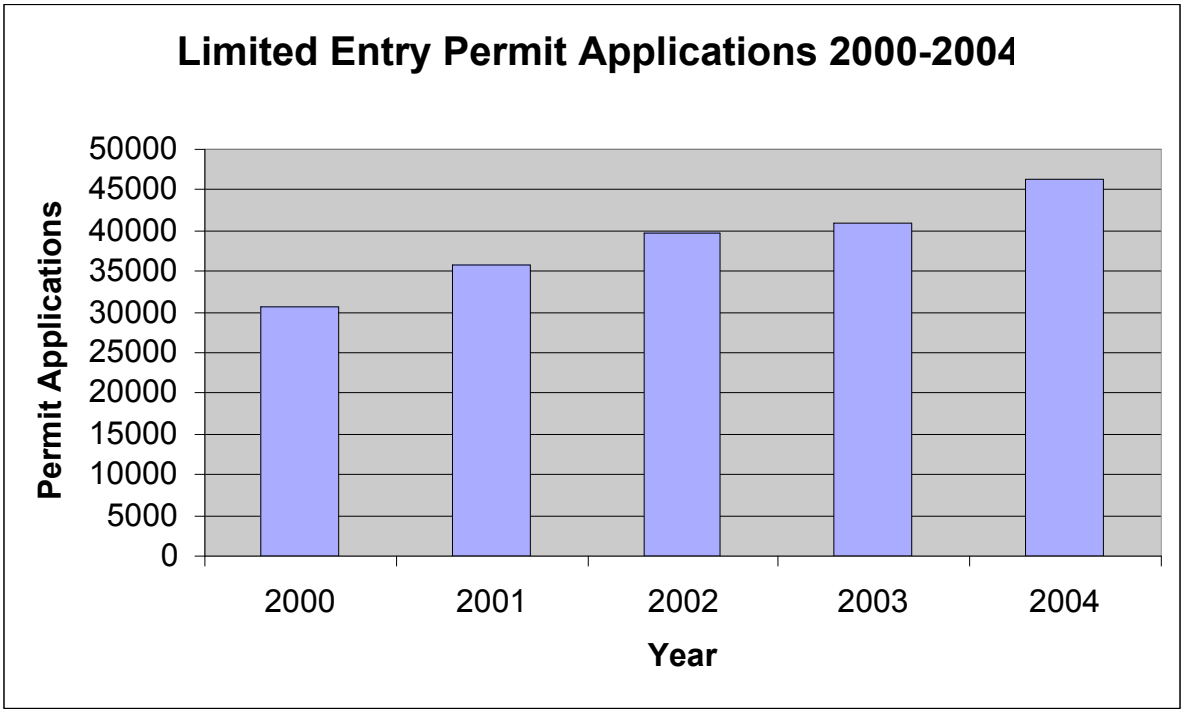
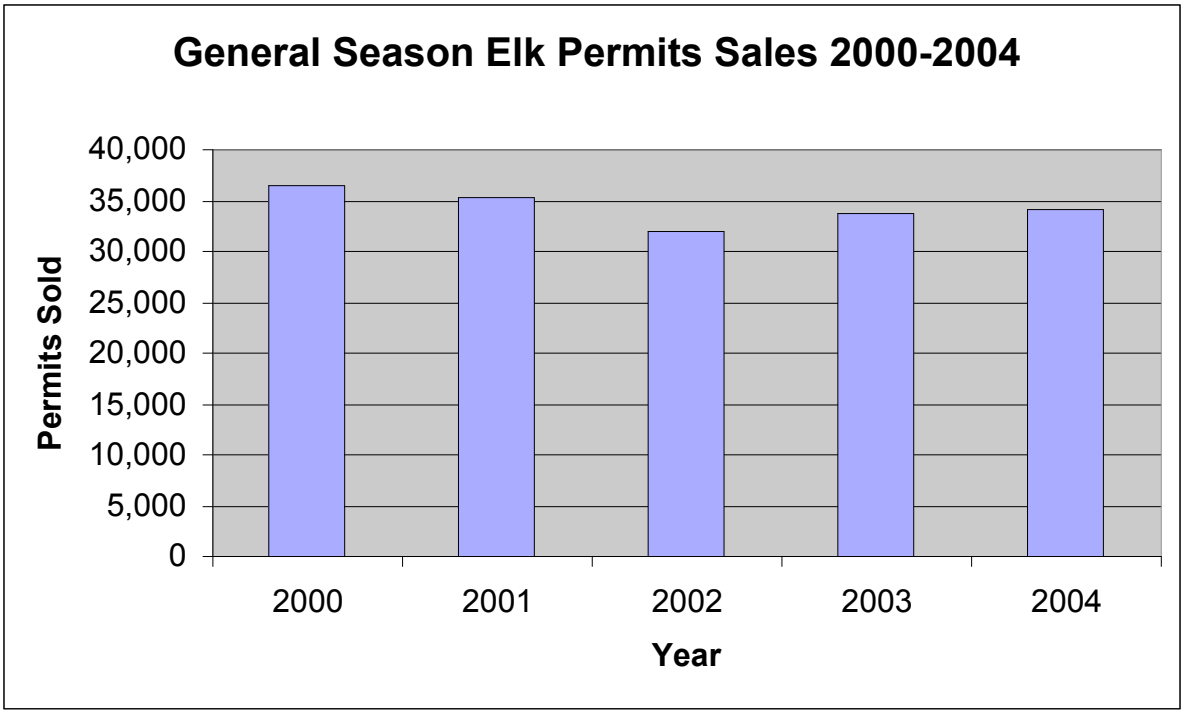


