DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 30
Pine Valley
2020

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%

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 - Manage for a 5-year target population of 19,500 wintering deer (modeled number) during the five-year planning period unless range conditions become unsuitable, as evaluated by DWR. This is an increase from the 2015 plan, which was 16,000. The 10-year average population estimate is 15,900. 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. Change to the population objective is based on this population's performance, improved range conditions, the amount of available habitat and the lack of

range damage from deer. New estimates of actual population numbers have been taken into account and the new objective should reflect the numbers of deer that are currently on the unit.

Unit 30
1994-2001 Objective: 16,000
2002-2014 Objective: 12,800
2015-2020 Objective: 16,000
2021-2025 Objective: 19,500
Change from last plan +3,500

- Herd Composition – This is a General Season unit and will be managed to maintain a three-year average postseason buck to doe ratio of 18-20 according to the statewide plan.

  Harvest – General Buck Deer hunt regulations, using archery, rifle, and muzzleloader hunts apply. In an effort to reduce hunter crowding on the traditional any-weapon season, an early any-weapon hunt was initiated in 2018 with 20% of the total permits being offered during this season. Hunter success rates have been similar to the traditional any-weapon season.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Utilizing harvest data, postseason and mortality estimates, a computer model has been developed to estimate winter population size. The 2019 post-season model estimates the population at 19,700 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.

- Survival – Continue to monitor Adult and Fawn survival with GPS tracking collars. Use this data to learn more about migration routes, patterns and timing.

- 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

Year	Buck harvest	Post-Season F/100 doe	Post-Season B/100 doe	Post-Season Population	Objective	% of Objective
2017	1816	56.6	23.9	19,700	16,000	123%
2018	1327	46.6	23.8	19,800	16,000	124%
2019	1513	59.7	21.2	19,700	16,000	123%
3 Year Avg	1552	54.3	23.0			

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 forage conditions will determine herd size. Excessive habitat utilization will be addressed with hunting.

- Predation - Follow DWR predator management policy.

  - The southern and eastern portion of this unit is currently under a Predator Management Plan with unlimited cougar harvest beginning the fall of 2020. This strategy is to protect desert bighorn sheep that were transplanted to the Beaver Dam Mountains in 2015. Deer in the

Browse and Beaver Dam mountain area will also benefit from this cougar management strategy. The northern portion of this unit is under a Harvest Objective hunt strategy for cougar.

- Highway Mortality - Mortality along I-15, SR-56, SR-18 has been significant. At several locations on SR-56, SR-18, New Harmony and Newcastle bench roads flashing deer crossing signs have been installed in cooperation with the Utah Dept. Of Transportation, Iron and Washington County road departments. Deer fencing has been installed along I-15 between Cedar City and New Harmony. Highway mortality will be monitored and additional highway fences, passage structures and warning signs will be added if needed.

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

- Use the most current range trend data and the best available science when prioritizing, designing, and implementing habitat improvement projects.

- Maintain critical fawning and fawn rearing 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.

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.

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

- Seek opportunities to partner with Universities to coordinate research in areas of need.

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 including but not limited to oil and gas development, wind energy, solar energy, and transmission line construction.

- Coordinate with federal and state partners in designing projects that will improve fire resiliency and protect areas of crucial habitat.

- 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. Continue working toward blocking up UDWR properties through land exchange.

- Manage vehicle access on Division of Wildlife Resources land 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 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 or in times of severe drought.

Habitat Improvements

- 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 Cheat grass with desirable perennial vegetation.

- Reduce expansion of Pinion-Juniper woodlands into sagebrush habitats and improve habitats dominated by Pinion-Juniper woodlands by completing habitat restoration projects like lop & scatter, bullhog, and chaining.

- Seek opportunities to increase browse in burned areas of critical winter range.

- 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.

- Seek out opportunities to improve fawning habitat across the unit. Consider summer range habitat improvement projects that remove encroaching trees, improves succulent vegetation and wet meadow habitat, increases aspen recruitment, enhances and/or protects riparian areas, use prescribed fire to promote early succession habitats where appropriate.

- Future habitat work should be concentrated on the following areas.

    - Landscape level watershed improvements on the Pine Valley Ranger District of the Dixie National Forest with a focus on transitional ranges

    - Water developments for Mule Deer on federal and state land.

    - Retreatment of older treatments (>10years) to protect investment through maintenance.

    - Continued habitat improvements in the Pinto/Iron Town areas.

    - Look for opportunities to implement projects that reduce highway mortality to Mule Deer on highway 56 and 18.

