

DEER HERD UNIT MANAGEMENT PLAN
Deer Herd Unit # 18 & 19
(West Desert Complex)
December 2024

WEST DESERT COMPLEX BOUNDARY DESCRIPTION

Tooele, Salt Lake, Utah, Juab, and Millard counties - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to I-15; south on I-15 to Exit 207 and Mills Road; west on this road to the Sevier River; north along this river to SR132; west on SR132 to US-6; south on US-6 to its junction with US-50 at Delta; west on US-50/US-6 to the Utah-Nevada state line; north along this state line to I-80 at Wendover. EXCLUDING ALL NATIVE AMERICAN TRUST LAND WITHIN THIS BOUNDARY.

This boundary has four units including:

Unit 18a – Cedar/Stansbury – Tooele and Juab counties — Boundary begins on I-80 and exit 41 (Knolls); east on I-80 to exit 99 and SR-36, south on SR-36 to the Pony Express road, west on this road to the Dugway Mountain Road, north on this road to the north tip of the Dugway range, north cross country to exit 41 (Knolls) on I-80. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY.

Unit 18b – Oquirrh/Tintic – Tooele, Salt Lake, Utah, and Juab counties — Boundary begins at the junction of I-80 and SR-36; east on I-80 to I-15; south on I-15 to Exit 207 and Mills Road; west on this road to the Sevier River; north along this river to SR132; west on SR-132 to US-6; north on US-6 to SR-36; north on SR-36 to I-80.

Unit 19d – West Desert, Swasey – Tooele, Juab, and Millard counties — Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to exit 41 (Knolls), south cross country to the north tip of the Dugway range, southeast cross country to the Dugway mountain road, southeast on this road to the Pony Express road, east on this road to the 14-mile road, south on this road to the Delta road, southeast on this road to SR-174 (IPP/Brush Highway road), southeast on this road to US-6, south on US-6 to its junction with US-50 at Delta; west on US-50/US-6 to the Utah-Nevada state line; north along this state line to I-80 at Wendover. EXCLUDES ALL NATIVE AMERICAN TRUST LANDS WITHIN THIS BOUNDARY.

Unit 19b – West Desert, Vernon – Tooele, Juab, and Millard counties — Boundary begins at SR-36 and the Pony Express road; south on SR-36 to US-6; southwest on US-6 to SR-174 (IPP/Brush Highway road); northwest on SR-174 to the Delta road, northwest on this road to the 14-mile road; north on this road to the Pony Express road; northeast on this road to SR-36.

LAND OWNERSHIP – WEST DESERT COMPLEX

RANGE AREA AND APPROXIMATE OWNERSHIP

Ownership	YEARLONG RANGE		SUMMER RANGE		WINTER RANGE		TOTAL ACRES
	Area (acres)	%	Area (acres)	%	Area (acres)	%	
Forest Service	0	0	96,854	25.5	41,551	5.2	138,405
Bureau of Land Management	541,579	87.8	161,876	42.6	500,468	62.7	1,203,923
Utah State Institutional Trust Lands	46,914	7.6	14,213	3.7	53,035	6.6	114,162

Native American Trust Lands	0	0	10,739	2.8	12,754	1.6	23,493
Private	5,776	0.9	92,138	24.3	172,862	21.6	270,776
Department of Defense	22,299	3.6	3,969	1.0	17,951	2.2	44,219
USFWS Refuge	0	0	0	0	0	0	0
Bankhead Jones	0	0	0	0	0	0	0
Utah State Parks	0	0	0	0	0	0	0
Utah Division of Wildlife Resources	0	0	0	0	0	0	0
TOTAL	616,568	100%	211,614	100%	543,114	100%	1,794,978

UNIT MANAGEMENT GOALS

- Manage for a realistic and attainable population level that is at or below biological carrying capacity to maintain a robust and productive deer population.
- Manage the deer population at a level capable of providing a broad range of recreational opportunities, including hunting and viewing.
- Balance deer herd objectives with impacts on human needs, such as private property rights, agricultural crops and local economies.

POPULATION MANAGEMENT OBJECTIVES

Achieve a target population size of 22,800 wintering deer during the five-year planning period.

West Desert Complex (Units 18 & 19)

2017 – 2024 Objective 11,200 & 11,600
2025 – 2029 Objective 22,800
Objective Difference: no change

5-year Winter Herd Size –Manage for a 5-year target population of 22,800 wintering deer during the five-year planning period unless range conditions become unsuitable, as evaluated by the Utah Division of Wildlife Resources (DWR). Range Trend data coupled with browse monitoring will be used to assess habitat condition. If habitat damage by deer is occurring due to inadequate habitat, actions will be taken to reduce the population to sustainable levels.

Unit Target Winter Herd Size

Cedar/Stansbury: 5,600 deer
Oquirrh/Tintic: 8,800 deer
Swasey: 6,200 deer
Vernon: 2,200 deer

Herd Composition - Maintain the West Desert Complex for a three-year average postseason buck to doe ratio according to the statewide deer plan.

- The Cedar/Stansbury and Swasey are managed for a three-year average postseason buck to doe ratio ranging from 15-17 bucks per 100 does, or a three-year average hunter success rate between 20 - 35%.

- The Oquirrh/Tintic is managed for a three-year average postseason buck to doe ratio ranging from 18-20 bucks per 100 does.
- The Vernon is managed for a three-year average postseason buck to doe ratio ranging from 25-30 buck per 100 does.

Harvest – General Buck Deer hunt regulations, using Archery, Rifle, and Muzzleloader on the Cedar/Stansbury, Oquirrh/Tintic and Swasey units. Limited Entry hunt regulation for Archery, Rifle and Muzzleloader on the Vernon unit.

Table 1 – Current Population Status

Year	Buck Harvest	Post-Season fawn/100 Does*	Post-Season buck/100 Does*	Post-Season Population Estimate	Population Objective	Percent of Objective
2021	1,127	35.6	19.3	18,900	22,800	83
2022	1,149	63.0	28.0	19,400	22,800	85
2023	1,183	44.0	30.5	20,250	22,800	89
3 year Avg.	1,153	47.5	25.9	19,500	22,800	85.7

*Based on data collected from the Stansbury, Oquirrh, and Vernon areas

POPULATION MANAGEMENT STRATEGIES

Monitoring

Population Size - Utilizing harvest data, postseason sex and age classifications, and survival estimates in a population model to estimate winter population size. The 2023 post-season estimate of the population is 20,250 deer. Based on harvest data and available habitat, the 2023 population estimate for the Swasey is approximately 5,800 deer. Based on population model, harvest data and available habitat, the 2023 population estimate for the Cedar/Stansbury unit is approximately 4,850 deer. The 2023 population model estimates the Vernon population at 2,150 deer. Based on harvest data and available habitat, the 2023 population estimate for the Oquirrh/Tintic subunit is approximately 7,450 deer. Because of low deer densities resulting in inadequate classification on the Swasey and Cedar/Stansbury units, harvest data will play a more significant role in characterization of that part of this population. If harvest data proves inadequate, the region could request helicopter time for Swasey and Cedar/Stansbury.

Harvest - The primary means of monitoring harvest will be through the statewide uniform harvest survey. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons, as needed.

Research - Continue to collect annual adult and fawn survival rates, body condition scores, and cause-specific mortality on this unit from GPS collared deer as resources allow. Support continued research efforts to identify migration corridors and limiting factors for deer herd growth.

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 - At present, the availability of high quality summer range may be more limiting to this deer population than winter range. Condition of winter ranges is a long-term problem. Fire and encroachment by pinyon and juniper trees results in the loss of forage production, diversity and quality.

Predation – Manage predators according to the predator management policy where habitat is not limiting and predators are demonstrated to have negative impacts on the population. Indices such as doe and fawn survival, population growth rate, body condition scores, ingesta-free body fat, fawn production, and cause-specific mortality will be used to determine if predator management is deemed necessary. Cougar harvest will be managed according to 2023 Utah House Bill 469.

Highway Mortality - Cooperate with the Utah Dept. Of Transportation in construction of highway fences, passage structures and warning signs etc. as needed.

Illegal Harvest - If illegal kill becomes 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.

Disease Management – Investigate and manage diseases that threaten mule deer populations and continue monitoring for chronic wasting disease (CWD) as stated in the Statewide Deer Plan. The Oquirrh is a CWD positive unit (<0.05% prevalence).

CWD Strategies

- Utilize rotational hunter harvest surveillance, targeting this unit once every several years.
- Consider compulsory testing of hunter-harvested deer to increase sample size.
- Consider managing the unit toward the lower end of the buck/doe objective to minimize increase of the disease.
- Consider late season buck hunts in focal hotspots on the unit to minimize disease transmission.
 - Educate public and enforce rules regarding carcass importation and disposal from CWD positive areas.

Urban Deer Management – Continue working with municipalities on localized urban deer control management actions. Work cooperatively with municipalities in developing urban deer management plans, within the guidelines set by state law and agency rules and policy.

