DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 1
(Box Elder)
April 2012

BOUNDARY DESCRIPTION

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

Subunit 1 A: Consists of the western half of Box Elder county.
Subunit 1 B: Consists of the eastern half of Box Elder county (Kelton - east).
Subunit 1 C: Consists of Tooele, Salt Lake and Weber counties north of I-80 and west of I-15.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0	47174	6	25491	4
Bureau of Land Management, Dept Def.	35185	22	57466	8	243074	37
Private	115756	73	638378	84	341858	53
National Park	0	0	2263	<1	0	0
State Institutional Trust Lands, Sovereign	2387	2	17752	2	40309	6
Utah Division of Wildlife Resources	4796	3	0	0	0	0
DWR Salt Lake Office **TOTAL**	158124	100	763033	100	650734	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 deer 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size – The short term objective for 2013 is to achieve 20,000 wintering deer (13,000 for subunits 1A,1C and 7,000 for subunit B). Historically, the Unit 1 objective has been 24,000 animals. This population target has not been reached since deer management plans have been in place. Therefore, the Division recommends a short term reduction in management objectives to levels that are viewed as obtainable by regional biologists.

Subunit 1 A West Box Elder – The past objective has been 16,000 deer. This number has not been reached since 1988, when a 12 year wet cycle culminated. Over the last 14 years, this area

reached a peak population of around 11,000 deer in the year 2000; the population averaged less than 7,000 animals during that period. Based on this population performance, DWR recommends a minimum of 20% reduction to 13,000 animals.

Subunit 1 B- East Box Elder - This area reached and exceeded the 8,000 deer objective in 1999. A severe winter range fire on the Promontory peninsula occurred in 2001 and has reduced carrying capacity by approximately 1,000 animals. Consequently, the short-term objective is reduced to 7,000 deer.

We will recommend revisions of the short term objective if review of habitat conditions or the next range trend monitoring period indicate that changes are needed.

	Unit 1	**Subunit 1A**	**Subunit 1B**
1994-2005 Objective	24,000	16,000	8,000
2006-2011 Objective	20,000	13,000	7,000
20012-2013 Objective	20,000	13,000	7,000
Change	0	0	0

< Herd Composition - Maintain a region-wide three year average postseason buck to doe ratio in accordance to the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population size.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. The winter population of 20,000 should result in an expected annual buck harvest of 2,200 when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors (Items which may prevent achieving population objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat - Two-thirds of the Promontory peninsula critical winter range on subunit 1B burned in 2001. This loss will correspond to a 1,000 deer reduction in subunit 1B's short term objective. Subunit 1A has very little summer range and the DWR's range trend site's indicate that it is in good condition.

< Predation - Refer to DWR predator management policy.

- Assess need for control by species, geographic area and season of year.

- Seek assistance from ADC when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Predator control efforts will be focused just before and during the spring fawning period.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs etc..

< Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an “Action Plan” developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

< Maintain and/or enhance forage production through direct range improvements throughout summer range on sub-unit 1A and on winter range portions of the southern Promontory peninsula on sub-unit 1B to achieve population management objectives.

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

< Provide improved habitat security and escapement opportunities for deer.

< Condition of deer winter range (extensive, non-limiting) on subunit 1A, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1996	58	Good	22-36	37-53	54-72
2001	55	Good			

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HABITAT MANAGEMENT STRATEGIES

< Continue to monitor the permanent range trend studies located on subunit 1 A. Increase the emphasis on summer range transect sites.

CURRENT POPULATION STATUS

Year	Buck Harvest	Post-Season F/100 D	Post-Season Buck/100 D	% 3 point or better	Post-Season Population	% of Objective
2010	1,115	64	21	17,100	20,000	86%
2011	1,101	70	20	15,000	20,000	75%

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

Draft 04/9/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 2
(Cache)
April 2006

BOUNDARY DESCRIPTION

Cache, Rich, Weber, and Box Elder counties - Boundary begins at the Utah-Idaho state line and I-15; south on I-15 to US-91; northeast on US-91 to SR-101; east on SR-101 to Hardware Ranch and USFS Road 054 (Ant Flat); south on USFS 054 to SR-39; east on SR-39 to SR-16; 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.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	273346	55%	52358	16%
Bureau of Land Management	845	<1%	46126	9%	94909	29%
Utah State Institutional Trust Lands	245	<1%	25001	5%	28933	9%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	104662	99%	146362	30%	133488	41%
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%	17	<1%
Utah Division of Wildlife Resources	81	<1%	4552	1%	11823	4%
TOTAL	105833	100%	495387	100%	321528	100%

UNIT MANAGEMENT GOALS

The primary goal is to maintain the proper balance between the number of animals in the deer herd and the forage available on the limited winter range, thereby sustaining physiologically healthy deer. Also, to provide public hunting and non-consumptive opportunities, promote additional harvest opportunities for landowners, recommend measures for highway safety, and consider private property values.

POPULATION MANAGEMENT OBJECTIVES

- Target Winter Herd Size - Maintain a target population size of 25,000 wintering deer. This population objective remains for both the short-term (5-year life of this plan) and long term, barring significant changes in range conditions.

< Herd Composition –. General Hunt portion of Cache Unit: Maintain a 3-year average postseason buck to doe ratio in accordance with the statewide plan. Crawford Mountain subunit, managed under Limited Entry hunting: Maintain a 3-year average post-season buck: doe ratio of 25-35:100.

< We will recommend revisions of the short-term objective if review of habitat conditions or the next range trend monitoring period indicates that changes are needed.

	Unit 2
1994-2005 Objective:	25,000
2006-2013 Objective:	25,000
Change	0

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population size. Over winter mortality estimates will be determined using observations of mortality, and change-in-ratios from classification data.

< Buck Age Structure - Estimates of the age class structure of the buck population will be determined primarily (directly) through the use of hunter harvested bucks at checking stations and field bag checks, and secondarily (indirectly) using post-season classification observations.

< Harvest - The primary technique used to estimate harvest over the unit is the statewide uniform harvest telephone/mail surveys. Data collected at checking stations will also be used to compare with the uniform survey. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios. Antlerless harvest will be achieved, as needed using a variety of methods and seasons to maintain a wintering population within range carrying capacity and address depredation conflicts.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy. Some geographic populations may be maintained below range carrying capacity due to conflicts with crop production and private landscapes.

< Habitat - Winter range is the major limiting factor on the Cache. Not only is winter range less than 30 % of the total range, but much of the winter range is in poor condition due to past fires, competition from introduced weedy species, and the lack of spring livestock grazing, as described by "Clements and Young. 1997. A viewpoint: Rangeland health and mule deer habitat. J. Range Manage. 50:129-

138." Excessive habitat utilization will be addressed by antlerless harvests.

< Predation – It is clear that predators do eat deer. It is difficult to predict how predation in effecting current deer populations however. Because the population density on the Cache unit is so far below objective, a predator management plan has been drafted and cougars are being aggressively harvested on the unit. Wildlife Services has agreed to implement coyote control on the unit as well.

< Highway Mortality - The cooperation of the Utah Department Of Transportation to prevent vehicle collisions in terms of highway fences, underpasses, and earthen ramps in Wellsville Canyon, and warning signs as needed throughout the unit is greatly appreciated. A significant number of highway mortalities may tend to reduce deer populations in the following areas: Wellsville Canyon, Highway 91 between Smithfield and Richmond, and Logan Canyon. Reduced speed limits in these areas should be considered by the Department Of Transportation.

< Illegal Harvest, Crippling Loss, Disease and Parasites, White-tailed Deer - Although poaching losses appear insignificant on the Cache, due primarily to a highly visible law enforcement effort, crippling losses are a concern, especially under buck-only hunting. Hunter survey studies (Austin, D.D. 1992. Great Basin Naturalist 52:364-372) suggests as many as 18 deer may be left in the field per 100 hunters. Disease is very difficult to evaluate, but high mortality in the spring is often associated with disease. The meningeal or brain worm parasite is probably the most potentially dangerous organism to mule deer. This parasite is carried without ill effects by white-tailed deer and can be transferred to mule deer, elk or moose. The arrival of white-tailed deer in Utah (McClure M.F. et al. 1997. Range expansion of white-tailed deer (Odocoileus virginianus) into urban and agricultural areas of Utah. Great Basin Nat. 57:278-280) must be viewed cautiously because, "Mule deer show signs of dwindling wherever they meet whitetails, even in the mule deer's stronghold in Wyoming," (Valerius Geist. 1990. Mule deer country. North Word Press. Minocqua, WI). The animal disease diagnostic facility associated with Utah State University acts as the laboratory to identify disease problems. Chronic Wasting disease is of further concern though it has not yet been detected on the unit. Surveillance will be implemented by testing hunter harvested animals as well as targeted surveillance of symptomatic animals.

HABITAT MANAGEMENT OBJECTIVES

< Maintain, protect, and improve forage production on winter ranges, especially big game winter ranges owned by the Division of Wildlife. Annual projects of reseeding, seedling planting, and livestock grazing in spring will continue. The following wildlife management areas are available for big game on the Cache: Hardware Ranch 14,000 ac., Millville 3,477 ac., Richmond 2,066 ac., Woodruff 1,643 ac., Cold Water (new) 1,000 ac., Swan Creek 660 ac., USU (proposed but owned by DWR since 1937) 197 ac., First Dam 74 ac., and Orme 40 ac.

< Work with counties, cities, private landowners and federal agencies to maintain and protect critical and existing winter range from future losses.

< Encourage conservation easements in all ownership sectors, and additional acquisitions for DWR. Determine through research on defined plots, species, either seed or seedling, which may be used successfully in reestablishing browse on steep and/or rocky slopes not conducive to mechanical treatments.

Condition of deer winter range on Unit 2, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1996	47	Fair	27 - 41	42 – 58	59 - 74
2001	49	Fair			

HABITAT MANAGEMENT STRATEGIES

Data will be collected about every five years on the 40-plus permanent trend transects on the Cache. These data will be evaluated as related to deer management by the biologist.

Revegetation of poor condition rangeland and winter ranges damaged by wildfire will be accomplished as time and materials are available.

PERMANENT RANGE TREND DATA SUMMARIES

Unit 2 Cache

Twenty-nine permanently marked study sites were established in 1984 on the Cache unit. During the 1990 survey season, 5 new sites were added, and in 1996, 6 additional sites were added for a total of 40. Data are available in: Davis et al. 1996, Volume 1. Utah big game range trend studies. Ut. Div. Wildl. Res. Publ. No. 98-9. Since 1996 additional sites have been added, especially on State Wildlife Management Areas, but these data are unpublished. Data analyzed from the 29 available sites between 1984 and 1996 indicated a downward trend in shrub density. Specifically, big sagebrush decreased from about 3,300 to 2,700 plants/acre, antelope bitterbrush decreased from about 600 to 550 plants/acre, and rabbitbrush decreased from about 1900 to 1600 plants/acre. Decrease in shrub density is believed to have mostly occurred between 1984 and 1990 during periods of high deer population and unfavorable climatic conditions. Between 1990 and 1996, the number of sites per browse trend category were: down = 6, slightly down = 2, stable = 21, slightly up = 7, up = 4. These data suggest a mostly stable browse trend over the unit, 1990-1996. Between 1996 and 2001, the browse trend is considered to be stable or slightly up, due to favorable winter climatic conditions and decreased deer populations. Beginning in 1996, the 100 foot individual transect lines used for vegetal measurement, and not just the 500 foot location line, were permanently marked to increase the accuracy of data collection.

CURRENT POPULATION STATUS

Year	Buck Harvest	Post-Season F/100 D	Post-Season Buck/100 D	Post-Season Population	Objective	% of Objective
2010	1,056	81	23	16,500	25,000	66%
2011	950	72	12	16,000	25,000	64%

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 3
(Ogden)
April 2012

BOUNDARY DESCRIPTION

Weber, Box Elder, Cache, and Morgan counties - Boundary begins at Hyrum and SR-101; east on SR-101 to the Ant Flat Road (at Hardware Ranch); south on this road to SR-39; west on SR-39 to SR-167 (Trappers Loop Road); south on SR-167 to I-84; west on I-84 to I-15; north on I-15 to Exit 364 and U.S.-91: northeast on US-91 to SR-101; east on SR-101 to Hyrum.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP*

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	--	19859	10%	12011	9%
Bureau of Land Management	0	--	0	0%	76	<1%
Utah State Institutional Trust Lands	0	--	8216	5%	0	0%
Native American Trust Lands	0	--	0	0%	0	0%
Private	0	--	139478	70%	112589	80%
Department of Defense	0	--	0	0%	5	<1%
USFWS Refuge	0	--	0	0%	0	0%
National Parks	0	--	0	0%	0	0%
Utah State Parks	0	--	0	0%	20	<1%
Utah Division of Wildlife Resources	0	--	30516	15%	15206	11%
TOTAL	0	--	198069	100%	139,907	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 deer 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - Achieve a modeled target population size of 11,000 wintering deer. This is a reduction of both long-term and short-term objectives from the objective established in 2003, due to permanent loss of winter range within the unit.

< Herd Composition – Maintain a minimum 3-year average postseason buck to doe ratio in accordance with the statewide plan.

Unit 3

1994-2005 Objective:	15,000	
2003 Objective:	12,000	
2006-2013 Objective:	11,000	
Change since 2003:	-1,000	(due to permanent loss of winter range)

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population size.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat - Winter and summer forage conditions, public land range availability, winter habitat development, and landowner acceptance will determine herd size. Excessive habitat utilization will be addressed.

< Predation - Refer to DWR predator management policy.

- Assess need for control by species, geographic area and season of year.

- Seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Concentrate Wildlife Services control efforts during and immediately prior to the fawning period.

- As necessary, recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs.

< Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

< 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.

< Provide improved habitat security and escapement opportunities for deer.

< Condition of deer winter range on Unit 3, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1996	51	Poor to Fair	35 – 49	50 – 64	65 – 79
2001	54	Fair			

HABITAT MANAGEMENT STRATEGIES

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

< Work cooperatively to utilize grazing, prescribed burning and other recognized vegetative manipulation techniques to enhance deer forage quantity and quality.

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

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

PERMANENT RANGE TREND SUMMARIES

Unit 3, Ogden

There are a total of 13 range trend sites in this unit. Of these, 1 was dropped from the 1996 range trend inventory due to poor site placement. The remaining 12 sites are all located on big game winter range. Deer populations throughout the unit have increased since the 1992-93 die-off; however, fawn losses are common throughout the unit even during mild winters. Range conditions are generally described as having a low browse component with a downward trend in forb density. Because of fire, weedy species have replaced desirable plants throughout much of the unit. In addition, winter range development has severely impacted the number of deer that can winter on the unit. In March, 2000 the Ogden deer management plan objective was lowered to 12,000 to reflect winter range loss. To summarize, the unit can be divided into 3 distinct wintering areas. While all sites show different utilization and vegetal structure, the trends are reasonably similar throughout the unit.

Ogden, Box Elder County portion

- Eight established sites between Perry and Mantua Reservoir
- Trend is down on grasses and forbs, stable for browse.
- There is a predominance of undesirable species (cheat grass, dyer's woad) present on all sites

Ogden, Ogden Valley portion

- Three established sites east of Huntsville
- Fire and development have dramatically affected the number of deer this portion of the unit can winter
- The browse component varied from eliminated to slightly up, however, preferred browse species were down. On all sites, forb densities were down with an increase in undesirable grasses.

Ogden, Cache County portion

- There is one established site near Hardware Ranch
- Grasses and forbs are exhibiting a downward trend, while the browse component is stable.

CURRENT POPULATION STATUS

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Year	Buck Harvest	Post-Season F/100 D	Post-Season Buck/100 D	Post-Season Population	Objective	% of Objective
2010	507	87	12	9,150	11,000	83%
2011	407	67	20	7,000	11,000	64%

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Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #4
(Morgan-South Rich)
April 2012

BOUNDARY DESCRIPTION

Morgan, Rich, Summit and Weber counties - Boundary begins at the junction of I-80 and I-84 near Echo, Utah; east on I-80 to the Utah-Wyoming state line; north along this state line to SR-16; north on SR-16 to SR-39 near Woodruff; west along SR-39 to SR-167 (Trappers Loop road); south on SR-167 to SR-30 at Mountain Green; west on SR-30 to I-84; east on I-84 to I-80.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

2006	Yearlong range		Summer Range		Winter Range	
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0%	35429	9%	3217	2%
Bureau of Land Management	8142	19%	4695	1%	15803	9%
Utah State Institutional Trust Lands	701	2%	5876	2%	4967	3%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	34386	79%	322364	86%	133812	80%
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	37	0%	6084	2%	11322	6%
TOTAL	43266	100%	374448	100%	169121	100%

UNIT MANAGEMENT GOALS

To manage the deer population at levels consistent with available habitat but below carrying capacity, and to maintain a high buck:doe ratio. 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.

POPULATION MANAGEMENT OBJECTIVES

- Target Winter Herd Size - The population objective has been reduced from 12,500 to 12,000 wintering deer in 2006 to accommodate the permanent loss of about 4% of the unit's winter range and 2.5% loss of summer range since 2001. This population objective remains for both the short-term

and long term, barring significant changes in range conditions.

< Herd Composition – Maintain a three-year average post-season in accordance with the statewide plan.

Unit 4

1994-2005 Objective:	10,750
2003 Objective:	12,500
2006-2013 Objective:	12,000
Change since 2003:	-500 (due to permanent loss of 4% of winter range)

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilize checking station data, field collection of harvest data, post season and spring classification counts and range ride data in a computer model to estimate the winter population.

< Harvest Strategy - Harvest strategies may include any or all of the following; buck only hunts, limited either sex permits, antlerless permits and access management - to provide increased security for big game.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - All depredation problems will be addressed as dictated by Utah Code and Division of Wildlife Resources policy.

< Habitat - Excessive over utilization of available habitat by elk will be addressed. The 2006 post-season winter survey found excessive numbers of elk, greatly exceeding the population objective of the unit. The elk population will be reduced to objective to address this problem.

< Predation - Cougar populations will be managed at levels consistent with the deer population as determined by the management objective. Cougar permits will be authorized as determined by their population and depredation incidents. Animal Damage Control (Wildlife Services) will be utilized when livestock depredation occurs. Wildlife Services, livestock operator or bear permittee according to current rules and regulations may handle bear predation on livestock. Harvest permits will be authorized for cougar and bear according to the populations as determined by the DWR.

HABITAT MANAGEMENT OBJECTIVES

< To maintain, enhance and protect all big game habitat within the unit to sustain a healthy population of deer as stated in the population objective.

< Improve critical winter range habitat. Cooperate with private landowners and public land managers to improve 1,000 acres of critical winter habitat each year.

< Provide big game escape cover/security by implementing access management where warranted.

Condition of deer winter range on Unit 4, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1996	52	Fair	27 to 40	41 to 55	56 to 71
2001	62	Fair			

HABITAT MANAGEMENT STRATEGIES

< The Division of Wildlife Resources range trend survey crew will continue to monitor range conditions on a five to six year rotational basis as presently scheduled.

< Cooperation and open working relationship with government agencies, private landowners/operators and local entities will be actively pursued to address land use planning and all habitat related issues for the Morgan-South Rich unit. Range improvement projects will be considered and proposed for the benefit of all users of the rangelands.

< Public access to the Division of Wildlife Resources Henefer-Echo Wildlife Management Area (WMA) will be by horseback or foot only to reduce harassment and to encourage big game to remain on the area and to reduce depredation on adjacent private agricultural land.

< Identify critical areas. Critical deer winter range starts at Cottonwood Canyon (southeast of Browning Arms in Morgan County) and follows the foothills all the way to Lost Creek dam; Cedar Canyon to Heiners Canyon in Summit county. Murphy Ridge to Woodruff Creek just below Woodruff Creek Reservoir in Rich County; and the south slopes from Magpie Canyon around to Bennett Creek in Weber County.

< Acquisition needs (easements, leases, trades, purchases): Additional winter range needs to be purchased, leased or protected as it becomes available.

PERMANENT RANGE TREND SUMMARIES (Added 2001)

Unit 4, Morgan South Rich

There are 17 permanent range trend study sites in the Morgan-South Rich management unit. All but two of the transects were read in 1990 and again in 1996 and 2001. Big Hollow and Causey Dam were the only two sites that were not read in 1996, and will be discontinued from the trend study list.

All sites read in 1996 indicated stable to improving soil trends and all but two show stable to improving browse trends. The most notable problem of the unit is the poor condition and composition of the herbaceous under stories. Most sites have under stories dominated by annual grasses and weedy undesirable forbs. Due to the rocky nature of many sites in association with southern aspects, higher winter soil temperatures give competitive advantage to the winter annuals over the perennial native grasses, especially when spring grazing is permitted. Overall, desirable grasses and forbs are in a stable to poor condition although the quantity is up slightly on several sites. The 2001 survey indicated an improving trend on most sites probably due to lower winter utilization from lower overall deer populations. However, high elk use seems to be a continuing problem on some critical winter range areas.

Approximately 3,500 acres of winter range burned on the Henefer-Echo Wildlife Management

Area in 1999 and was subsequently reseeded. The reseeding appears to be very successful, and due to the mild winters since the burn, deer use has been moderate but elk use has been high. High winter use by elk is impacting the recovery of the range treatments. Another fire burned about 600 acres of winter range on private land adjacent to the town of Echo, Summit County. High numbers of elk on critical winter ranges appears to have a significant impact on deer range and deer survival.

CURRENT POPULATION STATUS

Year	Buck Harvest	Post-Season F/100 D	Post-Season Buck/100 D	Post-Season Population	Objective	% of Objective
2010	839	84	41	9,900	12,000	83%
2011	600	61	39	10,000	12,000	83%

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #5
(East Canyon)
April 2012

BOUNDARY DESCRIPTION

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

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	561	14%	45802	19%	18626	21%
Bureau of Land Management	0	0%	173	0%	314	0%
Utah State Institutional Trust Lands	0	0%	754	1%	59	0%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	3516	86%	188243	79%	65865	75%
Department of Defense	0	0%	193	0%	773	1%
USFWS Refuge	0	0%	0	0%	0	0%
National Parks	0	0%	0	0%	0	0%
Utah State Parks	0	0%	0	0%	840	1%
Utah Division of Wildlife Resources	0	0%	2296	0%	1273	2%
TOTAL	4077	100%	237461	100%	87750	100%

UNIT MANAGEMENT GOALS

To manage the deer population at optimum levels consistent with available habitat, and to cooperate in the improvement and/or acquisition of winter range as opportunity permits.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size – Maintain a wintering population of 7,000 deer on the East Canyon Unit.

- 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. This area has been impacted heaviest and has had a 50% reduction of winter range. Therefore, the post-season winter population objective for this portion of the unit is approximately 1,500 deer.

- 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, 5,500 wintering deer is the current objective. Private landowners and local interest groups must be involved in management recommendations. Without their support and cooperation, management objectives may not be realized and deer population control may not be possible.

These population objectives apply to both the short-term (5-year life of this plan) and long term, barring significant changes in range conditions.

< Herd Composition – Maintain a three-year average post-season buck to doe ratio in accordance to the statewide plan.

	Unit 5	**Subunit 5A**	**Subunit 5B**
1994-2005 Objective:	9,500		
2003 Objective:	8,500	3,000	5,500
2006-2013 Objective:	7,000	1,500	5,500
Change since 2003:	-1,500	-1,500	0
		(due to loss of winter range in subunit 5A)	

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilize checking station data, field collection of harvest data, post season and spring classification counts and range ride data in a computer model to estimate the winter population.

< Harvest - Harvest strategies may include any or all of the following: general season buck only hunts, limited either sex permits and limited antlerless permits. These strategies will be used to provide a variety of hunter opportunities and to control deer populations as required, and to address depredation or range management objectives. Access management may also be used on certain parcels of winter range where appropriate, to alleviate excess harassment and provide increased security of big game.

Limiting Factors (May prevent achieving management objectives)

< Depredation Strategy - All depredation problems will be addressed as dictated by Utah Code and Division of Wildlife Resources policy.

< Habitat - Excessive habitat utilization will be addressed.

< Predation - Cougar populations will be managed at levels consistent with the deer population as determined by the management objective. Cougar permits will be authorized as determined by their population and depredation incidents. Animal Damage Control (Wildlife Services) will be utilized when livestock depredation occurs. Bear predation on livestock may be handled by Wildlife Services, livestock operator or bear permittees according to current rules and regulations. Harvest permits will be authorized for cougar and bear according to the populations as determined by the DWR.

HABITAT MANAGEMENT OBJECTIVES

< To maintain, enhance and protect all big game habitat within the unit to sustain a healthy population of deer as stated in the population objective.

< Improve critical winter range habitat.

< Provide big game escape cover/security by implementing access management where warranted.

Condition of deer winter range on Unit 5, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit specific DCI score range: Poor	Unit specific DCI score range: Fair	Unit specific DCI score range: Good
1996	40	Poor	35 to 49	50 to 64	65 to 79
2001	51	Fair to Poor			

HABITAT MANAGEMENT STRATEGIES

< The Division of Wildlife Resources range trend survey crew will continue to monitor range conditions on a five to six year rotational basis as presently scheduled.

< Cooperation and open working relationship with government agencies, private landowners/operators and local entities will be actively pursued to address all habitat related issues for the East Canyon unit. Range improvement projects will be considered and proposed for the benefit of all users of the rangelands.

< Public access to the Division of Wildlife Resources Red Rock Canyon Wildlife Management Area (WMA) will be by horseback or foot only to reduce harassment and to encourage big game to remain on the area and to reduce depredation on adjacent private agricultural land.

< Identify critical areas. The winter range below East Canyon Reservoir is very critical to significant number of deer. Fire burned a large area in 1991. Reseeding has been successful. In addition, volunteers planted browse in 1995, 1996 and 1997 but the plants require enough time to establish themselves. Consequently, deer numbers must not be allowed to increase too rapidly. The population was reduced significantly in the winter of 1992-3, allowing the range to recover slightly from decreased use. However, the deer are expected to increase quickly providing there are normal winters for the next few years.

< Acquisition needs (easements, leases, trades, purchases): Additional winter range needs to be purchased, leased or protected as it becomes available.

PERMANENT RANGE TREND SUMMARIES (Added 2001)

Unit 5, East Canyon

The East Canyon management unit is a highly human populated area and dominated by private land. Managing big game winter ranges therefore is often very difficult and a matter of educating the private landowner of the benefits of providing quality winter ranges for big game.