RANGE TREND SUMMARY

Management Unit Description

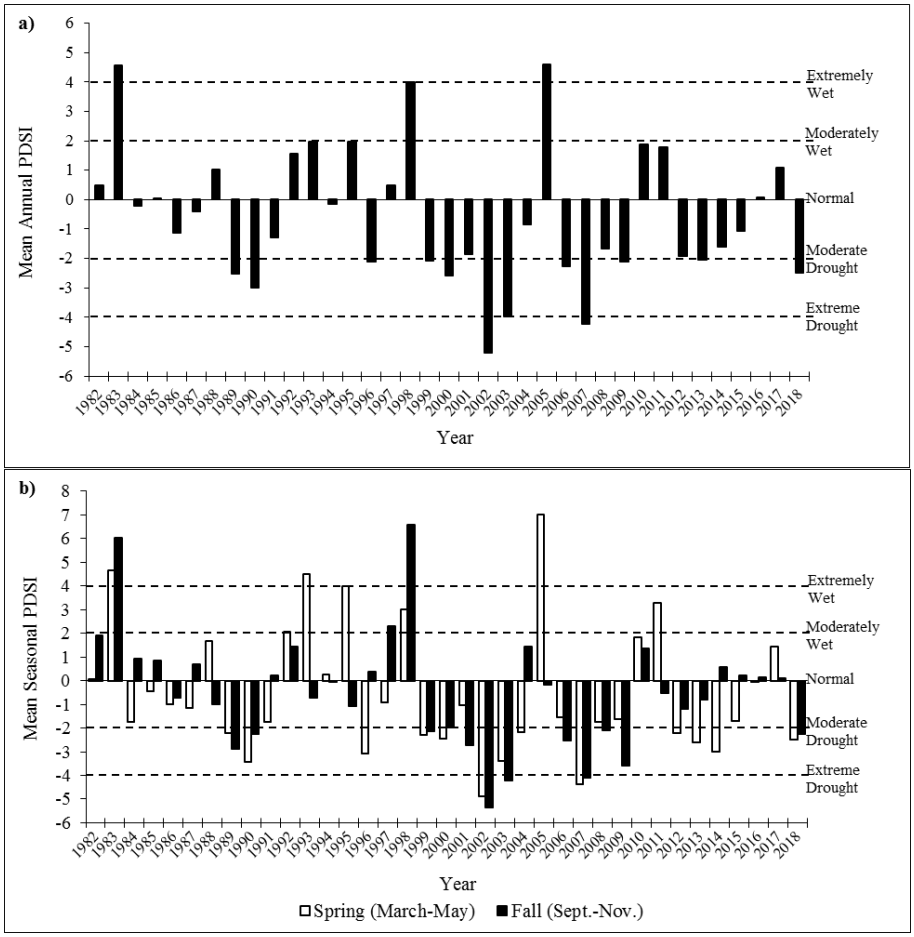
Geography

The Pine Valley wildlife management unit is located in the southwest corner of Utah. It includes three physiographic regions: Mojave Desert, Great Basin, and Colorado Plateau. The Mojave Desert is located in the southern portion of the unit. The Great Basin is located in the central and northern sections of the unit. The eastern section of the unit, mainly the Pine Valley Mountains and Harmony Mountains, are on the western edge of the Colorado Plateau. These physiographic regions have a diverse array of vegetation communities and transitional communities that are important areas for wildlife.

Climate Data

The 30-year (1981-2010) annual precipitation PRISM model shows precipitation ranges on the unit from 7 inches in the far southeastern and southwestern portions of the unit up to 35 inches on the high-elevation peaks of the Pine Valley Mountains. All of the Range Trend and WRI monitoring studies on the unit occur within 9-28 inches of precipitation (PRISM Climate Group, Oregon State University, 2013).

Vegetation trends are dependent upon annual and seasonal precipitation patterns. Palmer Drought Severity Index (PDSI) data for the unit was compiled from the National Oceanic and Atmospheric Administration (NOAA) Physical Sciences Division (PSD) as part of the Western, Dixie, and South Central divisions (Divisions 1,2, and 4).



Summer Range

Summer range is confined to elevations above 6,000 to 6,500 feet on the New Harmony and Pine Valley Mountains. The summer range consists of dense conifers with a few aspen clones and dry meadows at higher elevations and mixed oak brush, mountain brush, southern desert shrub, and sagebrush-grass at lower elevations. Part of the summer range is within the officially designated wilderness area. The vegetation characteristics of the Harmony Mountain and lower slopes of Pine Valley are principally oak brush and mountain brush. Aspen and conifer are common on the higher portions of the Pine Valley Mountains, but much less prevalent on the Harmony Mountains. Sagebrush-grasslands and meadows can be found at the summit of the Harmony Mountains. These areas are important for deer during a short period in the summer months. However, these areas have been heavily impacted by cattle. Many similar sagebrush grasslands and meadows occur on the northern end of the Pine Valley Mountains. Summer deer concentrations are primarily on Harmony Mountain and the north end of the Pine Valleys.

