

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 5
East Canyon
September 2023

BOUNDARY DESCRIPTION

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

LAND OWNERSHIP

Approximate Land Ownership of Mule Deer Habitat

Ownership	Yearlong Range		Summer Range		Spring/Fall Range		Winter Range		All Ranges
	Area (Acres)	%	Area (Acres)	%	Area (Acres)	%	Area (Acres)	%	Area (Acres)
Bureau of Land Management	0	0%	318	<1%	0	0%	222	<1%	540
Bureau of Reclamation	0	0%	0	0%	0	0%	293	<1%	293
Department of Defense	0	0%	0	0%	0	0%	196	<1%	196
Forest Service	577	14%	37,197	18%	11,486	40%	20,710	23%	69,970
Private	3,499	86%	168,191	80%	17,209	60%	64,421	73%	253,320
Division of Wildlife Resources	0	0%	2,283	1%	0	0%	1,393	2%	3,676
Utah State Parks	0	0%	1,115	1%	2	<1%	1,137	1%	2,254
TOTAL	4,076	100%	209,104	100%	28,697	100%	88,372	100%	330,249

UNIT MANAGEMENT GOALS

- Manage for a healthy population of 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 – Manage for a target population objective of 13,500 wintering deer based on the best available model, range conditions and as public tolerance allows. This

objective can be modified if deer populations, range condition, deer body conditions, or human/wildlife conflict indicate that the current objective needs adjustment. Current research on survival, body condition, production data, and cause specific mortality in combination with range trend data, wildlife tolerance on private property, human/wildlife conflict levels, and past population model estimates are used to set this objective.

Unit 5

1994-2002 Objective: 9,500
 2003 Objective: 8,500
 2004-2013 Objective: 7,000
2014-2028 Objective: 13,500

Change from last plan: No change

- Herd Composition – Manage for a postseason buck:doe ratio of 18-20 bucks:100 does in accordance with the statewide plan.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Utilizing harvest data, postseason classifications, and GPS collar mortality estimates, an analytical model will be used to estimate winter population size. Cause specific mortality, body condition and vital rates of collared animals will be used to guide management decisions.
- Buck:Doe Ratios – Postseason classification will be conducted to monitor buck/doe ratios.
- Harvest - The primary technique used to estimate harvest over the unit is the statewide uniform harvest surveys. 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 objective and to address depredation conflicts.

Year	Buck Harvest	Post-Season Fawns:100 Does	Post-Season Buck:100 Does	Post-Season Population Estimate	Population Objective	% of Objective
2017	972	79	24	14,300	13,500	106%
2018	997	71	34	16,600	13,500	123%
2019	691	52	24	12,000	13,500	89%
2020	556	57	21	12,800	13,500	95%
2021	811	65	28	9,800	13,500	73%

Limiting Factors

A myriad of factors may prevent mule deer populations on East Canyon from reaching objective. These factors include:

- Crop depredation
 - Damages and losses to agricultural crops may limit landowner tolerance for deer in localized areas on the unit. Depredation issues will be addressed in accordance with state law and DWR Policy. Antlerless hunts on private lands or in smaller portions of the unit may be used to reduce the number of animals in specific geographic areas where crop damage is exorbitant.

- Habitat
 - Currently, the loss and reduced quality of winter range is a major limiting factor for mule deer on the unit. Strategies to preserve winter range are paramount in achieving the population objective. Some strategies include:
 - Keep lands enrolled in the Cooperative Wildlife Management Unit program to prevent winter range from being developed.
 - Implement water improvement projects.
 - Implement an array of habitat treatments to eliminate noxious weeds and increase sagebrush and other desirable vegetation for mule deer.
 - Enroll lands in the walk in access program or conservation easement agreements to prevent development and provide funding opportunities for landowners to improve habitat.
 - Make efforts to acquire land that is critical habitat for mule deer.

- Predation
 - Predation from cougars has the potential to suppress deer populations, under certain circumstances. Additionally, predation from coyotes, has the potential to limit recruitment of fawns into the population. GPS collar mortality data, population estimates, body condition, weather conditions, habitat quality, and population growth rates of deer will be used, in accordance with policy W1AG-4 *Managing Predatory Species* to determine when to implement predator control measures. Cougar harvest will be managed according to 2023 Utah House Bill 469.

- Highway mortality
 - Over the last five years, 2,112 deer mortalities were reported from deer-vehicle collisions on the East Canyon unit. Coordination with Utah Department of Transportation will be ongoing to identify areas where high fencing, crossing structures, and warning signs can be installed to reduce wildlife-vehicle collisions. Portions of Interstate-84 and Interstate-80 are current candidates for future projects.