There are currently nine permanent range transect sites within the East Canyon unit, and they were last read and analyzed in 2001. All of the transects showed stable to improving conditions of soil, grasses and forbs. In addition, all but one site indicated stable to upward trends in browse vitality, although the amount of winter range continues to decrease due to

human urban development. Two new transects were established in 1996, and showed range improvement in 2001. Red Rock Canyon is a DWR management area, and is an important wintering area for deer. Overall the range conditions appear to be stable to improving.

CURRENT POPULATION STATUS

Year	Buck Harvest	Post-Season F/100 D	Post-Season Buck/100 D	Post-Season Population	Objective	% of Objective
2010	626	75	26	9,100	7,000	130%
2011	659	61	34	9,200	7,000	131%

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 6
(Chalk Creek)
April 2012

BOUNDARY DESCRIPTION

Summit and Duchesne counties - Boundary begins at the junction of I-84 and I-80 near Echo; northeasterly 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 head; west on this trail to Holiday Park and the Weber River road; west on this road to SR-32; northwest on SR-32 to I-80 and Wanship; north on I-80 to I-84 near Echo.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	??	33,719	11%	91	.1%
Bureau of Land Management	0	??	507	.2%	324	.4%
Utah State Institutional Trust Lands	0	??	363	.1%	259	.3%
Native American Trust Lands	0	??	0	0%	0	0%
Private	0	??	271,558	88.7%	71,612	96%
Department of Defense	0	??	0	0%	0	0%
USFWS Refuge	0	??	0	0%	0	0%
National Parks	0	??	0	0%	0	0%
Utah State Parks	0	??	0	0%	131	.2%
Utah Division of Wildlife Resources	0	??	0	0%	2,044	3%
2006 TOTAL	0	??	306,147	100%	74,461	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 deer herd impacts with human needs, such as private property rights, agricultural crops and local economies.

- Maintain the population at a level that is within the short-term capability or "carrying capacity" of the available habitat, based on winter range trend studies conducted every five years. Using the long-term population objective as a guide, the short-term objective will be adjusted according to the percent change of the most recent range trend assessments of the Desired Components Index (DCI). [The DCI is a measurement of the condition of the big game

winter range and relates to the potential "carrying capacity" of big game on that range. As the DCI changes, the short-term population objective may increase or decrease].

POPULATION MANAGEMENT OBJECTIVES

< **Target Winter Herd Size** – A population of 10,500 wintering deer. This population objective applies to both the short-term and long term, barring significant changes in range conditions on the unit.

< **Herd Composition** - A three-year average postseason buck to doe ratio in accordance with the statewide plan.

Unit 6

1994-2005 Objective:	11,500
2006-2013 Objective:	10,500
Change	- 1,000

The population objective was reduced to account for loss of deer winter habitat due to residential and urban development.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size – A computer model will be used to estimate the wintering population size, by utilizing harvest data, postseason and spring classifications and mortality estimates.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size, through antlerless and either sex hunting, using a variety of harvest methods and seasons. The winter population should result in an expected annual buck harvest of approximately 1,4 00 when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck to doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by State Law and DWR Policy.

< Habitat -Winter and summer forage conditions, public land range availability and landowner acceptance will determine herd size. Excessive habitat utilization will be addressed.

-Loss of habitat due to human expansion and development.

< Predation - Use the DWR predator management policy

- The population trend and percent of herd size objective, will determine the need for predator

control by species, geographic area and season of year.

- DWR will seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Wildlife Services efforts will be concentrated during and immediately prior to the fawning period.

-Cougar harvest will be recommended to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Dept. Of Transportation in constructing of highway fences, passage structures and warning signs etc.

< Illegal Harvest - Should illegal kills be identified as a significant source of mortality, specific preventive measures will be developed within the context of an Action Plan. This plan will be developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

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

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

< Maintain or improve habitat security and escapement opportunities for deer.

Condition of deer winter range on unit 6, as indicated by DWR range trend surveys

Year	Mean DCI Score for Unit	Classification	Unit-specific DCI Score Range: Very Poor	Unit-specific DCI Score Range: Poor	Unit-specific DCI Score Range: Fair	Unit-specific DCI Score Range: Good	Unit-specific DCI Score Range: Excellent
1996	57	Fair	< 36	36 - 50	51 – 64	65 - 81	> 82
2001	54	Fair					

HABITAT MANAGEMENT STRATEGIES

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

< Work cooperatively to utilize grazing, prescribed burning and other recognized vegetative manipulation techniques to enhance deer forage quantity and quality.

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

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

PERMANENT RANGE TREND SUMMARIES

Unit 6, Chalk Creek

The overall range trend (from2001) within this unit is stable to slightly down, with a DCI of 51 to 64 in 2001

indicating a fair condition. Some areas within this unit suffered from an extended drought. This is reflected in the DCI rating for these sites.

There are 11 range trend sites on this unit. The most recent reading to these sites was done in 2001. All but 2 of the sites are on private land. Permission to trespass was denied on 2 of these sites in 2001. All of the transects are located on important big game winter range. All sites have a stable to improving soil trend except the Spring Hollow (#6-3) site, which is down slightly. Browse is in a stable to slightly downward trend on all sites. Downward trends continue on the juniper sites due to the lack of desirable browse plants. Overall, this unit's winter range shows a stable to down ward trend for browse, grasses and forbs. Fires in recent years have destroyed winter range in the Grass Creek-Echo and Huff Creek areas. Prime big game winter range in this unit is being lost to development every year. Management options are rather limited in this unit because it is predominantly private land. A problem in this unit is the composition of herbaceous understory, which on most sites is mostly made up of annual species, cheat grass that prohibits sagebrush seedling establishment during hot dry summers.

CURRENT POPULATION STATUS

Year	Buck Harvest	Post-Season F/100 D	Post-Season Buck/100 D	Post-Season Population	Objective	% of Objective
2010	667	71	35	8,500	10,500	81%
2011	612	64	32	8,000	10,500	76%

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 7
(Kamas)
April 2012

BOUNDARY DESCRIPTION

Summit and Wasatch counties - Boundary begins at the junction of I-80 and SR-32 (Wanship); south on SR-32 to the Weber Canyon Road at Oakley; east on this road to Holiday Park and the Weber River Trail; east on the Weber River Trail to SR-150 near Pass Lake; south on SR-150 to the North Fork of the 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 near Jordanelle; north on US-40 to I-80; north on I-80 to SR-32 and Wanship.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	??	119,932	72.5%	6,511	19%
Bureau of Land Management	0	??	91	.1%	5	.1%
Utah State Institutional Trust Lands	0	??	74	.1%	153	.5%
Native American Trust Lands	0	??	0	0%	0	0%
Private	0	??	44,824	27%	26,084	78%
Department of Defense	0	??	0	0%	0	0%
USFWS Refuge	0	??	0	0%	0	0%
National Parks	0	??	0	0%	0	0%
Utah State Parks	0	??	0	0%	148	.4%
Utah Division of Wildlife Resources	0	??	507	.3%	657	2%
2006 TOTAL	0	??	165,428	100%	33,558	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 deer herd impacts with human needs, such as private property rights, agricultural crops and local economies.
- Maintain the population at a level that is within the short-term capability or “carrying capacity” of the available habitat, based on winter range trend studies conducted every five years. Using the long-term population objective as a guide, the short-term objective will be adjusted according to the percent change of the most recent range trend assessments of the Desired

Components Index (DCI). [The DCI is a measurement of the condition of the big game winter range and relates to the potential "carrying capacity" of big game on that range. As the DCI changes, the short-term population objective may increase or decrease].

POPULATION MANAGEMENT OBJECTIVES

< **Target Winter Herd Size** – Maintain a population of 8,000 wintering deer. This population objective applies to both the short and long term, barring significant changes in range conditions on the unit.

< **Herd Composition** – manage for a unit three-year buck to doe ratio average in accordance to the statewide plan.

	Unit 7
1994-2001 Objective:	12,000
2001-2005 Objective:	9,000
2006-2013 Objective:	8,000
Change	- 1,000

The population objective was reduced in 2006 to account for permanent loss of deer winter habitat due to residential and urban development.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - A computer model will be used to estimate the wintering population size, by utilizing harvest data, postseason and spring classifications and mortality estimates.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless, either sex hunting and a variety of harvest methods and seasons. The winter population should result in an expected annual buck harvest of approximately 1,100 bucks when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck to doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by State Law and DWR Policy.

< Habitat - Winter and summer range conditions, public land range availability and landowner acceptance will determine herd size. Excessive habitat utilization will be addressed.

-Loss of habitat due to human expansion and development.

< Predation - Use the DWR predator management policy

- The population trend and percent of herd size objective, will determine the need for predator control by species, geographic area and season of year.

- DWR will seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Wildlife Services efforts will be concentrated during and immediately prior to the fawning period.

- Cougar harvest will be recommended to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Dept. Of Transportation in constructing of highway fences, passage structures and warning signs etc.

< Illegal Harvest - Should illegal kills be identified as a significant source of mortality, specific preventive measures will be develop within the context of an Action Plan. This plan will be developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

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

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

< Maintain or improve habitat security and escapement opportunities for deer.

Condition of deer winter range on unit 7, as indicated by DWR range trend surveys

Year	Mean DCI Score for Unit	Classification	Unit-specific DCI Score Range: Very Poor	Unit-specific DCI Score Range: Poor	Unit-specific DCI Score Range: Fair	Unit-specific DCI Score Range: Good	Unit-specific DCI Score Range: Excellent
1996	59	Fair	< 37	37 - 51	52 - 66	67 - 83	> 84
2001	64	Fair					

HABITAT MANAGEMENT STRATEGIES

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

< Work cooperatively to utilize grazing, prescribed burning and other recognized vegetative manipulation techniques to enhance deer forage quantity and quality.

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

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

PERMANENT RANGE TREND SUMMARIES

Unit 7, Kamas

The overall range trend within this unit is stable to slightly down, with a DCI of 64 in 2001 indicating a fair condition. Some areas within this unit suffered from an extended drought. This is reflected in the DCI rating for these sites.

There are 9 study sites in this unit, which were all located on deer winter range. Most of the winter range is on private property. The most recent reading to these sites was in 2001. All sites have a sable to improving soil trend. The browse trend was stable to slightly downward on all sites. On all winter range surveyed, the plant communities have the potential to recover from the downward trends because the plant communities are divers. The goal in this unit is to protect the limited acreage of winter range from urbanization and development.

CURRENT POPULATION STATUS

Year	Buck Harvest	Post-Season F/100 D	Post-Season Buck/100 D	Post-Season Population	Objective	% of Objective
2010	441	76	21	5,950	8,000	74%
2011	446	65	19	6,000	8,000	75%

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 8
(North Slope)
April 2012

BOUNDARY DESCRIPTION

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

LAND OWNERSHIP

No change has occurred in the acreage for this unit since the last plan revision.

RANGE AREA AND APPROXIMATE OWNERSHIP – April 2012

	Yearlong range		Summer Range		Winter Range	
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0%	317491	56%	17277	9%
Bureau of Land Management	0	0%	19056	3%	42696	23%
Utah State Institutional Trust Lands	843	21%	8083	1%	20598	12%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	2716	70%	56583	10%	35768	19%
Department of Defense	0	0%	0	0%	0	0%
USFS & BLM Wilderness Area	0	0%	160104	28%	0	0%
National Recreational Area	366	9%	5753	1%	66084	36%
Utah State Parks	0	0%	0	0%	0	0%
Utah Division of Wildlife Resources	0	0%	984	1%	2162	1%
TOTAL	3925	100%	568054	100%	184585	100%

UNIT MANAGEMENT GOALS

- Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing.
- Expand and improve mule deer populations within the carrying capacity of available habitats and in consideration of other land uses.

- Conserve and improve mule deer habitat throughout the unit with emphasis on crucial ranges.

POPULATION MANAGEMENT OBJECTIVES

< **Long Term Target Winter Herd Size** – The long-term objective is 6,200 wintering deer (modeled number), which is the same in the last plan objective, and is based on an overall stable DCI rating.

< **Short Term Objective –**No short term objective is needed for this unit

< **Herd Composition** – Maintain a three-year average postseason buck:doe ratio in accordance with the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - A computer model will be used to estimate the wintering population size, by utilizing harvest data, postseason and spring classifications and mortality estimates.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. The winter population should result in an estimated annual buck harvest up to 700 (500 for West Daggett & Three Corners part, 200 for the Summit part) when normal conditions occur. Recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck to doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat - Winter range forage conditions, public land range availability and landowner acceptance will determine herd size. Excessive habitat utilization will be addressed with hunting.

< Predation - Refer to DWR predator management policy.

< - If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.

- If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

< Highway Mortality - Work with UDOT, Summit and Daggett counties, Universities, local conservation groups, and landowners to minimize highway mortality by identifying locations of high deer-vehicle collisions and erecting sufficient wildlife crossing structures in those locations. Evaluate the effectiveness of the crossing structures over time and implement new technologies to improve future wildlife crossing structures.

< Illegal Harvest - Support law enforcement efforts to educate the public concerning poaching and reduce illegal taking of deer.

HABITAT MANAGEMENT OBJECTIVES

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

< Work with private landowner and federal, state and local government agencies to maintain and protect critical and existing winter range from future losses.

< Provide improved habitat security and escapement opportunities for deer.

HABITAT MANAGEMENT STRATEGIES

< 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.

< Work with land management agencies, conservation organizations, private landowners, and local leaders through the regional Watershed Restoration Initiative working groups to identify and prioritize mule deer habitats that are in need of enhancement or restoration.

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

< Initiate broad scale vegetative treatment projects to improve mule deer habitat with emphasis on drought or fire damaged sagebrush winter ranges, ranges that are being taken over by invasive annual grass species, and ranges being diminished by encroachment of conifers into sagebrush or aspen habitats.

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

< Properly manage elk populations to minimize competition with mule deer on crucial ranges.

< Work with state and federal land management agencies to properly manage livestock to enhance crucial mule deer ranges

< Minimize impacts and mitigate for losses of crucial habitat due to human impacts and energy development.

< Work with county, state, and federal agencies to limit the negative effects of roads by reclaiming unused roads, properly planning new roads, and installing fencing and highway passage structures where roads disrupt normal mule deer migration patterns.

PERMANENT RANGE TREND SUMMARIES

The following tables summarize the condition of deer winter range on Unit 8, as indicated by DWR range trend surveys:

8bc (West Daggett & Three Corners)

Year	Mean DCI Score for Unit	Classification	Unit-specific DCI Score Range: Low	Unit-specific DCI Score Range: Mid	Unit-specific DCI Score Range: High
1995	74	Good	65	76	76
2000	70	Good	57	74	81
2005	64	Good	54	60	85
2010	68	Good	52	63	87

8a (Summit)

Year	Mean DCI Score for Unit	Classification	Unit-specific DCI Score Range: Low	Unit-specific DCI Score Range: Mid	Unit-specific DCI Score Range: High
1995	90	Good	-	-	90
2000	93	Excellent	-	-	93
2005	88	Good	-	-	88
2010	93	Excellent	-	-	93

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

Overall range trend within these subunits is good. Some areas within this subunit suffered a sagebrush die-off, primarily due to the extensive seven-year drought. This is reflected in the DCI rating for these sites.

There are ten permanent winter range trend study sites on this portion of the unit. In 2010, two sites had a higher Desired Components Index figure showing an improvement in habitat quality. Study sites in the low ecological potential had a slight decrease in their DCI rating, while the mid potential was up slightly. The overall DCI rating is “Good” at 68, which is up from 64 found in the year 2005.

Two additional range trend sites located in Brown’s Park, south of the Green River, are technically in the South Slope Diamond Mountain subunit, but can be used to show range trend on the Three Corners Subunit. They show both show fair DCI ratings, and both

have low potential ecological potential.

Essential vegetation types monitored include Mountain big sagebrush, Wyoming big sagebrush and mountain brush (which includes bitterbrush, mountain mahogany, curleaf mahogany and service berry).

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. The slight upward trend in the last 5 years is probably a result of increased precipitation. The overall DCI rating is excellent.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 9
(South Slope)
March 2012

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 White 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.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	601817	53%	38165	5%
Bureau of Land Management	388251	41%	97496	9%	223035	31%
Utah State Institutional Trust Lands	67305	7%	12320	1%	45610	6%
Native American Trust Lands	133415	14%	35293	3%	206941	28%
Private	344309	36%	108198	9%	177247	24%
Department of Defense	0	0%	0	0%	0	0%
USFWS Refuge	8703	1%	0	0%	272	0%
National Parks	7435	1%	8009	1%	35185	5%
Utah State Parks	62	0%	0	0%	946	0%
Utah Division of Wildlife Resources	1201	0%	10603	1%	2197	0%
National recreation Areas	0	0%	1559	1%	2352	0%
USFS & BLM Wilderness Areas	0	0%	264713	23%	0	0%
TOTAL	950681	100%	1140008	100%	731950	100%

UNIT MANAGEMENT GOALS

- Expand and improve mule deer populations within the carrying capacity of available habitats and in consideration of other land uses.
- Provide a diversity of high-quality hunting and viewing opportunities for mule deer throughout the unit.
- Conserve and improve mule deer habitat throughout the unit with emphasis on crucial ranges.

POPULATION MANAGEMENT OBJECTIVES

< **Long Term Target Winter Herd Size** - population size of 26,000 wintering deer (modeled number distributed in the following subpopulations).

- 9a Yellowstone subpopulation:	13,000
- 9b,c&d Vernal/Bonanza and Diamond Mountain subpopulations:	13,000

If forage production or range conditions are identified as a problem, antlerless deer permits will be used to address specific locations of concern.

< Herd Composition –
The Yellowstone and Vernal/Bonanza subunits are General Season subunits and will be managed for a 3-year average postseason buck to doe ratio in accordance to the statewide plan

The Diamond Mountain subunit will be managed as a Limited Entry hunting unit, with a 3 year average postseason buck to doe ratio objective ranging from 25 to 35 bucks per 100 does. When the buck ratio reaches the Premium Limited Entry hunting unit objectives, the unit will be recommended for inclusion in the Premium Limited Entry category. As of postseason 2011, the 3 year average on Diamond Mountain is 38.7 bucks per 100 does.

Once this unit becomes premium limited entry management buck hunts can be implemented, based on the same criteria used on the other premium limited entry units.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Winter population size will be estimated using a computer model that was developed to utilize harvest data, postseason and spring classifications and radio collar based survival estimates. Annual survival rates for adult does and doe fawns will be monitored by capturing and radio collaring 30 doe fawns each Dec. across the unit and following survival rates into adult hood.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, tooth cementum annuli analysis, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of checking stations. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Minimize depredation as prescribed by state law and DWR policy.

< Habitat - Public land winter range availability, landowner acceptance and winter range forage conditions will determine herd size. Excessive habitat utilization will be addressed with hunting.

< Predation - Follow DWR predator management policy:
< - If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.
< - If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

< Highway Mortality - Highway mortality is a significant factor in reduced population growth in deer. Work should continue in cooperation with UDOT, Uintah and Duchesne Counties, Universities, local conservation groups, and landowners to minimize highway mortality by identifying locations of high deer-vehicle collisions and erecting sufficient wildlife crossing structures in those locations. Evaluate the effectiveness of the crossing structures over time and implement new technologies to improve future wildlife crossing structures.

< Disease - The impact of disease on deer herds is difficult to assess. Monitoring should be continued for diseases that have been found in the state. Those diseases include: bluetongue, epizootic hemorrhagic disease (EHD), pneumonia, enterotoxemia and Chronic Wasting Disease (CWD). CWD has been documented on the Vernal and Diamond Mountain subunits. Between 2003 and 2008 six samples tested positive for CWD. Since 2008 there have been no positive samples for CWD on this unit or in the vicinity. Since 2002 when CWD monitoring was initiated samples from 6 deer have tested positive for CWD out of 4,130 samples tested from across the North Slope and the South Slope and an additional 1610 elk samples that have all tested negative.

< Illegal Harvest - Support law enforcement efforts to educate the public concerning poaching and reduce illegal taking of deer.

HABITAT MANAGEMENT OBJECTIVES

< Maintain mule deer habitat throughout the unit by protecting and enhancing existing crucial habitats and mitigating for losses due to natural and human impacts.

< Improve the quality and quantity of vegetation for mule deer on crucial range.

< Provide improved habitat security and escapement opportunities for deer.

HABITAT MANAGEMENT STRATEGIES

< Continue to monitor permanent Big Game Range Trend Studies of crucial mule deer range across the unit.

< Continue annual seasonal range rides and range assessments to evaluate forage condition and utilization.

< Work with land management agencies, conservation organizations, private landowners, and local leaders through the regional Watershed Restoration Initiative working groups to identify and prioritize mule deer habitats that are in need of enhancement or restoration.

< Initiate broad scale vegetative treatment projects to improve mule deer habitat with emphasis on drought or fire damaged sagebrush winter ranges, ranges that are being taken over by invasive annual grass species, and ranges being diminished by encroachment of conifers into sagebrush or aspen habitats.

< Properly manage elk populations to minimize competition with mule deer on crucial ranges.

< Work with state and federal land management agencies to properly manage livestock to enhance crucial mule deer ranges

< Minimize impacts and mitigate for losses of crucial habitat due to human impacts and energy development.

< Work with county, state, and federal agencies to limit the negative effects of roads by reclaiming unused roads, properly planning new roads, and installing fencing and highway passage structures where roads disrupt normal mule deer migration patterns.

< Utilize antlerless deer harvest to improve or protect forage conditions if and when vegetative declines are attributed to deer overutilization or are expected due to severe weather conditions.

PERMANENT RANGE TREND SUMMARIES

The following table summarizes the condition of deer winter range on Unit 9, as indicated by DWR permanent Big Game Range Trend studies:

Year	Mountain Brush Sites (n=5)		Mountain Big Sagebrush Sites (n=9)		Wyoming Big Sagebrush Sites (n=6)	
	score	ranking	score	Ranking	score	ranking
1995	77	Good	63	Fair	42	Fair
2000	84	Good	68	Good	32	Fair
2005	83	Good	64	Fair-Good	25	Poor-Fair
2010	90	Good-Excellent	65	Fair-Good	29	Fair

Based upon the last range trend studies conducted in 2010 the overall condition of the South Slope deer unit is currently considered to be improving slightly. However, the most critical winter range areas are the Wyoming Big Sagebrush areas which are currently only in Fair condition. These are the areas with the lowest potential and are reflective of the sagebrush die-off that occurred in 2003. These low potential sites are located on the most critical winter range where deer are pushed on hard winters. Serious range condition problems exist in some of this zone, particularly on the South Slope, Vernal subunit (9b). Those areas where the range condition is currently in the Poor or Very Poor condition need to be addressed and utilization minimized until

range condition can be improved.

Unit 9bcd, South Slope, Vernal, Diamond Mountain and Bonanza Subunits

A total of 12 study sites were read on these subunits in 2010. Range trend varies depending upon the sites ecological potential. The Mid to High potential sites are mostly in Good condition. The Low potential sites range from Fair to Very Poor. The low potential sites are the most critical deer winter range.

Six of the study sites are located at sites with a low ecological potential. Of those 2 are in Very Poor Condition, 1 is in Poor condition, 2 are in Fair Condition and 1 is in Good-Excellent condition. Several of these sites have suffered from fire or from the drought caused sagebrush die-off in 2003. They are recovering very slowly or not at all.

The other six study sites are located at sites with a mid to high range ecological potential. Eighty percent of these are considered to be in fair to good condition, while the other site remains in Very Poor condition. Deer primarily use these sites during transition to critical winter range and during light winters with below normal snow depths. These areas did not experience browse die-offs during the drought.

Unit 9a, South Slope, Yellowstone Subunit

Eight range trend sites were assessed in 2010 across the Yellowstone subunit. Four of those are mid potential sites and 4 are high potential sites. Most of the studies on this subunit are located in the mountain brush and mountain sagebrush habitat type and sample deer winter range. Some sites sample higher elevation winter range, which is likely used in the spring and summer as well. Currently, there are no low elevation monitoring sites on this subunit to represent the most critical winter range.

Three of the four Mid Potential trend sites (7,000'-7,900') are rated in Good or Excellent condition, while the other site is rated in Poor condition due primarily to being burned by the Neola North fire. The other three are up slightly from 2005.
All four of the High Potential sites (7,000'-8160') are rated in Good or Excellent condition. The condition of these mid elevation sites all appear to be improving.
There is a real need for additional monitoring sites at lower elevation wintering areas which become crucial in hard winters. For example: the Clay Basin area near Bluebell (6300') suffered high sagebrush mortality due to the drought 2003. That area historically wintered large numbers of deer but will take decades to recover. Additional monitoring is needed in those types of areas.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

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

Uintah, Daggett counties -- Boundary begins at the Dry Fork-White Rocks 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 Forest Service-Private Land boundary on the west side of Davenport Draw and continuing south along this Forest Service boundary to the BLM boundary on the Diamond Mountain rim; east and south along the Diamond Mountain rim to the Diamond Mountain road; south and west 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; north and east 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; west 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

Uintah, Daggett counties -- Boundary begins at the Green River and the Utah-Colorado state line; then west along this river to Gorge Creek; then south along Gorge Creek to the summit and the head of Davenport Draw; south along the Forest Service-Private Land boundary on the west side of Davenport Draw and continuing south along this Forest Service boundary to the BLM Boundary on the Diamond Mountain Rim; east and south along the Diamond Mountain rim to the Diamond Mountain road; south and west 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; north and east along this boundary to the Utah -Colorado state line; north along 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.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 10
(Book Cliffs)
March 2012

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 1-70 near the town of Green River. **EXCLUDES ALL NATIVE AMERICAN TRUST LAND WITHIN THE BOUNDARY.**

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	0	0%	0	0%
Bureau of Land Management	145453	62%	160399	34%	899786	66%
Utah State Institutional Trust Lands	33770	14%	127776	27%	119242	9%
Native American Trust Lands	51816	22%	161229	35%	253474	19%
Private	4216	2%	9608	2%	90387	7%
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%	6518	1%	1689	0%
TOTAL	235255	100%	465531	100%	1364578	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 deer 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - The wintering deer herd will be maintained within the vegetative carrying capacity. This will be achieved by establishing short term population objectives if the trend of the rangeland Desired Component Index (DCI) values indicate a need. (The DCI is a measurement of the condition of mule deer winter range and relates to the potential "carrying capacity" for the study site. If short term population objectives are warranted due to declining range condition, they will be established and adjusted as the DCI reflects the need or opportunity.)

