DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 22
(Beaver Mountains)
May 2015

BOUNDARY DESCRIPTION

Iron, Garfield, Piute, Beaver and Millard Counties: Boundary begins at SR-130 and I-15; north on SR-130 to SR-21; north on SR-21 to SR-257; north on SR-257 to the Black Rock road; east of the Black Rock road to I-15; south of I-15 to I-70; east on I-70 to US-89; south on US-89 to SR- 20; west on SR-20 to I-15; south on I-15 to SR-130.

LAND OWNERSHIP

	Summer Range		Winter Range	
Ownership	**Area (acres)**	**%**	**Area (acres)**	**%**
Forest Service	213,318	70%	83,337	14%
Bureau of Land Management	65,991	22%	396,598	68%
Utah State Institutional Trust Lands	7,386	2%	44,367	8%
Native American Trust Lands	0	0%	205	<1%
Private	18,436	6%	53,769	9%
Department of Defense	0	0%	0	0%
USFWS Refuge	0	0%	0	0%
National Parks	0	0%	0	0%
Utah State Parks	0	0%	0	0%
Utah Division of Wildlife Resources	0	0%	2,288	2%
Total	**305,201**	**100%**	**580,564**	**100%**

RANGE AREA AND APPROXIMATE OWNERSHIP

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 13,000 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. If habitat damage by deer is occurring due to inadequate habitat, measures will be taken to reduce the population to sustainable levels.

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. Antlerless removal

will be implemented to achieve the target population size using a variety of harvest methods and seasons. It is recognized that buck harvest may fluctuate due to climatic and productivity variables. Buck harvest strategies will be developed through the RAC and Wildlife Board process to achieve management objectives.

POPULATION MANAGEMENT STRATEGIES

Monitoring

- Population Size - Utilizing harvest data, postseason classification and mortality estimates, a computer model has been developed to estimate winter population size. The 2014 model estimates the population at 3,000 deer.

- Buck Age Structure - Monitor age class structure of the buck population through the use of checking stations, postseason classification, statewide harvest survey data and bag checks.

- Harvest - The primary means of monitoring harvest will be through the statewide harvest survey and the use of checking stations.

Limiting Factors (May prevent achieving management objectives)

- Crop Depredation – Strategies will be implemented to mitigate crop depredation as prescribed by state law and DWR policy.

- Habitat – The amount and condition of summer habitat on public lands, landowner acceptance and winter forage conditions will determine herd size. Excessive habitat utilization will be addressed through antlerless removal. The Southwest Desert is a summer range limited unit. Winter range is abundant. Fawn recruitment is a major concern on this unit and may be the single greatest factor limiting the population

- 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.
  - 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 may be implemented.
  - This unit is currently under a Predator Management plan and coyotes are being targeted by contractors.

- Highway Mortality – DWR will Cooperate with the Utah Dept. Of Transportation to construct highway fences, passage structures and warning signs etc if needed.

- Illegal Harvest - If illegal harvest is identified as a limiting factor, a unit specific action plan will be develop in cooperation with the Law Enforcement Section.

HABITAT MANAGEMENT OBJECTIVES

- Maintain or enhance forage production through direct range improvements on winter and summer deer

range throughout the unit to achieve population management objectives.

- Maintain critical fawning habitat in good condition. Fawn recruitment is a major concern on this unit and may be the single greatest factor limiting the population.

- Work with federal and state partners in fire rehabilitation and prevention on crucial deer habitat through the WRI process

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. However, the relationship between DCI and the changes in deer carrying capacity is difficult to quantify.

Habitat Protection, Improvement 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 agreements with land management agencies and local governments, the use of conservation easements, etc. on private lands and working toward blocking up UDWR properties through land exchanges with willing partners.

- Manage vehicle access on Division of Wildlife Resources land to limit disturbance critical times such as winter and fawning.

