

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 20
(Southwest Desert)
February 2015

BOUNDARY DESCRIPTION

Beaver, Iron, and Millard counties - Boundary begins at US-50&6 and the Utah-Nevada state line; east on US-50&6 to SR-257; south on SR-257 to SR-21; south on SR-21 to SR-130; south on SR-130 to I-15; south on I-15 to SR-56; west on SR-56 to the Lund Highway; northwest on the Lund Highway to the Union Pacific railroad tracks at Lund; southwest on the Union Pacific railroad tracks to the Utah-Nevada state line; north on this state line to US-50&6.

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	Year-long range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0%	0	0%	0	0%
Bureau of Land Management	132752	95%	711554	84%	167425	85%
Utah State Institutional Trust Lands	6650	5%	92989	11%	16492	8%
Native American Trust Lands	0	0%	0	0%	0	0%
Private	645	<1%	36326	4%	9788	5%
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	0	1%	6775	1%	3487	2%
TOTAL	140047	100%	847644	100%	197192	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 4,000 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. 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. The population objective is being restored after instituting a temporary in 2002 because of poor range conditions.

Unit 20 Population Objective History

1994-2001 Objective: 4,000

2002-2014 Objective: 3,200

2015-2020 Objective: 4,000

Change from last plan +800

- 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. This unit typically exceeds the 20 bucks per 100 doe threshold post season. It is a difficult unit to obtain a large enough sample size for this analysis. Caution will be use when adjusting permits and trends will be considered.
- 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 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.

Year	Buck harvest	Post-Season F/100 doe	Post-Season B/100 doe	Post-Season Population	Objective	% of Objective
2012	155	43.6	29.9	1700	3,200	53.1%
2013	201	47.9	29.2	2100	3,200	65.6%
2014	175	46.1	24.5	3000	3,200	90.6%
3 Year Avg	177	45.8	27.9			

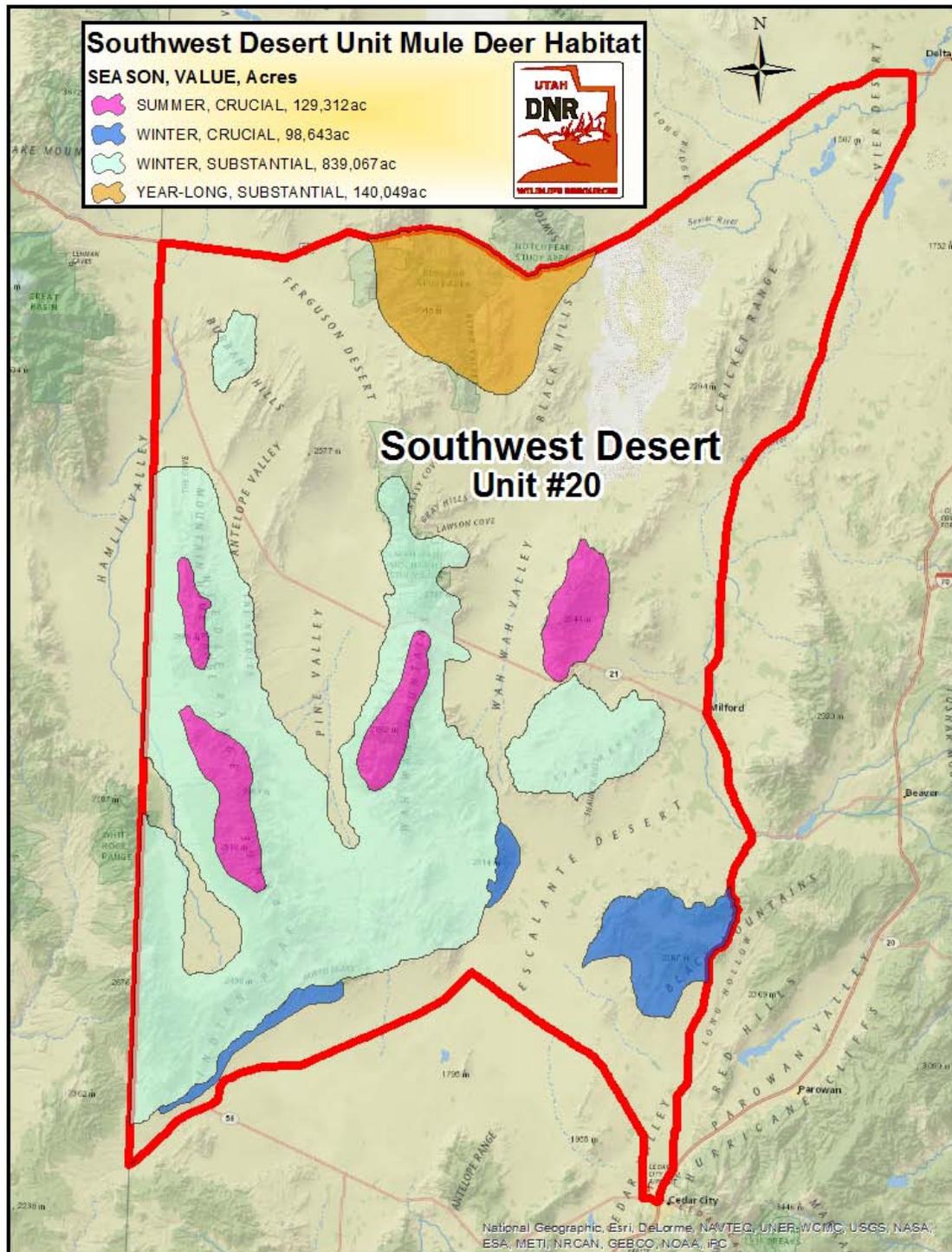
Limiting Factors (May prevent achieving management objectives)

