

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit 1
Box Elder
August 2016

BOUNDARY DESCRIPTION

Box Elder, Tooele, Salt Lake, Davis and Weber counties- Boundary begins at the Utah-Idaho state line and I-15; west along this state line to the Utah-Nevada state line; south along this state line to I-80; east on I-80 to I-15; north on I-15 to the Utah-Idaho state line.

Subunit 1a Grouse Creek: Box Elder County--Boundary begins on the Utah-Idaho state line at SR-42; east on SR-42 to Curlew Junction and SR-30; south and west on SR-30 to the Utah-Nevada state line; north on this state line to the Utah-Idaho state line; east on this state line to SR-42.

Subunit 1b Hansel Mountain: Box Elder County Boundary begins at 12th Street and I-15 in Ogden north on I-15 to the Utah/Idaho state line west along this state line to SR-42 southeast on SR-42 to SR-30 southwest on SR-30 to the Kelton road south along this road to the Great Salt Lake shoreline southeast along this shoreline to the Pacific Causeway near Promontory Point east on this causeway to 12th Street east on this street to I-15 in Ogden.

Subunit 1c Pilot Mountain: Box Elder and Tooele counties- Boundary begins at SR-30 and the Utah-Nevada state line; east along SR-30 to the township line separating Range 15 West and Range 16 West; south along this township line to I-80; west along I-80 to the Utah-Nevada state line; north along this state line to SR-30. This subunit also includes Nevada's Unit 091. Nevada's Unit 091 boundary begins at I-80 and the Utah-Nevada state line, west on I-80 to the Pilot Creek Valley Road, north on Pilot Creek Valley Road to SR-233, east on SR-233 to the Utah state line, south on the state line to I-80.

LAND OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service			30,115	54	5,913	13
Bureau of Land Management	190,324	48	5,459	10	21,528	48
Utah State Institutional Trust Lands	28,082	7	1,553	3	3,447	8
Native American Trust Lands						
Private	182,078	45	18,277	33	13,800	31
Department of Defense						
USFWS Refuge						
National Parks						
Utah State Parks						
Utah Division of Wildlife Resources						
TOTAL	400,484	100	55,404	100	44,688	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 the population at a level that is within the long-term capability of the available habitat.

Use CWMU's to help manage elk populations and address the complex private/public checkerboard land pattern on the Grouse Creek/Raft River subunits.

Co-manage the Pilot subunit with the State of Nevada to abide by the interstate hunt agreement.

Prioritize habitat restoration and enhancement efforts to stem the loss of grasslands to Juniper and cheatgrass encroachment or conversion.

UNIT MANAGEMENT OBJECTIVES

West Box Elder Elk Committee Input

- CWMU's - Maximize the use of elk CWMUs in subunit 1a and 1b to manage elk.
- Crop depredation - Immediate response to all crop damage complaints.
- Elk population objective - 275 animals on subunit 1a. If elk immigrate into the Raft River portion of the unit, have a sub-population objective of 100 animals.

Habitat

- Increase 1,000 acres of summer range on subunit 1a.
- Increase summer and winter carrying capacity on subunit 1c.

Population

Target Winter Herd Size

- Subunit 1a** establish population objective at 275 animals at any time of the year.
 - **Subunit 1a Raft River portion:** Allow population to increase up to 100 animals
- Subunit 1b Hansel Mtn.:** This is a private lands/agricultural unit that is not recommended for elk populations. Elk will be hunted opportunistically but no population objective will be set.
- Subunit 1c Pilot Mtn.:** Increase population to achieve 400 animals (computer modeled population).

Bull Age Harvest Composition-

- Subunit 1a and 1c:** Average age of harvested bulls will be maintained at 4.5-5.0 years.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

- Habitat conditions: All areas of this desert unit appear to be declining. Cheatgrass invasion and juniper expansion is occurring at a rapid rate.
- Determining population objectives: When looking at population objectives, the Division has taken into account numerous factors which include: 1) depredation issues 2) winter range that is beyond Division control 3) social and political factors 4) current and future range improvements and 5) current range health.

-Subunit 1a: The West Box Elder Elk Committee recommended 275 animals after reviewing the above information. The summer and winter populations are constantly straddling the border with Nevada. Movement of 100 plus animals every week is common.

-Subunit 1b: This is a private lands/agricultural unit that is not recommended for elk populations. Elk will be hunted opportunistically but no population objective will be set.

-Subunit 1c: In 2000, this unit experienced a winter migration of 200-250 elk out of a population that was at the 400 objective. These elk appeared to move into the north Montello (Nevada) population and never returned. The 1980's objective of 400 animals was based on an AUM allotment that required the elk to utilize feed that was on steep hillsides and thus not used by livestock. No livestock AUMs were lost during the process of "finding" approved feed for a new elk herd. Winter feed may be limiting and it is recommended that close scrutiny occur in winter as this unit approaches objective.

HABITAT PROJECTS COMPLETED AND PROPOSED

Completed Projects – 2012 through 2016		Potential Projects – 2017 and beyond	
Pole Creek Bullhog	1,619 acres	Pilot Mtn P/J Removal	
North Grouse Creek Bullhog	1,066 acres	Keg Springs Juniper Removal	
Grouse Creek Bullhog ph.II	1,031 acres	Red Butte Juniper Removal	
Grouse Creek Bullhog ph.III	705 acres	Kimbell Creek Juniper and Water	
West Grouse Creek Bullhog ph.II	1,079 acres		
West Grouse Creek Bullhog ph.III	950 acres		
Project total acreage	6,450 acres		

Population Dynamics

-Subunit 1a:

-Population status: This area currently winters approximately 100 animals. This is essentially the same number as 10 years ago, however; the summer peak average population has more than doubled (300 to 400). It appears that quite a few of Utah's summering elk, winter in Nevada. The Utah winter distribution is as follows: 10-20 elk on the southern Grouse Creek range, 75 -100 on the Goose Creek drainage (Nevada/Idaho border area) and 80 in the Kilgore Basin/Nevada line area. The Nevada population is currently above objective. Routine discussions of management and populations take place with the Nevada Division of Wildlife. The Nevada portion of this area currently supports 1,700 elk. The Grouse Creek Subunit appears to occupy the easternmost edge of their range.

-An aerial elk/moose survey will begin during the winter of 2016-17 to assess the wintering population in sub-unit 1a. These surveys should repeat every 3 years.

- Harvest: The 5 CWMUs currently issue 28 bull permits and 35 antlerless permits annually. There are 15 bull and 45 antlerless Limited Entry public land tags as well as a general season spike only hunt. For the CWMU and Limited Entry hunts, the past 5 year average yearly harvest has been 30 bulls at 5.42 years of age. Age structure is based on various sample sizes (4-25). One additional CWMU will also begin hunting elk in 2016 (Cotton Thomas).

-Subunit 1b:

-Population status: This is a private lands/agricultural unit that is not recommended for elk populations and currently numbers about 125 animals. Beginning in the late 1980's Idaho had a growing elk population that started

wintering near Snowville, after going around an Idaho wildlife drift fence. The fence was removed in the mid 1990's and 200-300 elk started crossing I-84 to winter on the southern end of the Hansel Mountain range. Several elk stayed during the summer. When the summer population reached 20+ DWR initiated several hunts to attempt to eliminate this population. An open bull season was started along with free and fee antlerless tags to landowners and a public antlerless hunt. The public antlerless hunt was expanded in 2016 to include the area from I-15 west to Hwy 30. The average number of antlerless elk harvested over the last five years is 15 elk. The summer resident population has tripled over the last 15 years. The annual winter influx makes this population even harder to manage. Numerous elk damage discussions have taken place with concerned smaller acreage landowners and all landowners are still content to maintain the population with free/fee mitigation tags. This has slowed the growth down considerably. The elk spend most of the summer and fall on 2-3 landowners with nightly jaunts off the property for water, alfalfa, or corn.

-Harvest: An any bull hunt occurs on this subunit, and bull harvest is increasing. This equals about 37 bulls annually (5 year average).

-Subunit 1c:

-Population status: There are approximately 300 elk on this subunit. This population is slowly increasing. Cow/calf ratio's averaged above 40 with an increasing trend.

-Aerial helicopter surveys occur every other year on this unit with Utah and Nevada scheduling and paying for the flight every other survey. Utah will schedule and pay for the 2016 survey and Nevada will be responsible for the 2018 survey. These surveys are conducted in mid-August in conjunction with a big-horn sheep survey.

-Harvest: The past 5 year average annual bull harvest has been 3 bulls with an age of 6.25, and the average age of harvested bulls is increasing (3 yr average is 6.5). The age objective of this unit was reduced in 2015 to match subunit 1a at 4.5-5.0 years. Increased numbers of bull permits will be required to lower the ages of harvested bulls toward objective.

To coordinate hunt timing with Nevada, the bull elk hunt on this unit will be recommended to start the 2nd Saturday in September and run for three weeks.

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

West Box Elder Elk Committee Input

-CWMU's: The Grouse Creek Subunit elk population would be eliminated if CWMUs were not used to manage the population. Currently 6 CWMU's help manage 80% of the elk and the associated crop depredation issues.

-Crop depredation: Landowners will not be expected to tolerate elk following into a pattern of causing sustained measurable damage to crops.

-Population: Increases allowed by immigration only.

Habitat

-Subunit 1a: The majority of the current late August/September population winters in Nevada. There are around 80 elk that winter on the Kilgore Basin on the Nevada/Utah border. This area also winters several hundred deer. The small eastern Grouse Creek Range population appears to have very limited

summer habitat. Currently there is only one small group of 20-30 elk that rarely depredate, and they live on rangeland. This area is an un-grazed BLM allotment. Summer crop depredation occurs by almost the entire population.

-Subunit 1b: This is a private lands/agricultural unit that is not recommended for elk populations. Elk will be hunted opportunistically but no population objective will be set.

-Subunit 1c: Winter feed appears to be limiting. Summer habitat changes such as increased cheatgrass and low mountain grass production may have forced elk into crop depredation circumstances. Very little crop damage occurred in the 1980's and 1990's but during and following this last drought all cropland has elk depredation beginning in June. An average of 24 elk per day are on the TL Bar Ranch cultivated fields from June to November (3 years data).

Population

- The age objective of harvested bulls on Subunit 1c was reduced to 4.5-5.0 years to match subunit 1a.

Other Barriers

-Crop Depredation is a huge problem in the Grouse Creek and Hansel Mountain Subunit and is an increasing problem in the Pilot Mountain Subunit.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

West Box Elder Elk Committee Input

-CWMU'S Subunit 1a: Maintain and enhance the existing CWMU's, and pursue ways to address the remaining elk that are depredate on cropland.

Actions to Remove Elk Committee Barriers

-Recommend no additional losses for elk management in the CWMU program. This includes the 6 current CWMU's, their acreage requirements, percent splits and the use of additional public/private checkerboard properties to manage this elk population as mandated.

-Continue to encourage and support the damage control technicians to promptly respond and address elk damage complaints.

Habitat

-Monitoring: Continue to monitor permanent range trend studies located throughout the winter range.

Actions to Remove Habitat Barriers

-Encourage and support the habitat section in enhancement of summer and winter range conditions on subunits 1a and 1c:

-1a: Continue working with the landowners on potential habitat improvement projects. Elk winter range will be enhanced, and haystack depredation may decline.

-1c: Work with the BLM on all wildfire reseeding on the wilderness study area. This should help increase winter carrying capacity and limit summer crop damage. Continue working with landowners on the potential projects.

Population

Monitoring:

-Population Size - The majority of elk on Subunit 1a winter in Nevada and are surveyed by Nevada during their annual winter flight. The population is

monitored using harvest data, aerial trend counts and classification, preseason classification, and survival estimates. Constant discussion with Nevada regarding their population computer model and management has been occurring. The Utah proportion of this overall elk population is around 10-15%. Subunit 1c is also co-managed with Nevada and is shared 50:50. Continue every other year aerial summer survey on unit 1c in conjunction with Nevada and start and continue winter aerial survey on units 1a every 3 years.

-Bull Age Structure - Monitor age class structure of the bull population through the use of uniform harvest surveys, limited entry tooth aging, and aerial classification.

-Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size through antlerless harvest using a variety of harvest methods and seasons. Bull harvest strategies will be developed through coordination with Nevada, and the RAC and Wildlife Board process.

Actions to Remove Population Barriers

Continue annual proactive meetings and mailings for landowners affected by depredating elk. The last ten years of proactive fee/free mitigation permit mailings and meetings have removed most depredating population barriers.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 2
Cache
June 2016

BOUNDARY DESCRIPTION

Box Elder, Cache, Rich and Weber counties—Boundary begins at I-15 and the Utah-Idaho state line; south on I-15 to US-91; east on US-91 to US-89/91; north on US-89/91 to SR-101; east on SR-101 to Hardware Ranch and USFS Road 054 (Ant Flat road); south on USFS Road 054 to SR-39; east on SR-39 to SR-16 in Woodruff; southeast on SR-16 to the Utah-Wyoming state line; north along this state line to the Utah-Idaho state line; west along this state line to I-15.

Limited Entry Unit Boundaries

North Cache: Cache and Rich counties—Boundary begins at US-89 and the Utah-Idaho state line; southwest on US-89 and US-89/91 to Brigham City; west on US-91 to I-15; north on I-15 to the Utah-Idaho state line; east along this state line to US-89.

Cache, Rich and Weber counties—Boundary begins at US-89 and the USFS boundary west of Garden City; south on this boundary to SR-39; southwest on SR-39 to USFS Road 054 (Ant Flat road); north on this road to SR-101; west on SR-101 to US-89/91; north on US-89/91 to Logan and US-89; northeast on US-89 to the USFS boundary approximately 3 miles west of Garden City.

Rich County—Boundary begins at US-89 and the USFS boundary west of Garden City; south along this USFS boundary to SR-39; east on SR-39 to SR-16; north on SR-16 to SR-30; northwest on SR-30 to US-89; west on US-89 to the USFS boundary.

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 the population at a level that is within the long-term capability of the available habitat.

Summer range is abundant and in good to excellent condition. Winter range is in acceptable condition for wintering elk.

UNIT MANAGEMENT OBJECTIVES

Habitat

Maintain and/or enhance forage production through direct range improvements throughout the unit on winter range to achieve population management objectives. Pay special attention to WMA's and areas where holding elk could alleviate pressure on private landowners experiencing damage by wintering elk.

Work with private and federal agencies to maintain and protect critical and existing winter range from future losses.

Population

Target winter herd size of 2,300 elk (computer modeled population). Assess the elk feeding program at Hardware Ranch as it relates to disease.

Bull Age Harvest Composition – Average age of bulls harvested from the North Cache will be 4.75 years old, on the South Cache will be 6.75 years old, and on Meadowville 4.75 years old.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Elk on this unit generally summer on public land and winter on a mixture of public and private land at lower elevations in Cache Valley and Rich County. Most of the range is in suitable condition to expect growth in elk numbers into the future. Most losses of winter range to development are taking place in areas where elk do not traditionally winter. Though habitat is probably not limiting at this time, tolerance for wintering elk by landowners is limiting. The objective of 2,300 wintering elk in this plan takes all factors into consideration.

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	5701	25	202,884	65	116,462	32
Bureau of Land Management	0	0	16,627	5	97,367	27
Utah State Institutional Trust Lands	0	0	13,432	4	18,929	5
Native American Trust Lands	0	0	0	0	0	0
Private	16,043	72	78,415	25	118,553	32
Department of Defense	0	0	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	629	3	1,187	<1	14,972	4
TOTAL	22,374	100	312,544	100	366,283	100

Population (Current Status (2016))

The population is stable at 2,300 wintering animals (Modeled Population Pop II Model).

In order to maintain the population at objective, antlerless animals will need to be harvested annually through the duration of this plan. These

animals will be taken using limited entry antlerless permits, and depredation permits. This harvest will be concentrated in areas where animals are causing damage to agricultural interests.

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat: At this point habitat does not seem to be limiting on this unit.

Population: Public meetings have garnered public support for the current objective.

Disease: Brucellosis has not been detected in elk on the Cache unit, but neighboring States have positive populations. An elk at a facility on the Ogden Unit tested positive with chronic wasting disease, and some risk of wild ungulate infection exists. In addition other issues like external parasites and more common diseases occur within the population. Due to these risks, a review and assessment of the elk feeding program within this unit will be conducted. Feeding has been phased out on the Millville Face WMA. This assessment will start with a collaring project to monitor elk movement in this unit. Elk will likely be collared during the winter of 2016-17. Habitat projects will be proposed in the area in anticipation for more dispersed elk. Details of feeding elk will be spelled out in the Hardware Ranch management plan that will be completed in August 2017. This plan will be developed using a committee of stakeholders and other public input. We will monitor where elk are going, impacts to habitat, and other ungulates especially mule deer. Disease monitoring will continue, to detect any disease outbreaks within the herd.

Other Barriers: Crop damage to private lands will continue to be a problem on this unit. So far, fencing, damage payments, hazing, culling and mitigation permits have had varying degrees of success. The strategy should be to prevent damage where possible, compensate for damage when necessary, and discourage animals with hunting from coming into situations where they can cause damage. Culling is an option when all other methods have proven ineffective.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

Continue to monitor permanent range trend studies located throughout the winter range.

Actions to Remove Habitat Barriers

Pursue habitat options in the unit with special attention to DWR owned properties (Hardware Ranch, Richmond, and Millville Face WMAs). Seek out opportunities to enhance habitat for elk and mule deer in the greater Hardware Ranch WMA area.

Continued pursuit of conservation easements in Cache Valley.

Population

Monitoring

Population Size - Utilizing harvest data, aerial trend counts, postseason classification and mortality estimates, a computer model has been developed to estimate winter population size

Bull Age Structure - Monitor age class structure of the bull population through the use of Limited Entry hunter tooth submission for aging, checking stations, uniform harvest surveys, field bag checks, postseason classification and aerial classification.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Maintain the target population size by use of antlerless harvest using a variety of harvest methods and seasons.

Management Actions to Remove Population Barriers

Fencing, depredation hunts, and other actions will be used to reduce/mitigate crop depredation.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 3
Ogden
August 2016

BOUNDARY DESCRIPTION

Box Elder, Cache, Morgan and Weber counties: Boundary begins at US-91 and SR-101 west of Hyrum; east on SR-101 to Hardware Ranch and USFS Road 054 (Ant Flat Road); south on this road to SR-39; southwest on SR-39 to SR-167 (Trappers Loop Road); south on SR-167 to I-84 (Exit 92); west on I-84 to I-15; north on I-15 to US-91; northeast on US-91 to SR-101 west of Hyrum.

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 the population at a level that is within the long-term capability of the available habitat.

Summer range is abundant and in good condition. Winter ranges are disappearing due to increased development in Ogden Valley. Elk depredation of agricultural crops continues to be a problem during winter months.

UNIT MANAGEMENT OBJECTIVES

Habitat

Maintain and/or enhance forage production through direct range improvements throughout the unit on winter range to achieve population management objectives.

Work with private and federal agencies to maintain and protect critical and existing winter range from future losses.

Population

Target winter herd size of 2,000 elk (computer modeled population).

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Elk wintering on this unit are found in southern Cache Valley, and Ogden Valley. Most winter and summer range is privately owned. Winter range is limiting in Ogden Valley where development from the Wasatch front is quickly encroaching in areas elk currently winter. In Cache Valley winter range is less likely to be developed in the short term, but depredation to crops, haystacks, and equipment is a major concern. These factors combined set the social carrying capacity of this Unit at 2,000 wintering animals.

HABITAT PROJECTS COMPLETED AND PROPOSED

Completed Projects – 2009 through 2016		Proposed Projects – 2016 and beyond	
Middle Fork WMA	900	None	
Project total acreage	900		

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	15,727	15	18,237	11
Bureau of Land Management	0	0	0	0	0	0
Utah State Institutional Trust Lands	0	0	8,217	8	0	0
Native American Trust Lands	0	0	0	0	0	0
Private	8	0	79,181	76	138,217	81
Water	0	0	156	<1	28	<1
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	1,263	1	15,110	9
TOTAL	8	100	104,543	100	171,591	100

Population (current status (2016))

The last population flight estimated the population to be 2,200 elk. The current population is estimated to be at 2,300 elk. This is about 300 elk over the objective. We will continue to have hunts to bring the population down to objective and then maintain it there.

Three year plan to achieve population objective: In order to bring this population to objective it may be necessary to limit antlerless harvest to groups of animals that are actually depredate agricultural interests. Non-lethal methods of depredation control like fencing and hazing will be especially important to achieve the objective.

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat: As winter range continues to be lost to development, population objectives will have to be adjusted accordingly.

Other Barriers Depredation to crops, haystacks, equipment and infrastructure. Some elk stay on private land where hunting is not allowed.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

Continue to monitor permanent range trend studies located throughout the winter range.

Actions to Remove Habitat Barriers

Continue to rehabilitate the Middle Fork Wildlife Management Area (MFWMA) for the primary purpose of wintering elk and deer. This rehabbing may help hold elk on the MFWMA and prevent or reduce crop depredation in the valley.

Continue to pursue conservation easements around MFWMA, and work with land managers to improve habitat for wintering elk and mule deer where necessary.

Population

Monitoring

Population Size - Utilizing harvest data, aerial trend counts, postseason classification and mortality estimates, a computer model has been developed to estimate winter population size. The wintering population on this unit varies because of the influx of animals from the Morgan-South Rich and Cache units. Movement data obtained from telemetry and ear tagging studies indicate that a significant number of elk from those units wintered on the MFWMA.

Bull Age Structure - The Ogden unit is managed under a general season hunt format and as such bull age objectives are not required. General herd health will be assessed through the use of checking stations, uniform harvest surveys, field bag checks, postseason classification and aerial classification.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by adjusting antlerless harvest using a variety of harvest and non-harvest methods and season formats.

Management Actions to Remove Population Barriers

Fencing, depredation hunts, other actions to reduce/mitigate crop depredation. Implement hunt strategies to focus on problem areas. Focus on ending hunts early to avoid pushing elk from non problem areas to problem areas.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 4
Morgan-South Rich
August 2016

BOUNDARY DESCRIPTION

Morgan, Rich, Summit and Weber counties - Boundary begins at I-80 and the Utah-Wyoming state line; west on I-80 to Echo Junction and I-84; west on I-84 to SR-167 at Mountain Green (Trappers Loop Road); north along SR-167 to SR-39; east along SR-39 to Woodruff and SR-16; southeast on SR-16 to the Utah-Wyoming state line; south along the state line to I-80.

UNIT MANAGEMENT GOALS

The unit management goals are to maintain the population at a level that is within the long-term capability of the available habitat to support. Much of the unit is privately owned and enrolled in the Cooperative Wildlife Management Unit program with limited bull harvest. Actively work and cooperate with private landowners in the rehabilitation and/or acquisition of critical winter range and other range improvement projects as opportunity permits. Try to secure conservation easements on private properties to slow the rapid development occurring on critical ranges within the unit. Encourage and educate private landowners and Cooperative Wildlife Management Unit operators to continue the harvest of antlerless elk in sufficient numbers to maintain the winter elk population at objective.

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 elk population at levels that allow for healthy mule deer populations on shared year-round ranges.

Continue to work on habitat projects on UDWR owned properties within the unit and set management objective numbers of elk for Wildlife Management Areas.

UNIT MANAGEMENT OBJECTIVES

Habitat

Maintain and improve current acreages of summer and winter range (298,309 acres summer range, 246,532 acres winter range) through conservation easements and habitat projects. Much of the winter range is privately owned and could be at risk of being sold and developed. Strive to improve 500 acres/year of winter habitat on public and/or private property for deer and elk winter range. Work with private landowners on proper grazing techniques to enhance wildlife habitat.

HABITAT PROJECTS COMPLETED AND PROPOSED

Completed Projects – 2010 through 2016		Proposed Projects – 2016 and beyond	
Henefer/Echo WMA reseeding	30 acres	None	
H/E Water project			
Fencing to help manage grazing	7.5 miles		
Project total acreage	30 acres		

Population

Target Winter Herd Size – Achieve a target winter population of 3,800 elk (computer modeled population).

CURRENT STATUS OF ELK MANAGEMENT

Habitat (Current Status (2016))

Habitat conditions for the Morgan-South Rich unit are stable but may deteriorate with continued high elk populations. Some of the private landowners are making habitat improvements for livestock and wildlife, benefiting elk on summer and winter range.

The current modeled population (2016) is at the herd management objective. Elk-deer competition on common winter ranges can be a major factor for this unit. The population objective for this unit is 3,800 elk. A large percentage of the elk in the unit winter on the Deseret Land and Livestock (DLL) Ranch in Rich Co. The DLL Ranch is doing extensive range treatments to increase the winter capacity of the elk herds that in the past have been supplemented with hay in winter months. The yearly need for supplementation of hay and the duration of feeding of elk has been greatly reduced as a result of these successful projects.

Housing encroachment and development in the Morgan County portion of the unit is a factor that is reducing habitat of elk in that portion of the unit. With average to above average snow depths, human conflicts with depredation, livestock competition, and ornamental damage occur. There are planned housing developments on current elk winter ranges in the Morgan area.

There is concern about where the elk are being harvested. A high percentage of cow harvest occurs on the Henefer/Echo WMA. This is in large part because it is public land. In order to spread the harvest around the unit more evenly we will meet with landowners and discuss sub-objectives in the unit.

Currently, private property owners within the unit place a high value on elk and many derive a portion of their income from wildlife inhabiting private rangelands. Many landowners are members of a private habitat improvement organization called Quality Resource Management that helps landowners design and acquire funding for habitat improvement projects. Members meet annually to plan projects and discuss wildlife herd management objectives and harvest strategies. Habitat projects for the Henefer-Echo WMA, are being planned to be implemented on a yearly basis. A conservation easement is being donated to the Nature Conservancy on a 28,000 acre ranch in the Weber County portion of the unit.

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	21700	7.3	15943	6.4
Bureau of Land Management	0	0	5023	1.7	22523	9
Utah State Institutional Trust Lands	0	0	632	.2	3123	1.2
Native American Trust Lands	0	0	0	0	0	0
Private	0	0	265436	89	192549	78
Department of Defense	0	0	0	0	0	0
USFWS Refuge	0	0	0	0	0	0
Water	0	0	324	0	198	<1
Utah State Parks	0	0	0	0	0	0
Utah Division of Wildlife Resources	0	0	5194	1.7	12196	5
TOTAL	0	0	298309	100	246532	100

Population (Current (2007) Status)

The Morgan-South Rich elk unit was counted in February 2016. The population estimate is 3,800 elk, which is at the population objective. The elk are on a downward trend and within a year or two we will need to scale back on antlerless harvest in order to maintain our objective.

Harvest

Year	Bull Harvest	Antlerless Harvest
2009	369	563
2010	292	662
2011	299	451
2012	381	599
2013	362	671
2014	355	491
2015	380	540

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

The population objective of 3,800 elk is based on current range conditions and supplemental feeding of elk by a private ranch in the Rich County portion of the unit. If supplemental feeding were to permanently stop in this portion of the elk herd, the population objective would have to be lowered to reflect the capacity of the natural winter range and its carrying capacity. The feeding program was started to maintain numbers of elk and to keep elk from haystacks and feeding with livestock in the surrounding areas. Where much of the land in the unit is privately owned, habitat development and enhancement is out of the control of the UDWR.

Population

The main barrier to reaching the population objective is the inability to achieve an adequate harvest of antlerless elk on private lands within the unit. There is very limited bull harvest on the private properties. There is no harvest age objective for this unit; it is not a limited entry unit.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat Monitoring

Continue to monitor permanent range trend studies located throughout the winter range. Continue to monitor range conditions on the Henefer-Echo WMA and the impacts of current high elk numbers on critical deer winter range.

Actions to Remove Habitat Barriers

Develop a plan to rehabilitate 500 acres of Henefer-Echo WMA property; targeting old fires that are dominated with annual grasses. Continue to work on acquiring conservation easements to protect remaining habitat. Continue to work with private landowners and the Quality Resource Management group on habitat projects and range improvement methods.

Population

Monitoring

Population Size - Utilizing harvest data, aerial trend counts (every three years), postseason classification and mortality estimates, a computer model has been developed to estimate winter population size. The wintering population on this unit varies because of the influx of animals from the Chalk Creek, Ogden, and Cache units.

Bull Age Structure - Monitor age class structure of the bull population through the use of uniform harvest surveys, mandatory reporting, field bag checks, postseason classification and aerial classification.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Bull harvest strategies will be developed through the RAC and Wildlife Board process.

Management Actions to Remove Population Barriers

The foremost need for the Morgan-South Rich elk herd is to maintain the population to the target herd management objective. Continue to educate landowners on the importance of antlerless harvest. Hold annual meetings to inform landowners of harvest results and discuss antlerless hunt strategies. Continue to adapt hunt seasons, areas, and numbers to changing elk movements and numbers. Continue to look for new strategies to incorporate public hunters on private lands for antlerless harvest (ie. Walk-in access program).

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 5
East Canyon
August 2016

BOUNDARY DESCRIPTION

Davis, Morgan, Salt Lake and Summit counties - Boundary begins at Echo Junction and I-80; southwest along I-80 to I-15; north on I-15 to its junction with I-84 near Ogden; east on I-84 to Echo Junction.

UNIT MANAGEMENT GOALS

To manage the elk population at levels consistent with available habitat, and to cooperate with landowners in the protection, improvement and/or acquisition of critical winter range as opportunity permits. Work to obtain conservation easements on private lands for protection of critical winter and summer areas.

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 the population at a level that is within the long-term capability of the available habitat to support. Maintain elk population at current population objective to avoid competition with current mule deer populations. Encourage and educate private landowners and Cooperative Wildlife Management Unit operators to continue harvest of antlerless elk in sufficient numbers to maintain the winter elk population at the herd unit management objective.

UNIT MANAGEMENT OBJECTIVES

Habitat

Maintain the 106,072 acres of summer, winter, and year-long range. There is increasing development in most areas of the range for housing and recreational properties and conservation easements should actively be sought out to preserve the dwindling habitat. Work with private landowners on improving and properly grazing winter ranges, as nearly all of the winter range exists on private lands. The East Canyon Unit is adjacent to the Wasatch Front and has become a main area for summer homes and year-round recreation. The Salt Lake and Summit County portions of the unit needs to continually be monitored due to encroaching housing on critical range and human-wildlife conflicts. Provide big game escape cover/security by implementing access management where warranted.

Population

Target Winter Herd Size – Decrease elk numbers to achieve a winter population of 1,800 elk (computer modeled population).

Davis and Salt Lake County part - 5A - This part of the unit contains most of the public lands within the unit. The winter ranges are adjacent to the heavily populated "Wasatch Front" and are becoming very limited due to the impact of urban development. Therefore, the post season winter population objective for this portion of the unit is approximately 250 elk.

Morgan & Summit County part - 5B - A majority of the land within this portion of the unit is privately owned and depredation can be a significant

factor in determining the tolerable winter population objective. However, based on the past several years, 1,550 wintering elk is the current objective on this portion of the East Canyon Unit. Private landowners and local interest groups must be involved in management recommendations. Without their support and cooperation, management objectives may not be realized and elk population control may not be possible.

CURRENT STATUS OF ELK MANAGEMENT

Habitat (Current Status (2016))

Range trend studies show the browse trends stable and the herbaceous trend on winter ranges improving. The habitat seems to be improving slightly for elk with the increasing herbaceous trend. Competition on limited shared winter ranges with mule deer and competition with livestock for summer and fall feed seem to be the limiting factors for elk. Also dwindling summer and winter habitat from development and recreational use are factors reducing carrying capacity of elk range.

Approximately 1,500 acres of the Red Rock WMA were burned and re-seeded in the mid 1990's. It was a very successful project improving winter range in that area. There are negotiations underway for conservation easements in the Summit Co. portion of the unit for several large tracts of land, south of the town of Henefer and near the Morgan-Summit County line.

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	30715	26	0	8
Bureau of Land Management	85	1	0	0	32	<1
Utah State Institutional Trust Lands	0	0	0	0	0	0
Native American Trust Lands	0	0	0	0	0	0
Private	11388	90	87887	74	24646	99
Department of Defense	0	0	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	1122	9	77	<1	72	<1
TOTAL	12595	100	118679	100	24750	100

Population (Current Status (2016))

In February of 2016, an aerial trend count was conducted. There is an estimated 2,550 elk with 500 on the Salt Lake-Davis portion of the unit. Overall there has been a decrease in the populations over the past few years. There needs to be a continued harvest on the elk to obtain the objective.

Harvest		
Year	Bull Harvest	Cow Harvest
2006	175	201
2007	217	372
2008	188	291
2009	194	188
2010	245	236
2011	171	297
2012	243	397
2013	213	342
2014	226	348
2015	219	536

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

Winter range is the main limiting factor for habitat on this herd unit. Nearly all of the winter range is in private ownership and mostly out of the control of the UDWR for improvements. Continued housing and summer recreational development eat away at traditional elk ranges in some of the fastest growing rural counties in the state.

Population

The majority of the elk range in the unit is privately owned and is a barrier to achieve the necessary antlerless harvest to control elk numbers. Some landowners are reluctant to allow hunting and provide areas for elk populations to increase despite efforts to decrease numbers. The UDWR is exploring other antlerless elk harvest strategies to maximize harvest on this unit. There needs to be a continued harvest of 300 or more antlerless elk yearly for the next five years to bring the unit back to the management objective.

Other Barriers

Crop depredation is a minimal factor in some areas to keep the elk objective at current numbers.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

Continue to monitor permanent range trend studies located throughout the winter range.

Actions to Remove Habitat Barriers

Continue to work with private landowners to enhance ranges with grazing programs and habitat projects. Work on conservation easements for habitat protection to maintain carrying capacity of the unit.

Population

Monitoring

Population Size - Utilizing harvest data, aerial trend counts, postseason classification and mortality estimates, a computer model has been developed to estimate winter population size. The wintering population on this unit may vary due to elk movements from the Morgan-South Rich unit and the Wasatch unit to the south.

Bull Age Structure - Monitor age class structure of the bull population through the use aerial classification.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Bull harvest strategies will be developed through the RAC and Wildlife Board process.

Management Actions to Remove Population Barriers

Increase efforts to educate landowners to the need for elk harvest and provide incentives through DWR assisted range improvement projects. Also work through the Walk-in Access program as an incentive to allow more public harvest of antlerless elk. Explore different permit allocation methods to maximize antlerless harvest on private lands where there are low harvest rates.

Actions to Remove Other Barriers

Work on specific areas to reduce elk depredation by issuing mitigation permits to keep elk out of agricultural areas. Work to haze elk from these areas during periods when mitigation permits are not valid.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 6
CHALK CREEK
August 2016

BOUNDARY DESCRIPTION

Summit and Duchesne counties - Boundary begins at I-84 and I-80 near Echo; northeast on I-80 to the Utah-Wyoming state line; southeast along this state line to SR-150; south on SR-150 to Pass Lake and the Weber River trail; west on this trail to Holiday Park and CR 2596 (Weber Canyon road); west on this road to SR-32; northwest on SR-32 to I-80 at Wanship; north on I-80 to I-84 near Echo.

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, which include 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 the population at a level that is within the long-term capability of the available habitat.

This unit is comprised of mostly private property, and as a result winter range is being lost at an alarming rate due to development. In the next 5 years steps need to be taken to improve forage production on existing winter range. Habitat improvement and rehabilitation projects on private lands throughout the unit should be initiated in order to increase forage production for wildlife and livestock interests. Conservation easements should be initiated as to means to protect winter habitat from further loss to urban development.

UNIT MANAGEMENT OBJECTIVES

Habitat

Maintain and improve forage production on all winter range within this unit for the planning period.

Continue working with private landowners and Utah Foundation for Quality Resource Management (QRM) to protect winter range from future losses.

Population

Target Winter Herd Size – decrease elk numbers to achieve a winter population of 3,200 elk (computer modeled population) in the planning period.

CCURRENT STATUS OF ELK MANAGEMENT

Habitat

Overall range trend is stable to slightly improving with the increased precipitation in this area.

When looking at population objectives, the Division has taken into account factors 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.

In general, summer elk habitat is extensive within this unit; however the elk population objective is determined by winter range and impacts of elk on private land agriculture and ranching.

Several factors influencing the population objective of this unit include: agricultural depredation, competition for forage with domestic livestock, over utilization of winter browse in areas of heavy concentration of deer and elk during hard winters and landowner tolerance. In 2012 juniper thinning and reseeded projects were utilized to increase forage production on winter range.

COMPLETED HABITAT PROJECTS

Crandall Canyon PJ Thinning	150-200 acres	2012
South Fork PJ Treatment	150-200 acres	2013

All winter range in this unit is on private land. Division land managers and biologists will work with landowners to improve or rehabilitate as many acres as possible over the life of this plan.

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	33,987	9	0	0
Bureau of Land Management	0	0	80	<1	224	<1
Utah State Institutional Trust Lands	0	0	245	<1	222	<1
Native American Trust Lands	0	0	0	0	0	0
Private	0	0	300,278	90	45,471	95
Department of Defense	0	0	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	124	<1
Utah Division of Wildlife Resources	0	0	89	<1	1,966	4
TOTAL	0	0	334,679	100	48,007	100

Population (current status (2016))

The population is approximately 4,100 wintering animals (modeled Population using Pop II Model). This unit experiences significant transfer during the winter months from adjacent units.

TOTAL ELK COUNTED BY YEAR

Year	1990	1992	1996	1999	2001	2004	2007	2011	2013
South of Chalk Creek Road	463	937	743	821	787	640	560	559	1713
North of Chalk Creek Road	1097	1114	1552	1408	1064	966	1354	2613	1686
Total	1560	2056	2295	2229	1851	1606	1914	3172	3399

CLASSIFICATION

Year	Mature Bulls	Yearling Bulls	Cows	Calves	UNC Antlerless	Calves/100cows	Bulls/100Antlerless
2004	216	111	418	257	---	61	48
2007	228	175	125	61	---	49	28
2011	336	235	---	---	2601	59*	22
2013	490	261	---	---	2648	59*	28
2014	96	37	297	152		51	43
2015	69	21	216	120		56	42

* 2011 Pre-season elk classification data

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

- Loss of winter range due to development.
- Poor range conditions during drought years.
- Reduced quality of winter range due to juniper dominance.

