ELK HERD MANAGEMENT PLAN
Elk Herd Unit #19
WEST DESERT
December 2023

BOUNDARY DESCRIPTION

Tooele, Utah, Juab and Millard counties - Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Rowley Junction at exit 77 and SR-196 (Skull Valley road); south on SR-196 to S. Government Creek road; south on this road to the Pony Express Road: east on this road to SR-36; north on SR-36 to Pony Express Trail road; east on this road to SR-73; east on SR-73 to I-15 in Lehi; 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 132 to US-6; south on US-6 to its junction with US-50 near Delta; west on US-50 & 6 to the Utah-Nevada state line; north along this state line to I-80 at Wendover. **EXCLUDES ALL NATIVE AMERICAN TRUST LAND, AND MILITARY LANDS WITHIN THIS BOUNDARY.**

This boundary has two subunits including:

Unit 19a – West Desert, Deep Creek – Juab and Tooele counties – Boundary begins at the Nevada-Utah state line and the Pleasant Valley road; east on this road to the Snake Valley road; north on this road to the Pony Express road; north on this road to the Gold Hill road; north on this road to the Blue Lakes road; northwest on this road to the Utah-Nevada state line; south on this state line to the Pleasant Valley road. **EXCLUDES ALL NATIVE AMERICAN TRUST LAND WITHIN THIS BOUNDARY.**

Unit 19bc – West Desert, East (includes the Vernon 19b and Tintic 19c portions) – Juab, Millard, Tooele, and Utah counties -- Boundary begins at the Utah-Nevada state line and I-80 in Wendover; east on I-80 to the Rowley Junction at exit 77 and SR-196 (Skull Valley road); south on SR-196 to S. Government Creek road; south on this road to the Pony Express Road: east on this road to SR-36; north on SR-36 to Pony Express Trail road; east on this road to SR-73; east on SR-73 to I-15 in Lehi; south on I-15 to Exit 207 and the Mills road; west on this road to the Sevier River; north along the Sevier River to SR-132; west on SR-132 to US-6; southwest on US-6 to US-6/50; west on US-6/50 to the Nevada-Utah state line; north on this state line to the Pleasant Valley road and the Utah-Nevada state line; east on this road to the Snake Valley road; north on this road to the Pony Express road; north on this road to the Gold Hill road; north on this road to the Blue Lakes road; northwest on this road to the Utah-Nevada state line; north on this state line to I-80 in Wendover. **EXCLUDES ALL NATIVE AMERICAN TRUST LAND, AND MILITARY LANDS WITHIN THIS BOUNDARY.**

LAND OWNERSHIP

RANGE AREA AND APPROXIMATE OWNERSHIP

	YEARLONG RANGE		SUMMER RANGE		WINTER RANGE		TOTAL ACRES
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%	
Forest Service		0%	48,468	22.2%	21,282	3.9%	69,750
Bureau of Land Management	541,579	87.8 %	115,988	54.8%	412,392	75.9 %	1,069,959
Utah State Institutional Trust Lands	46,914	7.6%	8,486	4%	32,716	6%	88,116

Native American Trust Lands	0	0%	10,711	5.1%	9,877	1.8%	20,588
Private	5,776	.9%	27,961	13.2%	64,159	11.8 %	97,896
Department of Defense	22,299	3.6%	0	0%	2,688	.5%	24,987
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%	543114	100%	1,371,296

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 elk population.
- Manage the elk population at a level capable of providing a broad range of recreational opportunities, including hunting and viewing.
- Balance elk herd impacts on human needs, such as private property rights, agricultural crops and local economies.
- Strive for consistency and simplicity in elk management programs.

POPULATION MANAGEMENT OBJECTIVES

Target Winter Herd Size – Maintain a wintering elk population of 350 elk, based on aerial counts; supplemented with available harvest data, preseason sex and age classifications, and survival estimates. Elk on the Goshute Indian Reservations will be excluded from the targeted population size. Elk will be distributed among the following sub-populations:

Wintering Area (counting unit)	Target Population
West Desert, Deep Creek	200
West Desert, East	150
TOTAL	350

5-year Winter Herd Size – Manage for a 5-year target population of 350 wintering elk 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 elk is occurring due to inadequate habitat, actions will be taken to reduce the population to sustainable levels. The elk population objective will be evaluated each time the unit management plan is up for renewal.

Herd Composition - Utilize General Season Any Bull hunting strategy for the East subunit; this subunit will not be managed to an age objective. Utilize a limited entry September archery only and a later Handgun, Archery, Muzzleloader, Shotgun, Straight-walled rifle (HAMSS) hunt strategy managing for success rates in the range of 20% - 40% or an average age of harvested bull between 3.5 - 4.5 for the Deep Creek Subunit.

Harvest – General season any bull hunt regulations, using Archery, Rifle, and Muzzleloader, and youth hunting opportunities as described in the Statewide Plan. Utilize antlerless harvest strategies to maintain elk populations at or below population objectives. Antlerless harvest will be governed by depredation concerns and potential range conditions attributable to elk.

POPULATION MANAGEMENT STRATEGIES

Monitoring

Population Size - Utilizing aerial counts every 3-years, supplemented with available harvest data, preseason sex and age classifications, and survival estimates to estimate winter population size. The 2023 winter estimate of the population is 350 elk.

