ELK HERD UNIT MANAGEMENT PLAN
Elk 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 – 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 US-6; east on US-6 to SR-36; north on SR-36 to I-80.

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

Unit 19d – House/Tintic – 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 SR-36, southeast on this road to US-6, east on this road 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 the Pleasant Valley road; southeast on this road to the Snake Valley road; north on this road to the Pony Express road; northwest 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 the Utah-Nevada state line to I-80 at Wendover.

LAND OWNERSHIP – WEST DESERT COMPLEX

	Yearlong range		Summer Range		Winter Range	
Ownership	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	41,763	5.4	49,275	21.5	46,475	6.9
Bureau of Land Management	579,243	75.4	118,458	51.7	457,730	68.0
Utah State Institutional Trust Lands	54,272	7.1	9,262	4.0	38,572	5.7

Native American Trust Lands	0	0	10,711	4.7	13,414	2.0
Private	69,228	9.0	41,423	18.1	114,625	17.0
Department of Defense	23,687	3.1	0	0	2,688	0.4
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	0	0	0	0	0
TOTAL	151,625	100	17,515	100	130,390	100

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 2,150 elk, based on aerial counts. Elk will be distributed among the following populations:

Wintering Area (counting unit)	Target Population
Oquirrh	650
House/Tintic	650
Cedar/Stansbury	650
West Desert, Deep Creek	200
TOTAL	2,150

5-year Winter Herd Size – Manage for a 5-year target population of 2,150 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 – Manage herd composition as described in the Statewide Elk Plan, using a General Season Any Bull hunting strategy for the Oquirrh, House/Tintic, and Cedar/Stansbury units. These units will not be managed to an age objective. Utilize a limited entry September archery only and an October/November Handgun, Archery, Muzzleloader, Shotgun, Straight-walled rifle (HAMSS) hunt strategy with a 6.0 age objective for the Deep Creek unit.

Harvest – General season any bull hunt regulations, using Archery, Rifle, and Muzzleloader, and youth hunting opportunities as described in the Statewide Plan. A limited entry Archery only and HAMSS hunt

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strategies for the Deep Creek Subunit. 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 1,450 elk.

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. 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.

Translocation – Translocate elk to locations where population densities are low in accordance with the Statewide Elk Plan.

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 elk populations within the West Desert Complex. 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 summer ranges is a long-term concern with increasing temperatures and reduced precipitation. 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.

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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. Range trend studies will be evaluated for the units independently. 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 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 and private landowners in 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 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.
- Cooperate with federal agencies to assure a diverse age structure of aspen communities on summer habitats.