Figure 4. General season elk permit sales 2000-2004.


General Season Elk Permits Sales 2000-2004
Permits Sold
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
2000
2001
2002
2003
2004
Year

Appendix 1. Big game winter feeding policy.

STATE OF UTAH **DIVISION OF WILDLIFE RESOURCES** **WILDLIFE**	**NO. W5WLD-2**	**NO. PAGES 4**
	EFFECTIVE DATE: January 12, 2005	
	APPROVED	
SUBJECT: EMERGENCY BIG GAME WINTER FEEDING		
DISTRIBUTION: ALL DIVISION EMPLOYEES		

I. PURPOSE

The purpose of this policy is to establish the procedure and guidelines for emergency supplemental winter feeding of big game. The intent of this policy is to provide emergency feed for big game animals only during those periods of critical stress and not as a sustaining program that would carry larger game populations than the range can normally support.

II. POLICY

Continual supplemental winter feeding of big game is not a part of the Division=s routine management program because we recognize that in most cases big game populations should be maintained under natural conditions and by natural available forage. However, the Division also realizes that there are times when unusual weather conditions can create critical times of stress when winter forage becomes extremely limited, unavailable, or animals are forced into areas threatening public safety. Furthermore, we recognize that by providing the proper feed, only during these times of critical stress, the Division may improve the survival of those animals that may have otherwise succumbed to starvation.

The implementation of widespread feeding, which supports higher population levels than healthy habitat can sustain, is not only prohibitively expensive, but involves serious risks in terms of disease and habitat degradation (see Attachment). Under certain circumstances, supplemental winter feeding can be used as a tool to help accomplish the following, especially in the short-term:

1. control big game (primarily elk and deer) damage in agricultural areas, e.g. dairies, feed lots, orchards, until a better long-term solution can be sought;
2. promote public safety by drawing animals away from highways and urban areas;
3. maintain parent stocks of big game populations; and

4. relieve stress on populations in short-term severe emergencies.

Division feeding programs will be instituted only after specific recommendations of the Wildlife Section Chief, with final approval from the Director. Authorization for feeding will occur on a site-by-site basis only.

The Division will not participate in any emergency big game feeding program that occurs within the known range or use area of any big game population where chronic wasting disease, brucellosis or tuberculosis has been detected.

