

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 11
Nine Mile
October, 2016

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

Ownership	Yearlong range		Summer Range		Winter Range	
	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

- 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.

POPULATION MANAGEMENT OBJECTIVES

- < **Target Winter Herd Size** - Manage for a 5-year target population of 8,500 wintering deer (modeled number) 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

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

Anthro subunit: 2,500

Range Creek subunit: 6,000

- < **Herd Composition** – Manage for a three year average postseason buck to doe ratio of 18 to 20 bucks/100 does in accordance to the statewide plan.
- < **Harvest** – Manage harvest by having 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. A late season limited entry muzzleloader hunt will be offered to provide additional opportunity for hunters. This hunt is allowed on units which exceed the 18 to 20 bucks/100 doe objective. Antlerless permits will be issued to address specific localized crop depredation or range degradation.

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 population model to determine a winter deer herd population size. The modeled population estimate for the winter of 2015 was 6800 deer with approximately 3/4 of the deer residing on the Range Creek Subunit (5,100 deer) and 1/4 of the deer on the Anthro Subunit (1,700 deer).
- **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.

- Research - Continue radio telemetry survival study of transplanted deer on the Anthro Unit and expand to Range Creek Subunit as deer are transplanted there.
- Population Augmentation - Transplant deer to portions of the unit with low deer densities identified in the approved transplant list. These include portions of the West Tavaputs Plateau and the eastern portion of the Anthro unit. Consider transplant sources from areas with high deer densities and range over-utilization on this and other units as well as areas of urban nuisance populations.
- 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. This is not a CWD positive unit but is adjacent to one and has had domestic elk facilities that have had incidences of CWD. Continue surveillance through check stations and other methods to document prevalence, and location of positive animals.

Population Trends and Harvest for the Nine Mile Unit

Year	Buck harvest	Post-Season Fawns/100 does	Post-Season B/100 doe	Post-Season Population	Objective	% of Objective
2012	460	59	25	4,700	8,500	55%
2013	438	56	23	5,400	8,500	64%
2014	436	67	29	6,200	8,500	73%
2015	536	68	32	6,800	8,500	80%
3 Year Avg	470	64	28			

Strategies to address Limiting Factors:

- Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.
- Habitat - Summer Range is limiting on this unit. Limited portions of the winter range are in poor condition as a result of drought and/or overutilization by wildlife, feral horses, and domestic livestock. Utilization of key shrub species on critical winter ranges will be monitored. This unit has large tracts of private land.
- Predation – We will follow DWR predator management policy and include coyote control to protect newly transplanted populations of deer on the Anthro 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 – 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, and local governments to maintain and protect critical and existing ranges from future losses and degradation through grazing management and OHV and Travel Plan modifications.
- < Work with federal, private, and state partners to improve crucial deer habitats through the Watershed Restoration Initiative (WRI) process.
- < Work with federal and state partners in fire rehabilitation on crucial deer habitat through the WRI process
- < Maintain and protect critical winter range from future losses. Acquire critical winter range when the opportunity arises.
- < Minimize and 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, reseeding, controlled burns, grazing management, water developments etc. on public and private lands. Habitat improvement projects will occur on both winter ranges and summer range.
- < Continue to monitor permanent range trend studies located throughout the unit.
- < Conduct cooperative seasonal range assessments to evaluate forage condition and utilization. Determining opportunities for habitat improvements will be an integral part of these surveys. This will also be pivotal in determining if antlerless harvest is necessary.
- < Work toward long term habitat protection and preservation through the use of agreements with federal agencies and 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.
- < Manage vehicle access on DWR lands to limit human disturbance during times of high stress, such as winter and fawning.
- < Manage riparian areas in critical fawning habitat to furnish water, cover and succulent forage from mid to late summer.
- < Protect deer winter ranges from wildfire by reseeding burned areas, creating fuel breaks and vegetated green strips and reseed areas dominated by cheat grass with desirable perennial

vegetation.