- Manage riparian areas in critical fawning habitat to provide water, cover and succulent forage from mid- to late summer.

- Work with BLM to support wild horse removals where there are conflicts with Mule Deer.

- 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 reseed areas dominated by cheatgrass 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.

- 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 to provide refuges.

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

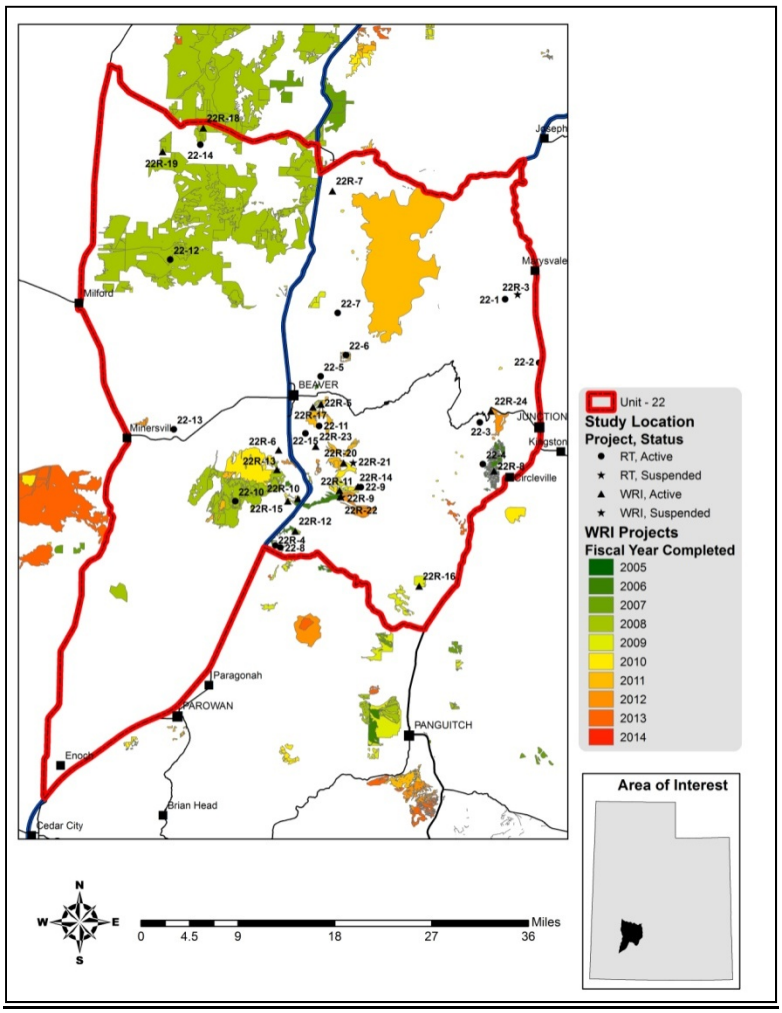
- Future habitat work should be concentrated on the following areas.

    - Seek opportunities to increase browse in burned areas of critical winter range.
    - Continue to reduce Pinyon and Juniper encroaching into shrubland in critical winter range. Specifically moving north from Beaver toward I-70 and along the east side of the Tushar slopes in critical winter range.
    - West of I-15 seek opportunities to improve riparian vegetation in fawning habitat to furnish water, cover, and late to mid summer succulent forage.
    - Quaking Aspen forests unit wide.

Treatments and 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 174,186 acres of land have been treated within the Beaver unit since the WRI was implemented in 2004. The majority of treatment acreage, especially seeding and chaining, was done in conjunction with restoration efforts of wildfires within the unit. Treatments to reduce pinyon-juniper woodlands such as bullhog, chaining, brush saw, and lop-and-scatter are the next most common management practices. Other common management treatments are those to rejuvenate sagebrush stands such as chaining and harrow treatments are also common.