III. PROCEDURES

A. Approval Procedure

Emergency Division feeding programs will be allowed only in accordance with a feeding proposal prepared by the region, reviewed by the Wildlife Section Chief, and approved by the Director. Generally, the feeding program will be confined to those situations described in the previous section.

B. Feeding Proposal

A feeding proposal must address the following issues:

1. Why feeding is necessary (emergency /unusual circumstances).
2. Number of animals and length of time.
3. Estimated cost.
4. Type of feed to be used (weed-free material is required).
5. Whether the proposed emergency feeding areas are within the known range or use area of any deer or elk population where chronic wasting disease, brucellosis, or tuberculosis has been detected.
6. Desired benefits.
7. Extent of monitoring.
8. Description of outreach actions to be taken to explain to public what is being done, why, and planned future actions.
9. Future actions to prevent the feeding need from recurring, e.g. hunts, fencing, habitat improvement projects, etc.

C. Division Discourages Private Feeding Programs

The Division strongly discourages private individuals and/or organizations from entering into feeding programs, except in extreme emergencies. In such emergencies, the public will be asked to join with the Division in emergency feeding. It may become necessary to obtain authority from the Wildlife Board to regulate private feeding programs that are negatively impacting big game populations.

D. Funding

The availability of funding will be a determining factor in approving emergency feeding programs. In the event of any extensive feeding initiative, funding for big game emergency winter feeding programs will, of a necessity, be sought outside the standard Division budget.

IV. REVISION DATE

This policy shall be reviewed on or before January 12, 2010.

Additional Information

For more information along with a significant scientific literature summary please refer to:

deVos, J.C., M.R. Conover, and N.E. Headrick. 2003. Mule deer conservation: Issues and management strategies. Jack H. Berryman Institute Press. Logan, UT.

AFeeding Wildlife...Just Say No@. 2000. A Wildlife Management Institute Publication. *Contact: WMI Publications, P.O. Box 34646, Washington, D.C. 20043 Telephone: (202) 371-1808*

WAFWA, 2003. Mule deer - changing landscapes, changing perspectives. WAFWA mule deer working group.

W5WLD-2.pol

Winter Feeding Policy Attachment

Winter feeding is not the simple act of kindness that many perceive it to be, and in fact, can be a great detriment to the welfare of Utah=s big game herds if not considered carefully.

Health problems associated with animals concentrating in feeding areas include higher incidences of eye and respiratory infections. Infection rates of chronic wasting disease and brucellosis have also been shown to be higher in artificially fed populations of deer and elk. Reproduction in some herds that are fed every winter; such as the Jackson, Wyoming elk herd, is dramatically lower than Utah=s herds-at least partly due to communicable disease.

Range damage occurs in areas around feeding sites because animals continue to eat other forages even when they are being fed. Where this feeding occurs every year, natural winter forage is often overused and may never recover.

Depredation on nearby private lands can be caused or intensified by establishing feeding sites since animals concentrate and usually increase each year.

Intense competition for food in limited space at feeding sites often causes higher death rates for fawns and calves than under more natural dispersed conditions.

Expense is extremely high in feeding programs in comparison to the relatively few animals it may help. For example, the cost to feed alfalfa pellets to one deer for 60 days would be approximately $45 at 2005 prices. The labor and equipment to distribute the feed could exceed the cost of the feed. The costs to feed elk are approximately double the costs for deer.

Why private citizens are discouraged to feedB

The Division generally discourages private citizens from feeding big game to avoid causing increased problems for deer. For instance, it is known that a steady diet of certain types of feed may actually cause harm to deer. Also, once a feeding program is begun, animals must be fed until they are ready to move back to natural forage.

Keeping big game wild-

Supplemental feeding can create significant behavior alterations like disruption or abandonment of long-term migration patterns. And though nature may seem cruel, it is perfectly normal for 10-15 percent of deer and elk to not survive a mild winter; more die during a harsh winter. Animals ill-equipped to survive succumb to starvation, accidents, predators, exposure, disease, or parasites. Feeding may save a few from starvation but does little or nothing to halt losses from other causes.