HABITAT MANAGEMENT OBJECTIVES

- Maintain and protect existing critical deer ranges sufficient to support the population objectives.
- Seek cooperative projects to improve the quality and quantity of deer habitat.
- Promote enhancement of habitat security and escapement areas for deer.

HABITAT MANAGEMENT STRATEGIES

Monitoring

Determine trends in habitat condition through permanent range trend studies, 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.

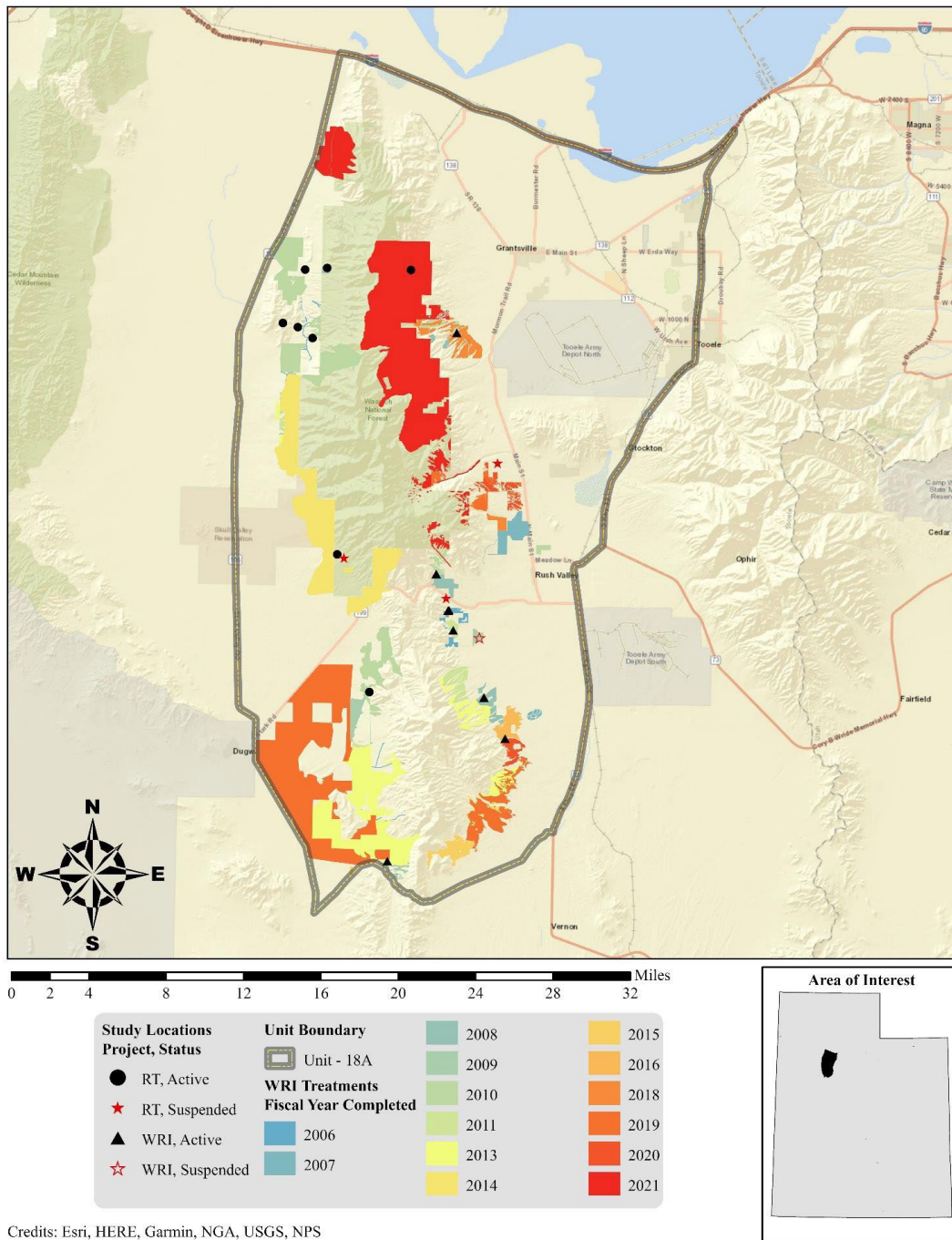
Habitat Protection and Maintenance

- 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.
- 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.

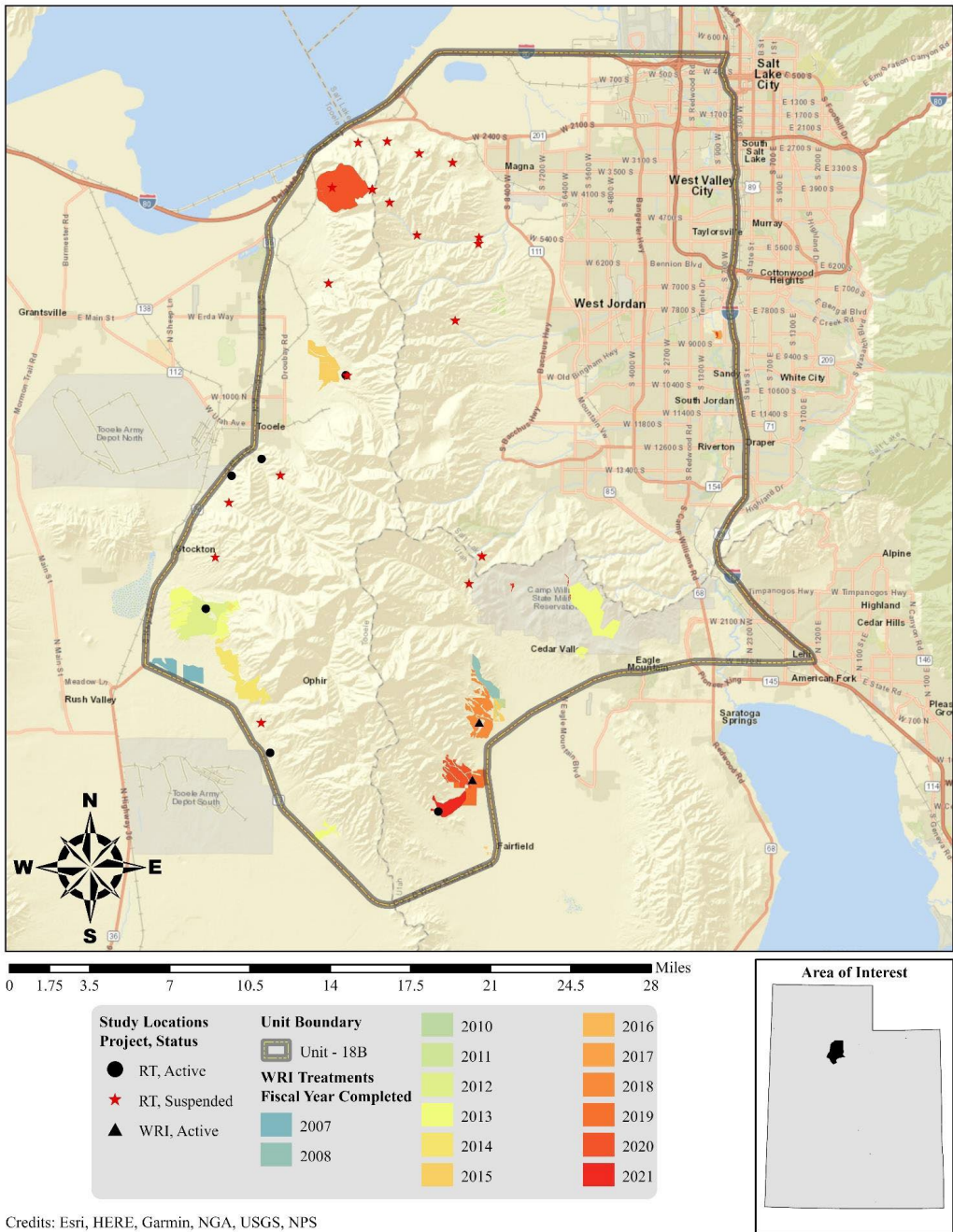
Habitat Improvement

- 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 cheatgrass with desirable perennial vegetation.
- Reduce expansion of Pinyon-Juniper woodlands into sagebrush habitats and improve sagebrush habitats dominated by Pinyon-Juniper woodlands by completing habitat restoration projects like lop & scatter, bullhog and chaining.
- Work with partners to increase the amount of available water resources (e.g. guzzlers).
- Cooperate with federal land management agencies and local governments in developing and administering vehicle access management plans for the purposes of habitat protection and escape or security areas.