Population

Antlerless elk harvest is often times difficult due to the amount of private land on the unit. Limited access becomes a problem for many sportsmen when large groups of elk seek refuge on private property.

Other Barriers

There is low landowner tolerance of elk due to depredation and rangeland use throughout this unit and, as result, damage to private land will continue to be a problem. Fencing, damage payments, and mitigation permits have had varying degrees of success in alleviating depredation issues. The division will be working on strategies to prevent damage where possible, compensate for damage when necessary, and discourage animals with hunting pressure from coming into situations where they can cause damage.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

Continue to monitor permanent range trend studies located throughout the winter range.

Actions to Remove Habitat Barriers

Initiate habitat improvement and rehabilitation projects on private lands in order to increase forage on the winter range. Continue to support conservation easements to protect winter habitat from loss to urban development.

Population

Monitoring

Population Size - Utilizing harvest data, aerial trend counts, postseason classification and mortality estimates, a computer model has been developed to estimate winter population size. The wintering population on this unit varies because of the influx of animals from the Morgan-South Rich unit. Movement data obtained from telemetry and ear tagging studies indicate that elk from the North Slope unit winter on this unit as well.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Bull harvest strategies will be developed through the RAC and Wildlife Board process.

Management Actions to Remove Population Barriers

Continue focused antlerless elk hunts to place pressure on that portion of the elk herd that causes crop and rangeland depredation on private land.

Continue landowner depredation (mitigation) permits and private lands only hunt strategies.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 7
KAMAS
August 2016

BOUNDARY DESCRIPTION

Summit and Wasatch counties - Boundary begins at I-80 and SR-32 at Wanship; south on SR-32 to Oakley and the Weber Canyon road (CR-2596); east on this road to Holiday Park and the Weber River Trail; east on this trail to SR-150 near Pass Lake; south and west on SR-150 to North Fork Provo River; south along this river to the Provo River; south along this river to SR-35; west on SR-35 to Francis and SR-32; west on SR-32 to US-40; north on US-40 to I-80; north on I-80 to SR-32 at Wanship.

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 the population at a level that is within the long-term carrying capacity of the available habitat.

This unit is comprised of mostly private property and, as a result, winter range within the unit is being lost at an alarming rate due to development. During the life of this plan, steps need to be taken to improve existing winter range in order to manage this elk population at the plan objective. Habitat improvement and rehabilitation projects on private lands throughout the unit should be initiated in order to increase forage production for wildlife and livestock interests. Opportunities for additional conservation easements should be investigated as a means to protect winter range from loss to urban development.

UNIT MANAGEMENT OBJECTIVES

Habitat

Maintain and improve forage production on all winter range within this unit for the planning period.

Continue working with private landowners and United States Forest Service (USFS) to protect winter range from future losses.

Population

Target Winter Herd Size – maintain elk numbers at a winter population of 850 elk (computer modeled population).

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Overall range trend is stable to slightly improving due to the increased precipitation in this area during the growing season.

When looking at population objectives, the Division has taken into account factors which include, depredation issues, winter range that is beyond division control, social and political factors, current range improvements, future range improvements, and over-all range health.

In general, summer elk habitat is extensive within this unit; however, the elk population objective is determined by winter range and impacts of elk on private land agriculture and ranching.

Several factors influencing the population objective include: agricultural depredation, competition for forage with domestic livestock, over utilization of winter browse in areas of heavy concentration of deer and elk during hard winters and landowner tolerance. Most of the winter range in this unit is on private land. Division biologists and land managers will be working with landowners to improve as many acres as possible over the life of this plan.

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	116,937	93	9,945	33
Bureau of Land Management	0	0	0	0	42	<1
Utah State Institutional Trust Lands	0	0	81	<1	199	0
Native American Trust Lands	0	0	0	0	0	0
Private	0	0	7,531	6	18,563	62
Department of Defense	0	0	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	1,183	4
TOTAL	0	0	124,549	100	29,932	100

Population (current status (2016))

The population is stable at approximately 1,100 wintering animals (modeled Population Pop II Model). This unit experiences significant transfer during the winter months from adjacent units.

Three Year Plan to Reach Objective:

In order to maintain the population at this objective, approximately 175 antlerless animals will need to be harvested annually through the duration of this plan. These animals will be taken using public draw antlerless permits, and depredation permits. This harvest will be concentrated in areas where animals are causing damage to agricultural interests. The majority of the elk range is privately owned and is a barrier to achieve the necessary harvest to control elk numbers. Some landowners are reluctant to allow hunting, which provides areas for elk populations to increase despite efforts to decrease numbers. The Utah Division of Wildlife Resources may need to explore other antlerless elk harvest strategies in order to maximize harvest on this unit. Under current permit allocations, it may be difficult to harvest 175 antlerless elk annually for the next five years in order to bring the unit back to the management objective.

TOTAL ELK COUNTED

	YEAR				2011	2013
	1997	2001	2004	2007*		
East Kamas				276	664	749
West Hills Kamas				210	206	194
Total	597	268	399	486	870	943

* 2007 was first year data split out.

2013 ELK CLASSIFICATION

Mature Bulls	Yearling Bulls	Antlerless
44	32	867

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

Winter range is being lost due to development. Poor range conditions during drought years is a concern.

Population

Antlerless elk harvest is often times difficult due to the amount of private land on the unit. Limited access becomes a problem for many sportsmen when large groups of elk seek refuge on private property.

Other Barriers

There is low landowner tolerance of elk due to depredation and rangeland use throughout this unit. Damage to private landowners will continue to be a problem on this unit. Fencing, damage payments, and mitigation permits have been utilized to reduce conflicts with private property owners. These strategies have had varying degrees of success. The strategy should be to prevent damage where possible, compensate for damage when necessary, and discourage animals with hunting pressure from coming into situations where damage may become an issue.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

Continue to monitor permanent range trend studies located throughout the winter range.

Actions to Remove Habitat Barriers

Continue to support conservation easements to protect winter habitat from loss to urban development

Continue to rehabilitate the Kamas WMA for the primary purpose of wintering wildlife. Habitat improvement and rehabilitation projects may

help hold elk on the WMA and prevent or reduce crop depredation in the valley.

Investigate opportunities for habitat improvement projects on private property to increase forage production for wildlife and livestock interests.

Population

Monitoring

Population Size - Utilizing harvest data, aerial trend counts, postseason classification and mortality estimates, a computer model has been developed to estimate winter population size

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Bull harvest strategies will be developed through the RAC and Wildlife Board process.

Management Actions to Remove Population Barriers

Continue focused antlerless elk hunts to place pressure on that portion of the elk herd that causes crop and rangeland depredation on private land.

Continue Landowner Depredation (mitigation) hunts.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 8
North Slope
October 2016

BOUNDARY DESCRIPTION

Daggett and Summit counties--Boundary begins SR-150 and the Summit-Duchesne county line at Hayden Pass (summit of the Uinta Mountains); north on SR-150 to the Utah-Wyoming state line; east on this state line to the Utah-Colorado state line; south on this state line to the Green River; west along this river to Flaming Gorge Reservoir; west along the south shoreline of this reservoir to Cart Creek; south along this creek to US-191; south on US-191 to the Uintah-Daggett County line (summit of the Uinta Mountains); west along the summit of the Uinta mountains to SR-150 at Hayden Pass.

This unit will continue to be managed with three subunits. See Appendix A for subunit boundary descriptions.

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing. Balance elk herd impacts on human needs, such as private property rights, agricultural crops and local economies. Maintain the population at a level that is within the long term capability of the available habitat to support. This unit will be managed within three subunits (Summit, West Daggett and Three Corners).

Continue habitat projects to improve forage for all wildlife populations. Numerous habitat projects have occurred within this unit over the past decades. Past and proposed projects include: prescribed fires in pinyon-juniper areas, followed by aerial reseeded with forbs, grasses and browse species; mechanical treatment of pinyon-juniper and conifer encroachment in critical browse / grassland areas; and working with land agencies and livestock grazers to improve overall forage conditions for both wildlife and livestock.

UNIT MANAGEMENT OBJECTIVES

Habitat

Enhance forage production on a minimum of 10,000 acres of elk habitat, through direct range improvements to maintain population management objectives.

Continue working with private landowners and federal, state, and local agencies to maintain and protect critical and existing winter range from future losses.

Continue providing improved habitat security and escapement opportunities for elk by working with federal agencies on motorized vehicle travel plans.

Population

Target Winter Herd Size – Manage elk numbers to achieve a target population size of 2,300 wintering elk.

Recent radio telemetry data confirm, under certain conditions, some animals move back and forth across the subunit boundaries. Therefore, the entire unit will be surveyed the same year and the distribution of elk during the trend count will be taken into account when determining if the subpopulations are actually above or below objective.

Subunit numbers are as follows:

- Summit (8a) – 300 elk
- West Daggett (8b) – 1,300 elk
- Three Corners (8c) – 700 elk

In 2016 an elk committee met and discussed the population objective for the Three Corners subunit. It was agreed to recommend an increase of 200 elk for the population objective for a total of 700 wintering elk. The committee will reconvene after the next aerial count to discuss any potential depredation problems that may have arisen. If depredation problems increase, the committee suggested lowering the population back to 500 elk or having targeted cow elk hunts.

Bull Harvest Objective for Limited Entry Subunit - For the Three Corners subunit, maintain a minimum average bull age of a 5.5-6 year-old bull in the harvest.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Current Status

Unit 8a, North Slope / Summit subunit

The steep slopes on the study sites have high erosion potential. However, the understory, especially the bunch grasses, is dense and vigorous and provides adequate soil stabilization. Browse trends on the unit for the key browse species, mountain mahogany, are stable to slightly up. The sites in this area all show a stable to slightly increasing trend and study sites are in good to excellent condition as of 2015.

Unit 8bc, North Slope / West Daggett and Three Corners subunits

Overall range trend within these subunits has been greatly impacted by a past drought, which has impacted forage production and plant survival. Browse communities at lower elevations, especially sagebrush, suffered die-offs from the sustained drought. However, where these browse die-offs have occurred, perennial native grasses have increased.

The greatest positive impact to this unit occurred from the 2002 Mustang / Dutch John wild fire. The fire area was reseeded and has significantly increased forage from perennial forbs and grasses.

The Utah Division of Wildlife Resources Big Game Range Inventory crew read a total of 10 range trend study sites during 2015. Three sites had improving browse trend, 4 were stable and 3 had declining trends due to drought conditions and/or increases in annual grasses. Overall, the majority of the sites are in good condition. The key browse species are principally Wyoming big sagebrush,

mountain big sagebrush and mountain browse species such as true mountain mahogany. Areas where sagebrush is the key species have remained stable, but recruitment of young plants has generally remained low. The perennial forb understories associated with mountain big sagebrush and Wyoming big sagebrush have stayed low, but have shown stable to upward trends for perennial grasses. Annual grasses, namely cheatgrass, have increased across sites, placing sites at increased risk for fire.

Number of elk on the Unit

When looking at the population objective, 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) range health.

In general, summer elk habitat is extensive within this unit; however, the elk population objective is determined by winter range and impacts of elk on private land agriculture and ranching.

One factor in determining the population objectives for the West Daggett and Summit subunits is winter range. During winters with deep snow elk move down to lower elevations. Elk conflict with agricultural and ranching practices on private land. Significant depredation occurs in these areas.

The Three Corners subunit consists of a higher percentage of year-round habitat, and also experiences significant depredation on private land year round.

The wild fire that occurred in 2002 in the Dutch John and Goslin Mountain area burned approximately 20,000 acres. Much of the area burned was mature pinyon-juniper with very little understory of grasses and forbs. This burn area was successfully reseeded and is producing significantly more forage than before the fire. Elk have been drawn into this area and use it year round.

Land Ownership

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	15946	85	458890	91	89470	46
Bureau of Land Management	0	0	13933	3	40624	21
Utah State Institutional Trust Lands	314	2	4311	1	21903	11
Native American Trust Lands	0	0	0	0	0	0
Private	2268	12	23905	5	41724	21
Department of Defense	0	0	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	127	1	1075	<1	2545	1
TOTAL	18655	100	502114	100	196275	100

Factors That Influence the Population Objective

Several factors influence the population objective including: agricultural depredation, competition for forage with domestic livestock, over utilization of winter browse in areas of heavy concentration of deer and elk during hard winters.

Some of the winter range in this unit is located in Wyoming where that state also has elk depredation and concerns with elk numbers. Control of the elk once they enter Wyoming is out of DWR's hands.

Elk within this unit are sometimes in conflict with both agriculture and ranching. This is especially relevant on winter range and yearlong elk range, but also concerns over elk use on summer range conflicting with livestock grazing on USFS and BLM lands.

Completed Habitat Improvement Projects

Over the past decades many habitat improvement projects have occurred that benefit elk and livestock. These include prescribed and wild fire, pinyon-juniper chainings, timber sales, conifer thinning, guzzler installation, etc. Five new guzzlers have been installed and five more are currently funded for installation.

Projects completed over the past five years on the North Slope subunits include:

Completed Project	Subunit	Land Agency	Acres	Cooperators	Year
Goslin Mtn/Red Creek PJ Removal	8c	BLM	413	DWR, BLM	2012
Dutch John Gap Browse Maintenance	8c	USFS	60	DWR,USFS	2013
Goslin Fire BAER Supplement	8c	USFS	178	DWR, USFS	2014
HWY 191 Timber Stand Improvement	8c	USFS	283	USFS	2014
Home Mountain Lop & Scatter	8c	BLM, SITLA	900	DWR,BLM, SITLA	2015
Birch Creek PJ Removal	8c	BLM, SITLA	276	DWR,BLM, SITLA	2015
Telephone Hollow Lop & Scatter	8a	DWR	303	DWR, USFS, SITLA	2015
Poison Mountain Lop & Scatter	8a	DWR	290	DWR, USFS	2014
Hoop Lake Lop & Scatter	8a	DWR	550	DWR, USFS	2014
TOTAL			3,253		

Proposed Habitat Projects

Following is a partial list of current and proposed habitat enhancement projects on the North Slope subunits. Others may be added as opportunities come up.

Proposed Project	Subunit	Land Agency	Acres	Cooperators	Approx. Year
Bender Mountain PJ Lop & Scatter	8c	BLM, SITLA	2596	BLM, SITLA, DWR	2017
Goslin Mountain PJ Lop & Scatter	8c	BLM, DWR, USFS, SITLA	1213	DWR, BLM, USFS, SITLA	2017
Browns Park Lop & Scatter	8c	BLM, DWR, SITLA	1251	DWR, BLM, SITLA	2016
Cart Creek Vegetation Restoration	8b	USFS	1482	USFS, DWR	2017
Guzzler Replacement	All units	USFS, BLM, DWR, SITLA		USFS, DWR, BLM, SITLA	2017-2020
Stimulate Regeneration in Goshawk Nesting Buffers	8a	USFS	238	USFS, DWR	2017-2018
North Slope Uintas Restoration Prescribed	8a	USFS	2900	USFS	2017

Fires					
Telephone Hollow Lop & Scatter Phase II	8a	USFS	472	USFS, SITLA	2017
Roughneck Vegetation Restoration Phase II	8a	USFS	5548	USFS, SITLA	2016
Hoop Lake Sage Wildlife Habitat Improvement Project	8a	USFS	677	USFS	2011
Roughneck Weed Spraying Phase I	8a	USFS	20,000	USFS	2017
TOTAL			36,377		

Population – Current Status (2013)

Winter Trend Counts by subunit			
	Year	Trend Count	Population Estimate
Three Corners	2004	348	500
West Daggett	2004	716	950
Summit	2004	215	269
Total		1279	1719
Three Corners	2007	912	1300
West Daggett	2007	863	1150
Summit	2007	228	285
Total		2003	2735
Three Corners	2013	267	400
West Daggett	2013	1055	1300
Summit	2013	1006	1257
Total*		2328	2957

Summit (8a) subunit:

Year	Trend Count	Pop Est	Bull Ratio	Calf Ratio	Bull Hunters	Bull Harvest	Cow Permits	Cow Harvest	LO Cow Permits	LO Cow Harvest
11-12	-	340			2478	264	45		20	
12-13	1006	1257	10	34	2445	335	45	20	20	
13-14	-	850			2226	290	90	37	20	15
14-15	-	875			2673	393	130	46	20	13
15-16	-	800			2742	384	158	45	20	16

West Daggett (8b) subunit:

Year	Trend Count	Pop Est	Bulls / 100 Cows	Calves / 100 Cows	Bull Hunters	Bull Harvest	Cow Permits	Cow Harvest	LO Cow Permits	LO Cow Harvest
11-12	-	1100	-	-	1492	199	125	55	42	15
12-13	1055	1300	8	32	1738	213	146	26	95	51
13-14	-	1600	-	-	1428	218	200	62	90	50
14-15	-	1800	-	-	1374	172	197	58	87	53
15-16	-	1700	-	-	1599	246	246	89	112	80

Three Corners (8c) subunit:

Year	Trend Count	Pop Est	Bulls / 100 Cows	Calves / 100 Cows	Bull Permit	Bull Harvest	Bull Ave Age	Cow Permits	Cow Harvest	LO Cow Permits	LO Cow Harvest
11-12	-	550	-	-	50	35	6.0	95	22	30	8
12-13	267	400	144	29	50	32	6.0	65	26	29	5
13-14	-	600	-	-	49	30	6.3	49	20	21	3
14-15	-	600	-	-	45	31	5.9	43	13	39	8
15-16	-	350	-	-	45	25	5.7	32	4	24	4

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat Barriers

- Loss of winter range due to sagebrush die off and resulting cheatgrass expansion.
- Poor range conditions during drought years.
- Reduced quality summer/transitional range due to conifer dominance.
- Conifer and PJ invasion of grasslands and browse areas critical for wildlife
- USFS lack of manpower and funding to conduct NEPA clearances.

Population Barriers

- Conflicts with antlerless hunt season structure and other hunts.
- Difficulty harvesting antlerless elk to maintain populations due to herds staying at difficult areas to hunt.
- Increased use of the Mustang wildfire area by elk from adjacent units.

Other Barriers

- Crop Depredation throughout the unit.
- Elk use on private rangelands throughout the unit.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat Strategies

Monitoring

Continue to monitor permanent range trend studies located throughout the herd unit.

Conduct cooperative seasonal range rides and surveys to evaluate forage condition and utilization.

Actions to Remove Habitat Barriers

Work cooperatively with the USFS and BLM to utilize prescribed burning, mechanical conifer and PJ removal, and grazing to enhance elk forage quantity and quality.

Utilize antlerless elk harvest to improve or protect forage conditions if and when vegetative declines are attributed to elk over-utilization.

Cooperate with and provide input to land management planning efforts dealing with management affecting habitat security, quality and quantity.

Population Strategies

Monitoring

- Population Size - Utilizing harvest data, aerial trend counts, postseason classification and mortality estimates, a computer model has been developed to estimate winter population size.

- Bull Age Structure - Monitor age class structure of the bull population through the use of checking stations, uniform harvest surveys, field bag checks,

postseason classification and aerial classification. Average age of harvest on the Three Corners limited entry subunit will be determined by tooth age data from bull harvest.

- Harvest – The primary means of monitoring harvest will be through the statewide uniform harvest survey and the mandatory harvest reporting for the Limited Entry hunts on the Three Corners subunit. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Bull harvest strategies will be developed through the RAC and Wildlife Board process in accordance to the Statewide Elk Management Plan.

Management Actions to Remove Population Barriers

- Continue focused antlerless elk hunts east of Red Creek and around Manila to place pressure on that portion of the elk herd that causes crop and rangeland depredation on private land.

- Continue working with federal agencies and private landowners to monitor elk numbers and elk use of the Mustang wildfire area.

- Implement new private lands only cow hunts to reduce depredation issues in West Daggett.

APPENDIX A

Unit 8a North Slope, Summit Subunit

Summit County--Boundary begins at the Utah-Wyoming state line and SR-150; south on SR-150 to the Summit-Duchesne county line at Hayden Pass; east on this county line to the Burnt Fork drainage bottom; north along this drainage bottom to the Utah-Wyoming state line; west on this state line to SR-150.

Unit 8b North Slope, West Daggett Subunit

Daggett and Summit counties---Boundary begins at the Burnt Fork drainage and the Utah-Wyoming state line; east along this state line to the Flaming Gorge Reservoir west shoreline; southeast along this shoreline to Cart Creek; south along this creek to US-191; south on US-191 to the Uintah-Daggett County line (summit of the Uinta Mountains); west on this county line to the Burnt Fork drainage; north along this drainage to the Utah-Wyoming state line.

Unit 8b North Slope, Three Corners Subunit

Daggett County--Boundary begins at the Flaming Gorge Reservoir west shoreline and the Utah-Wyoming state line; east on this state line to the Utah-Colorado state line; south on this state line to the Green River; west along this river to the Flaming Gorge Reservoir west shoreline; west along this shoreline to the Utah-Wyoming state line.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit #9
South Slope
October, 2016

BOUNDARY DESCRIPTION

Wasatch, Summit, Daggett, Uintah, Duchesne counties - Boundary begins at the junction of US-40 and SR-87 in Duchesne; north on SR-87 to SR-35; northwest on SR-35 to the Provo River; north along the Provo River to the North Fork Provo River; north along the North Fork Provo River to SR-150; north along SR-150 to the Summit/Duchesne county line (summit of the Uinta Mountains); east along the summit of the Uinta Mountains to US-191; north along US-191 to Cart Creek; north along Cart Creek to Flaming Gorge Reservoir; east along Flaming Gorge Reservoir to the Green River; east along the Green River to the Utah-Colorado state line; south along the Utah-Colorado state line to the White River; west along the Whiter River to the Green River; north along the Green River to the Duchesne River; west along the Duchesne River to US-40 at Myton; west along US-40 to SR-87 in Duchesne. Includes subunits 9a (Yellowstone), 9b (Vernal), 9c (Diamond Mountain) and 9d (Bonanza). **(EXCLUDING ALL INDIAN TRUST LANDS).**

This unit will continue to be managed with four subunits. See Appendix A for subunit boundary descriptions.

LAND OWNERSHIP

Ownership	Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%
Forest Service	857,114	79%	55,705	8%
Bureau of Land Management	77,627	7%	173,728	26%
Utah State Institutional Trust Lands	8,861	#1%	25,800	4%
Native American Trust Lands	30,119	3%	228,531	34%
Private	88,798	8%	180,042	27%
Department of Defense	0	0	0	0
USFWS Refuge	0	0	125	#1%
National Parks	7,240	#1%	9,486	1%
Utah State Parks	0	0	2,862	#1%
Utah Division of Wildlife Resources	11,398	1%	1237	#1%
TOTAL	1,081,157	100	677,516	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 wildlife and land uses including private property rights, agricultural crops and local economies. Maintain the population at a level that is within the long-term capacity of the available habitat.

Existing habitat needs to be protected and crucial habitat needs to be improved. A number of habitat projects have occurred within this unit over the past 20 years. Past and proposed projects include commercial lumber harvest, prescribed fire, wildfire, mechanical treatment of brush, etc. Conifer domination on summer and transition range needs to be addressed and natural fire intervals in the conifer zone re-established. Old and decadent stands of mountain sagebrush need to be thinned and regenerated on the winter range to minimize winter depredation on lower elevation agricultural areas. Critical private property parcels need to be protected from development through conservation easements, acquisitions, etc.

Remove or significantly reduce year round resident elk from all low elevation agricultural areas and from along the Tribal/agricultural boundary to increase tolerance of elk. Depredation due to elk coming off of tribal lands into agricultural areas has become unmanageable and will continue to increase and spread if not addressed. These animals are not readily available to the public for recreation and are very difficult to manage due to property ownership issues.

UNIT MANAGEMENT OBJECTIVES

Population

Target Winter Herd Size Objective– Manage towards an objective of a total of 8,000 wintering elk. The herd will be distributed between two wintering subpopulations:

- | | | |
|--------|--|------------------------|
| 9a | - Yellowstone wintering subpopulation | - approximately 5,000* |
| 9b,c,d | - Vernal/Diamond Mountain/Bonanza wintering subpopulations | - approximately 3,000 |

*Approximately 90% of the elk that winter on the Yellowstone subunit are found on Ute Tribal Trust Lands, which makes it nearly impossible to get enough antlerless harvest to control this population without antlerless harvest occurring on Tribal lands. In 2012 the Ute Tribe stopped antlerless harvest of elk that winter on their lands. Until the Tribe decides to limit the growth of the herd it will be nearly impossible for the state to stabilize or reduce this herd towards the objective. The state will continue to make every attempt to reduce depredation on agricultural areas and will try it's best to maintain the population near the current level through antlerless harvest on non-tribal lands. If the Tribe agrees to limit the growth of this elk herd and a new population objective is agreed upon, this plan will be updated at that time.

Radio collar data on the South Slope confirm that while the subunit populations are fairly distinct wintering populations, elk sometimes move back and forth across the subunit boundaries during the winter when aerial counts are conducted depending on conditions. Therefore, the entire unit will be surveyed at one time and the distribution of elk during the trend count will be taken into consideration when determining if the subpopulations are above or below objective.

Limited Entry Age Objective - Manage for a mean age of harvested bulls between 6.5-7.0 years of age on subunit 9c (Diamond Mountain) as dictated by the Statewide Elk Management plan. The remainder of the unit will be managed for general season Any Bull hunting. Limited Entry Youth Any Bull Elk permits will also be issued for the Any Bull portion of the unit.

Habitat

Maintain sufficient habitat to support elk herds at and reduce competition for forage between elk and livestock.

Winter Range - Maintain the existing crucial winter range. Improve the quality of at least 5,000 acres of winter range within the next 5 years.

Summer range -Improve the quality of at least 5,000 acres of summer and transitional range over the next 5 years.

CURRENT STATUS OF ELK MANAGEMENT

Population

The post season 2015 population estimate for the unit is 10,500 elk, split between the Yellowstone (7,800) and the Vernal/Diamond/Bonanza (2,700) subunits.

Recent Winter Trend Counts by subunit			
	Year	Trend Count	Population Estimate
Yellowstone	2004	3,305	5,000
Yellowstone	2007	4,745	5,850
Yellowstone	2010	4,721	5,900
Yellowstone	2013	6,010	7,500
	Year	Trend Count	Population Estimate
Vernal/ Diamond/Bonanza	2004	1,850	2,470
Vernal/ Diamond/Bonanza	2007	2,604	3,225
Vernal/ Diamond/Bonanza	2010	2,346	2,935
Vernal/ Diamond/Bonanza	2013	2,336	2,925

Habitat

Twenty vegetative trend studies were monitored by the Utah Division of Wildlife Range Crew in 2015. In 2015, the browse and herbaceous understory components, on the majority of studies in his unit, showed some improvement since the 2003 drought related sagebrush die off. Most of the improvements occurred in the higher elevation mtn. brush and mountain big sagebrush communities. However, the most crucial winter range areas in the lower elevation Wyoming sagebrush communities continue to struggle and are only in Fair condition. There are several critical winter range sites that are in Poor or Very Poor range condition on the Vernal subunit due to cheat grass invasion. Those areas should be managed to protect the remaining desirable vegetation. Overutilization by elk of those areas should be avoided.

When looking at elk population objectives, the Division has taken into account factors 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, competition for forage with domestic & feral 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 5 years numerous habitat improvement projects have been completed that benefit elk on this unit. These include, both prescribed and wild fire, pinyon-juniper chainings, conifer thinning, lop & scatter, Dixie harrow projects, etc.

This table lists specific habitat improvements that have occurred in the last 5 years.

Completed Project	Acres
Raven Ridge harrow project	500
Simplot Phosphates Browse Seeding.	80
Salt Creek Ponderosa Pine Thinning Project	660
Red Fleet Phase II/Maintenance	320
Davis Draw Sagebrush Project	425
Calder Reservoir Terrestrial Habitat Improvement Project	225
Big Brush Creek Big Game and Sage Grouse Habitat Improvement	515
Mail Draw Reseeding- Diamond Mountain	5
Sagebrush Project in Davis Draw-Diamond Mountain	180
Deadman Bench follow-up herbicide	1,005
Reseeding- Diamond Mountain	40
Taylor Mountain Greater Sage Grouse Habitat Improvement	645
Burnt Mill Spring Ponderosa Pine Thinning Project	40
Burnt Mill Spring Ponderosa Pine Thinning Project	40
Simplot Browse Plots	50
Dry Fork Hazardous Fuel Project Phase II	2,880
Marshall Draw / Warren Draw Lop and Scatter	945
Mail Draw Water Development Project	0
Little Mountain Lop and Scatter phase II	475
Little Mountain Lop and Scatter Phase I	470
Blue Mountain Chain Harrow and Seeding	600
Blair Springs Bullhog	450
Deadman Bench Harrow Phase III	515
Six Mile Slashing	1,700
Taylor Mountain Fire--BLM ESR Supplement	2,020
Taylor Mountain Fire--Private Lands	305
Diamond Rim Mastication	610
White Sage Slashing	605
Brown's Park Browse Plots	65
Total	16,370

Proposed Habitat Projects

Following is a partial list of proposed habitat enhancement projects on unit 9. Others will be added as opportunities arise.

Proposed Project	Acres
Taylor Mountain Fire Rehabilitation	880
Crouse Reservoir Lop and Scatter	2,350
Crouse Canyon Brows Plots	80
Mail Draw Shrub and Forb Project	55
Shiner Basin	3,700
Blue Mountain Chain Harrow and Seeding	504
Cottonwood Springs Bullhog - Lop & Scatter	4,130
Cart Creek Watershed Treatment Phase 2	436
Grassy Bench Lop and Scatter	1200
Hatch Cove/Diamond Mtn Lop & Scatter	1620
Little Hole WMA Browse	40
Mail Draw Shrub and Forb Project Phase II	38
Little Davenport Slashing/Lop & Scatter	1800
TOTAL	13,880

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat Barriers

- Loss of winter range due to loss of sagebrush and resulting cheat grass expansion.
- Poor range conditions during drought years.
- Loss of wildlife forage due to an increase in feral horses on the critical ranges.
- Poor quality summer/transitional range due to conifer dominance.
- Loss of winter range due to oil & gas development.
- Conifer and PJ invasion of grasslands and browse areas critical for wildlife

Population Barriers

- Difficulty harvesting enough antlerless elk to maintain populations due to the presence of refuge areas like Tribal lands, Dinosaur National Monument, and private property.
- Two management directions (UDWR and Ute Tribe) for the same population.

Other Barriers

- Agricultural crop depredation.
- Establishment of year round resident herds in lower elevation agricultural areas: Arcadia, Jensen, Ouray, lower Duchesne River, lower Uinta River, Pleasant Valley, etc.
- Private property owners that inhibit the removal of depredating animals from agricultural areas.
- Elk use of private rangelands on the Diamond Mountain Subunit.
- USFS lack of manpower and funding to conduct NEPA clearances for habitat improvements.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat Barriers

Management Actions to Remove Habitat Barriers

- Continue to monitor permanent range trend studies located throughout winter range.
- Annual on the ground habitat assessment surveys.
- Cooperate with USFS & BLM to reinstitute natural fire interval in conifer zone to improve elk habitat.
- Cooperate with Ute Tribe & sportsmen groups to remove feral horses from critical winter range.
- Cooperate with USFS to treat cheat grass expansion and reseed problem areas in old burn scars between Deep Creek and Uinta Canyon.
- Cooperate with BLM & the Ute Tribe to increase vegetative under story and reduce Pinyon Juniper invasion of the sagebrush zone.
- Cooperate with Simplot to maximize elk habitat on phosphate mine to reduce winter depredation on adjacent agricultural areas.
- Cooperate with the Ute Tribe & BIA to improve and re-vegetate winter range areas like Clay Basin and Neola North to reduce cheat grass dominance and increase desirable forage for elk.
- Utilize targeted antlerless elk harvest to reduce the impacts of elk use on critical deer winter range areas on the Vernal Subunit.
- Target resident elk herds in agricultural areas to reduce depredation impacts on private property shift elk back to public lands.

Population Barriers

Management Actions to Remove Habitat Barriers

- Pursue a cooperative management agreement with the Ute Tribe concerning the elk that we cooperatively manage that specifies a population target to jointly manage for.
- Cooperate with the Ute Tribe to remove enough antlerless elk from this herd to maintain the agreed upon population level.
- Provide private landowners with hunts and private lands permits that increase hunting pressure on private lands to pressure elk back to public lands.

Other Barriers

Management Actions to Remove Other Barriers

- Whenever feasible hunts will be targeted to address year round elk herds in agricultural areas to reduce depredation.
- Provide private landowners permits and hunting options that increase hunting pressure on private lands to pressure elk back to public lands.
- Cooperate with Ute Tribe to ensure that hunting pressure or removal occurs on Tribal lands when depredation hunts are held on adjacent private property to reduce or remove problem animals.
- If depredation hunts, tribal hunts, and landowner harvest are insufficient for removal of resident elk herds in low elevation agricultural areas, aggressive DWR removal will be implemented following approved action plans.
- Cooperate with Ute Tribe to ensure hunting pressure continues on Tribal lands to prevent elk from becoming year round residents on the winter range.
- Cooperate with Ute Tribe to increase consistency of Tribal harvest data to improve population estimates.
- Cooperate with UDOT to pursue fencing of Hwy 40 to reduce vehicle mortality.

APPENDIX A

Unit 9a South Slope, Yellowstone Subunit

Wasatch, Summit, Duchesne, Uintah counties -- Boundary begins at SR-87 and US-40 in Duchesne; north on SR-87 to SR-35; northwest on SR-35 to the Provo River; north along this river to North Fork Provo River; north along this river to SR-150; east and north on SR-150 to the Summit-Duchesne county line (summit of the Uinta Mountains) at Hayden Pass; east along the summit of the Uinta Mountains to the Dry Fork-Whiterocks drainage divide; south atop this divide to USFS Trail #025; southwest on this trail to Whiterocks Lake and the East Fork of the Whiterocks River; south along this river to the Whiterocks River; south along this river to the Uinta River; south along this river to the Duchesne River; west along this river to US-40 at Myton; west on US-40 to SR-87 in Duchesne.

Unit 9b South Slope, Vernal Subunit

Daggett and Uintah counties -- Boundary begins at the Dry Fork-Whiterocks drainage divide and the Daggett-Uintah county line (summit of the Uinta Mountains); east along the summit of the Uinta Mountains to US-191; north along US-191 to Cart Creek; north along Cart Creek to Flaming Gorge Reservoir; east along Flaming Gorge Reservoir to the Green River; east along the Green River to Gorge Creek; south along Gorge Creek to the summit and the head of Davenport Draw; south along the USFS-Private Land boundary on the west side of Davenport Draw and continuing south along this USFS boundary to the BLM boundary on the Diamond Mountain rim; southeast along the Diamond Mountain rim to the Diamond Mountain road (Jones Hole Road); southwest along this road to the Brush Creek road; south along this road to the Island Park/Rainbow Park road; east along this road to the Dinosaur National Monument boundary; northeast along this boundary to the Utah-Colorado state line; south along this state line to the Green River; south along this river to the Duchesne River; north along this river to the Uinta River; north along this river to Whiterocks river; north along this river to the East Fork of the Whiterocks River; north along this river to Whiterocks Lake and USFS Trail #025; northeast on this trail to the Dry Fork-Whiterocks drainage divide; north atop this divide to the Daggett-Uintah county line (summit of the Uinta Mountains).

Unit 9c South Slope, Diamond Mountain Subunit

Daggett and Uintah counties--Boundary begins at the Utah-Colorado state line and the Green River at Browns Park; west along this river to Gorge Creek; south along this creek to the summit and the head of Davenport Draw and the USFS boundary; south on this boundary on the west side of Davenport Draw and continuing south on this boundary to the BLM boundary on the Diamond Mountain Rim; east and south along this rim to the Diamond Mountain road (Jones Hole Road); south and west on this road to the Brush Creek road; south on this road to the Island Park/Rainbow Park road; east on this road to the Dinosaur National Monument boundary; north and east on this boundary to the Utah-Colorado state line; north on this state line to the Green River.

Unit 9d South Slope, Bonanza Subunit

Uintah County -- Boundary begins at the Colorado-Utah state line and the White River; west along this river to the Green River; north along this river to the Colorado-Utah state line; south along this state line to the White River.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 10
Book Cliffs
2016

BOUNDARY DESCRIPTION

Grand and Uintah counties—Boundary begins at Exit 164 on I-70 near the town of Green River; east on I-70 to the Utah-Colorado state line; north on this state line to the White River; west along this river to the Green River; south along this river to Swasey's Boat Ramp and the Hastings Road; south on this road to SR-19; south and east on SR-19 to Exit 164 on I-70 near the town of Green River.

This unit will continue to be managed with three subunits. See Appendix A for subunit boundary descriptions.

LAND OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	0	0	0	0
Bureau of Land Management	266,492	86.6	112,927	33.7	543,873	49.9
Utah State Institutional Trust Lands	35,353	11.5	114,778	34.2	85,524	7.9
Native American Trust Lands	1,525	0.5	96,678	28.8	386,145	35.4
Private	4,126	1.3	3,912	1.2	58,783	5.4
Department of Defense	0	0	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	86	0.1	7,157	2.1	15,286	1.4
TOTAL	307,582	100	335,452	100	1,089,611	100

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities including hunting and viewing. Balance elk herd impacts on human needs, such as private property rights, agricultural crops and local economies. Maintain the population at a level that is within the long term support capability of the available habitat.

Manage to maintain and enhance forage and cover habitat through vegetative manipulation, domestic grazing and other management techniques. Attempt to mitigate against habitat fragmentation, degradation and loss stemming from mineral extraction, road construction, increased recreation and other impacts.

