

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 17
(Wasatch Mountains)
May 2014

BOUNDARY DESCRIPTION

Carbon, Duchesne, Salt Lake, Summit, Utah and Wasatch 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; northwest on US-6 to I-15; north on I-15 to I-80 in Salt Lake City. **EXCLUDING ALL NATIVE AMERICAN TRUST LAND WITHIN THIS BOUNDARY.**

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	YEARLONG RANGE		SUMMER RANGE		WINTER RANGE		TOTAL ACRES
	Area (acres)	%	Area (acres)	%	Area (acres)	%	
Forest Service	17,268	31.6%	687,185	62.0%	104,466	21.7%	808,919
Bureau of Land Management	0	0%	12,105	1.1%	8,768	1.8%	20,873
Utah State Institutional Trust Lands	0	0%	34,450	3.1%	3,939	.8%	38,389
Native American Trust Lands	4,732	8.6%	20,930	1.9%	51,061	10.6%	76,723
Private	28,660	52.4%	297,425	26.8%	240,366	50.0%	566,451
Department of Defense	0	0%	0	0%	0	0%	0
USFWS Refuge	0	0%	0	0%	0	0%	0
National Parks	235	.4%	0	0%	0	0%	235
Utah State Parks	401	.7%	9,153	.8%	13,462	2.8%	23,016
Utah Division of Wildlife Resources	3,433	6.3%	47,363	4.3%	58,330	12.1%	109,126
TOTAL	54,729	100%	1,108,611	100%	480,392	100%	1,643,732

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 40,800 wintering

deer (modeled number).

Unit 17

17a Wasatch West subpopulation:	22,600
17b Currant Creek subpopulation:	15,000
<u>17c Avintaquin subpopulation:</u>	<u>3,200</u>
Total:	40,800 (no change from previous plan)

- 5 year Winter Herd Size – Manage for a 5-year target population of 40,800 wintering deer during the five-year planning period unless range conditions become unsuitable, as evaluated by DWR. Range Trend data coupled with annual browse monitoring will be used to assess habitat condition. If habitat damage by deer is occurring due to inadequate habitat, measures will be taken to reduce the population to sustainable levels.
- Herd Composition – All Wasatch Mountains subunits are General Season subunits and will be managed to maintain a three year average postseason buck to doe ratio according to the statewide plan (17a is managed for 15-17 bucks per 100 does / 17b,c is managed for 18-20 bucks per 100 does).
- Harvest – General Buck Deer hunt regulations, using archery, Rifle, and Muzzleloader hunts apply.

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. The 2013 model estimates the 17a population at 18,700, 17b at 14,300 and 17c at 2,500 deer.
- 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 may 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 could 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.
- Illegal Harvest - If illegal harvest is identified as a significant source of mortality, an attempt to develop specific preventive measures within the context of an action plan will be developed in cooperation with the Law Enforcement Section.

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.
- Seek cooperative projects to improve the quality and quantity of deer habitat.
- Provide improved habitat security and escapement opportunities 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 deer winter range Desirable Component Index (DCI) and other vegetation data. The DCI was created as an indicator of the general health of deer 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 improvement projects. Protect deer winter ranges from wildfire by reseeding burned areas, creating fuel breaks and vegetated green strips and reseed areas dominated by Cheatgrass with desirable perennial vegetation.
- Reduce expansion of Pinyon-Juniper woodlands into sagebrush habitats and improve habitats dominated by Pinyon-Juniper woodlands by completing habitat restoration projects like lop & scatter, bullhog and chaining.

- 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.
- Future habitat work should be concentrated on the following areas.
 - 17a
 - North side of hwy 6 in the Sheep Creek drainage.
 - Wallsburg WMA.
 - North side of Diamond Fork Canyon.
 - Quaking Aspen forests unit wide.
 - Anywhere along the front that would avert deer from entering cities.
 - 17b
 - 17c

Projects Unit 17a 2006-2014	# Projects	Acres
Pinyon-Juniper Projects	1	1,061
Sagebrush Improvement Projects	1	40
Mountain Brush Improvement Projects	3	2,159
OHV Trail Closures	4	104
Weed Control Projects	5	4,700
Total	14	8,064

PERMANENT RANGE TREND SUMMARIES

Unit 17bc, Wasatch Mountains, Currant Creek, and Avintaquin Subunits 2010

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).