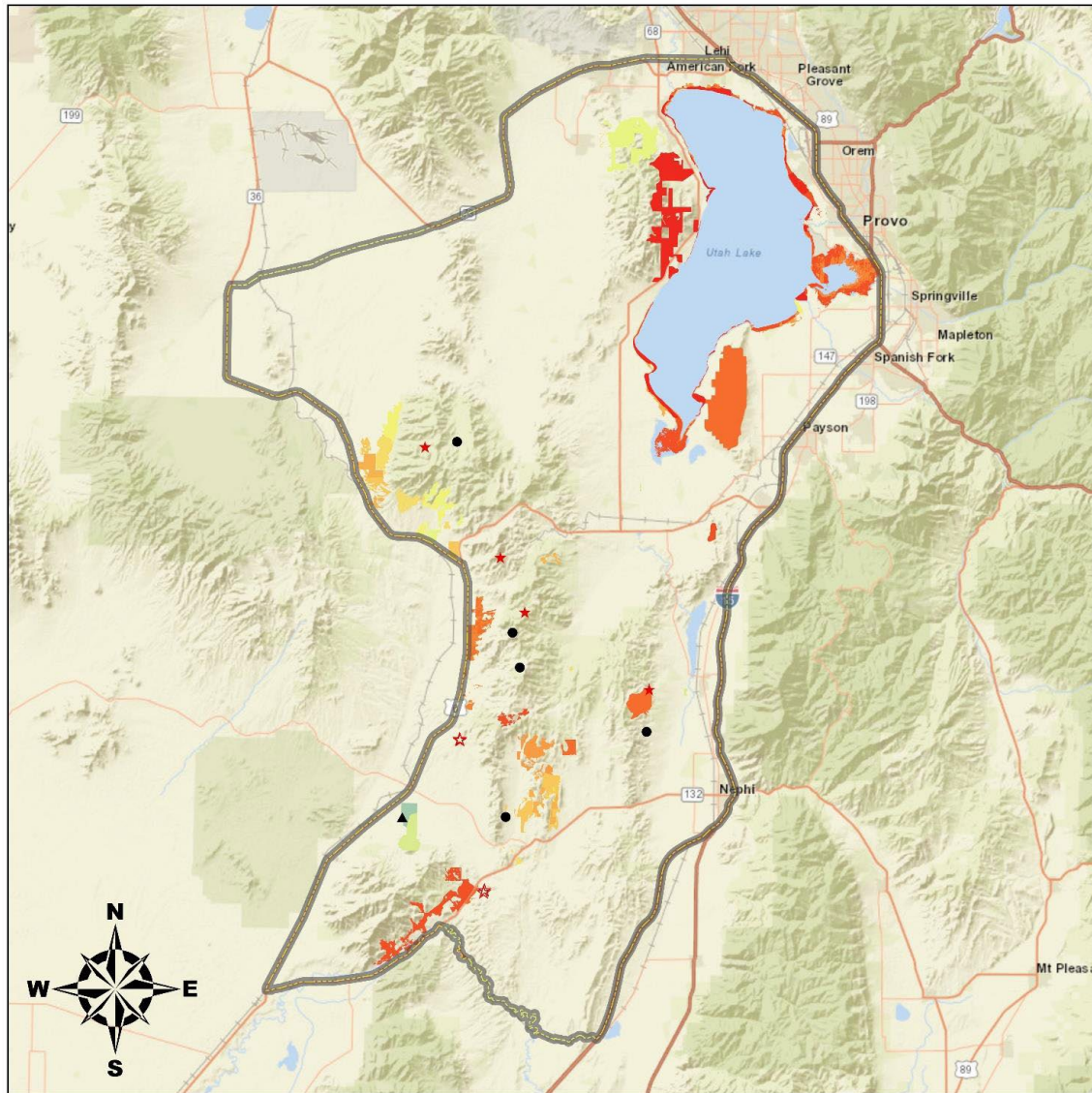
Habitat Projects within the West Desert Complex



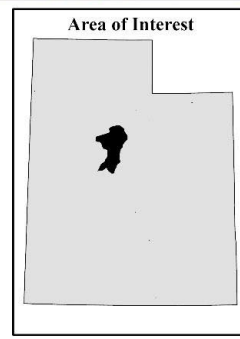
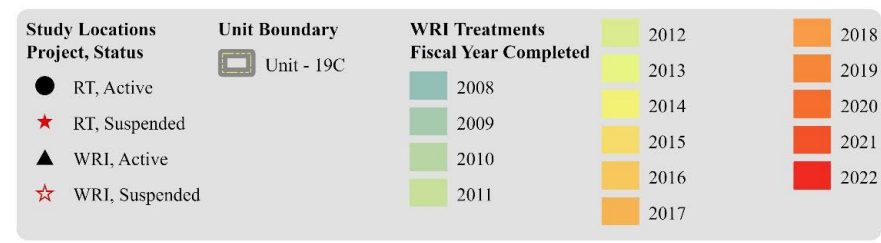
Map 1: WRI treatments by fiscal year completed for Stansbury Mountain.



Map 2: Watershed Restoration Initiative (WRI) treatments by fiscal year completed for Quirrh.