UNIT MANAGEMENT OBJECTIVES

Habitat

- Promote sustainable livestock grazing practices that minimize negative impacts to plant health and diversity, especially on summer ranges and on SITLA and DWR lands where DWR holds the grazing permit or controls livestock grazing.
- Develop new and protect/improve existing water sources for wildlife and livestock to improve distribution, and minimize overutilization in proximity to water sources.
- Remove conifer encroachment into winter range, sagebrush park lands, and summer range aspen forest and mountain browse communities. Approximately 1,500 acres per year will be targeted.
- Open the closed canopy piñon–juniper forest lands at mid elevation zones throughout the Book Cliffs to enhance perennial understory vegetative maintenance. Approximately 1,500 acres per year will be targeted utilizing mechanical and prescribed fire technology.
- Enhance riparian system and canyon bottom vegetative communities through continued agricultural practices, prescriptive grazing and mechanical or chemical treatments.
- Emphasis on reducing greasewood and improving canyon bottoms and riparian communities will continue.
- Manage to minimize wild horse herds and their impacts.
- Explore ways to improve Wyoming sagebrush community condition and perennial vegetative health.

Population

Target Winter Herd Size: Manage toward a wintering elk population of 7,500.

Harvested Bull Age Objectives: As directed in the Utah Statewide Elk Management Plan, manage for a harvested bull elk 3 year average age of 6.5 – 7.0 years for the Bitter Creek and South subunits and 7.5 – 8.0 years on the Little Creek subunit.

Antlerless Harvest: Despite being below population objective, some antlerless elk harvest is desirable to address specific range and depredation issues. To address range issues the Division may continue to issue limited cow elk permits in the San Arroyo and Little Creek areas. To reduce competition with mule deer for crucial winter range, cow hunts may continue in the McCook Ridge area. To reduce damage to agricultural crops by a low elevation resident elk herd in the lower Willow Creek area the Division may continue to issue cow elk mitigation permits and public draw antlerless permits for that area. Other antlerless elk permits may be recommended if there is justification and need based on range conditions, competition with mule deer, and/or conflicts with agriculture.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Habitat Conditions: Summer range is limited. Drought impacts from the early 2000's include sagebrush mortality, reduced browse vigor and forage production throughout lower elevation ranges. Perennial grasses persist, but annual grass and weed growth have responded to moisture timing and availability. There are 33 permanent range trend study sites on the Book Cliffs (9 sites on the South Book Cliffs subunit and 24 on the Bitter Creek and Little Creek subunits). While these study sites monitor mule deer range conditions and principally target wintering areas, they reflect the impact of drought conditions on the vegetative communities.

Few elk winter in areas sampled by the South Book Cliffs range trend studies. In 2015, study sites indicated that soil and browse trends appeared stable. However, species composition of the herbaceous understory is declining in quality, as composition is primarily annual grasses. Species such as cheatgrass (*Bromus tectorum*) are increasing in frequency and cover.

The North Book Cliffs subunit study sites showed stable and improving soils. Herbaceous plant understories are generally in poor to very poor condition with unsatisfactory species composition. This is due primarily to cheatgrass and annual forb dominance. Browse plant condition and frequency trends are generally improving with problems of declining 4-wing saltbush evident.

Distribution of all ungulate herbivory (including elk) on the limited summer range is becoming a more pressing issue. Competition for forage, and especially water between elk, cattle, deer, bison, and feral horses is increasing and cause for concern among the DWR, BLM, SITLA, and livestock permittees.

When looking at elk population objectives, the Division has taken into account factors 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. Drought vegetative impacts of the past decade have interfered with elk numbers. Antlerless elk harvest was initiated to stop, and then slow, elk herd growth and provide relief to vegetative communities. Mineral extraction and associated activities fragment elk habitat and elk security. Pinion and juniper invasion is reducing more beneficial forage production and threatening open and mosaic habitat values. Canopy cover is closing in mid elevation mature pinion and juniper communities. This limits and slowly removes valuable perennial understory species. Agricultural depredations are generally minimal but do occur.

Habitat improvement projects: Numerous habitat improvement projects have been completed in the Book Cliffs. The Division of Wildlife and partners have made aggressive efforts to preserve, improve and develop wildlife habitat. These efforts include taking advantage of naturally caused wild fires through reseeding and other more labor-intensive accomplishments. In total, 157,953 acres have been completed including wild fire reseedings. Currently proposed projects total 7,109 acres. Specific project areas and acreage totals are given below.

BOOK CLIFFS HABITAT PROJECTS COMPLETED AND PROPOSED			
Completed Projects – 2011 through 2016			
Project Name	Acres	Project Name	Acres
Little Creek Boundary Fence	0	Indian Springs Bullhog Maintenance	610.22
Meadow Creek Boundary Fence	0	Bookcliffs Aspen Exclosure Phase III	0
Book Cliffs Spring Protection and Enhancement	0	Bookcliffs Water Development	0
Bitter Creek Riparian Protection	0	West Bookcliffs Aspen Study	0
Seep Ridge Bullhog Phase II	389.87	Tom Patterson Rx Line Preparation	47.49
Seep Ridge Chaining	321.86	Atchee Ridge Guzzler Project	0
Indian Ridge Sagebrush	224.04	Little Creek WMA Guzzlers	0
Cedar Camp lop and scatter phase II	869.62	Monument Ridge Slashing	1,019.70
Moonshine Ridge Mountain Browse Enhancement	361.06	Book Cliffs Gobbler Guzzler Project	0
Boulevard Ridge Pinyon and Juniper Removal	392.25	Monument Ridge Bullhog	4,625.44

Bookcliffs Aspen Exclosures	0	Bottom Canyon Bullhog Phase II	415.8
Archy Bench Sagebrush Restoration	606.87	North Book Cliffs Wildlife Guzzler Project II	0
Buck Camp Canyon P-J Project	212.79	Wolf Den - Rector Ridge Fire Rehabilitation	2,228.82
Pine Springs bullhog phase II	494.83	Wolf Den Fire-Rainbow	525.52
Moon Ridge Chaining	540.88	Park Ridge bullhog maintenance	474.04
Little Jim Bullhog	668.77	Moonshine Bullhog Phase III	426.24
Moonshine Bullhog Phase II	619.59	Steer Ridge Lop and Scatter	566.19
Atchee Ridge Lop and Scatter Phase II	483.3	NER Pronghorn Guzzler Replacement	0
Book Cliffs Aspen Exclosures Phase II	0	Jack Trap Canyon	334.39
Seep Ridge Phase II/Bullhog Maintenance	729.03	Bitter Creek Restoration Phase 1	1,130
South Book Cliffs Vegetation Improvement Phase 3	458	Bitter Creek Restoration Phase 2	2,250
Total Acres Treated			22,026

Proposed/Current Projects – 2016 and beyond			
Project Name	Acres	Project Name	Acres
Red Leaf Reclamation	0.32	Boulevard Ridge P/J Removal Project	932.17
Book Cliffs Divide Ridge Water Improvements	0	Book Cliffs lower elevation guzzlers	0
Burnt Timber Bullhog	620.54	Went Ridge Guzzlers	0
Indian Spring Phase I Maintenance	319.4	Burnt Timber bullhog phase II	441.84
Chipeta Canyon Guzzler	0	Wolf Den Fire Weed Control and Restoration Phase 1	1,700.58
Seep Ridge Chaining maintenance	332.49	Monument Ridge Bullhog Implementation Phase I & II	1,999.72
Moon Ridge Chaining maintenance	698.2	Pine Springs Ponderosa	63.8
Sagers Canyon Veg Improvement	661		
Total Proposed Treatment Acres			7,770

Population

The following table provides a summary of Book Cliffs elk population information. Sightability has varied greatly due to snow conditions on trend count flights resulting in some divergence in the model and trend counts.

Winter Trend Counts and Modeled Population Estimates		
Year	Trend Count	Population Model
2002-2003		3560
2003-2004	1680	3698
2004-2005		3869
2005-2006		4027
2006-2007	3334	4200
2007-2008		4385
2008-2009		4442

2009-2010	2162	4104
2010-2011		4193
2011-2012		4270
2012-2013		4000
2013-2014		4800
2014-2015		5500
2015-2016	3224	5600

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

- Drought impacts to rangeland forage condition and abundance.
- Limited summer range on the unit.
- Habitat fragmentation, loss and disturbance from mineral developments, road extensions and human impacts.
- Pinion and juniper invasion into sagebrush, mountain browse and aspen communities.
- The maturation of conifer forests resulting in closed canopies. This reduces perennial understory vegetation and limits forage availability and diversity.
- Canyon bottom vegetation communities dominated by greasewood and tamarisk with the associated loss of water table and native cottonwood, willow and related riparian species.
- Wild/feral horse and feral cattle impacts on forage potential.

Population

- The population will be managed by hunting antlerless elk.
- Strategic antlerless harvest will be used to address localized issues and problems.
- Elk distribution across the unit.

Other barriers

- Crop depredations on privately owned agricultural lands is limited by the amount available but can be significant depending upon crops, timing and elk distribution.
- Cooperation between DWR, BLM, SITLA, landowners and the Ute Tribe is essential to elk herd management on this unit.
- Calf-to-cow ratios have been lower than normal in recent years. With calving grounds concentrated in such a narrow band of summer habitat, it is possible that predators such as coyotes and especially black bears have become more effective at killing elk calves and could be impacting recruitment.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

- Continue to monitor long term rangeland conditions and health through the permanent range trend sites.
- Annually inspect rangeland vegetative community impacts and health through habitat assessment surveys that include field assessments and range rides.

Actions to Remove Habitat Barriers

- Cooperate with land management agencies to establish natural fire policies that will allow wild fires to burn in beneficial and non threatening areas.
- Continue to cooperate with land management agencies to effectively reseed and/or rehabilitate wildfires to benefit elk and other wildlife.

- Continue with the aggressive juniper, pinion and other conifer treatment projects that target areas of invasion into sagebrush, mountain browse and aspen communities.
- Develop projects to improve vegetative diversity and perennial understory health in closed canopy pinion and juniper forests.
- Continue to treat greasewood and tamarisk communities and reestablish native woody vegetative species in riparian habitat types. Concurrent with these efforts, explore ways to bring water tables closer to the ground surface.
- Work with mineral development interests to attempt to mitigate for habitat fragmentation and losses.
- Seek to expand summer range values by extending and improving canyon-type habitats down drainage systems.
- Work with landowners and associated agencies to limit the impacts and control populations of wild cows and wild horses within the Book Cliffs.

Population

Monitoring

Population Size: Aerial helicopter surveys are normally conducted every three years. These flights are cooperatively timed with the Ute Indian Tribe and data shared to better understand elk population distribution and numbers. These flights and population models are utilized to track and evaluate the elk herd distribution and annual winter population estimates. Inclusive to these efforts, annual herd classification may be conducted to estimate herd productivity.

Bull Age Structure: Harvested bull ages will be monitored annually through cementum annuli lab analysis of hunter-submitted central incisor teeth

Harvest: The primary means of monitoring harvest will be through the statewide uniform harvest survey. Population size will be achieved through utilizing a variety of harvest methods and seasons. Elk distribution across the herd unit may also be addressed through selective public antlerless harvest and hunt areas.

Management Actions to Remove Population Barriers

Depredation: Antlerless hunts will continue to be the principle means of limiting cropland depredation. Mitigation permits and vouchers may also be used. An active landowner's association receives limited entry bull permits.

Interagency Cooperation: The increasing demands for all natural resource use within the Book Cliffs mandate close association and cooperation between all resource management agencies. While good cooperation and communication is established, this effort will be a priority and will include Private Landowners, BLM, SITLA, Ute Indian Tribe, the public and developers.

Translocations: Trap and transplant elk within the unit may be used to address depredation or distribution issues.

APPENDIX A SUBUNIT BOUNDARY DESCRIPTIONS

Unit 10a Book Cliffs, Bitter Creek Subunit

Grand and Uintah counties—Boundary begins at the Utah-Colorado state line and the White River; south along this state line to the Book Cliffs summit (north-south drainage divide); west along this summit and drainage divide to Ten Mile Knoll and the Steer Ridge road; north and west along the Steer Ridge road (atop the drainage divide) to the Uintah and Ouray Indian Reservation Boundary (NW 1/4 Sec 7, T17 S R 21 E); north along this boundary to the Uintah-Grand county line; west along this county line to the Green River; north along this river to the White River; east along this river to the Utah-Colorado state line.

Unit 10b Book Cliffs, South Subunit

Grand County—Boundary begins at the Utah-Colorado state line and the summit and drainage divide of the Book Cliffs; west along this summit and drainage divide to Diamond Ridge; southwest along Diamond Ridge and the Book Cliffs summit (north-south drainage divide) to the Uintah and Ouray Indian Reservation boundary (Hells Hole/head of Segoe Canyon); west along this boundary to the Green River; south along the Green River to I-70; east along I-70 to the Utah-Colorado state line; north along this state line to the summit and drainage divide of the Book Cliffs.

Unit 10c Book Cliffs, Little Creek (Roadless) Subunit

Grand County--Boundary begins at the Steer Ridge road at Ten Mile Knoll and the Book Cliffs summit (north-south drainage divide); southwest along the Book Cliffs summit on Diamond Ridge to the Uintah and Ouray Indian Reservation boundary (Hells Hole/head of Segoe Canyon); north on this boundary (west side of West Willow Creek) to the DWR Wildlife Management Area/Ute Tribe Fence at the confluence of East and West Willow Creek; northeast from this confluence cross-country to the Steer Ridge road (NW 1/4 Sec 7, T17 S R 21 E); south and east on the Steer Ridge road (atop the drainage divide) to Ten Mile Knoll and the Book Cliffs summit.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 11
Nine Mile
October 2016

BOUNDARY DESCRIPTION

Uintah, Duchesne, Carbon, and Emery counties - Boundary begins at Duchesne and US-191; southwest on US-191 to US-6; south on US-6 to I-70; east on I-70 to Exit 164 and SR-19 near the town of Green River; north and west on SR-19 to Hastings Road; north on this road to the Swasey boat ramp and the Green River; north on the Green River to the Duchesne River; west along this river to US-40; west on US-40 to Duchesne and US-191.

Land Ownership

The following tables show land ownership of seasonal elk habitat by subunit. Approximately 75,448 of the private acres in elk habitat in the Range Creek subunit are managed as Cooperative Wildlife Management Units (CWMU's). They comprise portions of summer, winter, and yearlong ranges.

Table 1a. RANGE AREA AND APPROXIMATE OWNERSHIP* SUBUNIT 11A (ANTHRO)

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	12,401	8	57184	95	30116	19
Bureau of Land Management	120,019	76	1050	2	21346	13
Utah State Institutional Trust Lands	19,681	12	225	<1	2442	1
Native American Trust Lands	748	<1	0	0	56296	36
Private	4,988	3	1446	2	40644	26
Utah Division of Wildlife Resources	0	0	0	0	7562	5
TOTAL	157,838	100	59905	100	158406	100

Table 1b. RANGE AREA AND APPROXIMATE OWNERSHIP* SUBUNIT 11B (RANGE CREEK)

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Bureau of Land Management	126778	51	43097	27	253027	83
Utah State Institutional Trust Lands	26876	11	8866	5	26537	9
Private	92765	37	103344	64	24459	8
Utah Division of Wildlife Resources	1564	1	5316	3	0	0
TOTAL	247983	100	160623	100	304038	100

UNIT MANAGEMENT GOALS

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

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 from oil and gas development, road construction, urban expansion, increased recreation or other land use impacts.

UNIT MANAGEMENT OBJECTIVES

Population

Population Objective 1: Maintain healthy elk populations at biologically and socially sustainable levels

Population Objective 2: Foster support among stakeholders for Utah's elk management program.

Population Objective 3: Achieve a proper distribution of elk on private and public lands.

Target Winter Herd Size – Manage toward a short term winter elk population objective of 2,500 elk (computer modeled population) distributed in the subunit populations listed below. This represents a 200 elk increase on the Range Creek Subunit.

Anthro Subunit	-	700 elk
Range Creek Subunit NW of Nine Mile Canyon	-	250 elk
Range Creek Subunit south of Nine Mile Canyon	-	<u>1,550 elk</u>
Total		2,500 elk

In the event that range conditions decline and diminish the ability to sustain additional elk and/or landowner tolerance for elk diminishes, the Division will immediately reduce the short term population objective to 1,600 on the Range Creek subunit.

Herd Composition Maintain a three-year average age of 5.5-6 years of harvested bulls on the Anthro subunit.

Utilize limited entry bull permit harvest on most of the Anthro subunit. Utilize General Season Any Bull hunting strategy on the Range Creek subunit and a small portion of the Anthro unit near the town of Duchesne to address depredation/public safety concerns (See Appendix A for boundary descriptions)

Utilize antlerless harvest to maintain elk populations at or below population objectives. Promote public hunting access on private lands where applicable.

Habitat

The unit habitat objectives will follow the goals and objectives outlined in the statewide elk plan with the primary goal to "Conserve and improve elk habitat

throughout the state." This will be done by maintaining sufficient habitat to support elk herds at population objectives, reducing competition for forage between elk and livestock, and reducing adverse impacts to elk herds and elk habitat.

- Improve forage and cover values on elk summer ranges. Practices will include prescribed fire, selective logging, and mechanical treatments that promote a diverse age structure in aspen communities. Over 300 acres per year will be targeted.
- Remove pinyon-juniper encroachment into winter range sagebrush parks and summer range mountain brush communities. Over 500 acres per year will be targeted using primarily mechanical treatments.
- Improve wet meadow habitats through shrub treatments in high elevation habitats.
- Improve limited water resources on the unit by developing and maintaining existing springs and guzzlers and installing wildlife guzzlers where needed.
- Minimize conflicts between elk and wild horses through habitat improvement and encouraging wild horse gathers when horse numbers exceed population objectives.
- Improve existing canyon bottom riparian communities by treating greasewood and overmature sagebrush through chemical, mechanical, and other methods, and minimize impacts on croplands in these habitats.
- Protect crucial habitats from oil and gas development and assure best possible location of wells to minimize habitat losses using best information available.

CURRENT STATUS OF ELK MANAGEMENT

Population

Elk populations on both Anthro and Range Creek subunits were well above population objectives in 2011. Aggressive antlerless harvest over the past 5 years reduced elk populations significantly. Modeled population estimates suggest 1,300 elk reside on the Range Creek subunit and 1,000 elk reside on the Anthro subunit. Both units were last surveyed by helicopter in January, 2013. Summer classification counts suggest an average of 41 calves per 100 cows on both Anthro and Range Creek subunits over the past 5 years.

Tables 4a and 4b shows the trend in bull and antlerless elk harvest on the Nine Mile unit. Large amounts of antlerless permits are issued on this unit in order to control an expanding elk population. The Anthro subunit is managed as a Limited Entry Bull unit, while the Range Creek subunit and a portion of the Anthro subunit near Duchesne have been managed as General Season Any Bull hunts. Furthermore, a significant portion of the harvest on the Range Creek Subunit occurs on CWMU's.

On the Anthro subunit, the Ute Tribe has changed their elk hunt strategy to allow general season elk hunting by tribal members. The tribe owns 36% of the winter range on the Anthro sub-unit. While the Anthro sub-unit is currently meeting age objectives on harvested bulls, if tribal harvest increases it may be difficult to maintain limited entry age objectives and hunt quality for permit holders in the future. If harvested bull ages decline below age objective, and we experience a significant decline in harvest success rates, and/or hunter satisfaction we may

consider changing the elk hunt strategy on the Anthro subunit to match the corresponding Tribal hunting strategy.

Table 4a. Summary of Harvest. Nine Mile, Anthro Subunit. 2011-2015

YEAR	# of Elk on Unit	LE BULL HARVEST (PUBLIC)	CWMU BULL HARVEST	GEN.SEASON ANY BULLHARVEST	AVE. AGE OF HARVESTED BULLS	ANTLERLESS HARVEST
2011	1450	12	0	0	7.4	115
2012	850	19	0	12	6.0	187
2013	900	18	0	12	6.1	126
2014	950	16	0	16	4.7	76
2015	1,000	15	0	8	5.2	131

Table 4b. Summary of Harvest Nine Mile, Range Creek Subunit 2011-2015

YEAR	# of Elk on Unit	LE BULL HARVEST (PUBLIC)	CWMU BULL HARVEST	GEN.SEASON ANY BULLHARVEST	AVE. AGE OF HARVESTED BULLS	ANTLERLESS HARVEST
2011	1700	16	56	112	9.5	100
2012	1700	0	66	117	7.7	168
2013	1550	0	70	137	8.8	115
2014	1400	0	72	136	9.2	131
2015	1300	0	65	108	8.7	105

Habitat

Habitat Conditions - Summer range is limiting on this unit. Summer elk habitat is restricted to a fairly narrow band of high elevation aspen/Douglas fir communities and elk are found at relatively high densities. Summer ranges and high elevation winter ranges (Mountain big sagebrush communities) appear to be in stable condition according to permanent range trend studies conducted by DWR in 2015. There were a total of 13 permanent range trend study locations that were read in 2015 on the unit. Of these, 7 sites are within elk winter range.

Browse and herbaceous trends appear to be stable over the past 20 years and mid-potential winter ranges where elk typically winter have DCI scores indicating "Fair to Good" winter range.

Cooperative BLM/UDWR spring range transects have shown stable to declining utilization by elk. Pellet group counts and browse utilization have decreased slightly in recent years. BLM range assessments in the area have not noted any deteriorating range conditions or overutilization by elk.

Biological range carrying capacity - When looking at biological carrying capacity for this plan, the UDWR has taken into account the following barriers: 1) private landowner tolerance/depredation issues, 2) winter range carrying capacity, 3) social and political factors, 4) current range improvements, 5) future range improvements and 6) range health and competition potential with other species.

Factors that reduce carrying capacity of unit - Drought is the primary factor that impacts elk population carrying capacity. Forage production and vigor as well as water distribution is severely limited during drought years. Oil and gas

development is becoming a major factor affecting both winter and summer ranges, especially on the Anthro subunit. Oil and gas development will continue to fragment existing elk habitat and displace elk to less productive areas. Oil and gas activities may eventually expand onto summer ranges that are already limiting. Crop depredation by elk on this unit is relatively minor on this unit and typically occurs during the spring months. Competition with domestic livestock is a potential conflict on portions of the unit. Many livestock operators are not stocking ranges at full permitted numbers. If operators elect to graze at full numbers, competition would likely be evident due to increased elk numbers that have filled the void of reduced cattle use. Competition with wild horses on the Range Creek subunit is pronounced as horse numbers are well above objectives and competing with elk for declining resources in the Cold Springs and Cedar Ridge areas. Bison populations emigrating from Ute Tribal Lands are also increasing which could significantly change elk habitat quality and quantity.

Habitat projects completed and proposed - Federal agencies, private landowners and the UDWR have cooperated on habitat improvement projects targeted at wildlife species that have also benefited elk (Tables 2 and 3).

Table 2. Completed Habitat Treatment Projects Benefitting Elk on the Nine Mile Unit, 2012-2016.

Dugout Creek Pinyon/Juniper Removal	210.67
Cold Springs Conifer Removal/Aspen Regeneration	20.72
Dugout Creek Fuels Reduction and Habitat Restoration: Phase III	507.37
Cold Springs Aspen Enhancement Phase 2: Tavaputs Ranch	190.33
Lighthouse Fire Rehabilitation	880.92
Bruin Point Discretionary Seed	7.97
Cold Springs Aspen Enhancement	489.32
Cottonwood Ridge P/J Removal Arch. Clearance	0
Cold Springs Conifer Removal/Aspen Regeneration Phase II	45.5
Dugout Creek Fuels Reduction and Habitat Restoration: Phase II	1,036.22
Interplanetary Airstrip Lop and Scatter	1,295.26
Cottonwood Ridge PJ Removal	2,069.86
Nutter Ranch Thurber Fescue Treatments	50.00
Total	6,804.14

Table 3. Proposed Habitat Treatment Projects Benefitting Elk on the Nine Mile Unit, 2016 - 2021.

Tavaputs Plateau Sagebrush Restoration	4000

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Population

- Much of the unit is not accessible to public hunters. Limited public access to both private and public lands makes it difficult to achieve adequate harvest of antlerless elk and quality opportunities for bull

- hunting.
- Equitable elk distribution across the herd unit.

Habitat

- Drought impacts to forage condition, vigor and abundance.
- Limited summer range on the unit.
- Habitat fragmentation, loss and disturbance as a result of oil and gas development.
- Pinion-Juniper invasion in limited sagebrush park areas.
- Conifer encroachment in overmature aspen communities
- Wild horse utilization on elk ranges.
- Low elevation canyon bottoms are dominated by greasewood and overmature basin big sagebrush with little forage/cover value for elk.
- Competition with domestic livestock if operators stock at full permitted numbers.

Other Barriers

- Crop depredation.
- Other mortality factors – extreme weather conditions such as drought or extreme winter, disease, poaching, road mortality.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Population

Monitoring

Population Size - Utilize harvest data, tri-annual aerial trend counts, preseason classification and mortality estimates. A computer model has been developed to estimate winter population size based on the above data.

Bull Age Structure - Monitor age class structure of the bull population through the use of annual preseason classification, checking stations, uniform harvest surveys, field bag checks, and aerial classification. Average age of harvested bulls from Limited Entry portions of the unit will be determined by tooth age data submitted by each hunter.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Aggressive and localized antlerless harvest will be used to control elk populations and respond to localized range concerns. Bull harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for bull:cow ratios.

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 private landowners, federal and state agencies to allow wild fires to burn in beneficial and non-threatening areas and to rehabilitate fires in a way that will benefit wildlife.
- Cooperate with private landowners, federal and state agencies to increase vegetative understory and reduce pinion-juniper encroachment in important sagebrush and mountain shrub communities.
- Work with oil and gas interests to protect key areas and minimize, or mitigate for losses due to development.
- Pursue Conservation Easements on critical parcels of private property to protect elk habitat.
- Cooperate with private landowners, oil and gas development companies, federal and state agencies to prepare access management plans to enhance elk habitat value.
- Continue to foster good relationships with private landowners and promote habitat enhancement projects that will benefit wildlife on private lands as well as promote public access for hunting opportunities.

Management Actions to Remove Population Barriers

Access - Public access is a major limiting factor on this unit. A larger portion of the total antlerless harvest must come from private lands. Cooperate with private landowners and Tribal lands to assure adequate antlerless harvest will occur on these lands.

Depredation - Utilize antlerless hunts, landowner mitigation permits, hazing, stackyard fencing and all other means necessary according to DWR guidelines to minimize crop depredation by elk.

Interagency Cooperation - Continue to work closely with federal and state agencies, as well as private landowners and the Ute Tribe. Assure them that proposed population objectives are reasonable and attainable. Respond to any range deterioration concerns.

APPENDIX A. Boundary Description of Subunits used for General Season Bull Hunting Boundaries.

Nine Mile, Range Creek . Carbon, Duchesne, and Emery counties. Boundary begins at the junction of the Green River and I-70; north along this river to Nine Mile Creek; west along this creek to the Nine Mile Canyon road near Bulls Canyon; west on this road to the Argyle Canyon Road; northwest on this Road to US-191; southwest on US-191 to US-6; southeast on US-6 to I-70; east on I-70 to the Green River.

Portion of Anthro subunit that is open to General Season Any Bull Hunting.

Duchesne and Uintah counties. Boundary begins at the Green River and the BLM/ Ute Tribal boundary near Pariette Draw; west along the BLM boundary to the junction with the Pleasant Valley/Antelope Canyon Road (CR-31); west along this road to the Antelope Canyon Road (CR-27); south along this road to the Antelope Canyon/Sowers Canyon Road junction; west along the Sowers Canyon Road (CR-24) to the Indian Canyon/Sowers Canyon Cutoff Road (CR-25); west along this road to US-191; north along US-191 to Duchesne and US-40; east on US-40 to the Duchesne River; east on the Duchesne River to the Green River; south on the Green River to the BLM boundary near Pariette Draw.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit 13
La Sal
August 2016

BOUNDARY DESCRIPTION

Grand and San Juan counties - Boundary begins at the junction of I-70 and the Green River; south on the Green River to the Colorado River; north on the Colorado River to Kane Springs Creek; southeast along this creek to Hatch Wash; southeast along this wash to US-191; south on US-191 to the Big Indian Road; east on this road to the Lisbon Valley Road; east on this road to the Island Mesa Road; east on this road to the Utah-Colorado state line; north on this line to I-70; west on I-70 to the Green River.

This boundary includes two subunits including:

Unit 13A - La Sal, La Sal Mountains - Grand and San Juan counties - Boundary begins at I-70 and the Green River; south along the Green River to the Colorado River; north along this river to Kane Springs Creek; southeast along this creek to Hatch Wash; southeast along this wash to US-191; south on US-191 to Big Indian Road; east on this road to Lisbon Valley Road; east on this road to Island Mesa Road; east on this road to the Utah-Colorado state line; north on this state line to the Dolores River; northwest along this river to the Colorado River; northeast along this river to the Utah-Colorado state line; north on this state line to I-70; west on I-70 to the Green River.

Unit 13B - La Sal, Dolores Triangle - Grand County - Boundary begins at the Colorado River and the Utah-Colorado state line; south on this state line to the Dolores River; northwest along this river to the Colorado River; northeast along this river to the Utah-Colorado state line.

LAND OWNERSHIP

Estimated Elk Habitat Acreage by Season and Ownership for WMU 13A, La Sal Mountains

Ownership	Yearlong Range		Summer Range		Winter Range		Spring/Fall	
	Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%
Bureau of Land Management	19,764	87	116	<1	58,546	41	1,483	13
Private	765	3	34,287	30	14,993	10	1,880	16
Utah State Institutional Trust Lands	1,935	9	27,949	25	5,082	4	86	1
Utah Department of Natural Resources	180	1	0	0	0	0	0	0
Utah Department of Transportation	0	0	0	0	41	<1	0	0
United States Forest Service	0	0	51,030	45	65,049	45	8,265	71
TOTAL	22,645	100	113,382	100	143,711	100	11,714	100

Range Area and Approximate Ownership* WMU 13B, Dolores Triangle

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Bureau of Land Management					61,435	88
Utah State Institutional Trust Lands					6,645	9
Private					1,915	3
Utah Department of Natural Resources						
TOTAL					69,995	100

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities including hunting and viewing. Maintain the population at a level that is within the long-term capability of the available habitat. Consider impacts of the elk herd on other land uses and public interests including private property rights, agricultural crops and local economies.

Maintain and protect existing crucial elk ranges needed to support the population objectives. Seek cooperative projects to improve the quality and quantity of elk habitat and to minimize conflicts with livestock and other wildlife. Promote enhancement of habitat security and escapement areas for elk.

UNIT MANAGEMENT OBJECTIVES

Population

Target Winter Herd Size - Maintain a winter population of 2,500 elk distributed on the subunits as follows:

La Sal Mountains 1,800 elk
 Dolores Triangle 700 elk

The population objective for the Dolores Triangle subunit was decreased in 2008 by 150 elk (approx. 20%) to be consistent with Dolores Triangle deer management plan revision due to poor winter range conditions. Range conditions have not improved and the population objective will be maintained at the reduced level.

Bull Harvest Age Objective - Maintain a 3-year average bull harvest age of 5.5–6.0 years old on limited entry hunts.

Habitat

Summer Range - Maintain and improve summer forage availability on the La Sal Mountains through aspen regeneration and oakbrush thinning projects. Coordination with private landowners on summer ranges will be discussed and implemented as conditions and funding allow.

Winter Range - Maintain and improve winter foraging areas through browse regeneration and pinyon-juniper removal projects. Approximately 1,360 acres on the La Sal Mountains will be targeted over the next 5 years if funding is available. Monitor range conditions and elk use in the Dolores Triangle to maintain habitat quality necessary to achieve population objectives. Address excessive habitat utilization through harvest strategies coordinated with Colorado Division of Parks and Wildlife (CDPW).

CURRENT STATUS OF ELK MANAGEMENT

Population

La Sal Mountains

The elk population on the La Sal Mountains is currently at the management objective. The last helicopter survey was conducted in January 2014. A total of 1,449 elk were counted and the population is currently estimated at 1,800 elk. Antlerless harvest has been maintained at levels sufficient to stabilize elk numbers at the management objective.

Aerial surveys can be beneficial for population estimate trends, but should not be relied on solely for age or sex classification data, given the inherent social behavior of elk during survey sessions, when bulls tend to be by themselves away from large cow groups and often in rugged, hard to survey locations. Observer error is also greater at this time when classifying calves, given their body size at this time. Data from both aerial surveys and summer classification indicate that calf production and bull:cow ratios are good and fairly stable on this unit.

Bull harvest on limited entry hunts has steadily been increasing with increased numbers of permits. Average age of bulls harvested has remained slightly above the harvest age management objective for the past three years. Spike bull harvest has been somewhat stable over the years, with a noticeable increase in 2015. Harvest results from the past 10 years are listed below.

Year	LE Bull Permits	LE Bull Harvest	LE Bull Avg. Age	Spike Bull Harvest	Antlerless Harvest
2006	75	55	5.9	53	108
2007	71	49	7.4	15	115
2008	84	61	6.9	60	198
2009	90	57	7.1	30	176
2010	97	70	6.3	64	159
2011	111	90	6.7	61	178
2012	125	81	6.0	50	157
2013	126	89	6.8	52	120
2014	136	102	6.5	67	188
2015	140	101	6.6	103	184

The number of bulls harvested on the Colorado portion (unit 60) of the La Sal Mountains has slowly increased over the past 5 years. Annual harvest in Colorado has averaged 66 bulls during the past 5 years. The Colorado portion is managed under a 4-point or better bull harvest strategy.

Dolores Triangle

This unit is winter range for elk that summer in the Glade Park and Pinon Mesa areas (unit 40) of western Colorado. CDPW biologists estimate the population of unit 40 at 3,000 elk. The number of elk that winter in the Dolores Triangle unit is dependent upon winter severity. Winter population numbers have typically varied between 300 and 700 elk, with 522 elk observed during the 2014 aerial survey. A small number of limited entry bull permits have been issued each year for this area. Antlerless harvest was initiated in 2007 and has remained somewhat stable over the past 5 years.

Habitat

La Sal Mountains

Summer ranges and upper elevation winter ranges on the La Sals generally appear to be in good, stable condition according to permanent range trend studies conducted by UDWR in 2014. There are

13 permanent range trend study locations on the unit of which 12 are found within elk use areas. Lower elevation winter ranges are showing slightly downward trends in range condition. There is increased decadence in sagebrush communities and slight downward trends in herbaceous communities. Interagency spring range transects have shown relatively stable utilization by elk. Pellet-group transect data indicated lower range use by elk from 1998 to 2003. Range use has slightly increased over the last 10 years. USFS and BLM assessments of current vegetative trends on the unit have not indicated overutilization of herbaceous forage by elk.

Crop depredation by elk on this unit has been minor during the past 5 years and typically occurs during the spring months. The one exception, a chronic summer alfalfa depredation problem, was resolved by permanently fencing the property. Given the current conditions, associated land use factors, and concern for potential competition with a struggling deer population, no changes to the elk population objective are being proposed at this time

Several habitat improvement projects that will benefit elk have been completed or are planned by federal agencies, UDWR, and private landowners. These projects should allow elk numbers to be maintained at the population objective without creating conflicts with other land uses.

HABITAT PROJECTS COMPLETED AND PROPOSED

Completed Projects – 2012 through 2016		Proposed Projects – 2017 to 2021	
La Sal Mountain Aspen Enhancement, UDWR	120 acres	Brush Hole Shrub Treatment, UDWR	360 acres
Lackey Fan Fire, UDWR	250 acres	Lackey Basin Aspen Restoration Project, USFS	500 acres
Ray Mesa Research Seeding, BLM	150 acres	West Slope PJ/Oak Mastication Project, USFS	500 acres
Black Ridge Fuels Reduction and Vegetative Restoration - Phase II, BLM	2,250 acres		
Black Ridge Fuels Reduction and Vegetative Restoration - Phase III, BLM	640 acres		
Black Ridge Fuels Reduction and Vegetative Restoration, BLM	2,480 acres		
Lackey Basin Aspen Restoration Project, USFS	1,600 acres		
Willow Basin Aspen Restoration Project, USFS	950 acres		
Sally's Hollow/Sinbad Managed Wildfire Project, USFS	550 acres		

Dolores Triangle

The Dolores Triangle is entirely winter range for the Colorado unit 40 elk herd. Elk use is highly variable dependent on snowfall amounts at upper elevation ranges. A series of woodland fires in this area have created substantial new forage areas for elk. Lower elevation winter ranges have been impacted by prolonged drought and concentrated ungulate use adjacent to agricultural fields. There is increased decadence in sagebrush communities and downward trends in soil and herbaceous communities. Cheatgrass invasion is evident in these sites. Elk use of these sites has increased, but is typically low during mild winters. Potential competition with deer herds during severe winters is a concern. Habitat improvement projects completed for other species have benefited wintering elk on this subunit.

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Population

Big Game / Livestock Competition - Resistance of livestock operators to manage for more elk and public concerns of impacts from a large elk population on a struggling deer population.

Elk Distribution - Elk herd congregation on private land CWMUs during the hunting seasons where hunting pressure is significantly lighter than on public lands (La Sal Mountains). Elk use of low elevation winter ranges in poor condition during severe winters (Dolores Triangle).

Harvest Age Objective - Public resistance to increasing numbers of bull hunting permits to reduce average age of harvest.

Habitat

Drought - Impact of prolonged drought to range condition and forage availability. Annual precipitation and weather patterns are the primary influence on range conditions and, ultimately, elk population numbers on this mountain range.

Limited Summer Range - Amount of quality summer habitat is limited for foraging and calving areas, and these ranges are shared with livestock and other big game.

Habitat Loss – Plant succession changes in important summer areas (conifer encroachment in aspen stands) and winter areas (pinyon-juniper invasion in mountain brush-sagebrush communities) reduces forage quality and quantity. Lack of browse regeneration and invasion of annual grasses on lower elevation winter ranges also impact habitat quality.