The most recent DCI ratings occurred in 2010. Winter range study sites appear stable. The Book Cliffs unit is a summer range limited area. Summer study site DCI values do not reflect a problem. Therefore, no short term population parameters are warranted.

Achieve a target population size of 15,000 wintering deer (modeled number) distributed in the following subpopulations:

	Objective
Bitter Creek, Subunit 10A	10,000
South, Subunit 10B	5,000
Unit 10 Total	**15,000**

(Subunit boundary descriptions are provided in the Appendix)

< Herd Composition and Harvest – The Book Cliffs will be managed as a Limited Entry buck deer hunting unit, with a 3 year average postseason buck to doe ratio objective ranging from 25 to 35 bucks per 100 does. If buck to doe ratios are significantly different on the northern and southern subunits, changes to season dates and hunt boundaries may be explored to address this large disparity. Management buck hunts may be considered when the statewide plan is revised.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population sizes. Wintering populations may be computer modeled for each herd subunit when deemed advantageous or when animal numbers appear to be reaching the objective.

< Buck Age Structure - Monitor age class structure of the buck subpopulations through the use of tooth sampling, checking stations, postseason classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of checking stations. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat – The vast expanse of the Book Cliffs herd unit is public land managed under a "multiple use"

directive. In recent years increased in energy development activities have and will continue to contribute to substantial habitat losses and increasing habitat fragmentation. Development of mineral resources through traditional well pads and associated drilling and production facilities may negatively impact deer habitat quality and quantity through loss, disturbance and fragmentation. The paving of the Seep Ridge Road may contribute to increased habitat fragmentation and deer vehicle collisions. In addition to existing mineral lease activities, future development of tar sands and/or oil shale extraction activities pose a significant additional threat to deer habitat. The Book Cliffs deer herd is summer range limited and exhibits slower herd recovery following significant population declines. Proliferation of non-system roads and increasing ATV and OHV use compromises deer security and escape possibilities. Domestic cattle grazing outside of recognized grazing plan utilization levels and seasons may negatively impact deer forage availability and condition. Excessive habitat utilization will be addressed when observed.

< Predation - Follow DWR predator management policy:
- If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.
- If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

< Highway Mortality - Cooperate with the Utah Department of Transportation and appropriate county road departments in construction of fences, crossing structures and warning signs etc. Especially in conjunction with the paving of the Seep Ridge Road. The DWR will also continue working collecting data as part of the Seep Ridge Road deer radio collar study examining the impacts of the paving of the Seep Ridge Road on mule deer.

< Illegal Harvest - Support law enforcement efforts to educate the public concerning poaching and reduce illegal taking of deer. In cooperation with the Law Enforcement Section develop specific preventive measures within the context of an Action Plan to prevent illegal harvest.

HABITAT MANAGEMENT OBJECTIVES

< Maintain and/or enhance forage production through direct range improvements to support and maintain herd population management objectives.

< Work with private landowners and, federal, state, local and tribal governments to maintain and protect critical and existing ranges from future losses and degradation.

< Provide improved habitat security and escapement opportunities for deer.

< Mitigate impacts from energy development activities.

< Minimize deer vehicle collisions along soon to be paved Seep Ridge Road corridor.

HABITAT MANAGEMENT STRATEGIES

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

< Conduct cooperative seasonal range rides and surveys to evaluate forage condition and utilization. Determining opportunities for habitat improvements will be an integral part of these surveys.

< Work cooperatively to utilize grazing, prescribed burning and other recognized vegetative manipulation techniques to enhance deer forage quantity and quality.

< Utilize antlerless deer harvest to improve or protect forage conditions when vegetative declines are attributed to deer over utilization.

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

< Work with land management agencies and energy companies to minimize and mitigate impacts of energy development activities. Oil and Gas specific habitat biologists will lead this effort.

< Continue to monitor deer survival in relation to the paving of the Seep Ridge Road and work to minimize deer vehicle collisions through fencing, crossing structures, signage etc.

PERMANENT RANGE TREND SUMMARIES

In 2010 mule deer habitat range trend Desirable Conditions Indices were calculated for 22 permanent range trend sites on the North Book Cliffs and 7 permanent range trend study sites on the South Book Cliffs. On the North Book Cliffs 5 “High Potential” summer range sites were evaluated, 8 “Mid Potential” spring/fall transition range sites were evaluated, and 9 “low potential” winter range sites were evaluated. On the South Book Cliffs 7 “low potential” winter range sites were evaluated. These range trend studies show a general trend of stability over the last 10 years with the exception of browse availability on the South Book Cliffs which has declined. In addition, the forb component has generally declined in all these study sites as it has across much of Utah. Weather patterns are the driving force behind much of the trend in range conditions, but continued efforts to reduce pinion juniper monocultures, diversify plant communities, develop/protect limited water resources, increase vigor of browse communities and promote sustainable livestock grazing practices are critical.

Mountain Brush Sites (High)

North Book Cliffs (n=5)

Year	Score	Ranking
95/98	89.1	Good-Excellent
00/02	85.4	Good
05	79.8	Good
10	81.2	Good

Mountain Big Sagebrush Sites (Mid)

North Book Cliffs (n=8)

Year	Score	Ranking

95/97/98	62.1	Fair
00	54.7	Fair
05	54.0	Fair
10	54.6	Fair

Wyoming Big Sagebrush Sites (Low)

North Book Cliffs (n=9)

Year	Score	Ranking
95/97	42.4	Fair
99/00	52.4	Good
05	29.9	Fair
10	49.4	Good

Wyoming Big Sagebrush Sites (Low)

South Book Cliffs (n=7)

Year	Score	Ranking
95	21.8	Poor
00	33.5	Fair
05	12.9	Poor
10	26.7	Poor-Fair

Unit 10 Book Cliffs, South Book Cliffs 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 Sego Canyon); west along this boundary to the Green River; south along the Green River to Swasey boat ramp and Hastings Road; south along Hastings Road to SR-19; south and east along SR-19 to exit 164 of 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 10 Book Cliffs, North Book Cliffs Subunit

Uintah and Grand Counties - Boundary begins at the Utah-Colorado state line and the White River; south along this state line to the summit and drainage divide of the Book Cliffs; west along this summit and drainage divide to the Uintah and Ouray Indian Reservation boundary (Hells Hole/head of Sego Canyon); west along this boundary to the Green River; north along the Green River to the White River; east along this river to the Utah-Colorado state line.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 11
(Nine Mile)
March 2012

BOUNDARY DESCRIPTION

Carbon, Duchesne, Emery and Uintah Counties—Boundary begins at US-40 and US-191 in Duchesne; southwest on US-191 to US-6; southeast 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 along this river to the Duchesne River; west along this river to US-40 at Myton; west on US-40 to US-191 in Duchesne.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	**7240**	**1%**	**35036**	**10%**	**57349**	**11%**
Bureau of Land Management	**315657**	**59%**	**111058**	**31%**	**296492**	**57%**
Utah State Institutional Trust Lands	**38845**	**7%**	**28819**	**8%**	**38596**	**8%**
Native American Trust Lands	**48508**	**9%**	**0**	**0%**	**48686**	**9%**
Private	**116726**	**22%**	**178895**	**51%**	**70679**	**14%**
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	**4890**	**1%**	**0**	**0%**	**6906**	**1%**
TOTAL	**531866**	**100%**	**353808**	**100%**	**518708**	**100%**

UNIT MANAGEMENT GOALS

- Expand and improve mule deer populations within the carrying capacity of available habitats and in consideration of other land uses.

- Provide a diversity of hunting and viewing opportunities for mule deer throughout the unit.
- Conserve and improve mule deer habitat throughout the unit with emphasis on crucial ranges.

POPULATION MANAGEMENT OBJECTIVES

Long Term Objective –

Manage for a winter population of 8,500 deer, distributed across the Range Creek and Anthro subunits

Anthro subpopulation: 2,500
Range Creek subpopulation: 6,000

Herd Composition –

All Nine Mile subunits are General Season subunits and will be managed for a 3-year average postseason buck to doe ratio in accordance with the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Winter population size will be estimated using a computer model that was developed to utilize harvest data, postseason and spring classifications and radio collar based survival estimates.
- Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.
- Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of checking stations. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios

Limiting Factors (May prevent achieving management objectives)

- Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.
- Habitat - Public land winter range availability, landowner acceptance and winter range forage conditions will determine herd size. Excessive habitat utilization will be addressed with hunting.
- Predation - Follow DWR predator management policy:

- If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.
-If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

- Highway Mortality - Work with UDOT, Counties, Universities, local conservation groups, and landowners to minimize highway mortality by identifying locations of high deer-vehicle collisions and erecting sufficient wildlife crossing structures in those locations. Evaluate the effectiveness of the crossing structures over time and implement new technologies to improve future wildlife crossing structures.

- Illegal Harvest - Support law enforcement efforts to educate the public concerning poaching and reduce illegal taking of deer.

HABITAT MANAGEMENT OBJECTIVES

- Maintain mule deer habitat throughout the unit by protecting and enhancing existing crucial habitats and mitigating for losses due to natural and human impacts.

- Improve the quality and quantity of vegetation for mule deer on crucial range.

- Provide improved habitat security and escapement opportunities for deer.

HABITAT MANAGEMENT STRATEGIES

- Continue to monitor permanent Big Game Range Trend Studies of crucial mule deer range across the unit.

- Continue annual seasonal range rides and range assessments to evaluate forage condition and utilization.

- Work with land management agencies, conservation organizations, private landowners, and local leaders through the regional Watershed Restoration Initiative working groups to identify and prioritize mule deer habitats that are in need of enhancement or restoration.

- Initiate broad scale vegetative treatment projects to improve mule deer habitat with emphasis on drought or fire damaged sagebrush winter ranges, ranges that are being taken over by invasive annual grass species, and ranges being diminished by encroachment of conifers into sagebrush or aspen habitats.

- Properly manage elk populations to minimize competition with mule deer on crucial ranges.

- Work with state and federal land management agencies to properly manage livestock to enhance crucial mule deer ranges

- Minimize impacts and mitigate for losses of crucial habitat due to human impacts and energy development.

- Work with county, state, and federal agencies to limit the negative effects of roads by

reclaiming unused roads, properly planning new roads, and installing fencing and highway passage structures where roads disrupt normal mule deer migration patterns.

PERMANENT RANGE TREND SUMMARIES

Unit 11a, Nine Mile, Anthro Subunit

The following table summarizes the condition of deer winter range on Unit 11a, as indicated by DWR permanent Big Game Range Trend studies:

Year	Mean DCI score for Subunit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1995	62	Good	10 – 24	25 – 44	45 - 64
2000	47	Good			
2005	65	Excellent			
2010	69	Excellent			

There are four range trend sites on the Anthro portion of the Nine Mile Management Unit. Two of these are on summer range areas and two on winter range sites to the north. The studies were revisited in 2010 but only data for the two winter range sites has been summarized and made available for DCI index comparisons.

Pinyon and junipers stands dominate much of the area but contain sufficient natural openings to provide good quality winter range. There is potential to provide more forage during the fall-spring period with treatment of pinyon-juniper sites. The limited, xeric summer range remains an important limiting factor for deer populations on this subunit.

The two winter range study sites are located in Cottonwood Canyon and Nutters Canyon and are in low potential vegetative types. Both locations showed improvement from the 2005 indices when they were visited in 2010. The Cottonwood Canyon site produced a 69 index in 2010 and the Nutters Canyon site rated a score of 68. These ratings both provide an excellent DCI index. The combined winter range average DCI rating was 69 for the Anthro subunit. This figure indicates that deer winter range is in the excellent condition range

Unit 11b, Nine Mile, Range Creek Subunit

The following tables summarize the condition of deer winter range on Unit 11b, as indicated by DWR permanent Big Game Range Trend studies:

DCI Scores for Mid-Level Potential Winter Ranges on the Nine Mile Range Creek Subunit 1994-2010 (n=4).

Year	Mean DCI score for Subunit	Classification
1994	55.5	Fair
2000	59.6	Fair
2005	62.4	Fair
2010	65.2	Fair-Good

DCI Scores for Low Potential Winter Ranges on the Nine Mile Range Creek Subunit 1994 - 2010 (n=7).

Year	Mean DCI score for Subunit	Classification
1994	33.3	Fair
2000	38.3	Fair
2005	36.3	Fair
2010	40.8	Fair

There were 11 permanent winter range trend sites on the Range Creek subunit of the Nine Mile unit that were read in 2010. Of these sites, 7 are low elevation winter range areas predominated by deer. The remaining 4 winter range sites are on the eastern slopes of the Tavaputs plateau draining in to the Green River and are utilized by both deer and elk, although elk use is more prevalent. These sites were last surveyed in 2010.

The overall trend in relative winter range health as noted by the DCI has been slightly improving over the past 16 years. Trends for the lower elevation deer winter range sites tend to have a declining forb community while grass and browse communities are stable and improving in the last several years. Most range trend sites show improving browse production and vigor with relatively little deer use, while several high use sites show declining browse production. Upper elevation winter range sites showed relatively stable to improving browse condition yet declining herbaceous understory trends.

High quality summer range is limiting on the subunit. A relatively small percentage of the unit occurs at high enough elevations to provide good summer range for deer.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 12
(San Rafael)
March 2012

BOUNDARY DESCRIPTION

Carbon, Emery, Wayne, and Garfield counties - Boundary begins in Price at the junction of SR-10 and US-6; east on US-6 to I-70; east on I-70 to the Green River; south along the Green River to the Colorado River; south on the Colorado River and the west shore of Lake Powell to SR-95; north on SR-95 to SR-24; west on SR-24 to Caineville and the Caineville Wash road (hunters may harvest deer 2 miles south of SR-24 between SR-95 and the Notom 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 the junction of I-70 and SR-10; north on SR-10 to Price.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

Unit 12 San Rafael	**Yearlong range**		**Winter Range**	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	0	0%
Bureau of Land Management	127012	69%	3650	54.3%
Utah State Institutional Trust Lands	12913	7%	79	1.2%
Native American Trust Lands	0	0%	0	0%
Private	22019	12%	3000	44.6%
Department of Defense	0	0%	0	0%
USFWS Refuge	0	0%	0	0%
National Parks	17426	9.5%	0	0%
Utah State Parks	0	0%	0	0%
Utah Division of Wildlife Resources	314	.2%	0	0%
National Recreation Area	4458	2.3%	0	0%
TOTAL	**184,141**	**100%**	**6,727**	**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 deer 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 carrying capacity of the available habitat. Range Trend data is not collected on the San Rafael unit. The majority of deer on this unit utilize agricultural areas to some extent throughout the winter.

In 2011, when Unit by Unit deer management went into effect, the San Rafael unit was included in the Manti general season deer hunt boundary. Deer numbers are concentrated on the unit where there are agricultural corridors. These lands often provide favorable food, water, and cover to deer. Deer numbers along these corridors are not in decline and provide hunting opportunity to the public. Most of the deer harvest on this unit occurs near agricultural areas. The decision to keep the unit within the Manti general season boundaries was largely social, allowing local deer hunters the opportunity to hunt both sides of State Highway 10 on or near private land, which is where most of the deer on the San Rafael unit are found.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size: 1000 wintering deer.

1994-2005 Objective:	1,000
2006-2012 Objective:	1,000
Change:	0

< Herd Composition – Deer herds that can be reliably found and classified in the natural habitat are isolated and few. This results in sample size being very low, which would not represent the population on this unit. As a general rule, the Manti unit to the west will be closely monitored instead.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size – Because this population is not directly monitored or modeled, the population size is not estimated.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Some harvested deer may also show up at DWR check stations.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat - Very limited year-round habitat exists for deer on this unit. By far, the majority of deer on this unit are on private land. Excessive habitat utilization will be addressed.

< Predation - Refer to DWR predator management policy.

- Assess need for control by species, geographic area and season of year.

- Seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Predator control will be initiated via an approved, unit predator management plan.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs etc.

< Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT STRATEGIES

< Watershed Initiative habitat restoration projects will be reviewed on a case-by-case basis through the UPCD process. The focus of habitat restoration efforts on this unit will be towards desert bighorn sheep habitat in high priority areas as well as key mule deer habitat especially where there is encroachment of pinyon juniper.

< The Utah Big Game Range Trend Study does not monitor this unit.

< Work toward long term habitat protection and preservation through the use of agreements with federal agencies, local governments and the use of Conservation Easements etc. on private lands.

< Implement "Habitat Management Plans" developed for DWR Wildlife Management Areas located on the unit.

< Cooperate with federal land management agencies and local governments in developing and administering access management plans for the purposes of habitat protection and escape or security areas.

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX - HUNT BOUNDARY DESCRIPTIONS

Central Mtns, Manti/San Rafael

Carbon, Emery, Sanpete, Sevier and Utah counties—Boundary begins US-6 and US-89 in Spanish Fork Canyon; southeast on US-6 to I-70; east on I-70 to the Green River; south along this river to the Colorado River; south along this river (and the west shore of Lake Powell) to SR-95; north on SR-95 to SR-24 (hunters may harvest deer within 2 miles south of SR-24 between SR-95 and the Notom Road); west on SR-24 to Caineville and 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; north on this road to I-70; west on I-70 to US-89; north on US-89 to US-6 in Spanish Fork Canyon.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 13
La Sal
March 2012

BOUNDARY DESCRIPTIONS

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 Colorado State Line; north on this line to I-70; west on I-70 to the Green River.

LAND OWNERSHIP

Unit 13A - La Sal, La Sal Mountains

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0	104835	58	36361	13
Bureau of Land Management	23173	49	2276	1	194381	70
Utah State Institutional Trust Lands	1248	3	29956	16	26447	9
Private	4211	9	44945	25	20887	8
Department of Defense	62	0.1	0	0	0	0
National Parks	18075	39	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	46769	100	182012	100	278076	100

TOTAL FROM 2001 PLAN			126700		367000	
CHANGE (+/-)			+55312	*	-88924	*

* Change in acreage is refinement of deer habitat use data, not changes in habitat availability.

Unit 13B - La Sal, Dolores Triangle

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	**0**	**0**	**0**	**0**	**0**	**0**
Bureau of Land Management	**0**	**0**	**0**	**0**	**87718**	**87**
Utah State Institutional Trust Lands	**0**	**0**	**0**	**0**	**9553**	**9**
Private	**0**	**0**	**0**	**0**	**3514**	**4**
TOTAL	**0**	**0**	**0**	**0**	**100785**	**100**
TOTAL FROM 2001 PLAN	**0**	**0**	**0**	**0**	**94100**	
CHANGE (+/-)	**0**	**0**	**0**	**0**	**+6685**	*****

***** Change in acreage is refinement of deer habitat use data, not changes in habitat availability.

UNIT MANAGEMENT GOALS

Manage the deer population for optimum herd size compatible with forage resources and existing land uses with emphasis on maintaining a diverse buck age structure. Consider various publics in managing deer to provide a diversity of hunting and viewing opportunities.

POPULATION MANAGEMENT OBJECTIVES

Target Herd Size

< Long-term Objective - Achieve a winter target population of 19,400 deer.
(13,000 deer on **La Sal Mountains** subunit and 6,400 deer on **Dolores Triangle** subunit).

< Short-term Objective
La Sal Mountains – No change needed in population objective. DCI score from 2009 range trend survey is at upper end of “fair” classification range. Trend of DCI scores from previous surveys is slightly down due to continued declines in browse cover and perennial forb cover scores.

Dolores Triangle – A 20% reduction in population objective to 5,100 deer was implemented in 2006 due to poor range conditions indicated by low DCI values. The reduced short-term population objective will remain until range conditions improve to a "fair" DCI rating. Antlerless removal is not needed immediately because the current deer population is near 50% of objective and fawn production is poor. If the deer population approaches the short-term objective, antlerless removal in specific problem areas will be utilized. Although the DCI score from the 2010 range trend survey is at lower end of “poor” classification range, there is no apparent trend of DCI scores from previous

surveys. Slight fluctuations in the DCI scores have been primarily due to changes in perennial and annual grass cover. The heaviest browse utilization is in small sagebrush parks in lower Westwater that are adjacent to agricultural fields. These fields concentrate large numbers of wintering deer in the area. Losses in browse cover and increases in annual grasses in the trend study plots in Westwater are largely responsible for the very poor DCI score. Browse utilization in other areas is not excessive and DCI scores are not as low. This deer herd is primarily managed by Colorado hunting strategies. The number of deer wintering in this unit is dependent on winter severity, but even with normal snow levels, recent deer numbers using this winter range have declined considerably due to low population.

	Long-term Objective	2012-2016 Objective	Change
La Sal Mountains	13,000	13,000	0
Dolores Triangle	6,400	5,100	-1,300
UNIT TOTAL	19,400	18,100	-1,300

Herd Composition

< **La Sal Mountains** – Maintain a three-year average postseason buck to doe ratio in accordance with the statewide plan.

< **Dolores Triangle** – Maintain a three-year average postseason ratio of 25-35 bucks per 100 does.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Harvest

La Sal Mountains - Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for herd composition. Utilize antlerless harvest when population objectives are met or to address specific habitat and depredation concerns.

Dolores Triangle - Continue limited entry hunting to maintain herd composition objectives and quality hunting opportunities. Utilize antlerless harvest when population objectives are met or to address specific habitat and depredation concerns.

< Population Size - Herd population size will be estimated by computer modeling based on data from postseason and spring classifications, mortality estimates and harvest surveys. The **Dolores Triangle** deer population will be modeled by the Colorado Division of Wildlife as part of their Unit #40 deer herd . About 40% of this herd winters in Utah; therefore, 40% of Colorado=s population estimate for Unit #40 was used as Utah=s population estimate.

< Short-term Population Objective - Manage deer populations to attain satisfactory range conditions based on desirable components index (DCI) scores on winter ranges. Where winter range is a limiting factor, reduce current populations by 20% on any subunit when weighted DCI score falls in to "poor" classification or below. On subunits where winter range condition is classified as "fair" or better deer populations will be allowed to expand toward current long-term objectives.

Management toward short-term objectives should consider the following:

- Management efforts should focus on improving deer habitat and carrying capacity.

- Declines in winter range carrying capacity are currently not entirely a result of over utilization by deer.
- Population control (if needed) and habitat improvement projects should be focused on areas where range degradation is most prevalent.
- Short-term population objectives should be evaluated and updated every 5 years as new range trend data is compiled.
- Biologists should closely monitor winter ranges. If deer utilization is excessive and is causing range degradation and increased overwinter deer mortality, short-term objectives should be reduced.

< Buck Age Structure - Age class structure of the buck population will be monitored through the use of harvest check stations, field harvest checks, postseason classification, and uniform harvest surveys.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Damage complaints will be addressed in accordance with established state laws and DWR policies.

< Habitat - Monitor range conditions and deer use to maintain habitat quality necessary to achieve population objectives (see Habitat Management Strategies). Identify areas on the **La Sal Mountains** where deer escapement could be enhanced through permanent or temporary road closures or other restrictions on motorized access. The **Dolores Triangle** subunit is entirely winter range for the Colorado unit #40 deer herd. Excessive habitat utilization will be addressed through antlerless harvest in specific problem areas.

< Predation - Follow DWR predator management policy:

- If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.

-If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

< Highway Mortality - Cooperate with Utah Dept. of Transportation in construction of highway fences, passage structures, warning signs, etc..

< Illegal Harvest - Implement specific preventive measures within the context of an action plan developed in coordination with the Law Enforcement Section when illegal kill has been identified as a significant source of deer mortality.

HABITAT MANAGEMENT OBJECTIVES

< Maintain and protect existing critical deer ranges sufficient to support the population objectives. Seek cooperative projects to improve the quality and quantity of deer habitat. Promote enhancement of habitat security and escapement areas for deer.

HABITAT MANAGEMENT STRATEGIES

Monitoring

< Determine trends in habitat condition through permanent range trend studies, spring range

assessments, 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 be conducted by DWR to evaluate deer habitat health, trend, and carrying capacity using the DCI. The DCI index was created as an indicator of the general health of big game winter ranges. The index incorporates shrub cover, density and age composition as well as other key vegetation variables. Changes in DCI suggest changes in winter range capacity. The relationship between DCI and the changes in deer carrying capacity is difficult to quantify and is not known.

Habitat Protection and Maintenance

< Work with public land management agencies to develop specific vegetative objectives to maintain the quality of important deer use areas.

< Continue to coordinate with land management agencies in planning and evaluating resource uses and developments that could impact habitat quality.

< Work toward long-term habitat protection and preservation through the use of agreements with land management agencies and local governments, and through the use of conservation easements, etc. on private lands.

Habitat Improvement

< Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseedings, controlled burns, water developments etc. on public and private lands.

< Cooperate with federal land management agencies and local governments in developing and administering access management plans for the purposes of habitat protection and escape or security areas.

PERMANENT RANGE TREND SUMMARIES

Unit 13A - La Sal, La Sal Mountains

The median browse trend decreased slightly from 1994 to 1999, and again in 2004. Wyoming big sagebrush (*A. tridentata* ssp. *wyomingensis*) was the most common species sampled and was sampled at eight study sites. The average density of Wyoming big sagebrush decreased significantly between 1999 and 2004. Average cover of Wyoming big sagebrush decreased significantly from 1994 to 1999 and then remained similar from 1999 to 2009. The average Wyoming big sagebrush population decadence increased significantly from 1999 to 2004, corresponding with the decrease in density. Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) was sampled on three sites in the unit. The average density of mountain big sagebrush remained similar from 1994 to 2004, with a significant increase in 2009. Much of the increase in 2009 is due to a large increase in the recruitment of young plants on the Hideout Mesa study. The average mountain big sagebrush cover decreased significantly from 1994 to 1999, but then increased again in 2004. The average population decadence of mountain big sagebrush was relatively high in 1994 at 30%, but steadily decreased through 2004 to 14% and remained low at 13% in 2009.

The median grass trend decreased slightly from 1999 to 2004, however, the average cover of perennial grass has steadily increased from 2004 to 2009. Cheatgrass (*Bromus tectorum*) has had a relatively low presence on the unit, and has remained relatively similar in cover in all sample years.