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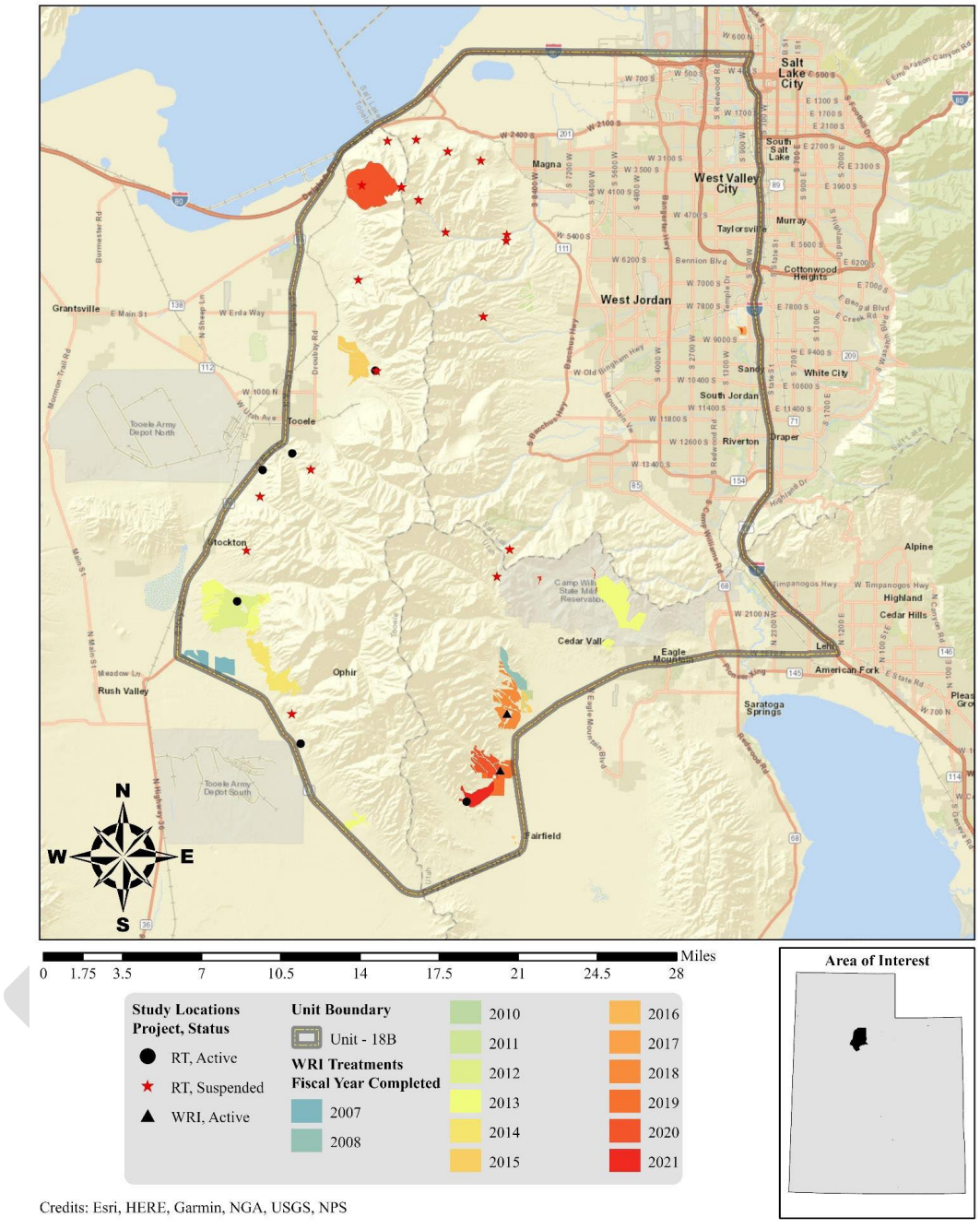