Harvest - The primary means of monitoring harvest will be through statewide mandatory harvest reporting. Achieve the target population size by use of antlerless harvest using a variety of harvest methods and seasons, as needed. Whenever possible, harvest recommendations will be crafted to simultaneously manage overall population size, age class and address concerns in specific areas such as depredation problems or localized range overuse by elk.

Research - Continue research efforts to identify migration corridors and limiting factors for elk herd growth, as funding and personnel allow.

Limiting Factors (May prevent achieving management objectives)

Crop Depredation - Take all steps necessary to minimize depredation as prescribed by state law and DWR policy.

Drought - Drought is the primary factor that influences these elk populations. Forage production and vigor is severely limited during drought years.

Habitat - At present, the availability of high quality summer range may be more limiting to this elk 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.

Urban Expansion - Current and future urban expansion will continue to fragment existing elk habitat and displace elk to less productive areas.

HABITAT MANAGEMENT OBJECTIVES

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

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 elk habitat health, trend, and carrying capacity using the elk winter range Desirable Component Index (DCI) and other vegetation data. The DCI was created as an indicator of the general health of 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 elk carrying capacity is difficult to quantify and is not known.

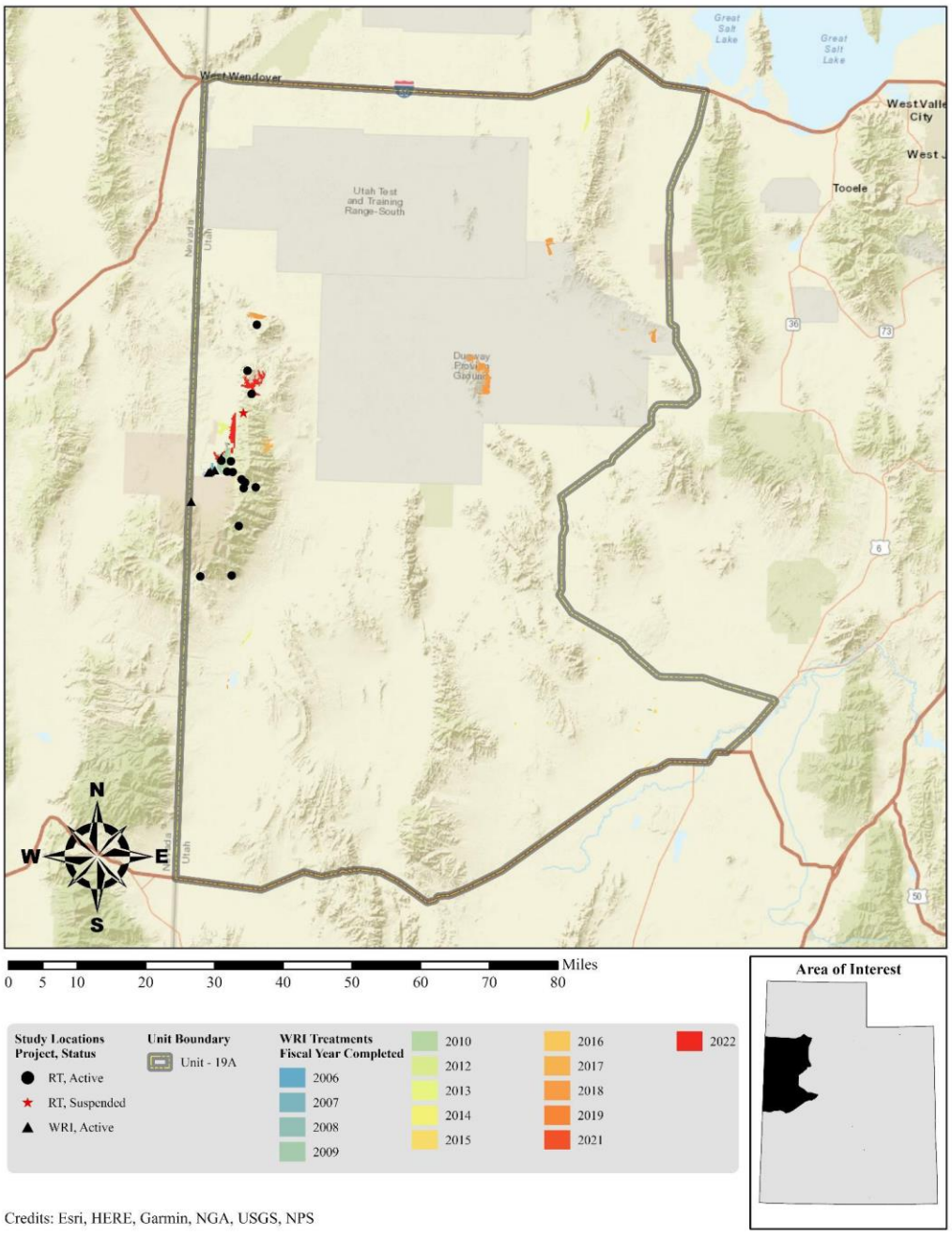
Habitat Protection and Maintenance

- Work with public land management agencies to identify and develop specific vegetative objectives to maintain the quality of important elk use areas.
- Continue to coordinate with land management agencies in planning and evaluating resource uses and developments that could influence habitat quality.
- Work toward long-term habitat protection and preservation using agreements with land management agencies and local governments, and with conservation easements, etc. on private lands.