- Urban development
 - Habitat along the benches between Salt Lake and South Ogden, the west side of Morgan Valley, and large land parcels west of Henefer continues to be lost to development. As urban sprawl continues, conflicts with wildlife continue to increase. Three strategies will be used to address urban development.
 - The Urban Deer Control Rule, R657-65, will be used to help municipalities address urban deer issues.
 - Localized hunting opportunities outside of municipal boundaries may be used to limit deer populations around cities and towns.
 - Continued outreach efforts to educate the public may be used to increase tolerance for deer and enable residents to co-exist with higher deer numbers.

- Disease
 - The impact that disease has on mule deer populations varies widely and can be challenging to assess. Diseases found on the unit include bluetongue, epizootic hemorrhagic disease (EHD), and pneumonia. Additionally, Chronic Wasting Disease (CWD) was detected on the unit in 2022. Current prevalence is below 1% and current detections are within North Salt Lake and Bountiful city limits. Monitoring and mitigation for CWD will be in accordance with the Statewide Deer Plan. CWD mitigation and monitoring strategies may include:
 - Conduct rotational hunter harvest surveillance.

- Allow for expanded season dates and boundaries for urban deer removals.
 - Consider late season buck hunts in focal hotspots to minimize disease transmission.
 - Involve Cooperative Wildlife Management Units (CWMUs) in sample collection to monitor the distribution and prevalence of CWD within the unit.
 - Educate the public and enforce rules regarding carcass importation and disposal from CWD positive areas.
 - Implement water improvement projects to distribute animals more evenly across the landscape and reduce the number of deer and elk congregating at limited water sources.
- **Illegal Take**
 - Illegal take is not currently a significant source of mortality. Should illegal kill become an identified and significant source of mortality, an Action Plan will be developed in coordination with the Law Enforcement Section to develop specific preventive measures.

HABITAT MANAGEMENT OBJECTIVES

- Minimize the loss of winter range habitat due to urban development.
- Protect and improve existing habitat on private and public lands that benefit mule deer populations.
- Build partnerships with private landowners and federal agencies to implement habitat restoration projects on private and public land.
- Through the WRI process and partnerships with state, federal, and private organizations, acquire funding for habitat restoration projects on summer and winter ranges.

HABITAT MANAGEMENT STRATEGIES

- Coordinate with livestock owners to implement grazing strategies that promote good rangeland health on private property.
- Use GPS collar data to determine habitat selection by mule deer and use this data to guide potential habitat improvement projects.
- Construct beaver dam analogs and relocate nuisance beavers into drainages approved in the Utah Beaver Management Plan to improve stream and riparian habitats.
- Continue permanent range trend studies to monitor habitat quality across the unit.
- Utilize antlerless deer harvest to improve or protect forage conditions when vegetative declines are attributed to deer over utilization.
- Protect winter ranges from wildfire by reseeding burned areas with desirable perennial vegetation and creating fuel breaks.
- Manipulate oak stands to reduce inaccessible feed and thin vegetation to a desirable density that is optimal for wildlife use. This can include mowing of oak in a mosaic to promote new growth.
- Reduce cheat grass using pre-emergence and restore sagebrush steppe habitats through reseeding or planting efforts on winter range.
- Create, improve, and maintain various types of water sources such as guzzlers, springs, catch basins, and streams through a variety of methods and in conjunction with partnering agencies and private land owners.
- Protect land from development by enrolling it in the CWMU program, the Walk-in Access program, conservation easements, and providing other incentives for property owners to manage land for wildlife or multi use.
- Explore new strategies to reduce noxious weeds, improve water quality and quantity, and establish desirable forage on low elevation ranges where habitat restoration efforts have not always proved successful.
- In areas with large stands of dying conifer, consider prescribed burns, or collecting deadfall to stack and burn on summer range. This will reduce the risk of a high intensity fire and allow for aspen regeneration.

2021 PERMANENT RANGE TREND SUMMARY

Unit Description

The East Canyon Unit is located mostly on the eastern side of the Wasatch Mountains. The topography varies across the unit, ranging from deep canyons and steep slopes in the western portion to more gentle open slopes and fewer cliffs in the east. Most of the unit is drained by the Weber River: several creeks (including the East Canyon Creek) along the north and east edges of the unit drain directly into the river. East Canyon Reservoir is located approximately in the center of the unit. The highest elevations in the management unit are along the western boundary on peaks of the Wasatch Range that reach above 9,500 feet. The lowest point is 4,800 feet in the northwestern corner where the Weber River flows out of the unit.