Winter Range

Herd unit 30 winter range varies greatly, depending upon elevation. North of the Great Basin-Colorado River divide, pinion-juniper and sagebrush-grass predominate. South of the divide, pinion-juniper is still prevalent but there are increasing amounts of desert shrub dominated by shrub live oak (*Quercus turbinella*) and other browse species not often found in the north. Both areas possess important acreages of seeded range, most notably east of Pinto at Page Ranch, Woolsey Ranch, New Harmony and Pintura Bench. Deer tend to congregate in these areas, especially the latter three. Additional winter range in the Pine Valley unit can be found south of Pintura, but currently supports few deer. Winter range is extensive, but not uniformly utilized. Pinion-juniper is the dominant vegetation type, but there are also other vegetation types that include large areas of sagebrush-grass, southern desert shrub, oak brush, and mountain brush. Important critical winter concentration areas include the area east of Central, the lower Pinto Creek drainage, the Antelope Range, Iron Mountain, the Shoal Creek drainage, Moody Creek, Tobin Bench, and the middle portion of the East Fork of Beaver Dam Wash. Only during the most severe winters do deer utilize the lower portions of the winter range, especially the Mojave Desert areas. During the spring, summer, and fall, crucial concentration areas include the higher elevations of the Bull Valley Mountains, Lost Peak, Maple Ridge, the slopes surrounding Pine Valley Reservoir, the meadows of the Whipple Valley area, and Flattop Mountains.

Limiting Factors to Big Game Habitat

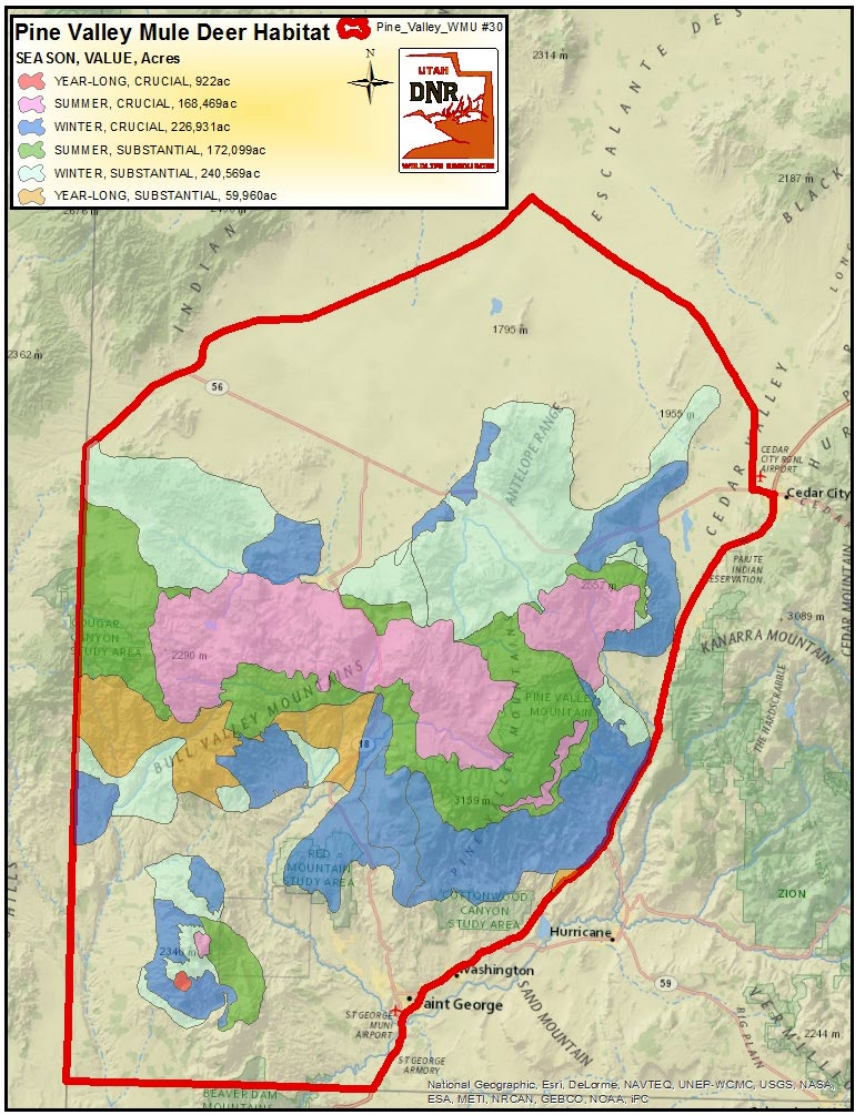
Mortality of deer has been significant along I-15, SR-56, and SR-18. Deer proof fencing has been erected along I-15, impeding deer movement. Fencing may pose some barrier to deer migration to the wintering grounds.