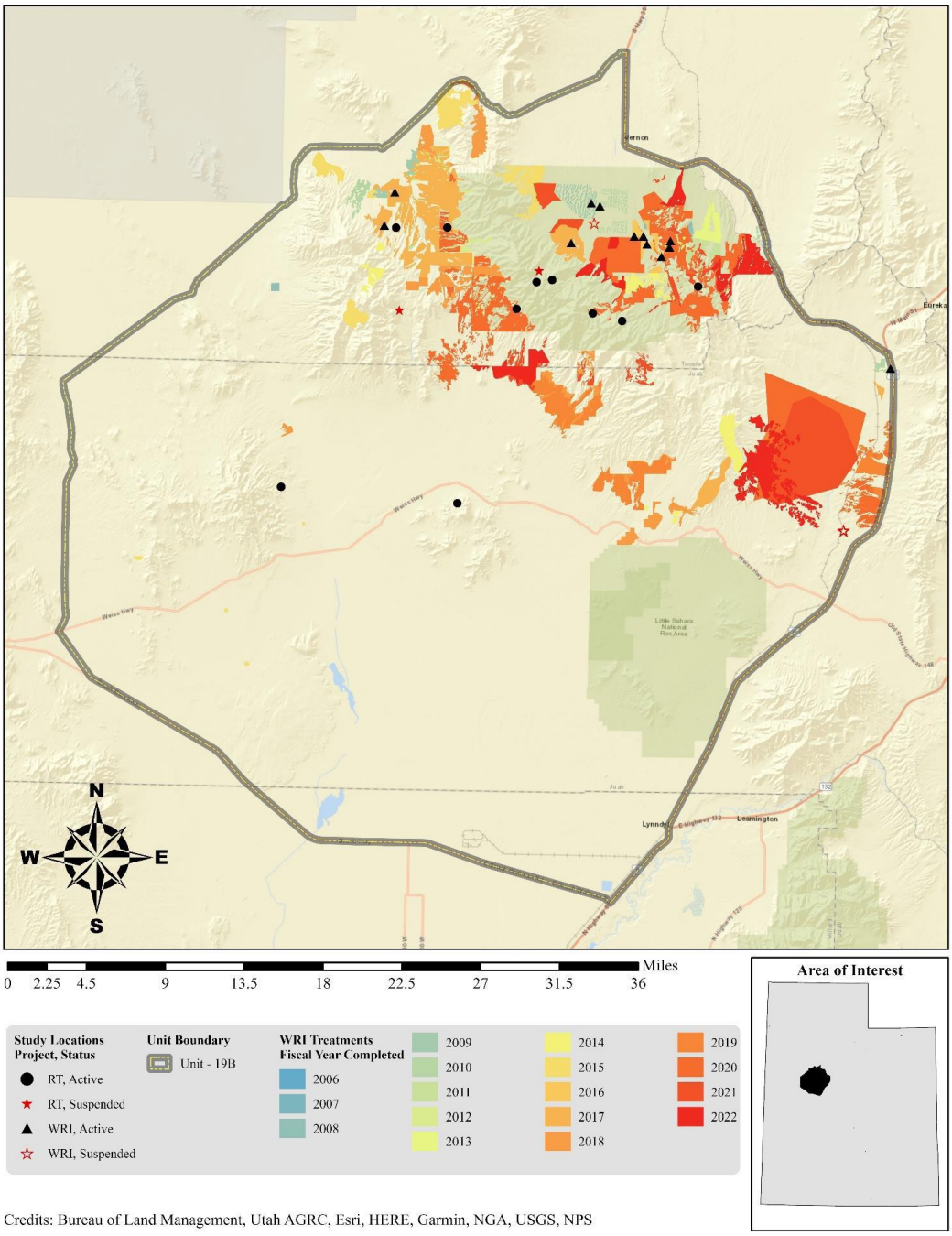
Habitat Improvement

- Cooperate with federal land management agencies, private landowners, and other partners in identifying highest priority areas and carrying out habitat improvement projects. Protect elk 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 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 access management plans for the purposes of habitat protection and escape or security areas.
- Cooperate with federal agencies to assure a diverse age structure of aspen communities on summer habitats.