Treatment Action	Acres
Seeding	177,845
Chaining	34,369
Prescribed Fire	6,342
Bullhog	6,292
Lop and Scatter	5,319
Harrow	3,989
Brush Saw	1,080
Planting/Transplanting	1,057
Herbicide	1,035
Road Decommissioning	491
Disc	158
PJ Push	36
Total Land Area Treated	**174,186**
Total Treatment Acres	**238,013**

PERMANENT RANGE TREND SUMMARIES

Unit 22 Beaver

The condition of deer winter range within the Beaver management unit has generally improved on the study sites sampled since 1998. The majority of sites sampled within the unit are considered to be in fair to good condition based on the most current sample data, and the proportion of sites classified as being in poor or very poor condition has consistently decreased since 1998.

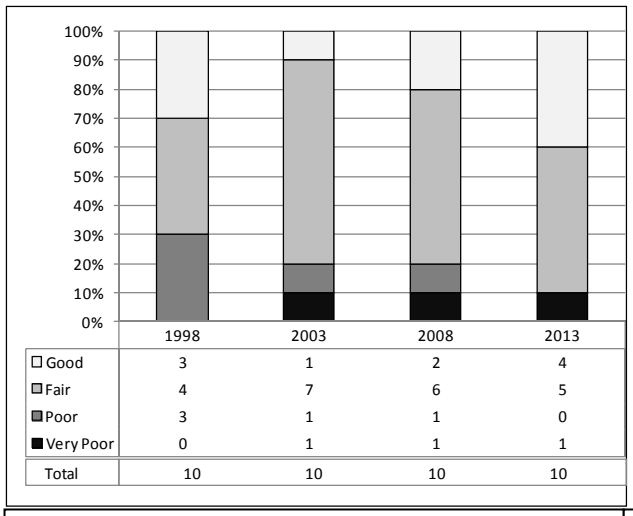


Figure **Error! No text of specified style in document.**..1: **Deer winter range Desirable Components Index (DCI) summary by year of**

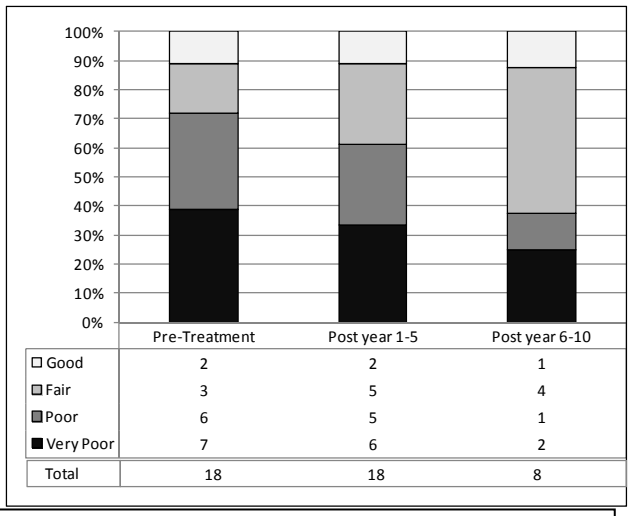


Figure **Error! No text of specified style in document.**..37: **Deer winter range Desirable Components Index (DCI) summary by year**

Of the 10 undisturbed sites 4 were considered to be in good condition and 5 were categorized as being fair. The only undisturbed study that is currently considered to be in poor condition is the Above Fremont Wash study, which has a depleted browse component and is dominated by cheatgrass.

The condition of disturbed and treated sites typically improves with increased time after disturbance on this unit with the exception of sites, which burned in wildfire. The majority of disturbed or treated study sites that ranked as being in poor or very poor condition 6-10 years after disturbance are those burned by wildfire. These study sites generally are still lacking in available browse species, and typically have increased amounts of cheatgrass. The only other treated study site considered to be in poor condition is the Sheep Rock study which has limited browse and is dominated by the introduced perennial grass crested wheatgrass.

