ELK UNIT MANAGEMENT PLAN
Elk Herd Unit #16
CENTRAL MOUNTAINS
May, 2012

BOUNDARY DESCRIPTION

Utah, Carbon, Emery, Sevier, and Sanpete counties – Boundary begins at the junction of US-6 and I-15 in Spanish Fork; southeast on US-6 to Price and SR-10; south on SR-10 to I-70; west on I-70 to US-50 in Salina; northwest on US-50 to I-15 in Scipio; north on I-15 to US-6 in Spanish Fork.

LAND OWNERSHIP

Approximately 101,226 of the private acres on this unit are managed as Cooperative Wildlife Management Units (CWMU) comprising portions of summer, winter, and yearlong ranges.

Table 1a. RANGE AREA AND APPROXIMATE OWNERSHIP* SUBUNIT 16A (NEBO)

	Spring/Fall Range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	147970	84			36390	19
Bureau of Land Management	866	<1			23144	12
Utah State Institutional Trust Lands	92	<1			6021	3
Private	15438	9			101165	54
Utah Division of Wildlife Resources	11716	7			22372	12
TOTAL	176082	100	0	100	189092	100

Table 1b. RANGE AREA AND APPROXIMATE OWNERSHIP* SUBUNIT 16B AND C (MANTI)

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Bureau of Land Management	8447	4	1054	<1	111,282	16
Private	64292	30	100,262	19	165180	23
Utah State Institutional Trust Lands	1572	1	3539	1	85913	12
Forest Service	134218	62	429328	80	295502	42
Utah State Parks	78	<1	17	<1	386	<1
Utah Division of Wildlife Resources	6269	3	2608	<1	45733	6
TOTAL	214878	100	536808	100	703996	100

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities including hunting and viewing. Consider impacts of the elk herd on other land uses and public interests including private property rights, agricultural crops and local economies. Maintain an elk population consistent with the available range resources and which is in balance with other range users such as domestic livestock, other big game and the need for watershed protection.

Maintain and enhance existing elk habitat through vegetative manipulation, sound domestic grazing practices, and other management techniques that will meet habitat objectives. Minimize and mitigate any habitat losses, degradation, or fragmentation coming from oil and gas development, road construction, urban expansion, increased recreation and other impacts.

Continue to provide spike-only general season, extended archery any bull seasons (Sanpete Valley) as well as limited entry bull elk hunting opportunities.

UNIT MANAGEMENT OBJECTIVES

Habitat

Protect and maintain existing habitats that are functioning properly. Enhance elk habitat on a minimum of 20,000 acres during the next 5 years through direct range improvements. This will include the following specific objectives.

- Remove pinion-juniper encroachment into winter range sagebrush parks and summer and transitional range mountain brush communities. Approximately 2,000 acres per year will be targeted using primarily mechanical treatments.
- Cooperate with federal agencies to improve summer range forage production and forest health by actively managing vast acreages of beetle-killed conifer stands. This may include salvage logging, prescribed fire, and other techniques. At least 1,000 acres per year will be targeted.
- Coordinate with federal agencies to protect and enhance aspen communities on summer habitats. Management techniques that assure a diverse age structure of aspen communities will be utilized.
- Pursue protection of crucial habitats to development through conservation easements.
- Minimize and mitigate for habitat loss and displacement of elk as a result of coal, oil and gas development and urban expansion.
- Cooperate with livestock operators and federal agencies to improve range management practices in such a way to optimize both livestock and elk forage production and thus minimize conflicts.

Population

Target Winter Herd Size – Maintain a wintering elk population of 13,450 elk (computer modeled estimate). This is the same objective as the previous plan. Elk will be distributed among the following sub-populations:

Manti – 12,000 elk
Nebo – 1,450 elk

The elk population objective will be evaluated each time the unit management plan is up for renewal. If conditions change due to a sustainable improved winter habitat then the population objective may potentially increase. In this management unit however, desired elk population levels are also guided by public and political tolerance of elk. This influences population objective recommendations as well as habitat conditions.

Herd Composition –Maintain an average age of harvested bulls between 5.5-6.0 years old on the Manti Subunit and 6.5-7.0 on the Nebo Subunit.

Utilize general season spike-only hunting and limited entry any bull hunting to accomplish herd composition objectives. Utilize extended archery any bull hunting to address depredation/public safety issues in Sanpete Valley.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Habitat Conditions: There are 64 permanent range trend study locations on the Central Mountains Manti Subunit and an additional 19 transects read on the Nebo Subunit. The Nebo and the western portions of Manti subunits were last read in 2007. The eastern portion of the Manti Subunit was read in 2009. Most range trend locations target winter ranges for deer but in many cases show trends in elk winter range productivity. Most range trend sites across the unit show declining trends in browse density and cover, particularly on the west side of the Manti. This was due in part to a large die-off of shrubs in this area between 2002 and 2004. Additionally, there are localized areas that get high utilization by deer and elk that contribute to declines in browse production. Grass and forb trends have been stable to slightly declining across the unit over the past 15 years. The average of all of the DCI scores on elk winter ranges suggest the winter elk habitat is in Fair condition.

Cooperative DWR/BLM/USFS spring range rides have shown relatively stable elk utilization patterns on winter ranges with some localized areas being over utilized. Most winter ranges should benefit from a mild winter in 2011-12 with very few deer and elk on typical wintering areas.

Elk summer habitat appears to be in stable condition. Domestic sheep graze much of the summer range on the unit. Although there may be localized competition between sheep and elk, stocking rates are well below historical averages. Summer ranges are also impacted by fairly high recreation use during the summer months. This tends to displace elk from portions of important summer range.

When looking at elk population objectives, the Division has taken into account barriers which include, 1) depredation issues 2) winter range that is beyond division control 3) social and political factors 4) current range improvements 5) future range improvements and 6)overall range health. As these factors change, the Division will adjust the population objective as needed.