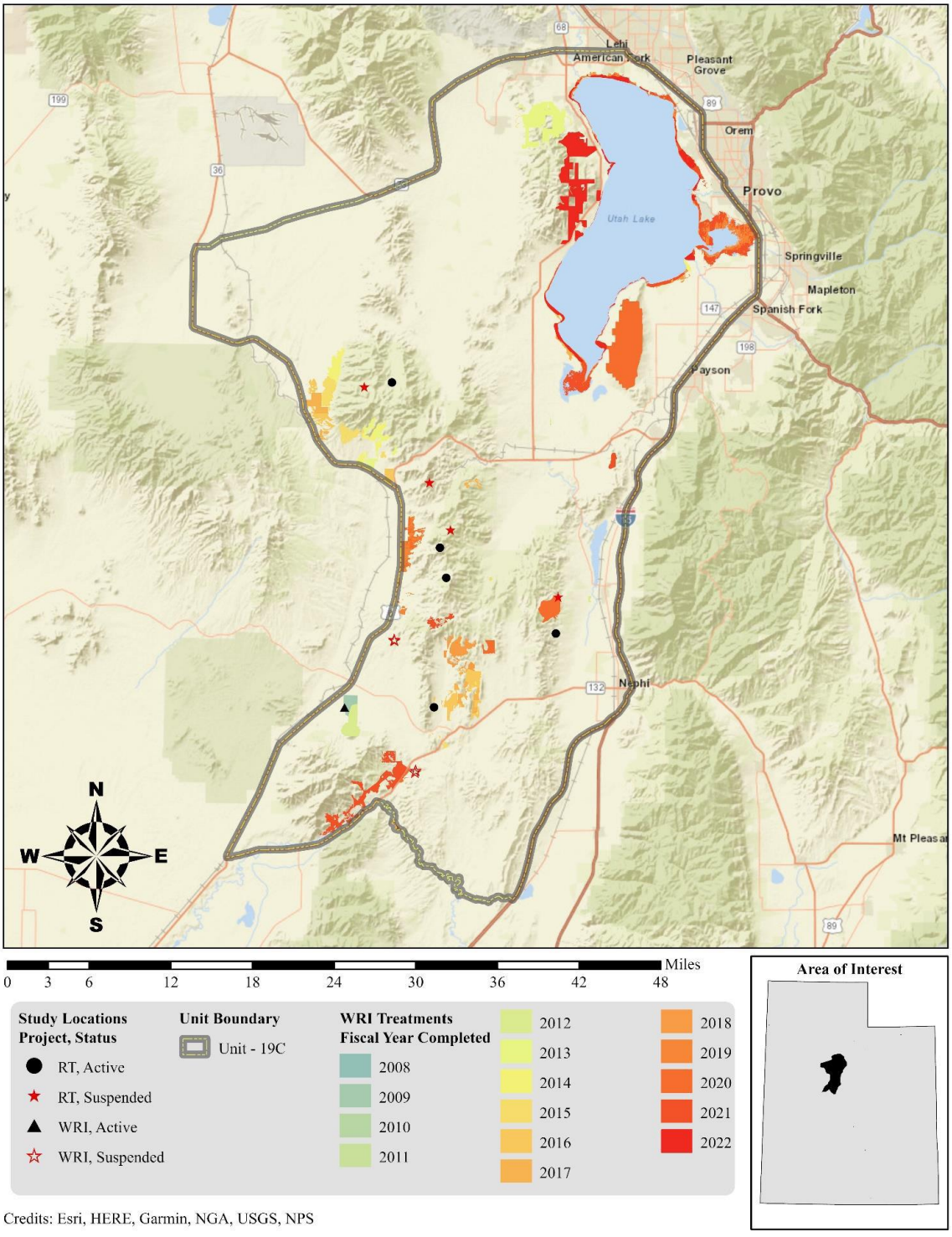
Habitat Projects within Unit 19



Map 1: Watershed Restoration Initiative (WRI) treatments by fiscal year completed for Wildlife Management Unit (WMU) 19a, West Desert, Deep Creek.



Map 2: WRI treatments by fiscal year completed for WMU 19b, West Desert, East (Vernon portion)



Map 3: WRI treatments by fiscal year completed for WMU 19c, West Desert, East (Tintic portion)

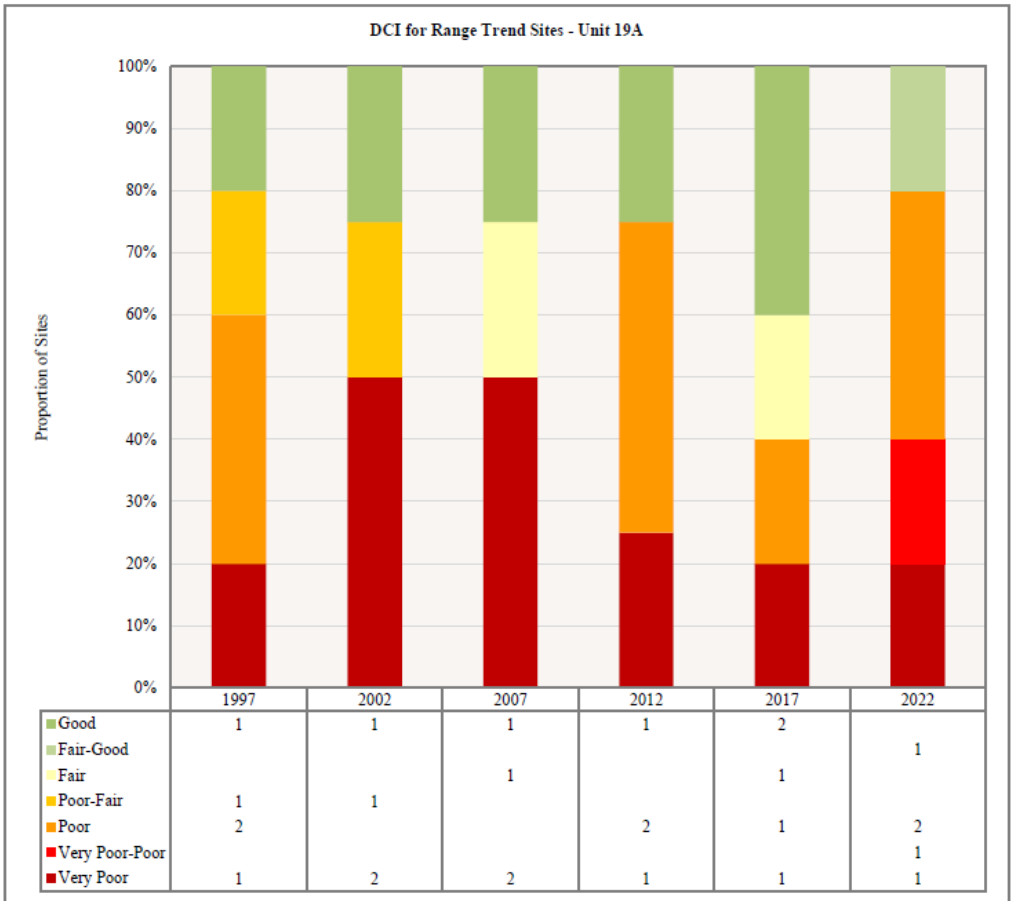
PERMANENT RANGE TREND SUMMARIES

DWR Winter Range Trend Assessment - Unit 19, West Desert 2022

West Desert, Deep Creek (19a)