Wildfire has had a significant impact on deer habitat in the southern and western portions of this unit in recent years. From 2000-2012, over 700,000 acres have burned in unit 30 in a variety of vegetative types. The abundance of cheat grass, primarily within the lower elevation sagebrush communities, increases the threat of catastrophic wildfires within the unit.

In addition to wildfire, severe flooding in January 2005 likely impacted deer habitat that 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 likely impact deer use of these areas for several years.

Encroachment by pinion-juniper woodland communities also poses a substantial threat to important sagebrush rangelands. Encroachment and invasion of these woodlands into sagebrush communities has been shown to decrease the sagebrush and herbaceous components, and therefore decreases available forage for wildlife.

Pine Valley Unit Mule Deer Habitat



Range Trend Studies

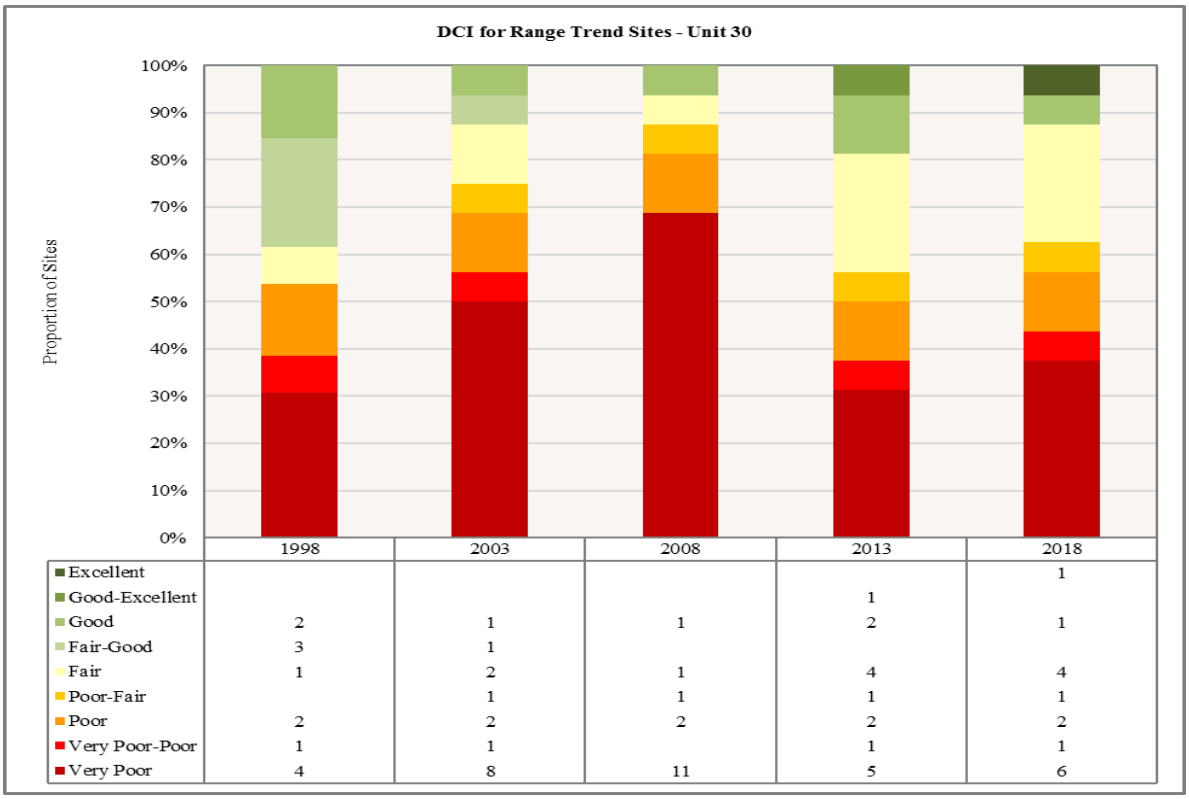
Range Trend studies have been sampled within WMU 30 on a regular basis since 1982, with studies being added or suspended as was deemed necessary (see full report or online report for a comprehensive list of study areas). Several of the range trend studies have been suspended over the sample years. Due to changes in sampling methodologies, only data sampled following the 1998 sample year are included in this summary. Monitoring studies of WRI projects have been sampled since 2004. When possible, WRI monitoring studies are established prior to treatment and sampled on a regular basis following treatment.