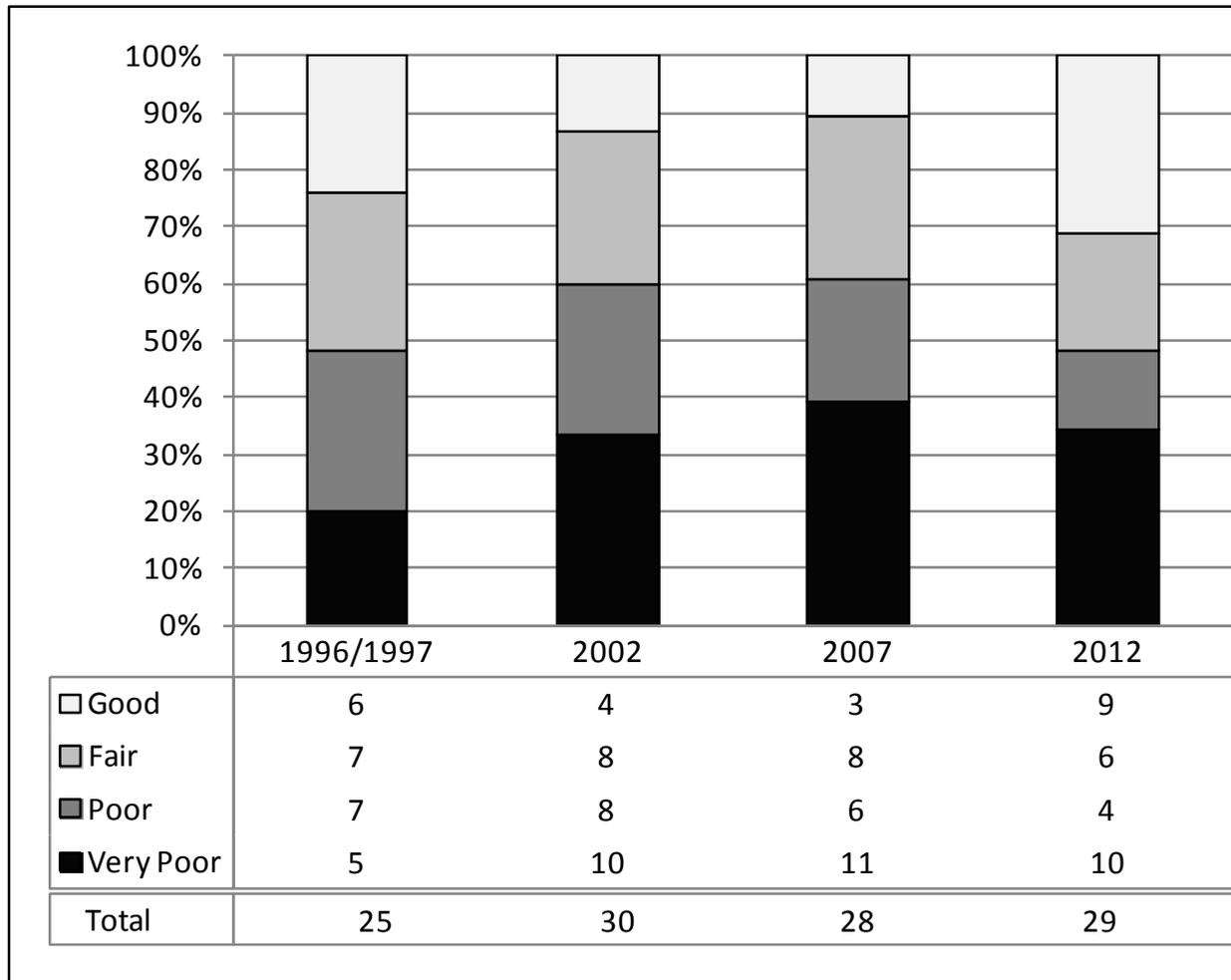
All 16 range trend study sites on these subunits are located in mule deer winter range. Vegetation varies from Pinyon-Juniper at lower elevations to sagebrush-grass and mountain brush communities at the higher elevations.

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 2012



Deer winter range condition trend summary for subunit 17a, Wasatch Mountains, West, as indicated by the deer winter range Desirable Components Index (DCI).

There were 29 permanent range trend study sites sampled on subunit 17a in 2012, all of which are considered to be in deer winter range. For summary purposes the subunit was divided into three distinct areas; Heber Valley, Bonneville Shoreline, and Spanish Fork Canyon.