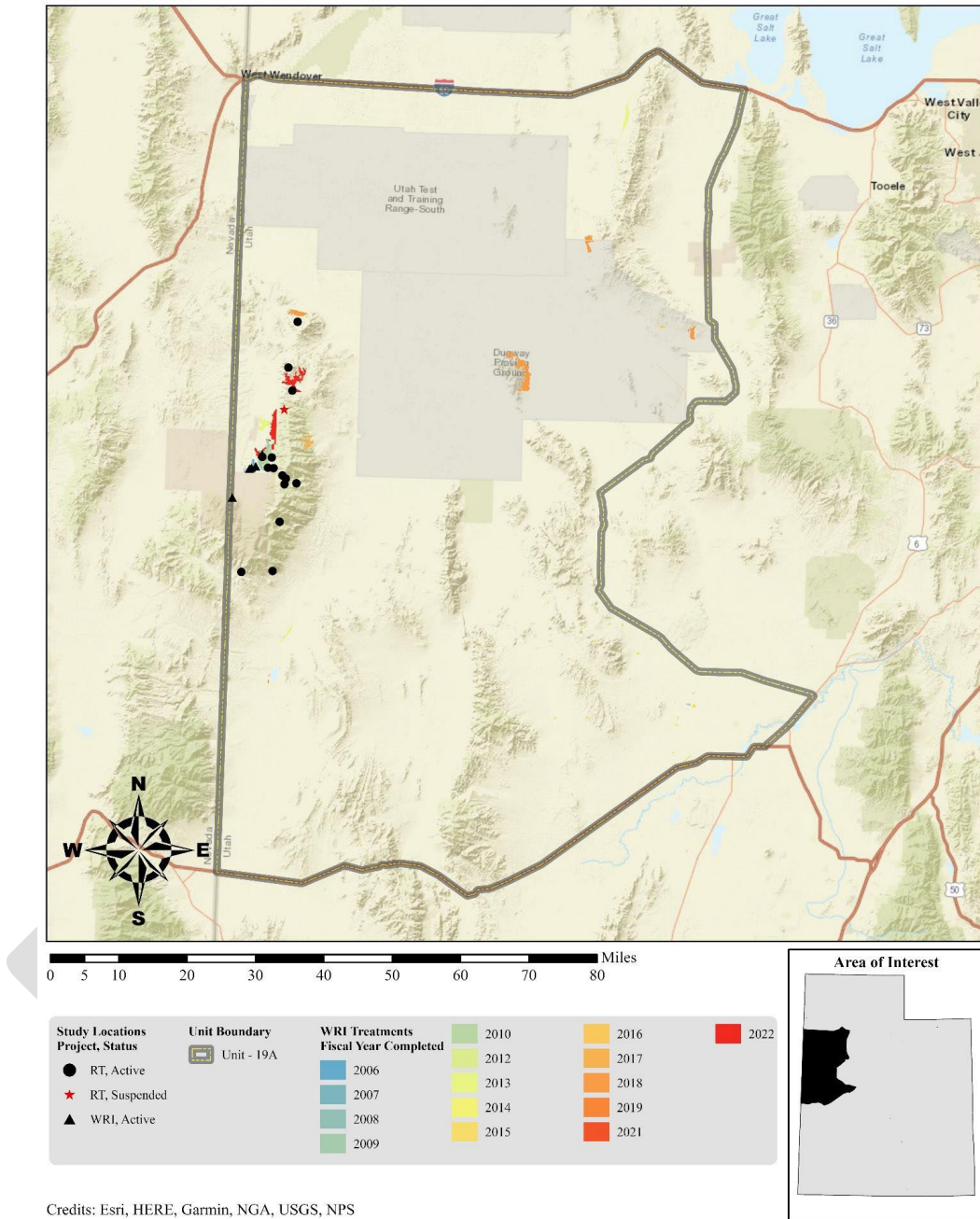


0 3 6 12 18 24 30 36 42 48 Miles

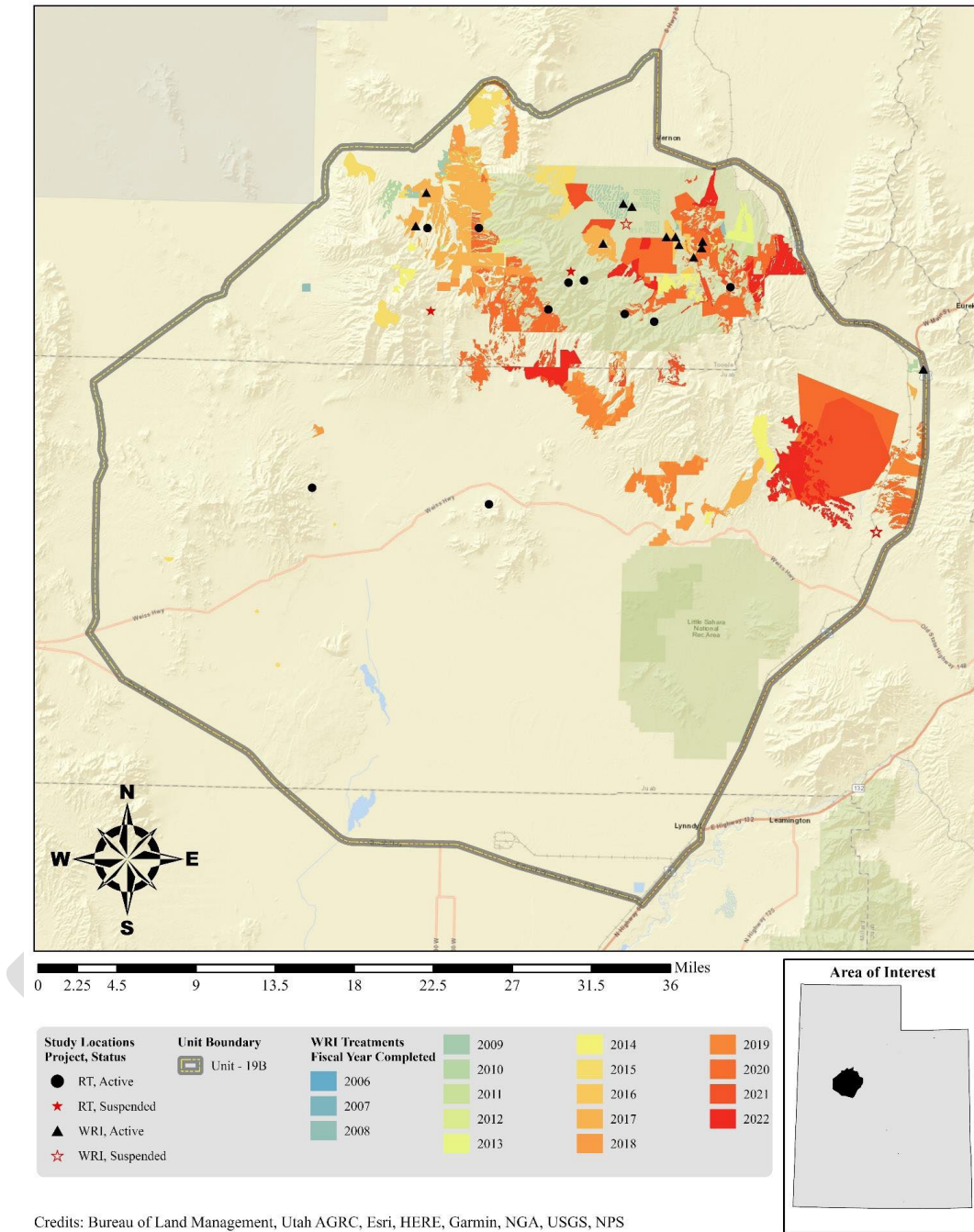


Credits: Esri, HERE, Garmin, NGA, USGS, NPS

Map 3: WRI treatments by fiscal year completed for Tintic.



Map 4: Watershed Restoration Initiative (WRI) treatments by fiscal year completed for Swasey and Cedar.



Map 5: WRI treatments by fiscal year completed for Vernon

PERMANENT RANGE TREND SUMMARIES

DWR Winter Range Trend Assessment - 2021

Stansbury Mountain Range

The condition of deer winter range within the Stansbury management unit, as a whole, has decreased from fair in 1997 to very poor wintering habitat in 2021. This decreasing trend was driven by the 2009 Big Pole wildfire with South Palmer Point, Salt Mountain Stock Pond, Below Chokecherry Spring, Salt Mountain, and South of Broons Canyon all being affected by the burn. Deadman Canyon was affected by the Patch Springs wildfire in 2013. Deer winter range on the east aspect of the Stansbury Mountains was negatively affected by the removal of much of the preferred browse populations. Some augmentation has been beneficial with the seeding of perennial grasses, but most sites have been negatively impacted by invasive annual grass.

The overall deer winter range assessment in 2021 for Stansbury mountain was very poor. Much of this can be attributed to the lack of preferred browse across the unit, with most of the sites sampling the west aspect of the Stansbury Mountains. Improvement to deer winter range will come with the addition of preferred browse species to the community.

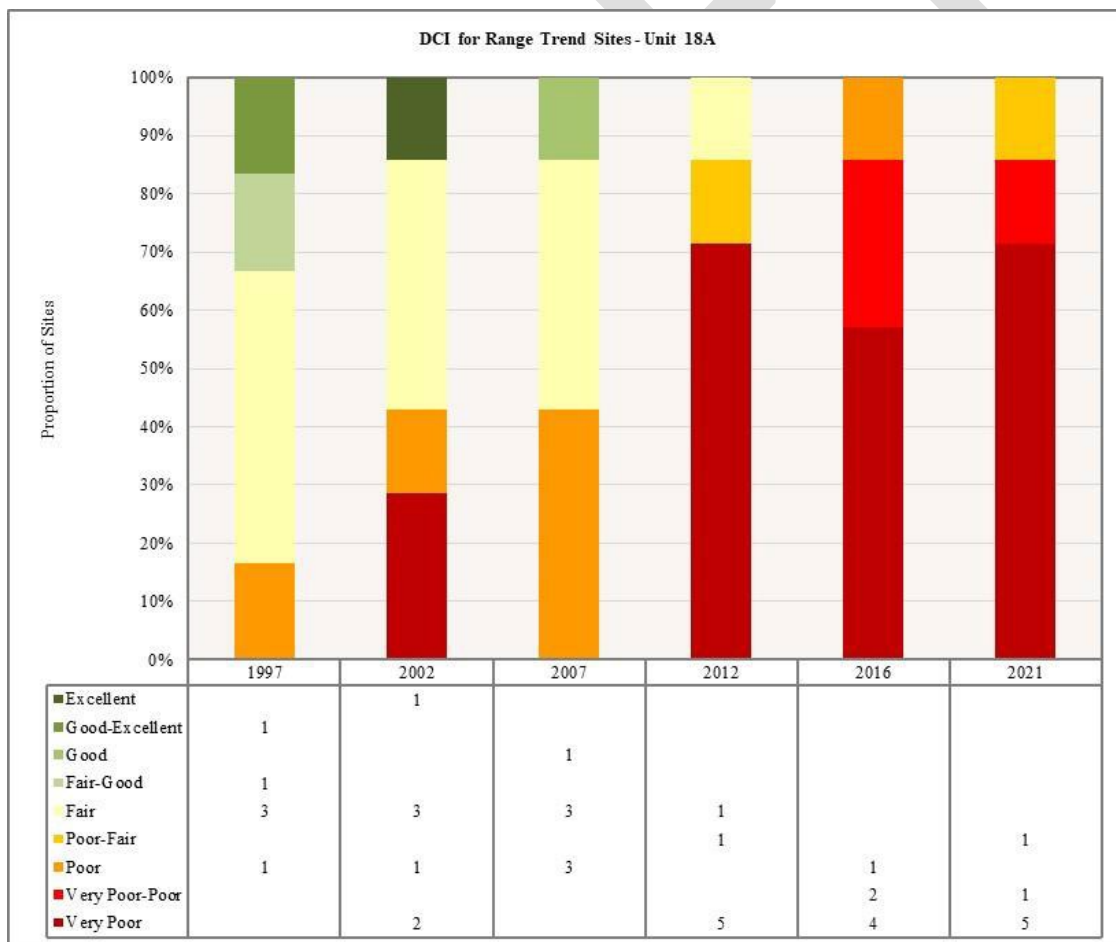


Figure 1: Stansbury Mountains deer winter range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2021.