The higher elevation upland and mountain sites, which support mountain big sagebrush communities, are generally considered to be in good condition for deer winter range habitat on the Beaver management unit.

The mid elevation upland Wyoming big sagebrush communities are generally considered to be in fair condition for deer winter range habitat on the unit.

The lower elevation semidesert Wyoming big sagebrush communities that have not been disturbed are generally considered to be in fair condition for deer winter range habitat on the unit.

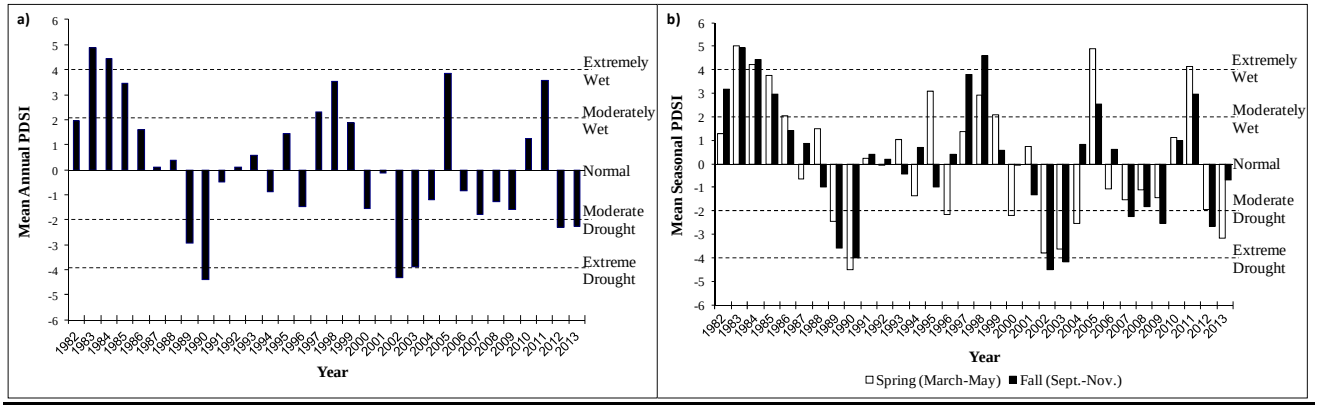
The semidesert and upland communities are prone to fire and those sites that have experienced fire are typically in poor or very poor condition. If wildfire occurs within these communities, they lose most of their value as deer winter range and reestablishment of valuable browse species is typically slow.

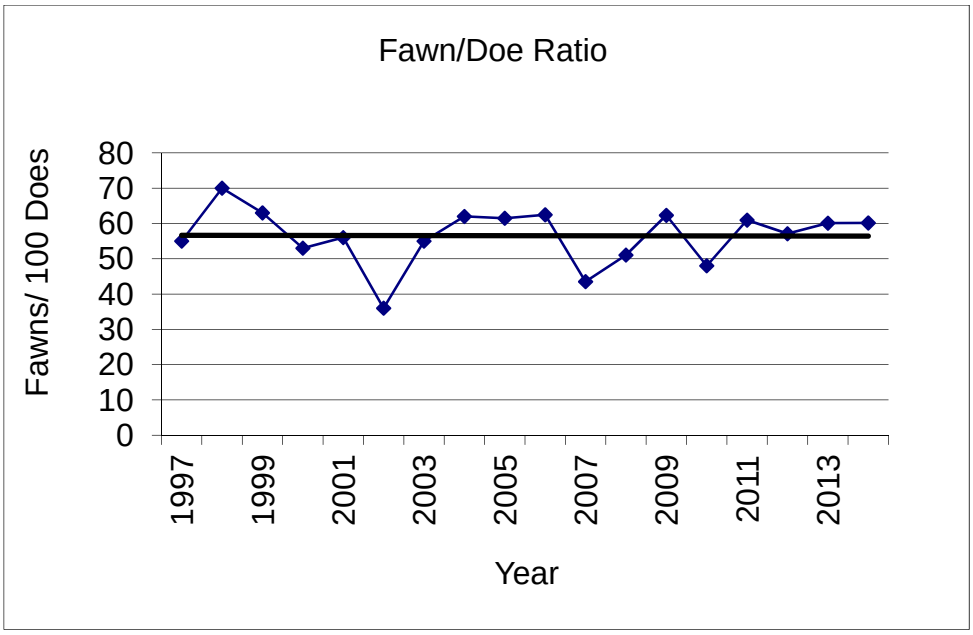
The upland and mountain communities are also prone to encroachment from pinyon-juniper trees, which can reduce understory shrub and herbaceous health if not addressed.