Factors limiting elk populations: Drought is the primary factor that impacts elk populations. Forage production and vigor is severely limited during drought years. Current and future oil and gas development as well as urban expansion will continue to fragment existing elk habitat and displace elk to less productive areas. Conflicts between elk and domestic livestock operators are also a primary limiting factor. This can be a volatile sociopolitical issue. This occurs in the form of crop depredation in farmlands as well as perceived competition for forage on rangelands. Elk numbers may be maintained at levels below the stated objective if excessive levels of crop depredation or forage consumption on private rangelands occur.

Habitat projects completed and proposed: Federal agencies, private landowners and the UDWR have cooperated on habitat improvement projects targeted at various wildlife species that have also benefited elk. Below is a list of current and future projects.

Table 2. Proposed and completed habitat projects on the Central Mountains Unit

Completed projects and acreage– 2007 through 2011		**Proposed projects and acreage– 2007 and beyond**	
Black Dragon Bullhog, 2007	2887	Gentry Prescribed Fire	3200
Gordon Creek Rollerchop, 2007	200	Nelson Mountain Prescribed Fire	3000
North Spring Harrow, 2007	679	South Horn	2000
Wildcat Rollerchop, 2008	150	Rio Dancer Prescribed Fire	6000
Danish Bench Lop and Scatter	592	Rolfson Fuels Reduction Project	650
Horse Bench Lop and Scatter, 2009	431	Shalom Prescribed Fire	1800
Joe's Valley Bullhog, 2009	1296	Swazey Phase 2	17,000
Mohrland PJ Rollerchop, 2009	746	Manti Fuels Project	2500
Scofield Harrow, 2009	152	Levan Prescribed Fire	1000
Wildcat Knolls Sagebrush Project	810	Old Pinery PJ	1262
Wildcat Knolls Phase 2	600	Willow/Ephraim Prescribed Fire	1000
Swasey Phase 1 Bullhog	1600	Pines Phase 2	6000
Price Wet Meadow Harrow Project, 2011	275	Trail Mountain Winter Range	500
Hiawatha Bullhog Project, 2011	290	Potters Prescribed Fire	250
Upper Fish Creek Prescribed Fire, 2010	2,000	Chris Creek Pinyon/Juniper Removal	500
Jungle Prescribed Fire, 2010	2,000	Manti Face Lop and Scatter	850
Dairy Fork Habitat Improvement	1648	Maple Canyon WMA Habitat Improvement	870
Big Hollow Bullhog	363	Dairy Fork Habitat Improvement	240
Santaquin WMA Habitat Impr.	75	Chriss Creek P J removal	965
Willow Creek Habitat Impr.	50	Canal Canyon Project	400
Twelve Mile Habitat Impr.	2320	Dry Canyon Habitat Improvement	500
6-Mile Habitat Impr.	785	Black Hills WMA Habitat Impr.	20
Salt Creek Wildfire Rehab.	7700		
Mill Fork Wildfire Rehab	485		
Black Hills Lop and Scatter	875		
Big Hollow Juniper Thinning	510		
Lasson Draw sagebrush enhancemnt	200		
Fountain Green WMA Hab. Impr.	275		
Levan Habitat Improvement	770		
White Hills Revegetation	30		
Chriss Creek P J removal	500		
Total Acreage	**28,407**	**Total Acreage Planned**	**53,207**

Population

In recent years the Central Mountains, Manti subunit has been allowed to slowly increase toward the population objective of 12,000 elk. The Central Mountains elk herd was last surveyed in January 2010. Aerial helicopter surveys resulted in a total of 1144 elk being counted on the Nebo Subunit. Recent model estimates the population at 1100, which is below the current population objective for this subunit. A total of 8604 elk were counted on the Manti Subunit resulting in a population estimate of 10,800 elk. The current estimated elk population on this subunit is 12,600 elk, which is above objective. There were 21 bulls per 100 cows observed in aerial surveys. Average calf production based on summer preseason classification counts has been 51 calves per 100 cows over the past 5 years.

Limited Entry bull harvest on the unit has steadily increased over the past 5 years, while general season spike harvest has been relatively stable. The average age of harvested

limited entry bull has slowly declined but is still above the objective of 5.5-6.0 year old bulls. Antlerless harvest trends show conservative harvest to allow the overall population to reach the population objective of 12,000 elk. Antlerless harvest beginning in 2012 will be much more aggressive.

Table 3a. Trends in Harvest Central Mountains, Nebo Subunit

YEAR	LE BULL HARVEST (public and CWMU)	GEN.SEASON SPIKE HARVEST.	AVE. AGE OF HARVESTED BULLS	ANTLERLESS HARVEST
2007	76	95	6.9	201
2008	86	79	6.1	155
2009	88	112	5.8	227
2010	72	132	5.7	132
2011	100	67	6.1	78

Table 3b. Trends in Harvest Central Mountains, Manti Subunit

YEAR	LE BULL HARVEST (public and CWMU)	GEN.SEASON SPIKE HARVEST.	AVE. AGE OF HARVESTED BULLS	ANTLERLESS HARVEST
2007	242	618	7.2	663
2008	276	479	6.3	705
2009	290	566	6.9	700
2010	312	584	6.4	809
2011	330	380	6.1	615

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

- Loss of winter range due to coal, oil and gas development and urban expansion.
- Drought impacts to rangeland forage condition and abundance.
- Loss of winter ranges and summer shrub habitats to pinion-juniper encroachment and shrub decadence.
- Large expanses of beetle killed conifer stands are providing little elk habitat value and are susceptible to large-scale fires.
- Competition for forage with domestic livestock on both summer and winter ranges.

Population

- Public resistance to increasing numbers of bull hunting permits to reduce mean age of harvest.