The median forb trend had a large decrease from 1994 to 1999 with slight decreases from 1987 to 1994 and from 1999 to 2004. The average cover of perennial forbs was similar from 1994 to 1999, then increased significantly from 1999 to 2004 and remained similar in 2009. No noxious weeds were sampled on the studies in this herd unit.

DCI scores are divided into categories based on ecological potentials. Eight studies in this herd unit sampled in 2009 are considered within the low potential scale for the Desirable Components Index (DCI). The average DCI ranking for these studies has decreased slowly, but steadily, from good in 1994 to fair in 2009. The decrease in DCI scores is due to a slight decrease in both the browse cover scores and the perennial forb cover scores. The three remaining deer winter range studies are within the mid-level potential scale. The average DCI ranking for these studies has remained relatively steady at fair since 1994, with a slight decrease to poor-fair in 2004. There were no studies that were considered to be within the high potential scale on this unit.

Year	DCI Score Low potential	DCI Score Mid potential	Classification Low / Mid
1994	52	59	Good / Fair
1999	50	60	Good / Fair
2004	44	51	Fair / Fair
2009	42	56	Fair / Fair

Unit 13B - La Sal, Dolores Triangle

Nine permanent range trend study sites on deer and elk winter range are located in the Dolores Triangle subunit. Data from these sites was last obtained in 2010. Four of the sites sample pinyon-juniper chainings completed in 1968. Two sites burned in wildfires in 1995 and one in 2009 removing most of the pinyon-juniper and browse from the sites.

The median browse trend remained stable throughout the early years of the study, decreased slightly in 2005 and remained lower in 2010. Desirable browse species are limited on most of the study sites in the unit. The Red Cliffs study is dominated by blackbrush (*Coleogyne ramosissima*) and the most common preferred browse species on the Steamboat East Bench study is true mountain mahogany (*Cercocarpus montanus*). Wyoming big sagebrush and basin big sagebrush are typically the most common preferred browse species on the studies within the unit. Wyoming big sagebrush and basin big sagebrush measurements were combined and will be referred to as big sagebrush. The mean density of big sagebrush decreased significantly in 2005 with a general decrease in density across the study sites. Mean density decreased further in 2010, primarily due to the fire that removed sagebrush from the Steamboat Mesa South study. The density of big sagebrush on the other studies in the unit remained similar in 2010. The mean cover of big sagebrush increased significantly in 2000, but decreased significantly in 2005. Mean decadence of big sagebrush is typically moderate on the unit, but was significantly higher in 2005 than in any other sample year.

The median grass trend has fluctuated over the course of the study years. It was slightly down in 1995 and 2005, but was slightly up in 2000 and 2010 making the overall trend fairly stable. Despite the stable trend, grasses within these communities are generally in poor condition. Grasses are not particularly diverse or abundant, and are typically dominated by one or two species. The annual species cheatgrass (*Bromus tectorum*) is common within the unit and is the dominant or codominant grass species on most of the studies. The increaser species bulbous bluegrass (*Poa bulbosa*) has been sampled at low, but increasing, frequency and cover on the Fish Park study and the three studies in the Steamboat Mesa area. Perennial grasses decreased significantly in 2005 with the significant increase in cheatgrass. Perennial grass cover increased significantly in 2010.

The median forb trend for the unit increased slightly in 1995, was down in 2000, but increased slightly again in 2005. Overall, the trend for forbs has remained relatively stable over the sample years. Perennial forbs are also in fairly poor condition across the unit with annual forbs typically being more common on the studies. The mean cover of perennial forbs was significantly higher in 2005 and 2010 than in 1995 and 2000

The low potential deer DCI has fluctuated slightly over the sample years, primarily due to the perennial and annual grass cover scores. The ranking of the DCI has ranged from very poor-poor to poor-fair throughout the sample years. There were no studies that were considered to be within the mid or high potential scale on this unit.

Year	DCI Score Low potential	Classification Low potential
1995	15	Poor
2000	26	Fair
2005	8	Very Poor
2010	16	Poor

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

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; south east 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 Utah-Colorado state line and the Colorado River; south along the state line to the Dolores River; northwest along the Dolores River to the Colorado River; northeast along this river to the Utah-Colorado state line.

Draft 04/09/2012

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 14
San Juan
March 2012

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 this road to the Big Indian road; east on this road to the Lisbon Valley road; southeast on this road to the Island Mesa road; east on this road to the Colorado state line; south on this line to the Navajo Indian Reservation boundary; southwest along this boundary to the San Juan River; west on this river to the Colorado River.

LAND OWNERSHIP

Unit 14A - San Juan, Abajo Mountains

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service			130454	38	1670	0.2
Bureau of Land Management			75780	22	420722	61
Utah State Institutional Trust Lands			9219	3	59981	9
Native American Trust Lands			0	0	12	0.01
Private			125767	37	210695	30
National Parks			0	0	390	0.06
Utah State Parks			0	0	0	0
Utah Division of Wildlife Resources			0	0	0	0
TOTAL			341220	100	693470	100
TOTAL FROM 2001 PLAN			112800		842200	
CHANGE (+/-)			+228420	*	-148730	*

* Change in acreage is refinement of deer habitat use data, not changes in habitat availability.

Unit 14B - San Juan, Elk Ridge

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	225	0.3	168372	65	19210	3
Bureau of Land Management	64649	94	50048	19	505156	76
Utah State Institutional Trust Lands	4055	6	4688	2	50213	8
Native American Trust Lands	0	0	0	0	7	0.01
Private	0	0	3076	1	6042	1
National Parks	15	0.02	69	0.03	54196	8
National Recreation Area	0	0	0	0	10983	2
USFS & BLM Wilderness Area	106	0.2	32973	13	12679	2
Utah Division of Wildlife Resources	0	0	0	0	0	0
TOTAL	69050	100	259226	100	658486	100
TOTAL FROM 2001 PLAN			135200		803800	
CHANGE (+/-)			+124026	*	-145314	*

***** Change in acreage is refinement of deer habitat use data, not changes in habitat availability.

UNIT MANAGEMENT GOALS

Manage the deer population for optimum herd size compatible with forage resources and existing land uses with emphasis on maintaining a diverse buck age structure. Consider various publics in managing deer to provide a diversity of hunting and viewing opportunities.

POPULATION MANAGEMENT OBJECTIVES

Target Herd Size

< Long-term Objective - Achieve a winter target population size of 20,500 deer.
(13,500 deer on **Abajo Mountains** subunit and 7,000 deer on **Elk Ridge** subunit).

< Short-term Objective - No changes needed in population objectives. DCI scores from 2009 range trend survey improved from the previous survey and are in the “fair” and "good" classification range.

Trend of DCI scores from previous surveys is up.

	Long-term Objective	2012-2016 Objective	Change
Abajo Mountains	13,500	13,500	0
Elk Ridge	7,000	7,000	0
UNIT TOTAL	20,500	20,500	0

Herd Composition

< **Abajo Mountains** - Maintain a three-year average postseason buck to doe ratio in accordance to the statewide plan.

< **Elk Ridge** - Maintain a three-year average postseason ratio of 25-35 bucks per 100 does.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Harvest
Abajo Mountains - Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for herd composition. Utilize antlerless harvest when population objectives are met or to address specific habitat and depredation concerns.

Elk Ridge - Continue limited entry hunting to maintain herd composition objectives and quality hunting opportunities. Utilize antlerless harvest when population objectives are met or to address specific habitat and depredation concerns.

< Population Size - Herd population will be estimated by computer modeling based on data from postseason and spring classifications, mortality estimates and harvest surveys.

< Short-term Population Objective - Manage deer populations to attain satisfactory range conditions based on desirable components index (DCI) scores on winter ranges. Where winter range is a limiting factor, reduce current populations by 20% on any subunit when weighted DCI score falls in to "poor" classification or below. On subunits where winter range condition is classified as "fair" or better deer populations will be allowed to expand toward current long-term objectives.

Management toward short-term objectives should consider the following:

- Management efforts should focus on improving deer habitat and carrying capacity.
- Declines in winter range carrying capacity are not entirely a result of over utilization by deer.
- Population control (if needed) and habitat improvement projects should be focused on areas where range degradation is most prevalent.
- Short-term population objectives should be evaluated and updated every 5 years as new range trend data is compiled.

- Biologists should closely monitor winter ranges. If deer utilization is excessive and is causing range degradation and increased overwinter deer mortality, short-term objectives should be reduced.

< Buck Age Structure - Age class structure of the buck population will be monitored through the use of harvest check stations, field harvest checks, postseason classification, and uniform harvest surveys.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Damage complaints will be addressed in accordance with established state laws and DWR policies.

< Habitat - Monitor range conditions and deer use to maintain habitat quality necessary to achieve the population objectives (see Habitat Management Strategies). Identify areas where deer escapement could be enhanced through permanent or temporary road closures or other restrictions on motorized access. Excessive habitat utilization will be addressed through antlerless harvest in specific problem areas.

< Predation - Follow DWR predator management policy:

- If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.

-If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

< Highway Mortality - Cooperate with Utah Dept. Of Transportation in construction of highway fences, passage structures, warning signs, etc.

< Illegal Harvest - Implement specific preventive measures within the context of an action plan developed in coordination with the Law Enforcement Section when illegal kill has been identified as a significant source of deer mortality.

HABITAT MANAGEMENT OBJECTIVES

< Maintain and protect existing critical deer ranges sufficient to support the population objectives. Seek cooperative projects to improve the quality and quantity of deer habitat. Maintain and enhance habitat security and escapement areas for deer.

HABITAT MANAGEMENT STRATEGIES

Monitoring

< Determine 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 be conducted by DWR to evaluate deer habitat health, trend, and carrying capacity using the DCI. The DCI index was created as an indicator of the general health of big game winter ranges. The index incorporates shrub cover, density and age composition as well as other key

vegetation variables. Changes in DCI suggest changes in winter range capacity. The relationship between DCI and the changes in deer carrying capacity is difficult to quantify and is not known.

Habitat Protection and Maintenance

< Work with public land management agencies to develop specific vegetative objectives to maintain the quality of important deer use areas.
< Continue to coordinate with land management agencies in planning and evaluating resource uses and developments that could impact habitat quality.

Habitat Improvement

< Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseedings, controlled burns, water developments etc. on public and private lands.

< Cooperate with federal land management agencies and local governments in developing and administering access management plans for the purposes of habitat protection and escape or security areas.

PERMANENT RANGE TREND SUMMARIES

Unit 14 - San Juan

The median browse trend had a slight decrease from 1994 to 1999 and again from 1999 to 2004. Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) was the most common species sampled and was sampled at eleven study sites in the unit. The mean density of mountain big sagebrush increased significantly between 1999 and 2004, while mean cover steadily increased from 1994 to 2009 and was significantly higher in 2004 and 2009 than in 1994. The mean mountain big sagebrush population decadence has fluctuated slightly through the years, but has always been low at below 20% decadence. Wyoming big sagebrush (*A. tridentata* ssp. *wyomingensis*) was sampled on nine sites in the unit. The mean density of Wyoming big sagebrush decreased significantly between 1994 and 1999 with a corresponding decrease in mean cover. The mean population decadence of Wyoming big sagebrush has been relatively high at near or above 40% since 1994. There was a significant increase in decadence of Wyoming big sagebrush from 1999 to 2004, but then a significant decrease to the lowest levels of all the sample years in 2009.

The median grass trend had a slight decrease from 1994 to 1999 and again from 1999 to 2004, but then had a slight increase from 2004 to 2009. The mean cover of perennial grass showed a similar trend except that cover was significantly lower in 1999 than in 1994 and increased to higher than the 1994 level in 2009. Cheatgrass (*Bromus tectorum*) has had a moderate presence on the unit with a significant increase in cover in 1999.

The median forb trend was down from 1999 to 2004, then was slightly up from 2004 to 2009. The mean cover of perennial forbs was similar from 1994 to 2004, then increased significantly from 2004 to 2009. No noxious weeds were sampled on the studies in this herd unit.

DCI scores are divided into 3 categories based on ecological potentials. Ten studies in this herd unit sampled in 2009 are considered within the low potential scale for the Desirable Components Index (DCI). The mean DCI ranking for these studies decreased markedly from 1994 to 1999, but had returned to near 1994 levels by 2009. The decrease in DCI scores was primarily due to a

decrease in the perennial grass cover score. Six of the studies on deer winter range are considered to be within the mid-level potential scale for the deer DCI. The mean DCI ranking for these studies has remained relatively steady at fair since 1994, with a slight decrease to poor-fair in 2004. The remaining three studies that sample deer winter range are considered to be within the high potential scale for the deer DCI. The mean DCI ranking for these studies has stayed similar since 1994 at good.

Year	DCI Score Low potential	DCI Score Mid potential	DCI Score High potential	Classification Low / Mid / High
1994	43	57	85	Fair / Fair / Good
1999	26	55	85	Fair / Fair / Good
2004	27	49	72	Fair / Poor / Good
2009	39	55	88	Fair / Fair / Good

The amount of available summer range in proportion to the large amount of winter range appears to be the limiting factor for deer populations on this unit. High quality summer range represents only a small percentage of the Elk Ridge subunit.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

Unit 14A - San Juan, Abajo Mountains

Grand and San Juan Counties - Boundary begins at the junction of Highway US-163 and South Cottonwood Creek (near Bluff); then north along this creek to Allen Canyon; north along this canyon to Chippean Canyon; north along this canyon to Deep Canyon; north along this canyon to Mule Canyon; north along this canyon to the Causeway; north from the Causeway to Trough Canyon; north along this canyon to North Cottonwood Creek; north along this creek to Indian Creek; north along this creek to the Colorado River; north along this river to Kane Springs Creek; southeast along this creek to Hatch Wash; southeast along this wash to Highway US-191; south on this road to the Big Indian road; east on this road to the Lisbon Valley road; southeast on this road to the Island Mesa road; east on this road to the Colorado state line; south on this line to the Navajo Indian Reservation boundary; west and south along this boundary to the San Juan River; west on this river to Highway US-163; then east on this highway to South Cottonwood Creek.

Unit 14B - San Juan, Elk Ridge

San Juan County - Boundary begins at the junction of highway US-163 and South Cottonwood Creek (near Bluff); north along this creek to Allen Canyon; north along this canyon to Chippean Canyon; north along this canyon to Deep Canyon; north along this canyon to Mule Canyon; north along this canyon to the Causeway; north from the Causeway to Trough Canyon; north along this canyon to North Cottonwood Creek; north along this creek to Indian Creek; north along this creek to the Colorado River; south on this river to the San Juan River; east on this river to highway US-163; east

on this highway to South Cottonwood Creek.

DEER HERD MANAGEMENT PLAN
Herd Unit # 15
(Henry Mountains)
March 2012

BOUNDARY DESCRIPTION

Garfield, Kane and Wayne counties—Boundary begins on SR-95 at a point two miles south of Hanksville; south on SR-95 to Lake Powell; south along the west shore of Lake Powell to SR-276 at Bullfrog; north on SR-276 to the Notom road; north on this road to a point two miles south of SR-24; east along a line that is two miles south of SR-24 to SR-95. EXCLUDING CAPITOL REEF NATIONAL PARK. USGS 1:100,000 Maps: Escalante, Hanksville, Hite Crossing, Loa. Boundary questions? Call the Price office, 435-613-3700.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	0	0%	0	0%
Bureau of Land Management	21784	90%	32533	85%	163894	88.2%
Utah State Institutional Trust Lands	2488	10%	4384	11.5%	18567	10%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	0	0%	1347	3.5%	2755	1.5%
Department of Defense	0	0%	0	0%	0	0%
USFWS Refuge	0	0%	0	0%	0	0%
National Parks	0	0%	0	0%	4.9	.003%
Utah State Parks	0	0%	0	0%	0	0%
Utah Division of Wildlife Resources	0	0%	0	0%	0	0%
TOTAL	**24272**	**100%**	**38263**	**100%**	**185221**	**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 deer 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 short and long term carrying capacity of the available habitat.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size:

Long Term Objective- Achieve a target population size of **2,000**

Short Term Objective – Herd unit management directives require deer populations to be managed according to range conditions based on DCI scores on winter ranges. Where winter range is a limiting factor, reduce current populations by 20% on any unit/subunit when the weighted DCI score falls within the "poor" classification. On subunits where winter range condition is classified as "fair" or better deer populations will be allowed to expand toward current long-term objectives. Summary of the 2009 DCI data is found at the end of this management plan in the Range Trend Summary section.

Management toward short-term objectives should consider the following;

- Management efforts should focus on improving deer habitat and carrying capacity.
- Declines in winter range carrying capacity are currently not entirely a result of over utilization by deer.
- Population control (if needed) and habitat improvement projects should be focused on areas where range degradation is most prevalent.
- Short term population objectives should be evaluated and updated every 5 years as new Range Trend data is compiled.
- Biologists should closely monitor winter ranges. If deer utilization is excessive and is causing range degradation and subsequently an increase in overwinter deer mortality, short-term objectives should be reduced.

< Herd Composition –

Manage premium limited entry units for a 3-year average of 40–50 bucks/100 does with 40–55% of the harvested deer being 5 years of age or older.

POPULATION MANAGEMENT STRATEGIES

Harvest -

Establish management buck hunts on these units to provide additional hunting opportunity

If >55% of the harvested bucks (3-year average) are 5 years of age or older, premium limited entry permits will be increased by no more than 10% in any given year until the age objective is met.

If the 3-year average buck:doe ratio exceeds 50/100, management buck permits will be increased to bring the population back to objective within 3 years.

Strategies to increase management buck harvest will need to be developed in order to lower the buck:doe ratio to the management objective. Hunter crowding and the check in requirement has created a situation where conservation officers are regularly needed to determine if the harvested buck is a management buck. This is due to the genetic traits of many Henry Mtns buck deer having 'crab claw' points.

Monitoring

- Population Size - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population size.

- Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

- Harvest - Monitor harvest through the state wide uniform harvest survey, and field bag checks.

Limiting Factors (May prevent achieving management objectives)

- Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy. Depredation has not been a major factor on this unit.

- Habitat - Quality summer range is more limiting than winter range on this unit. Sagebrush communities have persisted through the drought during the past decade on deer winter range.

- Pinyon-Juniper encroachment – This is currently being addressed. Maintenance on existing chainings began in 2007 to remove pinyon –juniper encroachment on both BLM and SITLA public lands. This work will enhance critical deer summer habitat for years to come.

< Predation - Follow DWR predator management policy:

  - If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.

  -If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

- Illegal Harvest - Should illegal kill become an identified and significant source of mortality, attempt to develop specific preventive measures within the context of an “Action Plan” developed in cooperation with the Law Enforcement Section.

- Elk - It is estimated that there are fewer than 30 elk in the population. As a result elk do not pose a limiting factor to the deer herd on the Henry Mountain unit. The elk population objective is zero animals. It is managed by hunter harvest to reach this objective.

HABITAT MANAGEMENT OBJECTIVES

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

- Work with private and federal agencies to maintain and protect critical existing range from future losses. Excessive critical habitat utilization will be addressed.

- Provide improved habitat security and escapement opportunities for deer.

HABITAT MANAGEMENT STRATEGIES

- Continue to use range trend studies conducted by DWR to evaluate deer habitat health and trend. The DCI index was created as an indicator of the general health of big game (Deer) winter ranges. The index incorporates shrub cover, density and age composition as well as other key vegetation variables. Decreases in DCI suggest that winter range capacity has decreased. The relationship between a decrease in DCI and the reduction of deer carrying capacity is difficult to quantify and is not known.

- Work cooperatively to utilize grazing, prescribed burning and other recognized vegetative manipulation techniques to enhance deer forage quantity and quality. Specifically, cooperate with the BLM through manpower and funding to complete maintenance of existing chainings.

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

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

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

- In 2003 the Bulldog fires swept across Mt. Hillars and Mt. Pennell burning 31,000 acres of mostly pinyon-juniper habitat. Mountain brush, fir and ponderosa, and quaking aspen stands also burned. The Lonesome Beaver fire burned 3,000 acres on Mount Ellen. Nearly 3,000 acres were chained and most all of the burn was seeded aerially in 2004. Forbs, grasses, mountain brush and aspen communities established favorably after crucial spring rains enhancing critical and limiting summer habitat. The associated flush of forbs has noticeably been declining while grasses have become mostly established and mountain brush and aspen continue to increase in height.

PERMANENT RANGE TREND SUMMARIES
Unit 15 Henry Mountains

Average DCI Scores for Low Potential (Low Elevation) and Mid-Level Potential Winter Ranges for Henry Mountains Unit 15, 2004 – 2009

Low Potential Winter Range

Henry Mtn (n=5)

Year	Score	Ranking
1994	37.4	Fair
1999	35.6	Fair
2004	22.7	Poor
2009	24.5	Poor-Fair

Mid-Level Potential Winter Range

Henry Mtn (n=7)

Year	Score	Ranking
1994	39	Poor
1999	39.5	Poor
2004	40.5	Poor
2009	58.2	Fair

Summary:

Community Types

There were thirteen Range Trend studies sampled in WMU 15 during the summer of 2009. Seven of the studies [Eagle Bench (15-1), South Creek Chaining (15-4), Bates Knob (15-5), Box Springs Chaining (15-6), Airplane Spring (15-7), Cave Flat Chaining (15-9) and Quaking Aspen Spring (15-12)] sampled areas that had been chained and seeded in the past to remove pinyon pine and Utah juniper. The Quaking Aspen Spring (15-12) study burned in the Bulldog wildfire in 2003 and

was subsequently reseeded. One of the new studies established in 2009, Coyote Spring (15-16), samples a pinyon and juniper community that also burned in the Bulldog fire and was seeded in 2003. All eight of the studies that sample historic pinyon and juniper communities are considered to be crucial year round bison habitat. Six of the historic pinyon and juniper sites (15-1, 15-4, 15-5, 15-9, 15-12, and 15-16) are considered to be crucial deer winter habitat, one site (15-6) is considered crucial deer spring/fall/summer habitat, and one site (15-7) is considered crucial year round deer habitat. Two study sites [Sidehill Spring (15-13) and Dugout Creek (15-14)] sample mountain big sagebrush communities. The Sidehill Spring (15-13) study is considered to be crucial year round habitat for both bison and deer, while the Dugout Creek (15-14) study is considered crucial deer winter habitat. The Sidehill Spring study site burned in the 2003 Bulldog wildfire and was reseeded. Two study sites [Steven's Mesa (15-15) and Swap Mesa (15-17)] sample two desert shrub communities that are considered to be crucial year long habitat for bison and crucial winter habitat for deer. The remaining study [Nasty Flat (15-2)] samples an aspen community that is considered to be crucial year long bison habitat and crucial deer summer habitat.

Precipitation

Vegetation trends are dependent upon annual and seasonal precipitation patterns. Precipitation data from this herd unit were compiled from the Hanksville and Capital Reef National Park weather stations. The units 27 year annual mean was 6.53 inches, the 28 year spring (March to May) mean was 1.51 inches, and the 27 year fall (Sept. to Nov.) mean was 1.98 inches. The unit annual precipitation was below 75% of the normal annual mean (drought conditions) in 1989, 1996, 2002, 2007, and 2008. Spring precipitation was below 75% of normal in 1982, 1989, 1994, 1996, 1998, 2000, 2002, 2003, and 2008. Fall precipitation was below 75% of normal in 1983, 1984, 1988, 1989, 1992, 1993, 1995, 1999, 2001, 2007, and 2008 (Utah Climate Summary 2009).

Browse

The median browse trend has remained relatively steady since 1987 with a slight increase between 2004 and 2009. Three sagebrush species were sampled in the unit; Mountain big sagebrush, Wyoming big sagebrush, and black sagebrush. Mountain big sagebrush was sampled at six study sites on the unit: 15-2, 15-4, 15-5, 15-6, 15-13 and 15-14. The mean density and cover of mountain big sagebrush was similar from 1994 to 2009, but increased significantly from 2004 to 2009. Much of the increase in density is due to a large recruitment of young plants in two studies, South Creek Chaining (15-4) and Dugout Creek (15-14). Mean mountain big sagebrush population decadence has remained low at below 10% since 1994. Decadence of mountain big sagebrush was significantly lower in 1999 compared to the other sample years. Wyoming big sagebrush was sampled on two sites in the unit: 15-1 and 15-12. The mean density of Wyoming big sagebrush has remained similar since 1994 with a slight decrease in 2004. The mean Wyoming big sagebrush cover increased significantly from 1994 to 1999, but then remained similar through 2009. The mean population decadence of Wyoming big sagebrush was low at below 14% since 1994. Decadence of Wyoming big sagebrush increased significantly from 1999 to 2004, but decreased significantly again in 2009. Black sagebrush was sampled in four studies in the unit: 15-4, 15-12, 15-13 and 15-14. The mean density and cover of black sagebrush decreased significantly from 1999 to 2004. The large decline in black sagebrush was due to the Bulldog fire which burned the Quaking Aspen Spring and Sidehill Spring study sites in 2003. The mean population decadence of black sagebrush was slightly higher in 2004, but was low (less than 10%) in all sample years.

Herbaceous Understory

The median grass trend decreased from 1987 to 1994 and again from 1999 to 2004, but increased again 2009. The mean perennial grass sum of nested frequency was similar in 1994, 1999 and 2009, but was significantly lower in 2004 than all other sample years. This same trend is reflected in the mean cover of perennial grass on the unit. Cheatgrass has had a relatively low presence on the unit, but was significantly higher in nested frequency and cover in 1999. The median forb trend decreased slightly from 1987 to 1994, then decreased more from 1999 to 2004. The mean perennial forb sum of nested frequency has decreased slightly, but steadily since

1994. The sum of nested frequency of perennial forbs was significantly lower in 2004 and 2009 than in 1994. The mean cover of perennial forbs decreased significantly from 1994 and 1999, but remained
similar from 1999 to 2009. No noxious weeds were sampled on the studies in this herd unit.

Desirable Components Index
Five studies in this herd unit are considered within the low potential scale for the deer Desirable Components Index (DCI): 15-1, 15-9, 15-15, 15-16 and 15-17. The mean DCI ranking for these studies decreased from fair in 1994 and 1999 to poor and poor-fair in 2004 and 2009, respectively. *The decrease in DCI scores is primarily due to a decrease in browse scores. This is an artifact of the addition of three new trend sites, Steven's Mesa in 2004, and Coyote Creek and Swap Mesa in 2009, all of which had much lower browse scores than the Eagle Bench study*. The seven remaining winter range studies, 15-4, 15-5, 15-6, 15-7, 15-12, 15-13 and 15-14, are within the mid-level potential scale. The mean DCI ranking for these studies remained steady at poor from 1994 to 2004, then increased to fair in 2009. Much of the increase in the average DCI score was due to an increase in the perennial grass cover score.

