

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 17
(Wasatch Mountains)
December 2023

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.

This boundary has three subunits including:

- **Unit 17a – Wasatch West -- 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.
- **Unit 17b -- Carrant Creek -- 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.
- **Unit 17c – Avintaquin -- Duchesne, Utah and Wasatch Counties** - Boundary begins at US-191 in Duchesne; then south on US-191 to Hwy 6; westerly and northerly on Hwy 6 to the Right Fork of the White River road; north on this road to the Reservation Ridge road; northerly along this road to Big Beaver Springs road; north on this road to Big beaver Springs and Beaver Canyon; northeast along this canyon to the Strawberry river; easterly along this river to US –191 in Duchesne. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS 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	32%	687,185	62%	104,466	22%	808,919
Bureau of Land Management	0	0%	12,105	1%	8,768	2%	20,873
Utah State Institutional Trust Lands	0	0%	34,450	3%	3,939	1%	38,389

Native American Trust Lands	4,732	9%	20,930	2%	51,061	11%	76,723
Private	28,660	52%	297,425	27%	240,366	50%	566,451
Department of Defense	0	0%	0	0%	0	0%	0
USFWS Refuge	0	0%	0	0%	0	0%	0
National Parks	235	1%	0	0%	0	0%	235
Utah State Parks	401	1%	9,153	1%	13,462	3%	23,016
Utah Division of Wildlife Resources	3,433	6%	47,363	4%	58,330	12%	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 43,600 wintering deer (modeled number).

Unit 17

2017 – 2022 Objective 43,600
 2023 – 2027 Objective 43,600
 Change no change

- 5-year Winter Herd Size – Manage for a target population of 43,600 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. 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 reduce deer populations to sustainable levels in localized areas. When available, annual Body Condition Scores (BCS) based on body fat measurements for deer on the unit or adjacent/representative units will be used to assess herd health. The need for antlerless harvest will be based on BCS and range condition.

Subunit Target Winter Herd Size:
 17a Wasatch West subpopulation: 22,600 deer
 17b Currant Creek subpopulation: 17,000 deer
 17c Avintaquin subpopulation: 4,000 deer

- 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 and 17b,c are managed for 18-20 bucks per 100 does).

Table 1 – Current Population Status

Subunit 17a Wasatch West

Year	Buck Harvest	Post-Season fawn/100 Does	Post-Season buck/100 Does	Post-Season Population Estimate	Population Objective	Percent of Objective
2020	1,992	53.6	15.6	22,600	22,600	100
2021	1,976	62.6	14.8	16,000	22,600	71
2022	2,327	55.8	15.5	18,700	22,600	83
3 year Avg.	2,098	57.3	15.3	19,100	22,600	85

Subunit 17b Currant Creek

Year	Buck Harvest	Post-Season fawn/100 Does	Post-Season buck/100 Does	Post-Season Population Estimate	Population Objective	Percent of Objective
2020	803	77.8	17.7	13,700	17,000	81
2021	1,015	63.0	19.5	13,500	17,000	79
2022	1,029	69.0	26.1	16,900	17,000	99
3 year Avg.	949	69.9	21.1	14,700	17,000	86

Subunit 17c Avintaquin

Year	Buck Harvest	Post-Season fawn/100 Does	Post-Season buck/100 Does	Post-Season Population Estimate	Population Objective	Percent of Objective
2020	299	67.2	23.3	3,800	4,000	95
2021	300	62.2	30.6	3,700	4,000	93
2022	383	67.1	23.1	4,000	4,000	100
3 year Avg.	327	65.5	25.7	3,833	4,000	96

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Winter population size will be estimated using an analytical model which incorporates harvest data, postseason and spring classifications, and GPS-collar based survival estimates.

- Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives for buck:doe ratios.

Limiting Factors

- Crop Depredation – DWR will take all steps necessary to minimize depredation as prescribed by state law and DWR policy.
- Habitat - Public land summer and winter range availability, landowner acceptance and range forage conditions will be taken into consideration when determining the population objective. Excessive habitat utilization will be addressed with hunting. Severe drought for the last several years has negatively impacted deer habitats and degraded ranges are a limiting factor for deer population growth.
- Predation - Manage predators according to the predator management policy when habitat is not limiting and predators are demonstrated to have negative impacts on the population. Indices such as doe and fawn survival, population growth rate, body condition scores, ingesta-free body fat, fawn production, and cause-specific mortality will be used to determine predator management strategies. Cougar harvest will be managed according to 2023 Utah House Bill 469.
- Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures, 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.
- Disease Management - Investigate and manage diseases that threaten mule deer populations and continue monitoring for chronic wasting disease (CWD) as stated in the statewide mule deer plan. The DWR will continue surveillance through check stations and other methods to document prevalence, and location of positive animals in accordance with the statewide CWD plan

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, and field inspections. Land management agencies will similarly conduct range monitoring to determine vegetative trends, utilization and possible forage conflicts.