Other Barriers

- Agricultural depredation by elk on privately owned crops and rangelands. Elk numbers may be maintained at levels below the stated objective if excessive levels of crop depredation or forage consumption on private rangelands occur.
- Weather Extremes - Periodic climatic extremes, especially severe winters or long term drought conditions, can cause great fluctuations in overall population size, sex ratios, and age structure.
- Other Mortality Causes – disease outbreaks, highway mortalities, poaching, etc.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

- Continue to monitor permanent range trend studies throughout the winter range.
- Annually inspect rangeland vegetative community impacts and health through cooperative DWR/BLM habitat assessment surveys that include ocular field assessments, utilization transects, and range rides.
- Continue to develop and implement Habitat Management Plans for UDWR owned properties on the unit.

Actions to Remove Habitat Barriers

- Cooperate with federal agencies to establish natural fire policies that will allow wild fires to burn in beneficial and non-threatening areas to recover lost elk habitat.
- Continue to improve forage production on winter and other shrublands by aggressive pinion-juniper removal.
- Cooperate with federal agencies to assure a diverse age structure of aspen communities on summer habitats.
- Pursue Conservation Easements on critical parcels of private property to protect important elk habitat from development.
- Work with oil and gas interests to attempt to protect key areas and minimize or mitigate for losses due to development.
- Cooperate with federal agencies to develop access management plans to enhance elk habitat value. This may include seasonal road closures or vehicle restrictions.
- Involve livestock operators in spring range rides and assessments in an effort to keep good relationships and address any potential concerns about competition between livestock and elk.

Population

Monitoring

Population Size - The population is monitored using harvest data, aerial trend counts and classification, preseason classification, and survival estimates.

Bull Age Structure - Monitor age class structure of the bull population through the use of annual preseason ground classification and winter aerial classification. Average age of harvest will be determined by tooth age data from L.E. harvest.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the mandatory harvest reporting for the L.E. hunts. Target population size will be maintained through the use of antlerless harvest using a variety of harvest methods and seasons.

Management Actions to Remove Population Barriers

- Target depredation hunts to address elk herds that habitually move into agricultural areas.
- Cooperate with private landowners to fence all haystacks and provide compensation when necessary in high winter depredation areas.
- Utilize antlerless hunts to address range concerns in specific areas.
- Utilize depredation bull hunts and extended archery season options to address depredation and public safety issues by bulls according to DWR depredation policy.
- Cooperate with UDOT to pursue funding to reduce vehicle mortalities.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 17
Wasatch Mountains
May, 2012

BOUNDARY DESCRIPTION

Carbon, Salt Lake, Summit, Wasatch, Duchesne, Utah counties - Boundary begins at the junction of I-15 and I-80 in Salt Lake City; east on I-80 to US-40; south on US-40 to SR-32; east on SR-32 to SR-35; southeast on SR-35 to SR-87; south on SR-87 to Duchesne and US-191; south on US-191 to US-6; northeast on US-6 to I-15; north on I-15 to I-80 in Salt Lake City.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP SUB-UNIT 17A

Sub-Unit 17a	Spring-Fall		Summer Range		Winter Range		Yearlong range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	406,817	77	75,006	83	58,373	38	2,221	18
Bureau of Land Management	472	>1	0	0	2,354	2	0	0
Utah State Institutional Trust Lands	669	>1	0	0	2,744	2	0	0
Native American Trust Lands	1,952	>1	768	>1	0	0	0	0
Private	105,054	20	13,737	15	71,081	46	9,523	75
Department of Defense	0	0	0	0	0	0	0	0
USFWS Refuge	0	0	0	0	0	0	0	0
National Parks	235	>1	0	0	0	0	0	0
Utah State Parks	11,917	2	0	0	7,524	5	0	0
Utah Division of Wildlife Resources	431	>1	521	>1	12,015	8	929	7
Water	87	>1	71	>1	0	0	0	0
TOTAL	**527,634**	**100**	**90,102**	**100**	**154,090**	**100**	**12673**	**100**

RANGE AREA AND APPROXIMATE OWNERSHIP SUB-UNIT 17B&C

Sub-Unit 17b&c	Spring-Fall		Summer Range		Winter Range		Yearlong range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	79,259	62	65,968	52	24,470	7	20,360	21
Bureau of Land Management	0	0	6,751	5	2,294	>1	8,729	9
Utah State Institutional Trust Lands	21,949	17	3,715	3	6,064	2	2,466	3
Native American Trust Lands	0	0	42	>1	62,970	18	9,107	9
Private	19,372	15	32,019	25	186,467	53	41,745	43
Department of Defense	0	0	0	0	0	0	0	0
USFWS Refuge	0	0	0	0	0	0	0	0
National Parks	0	0	0	0	0	0	0	0
Utah State Parks	0	0	0	0	1,150	>1	0	0
Utah Division of Wildlife Resources	6,135	5	19,273	15	70,780	20	15,244	16
Water	290	>1	0	0	0	0	0	0
TOTAL	**127,005**	**100**	**127,768**	**100**	**354,195**	**100**	**97,650**	**100**

UNIT MANAGEMENT GOALS

- To manage and sustain a healthy population of elk.
- To provide a variety of high quality recreational opportunities for viewing and harvesting elk.
- To maintain an elk population consistent with the available range resources.
- To strive for protection of key habitats with continued habitat improvements to mitigate losses by development.
- To continue to provide spike only general season and limited entry elk hunting opportunities. Limited entry hunts will be divided as archery, any weapon, muzzleloader and premium hunts.

UNIT MANAGEMENT OBJECTIVES

Habitat

Within the next five years, enhance forage production on a minimum of 20,000 acres of elk habitat, through direct range improvements to maintain population management objectives. Pursue protection of an additional 20,000 acres of elk habitat through Conservation Easements, CWMUs, Conservation agreements, etc.