- < Reduce expansion of Pinion-Juniper and other woodlands into sagebrush habitats and improve habitats dominated by Pinion-Juniper woodlands by completing habitat restoration projects like lop & scatter, bullhog, and chaining.
- < Manage conifer encroachment on important summer ranges by utilizing prescribed fire.
- < Cooperate with federal agencies in managing wild horse numbers within approved objectives to minimize competition and resource degradation of habitats important to deer.
- < Utilize antlerless deer harvest to improve or protect forage conditions when vegetative declines are attributed to deer over utilization.

PERMANENT RANGE TREND SUMMARIES

Unit 11a, Nine Mile, Anthro Subunit

Deer Winter Range Condition Assessment

The condition of deer winter range Nine Mile, Anthro management subunit has continually changed on the sites sampled since 1995. All of the Range Trend study sites (Cottonwood Canyon and Nutter’s Canyon) are considered to be in good condition as of the 2015 sample year (Figure 1). The single treated study site, Big Wash, was sampled before treatment and is in very poor condition. It is possible given a treatment, more time, and continual monitoring that this site will improve.

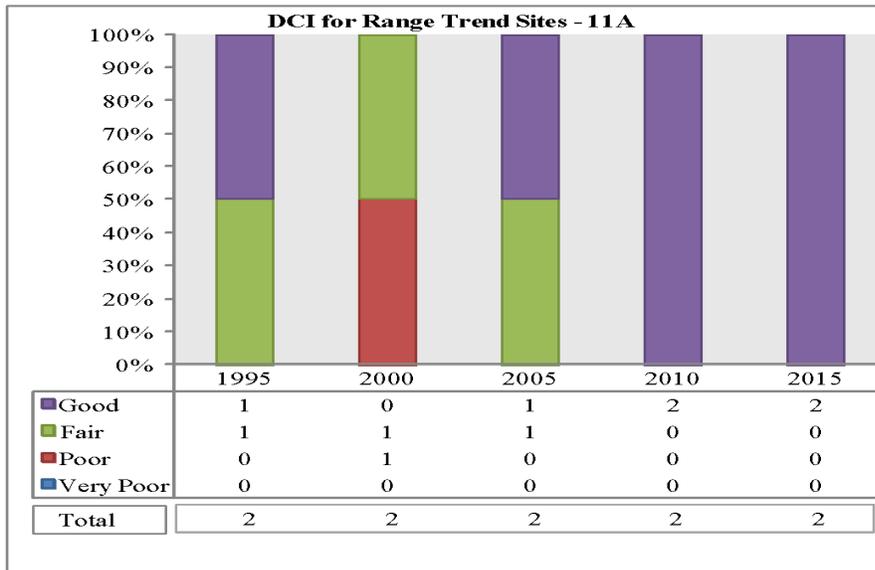


Figure 1. Deer winter range Desirable Components Index (DCI) summary by year of undisturbed sites for WMU 11A, Nine Mile, Anthro.

Unit 11b, Nine Mile, Range Creek Subunit

There are 12 permanent winter range trend sites on the Range Creek Subunit of the Nine Mile Unit that were read in 2015. The overall trend in relative winter range health as noted by the DCI has been slightly improving over the past two decades. Browse cover and density has improved on 11 of the 12 sites measured, whereas the herbaceous component is improving on only 7 of the 12 sites (See Figures 2 and 3). Most range trend sites across the unit show light deer use with a few sites near the town of Price showing extremely high use.

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.

Figure 2. Trends in Shrub Cover on 4 Ecological Types Representing the Majority of Mule Deer Winter Ranges