Range Trend studies that have not had recent disturbance or treatments are summarized in this report by ecological site or potential. Range Trend and WRI studies that have a disturbance or treatment during the reported sample period are summarized by the disturbance or treatment type. For a comprehensive report for each treatment type associated with the range trend site please refer to the full report. The full report can be viewed at the UDWR's regional office in Cedar City, Utah or at the UDWR Headquarters in Salt Lake City. An online version of the report will become available and currently you can access most of the results online at:

https://wildlife.utah.gov/.../**range**-**trend**s/.../2018_Southern_Region_Unit_Summary_Report.pdf

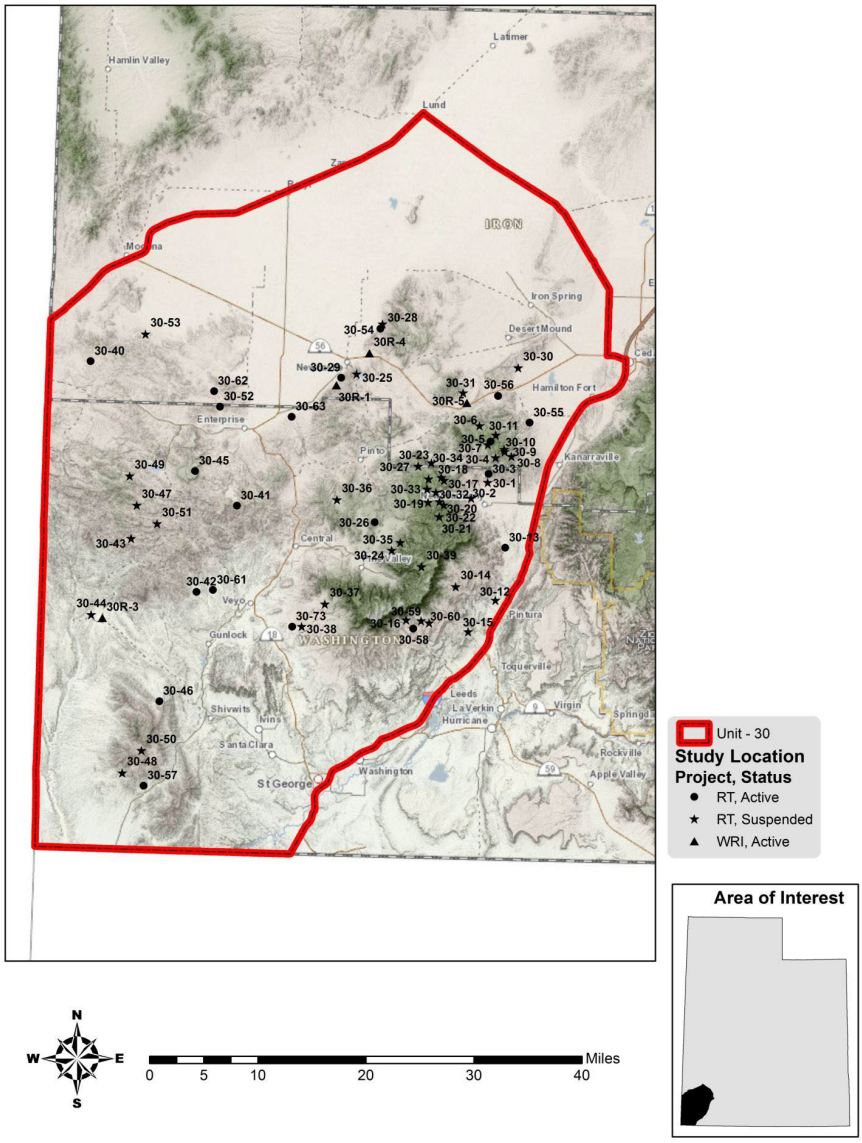
Deer Winter Range Condition Assessment

The condition of deer winter range within the Pine Valley management unit has continually changed on the sites sampled since 1998. The active Range Trend sites sampled within the unit are considered to be in very poor to excellent condition as of the 2018 sample year. The Upper Broad Hollow study improved to excellent condition, and the Spirit Creek South Burned study stayed in good condition. There were four studies considered to be in fair condition, and these are Black Ridge, Motoqua, Tobin Bench, and Pahcoon Bench West. The Quichapa Canyon study was considered to be in poor-fair condition. The Telegraph Draw and North Hills studies were classified as being in poor condition. The Bullion Canyon study site was considered to be in very poor-poor condition. A total of six studies were classified as being in very poor condition: Southwest of Newcastle, Grapevine Spring, Holt Canyon, Wide Canyon 2, Pinion Park and Swett Hills North. These sites were considered very poor due to lack of preferred browse, lack of perennial vegetation cover, and high loads of annual grass.