Drought Index – Stansbury Mountains

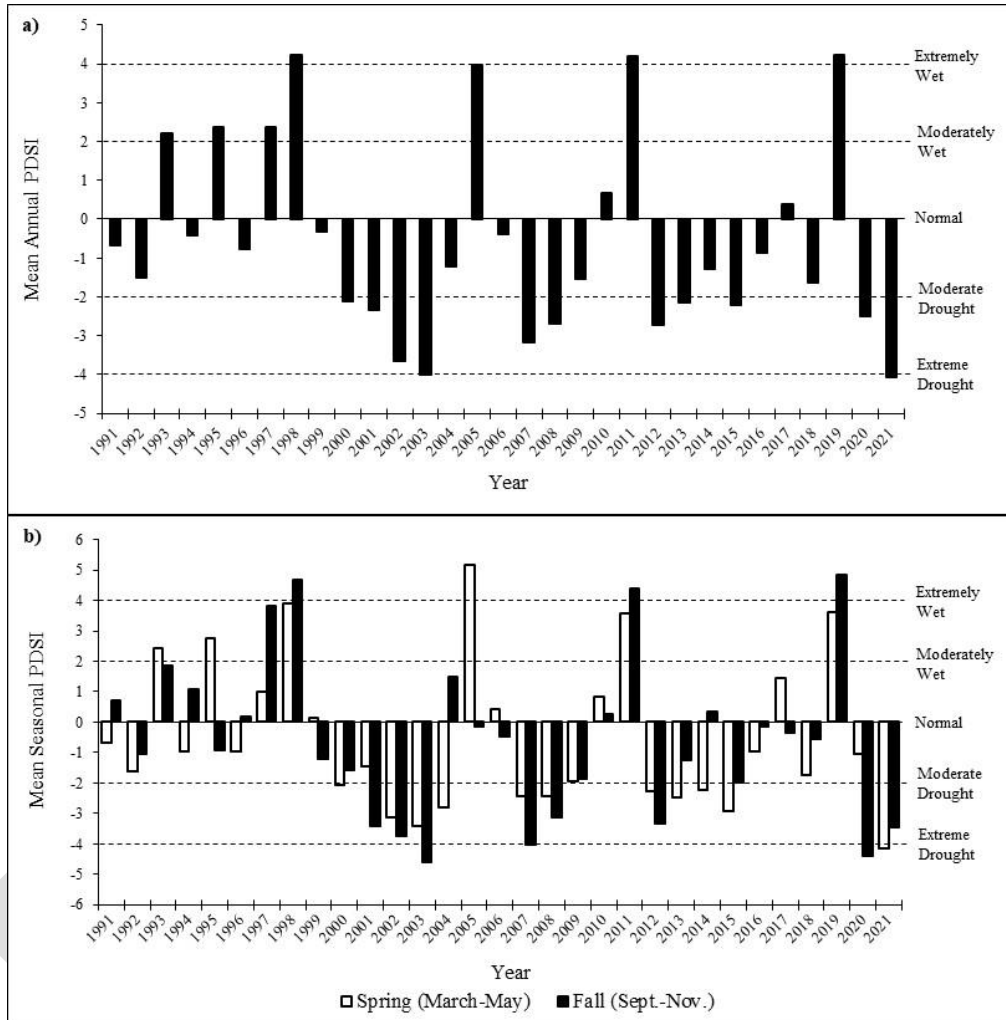


Figure 2: The 1991-2021 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2021. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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. a) Mean annual PDSI. b) Mean spring (March-May) and fall (Sept.-Nov.) (Time Series Data, 2022).

Oquirrh Mountain Range

The condition of deer winter range within the Oquirrh Mountains management unit has generally remained poor in most sample years, except in 2012, where average conditions were considered to be fair. Most Range Trend sites in the Oquirrh portion (Manning Canyon, Big Dip Gulch, South of Soldier Canyon, Three O'Clock, and Settlement Canyon Reservoir) have generally remained in poor condition and are considered to be the main drivers for the unit's overall winter condition. Contributing to the poor condition of these sites are deficient browse, and perennial grass and forb populations. Carr Fork 2 is a more recent study that was added to the sampling rotation in 2012, and has a tendency to be in states that are between fair and good condition for wintering deer: much of this favorable condition is due to a notable presence of antelope bitterbrush (*Purshia tridentata*), though cover has steadily decreased. Efforts to improve winter range on Carr Fork 2 should begin by preserving the browse community. Most sites show a proclivity to remain in poor condition and may not be the best candidates for rehabilitation.

The overall deer winter range assessment in 2021 for Oquirrh Mountain was very poor. Much of the poor condition can be attributed to a lack of preferred browse, perennial grasses, and forbs.

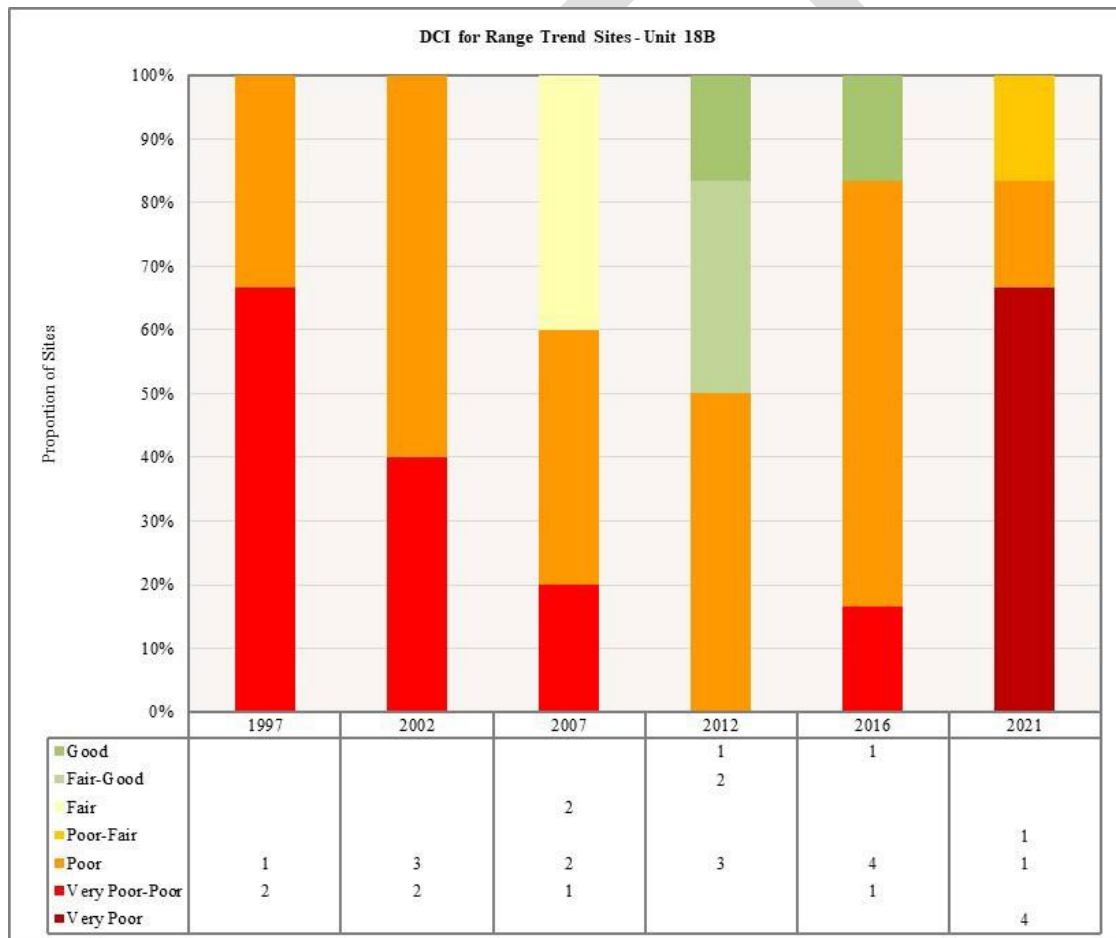


Figure 3: Oquirrh Mountains deer winter range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2021.