Other Barriers

Land Resource Activities - Impacts from habitat fragmentation and disturbance as a result of fire, logging and energy development activities. Recent forest fires and logging operations have provided new forage areas but, because of their large acreages, have reduced escapement and security areas. Current and future oil and gas development could potentially fragment existing elk habitat and displace elk to less productive areas.

Elk Distribution on Winter Range - Congregation of large elk herds on some winter areas may result in excessive utilization and could impact range conditions of important deer winter ranges.

Crop Depredation - Chronic crop depredation problems could result in reducing elk numbers in specific areas.

Predation - The La Sal Mountains has a healthy black bear population. Black bears are known to take elk calves, but bear predation does not appear to have a significant impact on elk calf survival rates.

Disease - Chronic wasting disease has been documented in deer and elk on this mountain range.

Illegal Harvest - Extent of illegal harvest on this unit is unknown, but because both subunits cross state boundaries and trophy-quality bulls are present, the potential for illegal activities is elevated. Illegal harvest of mature bulls has the potential to affect the availability of limited entry permits.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Population Monitoring

Population Size - The population is monitored using harvest data, aerial trend counts and classification, preseason classification, and survival estimates. The wintering population on this unit varies because of the movement of elk from and into Colorado depending on winter snowfall amounts.

Bull Age Structure - Monitor age class structure of the bull population through the use of checking stations, uniform harvest surveys, field bag checks, preseason classification and aerial classification.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. The target population size will be achieved through antlerless harvest using a variety of harvest methods and seasons.

Management Actions to Remove Population Barriers

Big Game / Livestock Competition - Continue to work with land management agencies and public grazing operators, as well as private landowners to assure that proposed population objectives are reasonable and attainable. Antlerless harvest through limited entry, Private-Lands-Only (PLO) and mitigation permits will be the primary strategy utilized to achieve and maintain population objectives and to address specific habitat concerns and depredation problems. Keep public informed of deer and elk population trends and incorporate elk management strategies that have minimal impacts to the deer population.

Elk Distribution - Coordinate with CWMU operators to develop hunting strategies to reduce elk congregations on private land during public land hunting seasons. Continue coordination with Colorado Division of Wildlife to ensure bull harvest management on Colorado hunt unit 60 complements harvest strategies implemented on the La Sal Mountains. Development of elk harvest strategies for the Dolores Triangle must consider weather conditions that dictate elk movements into Utah.

Harvest Age Objective - Continue public relations to provide information on effect of changing permit numbers in relation to average age of harvested bulls.

Habitat Monitoring

Habitat Condition and Trend – Continue analysis of trends in habitat condition through permanent range trend studies, pellet transects, and field inspections. Land management agencies will similarly conduct range monitoring to determine vegetative trends, utilization and possible forage conflicts. Range trend studies will continue to be conducted by DWR to evaluate elk habitat health, trend, and carrying capacity.

Management Actions to Remove Habitat Barriers

Limited Summer Range - Work with public land management agencies to develop specific vegetative objectives to maintain the quality of important elk use areas. Respond to any range deterioration concerns and address documented excessive forage utilization.

Habitat Loss - Cooperate with federal land management agencies and private landowners in carrying out habitat rehabilitation projects such as reseedings, controlled burns, water developments, etc. on public and private lands to maintain or increase biological carrying capacity.

Management Actions to Remove Other Barriers

Land Resource Activities - Continue to coordinate with land management agencies and energy development companies in planning and evaluating resource uses and developments that could impact habitat quality. Work to develop and administer access management plans for the purposes of habitat protection and escape or "security" areas.

Elk Distribution on Winter Range - Utilize antlerless harvest in specific areas when necessary to target elk concentrations impacting winter range conditions and/or important deer wintering areas.

Crop Depredation - Work with private landowners to make sure depredation is maintained within tolerable levels, and will not become a limiting factor. Utilize depredation hunts, fencing and other actions where appropriate to reduce/mitigate crop depredation.

Predation - Maintain bear hunting seasons to control bear populations. Maintain high quality summer habitats to protect important calving areas (see "Management Actions to Remove Habitat Barriers").

Disease - Continue testing of suspect animals to detect presence of CWD in the elk population.

Illegal Harvest – In areas where illegal bull harvest has been documented, law enforcement efforts will be focused through action plans.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 14
San Juan
August 2016

BOUNDARY DESCRIPTIONS

Grand and San Juan counties - Boundary begins at the confluence of the San Juan and Colorado rivers; north along the Colorado River to Kane Springs Creek; southeast along this creek to Hatch Wash; southeast along this wash to US-191; south on US-191 to the Big Indian road; east and north on this road to the Lisbon Valley road; southeast on this road to the Island Mesa road; east on this road to the Utah-Colorado state line; south on this state line to the Navajo Indian Reservation boundary; west and south on this boundary to the San Juan River; west along this river to the Colorado River.

This boundary includes two subunits including:

San Juan Bull Elk (limited entry)- Grand and San Juan counties - Boundary begins at the confluence of the San Juan and Colorado rivers; north along the Colorado River to Kane Springs Creek; southeast along this creek to Hatch Wash; southeast along this wash to US-191; south on US-191 to the Big Indian road; east and north on this road to the Lisbon Valley road; southeast on this road to the Island Mesa road; east on this road to the Utah-Colorado state line; south on this state line to US-491; west on US-491 to US-191; south on US-191 to the San Juan River; west on this river to the Colorado River.

San Juan, Montezuma Canyon (any bull) - San Juan County - Boundary begins at the Utah-Colorado state line and US-491; west on US-491 to US-191; south on US-191 to the Navajo Indian Reservation boundary; east on this boundary to the Utah-Colorado state line; north on this state line to US-491.

LAND OWNERSHIP

Estimated Elk Habitat Acreage by Season and Ownership for San Juan Bull Elk

Ownership	Yearlong Range		Summer Range		Winter Range		Spring/Fall	
	Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%
Bureau of Land Management	46,750	30	63	<1	254,076	51	4,545	8
National Park Service	0	0	0	0	10,539	2	0	0
Private	96,670	63	452	<1	29,034	6	6,036	11
Utah State Institutional Trust Lands	7,385	5	5	0	25,609	5	543	1
Utah Department of Transportation	0	0	0	0	1	<1	0	0
United States Forest Service	2,824	2	128,584	99	176,199	36	45,047	80
TOTAL	153,629	100	129,104	100	495,457	100	56,171	100

Estimated Elk Habitat Acreage by Season and Ownership for San Juan, Montezuma Canyon

Ownership	Yearlong Range		Summer Range		Winter Range		Spring/Fall	
	Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%
Bureau of Land Management	45,035	44	-	-	5,509	33	-	-
National Park Service	-	-	-	-	-	-	-	-
Private	51,669	51	-	-	10,440	62	-	-
Utah State Institutional Trust Lands	4,640	5	-	-	681	4	-	-
Utah Department of Transportation	-	-	-	-	0.6	<1	-	-
United States Forest Service	-	-	-	-	77	<1	-	-
TOTAL	101,344	100	-	-	16,707.6	100	-	-

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities including hunting and viewing. Maintain the population at a level that is within the long-term capability of the available habitat. Consider impacts of the elk herd on other land uses and public interests including private property rights, agricultural crops and local economies. Maintain and protect existing crucial elk ranges sufficient to support the population objectives. Seek cooperative projects to improve the quality and quantity of elk habitat and to minimize conflicts with livestock and other wildlife. Promote enhancement of habitat security and escapement areas for elk.

UNIT MANAGEMENT OBJECTIVES

Population

Target Winter Herd Size - Maintain a winter population of 1,300 elk with no more than 1,000 elk wintering west of highway US-191.

Bull Harvest Age Objective - Maintain a 3-year average bull harvest age of 7.5–8.0 years old on the San Juan Bull Elk limited entry subunit. Manage the San Juan, Montezuma Canyon subunit under a general season any bull hunt strategy.

Habitat

Summer Range - Maintain and improve summer forage availability on the Abajo Mountains and Elk Ridge through aspen regeneration and oakbrush thinning projects. Approximately 15,820 acres will be targeted for treatment over the next 5 years.

Winter Range - Maintain and improve winter foraging areas through browse regeneration and pinyon-juniper removal projects.

CURRENT STATUS OF ELK MANAGEMENT

Population

The elk population on the San Juan unit is currently just below the management objective of 1300 elk. The last helicopter survey was conducted in January 2014, and a total of 894 elk were counted yielding a population estimate of 1200 elk. Antlerless harvest has been maintained at levels sufficient to stabilize elk numbers at the management objective.

Aerial surveys can be beneficial for population estimate trends, but should not be relied on solely for age or sex classification data, given the inherent social behavior of elk during survey sessions, when bulls tend to be by themselves away from large cow groups and often in rugged, hard to survey locations. Observer error is also greater at this time when classifying calves, given their body size at this time. Data from both aerial surveys and summer classification indicate that calf production and bull:cow ratios are good and fairly stable on this unit.

Bull harvest on this unit slightly decreased with decreased numbers of permits. Average age of bulls harvested has increased slightly the past 5 years. Harvest results for the San Juan Bull Elk limited entry subunit over the past 5 years are listed below (includes CWMU harvest).

Year	LE Bull Permits	LE Bull Harvest	LE Bull Avg. Age	Spike Bull Harvest	Antlerless Harvest
2011	135	97	7.4	20	104
2012	112	107	7.3	31	125
2013	100	75	7.3	23	132
2014	90	72	8.3	31	174
2015	85	68	8.1	20	107

Habitat

This herd unit is summer range limited, and as such, the number of elk on this unit is primarily determined by trends in annual precipitation on the mountain range. There are 25 permanent range trend study locations on the unit of which 21 are found within elk use areas. Summer ranges and upper elevation winter ranges generally appear to be in good, stable condition according to permanent range trend studies conducted by UDWR in 2014. The upward trend in summer range conditions is primarily due to increases in perennial grasses and forbs. Lower elevation winter ranges showed stable trends in range condition due to decreased browse decadence and increased herbaceous cover. Elk use on these low elevation ranges has been relatively light, particularly in mild winters that have allowed elk to winter at higher elevations. Interagency spring range transects have shown slight increases in utilization by elk. USFS and BLM range assessments of current vegetative trends on the unit have not indicated over utilization by elk.

This unit could most likely support a larger elk population, however, given the current livestock grazing interests, social and political climate, and lower deer population status, the current population management objective is at an acceptable level. Several habitat improvement projects have been completed or are planned by federal agencies, UDWR, and private landowners.

HABITAT PROJECTS COMPLETED AND PROPOSED

Completed Projects – 2012 through 2016		Proposed Projects – 2017 to 2021	
Brushy Basin Habitat Improvement Project Phase 1	790 acres	North Elk Ridge Aspen Restoration - Phase II	60 acres
Peters Point - Phase I	1,940 acres	Mormon Pasture Mountain Wildlife Habitat Improvement Phase I	1,230 acres
Beef Basin – Phase I	1,300 acres	Dark Canyon Phase III	790 acres
Dark Canyon Phase I (formerly Beef Basin Phase 1)	240 acres	Dark Canyon Phase IV	1,100 acres

Johnson Creek Hazard Fuel Project	340 acres	Dark Canyon Phase V	530 acres
Devil Canyon - Phase II Thin and Pile	620 acres	Dark Canyon Phase VI	520 acres
Brushy Basin Habitat Improvement Project - Phase II	570 acres	Dark Canyon Phase VII	930 acres
Drill Hole II prescribed burn	320 acres	Beef Basin Phase II	1,130 acres
Spring Creek Discretionary Seed	17 acres	Beef Basin Phase III	390 acres
North Elk Ridge Aspen Restoration - Phase I	84 acres	Beef Basin Phase IV	740 acres
Peters Canyon II	53 acres	Beef Basin Phase V	900 acres
Dark Canyon Plateau - Phase II	240 acres	North Elk Ridge Aspen/Conifer Mix Prescribed Burn	7,500 acres
Dark Canyon Managed Wildfire	350 acres		
Chimney Park Prescribed Burn	175 acres		
Nizhoni Oak Mastication	130 acres		
North Elk Ridge Ponderosa Pine Thinning	550 acres		

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Population

Big Game / Livestock Competition - Resistance of livestock operators to increasing elk herds and concerns of impacts from a large elk population on a struggling deer population. Lack of public understanding of habitat relationships between elk and livestock can also be a concern.

Crop Depredation - Chronic crop depredation problems could result in reducing elk numbers in specific areas. There is continual crop depredation by elk on this unit, primarily during the summer on croplands east of highway US-191. Monetary damages have been significant on crops such as sunflower, corn and beans. These damage problem areas are often adjacent to CWMU units with large elk numbers. Some landowners are reluctant to enroll these properties in CWMUs because they feel that participation in the CWMU program does not adequately compensate them for losses sustained from elk depredation.

Harvest Age Objective - Maintaining high bull numbers to achieve harvest age objective and reduction of antlerless population to achieve population objective. Public resistance to increasing numbers of bull hunting permits to reduce average age of harvest can be a concern.

Landowner Participation in Cooperative Wildlife Management Unit Programs – Resistance of landowners to join CWMU units because of a lack of knowledge of the program or because of inadequate compensation for crop depredation losses.

Habitat

Drought - Impact of prolonged drought to range condition and forage availability.

Limited Summer Range - Amount of quality summer habitat for foraging and reproductive activities is limited and shared with livestock and other big game.

Habitat Loss – Plant succession changes in important summer areas (conifer encroachment in aspen stands) and winter areas (pinyon-juniper invasion in mountain brush-sagebrush communities) reduces forage for elk. Lack of browse regeneration and invasion of annual grasses on lower elevation winter ranges also impact habitat quality.

Other Barriers

Elk Distribution - Congregation of large elk herds on some areas may result in excessive utilization and could displace deer herds to less productive ranges.

Land Resource Activities - Impacts from habitat fragmentation and disturbance as a result of energy development and timber management activities. Recent implications of a new “Bear’s Ears National Monument” could impact elk habitat on this unit, depending on the designation results. A change in landownership and management could potentially cause a reduction in habitat projects on the unit, causing less desirable vegetative communities and potentially distributing elk into lower quality areas.

Predation - The San Juan Unit has healthy black bear and cougar populations. Black bears are known to take elk calves and cougars will prey on all ages of elk. With that said, predation does not appear to have a significant impact on elk survival rates on this unit.

Illegal Harvest - Extent of illegal harvest on this unit is unknown, but because of the unit’s reputation for trophy-quality animals, the potential for illegal activities is elevated. Illegal harvest of mature bulls has the potential to affect the availability of limited entry permits.

Disease - Chronic wasting disease has been documented in deer and elk on the adjacent La Sal Mountain range and in deer on the Abajo Mountains.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Population Monitoring

Population Size - The population is monitored using harvest data, aerial trend counts and classification, preseason classification, and survival estimates. Investigate and incorporate research findings on differential sightability of cow-calf groups, spike bulls, and mature bulls during aerial surveys.

Bull Age Structure - Monitor age class structure of the bull population through the use of checking stations, uniform harvest surveys, field bag checks, preseason classification and aerial classification.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. The target population size will be achieved through antlerless harvest using a variety of harvest methods and seasons.

Management Actions to Remove Population Barriers

Big Game/Livestock Competition - Continue to work with land management agencies and public grazing operators, as well as private landowners to assure that proposed population objectives

are reasonable and attainable. Antlerless harvest through limited entry, private-lands-only (PLO), antlerless control and mitigation permits will be the primary strategy utilized to achieve and maintain population objectives and to address specific habitat concerns and depredation problems. Keep public informed of deer and elk population trends and incorporate elk management strategies that have minimal impacts to the deer population. Educate the public about habitat and dietary overlap between elk and livestock.

Crop Depredation - Work with private landowners to make sure depredation is maintained within tolerable levels and will not become a limiting factor. Utilize depredation hunts, fencing and other actions where appropriate to reduce/mitigate crop depredation. Consider other options for attaining antlerless harvest east of highway US-191 such as reciprocal agreements on CWMUs. The CWMUs have recently participated in compensating landowners for crop damages adjacent to their units. The southeast portion of this unit is being managed under general open bull and liberal antlerless harvest strategies to alleviate depredation problems in this area. Antlerless removal on the CWMUs has been increased over the past 5 years to address these depredation situations.

Harvest Age Objective - Continue public relations to provide information on effect of changing permit numbers in relation to average age of harvested bulls. Continue spike-only bull hunts to increase hunting opportunities.

Habitat Monitoring

Habitat Condition and Trend – Continue analysis of trends in habitat condition through permanent range trend studies, pellet transects, and field inspections. Land management agencies will similarly conduct range monitoring to determine vegetative trends, utilization and possible forage conflicts. Range trend studies will continue to be conducted by DWR to evaluate elk habitat health and trend. Conduct range utilization studies in areas of perceived conflicts to evaluate competition between elk and livestock.

Management Actions to Remove Habitat Barriers

Limited Summer Range - Work with public land management agencies to develop specific vegetative objectives to maintain the quality of important elk use areas. Respond to any range deterioration concerns and address documented excessive forage utilization. Continue to investigate and develop habitat projects on summer range to improve forage availability for both elk and cattle.

Habitat Loss - Cooperate with federal land management agencies and private landowners in carrying out habitat rehabilitation projects such as reseeding, controlled burns, water developments etc. on public and private lands to maintain or increase forage quantity and quality. Completion of habitat projects to improve forage availability for both elk and cattle would allow potential increases in the elk population.

Management Actions to Remove Other Barriers

Elk Distribution - Utilize antlerless harvest in specific areas when necessary to target elk concentrations impacting range conditions and/or important deer areas.

Land Resource Activities - Continue to coordinate with land management agencies and energy development companies in planning and evaluating resource uses and developments that could impact habitat quality. Work to develop and administer access management plans for the purposes of habitat protection and escape or “security” areas.

Predation - Maintain hunting seasons to control bear and cougar populations. Maintain high quality summer habitats to protect important calving areas (see "Management Actions to Remove Habitat Barriers").

Illegal Harvest – Implement action plans to focus law enforcement efforts in areas where illegal bull harvest has been documented.

Disease - Continue testing of suspect animals to detect presence of CWD in the elk population.

ELK UNIT MANAGEMENT PLAN
Elk Herd Unit #16
CENTRAL MOUNTAINS
August, 2016

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 116,829 of the private acres on this unit are managed as Cooperative Wildlife Management Units (CWMU) comprising portions of summer, winter, and yearlong ranges. There are 96,279 acres on the Manti subunit and 20,550 acres on the Nebo subunit.

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

Ownership	Spring/Fall Range		Summer Range		Winter Range	
	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)

Ownership	Yearlong range		Summer Range		Winter Range	
	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. Maintain an elk population consistent with available range resources that are in balance with other range uses such as livestock grazing and watershed protection. Consider impacts of the elk herd on other land uses and public interests including private property rights, agricultural crops and local economies.

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 from oil and gas development, road construction, urban expansion, increased recreation or other land use impacts.

UNIT MANAGEMENT OBJECTIVES

Population

Population Objective 1: Maintain healthy elk populations at biologically and socially sustainable levels

Population Objective 2: Foster support among stakeholders for Utah's elk management program.

Population Objective 3: Achieve a proper distribution of elk on private and public lands.

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. Desired elk population levels are guided by habitat conditions and public tolerance of elk.

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 private lands only permits, depredation permits, and CWMU permits to increase antlerless harvest on private lands.

Habitat

The unit habitat objectives will follow the goals and objectives outlined in the statewide elk plan with the primary goal to "conserve and improve elk habitat throughout the state." This will be done by maintaining sufficient habitat to support elk herds at population objectives, reducing competition for forage between elk and livestock, and reducing adverse impacts to elk herds and elk habitat.

Unit habitat objectives will include;

- Enhance elk habitat on a minimum of 20,000 acres during the next 5 years through direct range improvements.
- 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.

CURRENT STATUS OF ELK MANAGEMENT

Population

The elk population on the Central Mountains, Manti subunit has fluctuated between 12,100 and 12,700 elk for the past 5 years and has been slightly above the population objective of 12,000 elk. The Nebo unit has shown an increasing trend from 1,100 elk in 2011 to 1,550 elk in 2015 which is above the objective of 1,450 elk. Antlerless harvest was initiated in 2012 in response to drought conditions, as well as to assist with rangeland recovery after the Seeley Wildfire. Antlerless harvest will continue to help manage a growing elk population. The Central Mountains' elk herd was last surveyed in January 2013. There were 25 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 remained relatively stable with very minor permit changes. Spike harvest has been relatively stable as well. The average age of harvested limited entry bull has slowly declined but is still at the upper end of the objective of 5.5-6.0 year old bulls on the Manti unit (see tables 4a and 4b). The average age of bull harvested on the Nebo unit has remained below the objective of 6.5-7.0 for each of the past 5 years.

Table 4a. Trends in Harvest Central Mountains, Nebo Subunit

YEAR	# of Elk on Unit	LE BULL HARVEST (public and CWMU)	GEN.SEASON SPIKE HARVEST.	AVE. AGE OF HARVESTED BULLS	ANTLERLESS HARVEST
2011	1100	59	108	6.0	81
2012	1200	62	105	5.8	74
2013	1200	54	126	6.2	145
2014	1400	55	101	5.6	137
2015	1550	56	110	6.0	135

Table 4b. Trends in Harvest Central Mountains, Manti Subunit

YEAR	# of Elk on Unit	LE BULL HARVEST (public and CWMU)	GEN.SEASON SPIKE HARVEST.	AVE. AGE OF HARVESTED BULLS	ANTLERLESS HARVEST
2011	12500	330	380	6.1	615
2012	12700	320	501	6.2	1366
2013	12300	329	487	6.2	1232
2014	12500	341	414	6.1	1407
2015	12100	345	417	5.9	1320

Habitat

Habitat Conditions - There are approximately 25 permanent range trend study locations on the Central Mountains Manti Subunit that occur primarily on elk winter ranges and an additional 19 transects read on the Nebo Subunit. The Nebo subunit was last read in 2012. The Manti Subunit was read in 2014. 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 on low elevation deer ranges inhabited primarily by deer. Range Trend Study locations at mid elevations where elk typically winter show a better trend. The majority of range trend sites monitored on predominantly elk ranges were in fair to good condition with stable browse and herbaceous understory components. The average of all of the DCI scores on elk winter ranges suggest the winter elk habitat is in Fair to Good condition.

Cooperative DWR/BLM/USFS spring range rides have shown relatively stable to declining elk utilization patterns on winter ranges with some localized areas being over utilized. Declines in elk use can be attributed to a series of mild winters where elk could winter at higher elevations in concert with aggressive antlerless harvest that has reduced the overall population and changed migration patterns.

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.

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 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. See Tables 2 through 5..

Table 2 Completed Habitat Treatment Projects Benefitting Elk on the Central Mountains, Manti Unit, 2012 – 2016

Gordon Creek WMA Shrub Planting	24.15
Grimes Wash Pinyon/Juniper Removal	224.93
Burma Rd. Pinyon/Juniper Removal	1,312.23
Porphyry Bench Cliffrose Planting Phase I	57.41
Stump Flat Pinyon/Juniper Removal Project	460.44
Helper Benches Pinyon/Juniper Removal	240.98
Swasey Habitat Improvement/Hazardous Fuels Reduction Project Phase VI	265.28
Swasey Habitat Improvement/Hazardous Fuels Reduction Project Phase V	854.54
Swasey Habitat Improvement/Hazardous Fuels Reduction Project Phase 3	1,073.64
Grimes Wash BLM Stewardship P/J Removal	181.3
Ford Ridge Fuels Reduction and Vegetation Restoration Project-Phase I	134.58

Swasey Wildlife Improvement/Hazardous Fuels Reduction Project Phase 2	686.16
Price Canyon Recreation Area Fuels Treatment Project	402.2
North Skyline Seed and Noxious Weed Control	60.56
Wood Canyon Dixie Harrow	22.19
Swasey Habitat Improvement/Hazardous Fuels Reduction Project Phase IV	518.49
Gordon Creek Lower Fields Rehabilitation	189.97
Price Wet Meadows-Gordan Creek	250.92
Hiawatha/Miller Creek Bullhog Project	287.18
Scofield Mountain Home Erosion Control	6.26
Spirit of Conservation/Poison Springs Bench Lop and Scatter	2,232.58
North Springs Pinyon/Juniper Removal Phase 1	3,590.63
Shinob Girls Camp Sagebrush Mowing	24.46
Seely Wildfire	48050
Hilltop Conservation Easement Bullhog	320
Bear Mountain CWMU Habitat Enhancement	285.93
12 Mile Habitat Improvement	302.11
Dairy Fork Habitat Improvement	702.27
Canal Canyon Project	402.94
Total	63,164.33

Table 3. Proposed Habitat Treatment Projects Benefitting Elk on the Central Mountains, Manti Unit, 2016-2021

North Springs PJ Removal Phase II	4,484.27
Gordon Creek Tamarisk and Russian Olive Removal	614.81
Swasey Habitat Improvement/Hazardous Fuels Reduction Project Phase VII	620.13
Porphyry Bench Sagebrush Planting	98.56
Trail Mountain Rx	5000
Willow Creek Habitat Improvement	621.93
Spring City Habitat Improvement	532.7
Birdseye WMA Bullhog	356.29
Pigeon Hollow Winter Habitat Improvement	764.86
Mill Fork Wildlife Habitat Improvement	553.11
Total	13,646.66

Table 4. Completed Habitat Treatment Projects Benefitting Elk on the Central Mountains, Nebo Unit, 2016-2021

Dry Canyon Chain Harrow	59.89
Wood Hollow Fire Bitterbrush Seeding	91.05
Thistle Creek Discretionary Seed Project	49.02
Wood Hollow Fire Chaining	1558
Wood Hollow Fire - Southwest Rehab	7292.85
Wood Hollow Fire - Southeast Rehab	9294.74
Wood Hollow Fire - North Rehab	4212.47
Wood Hollow Fire Rehab - BLM	3728.27

Maple Canyon WMA Habitat Improvement	832.23
Cedar Hills Restoration	164.91
Dry Canyon Wildlife Improvement	246.05
San Pitch Mountains Habitat Restoration Phase I	852.67
Total	28,382.15

Table 5. Proposed Habitat Treatment Projects Benefitting Elk on the Central Mountains, Nebo Unit, 2016-2021

San Pitch Mountains Habitat Restoration Phase II	852.67
Levan Fire Rehab	1554.68
Total	2,407.35

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Population

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

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 largescale fires.
- Competition for forage with domestic livestock on both summer and winter ranges.

Other Barriers

- Agricultural Depredation - elk on privately owned crops and rangelands may decrease public support for elk on this unit. 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

Population

Monitoring

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

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

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the mandatory harvest reporting for the limited entry 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.
- Utilize Private-Lands-Only permits to reduce elk numbers on private lands.
- Cooperate with private landowners to fence 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 if needed to address depredation and public safety issues by bulls according to DWR depredation policy.
- Cooperate with UDOT to pursue funding to reduce vehicle mortalities.

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.

Management 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.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 17
Wasatch Mountains
October, 2016

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.

UNIT MANAGEMENT GOALS

- To manage and sustain a healthy population of elk at the current population objectives.
- 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 as well as “limited entry” elk hunting opportunities. Limited entry hunts will be divided as archery, any weapon, muzzleloader, and multi-season hunt as an opportunity to hunt all three weapon types.

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 – 8,400 wintering elk distributed in the following subpopulations:

Wasatch Mountains West	3,400
Currant Creek	3,200
Avintaquin	1,800

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 dependent upon operating budgets and weather conditions.

Average age and permits for bull elk on Wasatch unit 2005-2015 (age objective 5.5 - 6 yrs).

Year	Harvest Age	Bull Tags*
2005	7.1	216
2006	7.2	236
2007	7.1	287
2008	7.3	360
2009	6.7	432
2010	6.8	509
2011	6.4	603
2012	6.3	652
2013	6.9	655
2014	6.8	703
2015	6.6	733

**public draw bull tags*

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.

Population Objective

When looking at the population objective for this unit, the Division has taken into account the following factors: 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) range health. Other factors influencing population objectives are urban encroachment, competition for forage, and over utilization of winter browse in areas of concentrated deer and elk during hard winters.

Land Ownership

The following tables show landownership in relation to habitat type.

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	12,673	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

Completed and proposed habitat improvement projects

Over the past decades many habitat improvement projects have occurred that benefit elk. These include; both prescribed fire and wild fire, pinyon-juniper chainings, conifer thinning, etc. There are also many proposed projects for the Wasatch unit that will benefit elk. Please see the proceeding tables for lists of projects and acreages.

Habitat improvements & protections on the Wasatch unit from 2006 to 2016.

Project Name/Description	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
Skitzzy 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. Santiquin Draw chaining	DWR	238	DWR
Tabby Mountain lop & scatter	DWR	600	DWR
Wallsburg fire break treatment	DWR	100	DWR
Wallsburg shrub planting	DWR	500	DWR, SFW
Sheep Creek phase 1	USFS	500	DWR, SFW,MDF,Utah Bowman
Sheep Creek phase 3	USFS	790	DWR,SFW,MDF,FFSL,Safari Club, Utah Bowman
Wallsburg knapweed control phase 1	DWR	932	DWR,MDF,SFW,RMEF,Utah Bowman, Wasatch Co.,ESMF
Wallsburg knapweed control phase 2	DWR	830	DWR,MDF,SFW,RMEF,Utah Bowman, Wasatch Co.
Wallsburg knapweed control phase 3	DWR	603	
Bartholomew Canyon vegetation treatment	USFS	1,000	USFS,DWR
South Strawberry sagebrush treatment	USFS	310	USFS,DWR
Springdell south vegetation treatment	USFS	2,500	USFS,DWR
Wheeler fire rehab.	DWR	220	DWR,Wasatch Co.,Private Landowner
Billies Mountain	USFS	1,000	DWR,Rocky Mtn.Power,SFW,RMEF,NWTF
Cascade weed treatment	USFS	2,175	DWR,NWTF
Tank Hollow habitat improvement	USFS	1,700	DWR,MDF,SFW
Foothill road closer	USFS	750	DWR,National Forest Foundation, NRCS
TOTAL		45,243	

Proposed habitat projects on unit 17. Others may be added as need/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.
Blacktail Mountain west PJ treatment	DWR	440	DWR
Reservation Ridge burn	BLM	85	BLM, DWR
Sheep Creek phase 4	USFS	1,427	DWR,FFSL,MDF,RMEF,Safari Club,SFW,Utah Bowman
Trout Creek reentry	USFS	200	DWR
Wallsburg shrub planting	DWR	500	DWR,SFW
Skitzzy lop & scatter	DWR	390	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.
\$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		45,634	

Population status

The last aerial census was taken in February 2013. The following are the results for each subunit:

Wasatch West 17a- 2,862 elk counted, 80% sightability, population estimate 3,434

Currant Creek 17b- 2,992 elk counted, 80% sightability, population estimate 3,740

Avintaquin 17c- 1,396 elk counted, 80% sightability, population estimate 1,745

Wasatch Mountains Unit Total- 7,250 elk counted, 80% sightability, total unit population estimate 8,919

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.
- Private lands where hunting is limited, resulting in elk refuges.

Population

- Difficulty in harvesting antlerless animals due to elk behavior, refuge areas on private and Ute tribal lands, and rugged terrain.
- Some sportsman resistance to increasing limited entry bull harvest to meet bull age objective.

Other Barriers

- Agricultural Depredation - 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, and disease.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

- Continue to monitor permanent range trend studies located throughout the winter range.
- Conduct 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 understory and reduce Pinyon/Juniper invasion of the sagebrush steppe 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 when 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

- Utilizing harvest data, preseason classification, and mortality estimates, a population model has been developed to estimate winter population size. This model is supplemented with data from aerial trend counts conducted every three years when weather and budgets permit.
- Use new GPS collar study to better understand seasonal elk movements and movements between management units.

Bull Age Structure

- Average age of elk will be determined by tooth age data from limited entry harvest.
- CWMUs on the unit will also submit teeth for aging and will comply with unit age objectives specified in the Utah Statewide Elk Plan.

Harvest

- The primary means of monitoring harvest will be through the statewide uniform harvest survey and the mandatory harvest reporting for the limited entry hunts. Target population size will be maintained through the use of antlerless harvest using a variety of harvest methods and seasons; including private lands only permits, and any other legal hunting strategies.

- Trap and transplant is another tool that may be used to address severe depredation situations, conflicts in high human population areas, and elk distribution issues on the unit.
- Bull harvest level will be developed through the RAC and Wildlife Board process to achieve the average age of 5.5-6.0 years.
- 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 elk may be harvested during the general season spike elk 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 haystacks in winter depredation areas.
- Cooperate with UDOT to pursue funding to reduce elk/vehicle collisions.
- 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
September 2016**

BOUNDARY DESCRIPTION

Salt Lake, Tooele and Utah counties--Boundary begins at I-15 and I-80 in Salt Lake City; south on I-15 to SR-73; west on SR-73 to the Pony Express road; west on the Pony Express road to SR-36; south on SR-36 to Pony Express Road; west on this road to the Skull Valley road (SR 196); north on this road to I-80 at Rowley Junction; east on I-80 to I-15. The Carr Fork Wildlife Management Area is closed to motorized travel year-round. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY

LAND OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	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

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing. Balance elk herd impacts on human needs, such as private property rights, agricultural crops and local economies. Maintain the population at a level that is within the long-term capability of the available habitat and is in proper balance with other range users such as domestic livestock. Strive for consistency and simplicity in elk management programs.

UNIT MANAGEMENT OBJECTIVES

Habitat

The unit habitat objectives will follow the goals and objectives outlined in the statewide elk plan with the primary goal to "conserve and improve elk habitat throughout the state." This will be done by maintaining sufficient habitat to support elk herds at population objectives and reduce competition for forage between elk and livestock and reducing adverse impacts to elk herds and elk habitat.

This will include the following projects

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

Coordinate with federal agencies to improve water development while helping to maintain existing water sources. Identify new potential water sources.

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.

Coordinate with sportsman's groups, grazers, private land owners, dedicated hunters, federal agencies and other partners on habitat projects.

Population Management Objectives

Population Objective 1: Maintain healthy elk populations at biologically and socially sustainable levels

Population Objective 2: Foster support among stakeholders for Utah's elk management program.

Population Objective 3: Achieve a proper distribution of elk on private and public lands.

Target Winter Herd Size – Maintain a wintering elk population of 1,650 elk (computer modeled estimate). This is an increased objective from the previous plan. The increase will occur on the Stansbury portion of the unit, increasing from 250 to 1000. Elk will be distributed among the following sub-populations:

<u>Wintering Area (counting unit)</u>	<u>Target Population</u>
North Oquirrh Mountains	350
South Oquirrh Mountains	300
<u>Stansbury</u>	<u>1,000</u> TOTAL
	1,650

The elk population objective will be evaluated each time the unit management plan is up for renewal. 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 5.5 to 6.0 year old bulls in the harvest.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Habitat Conditions: In 2012, 16 range trend studies were read on unit 18. These trend studies sample big game winter and summer range sites. 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.

Cooperative DWR/BLM/USFS spring range rides have shown relatively low elk utilization patterns on winter ranges.

When looking at elk population objectives, the Division has taken into account factors 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.

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 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 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 2016		Proposed Projects and acreage– 2016 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

This population has been a slow but steady increase over the past 10 years. There are three target herd objectives for this unit, North Oquirrh (primarily Kennecott lands), South Oquirrh, and Stansbury. This unit was surveyed in 2016, and population estimates were 744 for all three wintering areas. Antlerless permits are the primary way to target areas over objective. Most of the increase has occurred on Heaston East CWMU. In recent years increased pressure on the south part of the unit has moved elk to the north.

Limited entry bull harvest on the unit has remained relatively stable with very minor permit changes. Spike harvest has been relatively constant. The average age of harvested limited entry bull has remained stable as well.

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 are utilized to 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 winter aerial classifications conducted every 3 years. Tooth aging data will be used to manage this population to the approved age objective of 5.5-6.0 year old bulls.

Harvest - Whenever possible, harvest recommendations will be crafted 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. Monitoring of harvested animals will occur through the use of the uniform statewide harvest.

BARRIERS TO ACHIEVING MANAGEMENT OBJECTIVES

Habitat

- Loss of winter range due to 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.
- Competition for forage with domestic livestock on both summer and winter ranges.

Population

- Public input on numbers of bull hunting permits used to manage mean age of harvest.

Other Barriers

- Land ownership and access
- Crop depredation
- Weather extremes
- Other mortality causes

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.
- 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.