	1998	2003	2008	2013	2018
Excellent					1
Good-Excellent				1	
Good	2	1	1	2	1
Fair-Good	3	1			
Fair	1	2	1	4	4
Poor-Fair		1	1	1	1
Poor	2	2	2	2	2
Very Poor-Poor	1	1		1	1
Very Poor	4	8	11	5	6

Range Trend Study Locations – Long Term and WRI



Conditions and Recommendations

Mountain (Big Sagebrush)

The studies that are classified as a Mountain (Big Sagebrush) ecological site are considered to be in poor to good condition for deer winter range on the Pine Valley Unit. In general, these ecological communities support good shrub populations that can provide valuable browse for wildlife. Introduced perennial grasses are present on some of these study sites, and can lead to reduced understory diversity and productivity. Introduced annual grasses are also present in low amounts. Should these annual grasses increase in the future, they may change plant community dynamics and increase fuel loads. High fuel loads can lead to increased wildfire regimes. Monitoring of areas with introduced perennial and annual grasses is recommended. If these grasses increase consistently, treatments for their reduction may be needed. If reseeding is necessary to restore herbaceous species, care should be taken in species selection and native species should be given preference when possible.

The Telegraph Draw and Spirit Creek South Burned studies have some pinyon-juniper encroachment occurring, which has the potential for reduced understory and shrub vigor. It is recommended that tree-removing disturbances (e.g. bullhog, chaining, lop and scatter, etc.) take place in areas where conifer reduction would be feasible and beneficial. Care should be taken to select methods that will not increase annual grass cover.

Mountain (Browse)

The study within the Mountain (Browse) ecological type is considered to be in fair condition for big game summer range on this unit. This study supports a robust shrub community that may provide valuable forage for wildlife. Limited pinyon-juniper encroachment is occurring on this study and may eventually lead to reduced understory and shrub vigor. Treatments to reduce conifer encroachment (e.g. bullhog, chaining, lop and scatter, etc.) may be needed in the future.

Introduced perennial grasses are present in moderate amounts on this study site. High levels of these introduced grasses may lead to reduced understory diversity and productivity. In addition, annual grass contributes a low amount of cover on this site. Should introduced annual species increase in the future, they have the potential to shift the dynamics of the plant community and lead to less biodiversity. In addition, fuel loads are increased with high levels of annual grass, which in turn are associated with more frequent wildfires. 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.

Mountain (Curlleaf Mountain Mahogany)

The study that is classified as a Mountain (Curlleaf Mountain Mahogany) ecological site supports shrub populations which provide browse for summering big game animals. Introduced annual grasses are present in low amounts. Should future increases occur, higher amounts of annual grasses have the potential to increase fuel loads and exacerbate the risk of wildfire. This site is further threatened by the presence of introduced perennial grasses. Although the threat they pose is currently low, these introduced grasses can lead to diminished understory productivity and diversity if they increase in the future. 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.

Conifer encroachment is also occurring on this study site in low amounts. Although tree density is low as of 2018, tree-removing disturbances (e.g. bullhog, chaining, lop and scatter, etc.) may be appropriate if conifers increase in the future. Care should be taken to select methods that will not increase annual grass cover.

Mountain (Oak)

These Mountain (Oak) ecological sites are considered to be in good condition for deer summer range on the Pine Valley Management Unit. Annual grasses have been observed in varying amounts on these sites. Increased levels of annual grasses may exacerbate fuel loads, which in turn have the potential to increase fire intervals. It is recommended that monitoring of these studies continue; if these grasses are observed in consistently high amounts in the future, treatment(s) to restore the herbaceous understory may be necessary. In addition, noxious weeds have been observed in the past on the Flat Top Mountain study. Although their presence was not noted in 2013 or 2018, these noxious weeds may have the potential to outcompete native herbaceous species if they increase in future sample years.