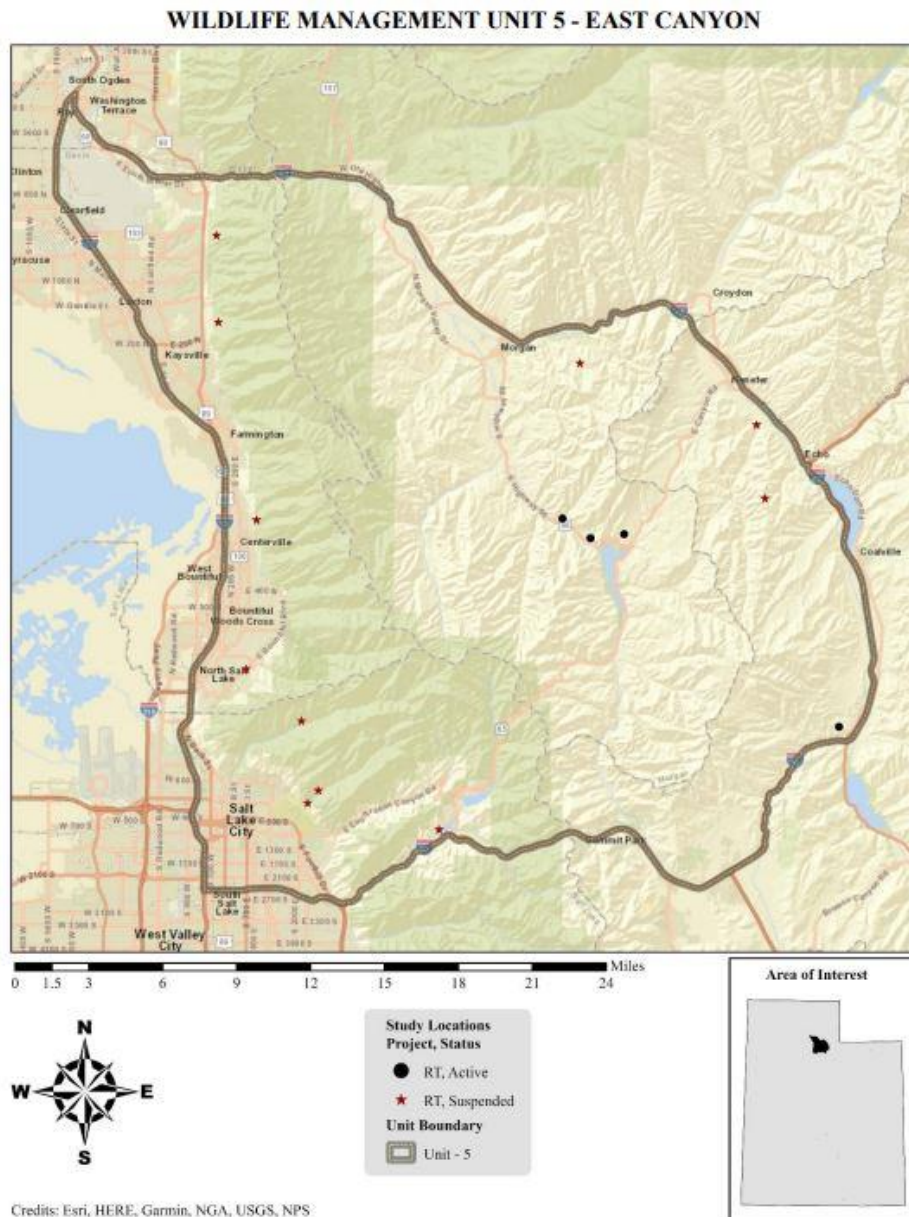


Figure 1. Current (black points) and suspended (red stars) Range Trend study sites for WMU 5, East Canyon.