Note: Stevens Mesa and Swap Mesa sites were established to assess habitat on bison range. Both sites should not be considered deer winter range and should be excluded from the deer DCI.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 16
Central Mountains
See Also
Deer Herd Unit #12
San Rafael Management Plan

April, 2012

CENTRAL MOUNTAINS BOUNDARY DESCRIPTION

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

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	721980	73.8%	300717	28.3%
Bureau of Land Management	24	2.2%	28187	2.9%	224215	21.1%
Utah State Institutional Trust Lands	1039	93.4%	14980	1.5%	110636	10.4%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	50	4.5%	198911	20.3%	353779	33.3%
Department of Defense	0	0%	0	0%	200	0%
USFWS Refuge	0	0%	0	0%	0	0%
National Parks	0	0%	0	0%	0	0%
Utah State Parks	0	0%	23	0%	116	0%
Utah Division of Wildlife Resources	0	0%	14774	1.5%	72704	6.8%
TOTAL	1113	100%	978855	100%	1062367	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 deer 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 carrying capacity of the available habitat, based on winter range trend studies conducted by the DWR every five years. Using the long term population objective as a guide, the short term objective will be adjusted according to the Desired Components Index (DCI). The DCI measured during range study surveys was created as an indicator of the general health of big game winter ranges. The index incorporates shrub cover, density and age composition as well as other key vegetation variables. Decreases in DCI suggest that winter range carrying capacity has decreased.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size:
< **Long Term Objective**-

Central Mountains, Manti Subunit -	38,000 deer
Central Mountains, Nebo Subunit -	22,600 deer
Total Central Mountains Objective -	60,600 deer

< **Short Term Objective** – Manage deer populations according to range conditions based on DCI scores on winter ranges. All winter ranges were measured in 2007 (Nebo and West Manti) and again in 2009 (east Manti). Data from these studies suggest that DCI scores on all winter ranges are stable to slightly improving. Most winter ranges received a "fair" rating. Thus, there will be no short term population reductions recommended to improve winter range health. Biologists will continue to carefully monitor winter ranges and make recommendations to improve and protect winter habitat. Should over-utilization and range damage by deer occur, recommendations will be made to locally reduce deer populations.

< Herd Composition - A three year average postseason buck to doe ratio in accordance to the statewide plan.

< Harvest - General Season Unit by Unit Buck deer hunt regulations, using Archery, Rifle, and Muzzleloader hunts. Buck permits will be adjusted to maintain buck/doe ratio objectives. Antlerless permits will only be issued to address specific localized depredation or range degradation concerns.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - A population estimate will be made based on fall and spring herd composition counts conducted by biologists, harvest surveys, and mortality estimates based on radio collar studies and range rides. These data will be used in a computer model to determine a winter deer herd population size.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of checking stations.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat – Winter range is a limiting factor for deer on this unit. Portions of critical winter ranges are in poor condition (See range trend summary below). Factors contributing to poor range conditions include recent droughts and range use by deer and domestic livestock. This has resulted in a reduction of winter range carrying capacity. Utilization of key shrub species on critical winter ranges will be closely monitored.

< Predation - - Follow DWR predator management policy:
- If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.

- If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

< Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs etc. Collect highway mortality data. A Deer Highway Crossing Study along SR-6 is underway.

< Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

< Protect, maintain, and/or improve deer habitat through direct range improvements to support and maintain herd population management objectives.

< Work with private landowners and, federal, state, local and tribal governments to maintain and protect critical and existing ranges from future losses and degradation.

< Provide improved habitat security and escapement opportunities for deer.

< Mitigate impacts from energy development activities.

< Minimize deer vehicle collisions along highways on the unit.

HABITAT MANAGEMENT STRATEGIES

< Continue to improve, protect, and restore sagebrush steppe habitats critical to deer. Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as pinion-juniper removal, reseedings, controlled burns, grazing management, water developments etc. on public and private lands. Habitat improvement projects will occur on both winter ranges as well as summer range.

- Continue to monitor permanent range trend studies located throughout the unit.
- Conduct cooperative seasonal range rides and surveys to evaluate forage condition and utilization. Determining opportunities for habitat improvements will be an integral part of these surveys.
- Work toward long term habitat protection and preservation through the use of agreements with federal agencies, local governments and the use of Conservation Easements etc. on private lands.
- Support, cooperate with, and provide input to land management planning efforts dealing with actions affecting habitat security, quality and quantity.
- Work with land management agencies and energy companies to minimize and mitigate impacts of energy development activities. Oil and Gas specific habitat biologists will lead this effort.
- Continue to monitor deer survival on this unit through radio telemetry studies. Use telemetry data to determine potential habitat improvement projects.
- Utilize antlerless deer harvest to improve or protect forage conditions when vegetative declines are attributed to deer over utilization.

PERMANENT RANGE TREND SUMMARIES

Unit 16a Central Mountains, Nebo Subunit

Average DCI Scores for Low Potential (Low Elevation) and Mid-Level Potential Winter Ranges for the Central Mountains, Nebo Subunit, 1997 - 2007

Low Potential Winter Range

Nebo (n=9)

Year	Score	Ranking
1997		
2002		
2007	5	Very Poor
2012		

Mid-Level Potential Winter Range

Nebo (n=10)

Year	Score	Ranking
1997	50	Fair
2002	44	Poor
2007	40	Poor
2012		

Summary:

Unit 16b and 16c Central Mountains, Manti Subunit (West Side)

Average DCI Scores for Mid-Level Potential Winter Ranges for the West Slope of the Central Mountains, Manti Subunit, 1997 - 2007

Mid-Level Potential Winter Range
Northwest Manti (n=8)

Year	Score	Ranking
1997	40	Poor
2002	36	Poor
2007	34	Very Poor
2012		

Low Potential Winter Range
Southwest Manti (n=9)

Year	Score	Ranking
1997	39	Fair
2002	30	Fair
2007	38	Fair
2012		

Mid-Level Potential Winter Range
Southwest Manti (n=4)

Year	Score	Ranking
1997	51	Fair-Poor
2002	43	Poor
2007	32	Very Poor
2012		

Summary:

Unit 16b Central Mountains, Manti Subunit (Northeast Manti)

Average DCI Scores for Low Potential (Low Elevation) for the Central Mountains, Northeast Manti Subunit, 1994 - 2009

Low Potential Winter Range

Northeast Manti (n=8)

Year	Score	Ranking
1994	42	Fair
1998/99	57	Good
2004	32	Fair
2009	43	Fair-Good

Summary:

Critical low elevation winter ranges on the Northeast Manti subunit support high densities of deer, particularly during heavy winters. Browse utilization by deer as well as by domestic sheep and cattle utilizing these ranges is very heavy. The primary browse species on these critical winter ranges are Wyoming big sagebrush and Mexican Cliffrose. This area had a severe sagebrush die-off at low elevations during the extreme drought years of 2002 and 2003. This resulted in a significant reductions in browse cover and abundance as well as high decadence, particularly when the area was surveyed in 2004. Since then, these indices improved somewhat with a more favorable precipitation pattern in recent years. Although much of the mature sagebrush community is decadent or dead today, there are an abundance of seedling shrubs being recruited. The grass and forb communities have remained relatively stable over the past 15 years. As a result, the DCI has improved slightly and is comparable to that found in 1994.

The carrying capacity of critical low elevation winter ranges has been reduced over the past decade as a result of sagebrush die-offs, oil and gas development, and over-utilization. Extensive winter range improvement projects have been implemented to improve this habitat. Winter ranges at slightly higher elevations appear to be healthy and show little use, even during light winters.

Unit 16c Central Mountains, Southeast Manti Subunit

Average DCI Scores for Low Potential (Low Elevation) and Mid-Level Potential Winter Ranges for the Central Mountains, Southeast Manti Subunit, 1994 - 2009

Low Potential Winter Range

Southeast Manti (n=8)

Year	Score	Ranking
1994	35	Fair
1999	40	Fair
2004	38	Fair
2009	42	Fair

Mid-Level Potential Winter Range

Southeast Manti (n=17)

Year	Score	Ranking
1994	48	Poor-Fair
1999	65	Fair-Good
2004	54	Fair
2009	58	Fair

Summary:

Vegetation trends are dependent upon annual and seasonal precipitation patterns. When the range trend data was collected on this unit in 2009, percent annual precipitation was below drought levels at approximately 65% of normal, the lowest annual mean recorded in 20+ years. The units annual precipitation was below 75% of the normal annual mean (drought conditions) in 1986, 1989, 2002, 2003 and 2008.

Browse trends for Mountain big sagebrush increased in density as a result of recruitment. Wyoming big sagebrush also increased in density primarily due to an increase in young plants. Decadence decreased significantly again in 2009 to more moderate levels. Black sagebrush also increased in density primarily due to an increase in young plants.

Herbaceous understory: The median grass nested frequency trend was between the high of 1999 and the low of 2004. Percent cover nested frequency was highest in 2009 and lowest in 2004. Cheatgrass was sampled on only a few studies at very low frequency and cover. The mean perennial forb sum of nested frequency was similar to 2004. The mean cover of perennial forbs decreased significantly from 2004 to 2009. No noxious weeds were sampled on the studies in this herd unit.

Desirable Components Index

Five of the studies that sample deer winter habitat, 16C-22, 16C-32, 16C-33, 16C-36, and 16C-40, are considered to be within the low potential scale for the deer Desirable Components Index (DCI). The mean DCI ranking for these studies has remained relatively stable at Fair over the sample years.

Nineteen studies, 16C-13, 16C-14, 16C-15, 16C-17, 16C-18, 16C-20, 16C-23, 16C-24, 16C-25, 16C-26, 16C-27, 16C-28, 16C-29, 16C-31, 16C-34, 16C-35, 16C-41, 16C-42 and 16C-43, are considered to be within the mid-level potential scale for the deer DCI on this unit. The mean mid-level potential DCI ranking of the unit increased from poor-fair to fair-good from 1994 to 1999 then decreased to fair in 2004 and 2009.

Three studies, 16C-19, 16C-30 and 16C-44, are considered to be within the high potential scale for the deer DCI on this unit. There was little change in the mean high potential DCI ranking and scores remained similar over the sample years with a ranking of good.

APPENDIX - SUBUNIT HUNT BOUNDARY DESCRIPTIONS

Central Mountains, Nebo

Juab, Millard, Sanpete, Sevier and Utah counties—Boundary begins at US-6 and I-15 at Spanish Fork; southeast on US-6 to US-89 near Thistle; south on US-89 to US-50 at Salina; northwest on US-50 to I-15 at Scipio; north on I-15 to US-6 at Spanish Fork. Excludes all CWMUs. USGS 1:100,000 Maps: Maps: Delta, Manti, Nephi, Provo, Salina

Central Mtns, Manti/San Rafael

Carbon, Emery, Sanpete, Sevier and Utah counties—Boundary begins US-6 and US-89 in Spanish Fork Canyon; southeast on US-6 to I-70; east on I-70 to the Green River; south along this river to the Colorado River; south along this river (and the west shore of Lake Powell) to SR-95; north on SR-95 to SR-24 (hunters may harvest deer within 2 miles south of SR-24 between SR-95 and the Notom Road); west on SR-24 to Caineville and 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; north on this road to I-70; west on I-70 to US-89; north on US-89 to US-6 in Spanish Fork Canyon.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 17
(Wasatch Mountains)
April 2012

BOUNDARY DESCRIPTION

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

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	17268	31.6%	687185	62.0%	104466	21.7%
Bureau of Land Management	**0**	**0%**	**12105**	**1.1%**	**8768**	**1.8%**
Utah State Institutional Trust Lands	**0**	**0%**	**34450**	**3.1%**	**3939**	**.8%**
Native American Trust Lands	**4732**	**8.6%**	**20930**	**1.9%**	**51061**	**10.6%**
Private	**28660**	**52.4%**	**297425**	**26.8%**	**240366**	**50.0%**
Department of Defense	**0**	**0%**	**0**	**0%**	**0**	**0%**
USFWS Refuge	**0**	**0%**	**0**	**0%**	**0**	**0%**
National Parks	**235**	**.4%**	**0**	**0%**	**0**	**0%**
Utah State Parks	**401**	**.7%**	**9153**	**.8%**	**13462**	**2.8%**
Utah Division of Wildlife Resources	**3433**	**6.3%**	**47363**	**4.3%**	**58330**	**12.1%**
TOTAL	**54729**	**100%**	**1108611**	**100%**	**480392**	**100%**

UNIT MANAGEMENT GOALS

- Expand and improve mule deer populations within the carrying capacity of available habitats and in consideration of other land uses.
- Provide a diversity of high-quality hunting and viewing opportunities for mule deer throughout the unit.

- Conserve and improve mule deer habitat throughout the unit with emphasis on crucial ranges.

POPULATION MANAGEMENT OBJECTIVES

Long Term Target Winter Herd Size - population size of 40,800 wintering deer (modeled number).

Avintaquin subpopulation: 3,200
Currant Creek subpopulation: 15,000
Wasatch West subpopulation: 20,600
Salt Lake subpopulation: 2,000

Herd Composition –

All Wasatch Mountains subunits are General Season subunits and will be managed for a 3-year average postseason buck to doe ratio in accordance with the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Winter population size will be estimated using a computer model that was developed to utilize harvest data, postseason and spring classifications and radio collar based survival estimates.

- Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, tooth cementum annuli analysis, uniform harvest surveys and field bag checks.

- Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey and the use of checking stations. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons. Recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios

Limiting Factors (May prevent achieving management objectives)

- Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

- Habitat - Public land winter range availability, landowner acceptance and winter range forage conditions will determine herd size. Excessive habitat utilization will be addressed with hunting.

- Predation - Follow DWR predator management policy:

- If the population estimate is less than 90% of objective and fawn to doe ratio drops below 70 for 2 of the last 3 years or if the fawn survival rate drops below 50% for one year, then a Predator Management Plan targeting coyotes will be implemented on that subunit.
-If the population estimate is less than 90% of objective and the doe survival rate drops below 85% for 2 of the last 3 years or below 80% for one year, then a Predator Management Plan targeting cougar would be implemented on that subunit.

- Highway Mortality - Work with UDOT, Counties, Universities, local conservation groups, and landowners to minimize highway mortality by identifying locations of high deer-vehicle collisions and erecting sufficient wildlife crossing structures in those locations. Evaluate the effectiveness of the crossing structures over time and implement new technologies to improve future wildlife crossing structures.

- Illegal Harvest - Support law enforcement efforts to educate the public concerning poaching and reduce illegal taking of deer.

HABITAT MANAGEMENT OBJECTIVES

- Maintain mule deer habitat throughout the unit by protecting and enhancing existing crucial habitats and mitigating for losses due to natural and human impacts.

- Improve the quality and quantity of vegetation for mule deer on crucial range.

- Provide improved habitat security and escapement opportunities for deer.

HABITAT MANAGEMENT STRATEGIES

- Continue to monitor permanent Big Game Range Trend Studies of crucial mule deer range across the unit.

- Continue annual seasonal range rides and range assessments to evaluate forage condition and utilization.

- Work with land management agencies, conservation organizations, private landowners, and local leaders through the regional Watershed Restoration Initiative working groups to identify and prioritize mule deer habitats that are in need of enhancement or restoration.

- Initiate broad scale vegetative treatment projects to improve mule deer habitat with emphasis on drought or fire damaged sagebrush winter ranges, ranges that are being taken over by invasive annual grass species, and ranges being diminished by encroachment of conifers into sagebrush or aspen habitats.

- Properly manage elk populations to minimize competition with mule deer on crucial ranges.

- Work with state and federal land management agencies to properly manage livestock to enhance crucial mule deer ranges

- Minimize impacts and mitigate for losses of crucial habitat due to human impacts and energy development.

- Work with county, state, and federal agencies to limit the negative effects of roads by reclaiming unused roads, properly planning new roads, and installing fencing and highway passage structures where roads disrupt normal mule deer migration patterns.

PERMANENT RANGE TREND SUMMARIES

Unit 17bc, Wasatch Mountains, Currant Creek, and Avintaquin Subunits

The following table summarizes the condition of deer winter range on Unit 17bc, as indicated by DWR permanent Big Game Range Trend studies:

Year	Mountain Brush Sites (n=1)		Mountain Big Sagebrush Sites (n=7)		Wyoming Big Sagebrush Sites (n=8)	
	score	Ranking	score	Ranking	score	ranking
1995	83	Good	59	Fair	49	Good
2000			67	Fair-Good	50	Good
2005	72	Fair-Good	64	Fair-Good	46	Fair-Good
2010	90	Good-Excellent	73	Good	47	Good

Winter range is the critical habitat factor on these subunits. Approximately half of the 200,000 plus acres of winter range is owned and managed by the State while the other half is in private ownership. Most of the privately owned winter range is currently under threat of cabin site & ranchette development (Davis et. al. 1995).

All 16 range trend study sites on these subunits are located in mule deer winter range. Vegetation varies from Pinyon-Juniper at lower elevations to sagebrush-grass and mountain brush communities at the higher elevations.
A total of 16 study sites were read on these subunits in 2010. Range trend varies depending upon the sites ecological potential. The Mid to High potential sites are mostly in Good-Excellent condition. The Low potential sites range from Fair to Excellent. The low potential sites are the most critical deer winter range.

Eight of the study sites are located at sites with a low ecological potential. Of those 8 sites, 5 are in Fair condition, 1 is in Good condition, 1 is in Good-Excellent condition, and 1 is in Excellent condition. Several of these sites have suffered from the drought caused sagebrush die-off in 2003. They are recovering slowly.

Seven study sites are located at sites with a mid to high range ecological potential. Only one of these sites is in Fair condition, three are in Good condition, and 3 are in Good-Excellent condition. These areas did not experience browse die-offs during the drought.

Unit 17a, Wasatch Mountains, West Subunit

There are 29 total permanent winter range trend study sites on this portion of the unit. There are nine sites in the Diamond Fork area, four sites in the Hobble Creek and five in

the Timpanogos areas. Some study sites were suspended since the 1997survey. In 2002, only 9 sites had a higher Desired Components Index figure showing an improvement in habitat quality. The overall DCI rating is "Fair" at 52 down from 57. Olsen (1976) estimated 72,209 acres of severe winter range, a bulk of which is in private ownership and of low productivity. Winter habitat is limited in by quality and quantity. Housing developments in recent years have consumed much of this important winter range and will continue to do so in the future. Most winter range has been reduced to a narrow bench above the communities of Alpine, Pleasant Grove, Orem, Springville and Mapleton. Essential vegetation types monitored include antelope bitterbrush, true mountain mahogany, mixed mountain browse, mixed oakbrush/sagebrush, and Stansbury cliffrose. There are 11 range trend study sites around the Heber area of the Wasatch Mountains herd unit. All are located within winter range with the majority being on sagebrush-grass type, two on oakbrush type and one on bitterbrush type. The DCI data has increased only on four of the trend sites. Another 4 have only decreased slightly or are unchanged. DCI rating (52) indicates "Fair" habitat. However, the majority of sites have poor quality herbaceous under-story composition with weeds and cheatgrass making up the major portion of the vegetation. This composition is largely due to fires and heavy gazing by livestock in the past. This situation produces abundant fuel during wet years and wildfires are a concern. Much of the winter range (50%) is privately owned and development was a concern at the time of the last study in 2002. Since then, development has accelerated and some of the most critical range is being converted to housing. Division of Wildlife Resources, State Parks as well as federal lands will be the key to the survival of deer into the future on this portion of the unit.

Unit 17, Wasatch Mountains/Salt Lake County Subunit

Range trend studies have not been done on this subunit since 1983. Lack of access to trend study plots that have not been destroyed by development has resulted in these studies being abandoned. Very little winter range is available on this subunit and deer are forced to winter in an urban setting during more severe winters.

SUB-UNIT	DCI Score	Rating Range	Classification	Current(2011) Population	Proposed Objective	Long Term Objective	Percent Change
Wasatch West	52	50-64 Fair	Fair	17,486	20,600	20,600	0
Salt Lake	NA	NA	NA	1,676	2,000	2,000	0

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

Unit 17-Wasatch Mountains, Avintaquin Subunit

Beginning at Duchesne; then south on Hwy US-191 to the Reservation Ridge Road; westerly and northerly on this road to Big Beaver Springs Road; northerly on this road to Big Beaver Springs and Beaver Canyon; northeasterly along this canyon to the Strawberry River; easterly

along this river to Duchesne.

Unit 17-Wasatch Mountains, Currant Creek Subunit
Beginning at Duchesne; then north on Hwy SR-87 to Hwy SR-35; northwesterly on SR-35 to Wolf Creek Pass and the Provo River-Duchesne River drainage divide; south along this drainage divide to Heber Mountain and the Strawberry River-Currant Creek drainage divide; southeast along this divide to Hwy US-40 and the Soldier Creek Dam road; south on this road to the Strawberry River; east along this river to Duchesne.

Unit 17-Wasatch Mountains, Price River Drainage Subunit
Beginning at the junction of Hwy US-191 and the Reservation Ridge road; west on Reservation Ridge road to the Right Fork of the White River road; southwest on this road to Hwy US-6; southeasterly on Hwy US-6 to the junction of US-191; northeasterly on US-191 to the Reservation Ridge road junction.

Unit 17-Wasatch Mountains, Salt Lake Subunit
Beginning at the junction of Hwy I-15 and I-80 in Salt Lake City; then easterly on I-80 to Hwy US-40; southerly on US-40 to the Summit Wasatch county line; southwesterly along this county line to the Salt Lake-Wasatch county line; southwesterly along this county line to the Salt Lake-Utah county line; southwesterly along this county line to I-15; northerly on I-15 to I-80.

Unit 17-Wasatch Mountains, Wasatch West Subunit
Beginning at Hwy I-15 and the Utah-Salt Lake county line; then easterly along this county line to the Utah-Wasatch county line; northerly along this county line to the Wasatch-Summit county line; easterly on this county line to Hwy US-40; westerly on this road to SR-35; east on this road to Wolf Creek Pass and the Provo River-Duchesne River drainage divide; south along this drainage divide to Heber Mountain and the Strawberry River-Currant Creek drainage divide; southeast along this divide to Hwy US-40 and the Soldier Creek Dam road; south on this road to the Strawberry River ; easterly along this river to Beaver Canyon; southwesterly on this canyon to the Reservation Ridge road; southerly on this road to the Right Fork of the White River road; southwesterly on this road to Hwy US-6; westerly on US-6 to I-15; northerly on I-15 to the Salt Lake-Utah county line.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 18
(Oquirrh-Stansbury)
April 2012

BOUNDARY DESCRIPTION

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

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	YEARLONG RANGE		SUMMER RANGE		WINTER RANGE	
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	??	48386	28.8%	20269	7.2%
Bureau of Land Management	0	??	45,888	27.3%	88,076	31.3%
Utah State Institutional Trust Lands	0	??	5,727	3.4%	20319	7.2%
Native American Trust Lands	0	??	28	0%	28,777	10.2%
Private	0	??	64177	38.2%	108,703	38.6%
Department of Defense	0	??	3,969	2.4%	15,263	5.4%
Utah State Parks	0	??	0	0%	0	0%
Utah Division of Wildlife Resources	0	??	0	0%	0	0%
TOTAL	0	??	168175	100%	281407	100%
Range Total from last plan (2001)	0	??	201465	100%	222082	100%
Change (+/-)	0	??	-33,290	-16.5%	+59325	+27%

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing. Balance deer 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - Achieve a target population size of 10,600 wintering deer.

Unit 18
1994 – 2005 Objective 10,600
2006 – 2015 Objective 10,600
Change 0

5 year Winter Herd Size – Manage for a 5-year target population of 10,600 wintering deer. Where winter range is the limiting factor, reduce current populations by 20% on any subunit when weighted DCI score falls in to "poor" classification or below. On units where winter range condition is classified as "fair" or better deer populations will be allow to expand toward current long-term objectives.

Unit	DCI Score	Fair DCI range for unit 18	Classification	Current Population	Proposed Objective
Oquirrh/Stansbury 18	47	38-54 fair	fair	9,400	10,600

Herd Composition-- Maintain an average postseason buck to doe ratio in accordance with the statewide plan.

Harvest – General Buck Deer hunt regulations, using archery, rifle, and muzzleloader hunts apply to Oquirhh/Stansbury Unit 18.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilizing harvest data, postseason and spring sex and age classifications and mortality estimates, a computer model has been developed to estimate winter population size.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Hunter Access - Excessive habitat utilization will be addressed. Because of the large amount of private land on this unit, it=s location and the number of owners, public access for deer hunting will continue to be a problem. Formation of the Heaston East CWMU may help in this regard on the North Oquirrh Mountains.

< Habitat - At present, the availability of high quality summer range may be more limiting to this deer population than winter range. Range condition, however, of winter ranges is a long-term problem. Encroachment by juniper trees and the resultant loss of forage production, diversity and quality is very widespread. The problem is especially apparent on the Stansbury Mountains.

< Predation - Refer to DWR predator management policy.

- Assess need for control by predator species, geographic area and season of year.

- Seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort.

- Concentrate control efforts during and immediately prior to the fawning period.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs etc..

< Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

< Provide a long-term continuing base of habitat quantity and quality sufficient to support the stated population objectives.

HABITAT MANAGEMENT STRATEGIES

< Work toward long-term habitat protection, preservation and improvement through the use of agreements with federal and local agencies and the use of Conservation Easements on private lands.

<

< Continue to restore and improve sagebrush steppe habitats critical to deer according to DWR's Habitat Initiative. Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseedings, controlled burns, water developments etc. on public and private lands.

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

< Implement the Habitat Management Plan for the Carr Fork Wildlife Management and Reclamation Area as a means for improving winter range conditions on the west side of the Oquirrh Mountains.

< Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseedings, controlled burns, water developments etc. on public and private lands.

< Cooperate with federal land management agencies and local governments in developing and administering access management plans for the purposes of habitat protection and escape or security areas.