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 acquisitions, 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, bull hog and chaining.
- Cooperate with partners to maintain, improve and expand availability of water for deer in arid/limiting area on the unit using guzzlers, improved springs, and/or other water systems.
- 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 Wasatch West
 - 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 Wasatch Front that would avert deer from entering cities
 - 17b Currant Creek
 - West Fork of the Duchesne
 - Currant Creek WMA
 - Tabby Mountain WMA
 - Wildcat WMA
 - 17c Avintaquin
 - Dollar Ridge Fire
 - Strawberry River WMA
 - Horse Ridge WMA
 - Reservation Ridge
 - Strawberry Peak area (Slab Canyon, Cow and Calf Hollow, etc.)

PERMANENT RANGE TREND SUMMARIES

Unit 17a, Wasatch Mountains, West subunit 2022

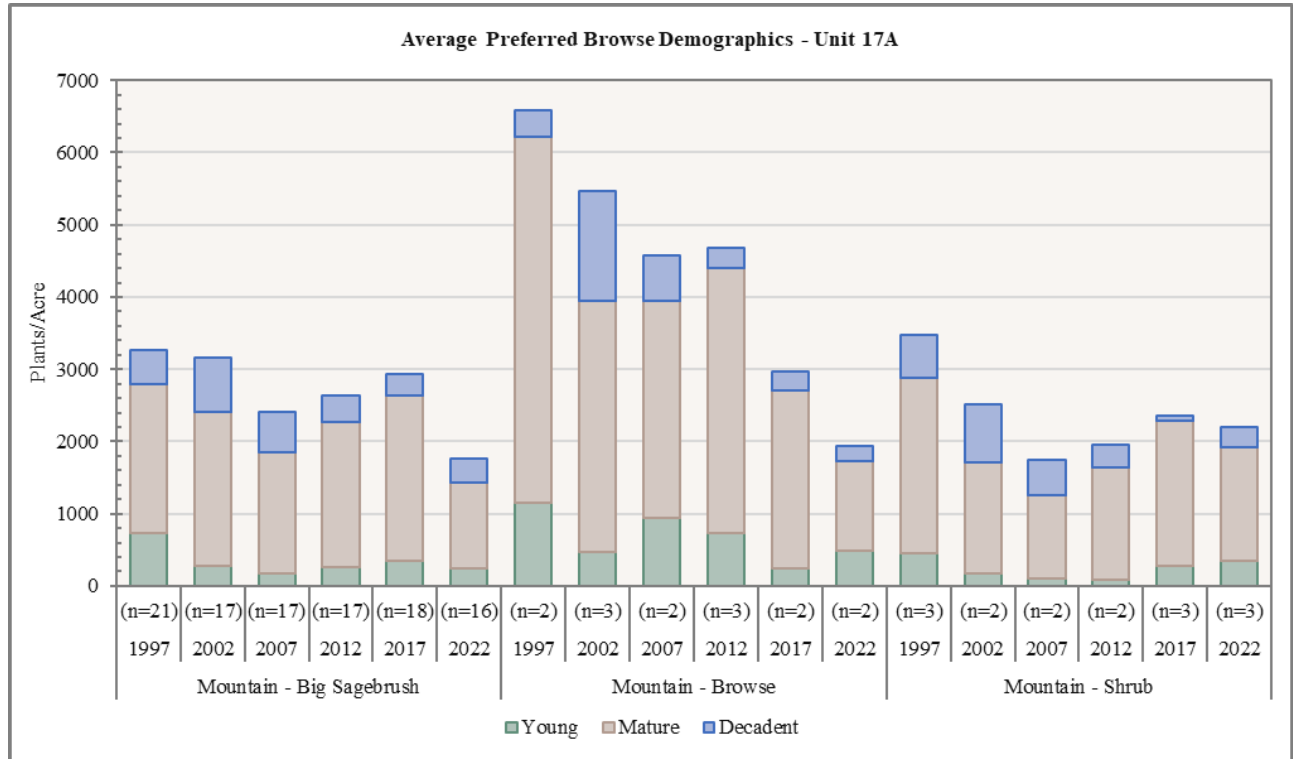


Figure 1. Deer winter range condition trend summary for subunit 17a, Wasatch Mountains, West, as indicated by the deer winter range Desirable Components Index (DCI).

There were 29 permanent range trend study sites sampled on subunit 17a in 2022, all of which are considered to be in deer winter range (see Figure 3). 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 2022. 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 2022. The lack of browse species is a primary concern in this area, and is likely an artifact of historical 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 2022. 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 2022. 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.