Population

Target Winter Herd Size –5400 wintering elk distributed in the following subpopulations:

Wasatch Mountains West	2600
Currant Creek	1200
Avintaquin	1600

Avintaquin Subpopulation- During the fall of 2011 a committee was organized in accordance with the Statewide Elk Management Plan. The purpose of the committee was to discuss a possible increase to the Avintaquin subunit population objective. The committee met in early December 2011 and voted to raise the objective from 1250 to 1600 wintering animals. However, if U.S. Forest Service cattle grazing permittees have their grazing AUM's reduced in the future do to over grazing by elk the committee will reconvene to reevaluate the population increase.

Herd Composition - Maintain a three year average age of 5.5-6.0 years of harvested bulls. Winter aerial counts are scheduled every three years and are dependant upon operating budgets and weather conditions.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Overall, range conditions for elk are good on this unit. Some wintering areas suffered a sagebrush die off due to the seven year drought that ended in late 2004. Since 2005 there has been several wet years, which resulted in good grass production that benefited elk. The majority of the Range Trend monitoring sites on this unit are in fair to good condition.

When looking at elk population objectives , the Division has taken into account barriers which include, 1) depredation issues 2) winter range that is beyond division control 3) social and political factors 4) current range improvements 5) future range improvements and 6)overall range health. As these factors change, the Division will adjust the population objective as needed.

Several factors impact the ability of this unit to support larger elk populations, including: agricultural depredation, urban encroachment, competition for forage with domestic livestock, over utilization of winter browse in areas of heavy concentration of deer and elk during hard winters.

Completed habitat improvement projects

Over the past decades many habitat improvement projects have occurred that benefit elk. These include; both prescribed fire and wildfire, pinyon-juniper chainings, conifer thinning, etc. This table lists specific habitat improvements & protections that have occurred in the last ten years on Unit 17.

Completed Project	Agency	Acres	Cooperators
Coyote Draw PJ lop & scatter	DWR	1,220	DWR
Cut Off Road PJ lop & scatter	DWR	415	DWR
East Side Hwy 208 anchor chaining	DWR	450	DWR
Golden Stairs anchor chaining	DWR	185	DWR
Grey Wolf Mtn anchor chaining	DWR	600	DWR
Horse Ridge PJ treatment	DWR	700	DWR
Lake Canyon aerator treatment & seeding	DWR	600	DWR

Lake Canyon PX conifer burn	USFS	500	USFS, DWR
Lower Red Creek – sagebrush seeding	DWR	600	DWR
Lower Red Creek Dixie Harrow	DWR	325	DWR
Rabbit Gulch anchor chaining	DWR	190	DWR
Rabbit Gulch PJ lop & scatter	DWR	1,400	DWR
Rabbit Gulch PJ lot & scatter	DWR	1,100	DWR
Rabbit Gulch sec 9 PJ anchor chaining	DWR	180	DWR
Sandwash/Sink Draw Cons. Easement	DWR	4,000	DWR, RMEF, SFWH, LIP
Sandwash/Sink Draw Cons. Easement	NRCS	5,000	NRCS, DWR
Santaquin Draw anchor chaining	DWR	1,800	DWR
Skitzy Canyon anchor chaining	DWR	730	DWR
Stink Draw seeding	DWR	500	DWR
Strawberry River prescribed burn	DWR	4,000	DWR, BOR
Strawberry River property acquisition	BOR	1,700	BOR, CUPMC, DWR
Trout Creek sagebrush treatment	USFS	200	USFS, DWR
Two Bar Ranch PJ thinning & lop & scatter	DWR	1,300	DWR
Wallsburg Fire break seeding	DWR	100	DWR
Wallsburg shrub planting	DWR	500	DWR, SFWH
Wildcat Canyon property acquisition	BOR	1,700	BOR, CUPMC, DWR
Horse Ridge lop & scatter	DWR	500	DWR
Tabby Mt. Santaquin Draw chaining	DWR	238	DWR
Tabby Mountain lop & scatter	DWR	600	DWR
TOTAL		**31,333**	

Proposed Habitat Projects

Following is a partial list of proposed habitat enhancement projects on unit 17. Others will be added as opportunities arise.

Proposed Project	Agency	Acres	Cooperators
SITLA Tabby Mtn Block Acquisition/Easement	DNR	28,000	DNR, DWR, SFWH, RMEF, MDF, etc..
Sandwash sagebrush restoration	DWR	92	DWR
Buck Knoll anchor chaining	DWR	400	DWR, B.B.C., Berry P.
Bartholomew Canyon vegetation treatment	USFS	1,000	USFS, DWR
Blacktail Mountain west PJ treatment	DWR	440	DWR
Reservation Ridge burn	BLM	85	BLM, DWR
knapweed Wallsburg control	DWR	830	DWR
Springdell South vegetation treatment	USFS	2,500	USFS, DWR
Skitzy lop & scatter	DWR	390	DWR
South Strawberry sagebrush treatment	USFS	310	USFS, DWR
Price Canyon burn	BLM	4,000	DWR, BOR
Blacktail Mountain east PJ treatment	Ute Tribe	1,400	Ute Tribe, DWR
Weeint Hollow anchor chaining	Ute Tribe	2,000	Ute Tribe, DWR, B.B.C.
Wallsburg shrub plantings	DWR	500	DWR, SFWH
$1200 ridge Prescribed burn	USFS	1,200	USFS, DWR
Reservation Ridge thinning	USFS	1,000	USFS, DWR
Indian Canyon Prescribed burn	USFS	500	USFS, DWR
Reservation Ridge – Tub Ridge burns	USFS	4,000	USFS, DWR
TOTAL		**48,647**	

Population

The last aerial census was taken January 2011 where 6,478 elk were observed on the unit. The estimated population would include a 20% increase of non-observed elk equaling 7,774. Any elk over the management plan objective of 5400 are removed from the population, thereby, keeping the herd stable. Average calf:cow ratios for the unit are 54:100. The five year average for the spike bull harvest is 436 and 340 limited entry bulls were taken in 2010.