PERMANENT RANGE TREND SUMMARIES

Unit 18, Oquirrh-Stansbury 2002

There are 18 trend range sites on the Oquirrh range. Four of these sites are in critical winter range, Seven on winter range, four on transitional winter / spring - fall range, and three on summer range. The most recent trend gathered on these sites was 2002. Summer range makes up about 48% of the area. Winter range comprises 48% of the area. During severe winters the available winter habitat is reduced in half. Another major concern is that 63% and 45% of the summer and winter range respectfully is under private ownership.

There are 11 trend range sites on the Stansbury mountain range. Summer range is limited to above 6800 ft contour where it makes up 45% of the range that is classified as suitable for big game. The remainder of the range is considered winter range (55%). The portion of private lands on this big game habitat is 6% and 14% of the summer and winter range respectively.

Overall soil, browse and herbaceous trends are stable to improving. Only three soil, one browse, and three herbaceous sites showed down or slightly down trends. Many sites showed a decline in forb species going from an average of 18 in 1997 to 12 in 2002.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 19
(West Desert)
April 2012

BOUNDARY DESCRIPTION

Tooele, Utah, Juab and Millard counties - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Dugway road at exit 77, Rowley Junction; south on this road to 14-mile road (Dugway Valley road); south on 14-mile road to the Pony Express Road: east on this road to SR-36; north on SR-36 to SR-73; east on SR-73 to I-15 in Lehi; south on I-15 to Exit 207 and Mills Road; west on this road to the Sevier River; north along this river to SR132; west on 132 to US 6; south on US-6 to its junction with US-50 near Delta; west on US-50 & 6 to the Utah-Nevada state line; north along this state line to I-80 at Wendover.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	YEARLONG RANGE		SUMMER RANGE		WINTER RANGE	
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service		0%	48468	22.2%	21282	3.9%
Bureau of Land Management	541579	87.8%	115988	54.8%	412392	75.9%
Utah State Institutional Trust Lands	46914	7.6%	8486	4%	32716	6%
Native American Trust Lands	0	0%	10711	5.1%	9877	1.8%
Private	5776	.9%	27961	13.2%	64159	11.8%
Department of Defense	22299	3.6%	0	0%	2688	.5%
USFWS Refuge	0	0%	0	0%	0	0%
Bankhead Jones	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	616568	100%	211614	100%	543114	100%
Range total from past plan (2002)	353,632	100%	248912	100%	945123	100%
Change (+/-)	+262936	+74%	-37298	-15%	-402009	-42.5%

UNIT MANAGEMENT GOALS

Manage for a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and viewing. Balance deer 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - Achieve a long-term combined target population size of 11,200 wintering deer (modeled number)

Unit 19

Target Objective 2002-2005	11,200
Target Objective 2006-2011	11,200
Change	0

5 year Winter Herd Size – Manage for a 5-year target population of 11,200 wintering deer. Based on overall changes of habitat Desirable Components Index (DCI). Where winter range is the limiting

factor, reduce current populations by 20% on any subunit when weighted DCI score falls in to "poor" classification or below. On subunits where winter range condition is classified as "fair" or better deer populations will be allow to expand toward current long-term objectives.

Subunit	DCI Score	Fair DCI range for unit 19	Classification	Current Population	Proposed objective
West Desert 19a	49.5	42-57 Fair	Fair	6,900 Combined	11,200 combined
Vernon 19b	50	46-61 Fair	Fair	6,900 combined	11,200 combined

Herd Composition

< West Desert Mt Range (19a,c); maintain a three year average postseason buck to doe ratio in accordance with the statewide plan.

< Vernon (19b); (limited entry portion of unit 19); maintain a three year average postseason buck to doe ratio ranging from 25-35:100.

< Harvest – General Buck Deer hunt regulations, using archery, Rifle, and Muzzleloader hunts apply on the West Desert Mountain Ranges 19a. Limited Entry hunt regulation for Archery, Rifle and Muzzleloader apply to Vernon subunit 19b

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population size. Because a part of this population is highly migratory in nature, periodic monitoring and counts of deer passing between the Sheeprock/Tintic mountains area and the House Range/Swasey Mountain/Conger Mountain areas will be required. A remote sensing apparatus may be used for this purpose.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. The targeted winter population should result in an expected annual buck harvest of perhaps 800 deer when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

<

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat - Deer numbers in this area are primarily limited by the amount and quality of summer range and water distribution. Preservation and even enhancement of the very limited areas of higher altitude good quality summer range is very important. At present, only the Deep Creek Mountains offer any significant expanse of this type of habitat. Excessive habitat utilization will be addressed.

< Predation - Refer to DWR predator management policy.

- Assess need for control by species, geographic area and season of year.

- Seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Concentrate control efforts during and immediately prior to the fawning period. This predator management plan for the Sheeprock Mountains, which focuses primarily on coyote control for the purpose of enhancing fawn survival, is currently being implemented.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

< Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an Action Plan developed in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

< Provide a long-term continuing base of habitat quantity and quality sufficient to support the stated population objectives.

HABITAT MANAGEMENT STRATEGIES

< Continue to monitor the permanent range trend studies located throughout the unit. These are located on both summer and winter range.

< Continue to restore and improve sagebrush steppe habitats critical to deer according to DWR's Habitat Initiative. Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseedings, controlled burns, water developments etc. on public and private lands.

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

< Work with private and federal agencies to maintain and protect critical summer ranges from future losses or degradation. Continue the cooperative effort to develop water sources to enhance deer and other wildlife distribution.

PERMANTENT RANGE TREND SUMMARIES (Added 2001)

Unit 19a, West Desert/Deep Creek Subunit (2002)

There are 8 range trend study sites on the deep creek mountain range. Seven are on BLM adminstered 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 Chokecherry, Granite, and the Basin.

There were no upward trends for soil, herbaceous, or browse components in 2002. Soil herbaceous, and browse trends were reported stable on two sites while downward on two others.

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

Unit 19b, West Desert/Vernon Subunit (2002)

The Vernon subunit has 9 trend sites of which 8 were read in 1997. Five sites are summer range and three are winter range. The South Pine Canyon transect was not read due to fire not leaving any browse species. In the summer of 1996 over 14,000 acres burned in much of the summer range. The Vernon was closed to deer hunting in 1997 and reopened in 2000.

In 2002 range trends were largely driven by 3 years of drought conditions. In combination with drought, mormon cricket use resulted in lower abundance of herbaceous and primary forbs.

Nine of twelve Browse sites showed stable trends, while only three sites had downward trends. Gentle slopes with vegetation and litter cover help keep erosion to a minimum. Herbaceous under-story appears to be stable on most sites but has declined on burned areas. In 1998 the Forest Service burned stands of thick juniper in the West Government Creek area in an effort to improve site conditions.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

Unit 19a, West Desert Mountain Ranges Subunit

Tooele, Utah, Juab and Millard counties - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Dugway road at exit 77, Rowley Junction; south on this road to the 14-mile road (Dugway Valley road); south on this road to SR-174; east on SR-174 to US-6; south on to US-6;south on US-6 to US-6/50; west on US-6/50 to the Utah/Nevada state line; North on this state line to I-80 in Wendover. Excludes all native American Trust Lands within This boundary. Excludes all CWMUs. USGS 1:100,000 Maps: Bonneville Salt Flats, Currie, Delta, Ely, Fish Springs, Kern Mountains, Lynndyl, Rush Valley, Tooele, Tule Valley, Wildcat Moutnain. Boundary questions? Call DWR Springville office, (801) 491-5678.

This unit excludes the following limited entry unit.

Tooele, Juab, and Millard counties - Boundary begins at SR-36 and the Pony Express road; southeast on SR-36 to US-6; southwest on US-6 to SR-174 (i.e. the IPP road); northwest on SR-174 to the Dugway Valley road; north on this road to the Pony Express road; northeast on this road to SR-36. USGS 1:100,000 Maps: Lyndyll, Delta, Fish Springs, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.

Unit 19b, West Desert/Vernon/ Subunit

Tooele, Juab, and Millard counties - Boundary begins at SR-36 and the Pony Express road; southeast on SR-36 to US-6; southwest on US-6 to SR-174 (i.e. the IPP road); northwest on SR-174 to the Dugway Valley road; north on this road to the Pony Express road; northeast on this road to SR-36. USGS 1:100,000 Maps: Lynndyl, Delta, Fish Springs, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.

Unit 19c, West desert /Subunit

Tooele, Juab, Utah and Millard counties – Boundary begins at I-15 and SR-73 in Lehi; south on I-15 to Exit 207 and Mills road; west on this road to the Sevier River; north along this river to SR-132; west on SR-132 to US-6; north on US-6 to SR-36; north on SR-36 to SR-73; east on SR-73 to I-15 in Lehi. Excludes all CWMUs USGS maps: Delta Lynndyl, Manti, Nephi, Provo, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.

This unit excludes the following limited entry unit.

Tooele, Juab, and Millard counties - Boundary begins at SR-36 and the Pony Express road; southeast on SR-36 to US-6; southwest on US-6 to SR-174 (i.e. the IPP road); northwest on SR-174 to the Dugway Valley road; north on this road to the Pony Express road; northeast on this road to SR-36. USGS 1:100,000 Maps: Lyndyll, Delta, Fish Springs, Rush Valley. Boundary questions? Call DWR Springville office, (801) 491-5678.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 20
(Southwest Desert)
April 2012

BOUNDARY DESCRIPTION

Beaver, Iron, and Millard counties - Boundary begins at US-50&6 and the Utah-Nevada state line; east on US-50&6 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 the Lund Highway to the Union Pacific railroad tracks at Lund; southwest on the Union Pacific railroad tracks to the Utah-Nevada state line; north on this state line to US-50&6.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	0	0%	0	0%
Bureau of Land Management	132752	95%	711554	84%	167425	85%
Utah State Institutional Trust Lands	6650	5%	92989	11%	16492	8%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	645	<1%	36326	4%	9788	5%
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	1%	6775	1%	3487	2%
TOTAL	140047	100%	847644	100%	197192	100%

UNIT MANAGEMENT GOALS

Overall deer numbers on this unit are considerably below recent averages and greatly below historic highs and averages. Significant increase in deer numbers will be pursued if conditions allow. Buck:doe ratios are within the minimum statewide guideline and should be maintained within that guideline.

POPULATION MANAGEMENT OBJECTIVES

< Target winter herd size - Manage for a winter population of 3,200 deer through 2014, or until this plan is amended. This is a short-term reduction of 20% from the previous plan period and is justified as based on the discussion in Permanent Range Trend Summaries at the end of this document. The long-term objective of 4,000 deer remains unless and until a permanent change occurs in the quantity or quality of deer range on the unit.

< Herd Composition – Maintain a unit three-year average post-season buck:doe ratio in accordance with the statewide plan.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Southwest Desert	4,000	4,000	3,200	- 800

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through post season and spring classification, hunter check stations, harvest surveys and computer modeling.

< Buck Age Structure - Age structure will be monitored at hunter check stations.

< Harvest - The main harvest strategy will be general buck hunting.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Agricultural damage is almost non-existent. If problems appear, antlerless removal will be directed at specific problem areas where appropriate.

< Habitat - Summer range is a limiting factor on this unit. Winter range seems to be abundant.

< Predation - Predator losses on this unit may be significant, given the drastically reduced deer numbers. Alternative prey species for lions exist in the form of abundant elk and wild horses in many areas. Lion numbers will be assessed in light of deer population objectives and lion harvest adjusted accordingly. A predator management plan is currently being prepared for this unit.

< Highway Mortality - Highway mortality is not a limiting factor on this unit.

< Illegal Harvest - There is no evidence that illegal harvest is a limiting factor on the unit.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

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

< Maintain critical fawning habitat in good condition. Fawn recruitment is a major concern on this unit and may be the single greatest factor limiting the population.

Condition of deer winter range on Unit 20, as indicated by DWR range trend surveys Desired Components Index.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1998	59	Fair	36 - 50	50 - 65	66 - 81
2003	45	Poor			

HABITAT MANAGEMENT STRATEGIES

< Evaluate and implement potential habitat improvement projects on BLM, state, and private lands

< Manage riparian areas in critical fawning habitat to furnish water, cover and succulent forage from mid- to late summer.

< Evaluate opportunities to address problems created by closed canopy pinyon-juniper.

< Cooperate with BLM on proposed Wilson Canyon Vegetation Treatment.

< Continue existing monitoring studies, and coordinate with BLM on additional riparian monitoring.

PERMANENT RANGE TREND SUMMARIES (Added 2001)

Unit 20, Southwest Desert

There are six range trend study transects on the Southwest Desert area. Two of these were established on DWR lands (Indian Peak WMA) in 1985 and four additional studies were added in 1998-99. All six transects are located on deer winter range, although some may be considered high elevation winter range. Trend data collected in 2003 showed a stable trend in browse species at one of two Indian Peak sites (20-1) and a slightly downward trend at the other (20-2). Browse trend along the other four transects was stable or improving, with the exception of a decrease at the South Spring (20-7) site. The condition rating for soils and herbaceous understory at the six range trend study sites was downward in most cases.

The overall DCI rating for this unit in 2003 was in the “poor” condition category. This low rating is partly a result of five years of extreme drought. However, pinyon and juniper encroachment is prevalent throughout this unit at many elevations. Additionally, forage competition is substantial in many areas of this unit and feral horse use is a problem. Summer range is limiting on this unit and a lack of aspen and good riparian areas on this range is limiting deer production. The potential for vegetative improvement by mechanical

treatment and/or burning is tremendous and would accomplish much toward reversing these conditions.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #21
Fillmore
April 2012

BOUNDARY DESCRIPTION

Millard, Sevier, Sanpete and Juab counties - Boundary begins at I-70 and I-15; north on I-15 to 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 SR-132; east on SR-132 to SR-28; south on SR-28 to US-89; south on US-89 to I-70; west on I-70 to I-15.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	**0**	**0%**	**325288**	**85%**	**140100**	**24%**
Bureau of Land Management	**2995**	**1%**	**15470**	**4%**	**188601**	**32%**
Utah State Institutional Trust Lands	**17**	**82%**	**2367**	**1%**	**34616**	**6%**
Native American Trust Lands	**0**	**0%**	**0**	**0%**	**1357**	**0%**
Private	**662**	**18%**	**40623**	**11%**	**202590**	**35%**
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%**	**119**	**0%**	**14977**	**3%**
TOTAL	**3674**	**100%**	**383867**	**100%**	**582241**	**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 deer herd impacts with 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - Achieve a target population size of 12,000 (2,000 on 21A, and 10,000 on 21B)) wintering deer (modeled number). These population objectives are short term, spanning the life of this plan. Long term population objectives remain at 2,500 deer on subunit 21A and 10,000 deer on subunit 21B.

	Unit 21	Subunit 21A	Subunit 21B
2003 Objective:	12,500	2,500	10,000
2006-2014 Objective:	12,000	2,000	10,000
Change since 2003:	-500	-500	0

The change in subunit 21A management objective represents a 20% reduction based upon poor range trend survey values (see Habitat Management Objectives section below).

< Herd Composition – maintain three-year average post-season buck to doe ratio in accordance with the statewide plan on the general season portion of the unit. On the Oak Creek Limited Entry portion of the unit (Sub-unit 21A), the herd will be managed for three-year average post-season ratios ranging from 25-35 bucks per 100 does.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through post season and spring classification, hunter check stations, harvest surveys and computer modeling.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat - Monitor DWR lands in Millard County. Protect newly reseeded areas. Excessive habitat utilization will be addressed.

< Predation - Refer to DWR predator management policy.

- Assess need for control by species, geographic area and season of year.

- Seek assistance from USDA/Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Concentrate USDA/Wildlife Services control efforts during and immediately prior to the fawning period.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued

resource in its own right.

< Highway Mortality - Work with UDOT to have deer proof fence from Holden to Fillmore and along I-70.

< Illegal Harvest - Specific preventive measures will be implemented through Action Plans developed in cooperation with the Law Enforcement section should illegal kill become an identified and significant source of mortality.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

< 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.

< Provide improved habitat security and escapement opportunities for deer.

Condition of deer winter range on Unit 21B, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1998	38.64	FAIR	21-35	36-53	54-71
2003	41.94	FAIR			

Condition of deer winter range on Unit 21A, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1998	20.03	POOR	21-35	36-53	54-71
2003	18.70	VERY POOR			

HABITAT MANAGEMENT STRATEGIES

< Continue to monitor the permanent range trend studies located throughout the seasonal ranges.

< Manage vehicle access on Division of Wildlife Resources land to limit human disturbance during times of high stress, such as winter and fawning.

< With the use of land exchange, block Division of Wildlife properties on this deer unit.

PERMANENT RANGE TREND SUMMARIES

Unit 21-Fillmore

Fourteen (14) permanent range trend study transects are located on the Fillmore unit, 11 of which monitor deer winter range. The remaining 3 were established on sensitive areas on the Pahvant Mountains that are used by deer and elk during summer. Transects were established in 1985 and are read at five-year intervals with the most recent data collected in 2003. Based upon the 2003 data, soil

erosion has not been a problem on most sites across the unit. The herbaceous under story is also relatively stable, although perennial forbs are lacking. The majority of the winter browse on this unit is provided by cliffrose, bitterbrush and big sagebrush. The 2003 study rated browse as decreasing on 6 sites, stable on 4, and improving on 1 location. Browsing by deer was moderate-to-heavy on many sites and the average deer use on winter range studies across the unit increased from 86 deer days per acre in 1998 to 108 deer days per acre in 2003. It is interesting to note that even though precipitation was below average between 1998 and 2003 the average DCI actually increased.

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CONDITION INDEX (DCI) OF WINTER RANGE TREND STUDY SITES DEER UNIT 21 (FILLMORE)			
Study Site	**Type**	**1998**	**2003**
M Hill	MB	60.88	51.92
Bennet Field	T	20.59	40.33
Smith's Ridge	V	59.16	44.77
Wide Canyon BLM	W	34.03	41.96
Wide Canyon DWR	W	45.97	53.55
Dog Valley	MB	-15.05	-4.77
Dameron	V	39.77	62.24
Walker Creek	T	26.69	48.73
Meadow Creek	V	52.51	21.44
East Cemetery	V	49.08	42.24
Baker Canyon	W	51.41	58.92
Unit Average		**38.64**	**41.94**

Sub-unit 21A-Fillmore Oak Creek Limited Entry

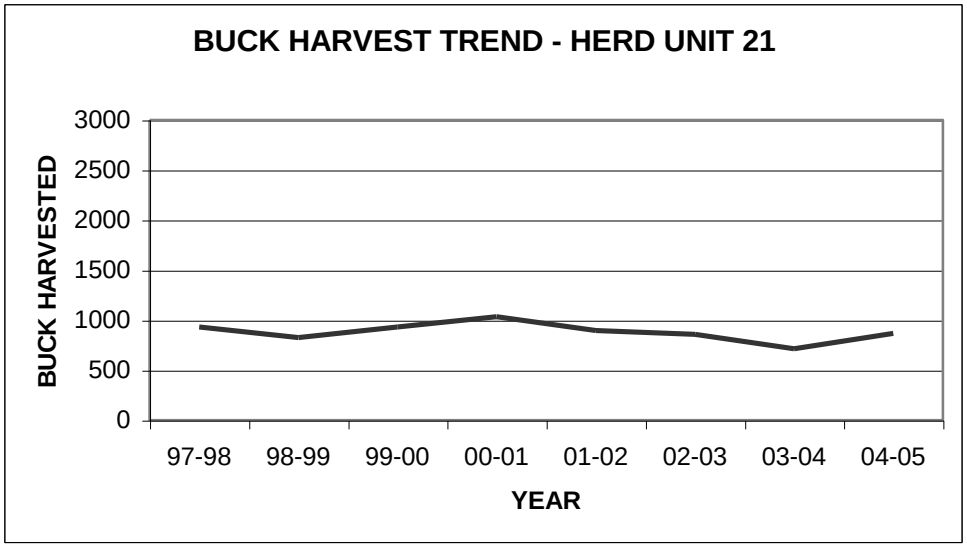
Four (4) transects are used to monitor winter range trend on the Oak Creek limited entry sub-unit. All are situated along the west slope of the Canyon Mountains. Soil and herbaceous understory are relatively stable across all sites. Wildfires have been frequent on this sub-unit and have reduced the density of browse species. Average deer use on winter range study sites across the unit decreased from 9 deer days per acre in 1998 to 3.5 deer days per acres in 2003. Many deer also have been wintering on alfalfa stubble growing in fields northeast of Oak City. The reliance of deer on these agricultural areas close to Oak City and the expansion of the town onto winter range have increased deer-human conflicts and there are problems with deer moving into town during the winter and damaging fruit trees and ornamental shrubs.

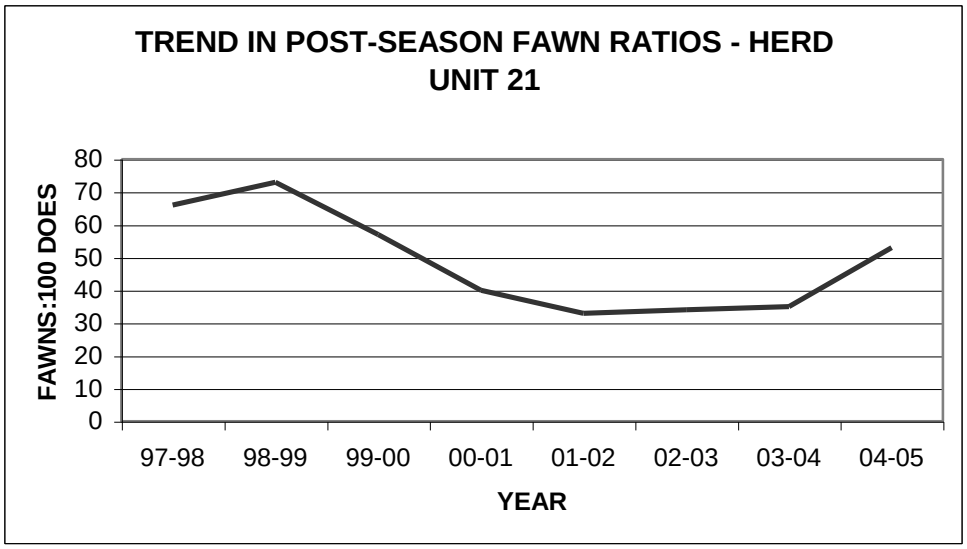
CONDITION INDEX (DCI) OF WINTER RANGE TREND STUDY SITES DEER UNIT 21A (OAK CREEK LIMITED ENTRY)			
Study Site	**Type**	**1998**	**2003**
Long Canyon	MB	42.78	38.34
Lovell Hollow	DES	1.72	-4.89
Cascade Spring	W	26.19	26.06
Horse Hollow	W	9.44	15.30
Sub-unit Average		20.03	18.70

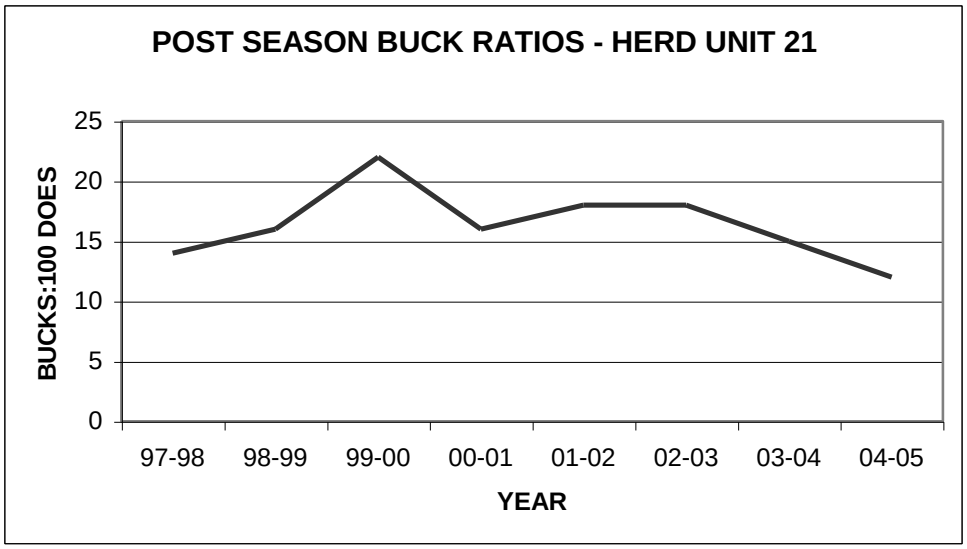
Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX – HARVEST AND CLASSIFICATION DATA






POST SEASON BUCK RATIOS - HERD UNIT 21
BUCKS:100 DOES
25
20
15
10
5
0
97-98
98-99
99-00
00-01
01-02
02-03
03-04
04-05
YEAR

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #22
(Beaver)
April 2012

BOUNDARY DESCRIPTION

Iron, Garfield, Piute, Beaver and Millard counties - Boundary begins at SR-130 and I-15; north on SR-130 to SR-21; north on SR-21 to SR-257; north on SR-257 to the Black Rock road; east on the Black Rock road to I-15; south on I-15 to I-70; east on I-70 to US-89; south on US-89 to SR-20; west on SR-20 to I-15; south on I-15 to SR-130.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Yearlong range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	??	213388	70%	83337	14%
Bureau of Land Management	0	??	65991	22%	396598	68%
Utah State Institutional Trust Lands	0	??	7386	2%	44367	8%
Native American Trust Lands	0	??	0	0%	205	0%
Private	0	??	18436	6%	53769	9%
Department of Defense	0	??	0	0%	0	0%
USFWS Refuge	0	??	0	0%	0	0%
National Parks	0	??	0	0%	0	0%
Utah State Parks	0	??	0	0%	0	0%
Utah Division of Wildlife Resources	0	??	0	0%	2288	0%
TOTAL	0	??	305201	100%	580564	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 deer herd impacts with 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - Achieve a target population size of 11,000 wintering deer (modeled number). This population objective remains for both the short-term (life of this plan) and long term, barring significant changes in range conditions.

Unit 22

2003 Objective:	11,000
2006-2014 Objective:	11,000
Change since 2003:	0

< Herd Composition – Maintain a unit three-year average post-season buck to doe ratio in accordance with the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Utilizing harvest data, postseason and spring classifications and mortality estimates, a computer model has been developed to estimate winter population size.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. The winter population should result in an expected annual buck harvest of 1500 when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy. Closely monitor Sulfurdale, Wildcat, North and South Creek on the West and Marysvale Ten-Mile on the east.