Drought Index – Oquirrh Mountains

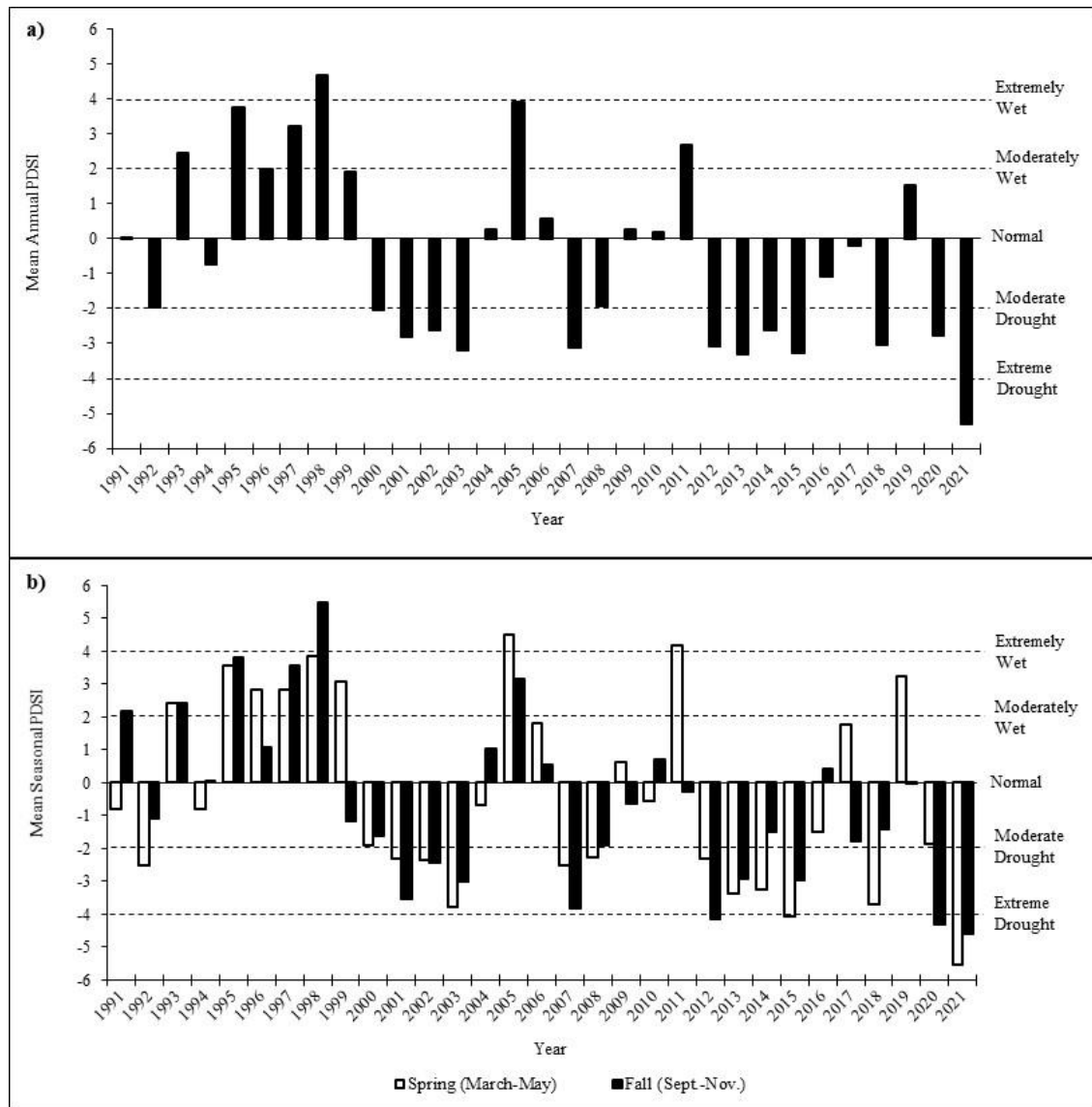


Figure 4: The 1991-2021 Palmer Drought Severity Index (PDSI) for the North Central division (Division 3). The PDSI is based on climate data gathered from 1895 to 2021. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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. a) Mean annual PDSI. b) Mean spring (March-May) and fall (Sept.-Nov.) (Time Series Data, 2022).

Tintic

The condition of deer winter range within the Tintic management unit has modestly improved overall from very poor-fair averaged conditions in 1997 to fair averaged conditions in 2022. Sunrise Canyon is the main driver for the unit’s wintering habitat stability and quality, and averages between fair and good for deer winter range conditions. Sioux Pass, Nephi Dump, and Furner Valley are considered to have poor conditions consistently from year to year, which suppresses the unit’s overall quality of winter habitat; as of 2007, however, Sioux Pass has not influenced the winter range conditional trend. Furner Valley tends to have higher variability in deer winter habitat, and appears to have the highest degree of potential winter range improvement: the immediate area may benefit and respond the most to improvement projects. Areas of improvement may include a reduction in pinyon and juniper tree cover, and/or cheatgrass.

The overall deer winter range assessment in 2022 for Tintic was in fair condition. Factors contributing to fair conditions are the presence of annual grass, low abundance of perennial grasses and forbs, and a lack of preferred shrub recruitment. However, Nephi Dump has a notable perennial grass community present.

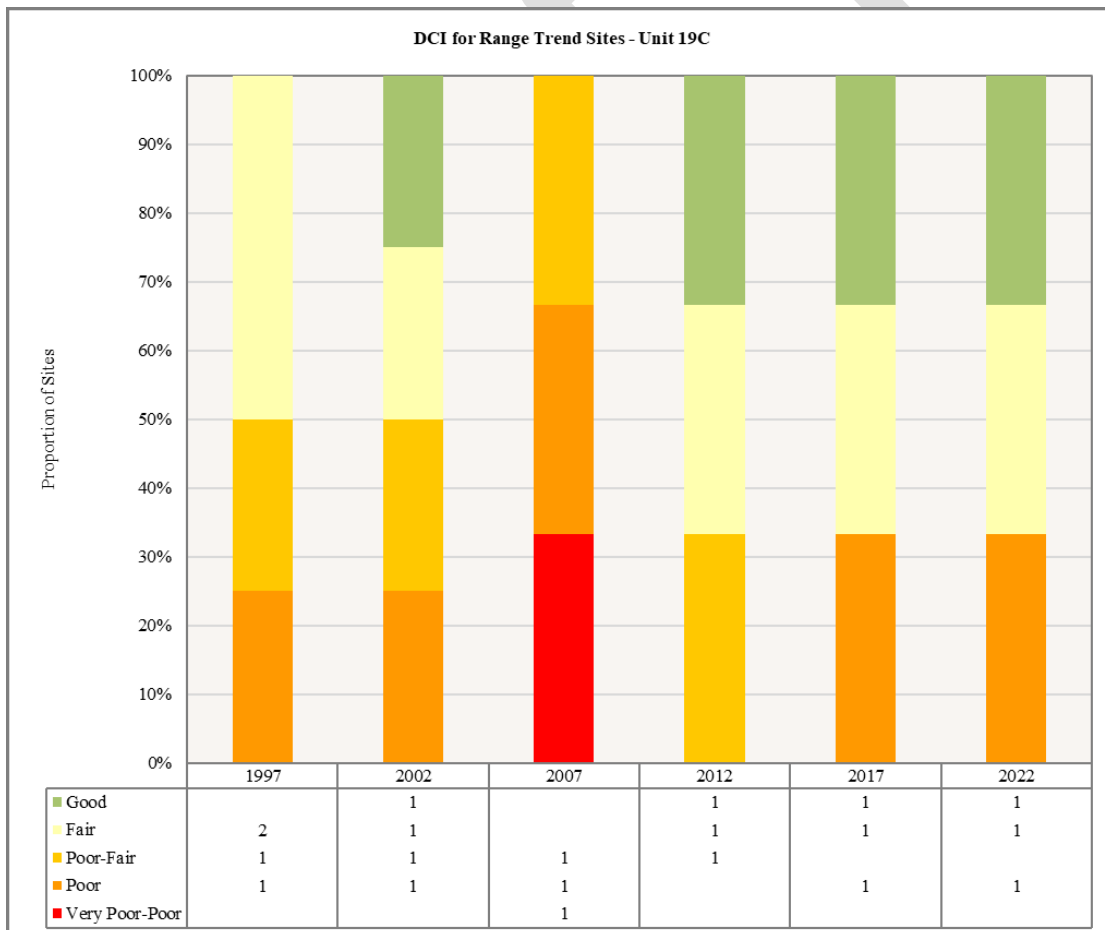


Figure 5: West Desert, Tintic deer winter range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2022.