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

- Loss of winter range due to development.
- Loss of winter range due to sagebrush die off and resulting cheatgrass expansion.
- Poor range conditions during drought years.
- Conifer and PJ invasion of grasslands and browse areas critical for wildlife.
- Loss of winter range due to expanding oil & gas development.

Population

- Resistance to increasing L.E. bull harvest to reduce the mean age of harvest.
- Difficulty in harvesting antlerless animals for population control on subunit 17c (Avintaquin) due to elk moving onto Ute Tribal lands.

Other Barriers

- Agricultural depredation by elk on privately owned crops and rangelands. Elk numbers may have to be maintained at levels below the stated objective if excessive levels of crop depredation or forage consumption on private rangelands occur.
- Weather Extremes - Periodic climatic extremes, especially severe winters or long term drought conditions, can cause great fluctuations in overall population size, sex ratios, and age structure.
- Other Mortality Causes - Occasionally, other sources of elk mortality such as unlawful harvest, highway mortality, winter loss, disease

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

- Continue to monitor permanent range trend studies located throughout the winter range.
- Annual habitat assessment surveys.
- Continue to develop and implement Habitat Management Plans for each of the DWR Wildlife Management Areas on the unit.

Actions to Remove Habitat Barriers

- Cooperate with USFS & BLM to re-institute natural fire interval in conifer zone to recover lost elk habitat.
- Cooperate with USFS, BLM, & Ute Tribe to increase vegetative under story and reduce Pinyon/Juniper invasion of the sagebrush step zone to increase winter forage to reduce depredation on private property.
- Pursue Conservation Easements on critical parcels of private property to protect important elk habitat.
- Implement habitat enhancement & watershed initiative projects whenever opportunities arise, including those listed in this plan.
- Participate with landowners by providing seed, labor or machinery to implement improvements on private rangelands that will benefit wildlife.
- Cooperate with USFS, BLM, and local governments to prepare access management plans to enhance wildlife habitats, range conditions and escape

opportunities for elk. Such plans may emphasize a mix of permanent and seasonal road closures and vehicle type restrictions.

Population

Monitoring

Population Size - The population is monitored using harvest data, aerial trend counts and classification, preseason classification, and survival estimates.

Bull Age Structure - Monitor age class structure of the bull population through the use of annual preseason ground classification and winter aerial classification. Average age of harvest will be determined by tooth age data from L.E. harvest.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the mandatory harvest reporting for the L.E. hunts. Target population size will be maintained through the use of antlerless harvest using a variety of harvest methods and seasons. Permits for the 3 weapon types are based on the following percentages: 30% for archery, 50% for rifle and 20% for muzzleloader. Maintain an archery only area in Salt Lake County along with an extended archery area in the Summit County portion of this unit where any bull may be harvested during the general spike hunt and the extended hunt period.

Management Actions to Remove Population Barriers

- Target depredation hunts to address elk herds that habitually move into agricultural or urban areas.
- Cooperate with private landowners to fence all haystacks in winter depredation areas.
- Cooperate with UDOT to pursue funding to reduce vehicle mortalities.
- Cooperate with Ute Tribe to ensure hunting pressure occurs on Tribal lands on subunit 17c to increase antlerless harvest for population control on that subunit.

ELK HERD MANAGEMENT PLAN
Elk Herd Unit #18
Oquirrh/Stansbury
May 2012

BOUNDARY DESCRIPTION

Salt Lake, Utah and Tooele counties - Boundary begins at the junction of I-15 and I-80; south on I-15 to SR-73; west on SR-73 to SR-36; south on SR-36 to the Pony Express road located just south of Faust; west on this road to the Skull Valley-Dugway-Timpie road; north on this road to I-80 at Rowley Junction; east on I-80 to I-15.

LAND OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	41,763	28	807	5	25,193	19
Bureau of Land Management	37,664	25	2470	14	45,338	35
Utah State Institutional Trust Lands	7358	5	776	4	5856	4
Native American Trust Lands	0	0	0	0	3537	3
Private	63,452	42	13,462	77	50,466	39
Department of Defense	1388	1	0	0	0	0
USFWS Refuge	0	0	0	0	0	0
National Parks	0	0	0	0	0	0
Utah State Parks	0	0	0	0	0	0
Utah Division of Wildlife Resources	0	0	0	0	0	0
TOTAL	151,625	100	17,515	100	130,390	100

UNIT MANAGEMENT GOALS

Provide and sustain a healthy elk population. Provide varied and high quality recreational opportunities for viewing and limited entry harvesting of elk. Balance impacts between elk and mans economic and social activities, private property rights and local economies. Maintain an elk population consistent with the available range resources and which is in balance with other range users such as domestic livestock, other big game and the need for watershed protection. Strive for consistency and simplicity in elk management programs.

UNIT MANAGEMENT OBJECTIVES

Habitat

Protect and maintain existing habitats that are functioning properly. Enhance elk habitat on a minimum of 2000 acres during the next 5 years through direct range improvements. This will include the following specific projects

Remove Juniper encroachment into winter range sagebrush parks and summer transitional range mountain brush communities.

Coordinate with federal agencies to protect and enhance aspen communities on summer habitats. Management techniques that assure a diverse age structure of aspen communities will be utilized.

Cooperate with livestock operators and federal agencies to improve range management practices in such a way to optimize both livestock and elk forage production and thus minimize conflicts.

Population Management Objectives

Target Winter Herd Size - Achieve wintering populations as listed below:

Wintering Area (counting unit)	Target Population
North Oquirrh Mountains	350
South Oquirrh Mountains	300
Stansbury	250
TOTAL	900

Herd Composition - Maintain an average age of 5.5 to 6.0 year old bulls in the harvest.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Habitat Conditions:
In 2007, 16 range trend studies were reread on unit 18. All of the trend studies read in 2007 sample big game winter range except for one summer range site at Black Rock East. This study samples a high elevation elk summer range near the top of Black Rock Mountain. Overall trends on unit 18 are stable to improving. Improving browse trends were found at South Palmer Point, Salt Mountain, south of Broons Canyon, Hatch Ranch, and East Hickman Canyon. All other sites were considered stable.