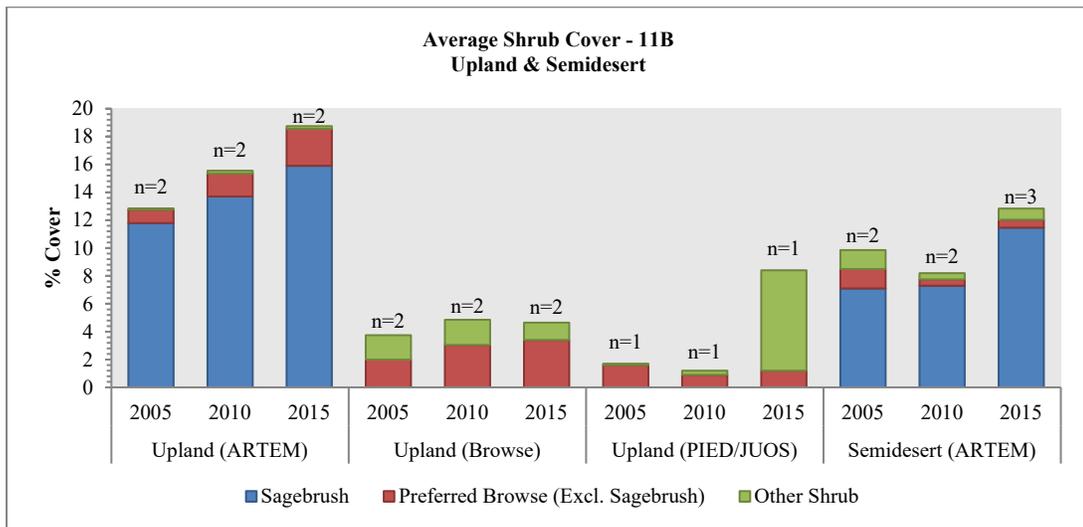
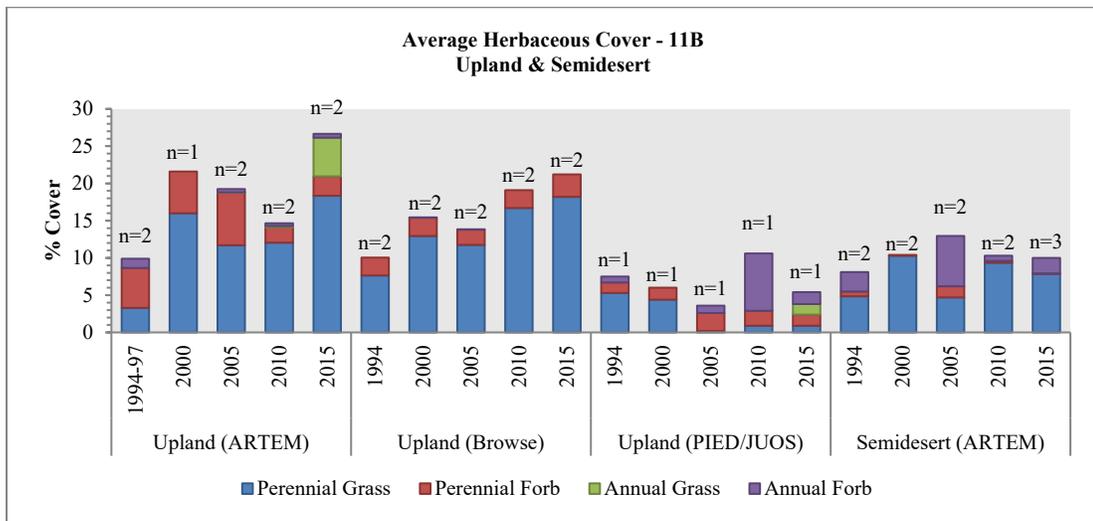


Figure 3. Trends in Herbaceous Cover on 4 Ecological Types Representing the Majority of Mule Deer Winter Range.