Drought Index – Tintic

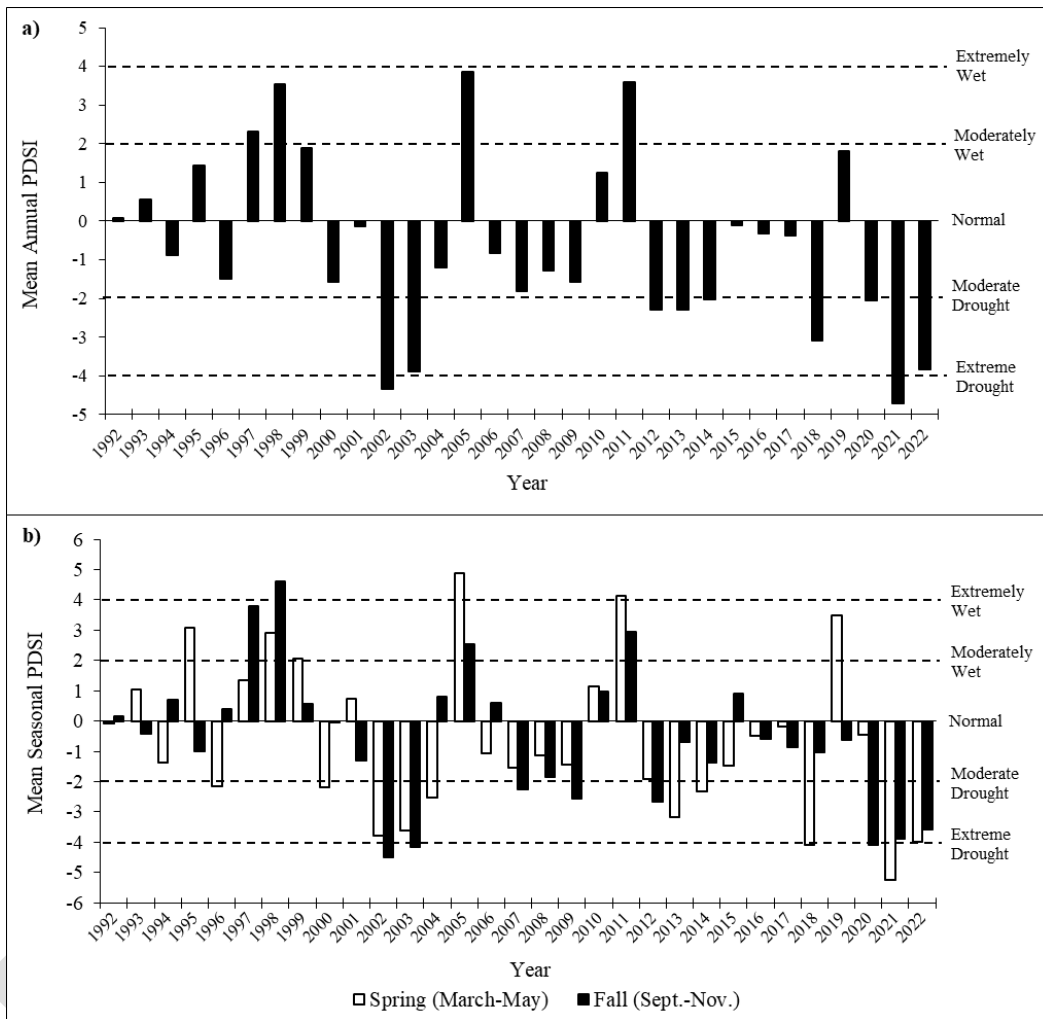


Figure 6: The 1992-2022 Palmer Drought Severity Index (PDSI) for the South Central division (Division 4). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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. **a)** Mean annual PDSI. **b)** Mean spring (March-May) and fall (Sept.-Nov.) PDSI Time Series Data, 2023.

Swasey

The averaged condition of deer winter range within the West management unit has generally remained poor since the 1997 sampling. The Range Trend sites in Swasey that have generally remained in good condition are The Basin and Rocky Canyon, and are the main drivers for the unit’s stability as good deer winter range. Trail Gulch, Ochre Mountain, Sevy Mountain, Wood Canyon, and Clifton Flat all have a proclivity to remain as very poor to poor deer winter range. Of these sites, Ochre Mountain and Wood Canyon have more variability in deer winter range condition: this variability may be an indicator that these sites may respond well to future habitat improvement projects.

The overall deer winter range assessment in 2022 for Swasey was that the unit was in poor condition; all sites except for The Basin were ranked as poor or worse. These conditions are mainly driven by an abundance of annual grass and a lack of preferred browse and/or a lack of diversity in preferred shrub age classes. Ochre Mountain and its surroundings would benefit the most from habit improvements made in these areas.

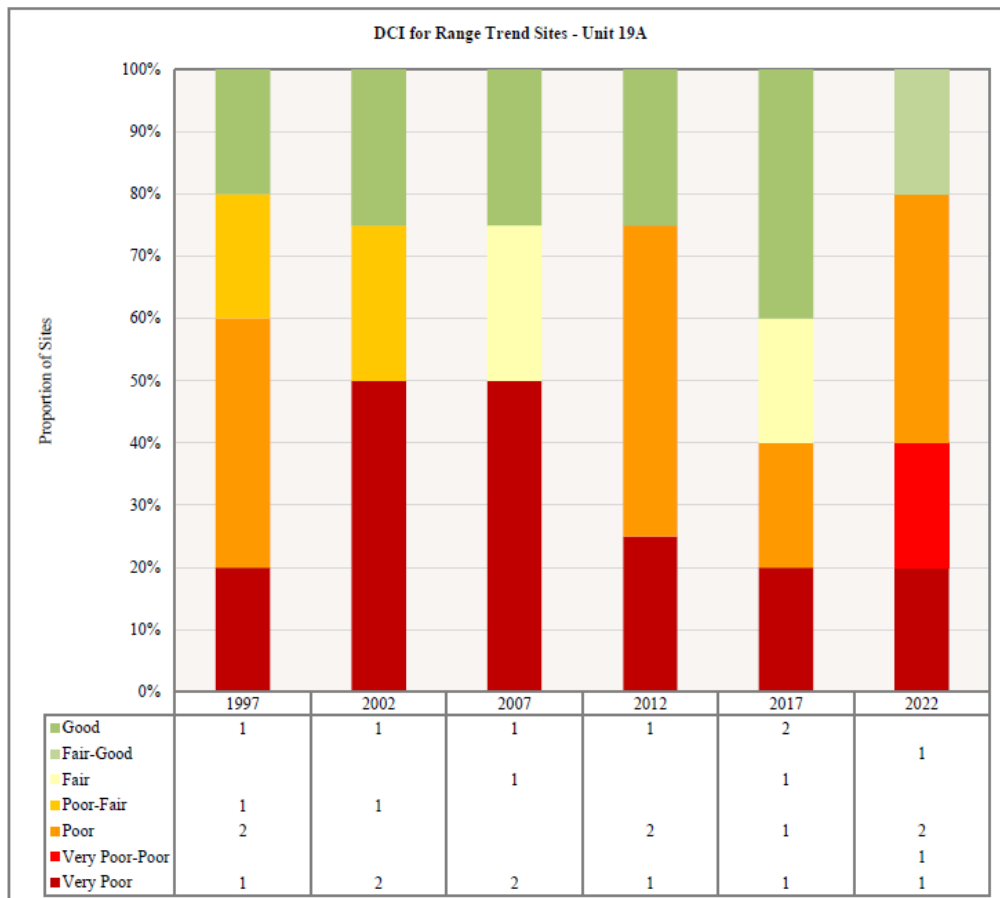


Figure 7: West Desert, West deer winter range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2022.

Drought Index – Swasey

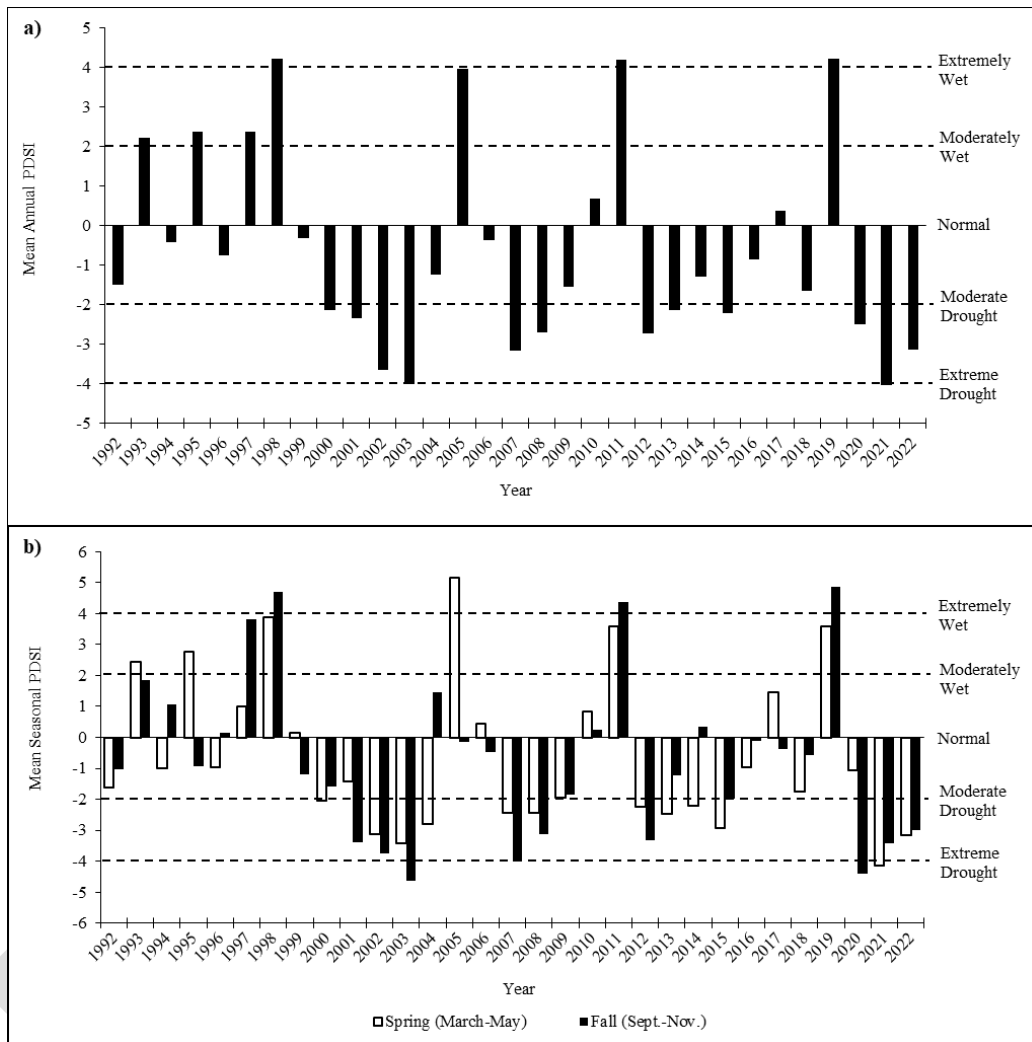


Figure 8: The 1992-2022 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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. **a)** Mean annual PDSI. **b)** Mean spring (March-May) and fall (Sept.-Nov.) PDSI (Time Series Data, 2023).