When looking at elk population objectives , the Division has taken into account barriers which include, 1) depredation issues 2) winter range that is beyond division control 3) social and political factors 4) current range improvements 5) future range improvements and 6)overall range health. As these factors change, the Division will adjust the population objective as needed.

Factors limiting elk populations:
Drought is the primary factor that impacts elk populations. Forage production and vigor is severely limited during drought years. Current and future oil and gas development as well as urban expansion will continue to fragment existing elk habitat and displace elk to less productive areas. Conflicts between elk and domestic livestock operators are also a primary limiting factor. This can be a volatile sociopolitical issue. This occurs in the form of crop depredation in farmlands as well as competition for forage on rangelands. Elk numbers may be maintained at levels below the stated objective if excessive levels of crop depredation or forage consumption on private rangelands occur.

Habitat projects completed and proposed: Federal agencies, private landowners and the UDWR have cooperated on habitat improvement projects targeted at various wildlife species that have also benefited elk. Below is a list of current and future projects.

HABITAT PROJECTS COMPLETED AND PROPOSED – Oquirrh Stansbury Mts. Unit

Completed Projects and acreage– 2002 through 2006		**Proposed Projects and acreage– 2007 and beyond**	
Lee Canyon/ BLM	700	Clover Creek PJ thinning/ private	250
Round Canyon PJ thinning/ BLM	650	Herbicide treatment/ Kennecott	225
Clover Creek PJ thinning/BLM	500	Bio control w/goats/ Kennecott	150
Iosepa PJ thinning/BLM	400	Weed mapping/Kennecott	300
St John wildfire rehab/ SITLA/private	1200	Toadflax Beetle distribution/ Kennecott	5
East Onaqui sagebrush enhancement/ BLM	200	Habitat fencing/ Kennecott	50
Dix Monroe sagebrush enhancement SITLA/private	800	Seeding/ Kennecott	50
Cunningham chaining/ private	120	Wildfire prevention plan/ Kennecott	
Big Hollow PJ thinning/BLM	500	Wildfire treatments/ Kennecott	100
East Onaqui PJ thinning/ BLM	600	Reclamation	800
Clover Creek sagebrush harrow/ private	170		
Toadflax Beetle distrb./ Kennecott	3		
Seeding/ Kennecott	300		
Reclamation	4900		
TOTAL	11043	TOTAL	1930

POPULATION MANAGEMENT STRATEGIES

Population

This population has been relatively stable over the past 10 years. There are three target herd objectives for this unit, North Oquirrh (primarily Kennecott lands), South Oquirrh, and Stansbury. Last surveyed in 2009 adjusted population estimates were 426 for all three wintering areas. Antlerless permits are the primary way to target areas over objective.

Monitoring

Population Size - Results from the annual harvest survey of public and CWMU hunters, age and sex classification surveys, aerial census or trend counts and estimates of mortality from causes other than lawful hunting will all be utilized to periodically monitor population status and trends. A dynamic computer model, which utilizes some or all of the previously mentioned data, will be used as an aid to assessing population status. It's primary use, however, will be to assist in determining ongoing harvest requirements necessary to manipulate herd size and composition.

Bull Age Structure - The primary means to monitor this parameter will be winter aerial classifications conducted every 3 years, tooth aging data from harvested bulls and antler configuration of harvested bulls.

Harvest - Whenever possible, harvest recommendations will be crafted so as to simultaneously manage overall population size, age class and also address concerns in specific areas such as depredation problems or localized range overuse by elk. The primary means to achieve this will be through antlerless harvest. A variety of harvest strategies, seasons and type of permits are available for this purpose. Bull harvest will likely be rather conservative and aimed toward older age class animals. Harvest age objective is 5.5-6.0 year old bulls. Monitoring of harvest will occur through the use of the uniform statewide harvest.

BARRIERS TO ACHIEVING MANAGEMENT OBJECTIVES

Land Ownership and Access - Because of the large amount of private land on this unit, its location and the number of owners, public access for harvesting elk will continue to be a problem. Formation of the Heaston East CWMU has helped in this regard on the North Oquirrh Mountains. Members of the South Oquirrh Mountains Landowner Association members are considering a similar CWMU. Control and manipulation of elk populations will largely be dependent upon antlerless elk harvest from private lands.

Crop Depredation - Prevention and/or minimization of damage caused by elk to privately owned crops and rangelands is a very high priority. The Utah State Wildlife Resources Code and the rules developed by the Wildlife Board constitute the basic guidance for implementing big game depredation prevention and compensation procedures.

Weather Extremes - Periodic climatic extremes, especially severe winters, can cause great fluctuations in overall population size, sex ratios, and age structure. In the broadest sense, these impacts are generally not preventable, although their impacts can sometimes be moderated with management programs. The best option is to try and provide an abundant habitat base of the highest quality. Artificial winterfeeding of elk will be considered only under the most extreme emergency conditions as prescribed by the Division of Wildlife Resources big game feeding policy.

Other Mortality Causes - Occasionally, other sources of elk mortality such as unlawful harvest, highway mortality, winter loss, disease or losses to predators may prevent or at least slow down the achievement of objectives. Normally these situations are best dealt with on a case specific basis tailored to the specific situation. Unlawful harvest is probably best addressed through an "Action Plan" approach that assigns greater and more timely law enforcement assets or which specifies some necessary public education measures. Cooperative efforts with Kennecott Utah Copper Corporation and the state Dept. of Transportation may help to reduce highway mortality. Predator management plans and their implementation may reduce the impact of predators.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Work cooperatively with land management agencies and private landowners to plan and implement improvement projects for the purpose of enhancing wildlife habitat and range resources in general. Efforts will be made to provide better wintering conditions on the Tooele County side of the unit to give some rest to the Northeast area. DWR will continue to implement the habitat management plan for the Carr Fork Reclamation Area with this objective in mind.