- 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. Currently, highway mortality is not a limiting factor on this unit.
- 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.

MULE DEER HABITAT MAP



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

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

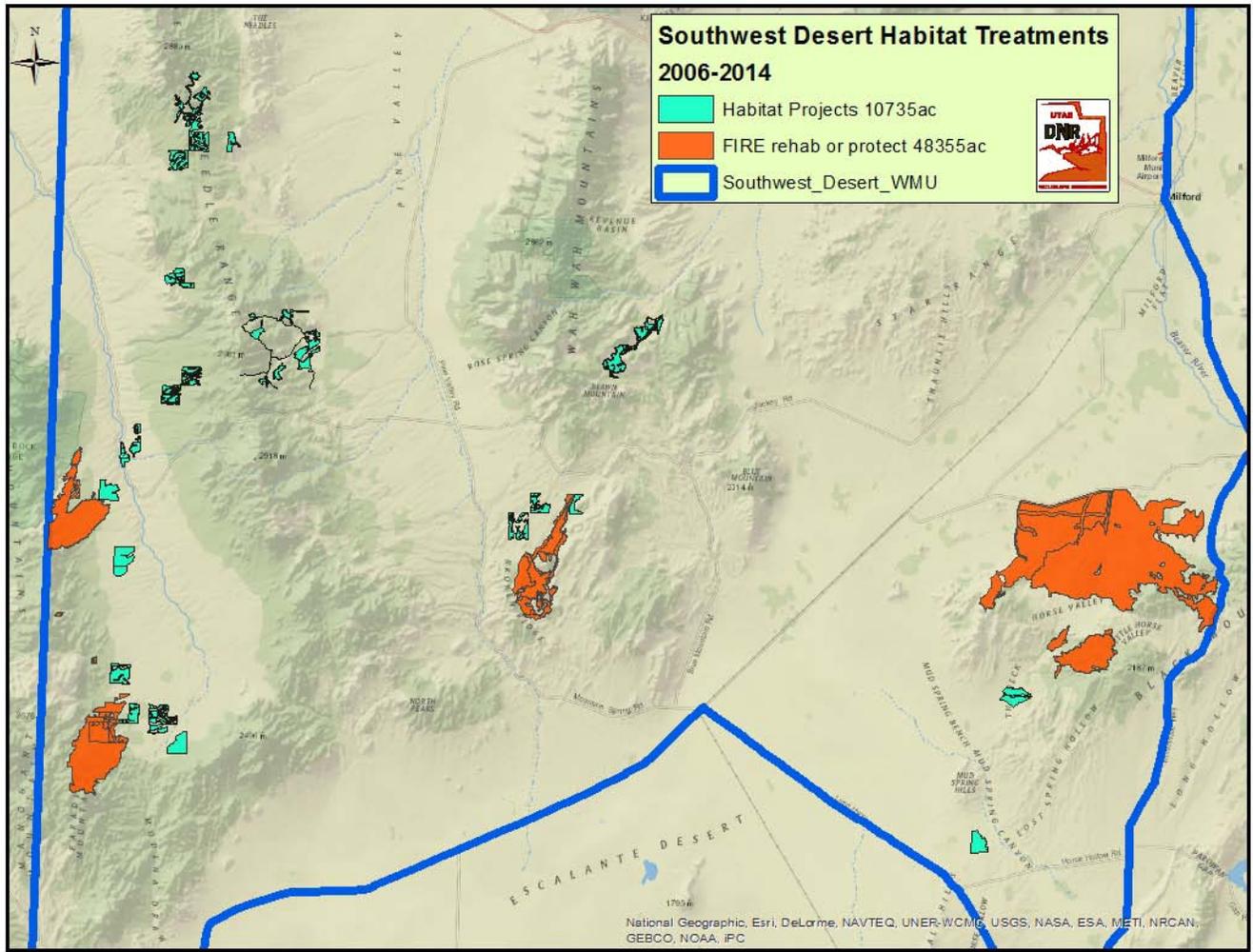
Habitat Protection, Improvement and Maintenance