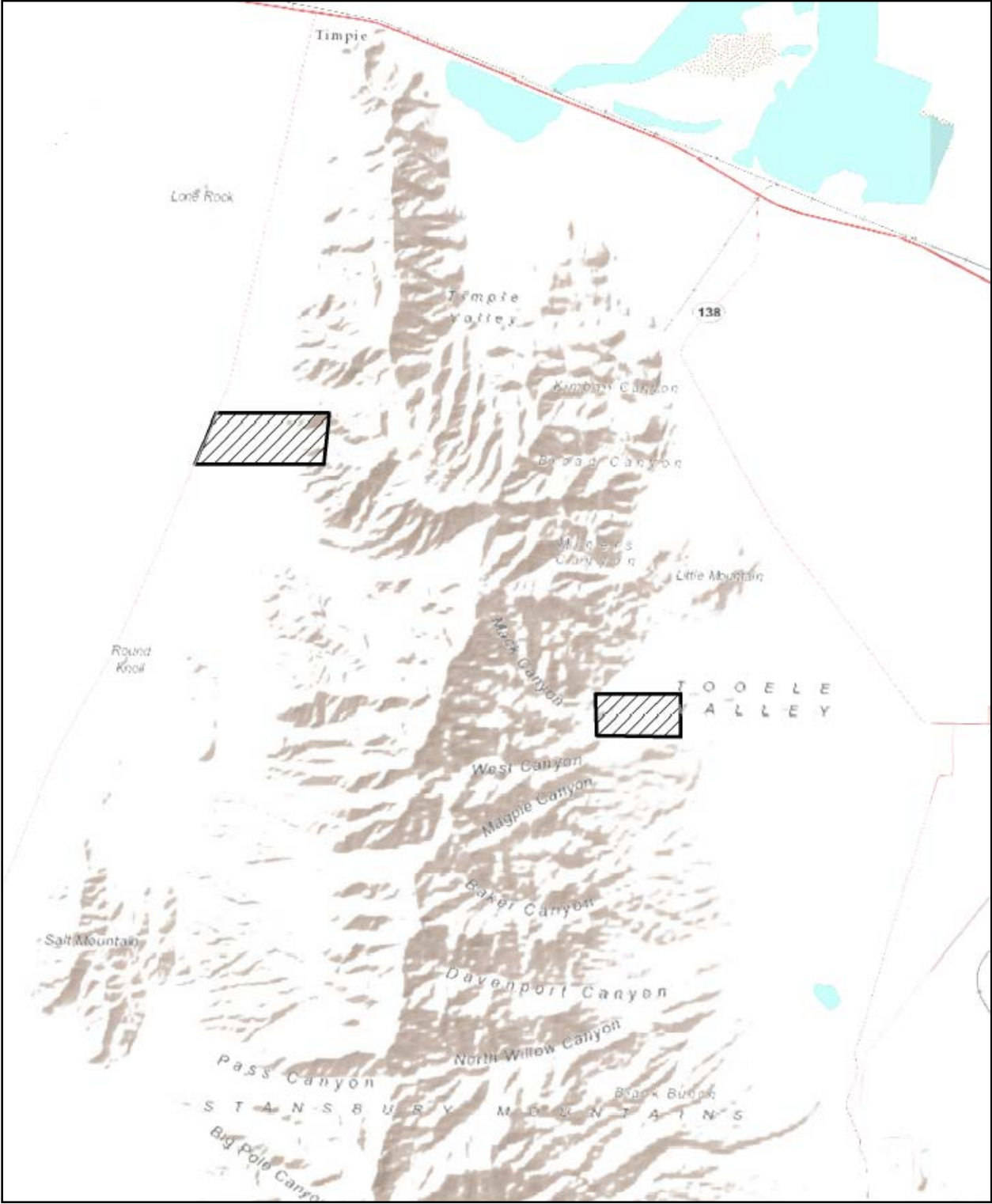
Bull Age Structure - Monitor age class structure of the bull population through the use of annual preseason ground classification and winter aerial classification. Average age of harvest will be determined by tooth age data from limited entry harvest.

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

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.
- Translocate elk to locations where population densities are low. A list of sites for translocation includes Muskrat Canyon and Mack Canyon (Appendix 1)

Appendix 1. Elk transplant sites on the Stansbury Mountains. Release sites include Muskrat Canyon and Mack Canyon.



ELK HERD MANAGEMENT PLAN
Elk Herd Unit #19
West Desert
September 2016

BOUNDARY DESCRIPTION

Juab and Tooele 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. EXCLUDES ALL NATIVE AMERICAN TRUST LAND WITHIN THIS BOUNDARY.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP DEEP CREEK SUB-UNIT

Unit 19a	Spring-Fall		Summer-Fall Range		Winter Spring		Winter Range		Yearlong range	
	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

The unit management goals are 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 and; 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.
- Monitor permanent range trend studies located throughout the winter range.

Population

Target Winter Herd Size – We want to 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 objective is to harvest 7.5-8.0 year old bulls annually under a limited entry harvest strategy. Antlerless harvest will be governed by depredation concerns and the eventual possibility of range condition problems attributable to elk.

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 was a stable to upward trend for soil, herbaceous understory, and browse components in 2012. Improvement on the browse component can be attributed to habitat treatments. Following a treatment of the browse the sagebrush stand was still relatively dense, but comprised of mostly smaller mature and young plants.

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 habitat improvement projects have occurred that benefit elk. These include; both prescribed fire and wild fire, pinyon-juniper chainings, conifer thinning, etc. This table lists specific habitat improvements & protections that have occurred in the last ten years on Unit 19.

WMU 19 Elk Projects 2005 to 2016

Completed Project	Agency	Acres	Cooperators
Ibapah Sagebrush Improvement- Year 1	BLM	250	DWR, MDF
Ibapah Sagebrush Improvement - Year 2	BLM	2,202	DWR, SFW, MDF, RMEF
Ibapah Sagebrush Improvement - Year 3	BLM	1,033	DWR, SFW, MDF, RMEF, NWTF
Ibapah Sagebrush Improvement - Year 4	BLM	152	DWR, SFW, RMEF, MDF
Ibapah Fire Rehab	BLM	1,135	DWR, FFSL

Deep Creek Valley Sagebrush Improvement -Year 2	BLM	647	DWR, MDF
Deep Creek East Pasture Habitat Improvement	BLM	150	DWR, RMEF
Deep Creek West Pasture Habitat Improvement	BLM	250	
Goshute Pinyon Juniper chaining project	NRCS	750	DWR
	USFS	750	DWR, National Forest Foundation, NRCS
TOTAL		7,319	

Population

The latest aerial flight was conducted January 2009 where 66 bulls were counted. Antlerless animals had moved off of the unit and were not located. These animals likely move onto tribal ground in the winter when aerial flights take place and move back onto the WMU at other times of the year. The adjusted modeled population count for 2016 is below objective at 60 animals. Average calf production is 40 to 50 calves/100 cows. The unit is scheduled to have another aerial flight winter of 2017.

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. Managing for healthy habitats is a priority on the deep creek unit. DWR will propose habitat improvement projects where needed to benefit elk and livestock on the range, and design antlerless hunts to obtain harvest and properly distribute elk on the unit.

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. These situations are best dealt with on a case specific basis tailored to the specific situation. Unlawful harvest is best addressed through an action plan approach that assigns greater law enforcement efforts or which specifies some necessary public education measures. Cooperative efforts with the state Department of Transportation may help 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

- 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, and will explore fencing 250 additional acres to minimize elk depredation in the Ibapah Valley.

Population

Monitoring

Population Size – use the results from the annual harvest survey, age and sex classification surveys, aerial census and estimates of mortality to 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 assess population status. Its primary use, however, will be to assist in determining ongoing harvest requirements necessary to manipulate herd size and composition. If needed, DWR may trap and remove or transplant elk to achieve management objectives.

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 concerns. 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.

Communication - DWR will strive to coordinate with the Goshute Tribe regarding harvest recommendations for the entire herd, keeping in mind the sovereign status of the Goshute Tribe. DWR has agreed to manage to a similar age objective as the Goshute tribe of 7.5-8.0 year old limited entry bull harvest. Another priority is to coordinating with the Goshute Tribe on habitat management efforts so that elk populations and range resources both on and off the reservation may benefit.

DWR will 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. Cooperatively, we will propose habitat projects to reduce juniper encroachment. 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.

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 20 (Southwest Desert)
August 2016

BOUNDARY DESCRIPTION

Beaver, Iron and Millard counties--Boundary begins at the Utah-Nevada state line and US-6/50; east on US-6/50 to SR-257; south on SR-257 to SR-21; south on SR-21 to SR-130; south on SR-130 to I-15; south on I-15 to SR-56; west on SR-56 to the Lund highway; northwest on this highway to Lund and the Union Pacific railroad tracks; southwest along these tracks to the Utah-Nevada state line; north on this state line to US-6/50. Excludes all CWMUs

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	SWD WMU Landownership		Yearlong Range	
	Area (acres)	%	Area (acres)	%
Forest Service	55,545	1.7	0	0
Bureau of Land Management	2,602,306	78.1	764,810	84.03
Utah State Institutional Trust Lands	313,722	9.4	89,536	9.84
Native American Trust Lands	0	0	0	0
Private	348,302	10.5	45,543	5.0
Utah Department of Transportation	163	<1	0	0
USFWS Refuge	0	0	0	0
National Parks	0	0	0	0
Utah State Parks	0	0	0	0
Utah Division of Wildlife Resources	10,270	<1	10,259	1.13
TOTAL	3,330,308	100	910,148	100

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing. Balance elk herd impacts on human needs, such as private property rights, agricultural crops and local economies. Maintain the population at a level that is within the long term support capability of the available habitat.

Maintain and enhance forage and cover habitat through vegetative manipulation, domestic grazing and other management techniques. Manage for increased water distribution which will in turn distribute ungulates. Mitigate against habitat fragmentation, degradation and loss stemming from an increased wild horse population, energy development, roads, increased recreation and other impacts.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size: Manage toward a herd unit computer model elk winter population size of 975. The Southwest Desert elk committee recognizes that the objective of 975 is a low population objective to have on a

unit that is so large. There have been no increases to the elk population objective since 1998. Since that time elk have increased their area of use and a significant portion of the population uses ranges that are north of Highway 21. It has been proposed that upon reaching a minimum of three of five goals listed below, the Southwest Desert elk committee will meet for an evaluation and discussion. If it is found sustainable, the population objective could be increased to the total of 1,200 wintering elk. The herd would be managed for a distribution of 900 wintering elk south of Highway 21 and 300 wintering elk north of Highway 21.

Goals:

1. Complete 15,000 acres of additional habitat treatments.
2. Install a minimum of 3 new wildlife guzzlers.
3. Elk population is managed to 975 or below for the next survey cycle.
4. Wild horse numbers have been significantly reduced.
5. Livestock grazing AUM's that have been suspended due to drought or habitat restoration have been reinstated or increased beyond original levels.

Bull Age Structure: Maintain a 3-year average bull harvest age of 6.5 - 7 years for all limited entry hunts. Maintain a high success rate on limited entry rifle hunts.

Recruitment: Determine annual recruitment and population status of the herd.

Harvest: Maintain antlerless harvest that will decrease the population and keep the population at its objective. Use limited entry bull harvest and general season spike bull harvest to provide hunting opportunities and maintain population dynamics.

HABITAT MANAGEMENT OBJECTIVES

- Continue to cooperatively work with the BLM, private landowners and SITLA to implement landscape scale habitat improvements.
- Promote sustainable wildlife, livestock and wild horse grazing practices that minimize negative impacts to plant health and diversity.
- Develop new and protect/improve existing water sources for wildlife and livestock to improve distribution and minimize overutilization in proximity to water sources.
- Remove piñon and juniper tree encroachment into all ranges and vegetative communities. Approximately 3,000 acres per year will be targeted.
- Enhance riparian systems through continued, prescriptive grazing and mechanical or chemical treatments.
- Manage wild horse herds within appropriate management levels to minimize impacts.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Habitat Conditions: The current BLM assessment is that habitat is stable on this unit; although it may be declining on a few allotments. Actual forage use by elk on BLM lands is estimated to be less than 10 percent that of livestock. The land ownership of the elk habitat on this unit is largely public land with some of the key areas still being on private lands. There is currently a Landowners Association working with the DWR to address the benefits that elk receive from being allowed on private lands. Tolerance of elk on these and other private rangelands on this unit are one of the factors affecting the population objective of elk on this unit.

Population Objective: The population objective is impacted by the following factors: 1) water distribution, 2) horse population that is beyond DWR control, 3) social and political factors, 4) current and future range improvements, and 5) range health and species competition potentials.

Factors that influence population management: Drought over the past decade has reduced elk habitat. Piñon and juniper invasion is reducing more beneficial forage production and threatening open and mosaic habitats. Canopy cover is closing in mid elevation mature piñon and juniper communities. This limits and slowly removes valuable perennial understory species. Limited livestock forage competition has occurred during the

drought. Agricultural depredations are generally minimal but do occur.

Habitat improvement projects: Numerous habitat improvement projects have been completed during the past ten years. These include taking advantage of naturally caused wild land fires through reseeding and other more labor-intensive accomplishments. In total, more than 34,000 acres have been completed in the last ten years. In that same time frame, seven 10,000 gallon big game guzzlers have been newly built or rebuilt to expand their capacities. Currently proposed projects total 3,578 acres of habitat restoration and three new big game guzzlers for 2016-17. The Hamlin Valley EA is completed and covers 78,000 acres. It is planned that a minimum of 3,000 acres of improvements be done each year over the next 10 years. BLM is also working on an EA to retreat, old treatments on the unit and a new EA's for Mountain Home and Pine Valley areas. Specific project areas and acreage totals are given below.

SOUTHWEST DESERT HABITAT PROJECTS COMPLETED AND PROPOSED

Completed Projects – 2006 through 2015			
Project Name	Acres	Project Name	Acres
Mountain Home Habitat Improvement	1218	White Rocks Fire Rehab	4156
Blawn Wash Seeding Restoration	1733	South Hamlin Shrub steppe Habitat Improvement	839
Salt Cabin Reseed	1190	Indian Peaks WMA Lop and Scatter	1511
Bowler Chaining	1376	Chokecherry Shrub steppe Improvement	1181
Paradise Fire- WH	533	Wah Wah Valley Shrub steppe Improvement	1263
Paradise Fire- BB	1294	Spike Hollow Vegetation Enhancement	1628
Paradise Fire- TS	148	Browse Seeding on FY13 Fires	3414
Hamlin Valley Flinspach	903	Hamlin Valley - Sagebrush Restoration Year I	3046
Greens Canyon Lop and Scatter	690	Halls Well	
Paradise TS Green strip	5	Sewing Machine Pass Guzzler	
Butcher MW Green stripping	60	South Wah Wah Guzzler	
Chokecherry Green strip	53	Grey Hills Guzzler	
Indian Peaks Summer Range Lop and Scatter	484	Woods Reservoir Guzzler	
Keel Spring SITLA	1487	South Antelope Guzzler	
Broken Ridge Fire Rehab	6400	Mountain Home West Guzzler	
		Total Acres Treated	34,612

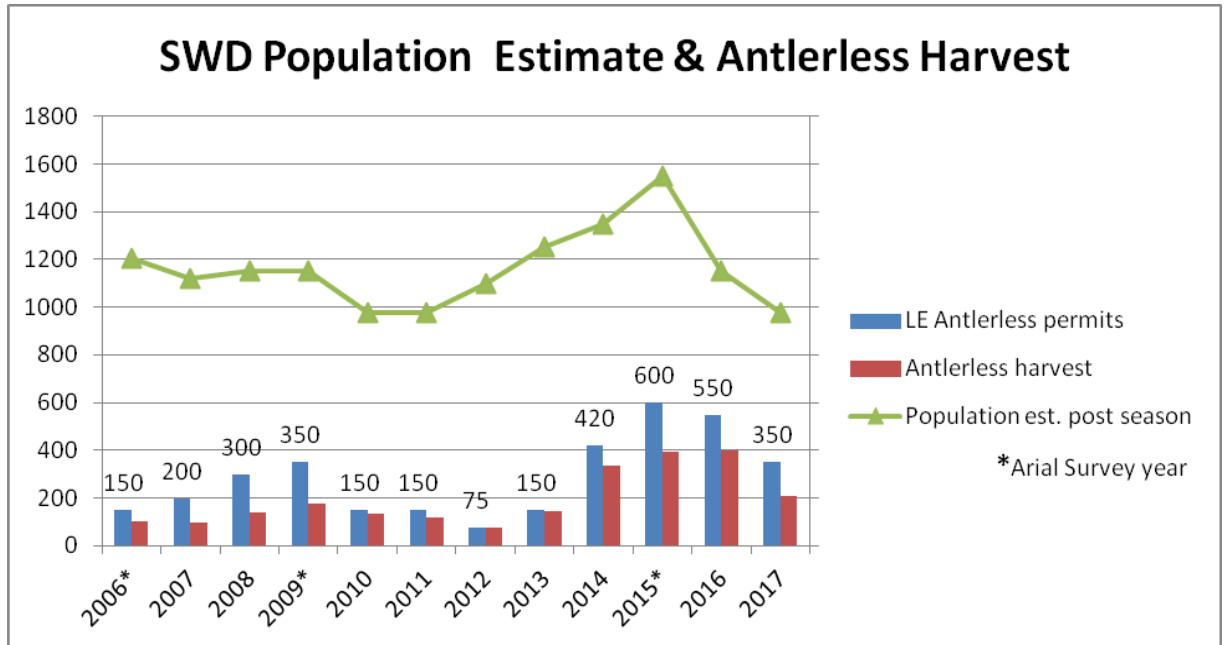
Proposed Projects – 2016 and beyond			
Project Name	Acres	Project Name	Acres
Hamlin Valley Habitat Restoration Project - Sagebrush Restoration Year 1	8441	Mountain Home East Guzzler	
Blawn Mountain Vegetation Enhancement Phase I	1243	Wah Wah Summit Guzzler	
Hamlin Valley Habitat Restoration Project - Sagebrush Restoration Year 2	22992	Headlight Mountain Guzzler	
Hamlin Valley EA remaining area	60,000		
SWD Re-treatment EA	?		
Mountain Home EA	?		

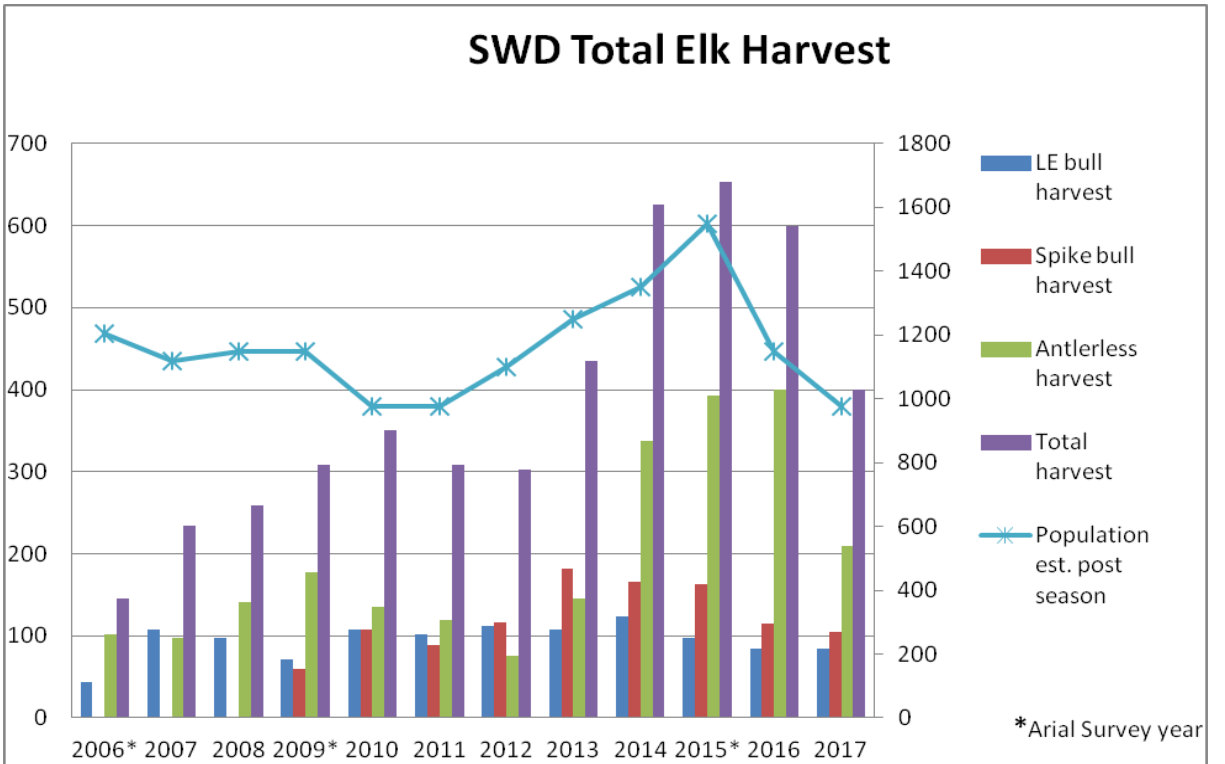
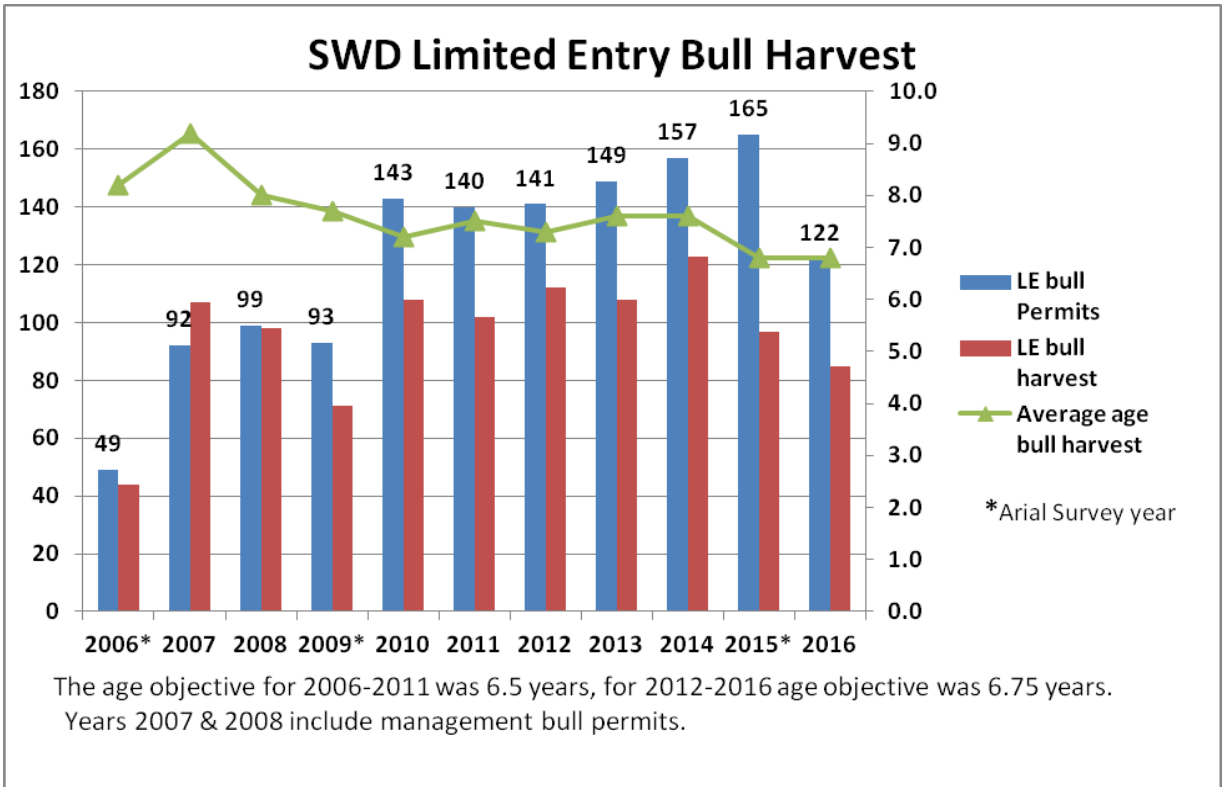
Population

Graph 1. Is a summary of Southwest Desert elk population trend for the past ten years and projection of the population to post season 2017.

Graph 2. Has the limited entry bull permits for the past 10 years and the average age of bull's harvested trend.

Graph 3. Is a summary of all elk harvest on the Southwest Desert and projected harvest to reach the current objective of 975 wintering elk.





BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

- Drought impacts to rangeland forage condition and abundance.
- Limited summer range.
- Pinion and juniper invasion into sagebrush, mountain browse and aspen communities.
- The maturation of pinion and juniper forests resulting in closed canopies. This reduces perennial understory vegetation and limits forage availability and diversity.
- Crop depredation could become a barrier but is not at this time.
- Wild horse impacts on forage potential and destruction of natural water sources.

Population

- Distributing antlerless harvest across the unit to treat localized issues and problems.
- Equitable elk distribution across the herd unit.
- Preliminary data from GPS collared elk is confirming that the suspected winter migration from Nevada into Utah that has artificially increased the wintering populations.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

- Continue to monitor long term rangeland conditions and health through the permanent range trend sites.
- Annually inspect rangeland vegetative community impacts and health through habitat assessment surveys that include ocular field assessments and range rides.
- Monitoring of water sources during drought years.

Actions to Remove Habitat Barriers

- Cooperate with land management agencies to establish natural fire policies that will allow wild fires to burn in beneficial and non threatening areas.
- Continue to cooperate with land management agencies to effectively reseed and/or rehabilitate wildfires to benefit elk and other wildlife.
- Continue with the aggressive juniper, pinion and other conifer treatment projects that target areas of invasion into sagebrush, mountain browse and aspen communities.
- Develop projects to improve vegetative diversity and perennial understory health in closed canopy pinion and juniper forests.
- The goal has been set to complete a minimum of 3,000 acres of habitat improvements each year.
- Improve existing water catchments and look for opportunities to improve water distribution.
- Work with landowners and associated agencies to limit the impacts and control the population of wild horses within the Southwest Desert.

Population

Monitoring

Population Size: Aerial helicopter surveys are conducted every three years. Effort will be made to cooperatively time with the Nevada Department of Wildlife and data shared to better understand elk population distribution and numbers. These flights and a computer population model program are utilized to track and evaluate the elk herd distribution and annual winter population estimates. Inclusive to these efforts, annual herd classification will be conducted as warranted and possible to estimate herd productivity during non flight years.

Bull Age Structure: Harvested bull ages will be monitored annually through cementum annuli lab analysis of hunter-submitted central incisor teeth. Herd composition classification every three years, annual ground classification and computer modeling will be used to monitor population dynamics.

Harvest: The primary means of monitoring harvest will be through the statewide uniform harvest survey. Population size will be achieved through utilizing a variety of harvest methods and seasons. Elk distribution inequities across the herd unit may also be treated through selective public antlerless harvest and hunt areas. Bull harvest numbers will be developed through the RAC and Wildlife Board process to achieve harvested bull age management objectives.

Migration: GPS collars have been deployed on cow elk in several areas along the Utah/Nevada state line to monitor movement of elk between the two states. . It is planned that this study will be expanded to improve the sample of elk wintering in Utah.

Management Actions to Remove Population Barriers

Depredation: Antlerless hunts will continue to be the principle means of limiting cropland depredation. Mitigation permits and vouchers will also be used. An active landowner's association receives limited entry bull permits.

Interagency Cooperation: The increasing demands for all natural resource use within the Southwest Desert mandate close association and cooperation between all resource management agencies. While good cooperation and communication is established, this effort will be a priority and will include private landowners, BLM, SITLA, the public land grazers and sportsmen.

Elk Population and Distribution: The Southwest Desert herd and the actual optimum population objective will be determined by factors including, but not limited to, water distribution, horse populations, social and political factors, current and future range improvements, range health, and potential species competition. Efforts to encourage elk to more uniformly utilize herd unit resources will include antlerless hunts, habitat improvements to rangeland vegetative communities, as well as water development.

Migration: Communicate with Nevada Department of Wildlife on the timing of antlerless hunts and try to coordinate hunting seasons so that elk are not being pushed back and forth across state lines and finding refuge.

ELK UNIT MANAGEMENT PLAN
Elk Herd Unit #21 (Fillmore, Pahvant/Oak Creek)
2016

BOUNDARY DESCRIPTION

Fillmore (East of I-15; Limited Entry)

Millard and Sevier counties--Boundary begins at I-70 and I-15; north on I-15 to US-50 at Scipio; southeast on US-50 to I-70; southwest on I-70 to I-15. Excludes all CWMUs.

Fillmore Oak Creek South (West of I-15; General Season)

Millard and Juab counties: Boundary begins at I-15 and the Black Rock road; west on the Black Rock road to SR-257; north on SR-257 to US-50 and 6; east on US-50 and 6 to US-6; north on US-6 to I-15; south on I-15 to the Black Rock road.

LAND OWNERSHIP

(Total Unit Area: 1,488,301 acres; Elk Habitat: 474,411)

Ownership	Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%
Forest Service	211,000	93%	112,645	46%
Bureau of Land Management	1,431	1%	57,067	23%
Utah State Institutional Trust Lands	0	0%	3,444	1%
Native American Trust Lands	0	0%	1,641	1%
Private	14,704	6%	57,989	23%
Department of Defense	0	0%	0	0%
USFWS Refuge	0	0%	0	0%
National Parks	0	0%	0	0%
Utah State Parks	0	0%	0	0%
Utah Division of Wildlife Resources	394	0%	14,095	6%
Total	227,529	100%	246,881	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, private development rights, and local economies. Maintain the population at a level that is within the long-term capability of the available habitat to support.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size: Achieve a target population objective of 1,600 elk (modeled estimate) on the entire unit, with a maximum of 150 elk on the Fillmore Oak Creek South general season unit, which will continue as an any-bull unit.

Bull Age Structure: Maintain a 3-year average bull harvest age of 7.5-8.0 years for all hunt types on the Fillmore Unit. Age structure will not be monitored on the Fillmore Oak Creek South (west of I-15) unit.

Recruitment: Determine annual recruitment and population status of the herd.

Harvest: Maintain antlerless, general season spike-only, general season any-bull and limited entry any-bull.

POPULATION MANAGEMENT STRATEGIES

Monitoring: Utilize harvest data, aerial trend counts, and preseason classification data to estimate wintering elk population on the unit.

Bull Age Structure: Monitor age class structure of the bull population through the use of check stations, harvest surveys, field bag checks, preseason classification, tooth age data, and aerial classification. Age class will not be monitored on the general season portion of the unit.

Recruitment: Aerial and/or ground classification will be conducted annually to determine population status, calf recruitment, calf/cow ratios, and range distribution.

Harvest: The primary means of monitoring harvest will be through the statewide harvest survey, check stations, and field bag checks. The target population size will be achieved through antlerless harvest using a variety of harvest methods and seasons.

CURRENT POPULATION STATUS

The elk population on this unit is estimated to be under the current objective of 1,600 elk. An aerial survey was conducted on this unit in February 2016. During this flight 1,172 elk were counted, giving a population estimate of 1,450 animals.

The average age of harvested bulls in 2015 was 7.8, which is up from the three-year average of 7.5 years. The cow:calf ratio in 2015 was 53 calves per 100 cows. Permit numbers for bulls have decreased slightly over the last few years in order to bring the average age of bulls harvested in line with the objective of 7.5-8.0.

HABITAT MANAGEMENT OBJECTIVES

Range Improvements: Maintain and/or enhance forage production through direct range improvements throughout the unit on winter and summer range to achieve population management objectives.

Winter Range: Work with private and federal agencies to maintain and protect critical and existing winter range from future losses.

Corridors: Provide improved habitat security and escapement opportunities for elk. Provide as much opportunity as possible for elk to navigate roadways safely.

HABITAT MANAGEMENT STRATEGIES

Range Improvements: Maintain and/or enhance forage production on elk summer and winter range throughout the Fillmore Unit. Coordinate with the Fillmore Ranger District and BLM to complete projects designed to improve forage production for both elk and cattle and to improve elk distribution across the unit. Support federal land management agencies in managing vehicle access in order to provide and maintain refuge areas for elk.

Winter Range: Continue to monitor the permanent range trend studies located throughout the winter range. Conduct annual spring range rides to assess winter habitat with the land management agencies and the public.

Corridors: Cooperate with land management agencies and private landowners to identify crucial areas of elk habitat and work together to maintain and enhance elk habitat corridors. Work with UDOT to maintain and enhance signing, wildlife ramps, over/underpasses, and other wildlife crossing structures.

HABITAT IMPROVEMENT PROJECTS

Between 2006-2015 there were 32,902 acres of elk habitat treated through habitat improvement projects. Currently there are 7,008 acres being treated. During July, 2016 there was also a 5,600 acre fire that burned in and around the Ebbs and Wild Goose canyon areas. The 2012 Fillmore Elk Plan Committee designated two areas of focus for habitat improvement projects on the unit. The northern area (Wild Goose) includes Pioneer, Wild Goose, and Ebbs canyons; the south area (South Mountain) includes South Mountain, Dry Wash, and Dog Valley. Both areas include important summer and winter range that can be improved to benefit elk. Several habitat projects have been completed in these areas since 2012.

Completed projects since 2006:

Dry Creek Chaining - 1,399 acres
Dick Swain Discretionary Seeding - 79 acres
Jim Brunson Discretionary Seeding - 41 acres
Dog Valley/Interchange Private Lands Fire Rehabilitation - 7,194 acres
Milford Flat Fire Rehabilitation and Contracting - 1,623 acres
Fillmore WMA Juniper Thinning - 1,427 acres
Grabalt Big Game Forage Enhancement - 1,052 acres
Dry Creek Phase II - Plateau Treatment - 262 acres
Widemouth Canyon Chaining Phase I - 691 acres
Youngsfield WMA rangeland improvement - 743 acres
Kanosh Bench Winter Range Enhancement - 1,236 acres
Scipio Pass Habitat Enhancement - 1,753 acres
Wild Goose Creek Discretionary Seed - 204 acres
Water Canyon Forage Enhancement Phase #2 - 656 acres
Fillmore Nixon WMA Habitat Improvement - 331 acres
Twitchell Canyon Fire Rehab - 9 acres
Beaver/Fillmore WMA Unauthorized Road Closures - 81 acres
Youngsfield/Nixon WMA Herbicide Treatment - 743 acres
Black Cedar Hill Chaining Treatment - 393 acres
Fillmore Nixon WMA North Habitat Improvement - 718 acres
Fillmore Halfway Hill WMA Habitat Improvement - 639 acres
Widemouth Canyon Chaining Phase IV - 905 acres
West Pahvant Habitat Restoration - 862 acres
Meadow Phase I - 388 acres
Ezra Flat winter range restoration - 1,737 acres
Pioneer WMA Bullhog - 287 acres
Widemouth Canyon Chaining Phase V - 1,901 acres
Pahvant spring rehabilitation - 1 acre
Pioneer WMA Road Improvement Project - 11 acres
Widemouth Canyon Project Phase VI - 1,209 acres
North Fillmore WMA Chaining and Pipeline Project - 1,099 acres
Black Cedar Habitat Restoration - 1,483 acres
Loafers Canyon Project Phase II - 1,745 acres

Current projects:

FFO Meadow Phase 2 - 402 acres

FFO Meadow Phase 3 - 343 acres

North Canyon Revegetation Project - 1,031 acres

Solitude Fire Revegetation Project - 1,076 acres

Dry Creek Meadow Canyon Phase II Restoration Project - 4,156 acres

LIMITING FACTORS TO MEETING OBJECTIVES

Crop Depredation: Crop depredation near Fillmore, Holden, Scipio, and Kanosh is a concern. Steps to minimize depredation as prescribed by state law and DWR policy will be implemented as needed.

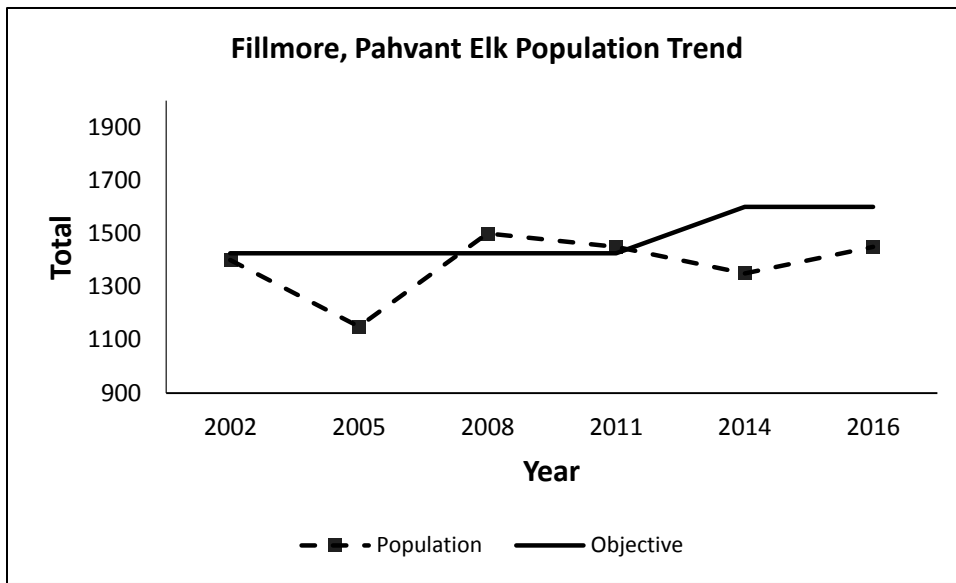
Highway mortality: I-70 and I-15 have been a source of highway mortality for elk. North and South lane fencing on I-70 and portions of I-15 have been completed which significantly decreased ungulate mortality. Additional fencing of I-15 between Cove Fort and Kanosh has been planned is being discussed and would reduce highway mortality in that area. Highway 50 has also been a source of mortality for elk.

Habitat: Invasion by spruce-fir and pinyon-juniper has reduced the productivity of much of the summer and winter ranges for elk. Heavy human activity along the Piute ATV trail may also be responsible for reducing elk use of traditional calving areas and increasing use of posted private land and roadless areas on the forest.

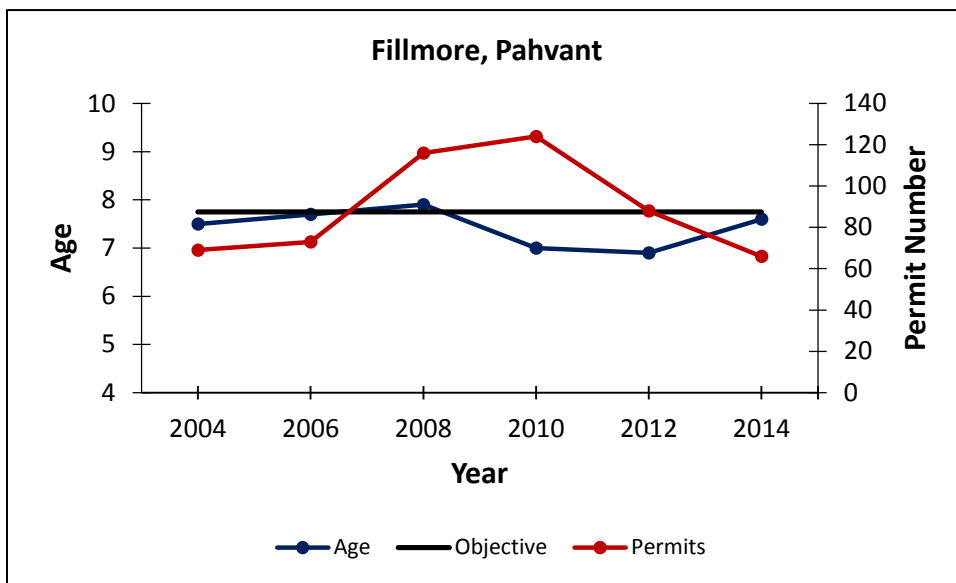
Travel Corridors: The fencing of I-15 and I-70 has limited elk migration to important winter habitat in the Church Hills and Cove Fort areas. Additional planned fencing of I-15 between Cove Fort and Kanosh will restrict elk access to wintering areas west of I-15. Winter range damage on the east side of I-15 could become a potential problem if elk populations become too large.