Heber Valley: Much of the winter range in the Heber Valley area (50%) is privately owned and development has been a continuing concern. Since the early 2000's development has accelerated and some of the most critical range is being converted to housing. Division of Wildlife Resources, State Parks, and federal lands will likely be the key to the survival of deer into the future on this portion of the unit. Important vegetation types monitored include antelope bitterbrush, mixed mountain browse, mixed oakbrush/sagebrush, and mountain big sagebrush.

There were 11 range trend study sites sampled around the Heber Valley area in 2012. Sites in the area showed a general decrease in sagebrush density, cover, and health in 2007. It is thought that an infestation of the sagebrush defoliator moth (*Aroga websteri*) likely occurred throughout the Heber Valley from 2002 to 2007 affecting many of the studies adversely. The moth was sampled on many of the studies in that area in 2007. The health of these sagebrush populations appears to be improving, but density and

cover of sagebrush remained at reduced levels. The abundance of the weedy annual grass species (namely cheatgrass) and bulbous bluegrass is a particular concern on these sites and may inhibit the recovery of sagebrush in the areas.

Bonneville Shoreline: Winter habitat is limited by quality and quantity in this area of the subunit. A large portion of deer winter range is privately owned making it susceptible to development. Housing developments in recent years have consumed much of this important winter range and will likely 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. Important vegetation types monitored include antelope bitterbrush, true mountain mahogany, mixed mountain browse, mixed oakbrush/sagebrush, and Stansbury cliffrose.

There were nine studies sampled along the Bonneville Shoreline area in 2012. The lack of browse species is a primary concern in this area, and is likely an artifact of historic wildfires on many of these studies. The abundance of weedy annual grass species (namely cheatgrass) and bulbous bluegrass is a particular concern on these sites.

Spanish Fork Canyon: The majority of deer winter range is managed by the US Forest Service in this area. These sites are typically higher elevation winter range and may not be used as heavily in more severe winters. Important vegetation types monitored include mixed mountain browse, mixed oakbrush/sagebrush, and sagebrush.

There were nine studies sampled in the Spanish Fork Canyon area in 2012. Browse species do not appear to be limited within this area. The primary concern in this area is the abundance of the weedy grass species bulbous bluegrass. A desirable trend is the increase in perennial grass species on many of the studies in this area.

General Assessment: The winter range within the Heber Valley and Spanish Fork Canyon areas of the subunit appear suitable to support planned deer population objectives. Suitable winter range on the Bonneville Shoreline is more limited due primarily to development and poor quality habitat. Deer will likely be forced to winter in an urban setting during more severe winters in this area. The abundance and increase of bulbous bluegrass is a concern in all of the areas of the subunit because this perennial species can form dense mats of cover that may compete with other more desirable herbaceous species and with seedlings and young shrubs, which potentially limits establishment of new plants into the population. The abundance of cheatgrass in the Heber Valley and Bonneville Shoreline areas of the unit is a concern because this annual species can increase fuel loads and increases the chance of a catastrophic fire event.

Unit 17, Wasatch Mountains/Salt Lake County, East Bench 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.

Precipitation

Vegetation trends are dependent upon annual and seasonal precipitation patterns. Precipitation and Palmer Drought Severity Index (PDSI) data for the unit were compiled from the National Oceanic and Atmospheric Administration (NOAA) Physical Sciences Division (PSD) as part of the Northern Mountains division (Division 5). The Northern Mountains division had a historic annual mean precipitation of 19.13 inches from 1895 to 2012. The mean annual PDSI of the Northern Mountains division displays a cycle of several wet years followed by several drought years over the course of study years (Figure 1 and Figure 2) (Time Series Data 2013).