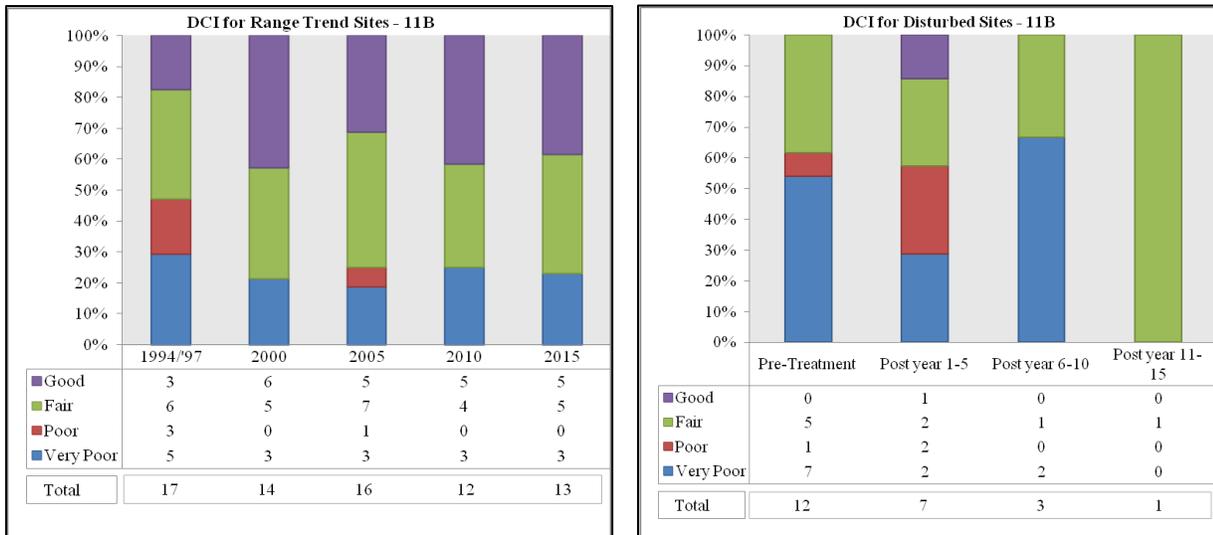


Deer Winter Range Condition Assessment

The condition of deer winter range within the Nine Mile, Range Creek management unit has continually changed on the sites sampled since 1994. Airport, Coal Creek, Cedar Ridge, Twin Hollow, and Steer Ridge remained in good condition. Airport Bench, Cottonwood, Cedar Corral, Dugout Creek PJ Chained, and Deadman Creek are in fair condition. Finally, the Deadman, 'B' Canyon, and Prickly Pear studies are considered to be in very poor condition generally due to the lack of browse cover and sagebrush diversity (Figure 4a). The treated study sites range from very poor to good. The treated sites have generally improved as time since treatment increases; the exceptions to this are the East Carbon Bullhog and Horse Canyon studies, which went from poor to very poor, and Deadman, which remained in very poor condition. Cold Springs WMA, Dugout, Cottonwood, and Cottonwood Ridge were all sampled prior to treatment and were in very poor or fair condition. West Coal Creek Bullhog improved from very poor to

fair, Airport Bench and Dugout Creek PJ Chained remained in fair condition. It is possible given more time and continual monitoring that these sites will continue to improve.

Figures 4a and 4b. DCI Scores for Permanent Range Trend and Disturbed Sties, 1994 - 2015.



Discussion and Recommendations

Mountain (Sagebrush)

The high elevation mountain ecological sites which support sagebrush communities are generally considered to be in good to excellent condition for deer winter range habitat on this unit. The sagebrush communities on these sites provide valuable browse in mild and moderate winters. These communities can be susceptible to invasion from annual grasses, primarily cheatgrass, which can boost fuel loads and increase the threat of wildfire. Some of these ecological sites are also prone to encroachment from pinyon-juniper trees which can reduce understory shrub and herbaceous health if not addressed.

When necessary, it is recommended that work to reduce pinyon-juniper encroachment (e.g. bullhog, chaining, lop and scatter, etc.) should begin in affected communities, although care should be taken to select methods which will not increase annual grass loads.

Mountain (Browse)

The high elevation mountain browse communities are considered to be in fair to excellent condition for deer winter range habitat on the unit. These communities support dense shrub populations that provide browse in moderate to severe winters. Some of these ecological sites can be prone to encroachment from pinyon-juniper trees which can reduce understory shrub and herbaceous health if not addressed.

It is strongly recommended that work to prevent and reduce pinyon-juniper encroachment (e.g. bullhog, chaining, lop and scatter, etc.) should begin in these communities.

Upland (Sagebrush)

The mid elevation upland ecological sites which support sagebrush communities are considered to be in fair condition for deer winter range habitat on the unit. These communities support shrub populations that provide valuable browse in moderate to severe winters. These ecological sites are prone to

encroachment from pinyon-juniper trees which can reduce understory shrub and herbaceous health if not addressed. In addition, annual grasses, primarily cheatgrass, have the potential to invade the understory in some of these communities. In high amounts, cheatgrass can increase fuel loads and exacerbate the risk of wildfire.