< Habitat - (winter/summer range conditions) Closely monitor winter ranges on the southern part of the unit where overuse currently has been documented. No increase in deer numbers is possible in this area unless habitat projects increase carrying capacity. Maintain or improve fawning habitat and summer waters west of I-15. Excessive habitat utilization will be addressed.

< Predation - Refer to DWR predator management policy.

- Assess need for control by species, geographic area and season of year.

- Seek assistance from Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Concentrate WS control efforts during and immediately prior to the fawning period.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Department of Transportation in construction of highway fences, passage structures and warning signs, etc.

< Illegal Harvest - Should illegal kill become an identified and significant source of mortality attempt to develop specific preventive measures within the context of an action plan developed in cooperation with the Law Enforcement Section.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

< Maintain and/or enhance forage production through direct range improvements throughout the unit on winter range to achieve population management objectives. Work with Federal agencies to improve critical winter ranges adjacent to the crop depredation areas identified above.

< Work closely with the BLM on maintaining and improving critical winter range conditions south of Beaver and east of I-15.

< Improve riparian areas in fawning habitat west of I-15 to furnish water, cover, and late to mid summer succulent forage.

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

< Provide improved habitat security and escapement opportunities for deer.

Condition of deer winter range on Unit 22, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
2003	37	FAIR	18-32	33-50	51-69

HABITAT MANAGEMENT STRATEGIES

< Habitat - Assist BLM in developing a plan for improving winter ranges south of Beaver. Identify methods to reduce pinyon-juniper encroachment. Continue assisting BLM with planned habitat projects south of Fremont Canyon.

< Work closely with BLM and private landowners to manage and improve riparian habitat conditions west of I-15.

Cooperate with BLM to enhance winter range west of I-15.

< Monitoring - Herd composition and population will be monitored through post season classification, spring classification, annual spring range rides, hunter check stations, harvest surveys, and computer

modeling. Continue to monitor the permanent range trend studies located throughout the seasonal ranges.

< Harvest - Antlerless harvest will be identified in amounts adequate to prevent crop damage, protect habitat and maintain buck objectives.

< Depredation - Damage to crops will be minimized by herding, landowner permits and depredation hunting. Antlerless permits will be made available to public in areas identified.

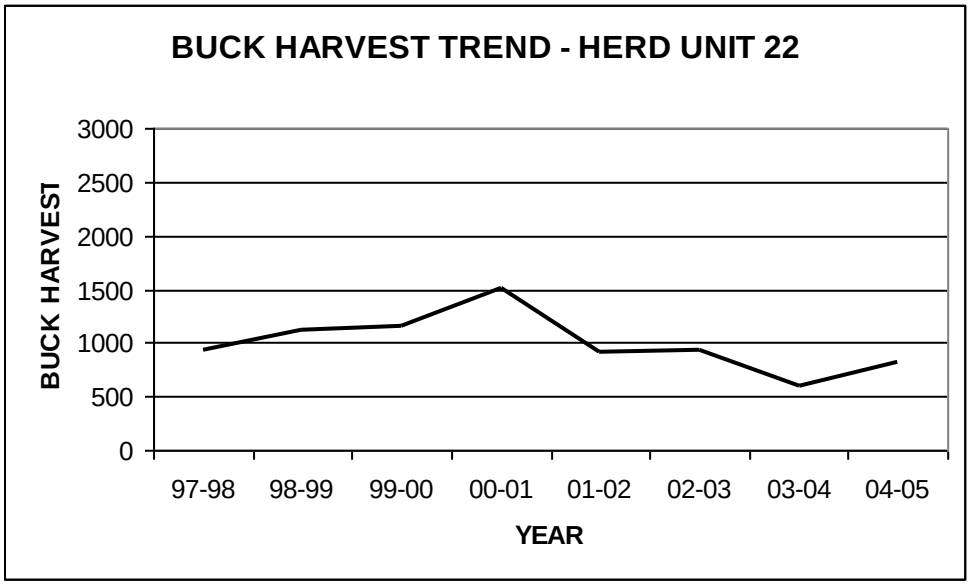
PERMANENT RANGE TREND SUMMARIES

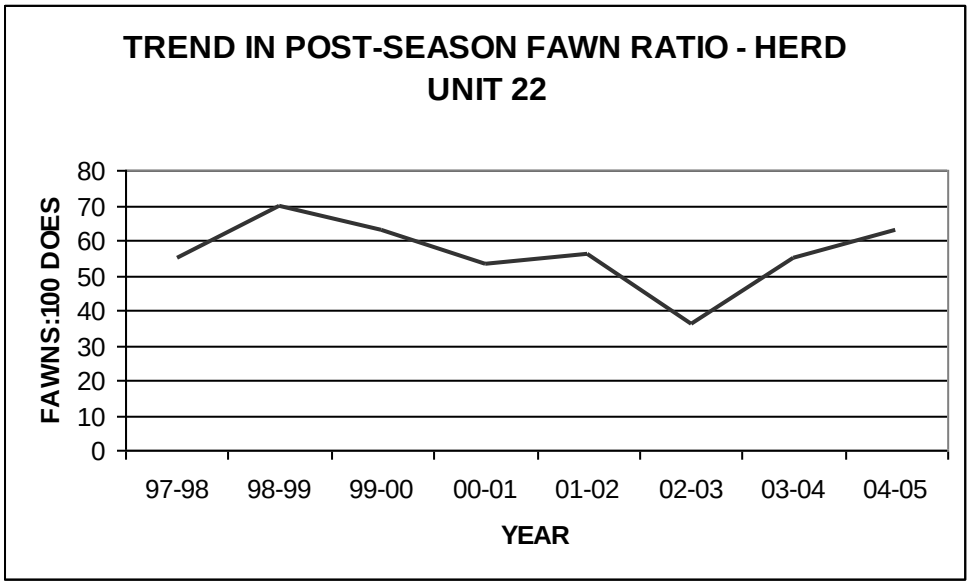
Fourteen (14) range trend study sites were initially established on the Beaver in 1985. Additional sites were added in South Creek and Fremont Wash in the late 1990s. All sites were read in 2003. Only two sites had improving trends over the entire unit and these were due to fire rehabilitation efforts. For all other sites trends for soil, herbaceous, and browse components were split evenly between stable and decreasing classifications.

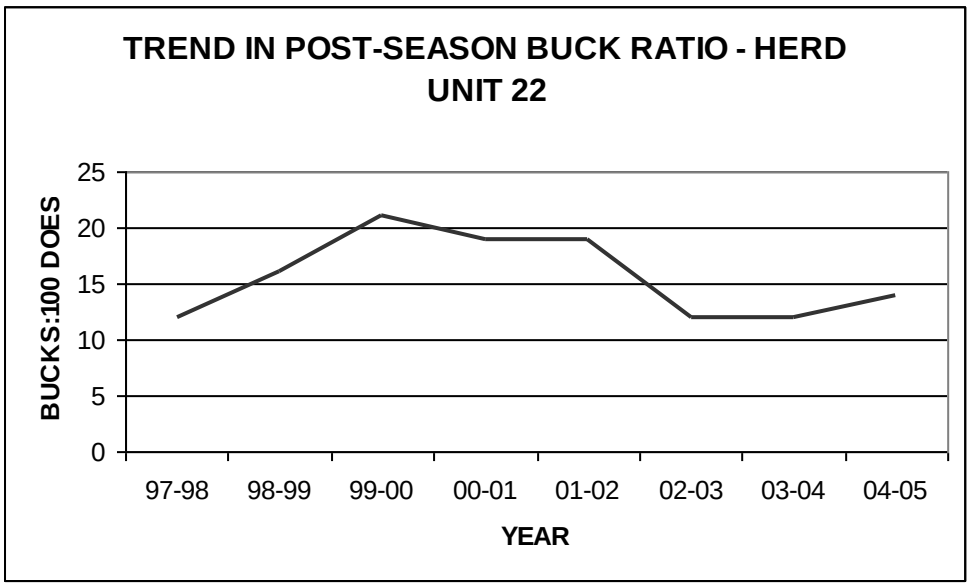
Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX – HARVEST AND CLASSIFICATION DATA






TREND IN POST-SEASON BUCK RATIO - HERD UNIT 22
BUCKS:100 DOES
25
20
15
10
5
0
97-98
98-99
99-00
00-01
01-02
02-03
03-04
04-05
YEAR

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #23
Monroe
April 2012

BOUNDARY DESCRIPTION

Piute and Sevier counties - Boundary begins at I-70 and US-89 north of Sigurd; south on US-89 to SR-24; south on SR-24 to SR-62; south and west on SR-62 to US-89; north on US-89 to I-70 near Sevier; north on I-70 to US-89 north of Sigurd.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	**0**	**??**	**112284**	**75%**	**43465**	**24%**
Bureau of Land Management	**0**	**??**	**8724**	**6%**	**99873**	**56%**
Utah State Institutional Trust Lands	**0**	**??**	**9942**	**7%**	**15034**	**9%**
Native American Trust Lands	**0**	**??**	**0**	**0%**	**640**	**0%**
Private	**0**	**??**	**18382**	**12%**	**15283**	**9%**
Department of Defense	**0**	**??**	**0**	**0%**	**0**	**0%**
USFWS Refuge	**0**	**??**	**0**	**0%**	**0**	**0%**
National Parks	**0**	**??**	**0**	**0%**	**0**	**0%**
Utah State Parks	**0**	**??**	**0**	**0%**	**0**	**0%**
Utah Division of Wildlife Resources	**0**	**??**	**0**	**0%**	**3753**	**2%**
TOTAL	**0**	**??**	**149332**	**100%**	**178048**	**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 deer herd impacts with 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - Achieve a target population size of 7,500 wintering deer (modeled number).

< Herd Composition – Maintain a unit three-year average postseason buck to doe ratio in accordance with the statewide plan.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Monroe	7,500	7,500	7,500	0

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through post season and spring classification, hunter check stations, harvest surveys and computer modeling.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. Recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy. Closely monitor Annabella and South Monroe agricultural areas.

< Habitat - (winter/summer range conditions) Monitor and protect the Poverty Flat burn (reseeded November 1997) to restore critical winter range. Excessive habitat utilization will be addressed.

< Predation - Refer to DWR predator management policy.

- Assess need for control by species, geographic area and season of year.

- Seek assistance from USDA/Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort.

Concentrate USDA/Wildlife Services control efforts during and immediately prior to the fawning period.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Cooperate with the Utah Department of Transportation in construction of highway fences, passage structures and warning signs, etc.

< Illegal Harvest - Specific preventive measures will be implemented through Action Plans developed in cooperation with the Law Enforcement section should illegal kill become an identified and significant source of mortality.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

< 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.

< Provide improved habitat security and escapement opportunities for deer.

Condition of deer winter range on Unit 23, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1998	43	Fair	20-34	35-52	53-70
2003	35	Fair/Poor Threshold			

HABITAT MANAGEMENT STRATEGIES

< Continue to monitor the permanent range trend studies located throughout the seasonal ranges.

< Monitoring - Range trend studies, pellet transects, annual spring range rides with agencies and the public.

< Cooperate with land management agencies and private landowners to identify critical areas and work together to maintain and enhance deer habitat.

< Work closely with Monroe Demonstration Steering Committee to obtain funding and coordinate habitat improvement projects.

PERMANENT RANGE TREND SUMMARIES

Unit 23, Monroe

There are currently 6 permanent range trend study transects on this unit. These are located in deer winter ranges identified by BLM, USFS and DWR personnel in 1985. The most recent trend data was collected in 2003. Currently all six sites show stable trends for soils, browse and herbaceous under stories.

DCI was down 20.0% from 1998 to 2003, likely as a result of severe drought conditions. Pinyon and juniper have increased by 10% on transects in this unit and several thousand of acres of critical deer winter range have recently been subjected to wildfires. Several of these areas are being invaded by cheat grass, a non-native species. Browse conditions on these burned areas have not yet recovered to the point where they are useful as deer winter range. However, favorable weather patterns in the last two years have increased the amount of feed available for big game in most areas. In addition, several vegetation treatments have been completed during the past five years in important deer habitats and more are in the planning stages. Deer herds are currently well below objective and are not expected to increase beyond the capacity of existing and treated winter ranges. Current and planned habitat improvement projects should result in higher DCI values in the near future. If this occurs, the short-term objective should be raised.

Summer range condition is probably not a limiting factor on this deer unit.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #24
(Mt. Dutton)
April 2012

BOUNDARY DESCRIPTION

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 the Widtsoe-Antimony road to SR-22; north on SR-22 to SR-62; west on SR-62 to US-89.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	8374	34%	131391	100%	106357	42%
Bureau of Land Management	1166	5%	0	0%	76366	30%
Utah State Institutional Trust Lands	623	2%	20	1%	35768	14%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	14450	59%	30	0%	28772	11%
Bankhead Jones	0	0%	0	0%	7225	3%
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%	244	0%
TOTAL	24663	100%	131440	100%	254733	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 deer herd impacts with 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.

POPULATION MANAGEMENT OBJECTIVES

- Target Winter Herd Size - Achieve a target population size of 2,700 wintering deer (modeled number).

- Herd Composition - Maintain a unit three-year average post-season buck to doe ratio in accordance with the statewide plan.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Mt. Dutton	2,700	2,700	2,700	0

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Herd composition and population size will be monitored through use of post- season and spring classification, hunter check stations, hunter harvest surveys and computer modeling.

- Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, post-season classification, uniform harvest surveys and field bag checks.

- 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. The winter population should result in an expected annual buck harvest of 250 when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors (May prevent achieving management objectives)

- Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

- Habitat - Pinon/Juniper encroachment on traditional winter rangelands is decreasing diversity and vigor of browse plants. Browse trends averaged slightly down. Four sites had downward trends for browse, 4 others were stable, and 2 sites showed improving trends. Average percent decadence of sagebrush, the key browse species, on the winter range sites more than doubled, increasing from 25% in 1997 to 56.5% in 2003. Young recruitment, on winter range sites, dropped nearly 6 fold from an average of 553 young plants/acre per site to 97 plants/acre. Herbaceous trends were down slightly overall. Six study transects had a downward herbaceous trend, 3 sites were stable, and 1 site, North Pole Canyon, was upward. The upward herbaceous trend on North Pole Canyon was due to an increase in the warm season grass, blue grama. Cover and frequency of crested wheatgrass decreased on three transects, Mud Spring Chaining (24-4), Prospect Seeding (24-4), and Marshall Basin (24-12). Winter ranges on this unit all have very poor forb cover and frequency. Average forb cover on winter ranges was poor at less than ½ of 1% estimated at only 0.23% in 1997, declining to 0.08% in 2003. Forb cover and frequency were much higher along the summer and transitional range transects, but drought conditions have caused a decline here as well. Wyoming big sagebrush at Prospect Seeding is in extremely poor condition and it appears that sagebrush will die out there completely in the near future. A special study transect was established at Sanford to sample an aspen/conifer prescribed burn. It was first read in 1998 prior to the fire of 2002 and the downward soil and herbaceous trends found in 2003 are due to the burn treatment.

- Predation - Refer to DWR predator management policy.

- A predator management plan is in place for the benefit of mule deer on the summer ranges of this unit..

- Seek assistance from USDA/Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Concentrate USDA/Wildlife Services control efforts during and immediately prior to the fawning period.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

- Highway Mortality - Highway mortality occurs on U.S. 89 and SR 62, but is not a serious problem on this unit.

- Illegal Harvest - Specific preventive measures will be implemented through Action Plans developed in cooperation with the Law Enforcement Section should illegal kill become an identified and significant source of mortality.

HABITAT MANAGEMENT OBJECTIVES

Work with private and federal agencies to maintain and protect critical and existing winter range from future losses. **Winter range restoration efforts must be completed for this deer herd to reach its population objectives. Pinyon and juniper reduction treatments and sagebrush restoration are necessary to stabilize winter range conditions and allow this herd to withstand heavy winters.**

Condition of deer winter range on Unit 24, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1997	48	Fair	20-34	35-52	53-70
2003	37	Poor			

-

HABITAT MANAGEMENT STRATEGIES

- Continue to monitor the permanent range trend studies located throughout the seasonal ranges.

- A downward trend is indicated on the 12 permanent range inventory transects. Implement habitat restoration treatments to reverse the trends on the Mt. Dutton unit.

- Several significant habitat projects have been implemented or completed since 1995. Funds were made available through the Utah DWR Habitat Fund, Rocky Mountain Elk Foundation, U.S. Forest Service, and BLM.

  Completed Projects:
  USFS, rebuilt guzzler - Bear Flat
  USFS, new guzzler - Corral Flat
  USFS/DWR, Jones Corral prescribed burn and reseed
  USFS/DWR, Johnson Bench prescribed burn and reseed
  USFS/DWR, Hoodle Creek Water Line
  DWR, Black Canyon riparian area

USFS/DWR Seeding after Sanford wildfire of 2002

Partially Completed or Planned Projects:
USFS pinyon juniper thinning Mud Springs and Prospect Creek
BLM, Horse Valley prescribed burn
BLM/SITLA/DWR, Pinyon juniper thinning and removal in the lower winter ranges of Deer Creek, Cow Creek and Cottonwood Creek.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #25
(Plateau)
April 2012

BOUNDARY DESCRIPTION

Sevier, Garfield, Piute, and Wayne counties - Boundary begins at SR-24 and US-89 at Sigurd; south on SR-24 to SR-62; south on SR-62 to SR-22; south on SR-22 to the Widtsoe-Antimony road; south on the Widtsoe-Antimony road to SR-12; east on SR-12 to the Burr Trail at Boulder; east on the Burr Trail to the Notom Road; north on the Notom Road to SR-24; east on SR-24 to the Caineville Wash road; north on the Caineville Wash road to I-70; west on I-70 to US-89; south on US-89 to SR-24.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	5733	90%	659953	85%	355829	27%
Bureau of Land Management	109	1%	18051	2%	495507	38%
Utah State Institutional Trust Lands	0	0	54940	7%	107656	8%
Native American Trust Lands	0	0	0	0%	27	0%
Private	544	9%	38111	5%	119243	9%
Bankhead Jones	0	0	0	0%	341	0%
Wilderness Area	0	0	598	1%	24843	2%
National Parks	0	0	304	0%	193967	15%
Utah State Parks	0	0	0	0%	1080	0%
Utah Division of Wildlife Resources	0	0	0	0%	1092	1%
TOTAL	6385	100%	772484	100%	1299640	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 deer herd impacts with 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.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - Achieve a target population size of 25,000 wintering deer (modeled number). This objective remains the same for both short-term (the life of this plan) and into the

foreseeable future, barring any significant change in the condition of deer range on the unit.

< Sub-unit #25A - 10,000; DCI is presently at the fair/poor threshold.

Depredation issues will continue to be addressed, resulting in some doe harvest. Habitat is not currently being negatively impacted by deer use. Over 11,600 acres of habitat have been treated on this sub-unit since 2001. These treatments should raise the DCI in the next five years.

< Sub-unit #25B - 3,000; DCI is currently at the good/fair threshold.

Depredation issues will continue to be addressed, resulting in some doe harvest. Habitat is not currently being negatively impacted by deer use. Over 1,100 acres of habitat have been treated on this sub-unit since 2001. These treatments should raise the DCI in the next five years.

This Limited Entry unit is too small to support a self-sustaining deer population and deer regularly move between this sub-unit and the Fishlake sub-unit (25A) on the west and, to a lesser degree, the Boulder sub-unit (25C) on the south. In addition, only public lands are open to Limited Entry hunts, while private lands are managed as a general season deer hunt. This land ownership/hunt boundary arrangement complicates management of this sub-unit. In consideration of these issues, the Thousand Lakes sub-unit (25B) should be combined with the Fishlake sub-unit (25A) in the future.

< Sub-unit #25C -12,000; DCI is currently in the fair range.

Depredation issues will continue to be addressed, resulting in some doe harvest. Habitat is not currently being negatively impacted by deer use. Over 6,800 acres of habitat have been treated on this sub-unit since 2001. These treatments should raise the DCI in the next five years.

< Herd Composition – Maintain a unit three-year average postseason buck:doe ratio in accordance with the statewide plan.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Plateau, Fishlake # 25A	10,000	10,000	10,000	0
Plateau, Fishlake Thousand Lakes #25B	3,000	3,000	3,000	0
Plateau, Boulder #25C	12,000	12,000	12,000	0
UNIT TOTAL	25,000	25,000	25,000	0

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through post season and spring classification, hunter check stations, harvest surveys and computer modeling.

< Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - The Division of Wildlife Resources will maintain aggressive programs to eliminate or lessen the burden of deer depredation on private cultivated and stored agricultural crops. Crop depredation problems will be addressed as provided for in applicable laws, rules and policies, and procedures of Utah's Landowner Assistance Program for big game. When necessary, control hunts will be implemented through the RAC process. When a problem needs immediate attention, local biologists may call depredation hunts and issue mitigation permits to keep deer away from cultivated and stored agricultural crops. These control hunts will be specified in areas where only offending animals will be harvested. Applicable laws, polices, and procedures will also be followed to lessen the burden of big game on private rangelands.

< Habitat - Habitat decline is a critical problem. Opportunities to reverse this trend seem to be diminishing. Because of this long-range decline, the Plateau Unit cannot support the deer herds of earlier years. Increase from current low populations can be achieved, however. Winter browse throughout the unit is old, decadent, and disappearing. The major concern throughout the unit is encroaching pinyon pine and juniper forest. An additional concern is the encroachment of spruce-fir into aspen habitats. The Utah Big Game Range Trend Studies for the Plateau Unit generally show a stable trend. The most notable trends was a general loss of litter cover, vegetative basal cover, and an increased percentage of decadence in key browse species, caused by the long term drought experienced on these ranges. This is expected to turn around with the anticipated end to the state's prolonged pattern of drought. There is no evidence the downward vegetative trends are due to deer use. Attainment of management goals will depend on reversal of recent drought conditions. Excessive habitat utilization will be addressed.

< Predation - The DWR recognizes the need to efficiently and effectively manage predators. The DWR strongly 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.

-The DWR will work cooperatively with the USDA/Wildlife Services to manage coyote populations in areas where deer populations are threatened by coyote.

- The DWR will recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource to assure their future ecological, intrinsic, scientific, educational and recreational values.

< Highway Mortality - Cooperate with the Utah Department of Transportation in construction of highway fences, passage structures and warning signs etc.

< Illegal Harvest - Specific preventive measures will be implemented through Action Plans developed in cooperation with the Law Enforcement section should illegal kill become an identified and significant source of mortality.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

< Develop cooperative programs that encourage public and private land managers to maintain a stable or upward trend in vegetative composition, with emphasis on high use areas, especially around critical agricultural depredation problem areas.

< Encourage vegetation manipulation projects and seeding to increase the availability, abundance and nutritional content of browse, grass, and forb species.

< Deer habitat will be monitored by current long-term vegetative trend studies, pellet trend studies, and seasonal monitoring range tours.

< Condition of deer winter range on Unit 25, as indicated by DWR range trend surveys.

Subunit	Year	Mean DCI score for Subunit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
25-A	1999	48	Fair	22-36	37-53	54-71
	2004	36	Fair/poor Threshold			
25-B	1994	51	Fair	20-34	35-52	53-70
	1999	63	Good			
	2004	53	Fair/Good			
25-C	1994	52	Good	20-34	35-52	53-70
	1998	59	Good			
	2003	48	Fair			

PERMANENT RANGE TREND SUMMARIES (Added 2001)

Unit 25A, Plateau/Fish Lake

There are 17 range trend studies on this sub-unit of the Plateau Management Unit. Five of the 17 are on intermediate range. Twelve are on critical winter range. Two of the twelve were established in 1999. The most recent trend data gathered on these sites was in 2004. The five intermediate range sites showed stable soil trends with a stable browse trend and a downward herbaceous understory trend. The critical winter range sites showed a stable soils trend with a stable browse trend and slightly downward herbaceous understory. Overall, the trend studies showed a lack of forbs. Continued drought patterns have been a serious problem on this unit. Currently deer are not in sufficient numbers to damage winter range areas and it is unlikely that they will increase beyond the long-term objective in the next five years. Several thousand acres of important deer habitat have been treated in the last five years on this unit, which should lead to an increase in DCI.

Unit 25B, Plateau/Thousand Lake Mountain

There are six range trend studies on this sub-unit of the Plateau Management Unit. All six are on critical winter range. The most recent trend data gathered on these sites was

in 2004. The study sites showed stable soil and browse trends and a downward herbaceous under story trend. Even though most sites are showing stable trends for herbaceous species, many of the sites would have to be considered in poor condition because of the low frequencies and low diversity of species, especially forbs, on these sites. Continued drought has been a serious problem on this unit. Currently deer are not in sufficient numbers to damage winter range areas and it is unlikely that they will increase beyond the long-term objective in the next five years. Several large habitat enhancement projects have been implemented in important deer habitat in the last five years on this unit, which should lead to an increase in DCI.

Thick pinyon and juniper stands dominate much of the critical winter range throughout the sub-unit, limiting the winter carrying capacity for big game. There is a great potential to provide more forage for big game by thinning or removing the thick stands of pinyon and juniper. In 2004 a habitat project was completed in Red Canyon and Sage Flat. Part of this treatment involved the removal of PJ by cutting and then seeding with grasses and forbs. Removal of the dense PJ stands opens the canopy allowing more sunlight to reach the soils and plants. Another project of this same type is planned to cover the area from Sage Flat south to Shingle Mill Creek. Fieldwork for this project will begin in 2007.

Unit 25C, Plateau/Boulder Mountain

There are 29 range trend study transects on this sub-unit of the Plateau Management Unit. Four of these measure big game and livestock on deer summer range, two are located on intermediate range, and the remaining 23 are on critical winter range. The most recent trend data gathered on these sites was in 2003. The study sites showed stable soils and browse trends. Herbaceous understory trends were down dramatically overall. Many sites, including those on intermediate and summer ranges, have poor herbaceous under stories lack grasses and forbs. Other sites have a stable but poor herbaceous understory. Continued drought conditions have been a serious problem.