Utilize the authority to conclude Conservation Easements with private landowners to protect critical winter ranges from future development. Participate with landowners by providing seed, labor or machinery to implement specific improvements on private rangelands. Work especially closely with Kennecott Utah Copper and the Heaston-East CWMU to plan and implement habitat improvements.

In concert with the Forest Service, BLM and local governments prepare access management plans to enhance wildlife habitats, range conditions and escape opportunities for elk. Such plans may emphasize a mix of permanent and seasonal road closures and vehicle type restrictions.

Continue to monitor permanent range trend studies throughout the winter range. Annually inspect rangeland vegetative community impacts and health through cooperative DWR/BLM habitat assessment surveys that include ocular field assessments, utilization transects, and range rides.

Continue to develop and implement Habitat Management Plans for UDWR owned properties on the unit.

Cooperate with federal agencies to establish natural fire policies that will allow wild fires to burn in beneficial and non-threatening areas to recover lost elk habitat.

Continue to improve forage production on winter and other shrub lands by aggressive pinion-juniper removal.

Cooperate with federal agencies to assure a diverse age structure of aspen communities on summer habitats.

Pursue Conservation Easements on critical parcels of private property to protect important elk habitat from development.

Population

Population size will be monitored using harvest data, aerial trend counts and classification, preseason classification, and survival estimates.

Monitor age class structure of the bull population through the use of annual preseason ground classification and winter aerial classification. Average age of harvest will be determined by tooth age data from L.E. harvest.

The primary means of monitoring harvest will be through the statewide uniform harvest survey and the mandatory harvest reporting for the L.E. hunts. Target population size will be maintained through the use of antlerless harvest using a variety of harvest methods and seasons.

Target depredation hunts to address elk herds that habitually move into agricultural areas.

Cooperate with private landowners to fence all haystacks and provide compensation when necessary in high winter depredation areas.

Utilize antlerless hunts to address range concerns in specific areas.

Develop hunt strategies which allow public hunters to harvest depredating bulls.

ELK HERD MANAGEMENT PLAN
Elk Herd Unit #19
West Desert
May **2012**

BOUNDARY DESCRIPTION

Entire Unit
Tooele, Utah, Juab and Millard counties - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Dugway road at Rowley Junction; south on this road to the Pony Express Road: east on this road to SR-36; north on SR-36 to SR-73; east on SR-73 to I-15; south on I-15 to SR-132 at Nephi; west on SR-132 to US-6; southwest on US-6 to its junction with US-50 near Delta; west on US-50 & 6 to the Utah-Nevada state line; north along this state line to I-80 at Wendover.

Deep Creek Mountains

Tooele and Juab counties - Boundary begins at the Pleasant Valley road and the Utah Nevada State line; north along this state line to the Salt Springs (Blue Lake) road; south on this road to the Pleasant Valley road; northwest on this road to the Utah-Nevada State line.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP DEEP CREEK SUB-UNIT

Unit 19a	Spring-Fall		Summer-Fall Range		Winter Spring		Winter Range		Yearlong range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service										
Bureau of Land Management	37,822	74	16,738	83			19,833	54		
Utah State Institutional Trust Lands							1475	4		
Native American Trust Lands	12,507	24	2694	13			12,359	34		
Private	1039	2	843	4			3127	8		
Department of Defense										
USFWS Refuge										
DOD										
Utah State Parks										
Utah Division of Wildlife Resources										
Water										
TOTAL	**51,367**	**100**	**20,275**	**100**			**36,795**	**100**		

UNIT MANAGEMENT GOALS

To provide and sustain a healthy elk population. Provide varied and high quality recreational opportunities for viewing and limited entry elk harvest. Balance impacts between elk and man's economic and social activities, private property rights and local economies. Maintain an elk population consistent with the available range resources and which is in balance with other range users such as domestic livestock, other big game and the need for watershed protection. Strive for consistency and simplicity in elk management programs.

Provide elk viewing opportunities to Wilderness visitors and other segments of the public on a year round basis. Maintain a population of mature bull elk sufficient to provide opportunities to see and hear mature bull elk behavior during the breeding season.

UNIT MANAGEMENT OBJECTIVES

Habitat

Maintain a stable or improving range trend on the important areas of elk habitat.
Continue to monitor permanent range trend studies located throughout the winter range.

Population

Target Winter Herd Size - Achieve a wintering population of 200 elk on that portion of the Deep Creek Mountains exclusive of the Goshute Indian Reservation. A secondary objective is to achieve a wintering population of 150 elk in the Dog Valley-Sage Valley area in the eastern part of the West Desert Wildlife Management Unit. This is the number of elk that BLM has provided for in their planning process.

Harvest - Because of tribal lands, the state of Utah has only minimal authority or ability to regulate harvest, and thus population size, on this unit. The bulk of harvest, at least for the foreseeable future will likely be confined to the Goshute Reservation. Utah's interim objective is to harvest 10 to 15 large branch antlered bulls annually under a limited entry bull harvest strategy. Achieve and maintain an age in the harvest objective of 5.5-6.0 years old. Antlerless harvest will be governed by depredation concerns and the eventual possibility of range condition problems attributable to elk.

Harvest in the Dog Valley - Sage Valley area will occur under limited entry bull hunting as part of the Unit 21 (Fillmore) Wildlife Management Unit. We expect to harvest 5 to 10 large branch antlered bulls annually from this area. Antlerless harvest will occur as needed to control depredation and to meet the population management objective. These recommendations will occur within the framework of the West Desert Management Unit.