Vernon

The condition of deer winter range within the Vernon management unit has generally remained stable since the 1997 sampling. Mean wintering conditions on Vernon have remained between poor-fair to fair condition from 1997 to 2022. West Government Creek and Lee's Creek are the main drivers for the unit's stability and average within good and fair deer winter range conditions, respectively. Range Trend sites in this WMU tend to have low variability in deer winter habitat, meaning that sites experience little change in their respective habitat qualities from year to year.

The overall deer winter range assessment in 2022 for Vernon was that sites were in poor-fair condition. However, West Government Creek was considered to be in good condition due to an abundance of perennial grasses, forbs, and preferred browse cover. A suggested habitat improvement that would address deer winter range condition on this site would be diversifying the age class component for preferred shrubs by decreasing decadence and increasing young populations. South Pine Canyon and the newly added Keg Mountain site are rated, respectively, as poor and fair winter range in 2022. Concerns identified are reduced perennial grass and forb abundance, and preferred browse, but annual grass is an additional issue. Addressing these areas as a focus for habitat rehabilitation would improve winter conditions for deer.

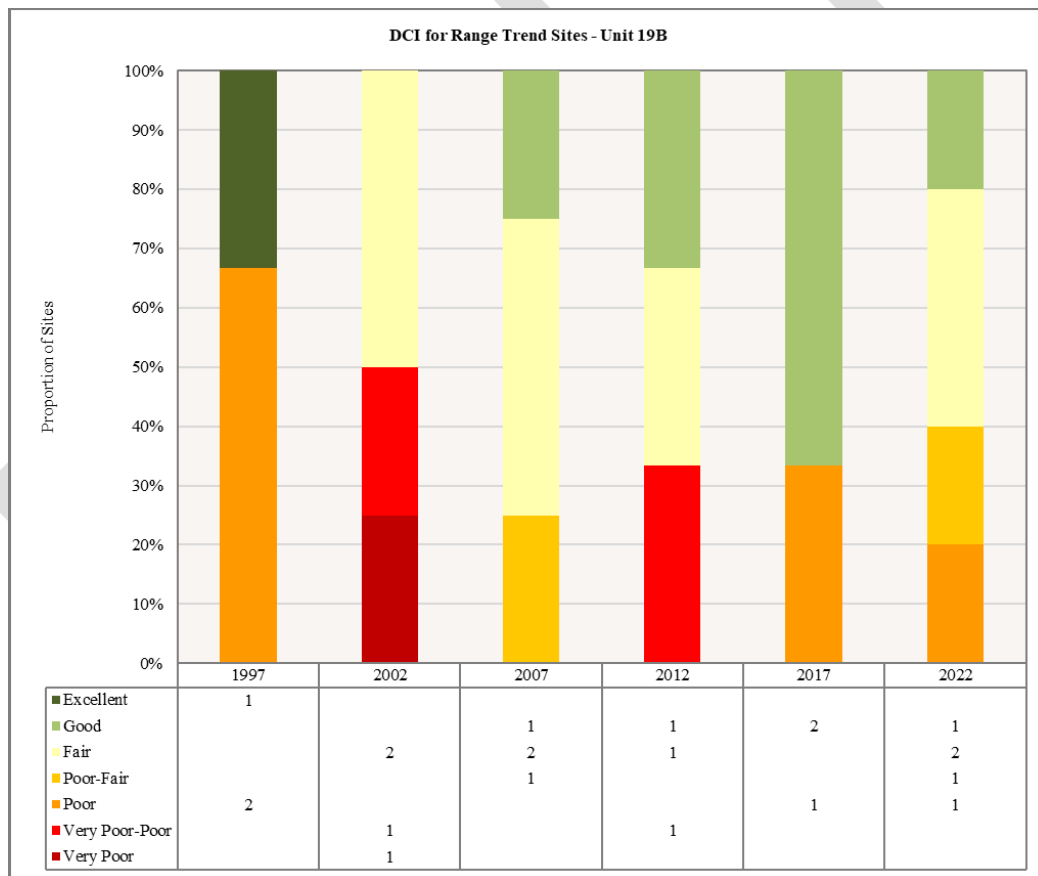


Figure 9: Vernon deer winter range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2022.

Drought Index – Vernon

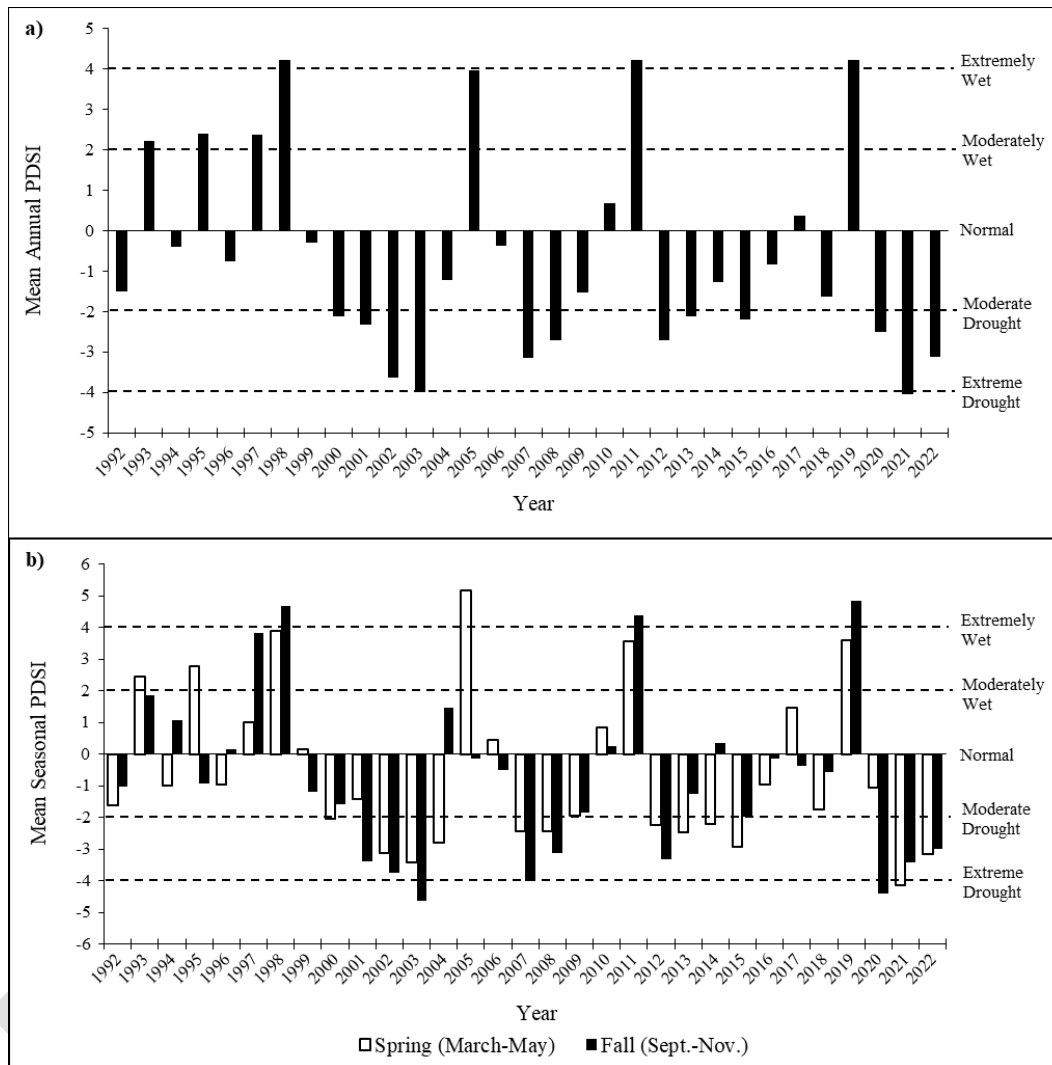


Figure 10: The 1992-2022 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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. **a)** Mean annual PDSI. **b)** Mean spring (March-May) and fall (Sept.-Nov.) PDSI (Time Series Data, 2023).

DURATION AND AUTHORITY OF PLAN

This unit management plan was approved by the Utah Wildlife Board January 9, 2025 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.