Elk Densities: Elk nursery herds in the Chalk Creek Drainage and areas near Skinner Hollow have become quite large during the summer and some damage is occurring in aspen and riparian communities. Cow hunts focusing on reducing the size of these herds should be considered when necessary.

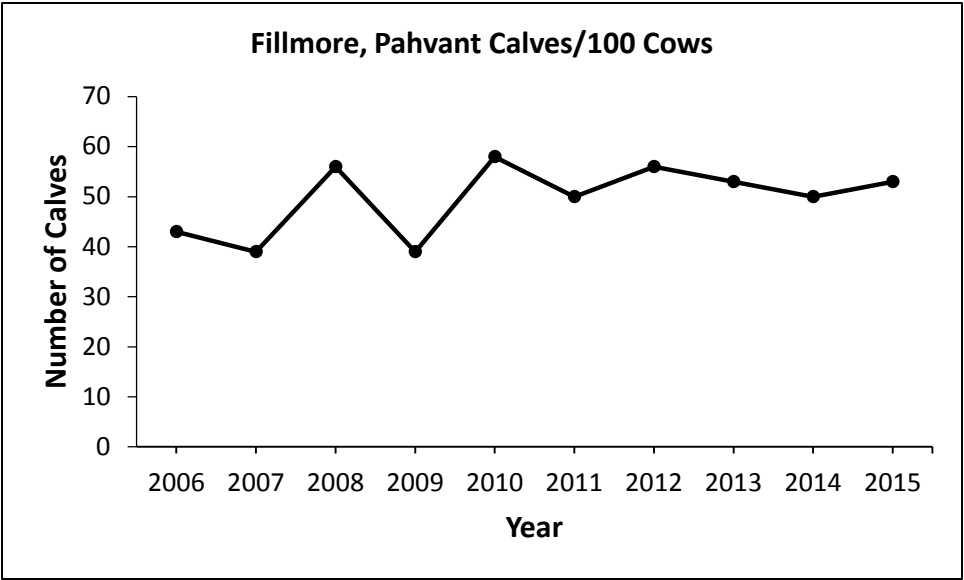
APPENDIX



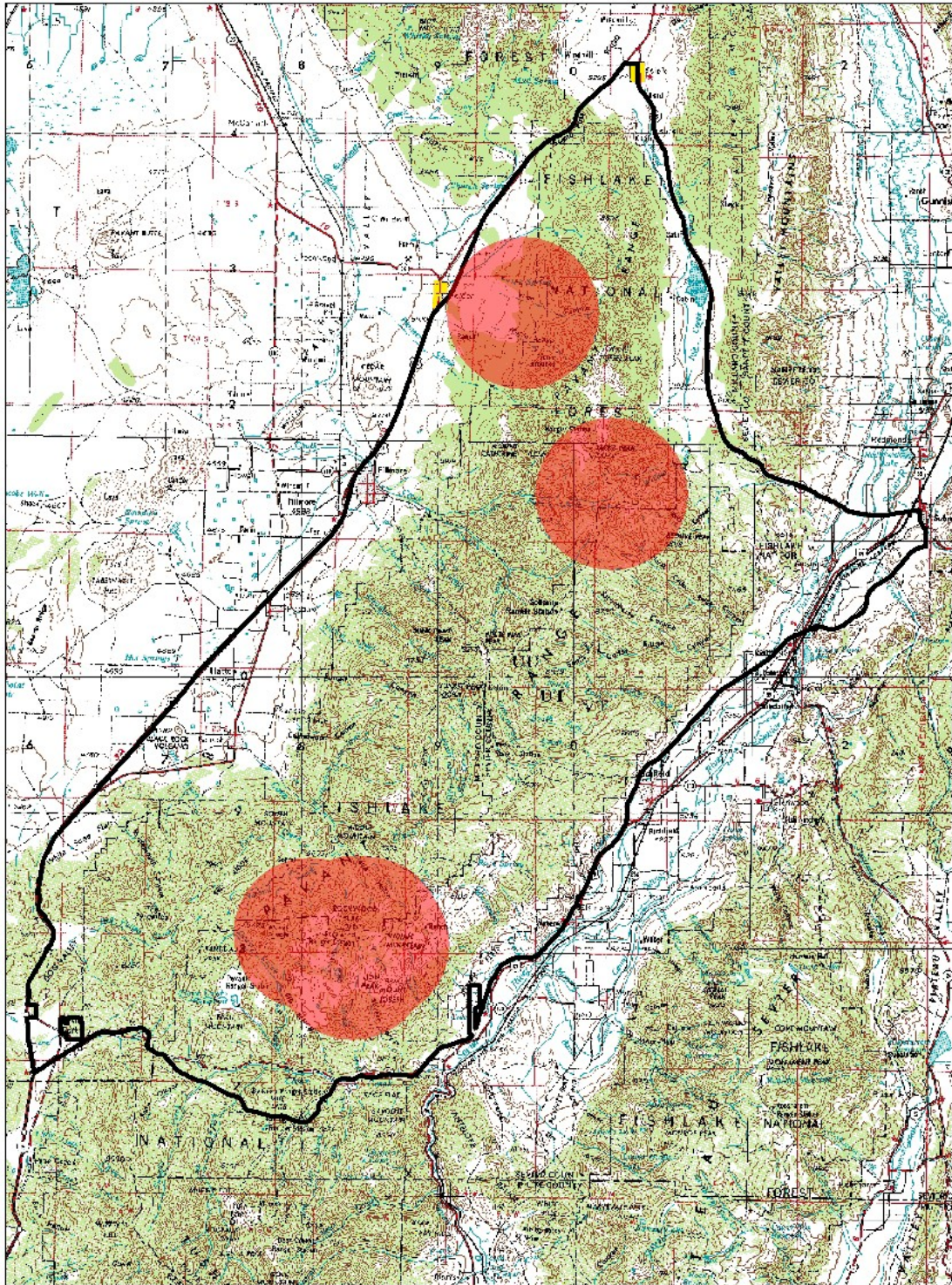
Fillmore Unit elk population trends, Utah 2002-2016.



Average Ages of harvested bulls and permit numbers for the Fillmore, Pahvant Unit



Fillmore, Pahvant Unit Cow/Calf ratios 2006 - 2015



Important elk calving habitat on the Fillmore Unit

**ELK MANAGEMENT PLAN
Unit #22 Beaver
2016**

BOUNDARY DESCRIPTION

Beaver, East (East of I-15; Limited Entry)

Boundary begins at I-15 and I-70; east on I-70 to US-89; south on US-89 to SR-20; west on SR-20 to I-15; north on I-15 to I-70.

Beaver, West (West of I-15; General Season, Any Bull)

Boundary begins at I-15 and SR-130; north on SR-130 to the Black Rock road; east on the Black Rock road to I-15; south on I-15 to SR-130.

LAND OWNERSHIP

(Total Unit Area: 1,150,656 acres; Elk Habitat: 530,647)

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0%	218,968	90%	70,831	34%
Bureau of Land Management	63,957	81%	7,405	3%	104,723	50%
Utah State Institutional Trust Lands	6,554	8%	1,976	1%	12,895	6%
Native American Trust Lands	0	0%	0	0%	247	<1%
Private	8,683	11%	15,127	6%	17,254	8%
Department of Defense	0	0%	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	40	0%	480	0%	1,507	1%
TOTAL	79,234	100%	243,956	100%	207,457	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, private development rights, and local economies. Maintain the population at a level that is within the long-term capability of the available habitat to support.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size: Achieve a target population objective of 1,050 elk (modeled estimate) on the unit. Elk numbers on the Beaver, West portion of the unit (west of I-15) will be kept as low as possible and will continue to be hunted as a general season any bull unit.

Bull Age Structure: Maintain a 3-year average bull harvest age of 7.5-8.0 years for all hunt types on the Beaver, East unit. Age structure will not be monitored on the Beaver, West portion of the unit.

Recruitment: Determine annual recruitment and population status of the herd.

Harvest: Provide antlerless, general season spike-only, general season any-bull, and limited entry any-bull hunt opportunities.

POPULATION MANAGEMENT STRATEGIES

Monitoring: Utilize harvest data, aerial trend counts, and pre-season classification data to estimate wintering elk population.

Bull Age Structure: Monitor age class structure of the bull population through the use of check stations, harvest surveys, field bag checks, preseason classification, tooth age data, and aerial classification. Age class will not be monitored on the Beaver, West portion of the unit.

Recruitment: Aerial and/or ground classification will be conducted annually to determine population status, calf recruitment, calf/cow ratios, and range distribution.

Harvest: The primary means of monitoring harvest will be through the statewide harvest survey, check stations, and field bag checks. The target population size will be achieved through antlerless harvest using a variety of harvest methods and seasons.

CURRENT POPULATION STATUS

The elk population on this unit is estimated to be over the objective of 1,050 elk. An aerial survey was conducted on this unit in February 2016. During this flight 1,258 elk were counted, giving a population estimate of 1,550 animals.

The average age of harvested bulls in 2015 was 6.9, down from the three-year average of 7.2 years. The cow:calf ratio in 2015 was 54 calves per 100 cows. Permit numbers for bulls have decreased slightly over the last few years in order to bring the average age of bulls harvested in line with the objective of 7.5-8.0.

HABITAT MANAGEMENT OBJECTIVES

Range Improvements: Maintain and/or enhance forage production through direct range improvements throughout the unit to achieve population management objectives. By 2018, improve a minimum of 15,000 acres of elk habitat, with a minimum of 10,000 acres of this total completed in the mountain brush or aspen communities and may include rehabilitation after wildfires.

Winter Range: Work with private and federal agencies to maintain and protect crucial and existing winter range from future losses.

Corridors: Provide improved habitat security and escapement opportunities for elk. Provide as much opportunity as possible for elk to navigate roadways safely.

HABITAT MANAGEMENT STRATEGIES

Range Improvements: Maintain and/or enhance forage production on elk summer and winter range throughout the Beaver Unit. Coordinate with the Beaver Ranger District and BLM to complete projects designed to improve forage production for both elk and cattle and to improve elk distribution across the

unit. Support federal land management agencies in managing vehicle access in order to provide and maintain refuge areas for elk.

Winter Range: Continue to monitor the permanent range trend studies located throughout the winter range. Conduct annual spring range assessments of winter habitat with the land management agencies and the public.

Corridors: Cooperate with land management agencies and private landowners to identify crucial areas of elk habitat and work together to maintain and enhance elk habitat corridors. Work with UDOT to maintain and enhance signing, wildlife ramps, over/underpasses, and other wildlife crossing structures.

HABITAT IMPROVEMENT PROJECT FOCUS AREAS

The 2012 Beaver Elk Plan Committee designated three areas of focus for habitat improvement projects for elk on the unit: Pine Creek, Jimmy Reed, and South Creek. These areas include important summer and winter range that can be improved to better benefit elk and livestock. All of these areas have had projects completed since 2012.

HABITAT IMPROVEMENT PROJECTS

Completed projects by BLM, NRCS, USFS, UDWR since 2006:

- SR Shrub Seedlings - 386 acres
- South Beaver Vegetation Enhancement Project Year 1 - 2664 acres
- P-Hill One-way Harrow - 2894 acres
- SR Shrub Seedlings Year 2 - 386 acres
- Beaver/Mtn Home Post Harrow PJ Cutting - 682 acres
- Dog Valley/Interchange Private Lands Fire Rehabilitation - 193 acres
- SR Shrub Seedlings Year 3 - 916 acres
- Bullion Pasture Watershed Improvement - 270 acres
- South Beaver Vegetation Enhancement Project Year 3 - 623 acres
- South Beaver SITLA vegetation enhancement - 651 acres
- Milford Flat Fire Rehabilitation - Missouri Flat - 3359 acres
- Milford Flat Fire Rehabilitation - JK - 382 acres
- Spry Sagebrush Restoration - 2818 acres
- Milford Flat Fire Rehabilitation and Contracting - 119052 acres
- South Beaver Vegetation Enhancement Yr 4 - 2476 acres
- SR Shrub Seedlings Yr 4 - 26 acres
- Indian Creek Chaining Project - 1100 acres
- Ranch Canyon Plateau - 393 acres
- Wildcat Discretionary Seed - 151 acres
- South Beaver Vegetation Enhancement Year 5 - 4394 acres
- Beaver North Creek WMA Habitat Improvement - 322 acres
- Panguitch Creek/South Beaver Dedicated Hunter Habitat Projects maintenance - 651 acres
- Twitchell Canyon Fire Rehab - 72648 acres
- Blue Valley Shrubsteppe Improvement Project - 313 acres
- Woodland Stewardship Project enhancement; Cedar City FO; FY 12 and 13 - 33 acres
- South Beaver Vegetation Enhancement Year 6 - 2439 acres
- City Creek Sagebrush-steppe Enhancement Year 1 - 1755 acres
- Beaver/Fillmore WMA Unauthorized Road Closures - 12 acres
- Youngsfield/Nixon WMA Herbicide Treatment - 152 acres
- Bucket Hollow Lop and Scatter - 923 acres

South Beaver Vegetation Enhancement Year 7 - 2218 acres

Indian Creek - 5142 acres

Project Maintenance - South Beaver - 6887 acres

Current projects:

Indian Creek West Drag Chaining - 2746 acres

Birch Creek - Bonneville Cutthroat Trout and Riparian Improvement - Phase 2 - 117 acres

North Beaver Prescribed Fire and Seeding (Baker/Face) - 15405 acres

Deer Flat Lop and Scatter Project - 1360 acres

LIMITING FACTORS TO REACHING OBJECTIVES

Crop Depredation: Crop depredation near Marysvale, Circleville, Beaver, Sulfurdale, and Manderfield is a concern. Steps to minimize depredation as prescribed by state law and DWR policy will be implemented as needed.

Highway Mortality: I-15 and I-70 has been a source of highway mortality for elk. North and south lane fencing of these interstates has been completed since the fall of 2010 and has significantly decreased ungulate mortality along these roadways. Highway 20 and 89 are currently not a source of significant mortality.

Development: Development of the east bench of Beaver and LaBaron and Puffer lake areas has the potential to increase disturbance, disrupt movements of elk, increase vehicle collisions, and damage habitat.

Habitat: Invasion by spruce-fir and pinyon-juniper has reduced the productivity of much of the summer and winter ranges for elk. Heavy human activity along the Piute ATV trail may also be responsible for reducing elk use of traditional calving areas and increasing use of private land and roadless areas on the Forest. The fencing of I-15 and I-70 has limited elk migration to important winter habitat in the areas west of Manderfield and Sulphurdale and east of Cove Fort. Winter range damage in these areas could become a potential problem if elk populations become too large.

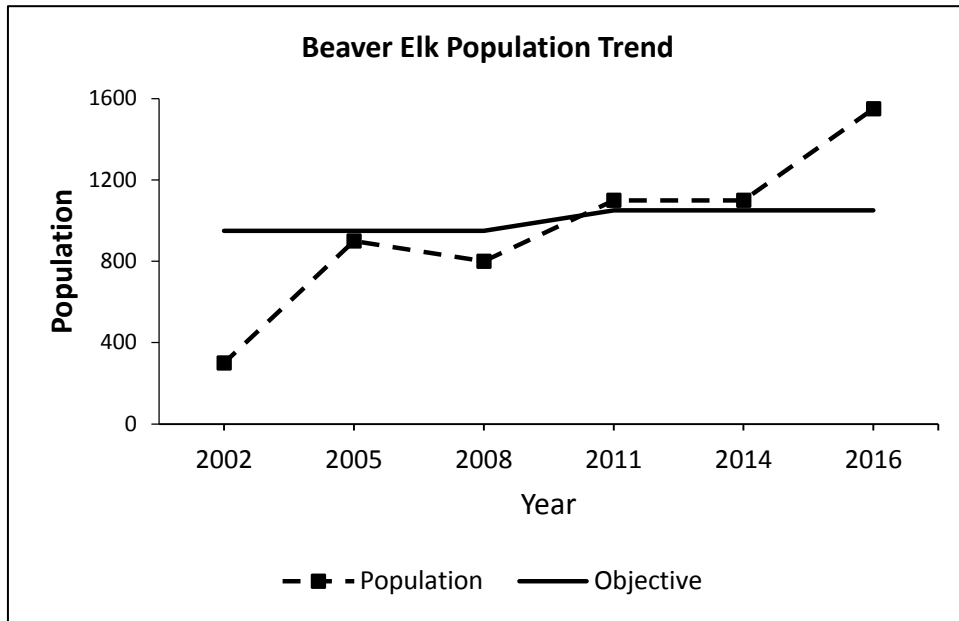
2016 BEAVER, EAST ELK COMMITTEE

In August 2016, the Beaver, East elk committee met to discuss the elk management plan. We discussed the current objective, current problems, and a possible increase in the population objective in the future. The possible increase was met with some resistance by cattlemen, but may be supported in the future with continued habitat work benefitting both elk and livestock. The current population objective will remain at 1,050 but may be looked at again in the next 3-5 years as more habitat projects are completed.

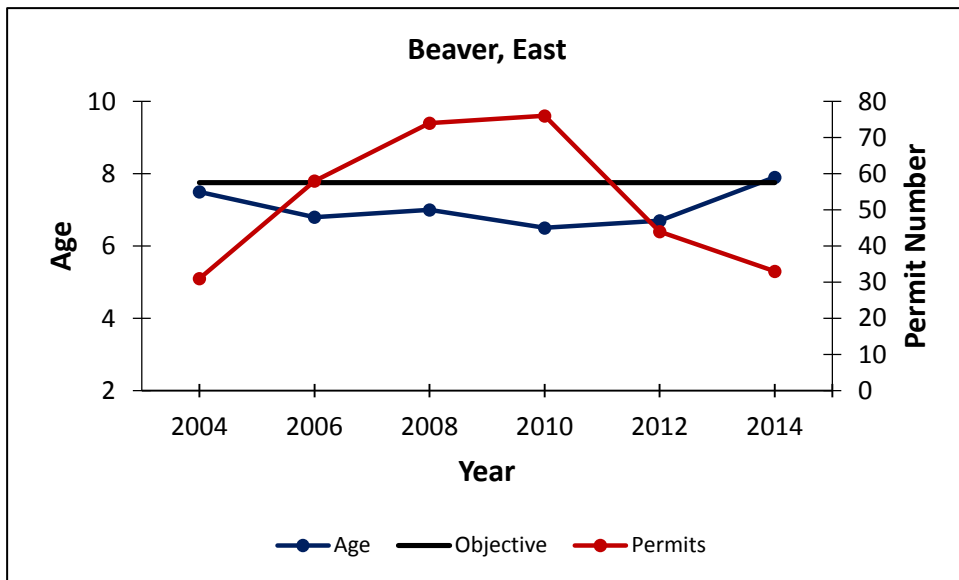
Comments/notes from the meeting

- Forest Service has completed more habitat work not listed above.
- Continue with aggressive harvest to bring population back to objective.
- Continue habitat projects.
- Most elk problems are during spring green up, focus habitat work in these areas.
- Protect deer winter range where we do not need elk.
- Ranchers would like an increase in AUM's before an increase in elk.
- Some ranchers could support and increase in elk if habitat work shows a substantial increase in forage production and if rangeland health shows an upward trend.
- Work on controlling elk populations where they are causing the most damage.
- If the elk objective is to increase in the future, consider where you want the elk to increase.

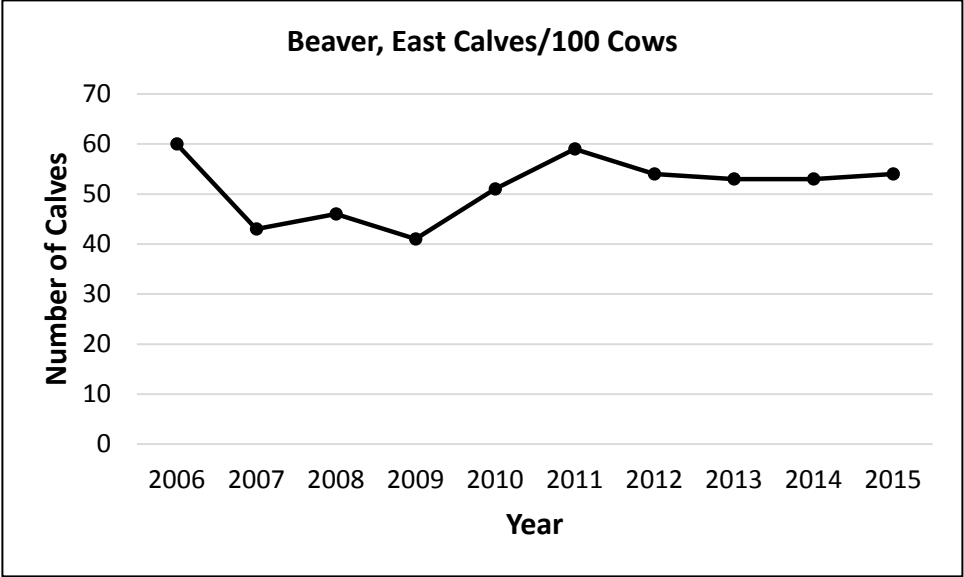
APPENDIX



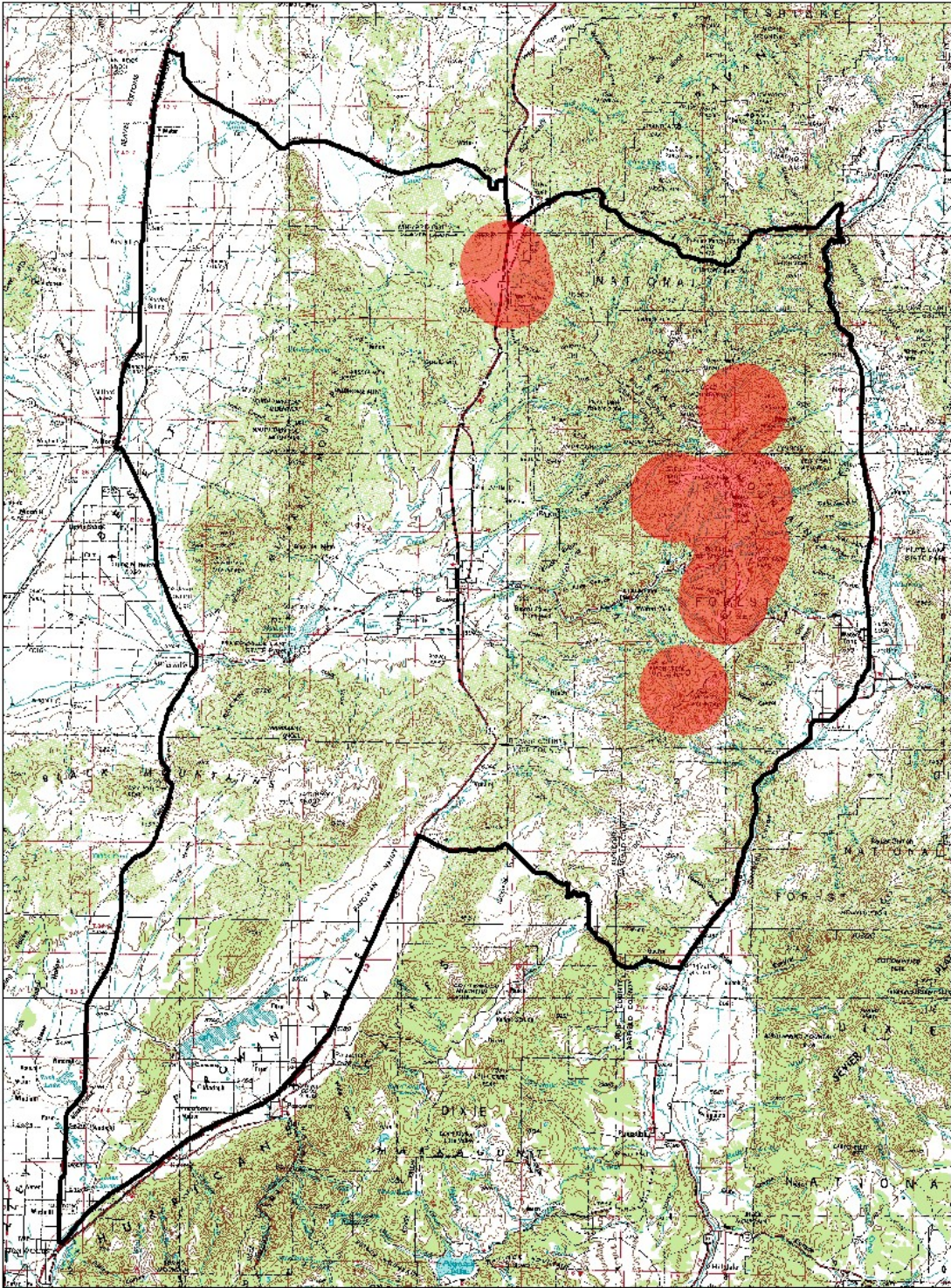
Beaver, East Unit elk population trends, Utah 2002 - 2016.



Average age of harvested bulls and permit numbers for the Beaver, East Unit



Beaver, East Cow/Calf ratios 2006 - 2015



Important elk calving habitat on the Beaver Unit

ELK MANAGEMENT PLAN
Greater Plateau Elk Complex
Elk Units: 23 Monroe, and 24 Mt. Dutton,
25 A&B, Fish Lake/Thousand Lakes, 25C Boulder/Kaiparowits

Traditionally Big game herds within the state have been managed at the management unit level. This process has worked well in the past; however challenges have arisen when elk use multiple herd units during their lifetime and at different seasons.

The multi-unit management complex is a new and experimental way of managing elk on a broader scale. Multi-unit complex boundaries are drawn to try and approximate an area that the animals use in all life stages and seasons with as little immigration and emigration as possible.

The unit complex boundaries include several Wildlife Management Units that are typically managed separately for most of the antlerless and bull hunts. The individual units may have differing age objectives, etc., but have one overall population objective for the complex. The individual units have a population target range that encompasses recent population lows and highs. These individual units are managed using the guiding principles set forth in the statewide elk management plan.

GREATER PLATEAU COMPLEX BOUNDARY DESCRIPTION

Garfield, Kane, Piute, Sevier and Wayne counties--Boundary begins at US-89 and I-70 near Sevier; south on US-89 to SR-12; east on SR-12 to the Paria River; south along the Paria River to the Utah-Arizona state line; east on the Utah-Arizona state line to the west shoreline of Lake Powell; north along this shoreline to SR-276; north on SR-276 to the Notom-Bullfrog road; north on this road to SR-24; east on SR-24 to the Caineville Wash road; north along the Caineville Wash road to the Cathedral Valley road; west on the Cathedral Valley road to Rock Springs Bench and the Last Chance Desert road; north on the Last Chance Desert road to the Blue Flats road; north and east on the Blue Flats road to the Willow Springs road; north on the Willow Springs road towards Windy Peak and the Windy Peak road; west on the Windy Peak road to SR-72; north on SR-72 to I-70; west and south on I-70 to US-89 near Sevier. EXCLUDES an area around Lyman and the agricultural fields beginning in Loa at the junction of SR-72 and SR-24; north and east on SR-72 to the Highline Irrigation Canal; south along this canal to Bicknell and SR-24; west on SR-24 to 2860 S (Big Rocks road); north and west on this road to Loa and the junction of SR-72 and SR-24. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY. EXCLUDES ALL NATIONAL PARKS. EXCLUDES ALL CWMUs.

PLATEAU, FISH LAKE/THOUSAND LAKE

Emery, Piute, Sevier and Wayne counties--Boundary begins at I-70 and SR-24 north of Sigurd; south and east on SR-24 to the Caineville Wash road; north on this road to the Cathedral Valley road; west on this road to Rock Springs Bench and the Last Chance Desert road; north on this road to the Blue Flats road; north and east on this road to the Willow Springs road; north on this road towards Windy Peak and the Windy Peak road; west on this road to SR-72; north on SR-72 to I-70; west on I-70 to SR-24 north of Sigurd. EXCLUDES ALL NATIONAL PARKS.

PLATEAU, BOULDER/KAIPAROWITS

Garfield, Kane, Piute and Wayne counties--Boundary begins at SR-62 and SR-24 east on SR-24 to the Notom-Bullfrog road south on this road to SR-276 south on SR-276 to the west shoreline of Lake Powell south along this shoreline to the Utah-Arizona state line west on the state line to the Paria River north along this river to SR-12 west on SR-12 to the Widstoe-Antimony road north on this road to SR-22 north on SR-22 to SR-62 north on SR-62 to SR-24. EXCLUDES ALL NATIONAL PARKS.

MONROE

Piute and Sevier counties--Boundary begins at US-89 and I-70 near Sevier; south on US-89 to SR-62; east and north on SR-62 to SR-24; north on SR-24 to I-70; south on I-70 to US-89 near Sevier. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY.

MT. DUTTON

Garfield and Piute counties--Boundary begins at US-89 and SR-62; south on US-89 to SR-12; east on SR-12 to the Widtsoe-Antimony Road; north on this road to SR-22; north on SR-22 to SR-62; west on SR-62 to US-89. Excludes all CWMUs.

LAND OWNERSHIP

Greater Plateau Complex Land Ownership Table

Elk Habitat Greater Plateau Complex (units 23, 24, 25 A,B&C)	Yearlong range		Summer range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	142,143	85%	680,708	87%	582,187	43%
Bureau of Land Management	14,573	9%	16,036	2%	487,598	36%
Utah State Institutional Trust Lands	7,772	5%	40,607	5%	147,711	11%
Native American Trust Lands	0		0		107	.008%
Private	2,695	2%	42,525	6%	85,878	6%
Department of Defense	0		0		0	
USFWS Refuge	0		0		0	
National Parks	0		0		54,867	4%
Utah State Parks	0		0		0	
Utah Division of Wildlife Resources	4	.002%	0		5,728	.4%
TOTAL	167,187		779,876		1,364,076	

AGENCY	ACRES
BLM	2,088,840
DNR	11,483
NPS	751,416
Private	356,902
SITLA	277,920
Tribal	850
UDOT	207
USFS	1,493,570
Total	4,981,188

Greater Plateau Complex Elk Habitat by Season

Total Summer	779,877
Total Winter	1,364,132
Total Year-Long	167,187
Total Elk Habitat	2,311,196

COMPLEX 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, private development rights, and local economies. Maintain the population at a level that is within the long-term capability of the available habitat to support.

COMPLEX POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size: Achieve and maintain the current combined target population objective of 10,400 wintering elk (modeled estimate) on the complex.

Units	Previous Plan's Wintering population objectives	New wintering population objective ranges	2015 pop estimates (aerial census)
Fish Lake/Thousand Lakes	5,600	5,000 – 5,900	4,100
Boulder	1,525	1,200 – 1,700	1,200
Monroe	1,800	1,000 – 1,400	1,000
Mt. Dutton	1,500	1,500 – 2,000	1,700
Total	10,425	10,425	8,000

Bull Age Structure: Maintain a 3-year average age of bull harvest at the following age objectives:

- Monroe - 6.5-7 (decreased from 7.5-8 in 2016)
- Mt. Dutton - 6.5-7 (increased from 5.5-6 in 2016)
- Plateau Fish Lake/Thousand Lakes - 5.5-6
- Plateau Boulder/Kaiparowits - 7.5-8

Average Age of Harvested Limited Entry Bull Elk												
Unit	Current Age Obj.	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	3 YR Average
Monroe	6.5-7	8.2	7.9	7.8	7.2	6.2	6	6.6	6.6	7.1	7.8	7.2
Mt. Dutton	6.5-7	6.8	6.6	6.2	5.9	5.6	5	5.4	6.1	6	5.9	6
Fish Lake	5.5-6	7.6	7.3	7.2	6.6	6.6	6	6.1	6.3	5.9	6	6.1
Boulder	7.5-8	8.4	7.8	8.3	8	7.1	7.4	7.4	7.6	7.9	7.3	7.6

Recruitment: Determine annual recruitment and population status of the herd.

Harvest: Maintain antlerless, general season spike-only, and limited entry bull hunting formats. To aid in the recruitment of yearling bulls into the adult bull population, the Monroe unit will not be open to the taking of spikes during the any-weapon season, it will however be open to the taking of spikes during the archery and muzzleloader seasons.

POPULATION STATUS

The elk population on the Greater Plateau Complex is currently below its combined objective of 10,400. An aerial survey was conducted on the complex during the winter of 2015-16. During this flight the population was estimated at 8,000 elk using an 80% sightability index. Significant antlerless harvest occurred on this complex during the previous several years resulting in the lower population. Antlerless permits for the 2016 hunting season have been reduced to allow the population to grow closer to objective.

POPULATION MANAGEMENT STRATEGIES

Monitoring: Utilize harvest data, aerial trend counts, and preseason classification data to estimate wintering elk population on the unit. All the units within the Greater Plateau Complex will be aerial surveyed during the same year to ensure the highest probability of obtaining the most accurate count. The population will also be modeled together to obtain population estimates.

Bull Age Structure: Monitor age class structure of the bull population through the use of check stations, uniform harvest surveys, field bag checks, preseason classification, tooth age data, and aerial classification.

Recruitment: Aerial and/or ground classification will be conducted annually to determine population status, calf recruitment, calf/cow ratios, and range distribution.

Harvest: The primary means of monitoring harvest will be through the statewide uniform harvest survey, check stations, and field bag checks. The target population size will be achieved through antlerless harvest using a variety of harvest methods and seasons.

HABITAT MANAGEMENT OBJECTIVES

Range Improvements: Maintain and/or enhance forage production and habitat quality (including aspen systems) through direct range improvements throughout the unit on winter and summer range to achieve population management objectives. Focus will be on high use areas especially where we can entice animals away from agricultural areas and crucial range areas receiving higher than desired use.

Winter Range and Monitoring: Work with private and federal agencies to maintain and protect crucial winter range from future losses. Elk habitat will be monitored by current long-term vegetative trend studies and range tours in cooperation with public and private land managers.

Water Development: Work with land management agencies and livestock producers to enhance water sources, contribute to elk habitat, and gain optimum distribution.

Corridors: Cooperate with land management agencies and private landowners to identify critical areas of elk habitat and work together to maintain and enhance elk habitat corridors. Work with UDOT to maintain and enhance signing, wildlife ramps, over/underpasses, and other wildlife crossing structures.

HABITAT MANAGEMENT STRATEGIES

The overall range condition and total production for elk is good on both winter and summer range. However, much of the winter range is covered with an advancing pinyon-juniper forest. There are also concerns over decadent stands/monocultures of sage species. On the summer range above 9,000 feet, the trend is toward a climax Engelman spruce forest that is eliminating aspen habitat and open meadows. Decadent aspen also need to be treated to regenerate stands. Due to many successful treatments on winter ranges the condition of those treated ranges is showing an upward trend.

Range Improvements: Maintain and/or enhance forage production on elk summer and winter range throughout the units. Coordinate with the USFS, SITLA, BLM and private land owners to complete projects designed to improve forage production for both elk and livestock and to improve elk distribution across the unit. Identify higher elevation habitat projects that would encourage elk to winter higher and potentially away from traditional deer wintering areas.

Encourage and support projects and management actions that will maintain and restore aspen ecosystems on the unit. Support federal land management agencies in managing vehicle access in order to provide and maintain refuge areas for elk.

Winter Range and Monitoring: Continue to monitor the permanent range trend studies located throughout the winter range. Conduct annual spring range rides to assess winter habitat with the land management agencies and the public.

Water Development: Identify potential water development projects that will benefit elk and seek funds/methods to implement them.

Corridors: Cooperate with land management agencies and private landowners to identify crucial areas of elk habitat and work together to maintain and enhance elk habitat corridors. Work with UDOT to maintain and enhance signing, wildlife ramps, over/underpasses, and other wildlife crossing structures.

HABITAT IMPROVEMENT PROJECTS

From 2006 to the end of 2017, over 159,000 acres of elk habitat has been improved or is scheduled to be improved through the Watershed Restoration Initiative (WRI). These projects reflect a substantial investment in elk and elk habitat.

See Appendix for List of Projects – Table 1

LIMITING FACTORS TO MEETING OBJECTIVES

Crop Depredation: The DWR will maintain programs to reduce the burden of crop depredation on private land. Currently Elk are causing depredation to agriculture crops in several areas within each subunit of the complex. Antlerless hunting using the depredation hunter pool, landowner permits/vouchers, and regularly scheduled hunts has been held and will be held to reduce this problem. As per Division policy, qualifying landowners may receive antlers elk permits to help encourage tolerance of elk and also to reduce numbers of elk using private lands. Additionally, special hunts for bull elk may be used to reduce crop depredation by bulls if needed.

Habitat: The overall range condition is good for elk on both summer and winter range. However much of the winter range is being effected by an advancing pinyon/juniper forest. Current proposed projects as well as future projects must be implemented in order to reverse this trend. Winter range habitat will be monitored closely for signs of over use. Localized antlerless hunts may be used to reduce pressure on specific areas.

Summer range projects to stimulate aspen recruitment and reduce conifer encroachment will be identified and implemented. Extensive aspen projects are currently being implemented on the Monroe unit. Aspen stands will be monitored closely to ensure the future viability of the stand. Different elk management strategies may used to protect aspen stands including hazing, fencing, and hunting.