The averaged condition of elk range within the Deep Creek management subunit has generally remained poor since the 1997 sampling. The Range Trend sites in WMU 19a 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 elk range. Trail Gulch, Ochre Mountain, Sevy Mountain, Wood Canyon, and Clifton Flat all have a proclivity to remain as very poor to poor elk range. Of these sites, Ochre Mountain and Wood Canyon have more variability in elk range condition: this variability may be an indicator that these sites may respond well to future habitat improvement projects.

The overall elk range assessment in 2022 for WMU 19a was that the subunit 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.



	1997	2002	2007	2012	2017	2022
Good	1	1	1	1	2	
Fair-Good						1
Fair			1		1	
Poor-Fair	1	1				
Poor	2			2	1	2
Very Poor-Poor						1
Very Poor	1	2	2	1	1	1

Figure 1: West Desert, Deep Creek elk range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2022.

Drought Index – West Desert, Deep Creek

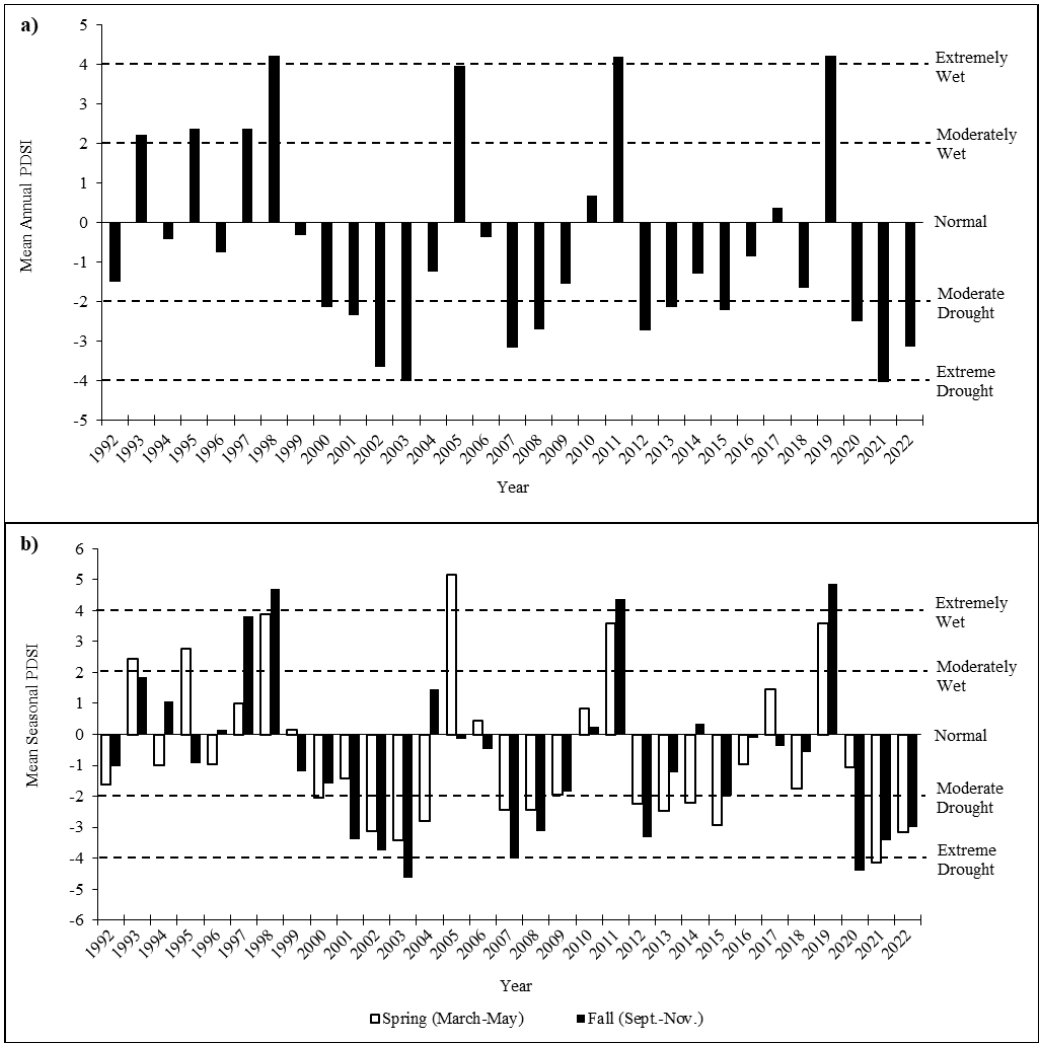


Figure 2: The 1992-2022 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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).

West Desert, East (Vernon portion 19b)

The condition of elk range within the Vernon management subunit has generally remained stable since the 1997 sampling. Mean wintering conditions on WMU 19b 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 elk range conditions, respectively. Range Trend sites in this WMU tend to have low variability in elk habitat, meaning that sites experience little change in their respective habitat qualities from year to year.

The overall elk range assessment in 2022 for WMU 19b 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 elk 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 conditions for elk.