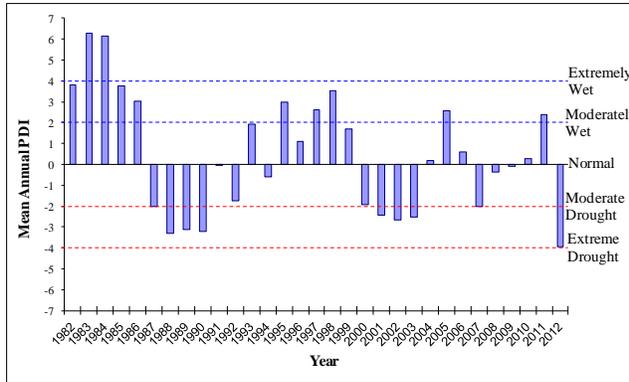


Figure 1. The 31 year mean annual Palmer Drought Severity Index (PDSI) for the Northern Mountains division (Division 5). The PDSI is based on climate data gathered from 1895 to 2012. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet and negative deviations indicate drought. Classification of the scale is ≥ 4.0 = Extremely Wet, 3.0 to 3.9 = Very Wet, 2.0 to 2.9 = Moderately Wet, 1.0 to 1.9 = Slightly Wet, 0.5 to 0.9 = Incipient Wet Spell, 0.4 to -0.4 = Normal, -0.5 to -0.9 = Incipient Dry Spell, -1.0 to -1.9 = Mild Drought, -2.0 to -2.9 = Moderate Drought, -3.0 to -3.9 = Severe Drought and ≤ -4.0 = Extreme Drought (Time Series Data 2013).

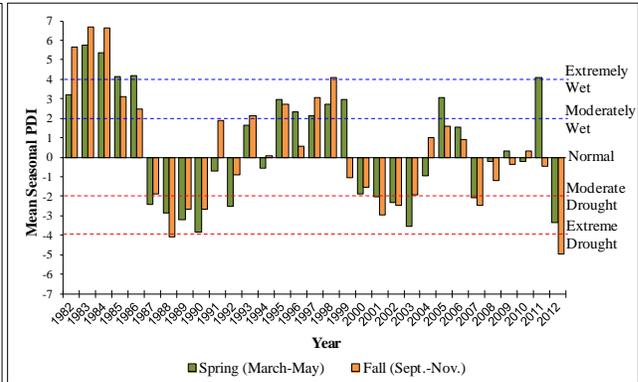


Figure 2. The 31 year mean spring (March-May) and fall (Sept.-Nov.) Palmer Drought Severity Index (PDSI) for the Northern Mountains division (Division 5). The PDSI is based on climate data gathered from 1895 to 2012. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet and negative deviations indicate drought. Classification of the scale is ≥ 4.0 = Extremely Wet, 3.0 to 3.9 = Very Wet, 2.0 to 2.9 = Moderately Wet, 1.0 to 1.9 = Slightly Wet, 0.5 to 0.9 = Incipient Wet Spell, 0.4 to -0.4 = Normal, -0.5 to -0.9 = Incipient Dry Spell, -1.0 to -1.9 = Mild Drought, -2.0 to -2.9 = Moderate Drought, -3.0 to -3.9 = Severe Drought and ≤ -4.0 = Extreme Drought (Time Series Data 2013).

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, Wasatch West Subunit

Salt Lake, Summit, Utah and Wasatch counties—Boundary begins at I-80 and I-15 in Salt Lake City; east on I-80 to US-40; south on US-40 to the Strawberry Bay Marina road; south on this road to USFS Road 042 (Indian Creek road); south and west on this road to USFS Road 051; south on this road to US-6; west on US-6 to US-89; northwest on US-6 to I-15; north on I-15 to I-80 in Salt Lake City. Excludes all CWMUs.

Unit 17-Wasatch Mountains, Avintaquin/Currant Creek Subunit

Carbon, Duchesne, Utah and Wasatch counties—Boundary begins SR-87 and US-40 in Duchesne; north on SR-87 to SR-35; west on SR-35 to SR-32 at Francis; west on SR-32 to US-40; southeast on US-40 to Strawberry Bay Marina Road; south on this road to USFS Road 042 (Indian Creek); south and west on this road to USFS Road 051; south on this road to US-6; southeast on US-6 to US-191; north on US-191 to US-40; east on US-40 to SR-87 in Duchesne. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY. Excludes all CWMUs.

Unit 17-Wasatch Mountains, Salt Lake Subunit

Davis, Salt Lake, and Summit counties—Boundary begins at I-15 and the Weber/Davis county line; east on this county line to the Davis/Morgan county line; south on this county line to the Morgan/Salt Lake county line; south on this county line to the Salt Lake/Summit county line; south on this county line to I-80; east on I-80 to US-40; south on US-40 to Summit/Wasatch county line; west on this county line to the Wasatch/Salt Lake county line; west on this county line to the Salt Lake/Utah county line; west on this county line Upper Corner Canyon Road; north on this road to Highland Drive; north on this road to Pioneer Road; west on this road to 700 East; north on this road to 12300 South; west on this road to I-15; north on I-15 to the Salt Lake/Davis county line; west on this county line to the 4200ft elevation line; north along this elevation to Weber/Davis county line; east on this county line to I-15. EXCLUDES ALL WATERFOWL MANAGEMENT AREAS.