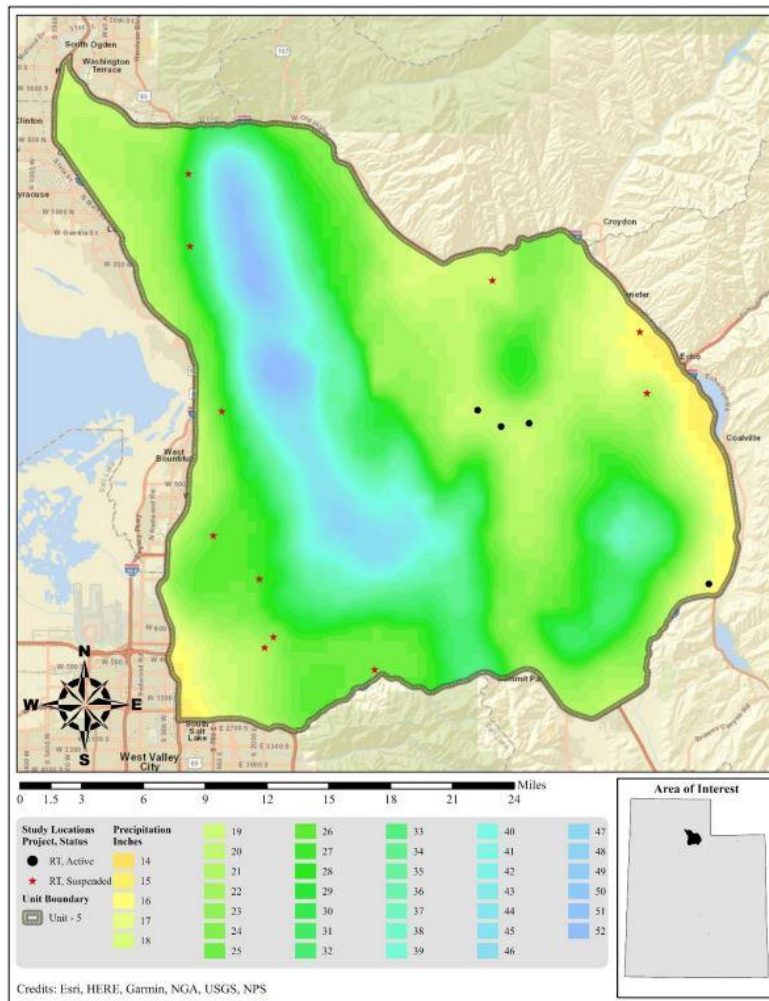


Figure 2. The 1991-2020 PRISM Precipitation Model for WMU 5, East Canyon (PRISM Climate Group, Oregon State University, 2021).

Past Treatments and Restoration Work

There have been efforts to address the limitations on this unit through the Watershed Restoration Initiative (WRI). A total of 2,216 acres of land have been treated within the East Canyon unit since the WRI was implemented in 2004. An additional 1,117 acres are currently being treated, and treatments are proposed for 1,142 acres. Treatments frequently overlap one another bringing the net total of completed treatment acres to 1,920 acres for this unit. Other treatments have occurred outside of the WRI through independent agencies and landowners, but the WRI comprises the majority of work done on deer winter ranges throughout the State of Utah. Herbicide application to remove unwanted vegetation is the most common management practice in this unit. Transplanting shrub species is also very common, and other management practices such as discing and seeding desirable herbaceous species are also implemented.