Thick pinyon and juniper stands dominate much of the critical winter range on the Boulder sub-unit, limiting the winter carrying capacity for big game. There is a great potential to provide more forage for big game by treating the thick stands of PJ. Removal of the dense PJ stands opens the canopy allowing more sunlight to reach the soils and plants. Removing PJ stands also releases water that can then be used for more desirable species of forage plants. Habitat treatments implemented on this unit since 2001 should lead to an increase in DCI.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

APPENDIX

Unit 25a Plateau, Fishlake Subunit

Sevier, Piute, and Wayne counties - Boundary begins at SR-24 and US-89 at Sigurd; south on SR-24 to SR-72 at Loa; north on SR-72 to I-70; west on I-70 to US-89; south on US-89 to SR-24.

Unit 25b Plateau, Thousand Lake Subunit

Sevier, and Wayne counties - Boundary begins at the junction of SR-24 and SR-72 at Loa; southeast on SR-24 to the Cainville Wash road; north on the Caineville Wash road to the junction of I-70 and SR-72; south on SR-72 to SR-24 at Loa.

Unit 25c Plateau, Boulder Subunit

Garfield, Piute, and Wayne counties - Boundary begins at SR-24 and SR-62; south on SR-62 to SR-22; south on SR-22 to the Antimony-Widtsoe road; south on the Antimony-Widtsoe road to SR-12; east on SR-12 to the Burr Trail at Boulder; east on the Burr Trail road to the Notom Road; north on the Notom Road to SR-24; west on SR-24 to SR-62.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #26
(Kaiparowits)
April 2012

BOUNDARY DESCRIPTION

Kane and Garfield counties - Boundary begins at the Paria River and the Utah-Arizona state line; north along the Paria River to SR-12; east on SR-12 to the Burr Trail at Boulder; southeast on the Burr Trail to Lake Powell; southwest along the shore of Lake Powell to the Utah-Arizona state line; west along this state line to the Paria River.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	23185	52 %	0	0%	801	0%
Bureau of Land Management	18765	42 %	119564	94 %	559081	93 %
Utah State Institutional Trust Lands	640	1%	0	0%	34120	1 %
Native American Trust Lands	0	??	0	0%	0	0%
Private	2150	5 %	556	1%	22523	4%
Department of Defense	0	??	0	0%	0	0%
USFWS Refuge	0	??	0	0%	0	0%
National Parks	0	??	0	0%	5614	1 %
Utah State Parks	0	??	0	0%	2187	0%
National Recreation Area	0	??	6447	5 %	7013	1 %
TOTAL	44738	??	126567	100%	600638	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 deer herd impacts with 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.

POPULATION MANAGEMENT OBJECTIVES

- Target Winter Herd Size - Achieve a target population size of 1,000 wintering deer (modeled number). This population objective remains for both the short-term (life of this plan) and long term, barring significant changes in range conditions.

- This unit has scattered areas of deer habitat and does not support high numbers of deer.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Kaiparowits	1,000	1,000	1,000	0

- Herd Composition – Maintain a unit three-year average post-season buck to doe ratio in accordance with the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Herd composition and population size will be monitored through use of post- season and spring classification, hunter check stations, hunter harvest surveys and computer modeling.

- Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, post-season classification, uniform harvest surveys and field bag checks.

- 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. The winter population should result in an expected annual buck harvest of 140 when normal conditions occur, but recognize that buck harvest will be above or below what is expected due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors (May prevent achieving management objectives)

- Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

- Habitat - Extensive dry desert conditions exist. Limited data suggest annual fawn recruitment is low. Forb production is low, especially on dry years. Large areas of Pinyon/Juniper trees are not productive. Water distribution is limited in some areas. Excessive habitat utilization will be addressed. This unit is almost entirely within the Grand Staircase Escalante National Monument (Monument), Glen Canyon National Recreation Area, and the Dixie National Forest (Canaan Mountain). Extensive federal Wilderness Study Areas (WSA) exist in this unit. Questions involving future management of habitat within the Monument or the WSAs are yet to be determined.

- Predation - Refer to DWR predator management policy.

  - Assess need for control by species, geographic area and season of year.

- Seek assistance from USDA/Wildlife Services when deer populations are depressed and where there is a reasonable chance of gaining some relief through a predator control effort. Concentrate USDA/Wildlife Services control efforts during and immediately prior to the fawning period.

- Recommend cougar harvest to benefit deer while maintaining the cougar as a valued resource in its own right.

- Predation by mountain lions and coyotes is significant factor to population growth. Rugged topography makes normal harvest of predators difficult in most areas of unit. Incentives for increasing mountain lion harvest may be helpful. The area is currently a harvest objective cougar unit.

- Highway Mortality - Deer/car collisions are low on this unit. A few kills are recorded on SR-12 each year.

- Illegal Harvest - Specific preventive measures will be implemented through Action Plans developed in cooperation with the Law Enforcement Section should illegal kill become an identified and significant source of mortality.
- Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

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

- **No range transects are monitored on the Kaiparowits unit. Thus, no DCI table is available.**

HABITAT MANAGEMENT STRATEGIES

- Continue to monitor the permanent range trend studies located throughout the seasonal ranges.

- Increase water for wildlife by re-modeling BLM livestock catchments to include year long water availability.

- Several areas within the Grand Staircase-Escalante National Monument need manipulation (fire, chaining, hand cut, etc.) to return vegetation to diversity and production.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #27
(Paunsaugunt)
April 2012

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

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	**0**	**??**	**122705**	**37%**	**8279**	**1%**
Bureau of Land Management	**0**	**??**	**76806**	**23%**	**502742**	**85%**
Utah State Institutional Trust Lands	**0**	**??**	**19551**	**6%**	**14011**	**2%**
Native American Trust Lands	**0**	**??**	**0**	**0%**	**0**	**0%**
Private	**0**	**??**	**93122**	**28%**	**48189**	**8%**
Department of Defense	**0**	**??**	**0**	**0%**	**0**	**0%**
USFWS Refuge	**0**	**??**	**0**	**0%**	**0**	**0%**
National Parks	**0**	**??**	**17658**	**6%**	**15098**	**3%**
BLM Wilderness Area	**0**	**??**	**0**	**0%**	**3269**	**1%**
Utah Division of Wildlife Resources	**0**	**??**	**0**	**0%**	**0**	**0%**
TOTAL	**0**	**??**	**329841**	**100%**	**591587**	**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 deer herd impacts with 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. Continue with limited entry hunting. Maintain cooperative DWR/landowner relationships, i.e. Paunsaugunt Landowners Association and Alton Cooperative Wildlife Management Unit.

POPULATION MANAGEMENT OBJECTIVES

< Target Winter Herd Size - The short-term objective will be a target population of 5,200 wintering deer (modeled number). If winter range conditions improve as indicated by DWR range trend data showing a unit-wide desired component index (DCI) in at least the “fair” category or data collected during spring range rides indicate a marked improvement, this herd may be managed to the long-term population objective of 6,500 wintering deer (modeled number).

< Herd Composition - The Paunsaugunt unit will be managed for a post-season buck to doe ratio (average of 3 most recent years) of between 40 and 50 bucks per 100 does.

  < A management buck hunt will be established on this unit to provide additional hunting opportunity and will be the primary means of bringing the buck:doe ratio into compliance with the management objective. The definition of a management buck on the Paunsaugunt will be consistent with the definition provided in the statewide plan for premium limited entry units.

  < If the 3-year average buck:doe ratio exceeds 50/100, management buck permits will be increased to bring the population back to objective within 3 years.

< Buck Harvest – In accordance with the state-wide mule deer management plan, the Paunsuagunt deer herd will be managed for a 3-year average of between 40–55% of the harvested buck deer being 5 years of age or older. If >55% of the harvested bucks (3-year average) are 5 years of age or older, premium limited entry permits will be increased by no more than 10% in any given year until the age objective is met.

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through computer modeling using data collected during post-season classification, hunter check stations, and hunter harvest surveys.

< Buck Age Structure – The age class structure of the harvest will be monitored through the mandatory submission of an incisor (tooth) from each buck harvested on the unit. Additional data on the age class

structure of the population may be obtained through post-season classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide mandatory harvest survey. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck: doe ratios and the age objective for premium limited entry units.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation -Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

< Habitat - Based on 2008 DWR range trend study data, the general condition of deer winter range on the Paunsaugunt unit continues to decline. Range condition on 10 of the 13 winter range sites was rated as either poor or very poor with only the higher elevation Moon landing and Heaton sites rating good or excellent. Range condition worsened on 6 sites between 2003 and 2008, with the Buckskin Mountain study showing the greatest decline resulting from loss of sagebrush combined with an increasing amount of annuals such as cheatgrass. Range condition did improve slightly on two winter range study sites: Nephi Pasture I, and Five-mile Mountain. The Moon Landing and Heaton studies also showed improvement, but these sites are more characteristic of higher elevation transitional range.

< Predation

- Current and future predator management efforts will be consistent with DWR predator management policy and should only be attempted when deer populations are depressed and where it is deemed that predator removal would provide a reasonable chance of improving herd productivity and survival. Predator management may be conducted with assistance from USDA/Wildlife Services. To be most effective, control efforts should generally occur during and immediately prior to the fawning period.

- Public hunting will be the primary means of managing cougar numbers on the Paunsaugunt unit. Harvest recommendations for cougar will be designed to benefit deer while maintaining the cougar as a valued resource in its own right.

< Highway Mortality - Significant in several areas on U.S. 89, especially east of Kanab.

< Illegal Harvest - Specific preventive measures will be implemented through Action Plans developed in cooperation with the Law Enforcement Section should illegal kill become an identified and significant source of mortality. If possible, the any-weapon season on the Paunsaugunt should not overlap with the general deer rifle hunt.

< Cooperative Management - Approximately 25-30% of deer that summer on the Paunsaugunt Unit migrate south across the Utah/Arizona border to winter in Arizona. Continue cooperative program with Arizona Game and Fish Department for mutual harvest objectives.

HABITAT MANAGEMENT OBJECTIVES

< Participate, as possible, with public and private land managers to rehabilitate and enhance important rangelands.

< Provide needed watering sources on critical wintering areas.

< Implement program for monitoring and reducing migratory highway mortality on U.S. 89 east of Kanab.

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

HABITAT MANAGEMENT STRATEGIES

< Continue to monitor the permanent range trend studies located throughout the seasonal ranges.

< Planned or In Progress Projects:

DWR/BLM, two large water catchments on Buckskin Mountain and Five Mile Mountain

Pinyon and juniper reduction treatments began on Buckskin Mountain in the fall of 2005 and should continue annually in order to stabilize the downward trend of browse species on deer winter range.

Other pinyon-juniper reduction and sagebrush restoration projects must occur on the winter ranges of the Paunsaugunt unit for this unit to be capable of supporting 6,500 wintering deer.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #28
(Panguitch Lake)
April 2012

BOUNDARY DESCRIPTION

Garfield, Iron and Kane Counties - Boundary begins SR-14 and US-89; 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.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	3210	25 %	246285	75%	35427	17%
Bureau of Land Management	4732	37 %	4458	2%	105564	52%
Utah State Institutional Trust Lands	1003	8 %	1708	0%	12271	6%
Native American Trust Lands	0		0	0%	47	0%
Private	3667	29 %	63930	19%	43680	22%
Department of Defense	0		0	0%	0	0%
USFS Wilderness	0		7082	2%	0	0%
National Parks	0		6007	2%		0%
Utah State Parks	0		0	0%	0	0%
Utah Division of Wildlife Resources	0		504	0%	5100	3%
TOTAL	12652	100 %	329972	100%	202088	100%

TOTAL FROM 2001 PLAN	0		339543		200914	
CHANGE (+/-)	+12652		- 9571		+ 1174	

UNIT MANAGEMENT GOALS

Maintain a healthy deer population with post season numbers that are in balance with available winter range. Cooperate with the various publics and agencies in managing deer to provide a diversity of deer hunting and viewing experiences.

POPULATION MANAGEMENT OBJECTIVES

< Target winter herd size: A modeled winter population of 8,500 deer. This population objective remains for both the short-term (life of this plan) and long term, barring significant changes in range conditions.

< Harvest: Antlerless harvest as needed to maintain stable herd size. Winter survival is highly dependent on snow accumulation on winter range on the west side of the unit.

< Herd Composition: Maintain a unit three-year average post-season buck to doe ratio in accordance with the statewide plan.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Panguitch Lake	8,500	8,500	8,500	0

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through post season and spring classification, hunter check stations, harvest surveys and computer modeling.

< Buck Age Structure- Monitor age class structure of the buck population through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< 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. Buck only hunting will be the general harvest method for this unit, with any other strategies to be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Agricultural crop damage will be minimized by deer barrier fences, herding and/or through landowner permits/depredation hunting. A large barrier fence, which will prevent deer depredation in several large alfalfa fields, extends several miles to the north from Paragonah into Buckhorn Flat. Range rehabilitation projects should reduce depredation problems on range and crop lands.

< Habitat - At present, winter range is a limiting factor. Highway construction on the west side of the unit has limited the accessibility to winter range on the west side of I-15. This has created areas of heavy utilization and concentration north of Paragonah. Development has also reduced the amount of available winter range along the east side of I-15, especially in the Cedar City area. Excessive habitat utilization will be addressed through antlerless harvests.

< Predation - Seek the assistance of USDA/Wildlife Services for coyote control where needed prior to and during fawning period. Balance cougar numbers with deer numbers.

< Highway Mortality - Cooperate with the Utah Dept. of Transportation in construction of highway fences, passage structures and warning signs, etc.

< Illegal Harvest – Specific preventive measures will be implemented through Action Plans developed in cooperation with the Law Enforcement section should illegal kill become an identified and significant source of mortality.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

< Maintain and protect all winter range where possible.

< Improve forage quality on critical deer winter/spring habitat north of Paragonah and other areas as needed.

< Provide improved habitat security and escape opportunities for deer.

Condition of deer winter range on Unit 28, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1998	52	Good	19-33	34-51	52-69
2003	37	Fair			

HABITAT MANAGEMENT STRATEGIES

< Rely on DWR range trend studies and range rides to monitor habitat condition.

< Complete habitat project north of Paragonah to improve spring and winter habitat for deer. The objective is to provide 90,000 lbs. of forage for 1500 deer during the spring/winter period.

<

< Complete cooperative three year pinyon-juniper thinning project on BLM land south of Panguitch in the Dickinson Hill/Sheep Hill areas.

< Continue to cooperate with private landowners and federal agencies on rehabilitation projects such as the recently completed burns on USFS lands on Five Mile Mountain.

< Identify seasonal distribution for specific deer herd segments.

PERMANENT RANGE TREND SUMMARIES

Unit 28, Panguitch Lake

There are fifteen range trend study sites on the Panguitch Lake Unit (WMU #28). The most recent trend data were gathered on these sites in 2003. The majority of the range trends were downward for all categories (soil, browse, and herbaceous understory). Browse trend was downward on 9 out of 10 sites; a result of key browse species showing declines in population densities, increases in percent decadence, an increasing proportion of plants classified as “dying,” and decreased reproduction. These changes were primarily due to decreased precipitation during past years, despite the fact that deer populations have been

reduced from prior levels through low recruitment.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #29
(Zion)
April 2012

BOUNDARY DESCRIPTION

Iron, Kane and Washington Counties - Boundary begins at I-15 and the Utah-Arizona state line; 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 the Utah-Arizona state line to I-15.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	0	0%	60638	20%	1270	<1%
Bureau of Land Management	1270	8%	19123	6%	268291	58%
Utah State Institutional Trust Lands	52	<1%	9059	3%	37693	8%
Native American Trust Lands	0	0%	0	0%	2226	<1%
Private	14149	91%	177242	59%	87560	19%
Department of Defense	0	0%	0	0%	0	0%
USFWS Refuge	0	0%	0	0%	0	0%
National Parks	0	0%	35501	12%	67854	15%
Utah State Parks	0	0%	0	0%	0	0%
Utah Division of Wildlife Resources	0	0%	0	0%	0	0%
TOTAL	15471	100%	301563	100%	464894	100%

UNIT MANAGEMENT GOALS

Maintain a healthy deer population with post-season numbers that are in balance with available winter range. A major proportion of this herd unit is on private land and herd size must be compatible with private land uses, particularly in such areas as Smith's Mesa, which has some dry land farming but also is important seasonal range for deer.

Cooperate with the public and land management agencies in managing deer to provide a diversity of deer hunting and viewing experiences.

POPULATION MANAGEMENT OBJECTIVES

< Target winter herd size - A modeled winter population of 9,000 deer on the entire WMU. This population objective remains for both the short-term (life of this plan) and long term, barring significant changes in range conditions.

<

< Herd Composition – Maintain a unit three-year average post-season buck to doe ratio in accordance with the statewide plan.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Zion	9,000	9,000	9,000	0

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through post season and spring classification, hunter checking stations, harvest surveys and computer modeling.

< Buck Age Structure - The age class structure of the buck population will be monitored through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. The target population size will be achieved through the use of antlerless harvest. Antlerless harvest will be identified in amounts adequate to reduce crop damage, protect ranges and maintain buck objectives. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Agricultural crop damage will be minimized by herding and/or through landowner permits/depredation hunting.

< Habitat - Winter range may be a limiting factor in localized areas. Overall "very poor" range condition rating may be indicative of decreased carrying capacity (see discussions below).

< Predation - Seek assistance of USDA/Wildlife Services for coyote control if needed prior to and during fawning period. Establish annual cougar harvest levels consistent with good multiple use management and to maintain balance with deer objectives.

< Highway Mortality - Highway mortality along I-15 and Highway 14 is significant.

< Illegal Harvest - There is no evidence that illegal harvest is a limiting factor on the unit.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

HABITAT MANAGEMENT OBJECTIVES

< Maintain and protect adequate habitat to support herd objectives.

< Improve quality of critical deer winter range east of I-15 and south of Cedar City.

< Reduce highway deer mortality along Interstate I-15 south of Cedar City and along Highway 14 east of Cedar City.

< A major proportion of both summer and winter habitat for deer on this unit is on private land. Therefore, it is paramount to work with private landowners to maintain both summer and winter habitat. Currently, there is one CWMU of 13,000 acres (Mt. Carmel - Zion) in the Muddy Creek drainage on the east portion of this unit. Other landowners have expressed interest in a CWMU and they may be organized in the future.

< Work with BLM to maintain deer winter range between Cedar City and Anderson Junction on the west side of the unit.

Condition of deer winter range on Unit 29, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1998	43	Poor	35 - 49	50 - 64	65 - 79
2003	32	Very Poor			

All of Zion National Park is within this deer unit and a significant number of deer winter in the park. Cooperative efforts between DWR and park staff will be required to meet objectives of both agencies.

HABITAT MANAGEMENT STRATEGIES

< Deer mortality on I-15 and SR-14 resulting from vehicle collisions has been a problem for years. A deer barrier fence was recently constructed on I-15 from Anderson Junction to the black ridge. Underpasses are present in this area to permit deer passage. Many deer are killed on I-15 between Ash Creek Reservoir and Cedar City. A solution to this problem needs to be developed.

< Monitoring will be accomplished using DWR range trend studies and range rides.

< Seek agency and landowner cooperative habitat management efforts.

< Continue to cooperate in the ongoing habitat improvements in the Muddy/Meadow Creek drainages.

< Maintain and protect critical winter range from future losses. Protect winter range east of I-15 from development from Cedar City to Anderson Junction. Acquire critical winter range when the opportunity arises.

< Continue cutting invading pinyon-juniper on winter range on BLM lands south of Cedar City.

< Protect wintering areas on Smith Mesa and identify specific cooperative range improvement projects.

PERMANENT RANGE TREND SUMMARIES

Unit 29, Zion

Only six range study transects (3 permanent and 3 special studies) have been established on this unit because of the vast amount of private land in this area. All were last read in 2003 and indicated range conditions had fallen from "poor" to "very poor". Browse, soils, and herbaceous understory conditions at almost all of these sites were in a slightly downward to downward condition. Soil conditions were stable in the Elephant Gap Total Exclosure.

Winter range is a limiting factor on the west side of the Zion Unit from Cedar City south to Toquerville where it is adjacent to Interstate 15. Pinyon-juniper encroachment, browse decadence, and invasion of cheatgrass are winter range problems on the unit.

Low DCI ratings might normally require a reduction in population objectives. However, there is a very low number of range trend study sites on this unit and their placement is severely hindered by the large amount of privately owned land. The deer population on this unit is not large enough to adversely impact winter ranges. There are also, as yet, only limited depredation issues on this unit. Range condition monitoring will be highlighted on this unit and the need for adjustments will be assessed in 2008, following the next round of range trend analyses.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit #30
(Pine Valley)
April 2012

BOUNDARY DESCRIPTION

Iron and Washington counties - Boundary begins at I-15 and the Utah-Arizona state line; north on I-15 to SR-56; west on SR-56 to the Lund Highway; northwest along the Lund Highway to the Union Pacific railroad tracks at Lund; southwest on the Union Pacific railroad tracks to the Utah-Nevada state line; south on this state line to the Utah-Arizona state line; west on this state line to I-15.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	Year-long range		Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	15557	23%	212454	67%	182357	38%
Bureau of Land Management	47018	70%	36143	11%	210905	44%
Utah State Institutional Trust Lands	830	1%	1446	<1%	22429	5%
Native American Trust Lands	0	0%	5859	2%	141	<1%
Private	3422	5%	13944	4%	64236	13%
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%	309	<1%
Utah Division of Wildlife Resources	0	0%	0	0%	0	0%
Wilderness (USFS & BLM)	0	0%	47881	15%	2350	<1%
TOTAL	66827	99%	317727	100%	482727	100%

TOTAL FROM 2001 PLAN	**1601**	**100%**	**300053**	**100%**	**466484**	**100%**
CHANGE (+/-)	**+ 65226**		**+ 17674**		**+ 16243**	

UNIT MANAGEMENT GOALS

Overall deer numbers are significantly below both long term and recent (1980's) levels. The unit will be managed to permit deer numbers to increase somewhat, while precluding overuse of ranges and reducing agricultural damage. The unit will be evaluated for different hunt strategies.

POPULATION MANAGEMENT OBJECTIVES

< Target winter herd size – For the short term (life of this plan), manage for a winter population of 12,800 deer on the entire WMU. This is a reduction of 20% from the previous plan period and is

justified as based on the discussion in Permanent Range Trend Summaries at the end of this document. If range trend indicators rebound to the Fair category in the future, the population objective will be amended upward to the long term value of 16,000 deer. This change will be contingent on range quality and quantity increasing to levels capable of sustaining populations at long-term objective levels.

< Herd Composition – Maintain a unit three-year average post-season buck to doe ratio in accordance with the statewide plan.

	Objective from past plan (2001)	Long-term Objective	2006-2014 Objective	Change
Pine Valley	16,000	16,000	12,800	- 3,200

POPULATION MANAGEMENT STRATEGIES

Monitoring

< Population Size - Herd composition and population size will be monitored through post season and spring classification, hunter check stations, harvest surveys and computer modeling.

< Buck Age Structure - The age class structure of the buck population will be monitored through the use of checking stations, postseason classification, uniform harvest surveys and field bag checks.

< Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. The strategy for the Pine Valley unit will be general buck hunting. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios. Antlerless harvest will be directed toward agricultural problems, range problems, and population regulation.

Limiting Factors (May prevent achieving management objectives)

< Crop Depredation - Agricultural damage will be addressed through herding, fencing, landowner permits, mitigation permits, depredation hunts, Division removal and damage payments.

< Habitat - Winter range in localized areas may be a limiting factor. Overall “poor” range condition rating may be indicative of a decline in carrying capacity (see discussions below).

< Predator Management - This unit historically had high densities of mountain lions. Lion harvest will be evaluated and adjusted relative to the widely fluctuating deer populations characteristic of this unit. Coyote control will be addressed under statewide predator management direction.

< Interspecific competition - No limitation generated by elk/deer interactions has been documented.

< Highway Mortality - Highway mortality along I-15, SR-56, SR-18 is significant.

HABITAT MANAGEMENT OBJECTIVES

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

< Maintain critical fawning habitats in good condition.

< Manage public lands adjacent to areas with heavy agricultural depredation to promote deer use during late summer.

< Maintain and protect critical winter range from future losses. Acquire critical winter range when the opportunity arises.

Condition of deer winter range on Unit 30, as indicated by DWR range trend surveys.

Year	Mean DCI score for Unit	Classification	Unit-specific DCI score range: Poor	Unit-specific DCI score range: Fair	Unit-specific DCI score range: Good
1998	45	Fair	28 - 42	43 - 58	59 - 76
2003	34	Poor			

HABITAT MANAGEMENT STRATEGIES

< Habitat suitability will be assessed through annual "range rides", trend studies and casual observation. Unsuitable habitat condition will be addressed through meetings and negotiations with landowners and land management agencies.

< Implement ecosystem management practices, including controlled burns and fuel wood harvest, in the Ox Valley - Lost Peak area, and the east slope of the Pine Valley Mountain.

< Protect riparian areas to furnish cover, water and succulent forage adjacent to areas with historic agricultural damage.

< Provide guzzlers or other water sources where needed on critical summer fawning areas.

PERMANENT RANGE TREND SUMMARIES

Unit 30, Pine Valley

A total of 22 vegetation transects were read in 2003. Average trend of soil conditions on winter ranges was slightly below stable. Average browse condition on winter ranges was slightly downward, despite the currently low deer populations. Conditions Southwest of Newcastle (30-29), Grapevine Spring (30-42) and Bullion Canyon (30-54) were particularly bad, and considerable sagebrush die-off had occurred there. Herbaceous trends on winter ranges were also downward and have shown a steady decline in trend since 1992. Pinyon/juniper thinning projects in conjunction with fuels reduction have been completed on Tobin Bench, Southwest of Newcastle, Woolsey Reseed, and Quitchapa Canyon. In addition, a pinyon/juniper thinning was completed on the North Hills north of Enterprise on SITLA land. All projects completed should contribute to better conditions for wintering deer.

Summer range trend conditions are better, except for herbaceous understory condition, which continued to decline.

Wildfires have had a significant impact on habitats in the southern and western portions of this unit in recent years. Over 250,000 acres have burned in a variety of vegetative types in Washington County since 2003. Where cheatgrass is prevalent, some locations have burned more than once during that time period. In addition, severe flooding in January 2005 drastically altered riparian communities along Moody Wash, Mogatsu Creek, Beaver Dam Wash, Santa Clara River, Virgin River, and neighboring drainages. Results of these events will impact deer use of these areas for several years.

Duration of Plan

This unit management plan was approved by the Wildlife Board on _____ and will be in effect for five years from that date, or until amended.