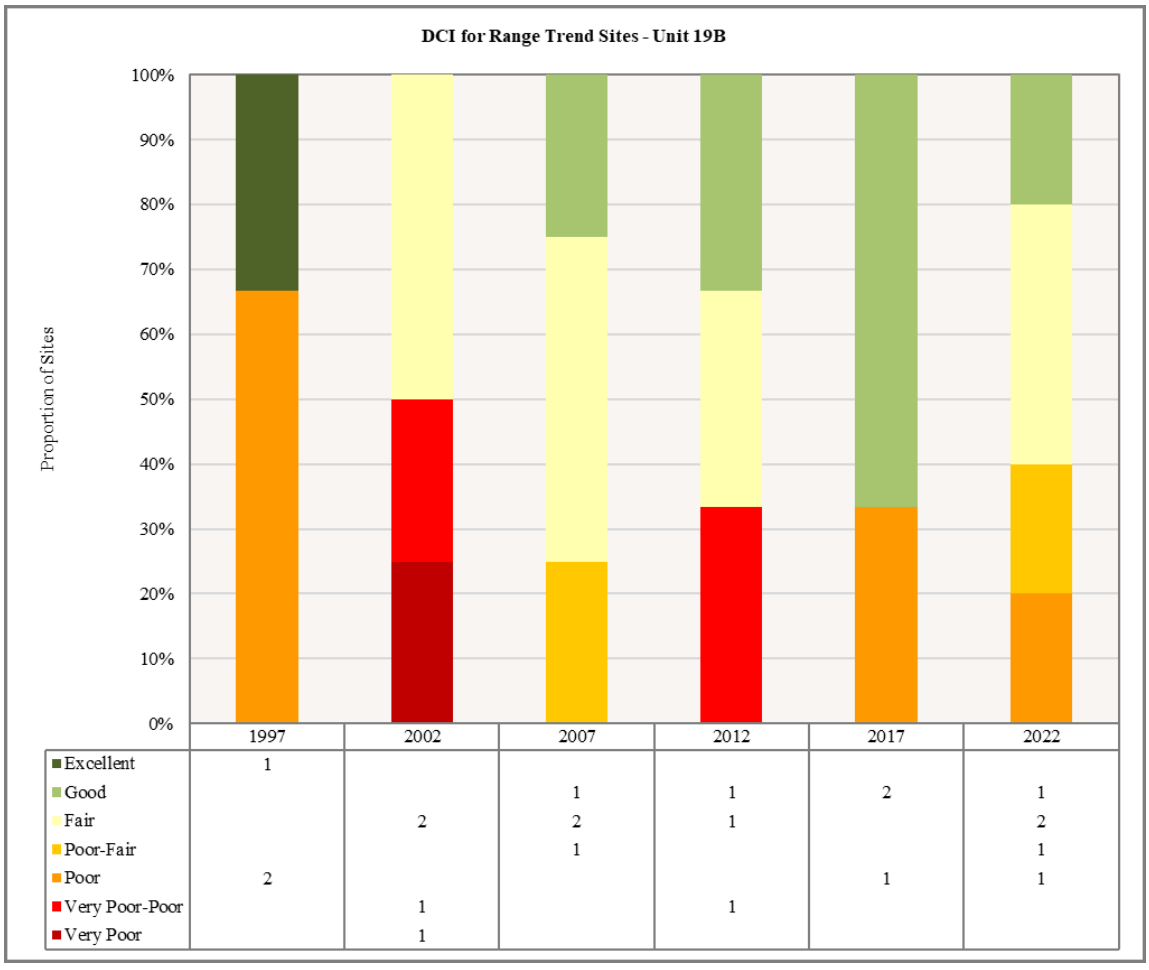


Figure 3: West Desert, East (Vernon portion) elk range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2022.

Drought Index – West Desert, East (Vernon portion)