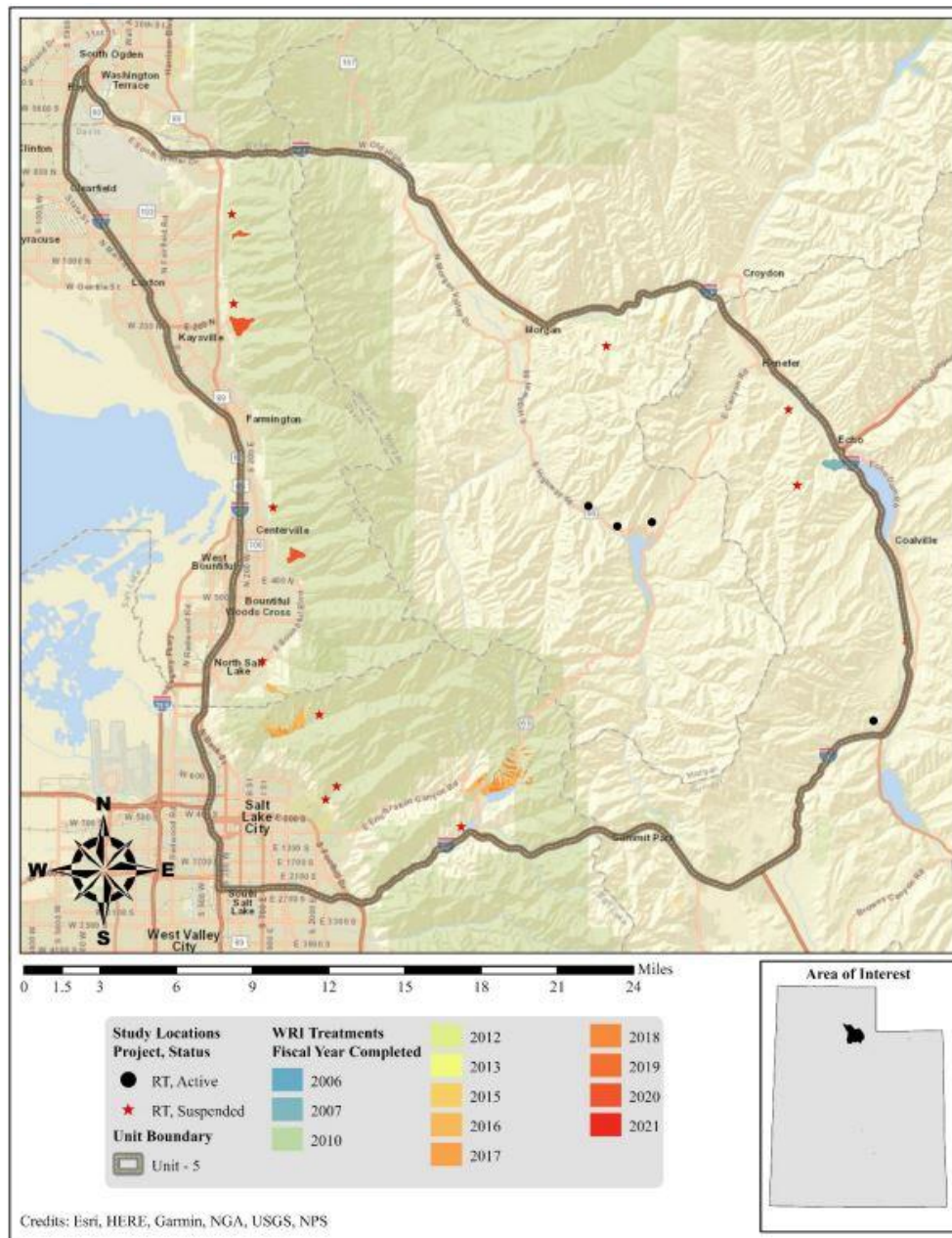


Figure 3. WRI Treatments by fiscal year completed for WMU 5, East Canyon.

Winter Range Condition

The overall deer winter range assessment in 2021 for WMU 5 was poor to very poor. Much of the poor condition can be attributed to an abundance of annual grass, and a lack of preferred browse recruitment and age class diversity. Over the duration of the study, preferred browse species have been lacking on Red Rock Canyon with much of the winter condition benefiting only from an abundance of perennial grass.