Drought Index – Wasatch Mountains

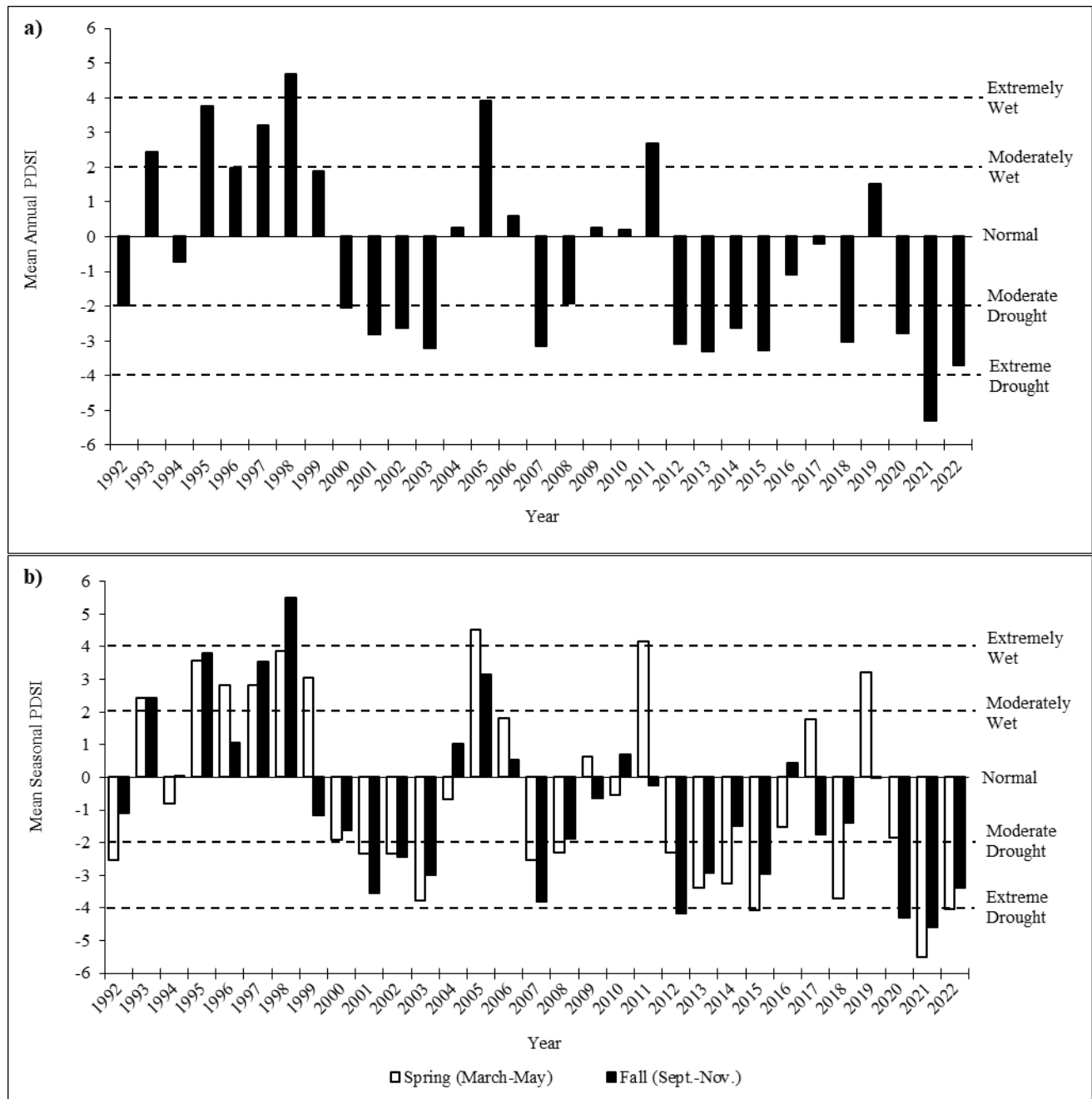


Figure 2: The 1992-2022 Palmer Drought Severity Index (PDSI) for the North Central division (Division 3). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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. **a)** Mean annual PDSI. **b)** Mean spring (March-May) and fall (Sept.-Nov.) PDSI (Time Series Data, 2023).

DURATION AND AUTHORITY OF PLAN

This unit management plan was approved by the Division Director in Dec. 2023 and will be in effect for five years, or until amended. Unit deer plan goals, objectives and strategies are constrained within the sideboards set in the statewide deer plan, which supersedes unit plans. It is possible that changes to the statewide deer plan may affect unit plans. Additionally, changes to Utah State Code and/or Administrative Rules may also affect deer unit plans.