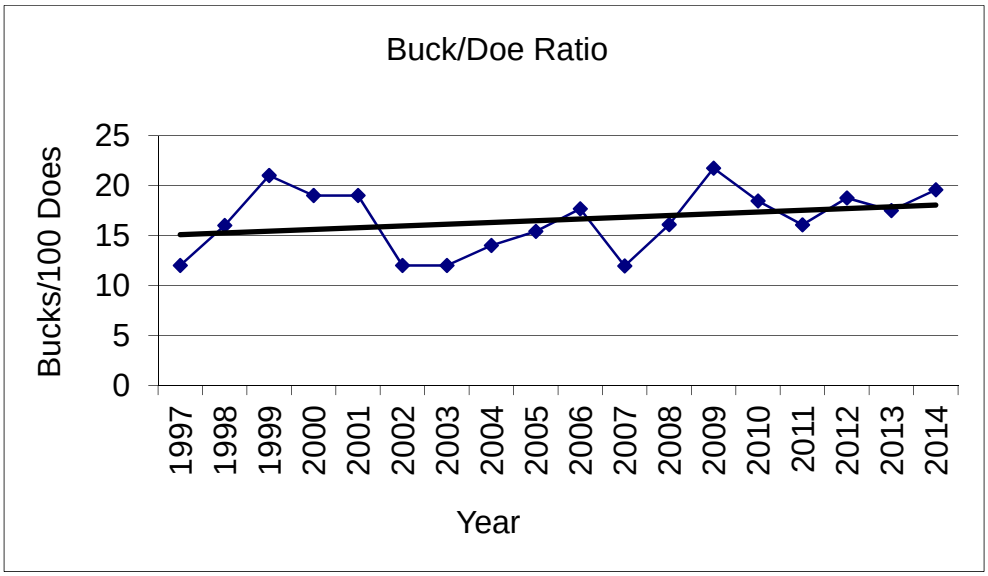
Precipitation

Vegetation trends are dependent upon annual and seasonal precipitation patterns. 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 South Central division (Division 4). The mean annual PDSI of the South Central division displayed years of moderate to extreme drought from 1989-1990, 2002-2003, and 2012-2013. The mean annual PDSI displayed years of moderate to extreme wet years from 1982-1985, 1997-1998, 2005, and 2011 (**Error! Reference source not found.**a). The mean spring (March-May) PDSI displayed years of moderate to extreme drought in 1989-1990, 1996, 2002-2004, and 2013; and displayed years of moderate to extreme wet years in 1982-1985, 1993, 1995, 1999, 2001, 2005, and 2011. The mean fall (Sept.-

Nov.) PDSI displayed years of moderate to extreme drought in 1989-1990, 2002-2003, 2007, 2009 and 2012; and displayed years of moderate to extreme wet years in 1982-1985, 1997-1998, 2008 and 2011 (**Error! Reference source not found.**b) (Time Series Data, 2014).




Fawn/Doe Ratio
Fawns/ 100 Does
80
70
60
50
40
30
20
10
0
1997
1999
2001
2003
2005
2007
2009
2011
2013
Year


Buck/Doe Ratio
Bucks/100 Does
25
20
15
10
5
0
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Year