Predation: The DWR recognizes the need to efficiently and effectively manage predators. The DWR promotes a predator management philosophy and recognizes predator management to be a viable and legitimate wildlife management tool that must be available to wildlife managers when needed. Predator management must include the need for control by species, geographic area and season of year. The DWR will recommend cougar harvest if needed to benefit elk while maintaining the cougar as a valued resource to assure their future ecological, intrinsic, scientific, educational and recreational values.

Deer/Elk Competition: Concern has been expressed by some sportsmen and others that elk populations are responsible for declines in deer herds; however, 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. Additionally, habitat improvement projects should be focused in those areas to reduce competition and improve range conditions for all species.

ELK MANAGEMENT COMMITTEE

An Elk Management committee was formed and met together to discuss elk management on the units addressed in this plan. The committee was formed in accordance with Division policy and consisted of members from various stakeholder groups and land management agencies. During this committee's meeting there was wide support for and no objections to the proposed method of managing under a multi-unit complex system.

APPENDIX

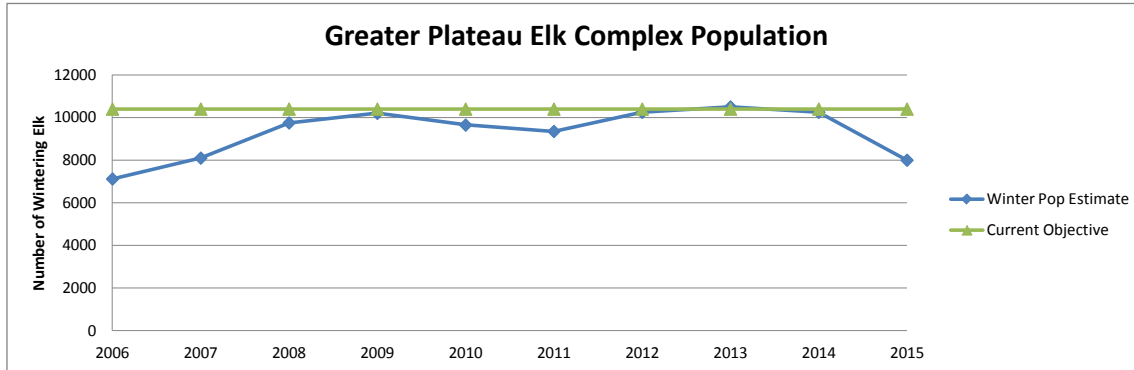


Figure 1

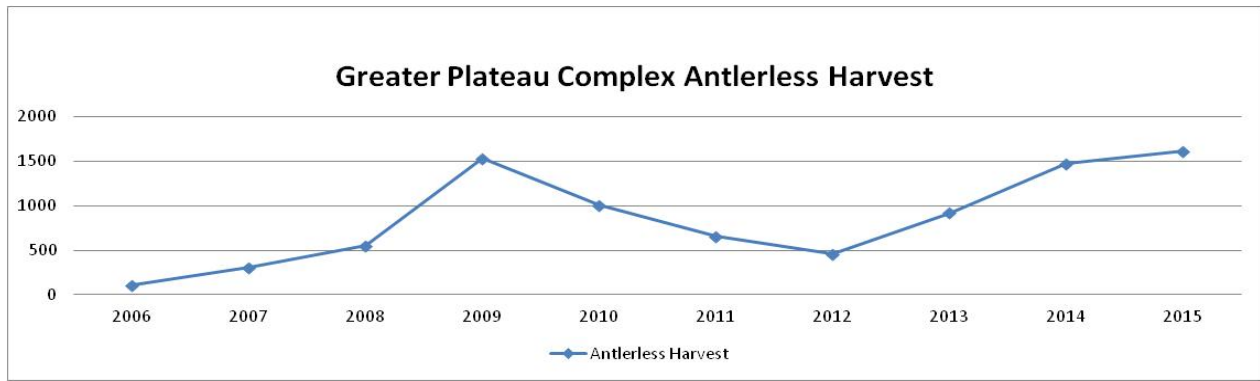


Figure 2

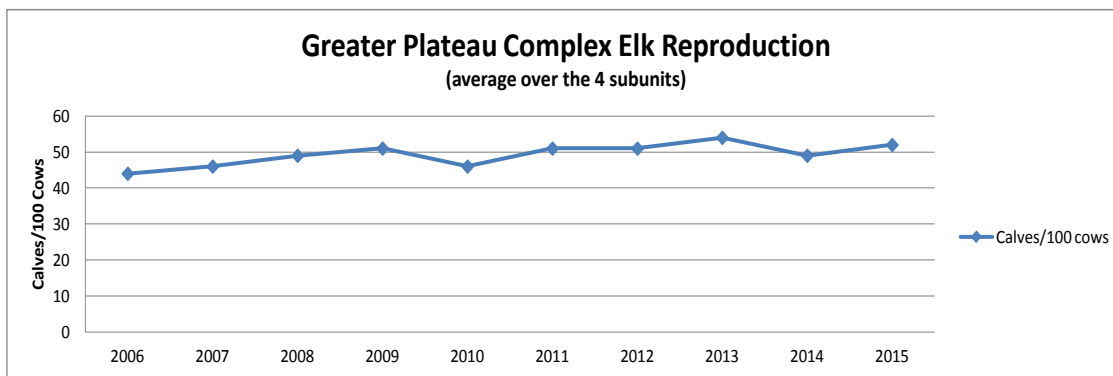


Figure 3

Table 1
 Greater Plateau Complex
 Elk Treatment Table from Watershed Restoration Initiative

Title	Status	Project Manager	Lead Agency	Fiscal Year	Acres	Unit
CB LIP	Completed	Tyler Thompson	Utah Division of Wildlife Resources	2006	186.72	Plateau, Boulder
CB LIP	Completed	Tyler Thompson	Utah Division of Wildlife Resources	2006	98.80	Monroe
Durfey Creek	Completed	Tyler Thompson	U.S. Forest Service	2006	1040.05	Plateau, Boulder
Poverty Flat	Completed	Tyler Thompson	Bureau of Land Management	2006	3455.10	Monroe
Circle Cliffs Range Seeding 2	Completed	Tyler Thompson	Bureau of Land Management	2006	1503.73	Plateau, Boulder
South Narrows Dixie Harrow - West Side	Completed	Brant Hallows	Bureau of Land Management	2006	861.89	Plateau, Boulder
South Narrows Dixie Harrow - West Side	Completed	Brant Hallows	Bureau of Land Management	2006	2866.54	Monroe
Fishlike NF PJ Maintenance-Sagebrush Enhancement - Year 1	Completed	Kreig Rasmussen	U.S. Forest Service	2006	0.00	Plateau, Fish lake
Fish lake NF PJ Maintenance-Sagebrush Enhancement - Year 1	Completed	Kreig Rasmussen	U.S. Forest Service	2006	952.55	Monroe
Pretty Tree Bench Ponderosa Pine Prescribed Burn	Completed	Lisa Young	U.S. Forest Service	2006	871.76	Plateau, Boulder
Monroe Mountain Emergency Stabilization Seed	Completed	Kreig Rasmussen	U.S. Forest Service	2006	349.91	Monroe
Monroe Mountain Burn Stabilization	Completed	Kreig Rasmussen	U.S. Forest Service	2006	1726.08	Monroe
Elbow Ranch Harrow	Completed	Tyler Thompson	Utah Division of Wildlife Resources	2006	109.21	Monroe
CB LIP	Completed	Tyler Thompson	Utah Division of Wildlife Resources	2006	39.64	Monroe
Fish lake NF PJ Maintenance-Sagebrush Enhancement - Year 1	Completed	Kreig Rasmussen	U.S. Forest Service	2006	0.00	Plateau, Fish lake
Fish lake NF PJ Maintenance-Sagebrush Enhancement - Year 1	Completed	Kreig Rasmussen	U.S. Forest Service	2006	2493.53	Plateau, Fish lake
Fish lake NF PJ Maintenance-Sagebrush Enhancement - Year 1	Completed	Kreig Rasmussen	U.S. Forest Service	2006	0.00	Monroe
Monroe Mountain Burn Stabilization	Completed	Kreig Rasmussen	U.S. Forest Service	2006	672.48	Monroe
Elbow Ranch Harrow	Completed	Tyler Thompson	Utah Division of Wildlife Resources	2006	168.57	Monroe
Fish lake NF PJ Maintenance-Sagebrush Enhancement - Year 1	Completed	Kreig Rasmussen	U.S. Forest Service	2006	10.65	Plateau, Fish lake
Fish lake NF PJ Maintenance-Sagebrush Enhancement - Year 1	Completed	Kreig Rasmussen	U.S. Forest Service	2006	287.17	Monroe
Boulder Mountain North Slope Rehabilitation	Completed	Joanne Stenten	U.S. Forest Service	2007	1269.39	Plateau, Boulder
Sevier Plateau Dixie Harrow	Completed	Jake Schoppe	U.S. Forest Service	2007	828.56	Mt. Dutton
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	2624.81	Plateau, Fishlake
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	79.23	Monroe
Seven Mile - North Mountain Dixie Harrow	Completed	Brant Hallows	Bureau of Land Management	2007	2698.76	Plateau, Fishlake

Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	0.00	Plateau, Fishlake
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	239.99	Plateau, Fishlake
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	105.76	Monroe
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	0.60	Monroe
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	1796.56	Plateau, Fishlake
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	169.18	Monroe
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	0.00	Monroe
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	10.65	Plateau, Fishlake
Fishlake NF PJ Maintenance-Sagebrush Enhancement - Year 2	Completed	Kreig Rasmussen	U.S. Forest Service	2007	145.66	Monroe
Elbow Ranch WMA Habitat Improvement	Completed	Rhett Boswell	Utah Division of Wildlife Resources	2008	115.15	Monroe
North Fremont	Completed	Brant Hallows	Bureau of Land Management	2008	2261.97	Plateau, Fishlake
Terza Flat et al Seeding Trial	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2008	48.98	Plateau, Boulder
Elbow Ranch WMA Habitat Improvement	Completed	Rhett Boswell	Utah Division of Wildlife Resources	2008	168.57	Monroe
Cedar Creek Winter Range Enhancement	Completed	Kent Chappell	U.S. Forest Service	2009	5831.28	Plateau, Thousand Lakes
Mt. Terrill Habitat Improvement	Completed	Kreig Rasmussen	U.S. Forest Service	2009	2611.74	Plateau, Fishlake
Johnson Mountain Ranch Chaining	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2009	868.54	Plateau, Fishlake
North Narrows Year 1	Completed	Brant Hallows	Bureau of Land Management	2009	2230.40	Plateau, Boulder
Twin Peaks Habitat Restoration Project	Completed	Kreig Rasmussen	U.S. Forest Service	2009	1352.96	Monroe
RN Boulder Discretionary Seed	Completed	Nile Sorenson	Private Landowner	2009	0.22	Plateau, Boulder
RN Boulder Discretionary Seed	Completed	Nile Sorenson	Private Landowner	2009	35.36	Kaiparowitz
Mt. Terrill Habitat Improvement	Completed	Kreig Rasmussen	U.S. Forest Service	2009	239.99	Plateau, Fishlake
Johnson Mountain Ranch Chaining	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2009	0.07	Plateau, Fishlake
North Narrows Year 1	Completed	Brant Hallows	Bureau of Land Management	2009	0.01	Plateau, Boulder
North Narrows Year 1	Completed	Brant Hallows	Bureau of Land Management	2009	1.30	Plateau, Boulder
Circleville Cove	Completed	Shawn Peterson	Bureau of Land Management	2010	2113.51	Mt. Dutton
Antimony Seeding	Completed	Robert Bate	Bureau of Land Management	2010	6280.06	Mt. Dutton
Sand Ledges Chaining	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2010	1012.96	Plateau, Fishlake
Sand Ledges Chaining	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2010	5.27	Monroe

North Narrows Year 2	Completed	Brant Hallows	Utah Division of Wildlife Resources	2010	1711.85	Plateau, Boulder
Rock Bench Pinyon/Juniper and Brush Removal	Completed	Lisa Young	U.S. Forest Service	2010	381.92	Plateau, Boulder
Kingston Canyon Property Acquisition	Completed	Stan Beckstrom	Utah Division of Wildlife Resources	2010	236.81	Monroe
Kingston Canyon Property Acquisition	Completed	Stan Beckstrom	Utah Division of Wildlife Resources	2010	329.98	Mt. Dutton
Solomon Basin Fire Rehab	Completed	Gary Bezzant	U.S. Forest Service	2010	3840.44	Plateau, Thousand Lakes
North Narrows Year 2	Completed	Brant Hallows	Utah Division of Wildlife Resources	2010	0.01	Plateau, Boulder
Sand Ledges Chaining	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2010	136.04	Plateau, Fishlake
Sand Ledges Chaining	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2010	12.71	Plateau, Fishlake
Sand Ledges Chaining	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2010	240.79	Monroe
Kingston Canyon Property Acquisition	Completed	Stan Beckstrom	Utah Division of Wildlife Resources	2010	5.15	Mt. Dutton
Kingston Canyon Property Acquisition	Completed	Stan Beckstrom	Utah Division of Wildlife Resources	2010	19.38	Mt. Dutton
Sawmill Point/Baldy's Ridge Aspen Improvement Stewardship	Completed	Lisa Young	U.S. Forest Service	2011	1519.28	Plateau, Boulder
South Dutton Wildlife water	Completed	Jake Schoppe	U.S. Forest Service	2011	0.06	Mt. Dutton
West Grass Valley Bullhog	Completed	Brant Hallows	Bureau of Land Management	2011	2520.37	Monroe
Cow and Cottonwood Creek Lop and Scatter	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2011	3385.28	Mt. Dutton
North Cove Vegetation Treatment	Completed	Brant Hallows	Bureau of Land Management	2011	3212.43	Monroe
Pine Creek Chaining	Completed	Nile Sorenson	USDA Natural Resources Conservation Service	2011	592.98	Mt. Dutton
North Cove Vegetation Treatment	Completed	Brant Hallows	Bureau of Land Management	2011	197.82	Monroe
North Cove Vegetation Treatment	Completed	Brant Hallows	Bureau of Land Management	2011	1884.17	Monroe
Pine Creek Chaining	Completed	Nile Sorenson	USDA Natural Resources Conservation Service	2011	0.76	Mt. Dutton
Glenwood Habitat Enhancement	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2012	765.09	Monroe
Box Creek Aspen Regeneration Wild Ungulate Temporary Protection Fence	Completed	Kreig Rasmussen	U.S. Forest Service	2012	5302.59	Monroe
2012 North Paunsaugunt habitat enhancement	Completed	Jake Schoppe	U.S. Forest Service	2012	0.01	Mt. Dutton
Foot Bridge for Public Access to Kingston WMA	Completed	Stan Beckstrom	Utah Division of Wildlife Resources	2012	0.12	Monroe
Foot Bridge for Public Access to Kingston WMA	Completed	Stan Beckstrom	Utah Division of Wildlife Resources	2012	0.06	Mt. Dutton
Box Creek Fire Line Seeding	Completed	Gary Bezzant	U.S. Forest Service	2012	12.32	Monroe
Box Creek Aspen Regeneration	Completed	Kreig	U.S. Forest Service	2012	105.76	Monroe

Wild Ungulate Temporary Protection Fence		Rasmussen				
Box Creek Fire Line Seeding	Completed	Gary Bezzant	U.S. Forest Service	2012	0.60	Monroe
Kingston Canyon/Black Canyon WMA Habitat Improvement Phase I	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2012	0.15	Plateau, Boulder
Kingston Canyon/Black Canyon WMA Habitat Improvement Phase I	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2012	25.21	Mt. Dutton
Box Creek Fire Line Seeding	Completed	Gary Bezzant	U.S. Forest Service	2012	4.01	Monroe
Kingston Canyon/Black Canyon WMA Habitat Improvement Phase I	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2012	19.38	Mt. Dutton
Pockets Aspen Stewardship Project	Pending Completed	Lisa Young	U.S. Forest Service	2013	1264.86	Plateau, Boulder
Johnson Mountain Ranch Chaining Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	1549.64	Plateau, Fishlake
Antimony PJ reduction and riparian improvement (Phase V)	Completed	Brant Hallows	Bureau of Land Management	2013	1622.39	Mt. Dutton
Grass Valley/Rocky Knoll Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	240.57	Monroe
East Annabella Revegation Project	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	250.11	Monroe
Sandledges Lop and Scatter Project Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	3607.93	Plateau, Fishlake
Pacer Lake/Center Creek habitat enhancement	Completed	Michael Golden	U.S. Forest Service	2013	87.65	Plateau, Boulder
Kingston/Black Canyon WMA Seeding Phase II	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2013	0.47	Mt. Dutton
Angle PJ reduction Phase I	Completed	Brant Hallows	Bureau of Land Management	2013	769.91	Plateau, Boulder
Lost Lakes Fire Seed Supplement	Completed	Gary Bezzant	Utah Division of Wildlife Resources	2013	1180.88	Plateau, Boulder
Grass Valley/Rocky Knoll Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	39.64	Monroe
Johnson Mountain Ranch Chaining Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	0.07	Plateau, Fishlake
Sandledges Lop and Scatter Project Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	136.04	Plateau, Fishlake
Kingston/Black Canyon WMA Seeding Phase II	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2013	5.15	Mt. Dutton
Antimony PJ reduction and riparian improvement (Phase V)	Completed	Brant Hallows	Bureau of Land Management	2013	0.76	Mt. Dutton
Kingston/Black Canyon WMA Seeding Phase II	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2013	0.15	Plateau, Boulder
Kingston/Black Canyon WMA Seeding Phase II	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2013	25.21	Mt. Dutton
Antimony PJ reduction and riparian improvement (Phase V)	Completed	Brant Hallows	Bureau of Land Management	2013	1189.55	Mt. Dutton
Sandledges Lop and Scatter Project Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	0.14	Plateau, Fishlake
Sandledges Lop and Scatter Project Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2013	1.49	Plateau, Fishlake
Kingston/Black Canyon WMA Seeding Phase II	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2013	9.98	Mt. Dutton

Angle PJ reduction Phase I	Completed	Brant Hallows	Bureau of Land Management	2013	2.89	Plateau, Boulder
Angle PJ reduction Phase I	Completed	Brant Hallows	Bureau of Land Management	2013	288.63	Plateau, Boulder
Kingston/Black Canyon WMA Seeding Phase II	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2013	19.38	Mt. Dutton
Antimony PJ reduction and riparian improvement (Phase V)	Completed	Brant Hallows	Bureau of Land Management	2013	0.11	Mt. Dutton
John's Valley Shrubsteppe Improvement	Completed	Nile Sorenson	Utah Division of Wildlife Resources	2014	310.70	Mt. Dutton
Parker Front PJ removal	Completed	Brant Hallows	Bureau of Land Management	2014	1465.41	Plateau, Boulder
Antimony Fuels Reduction and Habitat Improvement FY14	Pending Completed	Robert Bate	Bureau of Land Management	2014	0.04	Mt. Dutton
Otter Creek Utah Prairie Dog habitat enhancement.	Completed	Clint Wirick	U.S. Fish and Wildlife Service	2014	49.04	Plateau, Boulder
Johns Valley Phase III	Completed	Jake Schoppe	U.S. Forest Service	2014	779.26	Mt. Dutton
Circleville Vegetation Enhancement	Completed	Trail Kreitzer	Utah Division of Wildlife Resources	2014	743.91	Mt. Dutton
Antimony Fuels Reduction and Habitat Improvement FY14	Pending Completed	Robert Bate	Bureau of Land Management	2014	1189.55	Mt. Dutton
Parker Front PJ removal	Completed	Brant Hallows	Bureau of Land Management	2014	1.10	Plateau, Boulder
Parker Front PJ removal	Completed	Brant Hallows	Bureau of Land Management	2014	2.16	Plateau, Boulder
Johns Valley Phase III	Completed	Jake Schoppe	U.S. Forest Service	2014	220.87	Mt. Dutton
Johns Valley Phase III	Completed	Jake Schoppe	U.S. Forest Service	2014	278.52	Mt. Dutton
Antimony Fuels Reduction and Habitat Improvement FY14	Pending Completed	Robert Bate	Bureau of Land Management	2014	0.11	Mt. Dutton
Sandledges Lop and Scatter Project Phase III	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	2357.06	Plateau, Fishlake
Sandledges Lop and Scatter Project Phase III	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	817.40	Monroe
Cedar Groves Lop and Scatter Project Phase I	Current	Kendall Bagley	Utah Division of Wildlife Resources	2015	1.96	Plateau, Fishlake
Cedar Groves Lop and Scatter Project Phase I	Current	Kendall Bagley	Utah Division of Wildlife Resources	2015	1534.26	Plateau, Boulder
Sandledges Chaining Project Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	1296.07	Plateau, Fishlake
Mormon Peak Habitat Improvement Project	Completed	Robert Bate	Bureau of Land Management	2015	3916.19	Monroe
Mount Dutton East Side Riparian Improvement project Phase I	Current	Michael Golden	U.S. Forest Service	2015	421.82	Mt. Dutton
Parker Front PJ Removal Phase II	Completed	Brant Hallows	Bureau of Land Management	2015	3657.90	Plateau, Boulder
Black Canyon WMA RabbitBrush Removal phase 2	Current	Trail Kreitzer	Utah Division of Wildlife Resources	2015	28.83	Mt. Dutton
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	2830.72	Plateau, Fishlake
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	5676.10	Monroe
North Cove Maintenance and Guzzlers	Current	Brant Hallows	Bureau of Land Management	2015	124.73	Monroe
Dixie and Chain Harrow Retreat	Current	Kreig	U.S. Forest Service	2015	2493.53	Plateau,

		Rasmussen				Fishlake
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	1796.56	Plateau, Fishlake
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	169.18	Monroe
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	672.48	Monroe
Sandledges Lop and Scatter Project Phase III	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	12.71	Plateau, Fishlake
Sandledges Lop and Scatter Project Phase III	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	240.79	Monroe
Mormon Peak Habitat Improvement Project	Completed	Robert Bate	Bureau of Land Management	2015	197.82	Monroe
North Cove Maintenance and Guzzlers	Current	Brant Hallows	Bureau of Land Management	2015	1884.17	Monroe
Sandledges Lop and Scatter Project Phase III	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	0.14	Plateau, Fishlake
Sandledges Chaining Project Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	1.49	Plateau, Fishlake
Black Canyon WMA RabbitBrush Removal phase 2	Current	Trail Kreitzer	Utah Division of Wildlife Resources	2015	9.98	Mt. Dutton
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	4.01	Monroe
Parker Front PJ Removal Phase II	Completed	Brant Hallows	Bureau of Land Management	2015	2.89	Plateau, Boulder
Sandledges Lop and Scatter Project Phase III	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	1.56	Plateau, Fishlake
Sandledges Chaining Project Phase II	Completed	Kendall Bagley	Utah Division of Wildlife Resources	2015	1.56	Plateau, Fishlake
Cedar Groves Lop and Scatter Project Phase I	Current	Kendall Bagley	Utah Division of Wildlife Resources	2015	2.82	Plateau, Fishlake
Cedar Groves Lop and Scatter Project Phase I	Current	Kendall Bagley	Utah Division of Wildlife Resources	2015	5.68	Plateau, Boulder
Mount Dutton East Side Riparian Improvement project Phase I	Current	Michael Golden	U.S. Forest Service	2015	141.12	Mt. Dutton
Mount Dutton East Side Riparian Improvement project Phase I	Current	Michael Golden	U.S. Forest Service	2015	137.06	Mt. Dutton
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	0.92	Monroe
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	1489.79	Monroe
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	10.65	Plateau, Fishlake
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	287.17	Monroe
Dixie and Chain Harrow Retreat	Current	Kreig Rasmussen	U.S. Forest Service	2015	145.66	Monroe
Boobe Hole CWMU Habitat Improvement Project Phase I	Current	Kendall Bagley	Utah Division of Wildlife Resources	2016	940.40	Plateau, Fishlake
Parker Front Phase 3	Current	Mathew Madariaga	Bureau of Land Management	2016	628.39	Plateau, Boulder
Antimony Phase 5	Current	Mathew Madariaga	Bureau of Land Management	2016	2433.65	Mt. Dutton
Monument Peak Hazardous Fuels Reduction Project	Current	Kelly Cornwall	U.S. Forest Service	2016	7120.09	Monroe
Twin Peaks Hazardous Fuels Reduction Project Phase 2	Current	Kelly Cornwall	U.S. Forest Service	2016	1677.95	Monroe

Dixie National Forest FY 2016 Exclosure Repair and Rebuild project	Current	Michael Golden	U.S. Forest Service	2016	191.83	Plateau, Boulder
Dixie National Forest FY 2016 Exclosure Repair and Rebuild project	Current	Michael Golden	U.S. Forest Service	2016	2907.50	Mt. Dutton
Cedar Groves Lop and Scatter Project Phase II	Current	Kendall Bagley	Utah Division of Wildlife Resources	2016	1200.13	Plateau, Fishlake
Cedar Groves Lop and Scatter Project Phase II	Current	Kendall Bagley	Utah Division of Wildlife Resources	2016	2.30	Plateau, Boulder
Sandberg Ranch Revegetation Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2016	319.47	Plateau, Boulder
Monument Peak Hazardous Fuels Reduction Project	Current	Kelly Cornwall	U.S. Forest Service	2016	0.00	Monroe
Parker Front Phase 3	Current	Mathew Madariaga	Bureau of Land Management	2016	1.30	Plateau, Boulder
Parker Front Phase 3	Current	Mathew Madariaga	Bureau of Land Management	2016	288.63	Plateau, Boulder
Parker Front Phase 3	Current	Mathew Madariaga	Bureau of Land Management	2016	1.10	Plateau, Boulder
Dixie National Forest FY 2016 Exclosure Repair and Rebuild project	Current	Michael Golden	U.S. Forest Service	2016	220.87	Mt. Dutton
Dixie National Forest FY 2016 Exclosure Repair and Rebuild project	Current	Michael Golden	U.S. Forest Service	2016	141.12	Mt. Dutton
Monument Peak Hazardous Fuels Reduction Project	Current	Kelly Cornwall	U.S. Forest Service	2016	0.92	Monroe
Cedar Groves Lop and Scatter Project Phase II	Current	Kendall Bagley	Utah Division of Wildlife Resources	2016	0.75	Plateau, Fishlake
Cedar Groves Lop and Scatter Project Phase II	Current	Kendall Bagley	Utah Division of Wildlife Resources	2016	0.12	Plateau, Boulder
Monument Peak Hazardous Fuels Reduction Project	Current	Kelly Cornwall	U.S. Forest Service	2016	145.66	Monroe
Antimony Phase 5	Current	Mathew Madariaga	Bureau of Land Management	2016	0.11	Mt. Dutton
Otter Creek riparian and fish habitat enhancement	Current	Clint Wirick	U.S. Fish and Wildlife Service	2017	105.65	Plateau, Boulder
Monroe Mountain Aspen Ecosystems Restoration Project Phase 1	Current	Kelly Cornwall	U.S. Forest Service	2017	5036.03	Monroe
Prospect Creek / Johns valley PJ	Current	Jake Schoppe	U.S. Forest Service	2017	3818.73	Mt. Dutton
Paradise Valley Restoration Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	404.61	Plateau, Thousan d Lakes
Paradise Valley Restoration Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	59.51	Plateau, Fishlake
Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	443.05	Plateau, Fishlake
Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	481.99	Plateau, Boulder
Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	1.71	Monroe
Monroe Mountain Aspen Ecosystems Restoration Project Phase 1	Current	Kelly Cornwall	U.S. Forest Service	2017	0.00	Monroe

Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	2.16	Plateau, Boulder
Prospect Creek / Johns valley PJ	Current	Jake Schoppe	U.S. Forest Service	2017	278.52	Mt. Dutton
Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	2.82	Plateau, Fishlake
Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	5.68	Plateau, Boulder
Prospect Creek / Johns valley PJ	Current	Jake Schoppe	U.S. Forest Service	2017	137.06	Mt. Dutton
Monroe Mountain Aspen Ecosystems Restoration Project Phase 1	Current	Kelly Cornwall	U.S. Forest Service	2017	1489.79	Monroe
Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	0.75	Plateau, Fishlake
Hwy 24 Wildlife Crossing and Mastication Project	Current	Kendall Bagley	Utah Division of Wildlife Resources	2017	0.12	Plateau, Boulder
Monroe Mountain Aspen Ecosystems Restoration Project Phase 1	Current	Kelly Cornwall	U.S. Forest Service	2017	287.17	Monroe
				TOTAL=	159,790.13	

**ELK UNIT MANAGEMENT PLAN
PAUNSAUGUNT Unit #27
2016**

BOUNDARY DESCRIPTION

Garfield and Kane counties--Boundary begins at US-89A and the Utah-Arizona state line; north on US-89A to US-89; north on US-89 to SR-12; east on SR-12 to the Paria River; south along the Paria River to the Utah-Arizona state line; west along this state line to US-89A.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP*

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	94519	64	0	0
Bureau of Land Management	0	0	7862	5	40673	73
Utah State Institutional Trust Lands	0	0	2779	2	3925	7
Native American Trust Lands	0	0	0	0	0	0
Private	0	0	41358	28	11058	20
Department of Defense	0	0	0	0	0	0
USFWS Wildlife Refuge	0	0	0	0	0	0
National Parks	0	0	618	1	0	0
Utah State Parks	0	0	0	0	0	0
Utah Division of Wildlife Resources	0	0	0	0	0	0
TOTAL	0	0	147136	100	55656	100

UNIT MANAGEMENT GOALS

- Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing.
- Balance elk herd impacts on human needs, such as private property rights, agricultural crops, other big game species and local economies.
- Maintain the population at a level that is within the long-term capability of the available habitat and that does not negatively impact the mule deer population.
- Continue with limited entry and cooperative programs with the landowners association and the Alton Cooperative Wildlife Management Unit.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size: Continue to manage for a total of 140 total elk wintering across the unit. This recommendation is made largely to provide antlerless harvest opportunities and reduce potential negative impacts to mule deer on a premium mule deer unit.

Bull Age Structure: Maintain a 3-year average bull harvest age of 4.5-5.0 years for all hunt types on the unit.

Recruitment: Determine annual recruitment and population status of the herd.

Harvest: Provide antlerless, general season spike-only, and limited entry any-bull hunt opportunities.

POPULATION MANAGEMENT STRATEGIES

Monitoring: Utilize harvest data, aerial trend counts, and pre-season classification data to estimate wintering elk population. Opportunistic ground surveys in the winter months appear to also provide some useful trend data due to low overall numbers.

Bull Age Structure: Monitor age class structure of the bull population through the use of check stations, harvest surveys, field bag checks, preseason classification, tooth age data, and aerial classification.

Recruitment: Aerial and/or ground classification will be conducted annually to determine population status, calf recruitment, calf/cow ratios, and range distribution.

Harvest: The primary means of monitoring harvest will be through the statewide harvest survey, check stations, and field bag checks. The target population size will be achieved through antlerless harvest using a variety of harvest methods and seasons with a focus on reducing potential negative impacts to mule deer. The Skutumpah area should be a focus for any antlerless harvest since this wintering herd is the closest to mule deer winter range. Antlerless harvest may be used if there is evidence of negative impacts to mule deer on additional ranges. Antlerless harvest will occur on the Alton CWMU, across the unit, and on private lands using private lands only permits.

CURRENT POPULATION STATUS:

Due to the rotation of aerial flights combined with poor winter conditions in recent years, an aerial census has not occurred on the unit since 2010. Provided there are adequate winter conditions, it will be flown during the winter of 2017.

Prior to the winter of 2009-10, very few elk were counted during census surveys since the Paunsaugunt was used by elk mainly in the summer months. Elk numbers have increased in the Skutumpah area. With the recent expansion, there are currently two different wintering herds on the Paunsaugunt; 1) Hatch Bench and 2) Skutumpah Terrace/Glendale Bench. Recent telemetry research suggests the Hatch Bench segment may also utilize areas on Mount Dutton during extreme snow during the winter months.

Population modeling is extremely difficult since the Paunsaugunt winters few elk in comparison to adjacent units and experiences higher numbers during summer months (Table 2) when census surveys are impractical.

BARRIERS AND ACTIONS

Depredation – Many of the local landowners and livestock owners on the unit express concern that an increase in the elk population would increase damages due to elk depredation. We will take all steps necessary to minimize depredation as prescribed by state law and DWR policy. We want to maintain the Alton CWMU and Paunsaugunt Elk Landowners Association to compensate for elk use of private lands. Issuing private-lands-only permits will be a management strategy to reduce depredation elk issues.

Competition – This unit is managed as a premium limited entry deer unit, and there are concerns that elk populations may compete with mule deer for resources. We will monitor for signs of competition between the two species and address situations where elk negatively impact mule deer habitat or populations.

UNIT HABITAT MANAGEMENT OBJECTIVES

- Continue to be committed to the statewide goal of supporting habitat projects that increase forage for both big game and livestock.
- Work with private, state and federal agencies to maintain and protect critical and existing range from future losses. Continue projects with USFS, BLM, state and private entities to enhance wildlife habitat.
- Provide improved habitat security and escapement opportunities for elk through support and cooperation of approved Dixie National Forest Travel Plan.
- Encourage the maintenance and development of water sources throughout the unit. Focus on providing water sources in remote areas or on abandoned / sources such as old water trough's, ponds, and tanks that can benefit both livestock and wildlife.
- Discourage the encroachment of Pinyon and Juniper (PJ) trees into sagebrush and other habitats. Seek opportunities to improve habitat through grazing practices, prescribed burning, and mechanical treatments to improve habitat where PJ encroachment is occurring.

HABITAT MANAGEMENT STRATEGIES

Focus habitat improvement projects in summer/winter habitats as well as water development and maintenance:

- Hatch bench – Winter range (SITLA/USFS)
- East fork Sevier – Calving/Summer range (USFS)
- Skutumpah Terrace and Glendale Bench – Year long range (BLM)

Work with USFS to continue projects with guzzlers, riparian improvement, and timber harvest in key calving habitat on the East Fork.

Work with the BLM and Grand Staircase Escalante National Monument to continue projects on vegetation enhancement, PJ encroachment, guzzlers, ponds and water distribution.

Continue to monitor the permanent range trend studies located throughout the winter range. Work with state range trend monitoring crew to establish new trend studies in areas where elk use or trend is a concern.

Encourage and provide support to other land management agencies, private landowners, and stakeholders when developing habitat projects that will enhance or improve elk habitat throughout the management unit.

Encourage habitat restoration project funding proposals through a diversity of sources including UPCD and Alton Coal.

CURRENT STATUS OF ELK HABITAT MANAGEMENT

Overall, elk habitat on the Paunsaugunt unit is good with stable range conditions throughout most of their range. Some challenges facing elk habitat include; 1) conifer encroachment of aspen stands, 2) degradation of rangelands by increased woody vegetation, and 3) water availability.

Many habitat restoration projects have been completed in the past 5-10 years that have improved elk habitat. There are also several thousand acres across the unit currently proposed for treatment. Many of these projects are listed in Appendix 2.

BARRIERS TO ACHIEVING UNIT HABITAT MANAGEMENT OBJECTIVES

- Water distribution, development and maintenance.
- Degradation of summer and winter rangelands.
- Conifer encroachment of aspen stands.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT HABITAT MANAGEMENT OBJECTIVES

- Use range trend and habitat improvement data to make appropriate decisions regarding population objectives. Antlerless harvest may be recommended if there is excessive habitat utilization.
- Support habitat improvement projects in the Skutumpah Terrace and Glendale Bench areas that could attract elk and other wildlife away from private land at lower elevations. Focus on public lands in PJ or sagebrush areas.
- Continue to focus on improving habitat in upper elevation calving habitat on the East Fork of the Sevier. Projects that provide for aspen and water at higher elevations would be beneficial.
- Conduct large-scale habitat projects to help prevent elk and other wildlife from concentrating on isolated patches of improved habitat.
- Encourage projects on private land that maintain habitat for elk over the long-term.
- Work closely with State Trust Lands (SITLA) to conserve crucial / key winter habitat along the Hatch bench.
- Continue projects with USFS, BLM, state and private landowners to enhance overall elk habitat.
- To reduce potential negative impacts on the mule deer population, habitat projects will be needed to improve range conditions on both summer and winter ranges.

Appendix 1. Seasonal habitat use on the Paunsaugunt WMU #27.

Paunsaugunt Elk Habitat	Sum_Acres	% of available habitat	% of WMU
Summer Crucial	60615	17	6
Summer Substantial	83854	23	9
Winter Crucial	17489	5	2
Winter Substantial	20991	6	2
Year Long Substantial	175970	49	18
TOTAL ELK HABITAT	358919	100	37
Wildlife MGMT Unit Total Area	957122		100

Appendix 2 Paunsaugunt WMU #27 habitat projects listed in WRI database 2012-2017.