- 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.
 - Hamlin Valley and the surrounding areas covered by the BLM's 2014 Habitat Improvement Environmental Assessment
 - Retreatment of older treatments (>10years) to protect investment through maintenance.
 - Habitat improvements in the Indian Peak, Wah Wah, and Mountain Home crucial summer habitats.
 - Look for opportunities to implement habitat improvements for deer in the northern half of the unit.

Habitat Project Summary

Projects Southwest Desert Unit : 2006-2014	# Projects	Acres
Habitat Enhancements, Shrub steppe rehab, PJ removals, etc	18	10,735
Fire Rehab and Protection Projects	29	48,355
Totals	47	59,090



PERMANENT RANGE TREND SUMMARIES

Units 20, Southwest Desert Units

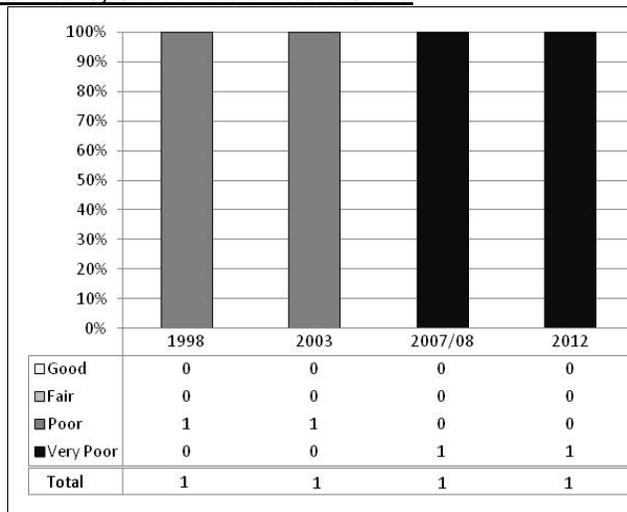


Figure 1: Deer winter range Desirable Components Index (DCI) summary by year of undisturbed sites for WMU 20, Southwest Desert.

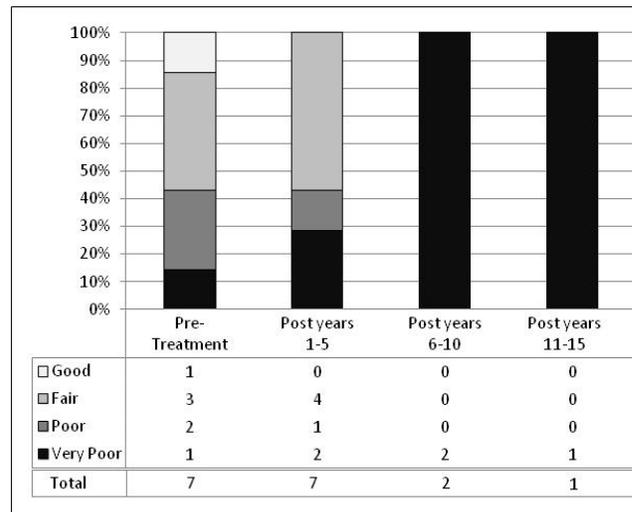


Figure 2: Deer winter range Desirable Components Index (DCI) summary by year of treated/disturbed sites for WMU 20, Southwest Desert.