Upland (Big Sagebrush)

The studies classified as Upland (Big Sagebrush) ecological sites are considered to be in very poor to fair condition for deer winter range on this management unit. The plant communities that are considered to be of this ecological type support sagebrush that provides browse for wintering big game animals. Annual grasses are present on many of these study sites in high amounts. Increased levels of annual grasses can exacerbate fuel loads and may alter the fire regime. Introduced perennial grasses pose a high-level risk on the Pahcoon Bench West study: high amounts of these grasses may lead to reduced understory diversity and productivity. It is recommended that monitoring of these studies continue; if these grasses are observed in consistently high amounts in the future, treatment(s) to restore the herbaceous understory may be necessary. 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.

Pinyon-juniper encroachment is also occurring on most of these study sites and may lead to reduced understory and shrub productivity. Tree-removing disturbances (e.g. bullhog, chaining, lop and scatter, etc.) are recommended in areas where they would be beneficial and appropriate. However, care should be taken to select methods that will not increase annual grass cover.

Upland (Black/Low Sagebrush)

These lower elevation Upland (Black/Low Sagebrush) ecological sites are classified as being in very poor-poor to fair condition for deer winter range on this management unit. These sites support robust sagebrush populations that provide valuable forage for wintering big game. Pinyon and juniper encroachment pose medium-level threats to these study sites, as they have the potential to reduce understory and shrub productivity as encroachment progresses. When and where appropriate, tree-removing disturbances such as bullhog and chaining may be beneficial.

Annual grasses are also present on these studies, posing a low-risk threat on the Black Ridge site and a high-risk threat on the Bullion Canyon study. High amounts of annual grasses can increase fuel loads and can potentially exacerbate the risk for wildfire. Monitoring should continue on these study sites and treatment may be necessary if high amounts of annual grasses persist in the future.

Upland (Shrub Liveoak)

The studies classified as Upland (Shrub Liveoak) ecological sites are considered to be within very poor to excellent condition for deer winter range within the Pine Valley Management Unit. More specifically, Upper Broad Hollow (30-03) is in excellent condition, while Grapevine Spring (30-42) is considered to be in very poor condition. Annual grasses pose a high-risk threat on the Upper Broad Hollow study and a low threat on the Grapevine Spring study site. Increased amounts of these grasses elevate fuel loads and may exacerbate the risk of catastrophic wildfire. If consistently high levels of annual grasses are observed in future sample years, treatment may be necessary to restore the herbaceous understory.

Encroachment of pinyon and juniper trees is an additional threat to both of these sites. Although the risk posed is currently ranked as medium, there may be potential for further encroachment in the future. As these pinyon-juniper woodlands progress in the phases of woodland succession, they have the potential to reduce the health and productivity of the understory and shrub components. Tree-removing disturbances (e.g. lop and scatter, bullhog, chaining, etc.) may be advisable in appropriate areas.

Semidesert (Desert Bitterbrush)

Tobin Bench (30-61), the study classified as a Semidesert (Desert Bitterbrush) ecological site, is classified as being in fair condition for mule deer winter range in this unit. This study supports shrub communities that provide valuable browse for wildlife. The existing herbaceous understory on this site is fairly degraded, and most of the graminoid cover is provided by the introduced perennial species crested wheatgrass (*Agropyron cristatum*) and annual species cheatgrass (*Bromus tectorum*). Introduced perennial grasses have the potential to outcompete native species for resources, therefore causing decreased understory diversity and productivity. In sufficient amounts, annual grasses can change plant community dynamics and increase fuel loads. High fuel loads, in turn, have the potential to alter wildfire regimes. If these grasses increase consistently, treatments for their reduction may be needed. Should reseeding be necessary to restore herbaceous species, care should be taken in species selection and native species should be given preference when possible.

Semidesert (Blackbrush)

The Motoqua (30-44) study site is considered to be a Semidesert (Blackbrush) ecological site and is classified as being in fair condition for deer winter range in this management unit. The shrub component on this site provides valuable browse for wildlife. Annual grasses are abundant on this site; increased annual grass levels can increase fuel loads and exacerbate the risk of wildfire. It is recommended that monitoring continue. If these grasses persist, treatments to restore the herbaceous understory may be beneficial.

Juniper encroachment is occurring on this study site. Although the study site is only in Phase I of woodland succession, tree-removing disturbances (bullhog, lop and scatter, chaining, etc.) may be beneficial. Over time, continued tree encroachment can lead to reduced understory and shrub productivity.