Title	Status	Lead Agency	Fiscal Year	Acres
2012 North Paunsaugunt habitat enhancement	Completed	U.S. Forest Service	2012	770
South Alton Browse Seeding Project	Completed	Utah Division of Wildlife Resources	2012	142
Pine Point Handthin	Completed	Bureau of Land Management	2013	4,674
Hatch Bench Vegetation Enhancement Phase II	Completed	Utah Division of Wildlife Resources	2014	4,773
Upper Kanab Creek Phase II Bullhog - Bald Knoll	Completed	Bureau of Land Management	2014	2,256
UKC Thompson Creek	Completed	Bureau of Land Management	2014	1,520
Sieler Stewardship	Completed	U.S. Forest Service	2014	1,621
Upper Kanab Creek Bald Knoll - Phase 3	Completed	Bureau of Land Management	2015	1,945
Paunsaugunt Rabbit Brush Removal Phase II	Completed	Utah Division of Wildlife Resources	2015	492
Coal Hollow, Kane County	Completed	Bureau of Land Management	2015	316
UKC - Elbow Spring Phase I	Current	Bureau of Land Management	2016	998
UKC - Cottonwood Spring- Phase I	Current	Bureau of Land Management	2016	5,837
UKC - Carly Knoll/Mill Creek	Current	Bureau of Land Management	2016	1,091
Alton/South Canyon Retreatment - large tree removal	Current	Bureau of Land Management	2016	1,653
Coal Hollow, Kane County - Phase II	Current	Bureau of Land Management	2016	1,753
Sunset Cliffs Rabbitbrush Treatment	Current	Private Landowner	2016	526
Sieler Stewardship Project Phase 2	Current	U.S. Forest Service	2016	638
Dixie National Forest FY 2016 Exclosure Repair and Rebuild project	Current	U.S. Forest Service	2016	10
Broad Hollow Rabbitbrush Removal	Current	Utah Division of Wildlife Resources	2016	609
Kanab Area Project Maintenance	Current	Utah Division of Wildlife Resources	2016	2,857
Hatch Bench Vegetation Enhancement Phase III	Current	Utah Division of Wildlife Resources	2016	3,537
Left Fork Stewardship Project	Current	Mule Deer Foundation	2017	2,004
UKC Cottonwood Phase II	Current	Bureau of Land Management	2017	4,146
UKC - Upper Sink Valley	Current	Bureau of Land Management	2017	2,744
UKC - Coal Hollow Phase III	Current	Bureau of Land Management	2017	821
Sieler Stewardship Project Phase 3	Current	Mule Deer Foundation	2017	792
South Canyon (Coal Pit Wash)	Current	Bureau of Land Management	2017	4
Paunsaugunt boreal toad habitat improvement project	Current	U.S. Forest Service	2017	107
Bulldog Bench-First Point Handthin	Current	Bureau of Land Management	2017	3,127

Total Acres: 51,763

**ELK UNIT MANAGEMENT PLAN
PANGUITCH LAKE UNIT #28
2016**

LAND OWNERSHIP

Garfield, Iron and Kane counties--Boundary begins at US-89 and SR-14; north on US-89 to SR-20; west on SR-20 to I-15; south on I-15 to SR-14; east on SR-14 to US-89.

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	Winter Range		Summer Range	
	Area (acres)	Percent	Area (acres)	Percent
US Forest Service	47,560	53%	238,300	75%
Bureau of Land Management	29,845	33%	14,578	5%
Utah State Institutional Trust Lands	3544	8%	3498	2%
Private	8828	5%	49,000	15%
Utah Division of Wildlife Resources	27	1%	1289	1%
National Park Service	0	0%	6005	2%
TOTAL	89,804	100	312,670	100

UNIT MANAGEMENT GOALS

Manage for a population of elk capable of providing a broad range of recreational opportunities including hunting and viewing. Maintain healthy elk populations at biologically and socially sustainable levels. Continue with the limited entry bull harvest strategy.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size: Manage for a range between 1,100 – 1,300 total elk wintering across the unit to account for variability in wintering numbers, with a target number of 1,200. If the population estimate is between 1,100-1,300, the unit will be considered at objective.

Bull Age Structure: Manage for an average age of harvest of (6.5 – 7) as outlined in the Statewide Elk Management Plan.

Recruitment: Aerial surveys and annual preseason classification surveys (July – August) will be used to monitor the population. Population modeling will also be used to generate annual postseason (winter) population estimates.

Harvest: General season spike-only and limited entry bull hunt opportunities are methods of bull harvest. Antlerless harvest using a variety of harvest methods and seasons will be the primary means to achieving the wintering population objective.

Current Status

Population trends can be found in Figures 1-3. The most recent aerial surveys were conducted in January 2010 and in 2016 with estimates of 785 and 1,700, respectively. Due to low counts in 2010,

conservative antlerless harvest was implemented until the 2016 count when a more aggressive cow harvest structure was employed.

2011 Advisory Committee - The unit elk committee met in October 2011 to discuss elk management on this unit and an increase in the population objective. It was recommended to maintain the 1,100 wintering elk objective at that time with plans for an increase if habitat projects continued and range trends continued to improve.

2016 Advisory Committee – The unit elk committee met in August 2016 and discussed elk management on this unit and potentially adjusting the population objective. A proposal was made to manage for a range of 1,100 to 1,500 with a target population of 1,300. After receiving comments from committee members, it was agreed that a smaller range be adopted of 1,100 to 1,300, with a target population of 1,200 elk.

Barriers to Achieving Unit Population Objectives

- Drought and Utilization – dry conditions or high elk utilization is a concern on this unit.
- Depredation – Some of the local landowners and public lands grazers experience depredation to private lands and fence damages from elk.

Strategies for Removing Barriers to Population Objectives

- Drought and Utilization – If drought related conditions and high elk densities are negatively impacting habitat, recommend additional antlerless elk permits at the August Wildlife Board meeting.
- Depredation - Take all steps necessary to minimize depredation using management strategies within state law and DWR policies to increase tolerance of elk on private and public lands.
- Continue the cooperative program with Panguitch Lake Landowners Association.
- Support statewide landowner incentive programs within the Statewide Elk Management Plan.
- Use new antlerless harvest tools identified in the Statewide Elk Management Plan as needed (private lands permits, cow harvest with a muzzleloader spike bull permit, etc).
- Support outreach efforts to document benefits elk on Panguitch Lake, particularly to local economies (hunting and viewing, landowner permits, shed antler gathering, etc.).
- Communicate with stakeholders regarding elk management and habitat conditions.

HABITAT MANAGEMENT

Current Status

Overall, range conditions on the Panguitch Lake WMU are good with stable to increasing range conditions on most of the unit (UDWR Range Trend / USFS and BLM Vegetation Monitoring). Some challenges facing elk habitat include:

- conifer encroachment of aspen stands
- recovering forests from epidemic of spruce bark beetle
- water availability and distribution that is dependent on precipitation

Many habitat restoration projects have been completed in the past 10 years that have improved over 60,000 acres of habitat with several thousand additional acres proposed for restoration (Appendix 1 & 2).

Unit Habitat Objectives

- Continue to be committed to the statewide goal of supporting habitat projects that increase forage for both big game and livestock.
- Maintain and/or enhance forage production through direct range improvements throughout the unit to achieve population management objectives.
- Work with private, state and federal agencies to maintain and protect crucial ranges. Continue projects with USFS, BLM, state and private entities to enhance habitat across the unit.
- Provide improved habitat security and escapement opportunities for elk through support and cooperation of approved Dixie National Forest Travel Plan.
- Encourage the maintenance and development of water sources throughout the unit. Focus on providing water sources in remote areas or on abandoned/sources such as old water troughs, ponds, and tanks that can benefit both livestock and wildlife.
- Discourage the encroachment of pinyon and juniper (PJ) trees into sagebrush and other habitats.
- Work with land management agencies to improve calving habitat and minimize disturbance in these areas. Seek opportunities to improve aspen communities, and some sagebrush ranges where calving and foraging are occurring.
- Discourage high densities of elk wintering along the Parowan Front below 7,000ft to protect crucial deer range, reduce human safety issues from vehicle collisions, and minimize depredation issues.

Barriers to Achieving Unit Habitat Objectives

Restoration efforts on summer ranges to improve forest health and address watershed productivity are needed. Private landowners, livestock permittees, federal and state land management agencies and the Utah Division of Wildlife Resources are encouraged to continue to work together to conduct landscape wide treatments. In an effort to regenerate aspen communities, land managers are encouraged to use fire, mechanical or chemical treatments on landscape level projects.

New water developments and maintenance of existing water sources can be an issue in drier portions of the unit and in drought conditions.

Drought conditions and utilization standards can create conflict if livestock reductions are imposed.

Improved communication about project needs and ideas are needed to facilitate greater cooperative efforts.

Strategies for Removing Barriers to Habitat Objectives

Encourage improved communication among stakeholders through Utah Partners for Conservation and Development as well as annual interagency coordination meetings. Communicate annually with advisory committee on elk population status and annual recommendations.

Use range trend and habitat improvement data to make appropriate habitat-related decisions. Antlerless elk harvest may be recommended if drought conditions exist and/or if there is excessive habitat utilization. Any of these hunts should have definitive boundaries around the problem area and be focused early in the season if possible (example: Markagunt Plateau).

Encourage USFS and BLM to control uses that negatively impact bottomlands and riparian areas. Focus areas should include Deer Creek, Little Valleys, and areas adjacent to the Cedar Breaks National Monument.

Maintain investments in previous habitat projects such as seedings, chainings, and water developments.

A goal from the elk committee was to encourage at least 10,000 acres of treatment in elk habitat during this plan.

RECREATION MANAGEMENT OBJECTIVES

Current Status

The 2015 Statewide Management Plan for Elk increased the average age of harvest objective from (5.5 - 6) up to (6.5 – 7). This was in response to public input through the 2011 Advisory Committee as well as the RAC and Wildlife Board processes. (Harvest trends of bull elk can be found in Figures 4 and 5.)

Barriers to Achieving Unit Recreation Objectives

There has been some conflict in balancing opportunity and quality in bull harvest strategies. A goal of this plan is to continue a public relations effort to promote the importance of maintaining the specified average age of harvested bulls. The increase in age objective will likely result in reduced permit numbers.

Strategies for Removing Barriers to Recreation Objectives

- Bull Age Structure - Monitor age class structure of the bull population through the use of harvest surveys and tooth analysis. Additionally, data will be analyzed from preseason classification surveys, aerial census surveys, check stations, and field hunter checks.
- Support outreach efforts to document benefits of higher quality bull elk on Panguitch Lake, particularly to local economies (landowner permits, shed antler gathering, etc.).
- Support spike bull hunting to promote healthy bull to cow ratios and hunting opportunities.

Figure 1. Population estimates of elk on Panguitch Lake WMU #28.

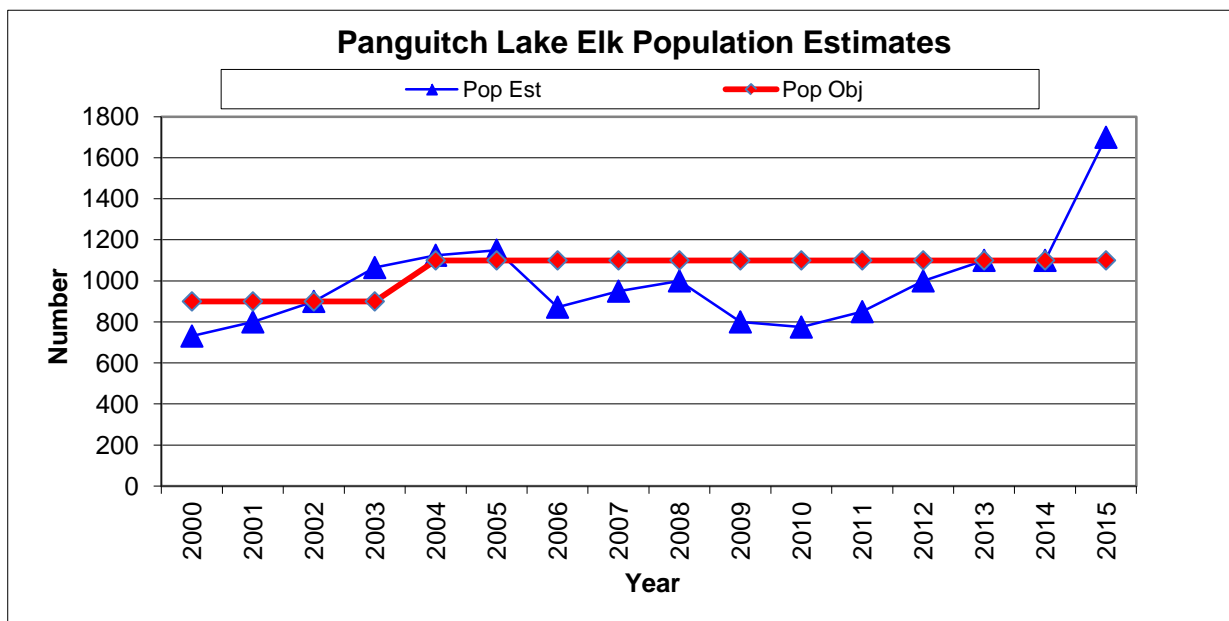


Figure 2. Antlerless elk hunters and harvest on Panguitch Lake WMU #28.

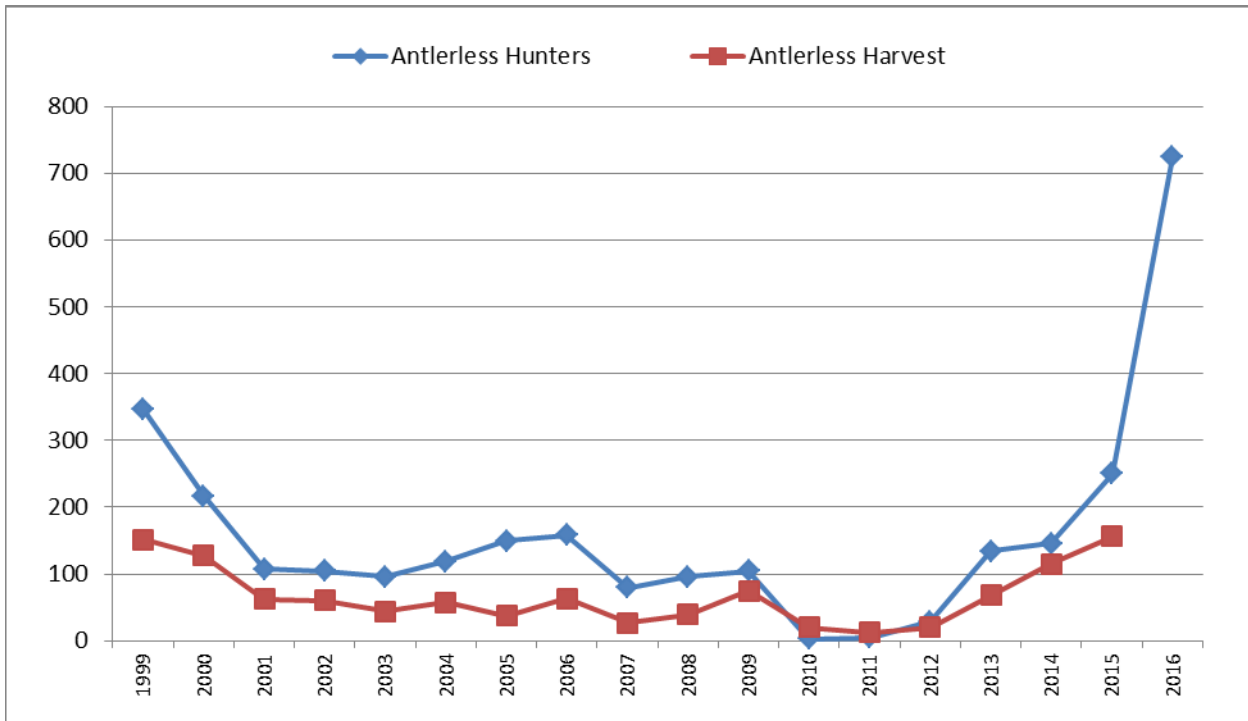


Figure 3. Preseason classification surveys of elk on Panguitch Lake WMU #28.

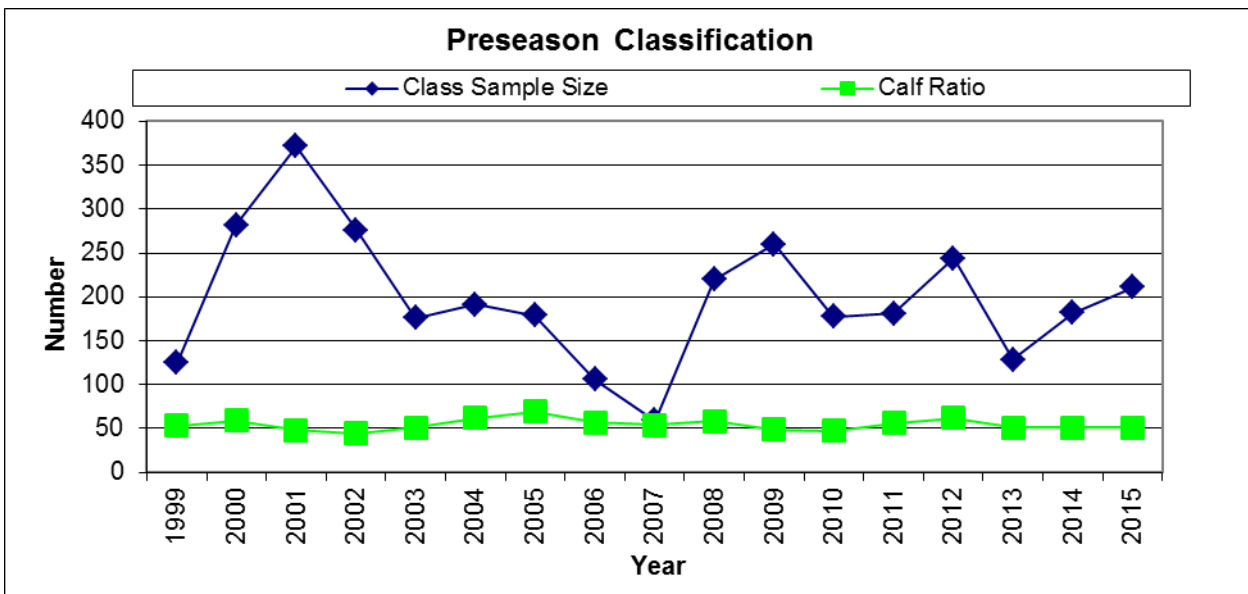


Figure 4. Trend of limited entry bull elk permits and harvest on Panguitch Lake WMU #28.

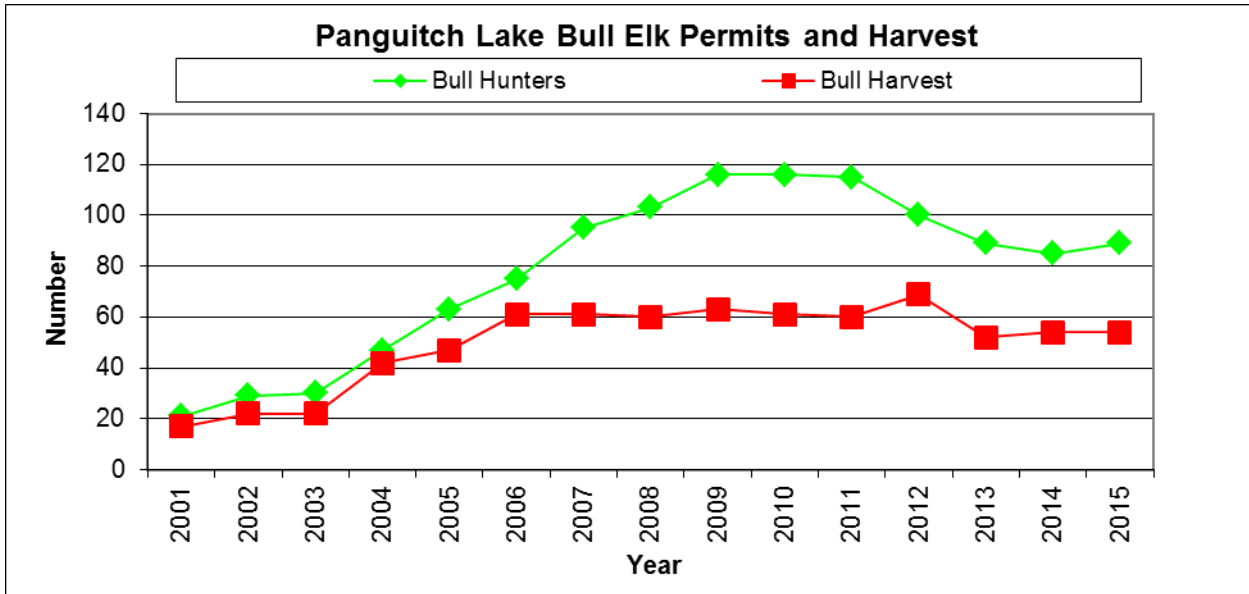
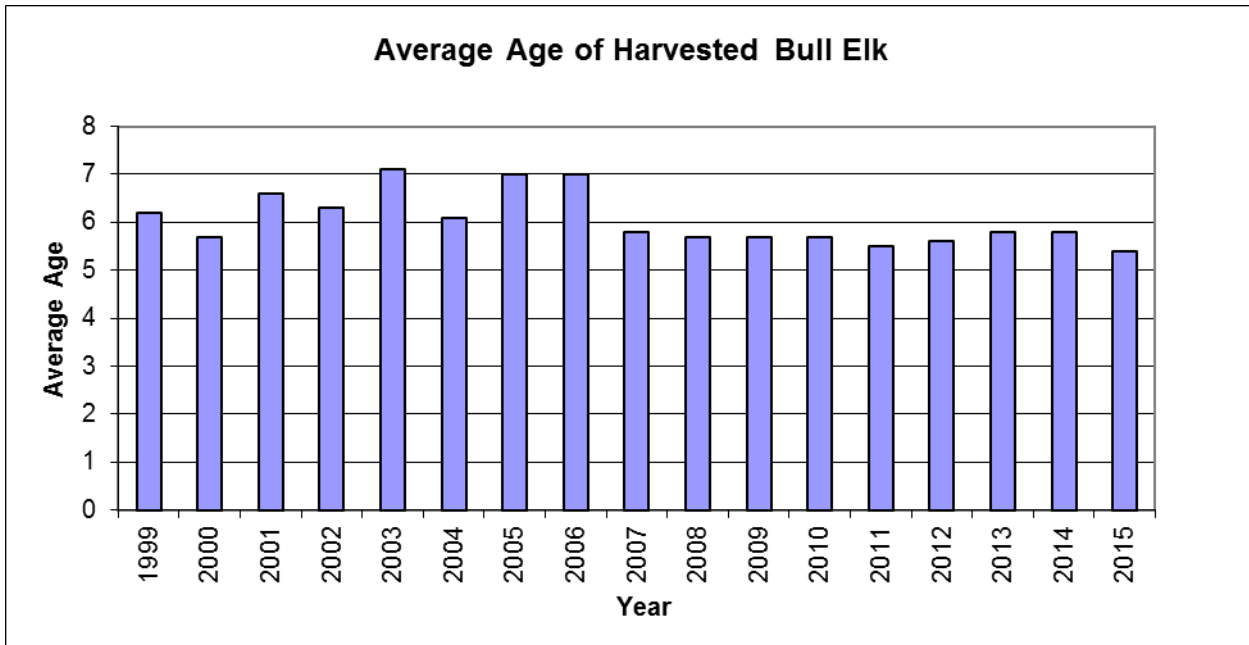
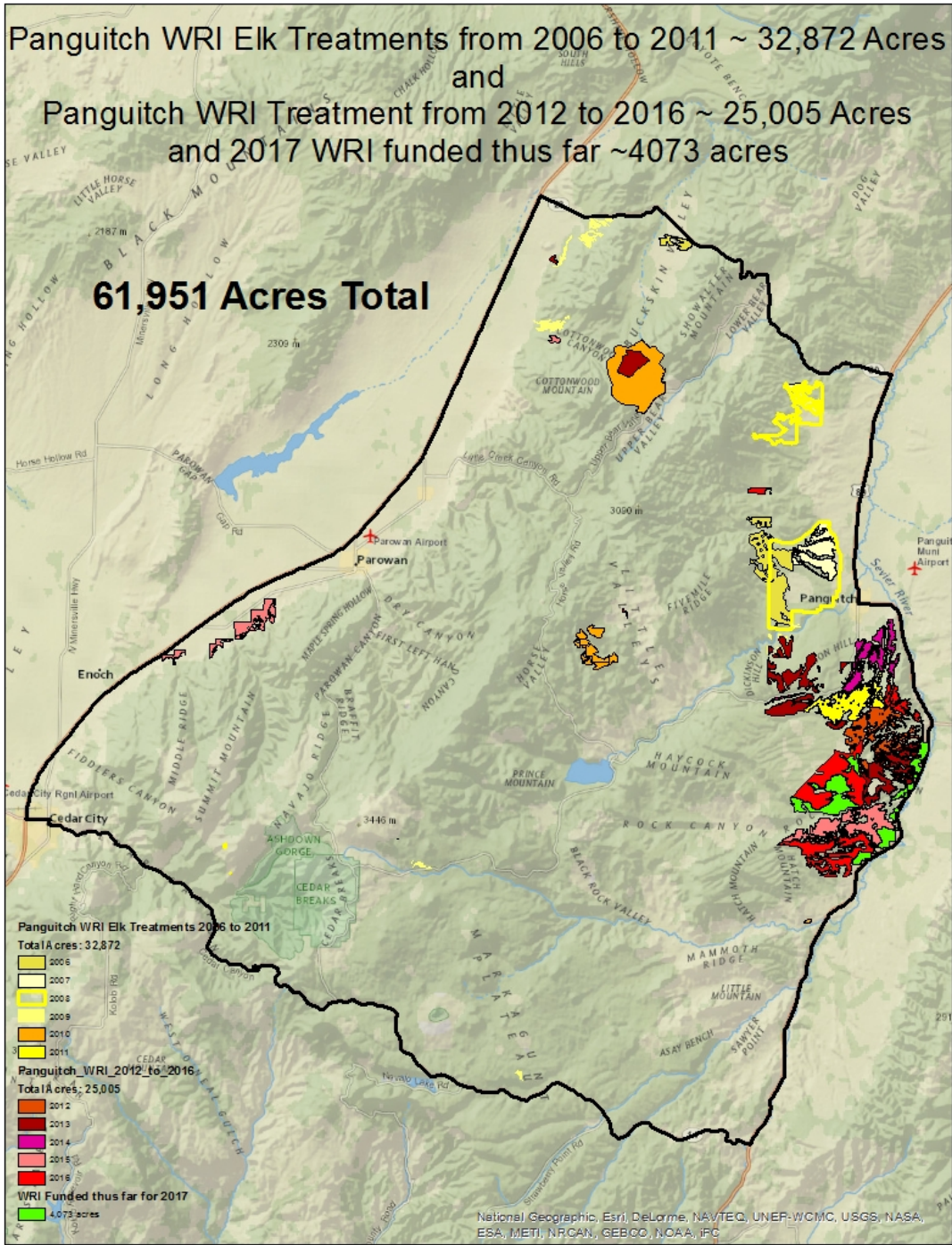


Figure 5. Average age of harvested bull elk on Panguitch Lake WMU #28.



Appendix 1. Habitat restoration efforts on the Panguitch Lake WMU #28 (2006-2016).



Appendix 2. Recent habitat projects in elk habitat on the Panguitch Lake WMU #28.

Fiscal Year	Title	Lead Agency	Acres
2006	Five Mile Hollow Sagebrush Restoration - Year 1	Bureau of Land Management	2477
2006	Tebbs Hollow Sagebrush Restoration PJ Removal	U.S. Forest Service	735
2006	Mud Springs Sagebrush and PJ Encroachment Project	U.S. Forest Service	1584
2006	Buckskin Valley Hwy 20	Bureau of Land Management	436
2007	Tebbs Hollow/Mud Springs Sagebrush and PJ Treatment	U.S. Forest Service	735
2007	Fivemile Hollow Sagebrush Restoration - Year 2	Bureau of Land Management	2201
2008	Tebbs Hollow Pinyon/Juniper Encroachment Project	U.S. Forest Service	2379
2008	Fivemile Hollow Sagebrush Restoration - Year 3	Bureau of Land Management	10387
2008	D. Burton Discretionary Seed	Utah Division of Wildlife Resources	2
2009	North Cottonwood Canyon Lop and Scatter/Bullhog Treatment	Utah Division of Wildlife Resources	1318
2009	Panguitch Creek WMA PJ Thinning	Utah Division of Wildlife Resources	615
2009	Castle Valley Aspen Regeneration	U.S. Forest Service	109
2009	Duck Creek Aspen Regeneration	U.S. Forest Service	76
2010	Edward Springs Rx Fire	U.S. Forest Service	5686
2010	Horse Valley Fire Rehab	Utah Division of Forestry, Fire & State Lands	483
2010	B.D. Discretionary Seed	Utah Division of Wildlife Resources	34
2010	Horse Valley Fire Area Seeding	U.S. Forest Service	812
2011	South Canyon	Bureau of Land Management	2804
2013	Annual Habitat Restoration Project Maintenance	Bureau of Land Management	2044
2012	South Canyon Year 2	Bureau of Land Management	3046
2013	Edward Springs Prescribed Burn Seeding Phase 2	U.S. Forest Service	927
2013	South Canyon (Hillsdale)	Bureau of Land Management	3651
2013	Laub and Cotton Fire Rehab	Utah Division of Wildlife Resources	69
2014	South Canyon (Graveyard)	Bureau of Land Management	2383
2015	South Canyon (Rock Canyon)	Bureau of Land Management	3153
2015	Parowan Front (Cottonwood and Summit) Chaining Maintenance Project	U.S. Forest Service	1780
2016	South Canyon (Limestone)	Bureau of Land Management	6870
2016	Alton/South Canyon Retreatment - large tree removal	Bureau of Land Management	854
2016	Dixie National Forest FY 2016 Exclosure Repair and Rebuild project	U.S. Forest Service	24
2016	Sandy Creek Ranch Rabbitbrush Removal	Utah Division of Wildlife Resources	203
2017	South Canyon (Coal Pit Wash)	Bureau of Land Management	4073
TOTAL			61,951

**ELK MANAGEMENT PLAN
ZION UNIT #29
2016**

BOUNDARY DESCRIPTION

Iron, Kane and Washington counties; Boundary begins at the Utah-Arizona state line and I-15; north on I-15 to SR-14; east on SR-14 to US-89; south on US-89 to US-89A; south on US-89A to the Utah-Arizona state line; west on this state line to I-15. This hunt is comprised of all or largely private property. Excludes Zion National Park. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY. Excludes all CWMUs.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	12,512	7	0	0
Bureau of Land Management	21,861	35	13,014	8	14,550	47
Utah State Institutional Trust Lands	7,318	12	2,184	1	2,389	8
Native American Trust Lands	0	0	0	0	2,088	7
Private	33,446	53	133,459	79	5,978	20
Water Resources	0	0	43	>1	0	0
USFWS Refuge	0	0	0	0	0	0
National Parks	184	<1	8,765	5	5,611	18
Utah State Parks	0	0	0	0	0	0
Utah Division of Wildlife Resources	0	0	0	0	0	11
TOTAL	62,809	100	169,979	100	30,616	100

UNIT MANAGEMENT GOALS

Manage for a population of elk capable of providing a broad range of recreational opportunities including hunting and viewing. Maintain healthy elk populations at biologically and socially sustainable levels. Continue with the any bull harvest strategy.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size: Continue to manage for a total of 300 elk wintering across the unit.

Bull Age Structure: Continue to manage the unit as a general season any-bull unit. No age of harvest data will be collected on this unit.

Recruitment: Aerial surveys and annual preseason classification surveys (July – August) will be used to monitor the population. Population modeling will also be used to generate annual postseason (winter) population estimates.

Harvest: Bulls are harvested under a general season any-bull hunt strategy. Antlerless harvest using a variety of harvest methods and seasons will be the primary means to achieving the wintering population objective.

Current Status: An aerial survey was conducted in January 2011. The wintering population at that time was estimated to be 275 elk. The unit has not been surveyed by helicopter since 2011 due to poor snow conditions. It is scheduled for survey in January 2017. The current population has been modeled to be approximately 350 wintering elk.

Barriers to Achieving Unit Population Objectives: Due to the high amount of private land and varying tolerances towards elk, depredation will continue to be an issue on high elevation private range lands.

Strategies for Removing Barriers to Population Objectives:

- Depredation - Take all steps necessary to minimize depredation using management strategies within state law and DWR policies to increase tolerance of elk on private and public lands.
- Support statewide landowner incentive programs within the Statewide Elk Management Plan.
- Use new antlerless harvest tools identified in the Statewide Elk Management Plan as needed (private lands permits, etc).
- Explore implementation of current private lands programs (LOA, CWMU) through research, public opinion surveys, etc.

HABITAT MANAGEMENT OBJECTIVES

Current Status: Overall, range conditions on the Zion WMU are good with stable to increasing range conditions on most of the unit (UDWR Range Trend / USFS and BLM Vegetation Monitoring). Approximately 7,100 acres of elk habitat have been treated through WRI since 2006 (Appendix 1). Some challenges facing elk habitat include:

- Conifer encroachment of aspen stands
- Recovering forests from epidemic of spruce bark beetle
- Stabilization following the Shingle Fire

Unit Habitat Objectives:

- Continue to be committed to the statewide goal of supporting habitat projects that increase forage for both big game and livestock.
- Maintain and/or enhance forage production through direct range improvements throughout the unit to achieve population management objectives.
- Work with private, state and federal agencies to maintain and protect crucial ranges. Continue projects with USFS, BLM, state and private entities to enhance habitat across the unit.
- Provide improved habitat security and escapement opportunities for elk through support and cooperation of approved Dixie National Forest Travel Plan.
- The 2011 Zion Elk Committee has suggested that the DWR be a participating partner in the Cedar Mountain Initiative and work with landowners on large-scale aspen regeneration projects.
- Work with land management agencies to improve calving habitat and minimize disturbance in these areas. Seek opportunities to improve aspen communities, and some sagebrush ranges where calving and foraging are occurring.

Barriers to Achieving Unit Habitat Objectives:

Restoration efforts on summer ranges to improve forest health and address watershed productivity are needed. Private landowners, livestock permittees, federal and state land management agencies and the Utah Division of Wildlife Resources are encouraged to continue to work together to conduct landscape scale treatments. In an effort to regenerate aspen communities, land managers are encouraged to use fire, mechanical or chemical treatments on landscape level projects.

Strategies for Removing Barriers to Habitat Objectives:

- Encourage improved communication among stakeholders through Utah Partners for Conservation and Development as well as annual interagency coordination meetings.
- Use range trend and habitat improvement data to make appropriate habitat-related decisions.

Appendix 1. Recent habitat projects in elk habitat on the Zion WMU #29.

Title	Lead Agency	Fiscal Year	Acres
Laurence Reese Discretionary Seeding	Utah Division of Wildlife Resources	2006	83
RW North Fork Discretionary Seed	Private Landowner	2009	16
Duck Creek Aspen Regeneration	U.S. Forest Service	2009	188
Muddy Creek	Bureau of Land Management	2010	1,581
Lambert Discretionary Seed	Utah Division of Wildlife Resources	2010	9
Crystal K Ranch Discretionary Seed	Utah Division of Wildlife Resources	2011	12
Shingle Fire Browse and Forb Seeding	Utah Division of Wildlife Resources	2013	2,962
Shingle Fire Reforestation	U.S. Forest Service	2016	714
Dixie National Forest FY 2016 Exclosure Repair and Rebuild project	U.S. Forest Service	2016	14
Kanab Area Project Maintenance	Utah Division of Wildlife Resources	2016	1,581

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 30
(Pine Valley)
2016

BOUNDARY DESCRIPTION

Iron and Washington counties - Boundary begins at the Utah-Arizona state line and I-15; north on I-15 to SR-56; west on SR-56 to the Lund highway; northwest on this highway to Lund and the Union Pacific railroad tracks; southwest along these tracks to the Utah-Nevada state line; south on this state line to the Utah-Arizona state line; east on this state line to I-15. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY. Excludes all CWMUs.

UNIT MANAGEMENT GOALS

Maintain a healthy elk population at a biologically and socially sustainable level. Address depredation concerns in agricultural areas in a timely and efficient manner. Continue to manage for a population of 50 elk.

UNIT MANAGEMENT OBJECTIVES

Habitat

Manage for healthy habitats capable of holding a small elk population.

Population

Target Winter Herd Size - Manage for a population objective of 50 elk. In the past, public committees including sportsman, landowners, grazers and public land managers were assembled, and DWR has agreed that the habitat on this unit should not be actively managed for increased elk populations.

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Habitat in the northern portion on this unit is currently stable at this time and capable of holding 50 elk. Large areas in the southern portion of this unit have been affected by wildfires in the past 15 years and several thousand acres of mule deer winter range have been negatively impacted.

Population

The elk population on this unit is currently estimated between 50-75 animals. Small populations have been reported in the Horse Valley/Mt. Meadow and Studhorse/Crestline areas of this unit. Sightings of a few elk in the New Harmony, Pinto and Chloride Canyon area have also been reported. Depredation permits are being issued to agricultural landowners, as well as antlerless control permits and public draw antlerless permits. All hunts have a very low success rate, and it is very difficult to find an elk to harvest.

POPULATION MANAGEMENT STRATEGIES

Monitoring

Population Size - The population will be monitored by doing an aerial helicopter census during the winter months as conditions and funds are available. Helicopter counts would be conducted every third year. If appropriate, population models will be used to fine tune population estimates for the unit. Due to the small size of the heard and priority of other units, no helicopter surveys have been done.

Bull Age Structure - Age structure will not be monitored through specific cementum annuli aging. A general idea of yearlings as compared to mature bulls in the harvest can be obtained through the

statewide uniform harvest survey. The population is so small and therefore difficult to locate, no classification or age information is being collected.

Harvest -The primary means of monitoring harvest will be through the statewide uniform harvest survey. The target population size will be achieved by use of antlerless harvest, using a variety of methods including a limited entry antlerless hunt, antlerless control permits and mitigation permits. A general season any bull hunt is the preferred hunt strategy to make sure that the population is kept down to the objective and to maximize hunter opportunity.

Depredation problems will be handled aggressively under the rules defined in Utah Code and Rules.

Limiting Factors

Crop Depredation - Depredation may be a limiting factor in localized segments of the unit. The DWR will take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

Habitat - (winter/summer range conditions) Competition between elk and livestock on private rangelands may be a limiting factor. Excessive habitat utilization will be addressed.

Wilderness – At this time very few elk use the Pine Valley wilderness area. If a herd becomes established in the wilderness area it will be difficult for hunters to gain access and keep population levels at the objective.

Illegal Harvest - Illegal harvest does not seem to be a significant problem from a population stand point.

Predation - Predators seem to have little impact on the Pine Valley elk herd.

Highway Mortality - Although there is some highway mortality, it is not a limiting factor for the Pine Valley elk herd.