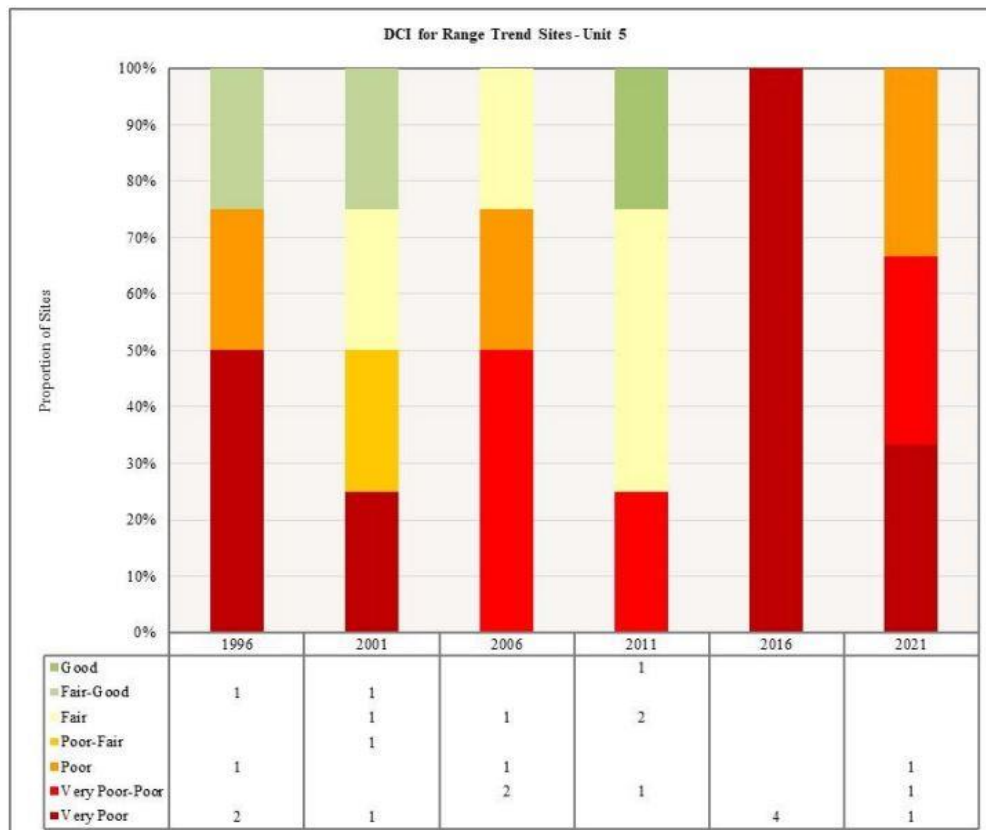


Figure 4. Deer winter range Desirable Components Index (DCI) summary by year of Range Trend sites for WMU 5, East Canyon.

- **Mountain Winter Range**

The high elevation study sites that are considered to be Mountain (Big Sagebrush) ecological sites are considered to be in very poor to poor condition for deer winter range habitat on the East Canyon unit. Although the herbaceous understories are abundant, annual grasses, namely cheatgrass (*Bromus tectorum*) or field brome (*B. arvensis*), are present or have been present in amounts that pose a high-level threat to the ecological integrities of all three study sites. In high amounts, annual grasses boost fuel loads, increase the risk of catastrophic wildfire, and alter wildfire return intervals. Introduced perennial grass species are also present on these studies, posing a high-level threat on the East Canyon Reservoir and Red Rock Canyon studies and a medium-level threat on the Tucson Hollow site. At higher elevations, introduced perennial grasses are often aggressive and can outcompete native grasses and forbs for resources. This in turn results in decreased prevalence and abundance of more desirable species. Finally, the noxious weed species jointed goatgrass (*Aegilops cylindrica*) and gypsyflower (*Cynoglossum officinale*) are present or have been present in the past in low amounts on the Tucson Hollow study. Much like introduced perennial grass species under the right conditions, noxious weeds are also aggressive and can also lead to reduced herbaceous diversity when present in higher amounts. In addition, evidence of drought is apparent on the East Canyon Reservoir study. Extended periods of drought may result in reduced vigor and abundance of shrub and herbaceous species and reduced resilience and resistance of the ecosystem to disturbance.

- **Upland Winter Range**

Wanship, the mid-elevation study site of this ecological type, is considered to be in very poor condition for deer winter range habitat on this unit. A sagebrush community was supported in the past, but the site now hosts an abundant herbaceous understory. Introduced perennial grasses

such as crested wheatgrass (*Agropyron cristatum*) are present on this site in high amounts as of 2016, posing a high-level threat to the site's ecological integrity. Although they can provide valuable forage, introduced perennial grasses are often aggressive and can lead to reduced prevalence and abundance of other more desirable native grass and forb species by outcompeting them for resources. The Wanship WILDLIFE MANAGEMENT UNIT 5 – EAST CANYON 210 study is also threatened by urban development, as it is on private land directly adjacent to a house and other associated structures. Urban development often leads to fragmentation and loss of habitat as valuable shrub and herbaceous communities are often negatively impacted or removed entirely by construction, roads, etc. In addition, pellet transect data taken in the most recent sample year (2016) indicates that moderate use by elk was occurring on this study, posing a medium-level threat. Overuse by elk can lead to decreased vigor in the shrub and herbaceous understory. Finally, the introduced annual grass species cheatgrass (*Bromus tectorum*) has been observed on this site in all sample years since 1996. Although cover has remained low during recent samplings, cheatgrass did contribute moderate cover in 1996, indicating that there may be the potential for a future resurgence of annual grasses. In high amounts, these grasses increase fine fuel loads, exacerbate the risk of wildfire, have the potential to alter wildfire regimes and may lead to reduced herbaceous diversity.

More detailed information regarding Range Trend data, results, trends, methodologies, tables and summaries can be found at the Utah's Big Game Range trend Studies web site at <https://wildlife.utah.gov/range-trend.html>

DURATION AND AUTHORITY OF PLAN

This unit management plan was approved by the Division Director in Sept. 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.