DWR Winter Range Trend Assessment

There were seven range trend study sites sampled in 2012 of which four were on winter range. The remaining three sites were on sensitive summer range areas. Of the four winter range sites, three have had a major disturbance or treatment in the last 30 years. One study site was chained, burned, and harrowed; one study site was burned; and one study site was lopped and scattered. Four additional study sites have been established to monitor habitat treatment projects.

The condition of deer winter range within the Southwest Desert management unit has remained poor on study sites sampled since 2003. The one undisturbed range trend site has remained in poor condition since 1998 due to low cover of preferred browse and perennial grass species (Figure 1). The condition of disturbed and treated study sites, initially following treatment, have remained similar (Figure 2). The study sites that ranked as being in poor or very poor condition 6-15 years after disturbance are those burned by fire. For the majority of the sites in poor condition, the lack of preferred browse species is driving this trend. The main winter browse species on these study sites is mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and black sagebrush (*Artemisia nova*). Cover of sagebrush has remained relatively stable on the majority of these sites, though cover has remained relatively low. Since 2003, sagebrush cover has increased on the Mountain Home Seeding and South Spring study sites, but cover remains moderately low. The annual grass species cheat grass (*Bromus tectorum*) is prevalent on the Lower Indian Peak and South Spring study sites.

The summer range study sites appear to be in good condition. The summer range sites cumulative median browse trend for the unit has fluctuated, but has generally decreased since 2003, though cover remains good on these sites. Use of mountain browse species has been moderate to heavy on these study sites.

The summer and winter range within this unit appears suitable to support planned deer population objectives. Though the winter range study sites are in poor condition, this unit is summer range limited and winter range is not the limiting factor. The abundance of cheat grass on the lower potential sites is a concern because of increased fuel loads and increased chance of a catastrophic fire event. Encroachment of pinion and juniper trees into shrub winter and summer ranges is a concern in some areas across the unit. Encroachment of pinion and juniper can reduce desirable shrub and herbaceous cover.

Precipitation 20

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 Western division (Division 1). The Western division had a historic annual mean precipitation of 9.79 inches from 1895 to 2014. The mean annual PDSI of the South Central division displays a pattern of drought years with a few periods of wet years over the course of study years (Figure 3a and Figure 3b) (Time Series Data 2015).

20.

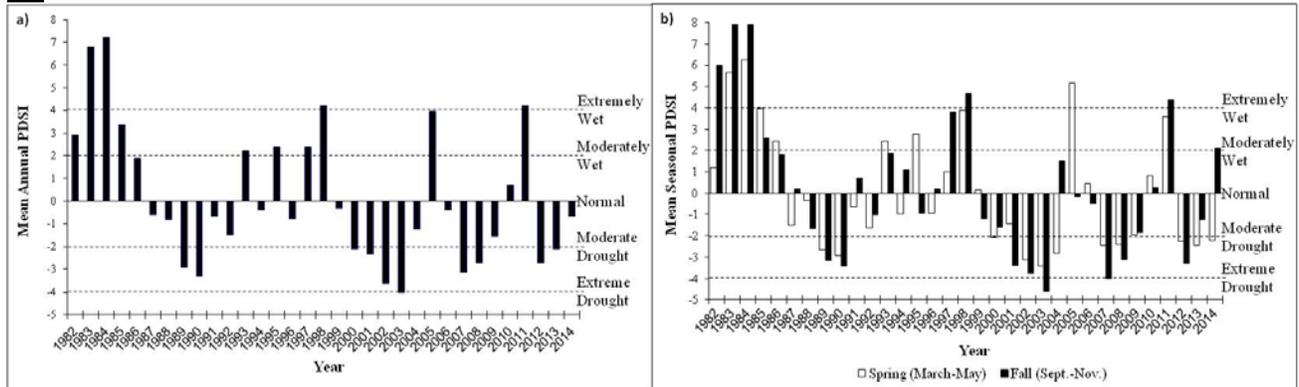


Figure 3: The 1982-2014 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2014. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet and negative deviations indicate drought. Classification of 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 (Time Series Data 2014). a) Mean annual PDSI. b) Mean spring (March-May) and fall (Sept.-Nov.) (Time Series Data, 2015).

Works Cited

Time Series Data. (2015). *National Oceanic and Atmospheric Administration Earth System Research Laboratory Physical Science Division*. Retrieved January 2015, from <http://www.esrl.noaa.gov/psd/data/timeseries/>