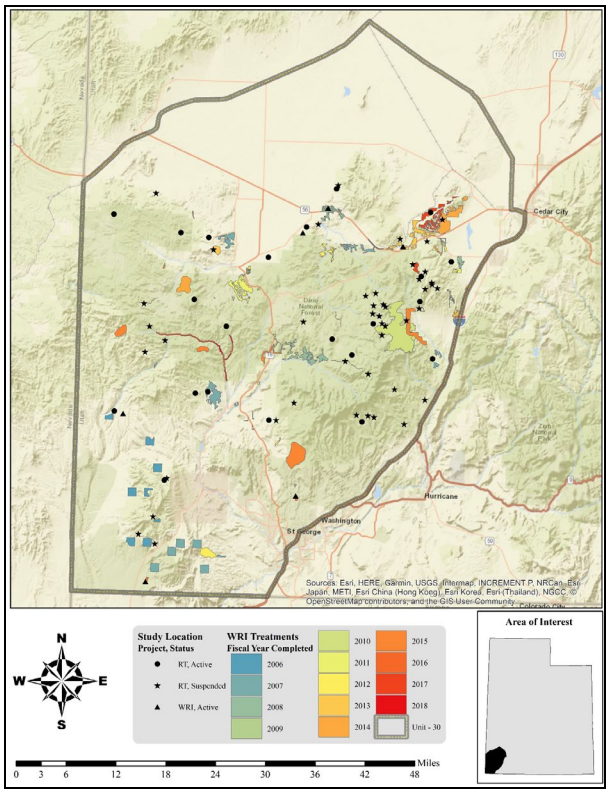
Treatments/Restoration Work

There has been an active effort to address many of the limitations on this unit through the Watershed Restoration Initiative (WRI). A total of 45,861 acres of land have been treated within the Pine Valley unit since the WRI was implemented in 2004 (**Map 9.7**). An additional 1,113 acres are currently being treated and treatments have been proposed for 6,173 acres. Treatments frequently overlap one another bringing the total treatment acres to 53,147 acres for this unit (**Table 9.6**). 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 plant species to supplement the herbaceous understory is the most common management practice in this unit and often occurs along with other treatment types. Bullhog treatments and manual vegetation removal techniques (such as lop and scatter) to remove pinyon and juniper trees are also frequently used in the unit. Other management practices include (but are not limited to): seeding plants to enhance the shrub component, anchor chaining to remove trees, harrowing, and herbicide application (**Table 9.6**).

Type	Completed Acreage	Current Acreage	Pending Completed Acreage	Proposed Acreage	Total Acreage
Anchor Chain	**3,758**	**0**	**0**	**0**	**3,758**
Ely (One-Way)	1,123	0	0	0	123
Ely (Two-Way)	2,635	0	0	0	2,635
Bulldozing	**40**	**0**	0	**0**	**40**
Tree Push	40	0	0	0	40
Bullhog	**9,270**	**47**	**0**	**5,319**	**14,636**
Full Size	4,200	0	0	3,008	7,208
Skid Steer	5,070	47	0	2,311	7,428
Chain Harrow	**0**	**0**	**0**	**14**	**14**
>15 ft. (Two-Way)	0	0	0	14	14
Harrow	**774**	**0**	**0**	**0**	**774**
≤15 ft. (One-Way)	774	0	0	0	774
Herbicide application	**749**	**0**	**0**	**0**	**749**
Aerial (Fixed-Wing)	131	0	0	0	131
Aerial (Helicopter)	644	0	0	0	644
Planting/Transplanting	**200**	**0**	**0**	**0**	**200**
Seeding (Primary)	**29,083**	**0**	**0**	**0**	**29,083**
Broadcast (Aerial-Fixed Wing)	15,914	0	0	0	15,914
Broadcast (Aerial-Helicopter)	10,210	0	0	0	10,210
Drill (Rangeland)	123	0	0	0	123
Ground (Mechanical Application)	2,836	0	0	0	2,836
Seeding (Secondary/Shrub)	**3,601**	**300**	**0**	**0**	**3,901**
Broadcast (Aerial-Fixed wing)	108	0	0	0	108
Broadcast (Aerial-Helicopter)	508	300	0	0	508
Hand Seeding	2,985	0	0	0	2,985
Vegetation Removal/Hand Crew	**3,656**	**841**	**0**	**1,764**	**6,261**
Lop & Scatter	3,656	841	0	1,764	6,261
Other	**275**	**0**	**0**	**0**	**275**
Greenstripping	264	0	0	0	264
Road Decommissioning	11	0	0	0	11
Grand Total	**51,406**	**1,235**	**0**	**7,097**	**59,691**
*** Total Land Area Treated**	**45,861**	**1,113**	**0**	**6,173**	**53,147**

Table 9.1: WRI treatment action size (acres) for completed, current, and proposed projects for WMU 30, Pine Valley. Data accessed on 02/18/2019. *Does not include overlapping treatments.



Map 9.1: WRI treatments by fiscal year completed for WMU 30, Pine Valley.

2015 – 2019 Habitat Project Areas