Current Status of Elk Management

Habitat

There are 8 range trend study sites on the Deep Creek Mountain Range. Seven are on BLM administered land while one is on Goshute Indian Reservation Land. Four study sites are present on winter ranges in Trail Gulch, Ochre Mountain, Sevy Canyon and Durse Canyon. Three summer range studies exist on Chokecherry, Granite, and the Basin.

There were no upward trends for soil, herbaceous, or browse components in 2007. Soil, herbaceous, and browse trends were reported stable on two sites while downward on two others.

Downward trends can be attributed to periods of drought. Resulting in increased bare soil, increased decadence, reduced vigor, decline in reproduction and a decline in overall forbs

Habitat projects include joint UDWR, BLM and NRCS treatments on the west slope and Ibapah Valley. These multi-year projects will help improve winter range conditions for elk.

Several factors impact the ability of this unit to support larger elk populations, including agricultural depredation, and competition for forage with domestic livestock.

Completed habitat improvement projects
Over the past decades many several habitat improvement projects have occurred that benefit elk.

Completed Projects	Agency	Acres	Cooperators
Sage valley	USFS	500	DWR,USFS
Goshute chaining	BLM	800	DWR,BLM, NRCS
Burraston Pond		1	DWR

Proposed Habitat Projects
The Following is a partial list of proposed habitat enhancement projects on unit 18.

Proposed Project	Agency	Acres	Cooperators
Sage valley lop and scatter	USFS	1300	DWR, USFS
Ibapah sage brush impr.	BLM	250	DWR, NRCS
Deep Creek east pasture	BLM	150	DWR, NRCS
Spanish Fork weed treatment	USFS	650	DWR

Population

An aerial flight was conducted January 2009 where 66 bulls were counted. Antlerless animals had moved off of the unit and were not located. The adjusted modeled population count for 2012 is below objectives at 60 animals. With the large expansion of the Indian Reservation, our management options have been even more severely limited than previously. Average calf production is 40 to 50 calves/100 cows.

BARRIERS TO ACHIEVING MANAGEMENT OBJECTIVES

Crop Depredation - Prevention and/or minimization of damage caused by elk to privately owned crops and rangelands is a very high priority. The Utah State Wildlife Resources Code and the rules developed by the Wildlife Board constitute the basic guidance for implementing big game depredation prevention and compensation procedures.

Habitat - Specific areas of elk habitat have become degraded from juniper encroachment. It may be necessary to reduce elk numbers to preserve the long-term health and productivity of the land. This is often a difficult and sometimes contentious balancing act between livestock grazing interests, the federal land management agencies and those interests who desire maximum numbers of elk.

Weather Extremes - Periodic climatic extremes, especially severe drought and winters, can cause great fluctuations in overall population size, sex ratios, and age structure. In the broadest sense, these impacts are generally not preventable, although their impacts can sometimes be moderated with management programs. The best option is to try and provide an abundant habitat base of the highest quality. Artificial winter-feeding of elk will be considered only under the most extreme emergency conditions as prescribed by the Division of Wildlife Resources written policy for the winter feeding of big game.

Other Mortality Causes - Occasionally, other sources of elk mortality such as unlawful harvest, highway mortality, winter loss, disease or losses to predators may prevent or at least slow down

the achievement of objectives. Normally these situations are best dealt with on a case specific basis tailored to the specific situation. Unlawful harvest is probably best addressed through an Aaction plan@ approach that assigns greater and more timely law enforcement assets or which specifies some necessary public education measures. Cooperative efforts with the state Dept. of Transportation may help to reduce highway mortality. Predator management plans and their implementation may reduce the impact of predators.

The Expansion of Wilderness Study Area – The recent expansion of the Wilderness Study Area has significantly reduced access and the abilities to do projects that could enhance wildlife habitat.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Achieve an improving range trend on the important winter range areas on the Deep Creek Mountains

Work with the BLM on habitat improvement projects on winter ranges. Limit winter range conversion from wildfires to cheat grass, juniper encroachment, control ATV use.

Work cooperatively with land management agencies and private landowners to plan and implement improvement projects for the purpose of enhancing wildlife habitat and range resources in general. Participate with landowners by providing seed, labor or machinery to implement specific improvements.

UDWR has fenced 220 acres of alfalfa field to reduce depredation. Fence a remaining 160 acres to nearly eliminated elk depredation in the Ibapah Valley.

Population

Monitoring

Population Size - Results from the annual harvest survey, age and sex classification surveys, aerial census or trend counts and estimates of mortality from causes other than lawful hunting will all be utilized to periodically monitor population status and trends. A dynamic computer model, which utilizes some or all of the previously mentioned data, will be used as an aid to assessing population status. Its primary use, however, will be to assist in determining ongoing harvest requirements necessary to manipulate herd size and composition.

Bull Age Structure - The primary means to monitor this parameter will be preseason ground classification surveys, winter aerial classifications conducted every third year and tooth aging data.

Harvest - Whenever possible, harvest recommendations will be crafted so as to simultaneously manage overall population size and also address concerns in specific areas such as depredation problems or localized range overuse by elk. The primary means to achieve this will be through antlerless harvest. Bull harvest will be managed under a Limited Entry hunt system and general season spike hunting. For antlerless harvest, a variety of strategies, seasons and type of permits are available. Monitoring of harvest will occur through the use of the uniform statewide harvest survey.

Coordinate with the Goshute Tribe to whatever extent possible, harvest recommendations for the entire herd, keeping in mind the sovereign status of the Goshute Tribe.

Work cooperatively with the Bureau of Land Management and state land management agencies and private landowners to plan and implement improvement projects for the purpose of enhancing wildlife habitat and range resources in general. Propose habitat projects to reduce juniper encroachment.

Consult with the Goshute Indian Tribe to coordinate habitat management efforts so that elk populations and range resources both on and off the reservation may benefit.

BLM, NRCS and Utah Division of Wildlife Resources are participating in projects to improve sage grouse habitat, which in turn will improve winter range for elk.