Although tree cover is currently low on these sites, it is strongly recommended that work to monitor and reduce pinyon-juniper encroachment (e.g. bullhog, chaining, lop and scatter, etc.) should continue. Treatments to reduce annual grass may be necessary on some sites.

Upland (Browse)

These mid elevation upland browse communities are considered to be in very poor condition for deer winter range habitat on the unit. These communities support shrub populations that provide browse in mild to moderate winters. Like the higher elevation mountain potential sites, these sites have introduced perennial grasses present in the herbaceous understories. These grasses have the potential to be aggressive and may reduce the abundance of other native grass and forb species. Encroachment from pinyon-juniper trees has also been an issue within some of these communities; this encroachment can reduce understory shrub and herbaceous health if not addressed.

If reseeding is necessary to restore herbaceous species, care should be taken in species selection and preference should be given to native grass species when possible. Work to reduce and/or prevent pinyon-juniper encroachment (e.g. bullhog, chaining, lop and scatter, etc.) should begin on sites that are affected by tree encroachment.

Upland (Twoneedle Pinyon/Utah Juniper)

This mid elevation twoneedle pinyon/Utah juniper community is considered to be in very poor condition for deer winter range habitat on the unit. This community supports mixed shrub populations that provide browse for wildlife. Annual grasses, mainly cheatgrass, are a potential issue in this community. Although cover is currently low, increased amounts of cheatgrass can increase fuel loads and exacerbate the threat of wildfire. This ecological site is also prone to encroachment from pinyon-juniper trees which can reduce understory shrub and herbaceous health if not addressed.

Treatments to reduce annual grass may be necessary if cover increases. It is also recommended that work to reduce pinyon-juniper encroachment (e.g. bullhog, chaining, lop and scatter, etc.) should continue in this community.

Semidesert (Sagebrush)

These low elevation semidesert ecological sites that support sagebrush communities are considered to be in fair to good condition for deer winter range habitat on the Nine Mile, Range Creek management unit. Sagebrush populations on these sites are generally robust, but sagebrush on the Airport Bench study is rather depleted. Introduced perennial grass species which can be aggressive are present on some sites. Although tree cover is low, pinyon-juniper encroachment is occurring in these communities and they are considered to be in Phase I of woodland succession. Invasion from annual grasses, primarily cheatgrass, is an additional threat to the herbaceous understories of these communities. Cover of cheatgrass is currently low, but increased amounts in the future could increase fuel loads and the risk of wildfire in these communities.

It is recommended that efforts to monitor and/or reduce pinyon-juniper encroachment (e.g. bullhog, chaining, lop and scatter, etc.) should begin or continue on these sites. If reseeding is deemed necessary to restore herbaceous species, care should be taken in species selection and preference should be given to native grass species when and where possible.

Treatments/Restoration Work

There has been an active effort to address many of the limitations on this unit through the Watershed Restoration Initiative (WRI). A total of 17,887 acres of land have been treated within the Nine Mile, Range Creek unit since the WRI was implemented in 2004. Treatments frequently overlap one another bringing the total treatment acres to 18,340 acres for this unit (Table 1). 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.

Seeding to supplement the herbaceous understory is the most common management practice in this unit. Vegetation removal via hand crew is also very common. Other management practices include seeding desirable shrub species, bullhog use to remove pinyon pine and Utah juniper, herbicide application to remove weeds, prescribed fire, harrow, and other similar vegetation removal techniques.

Table 1. Treatments Completed on Nine Mile Range Creek Subunit

Treatment Action	Acres
Seeding (Primary)	9271
Vegetation Removal/Hand Crew	3253
Bullhog	2502
Herbicide Application	1521
Seeding (Secondary/Shrub)	867
Prescribed Fire	680
Mowing	107
Bulldozing	66
Harrow	57
Planting/Transplanting	16
Stream Corridor/Channel Improvements	0
Vegetation Improvements	0
*Total Land Area Treated	17887
Total Treatment Acres	18340