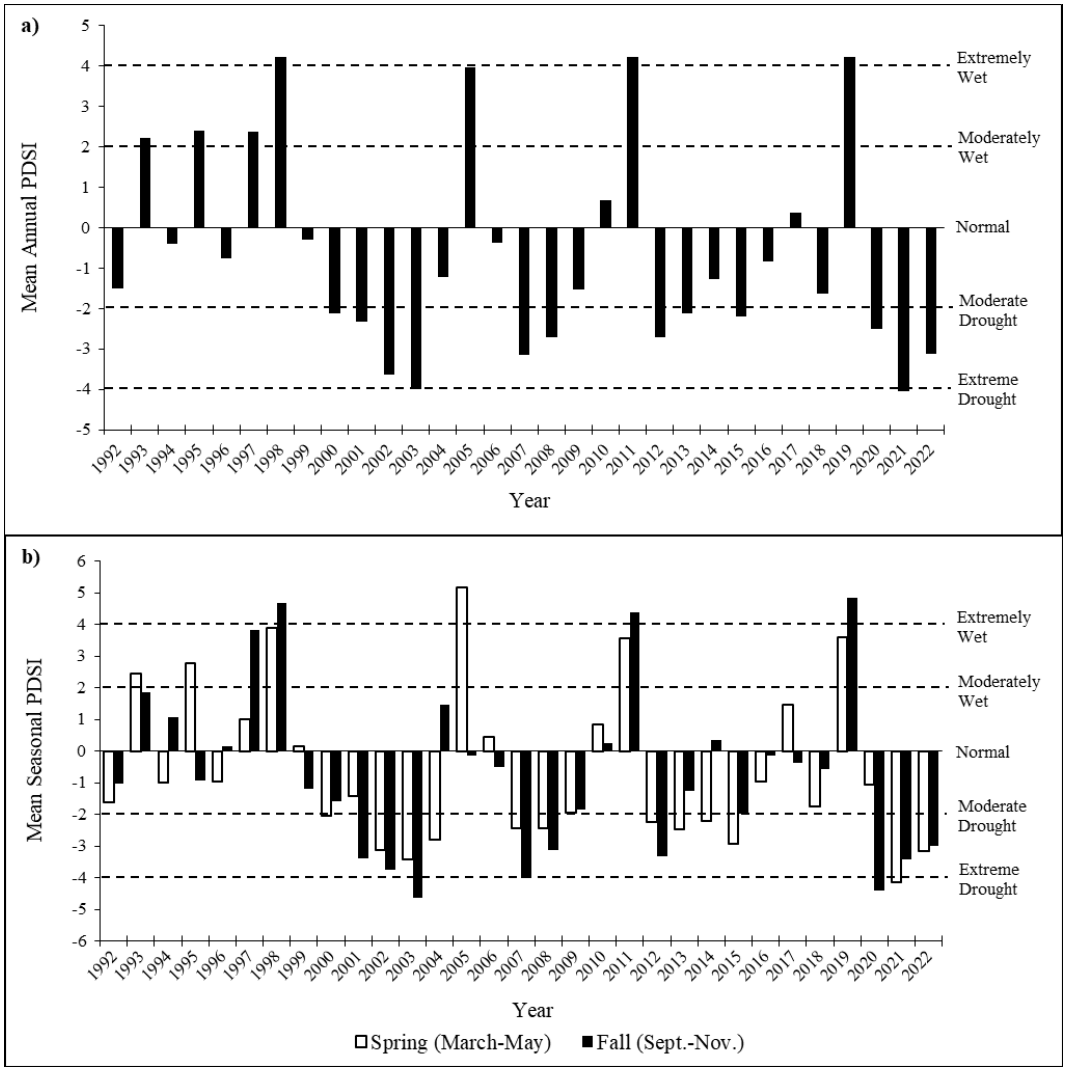
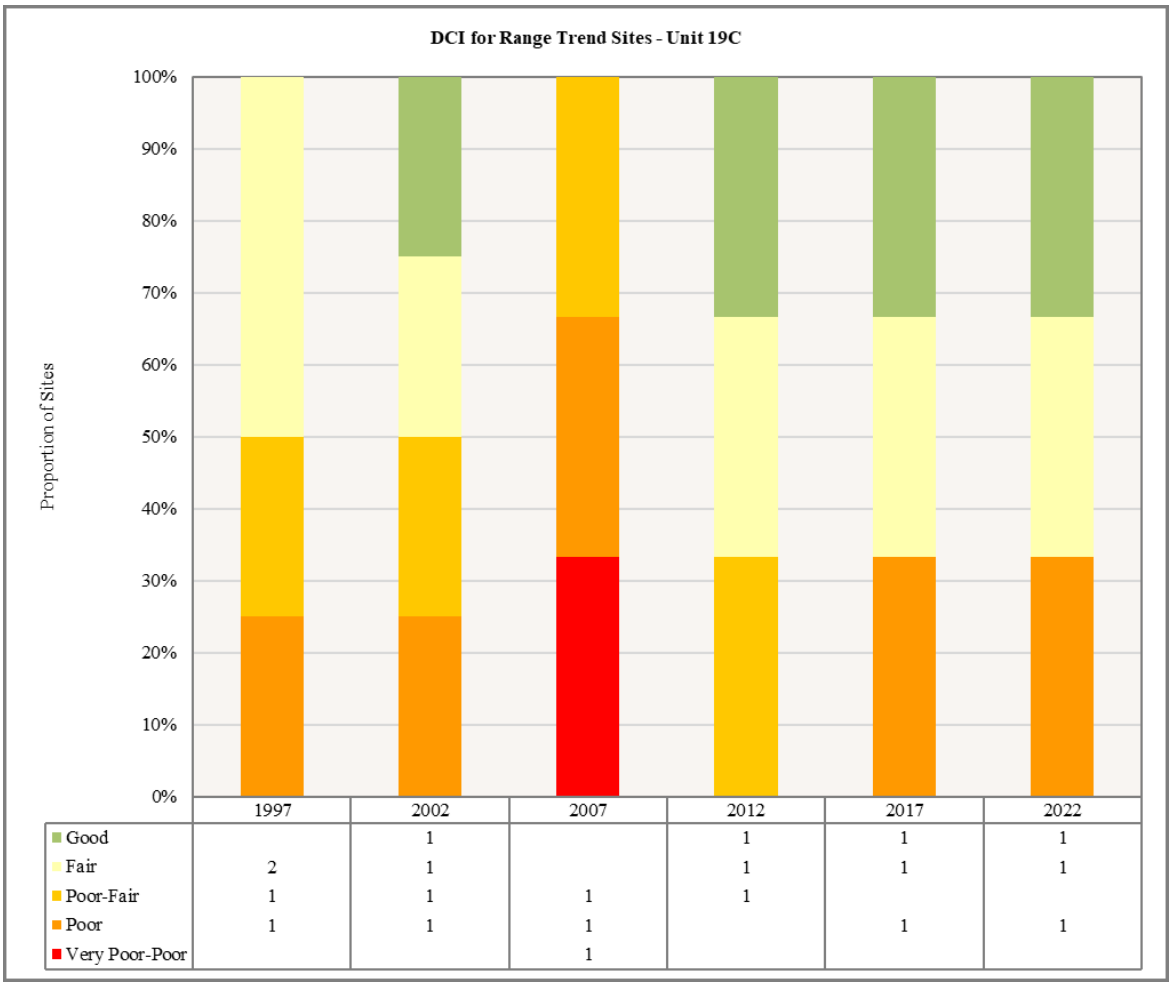


Figure 4: The 1992-2022 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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).

West Desert, East (Tintic portion 19c)

The condition of elk range within the Tintic management subunit 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 elk range conditions. Sioux Pass, Nephi Dump, and Furner Valley are considered to have poor conditions consistently from year to year, which suppresses the subunit'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 elk 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 elk range assessment in 2022 for WMU 19c 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.



	1997	2002	2007	2012	2017	2022
Good		1		1	1	1
Fair	2	1		1	1	1
Poor-Fair	1	1	1	1		
Poor	1	1	1		1	1
Very Poor-Poor			1			

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

Drought Index – West Desert, East (Tintic portion)

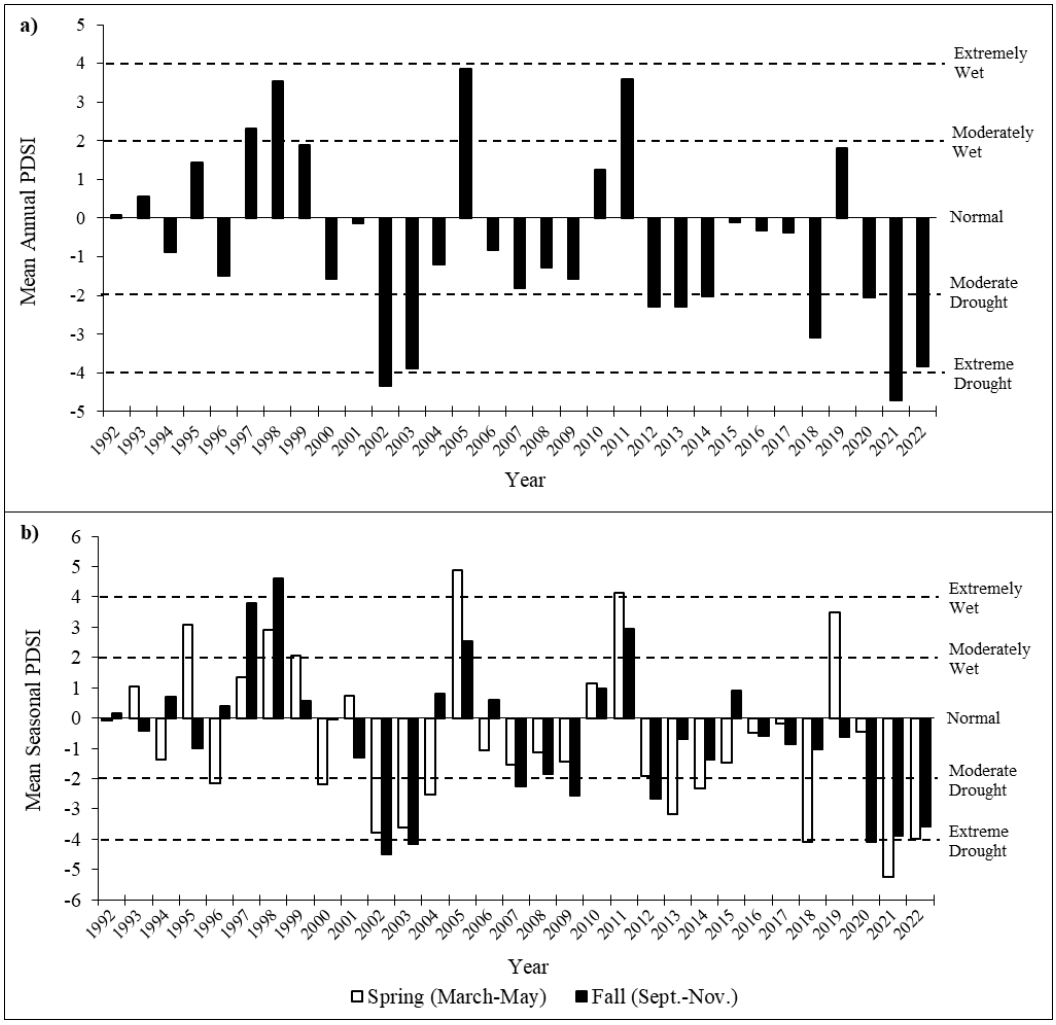


Figure 6: The 1992-2022 Palmer Drought Severity Index (PDSI) for the South Central division (Division 4). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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).

DURATION OF THIS MANAGEMENT PLAN

This Unit Management Plan was revised in 2023 following the revision of the Statewide Elk Management Plan. This Unit Management Plan will be revised after the next Statewide Elk Management Plan revision to ensure all current management tools are being used. Revision of this plan may also take place as needed to address future issues or incorporate new management strategies. Unit elk plan goals, objectives, recommendations and strategies are constrained within the sideboards set in the Statewide Elk Plan, which supersedes unit plans. It is possible that changes to the Statewide Elk Plan may affect unit plans. Additionally, changes to Utah State Code and/or Administrative Rule may also affect elk plans.