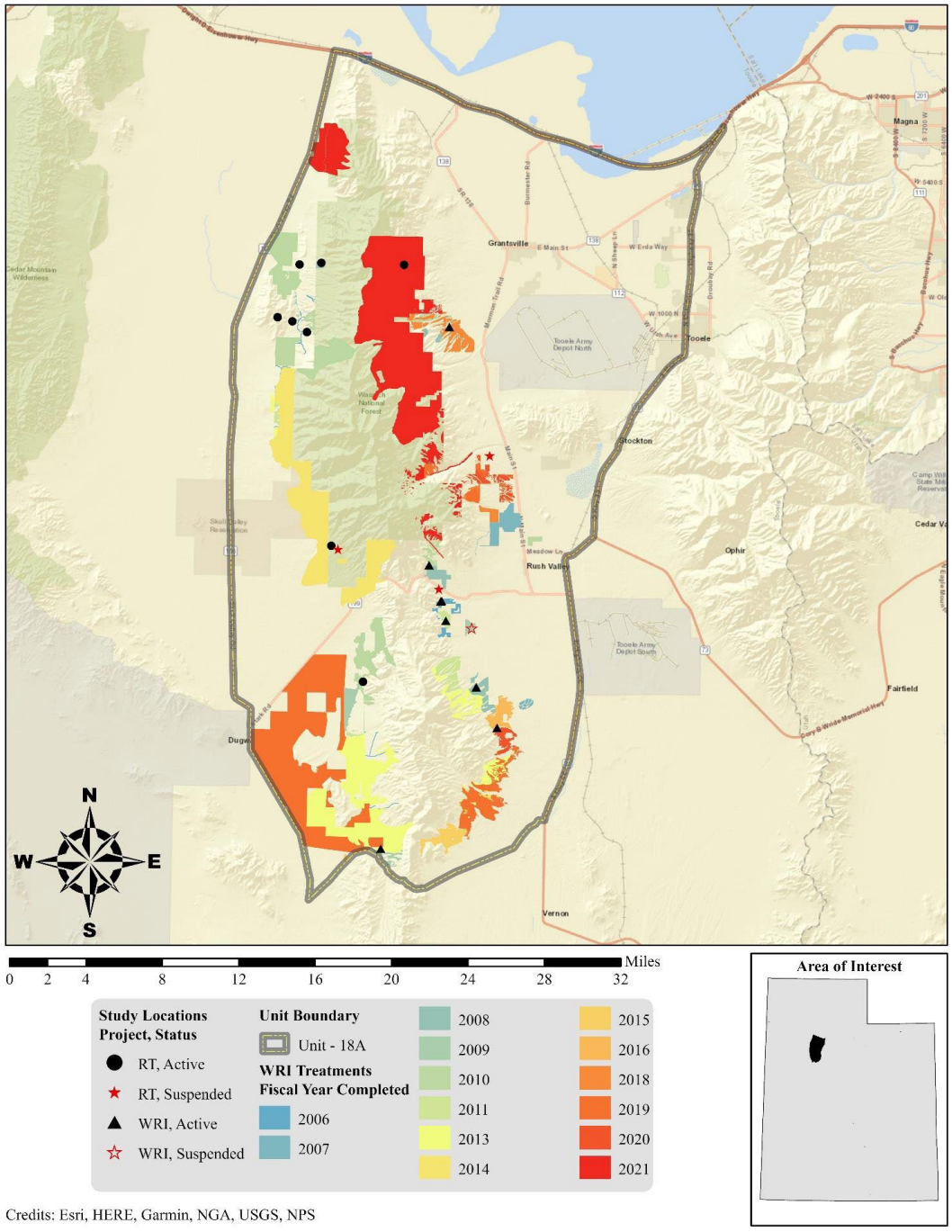
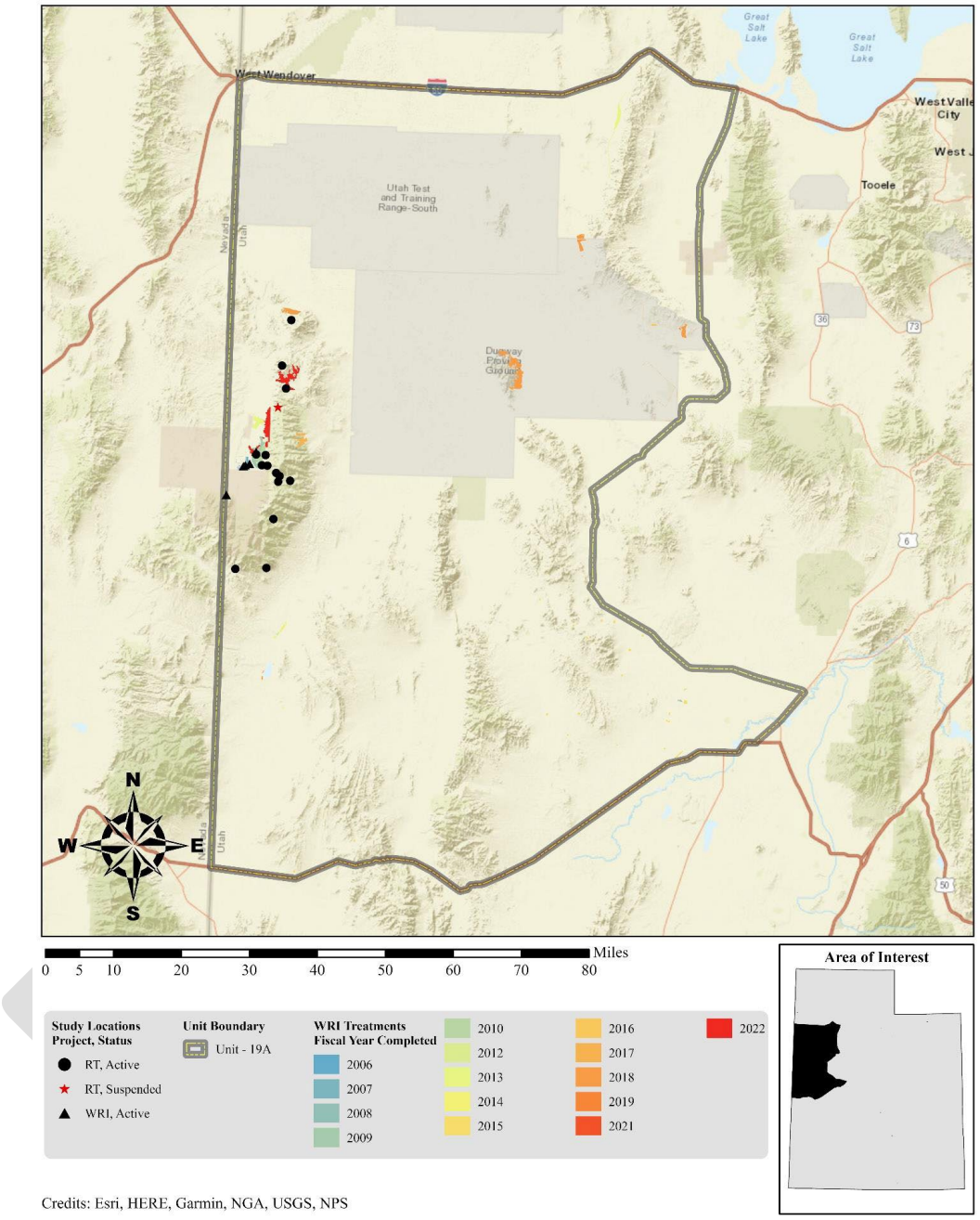
Habitat Projects within the West Desert Complex



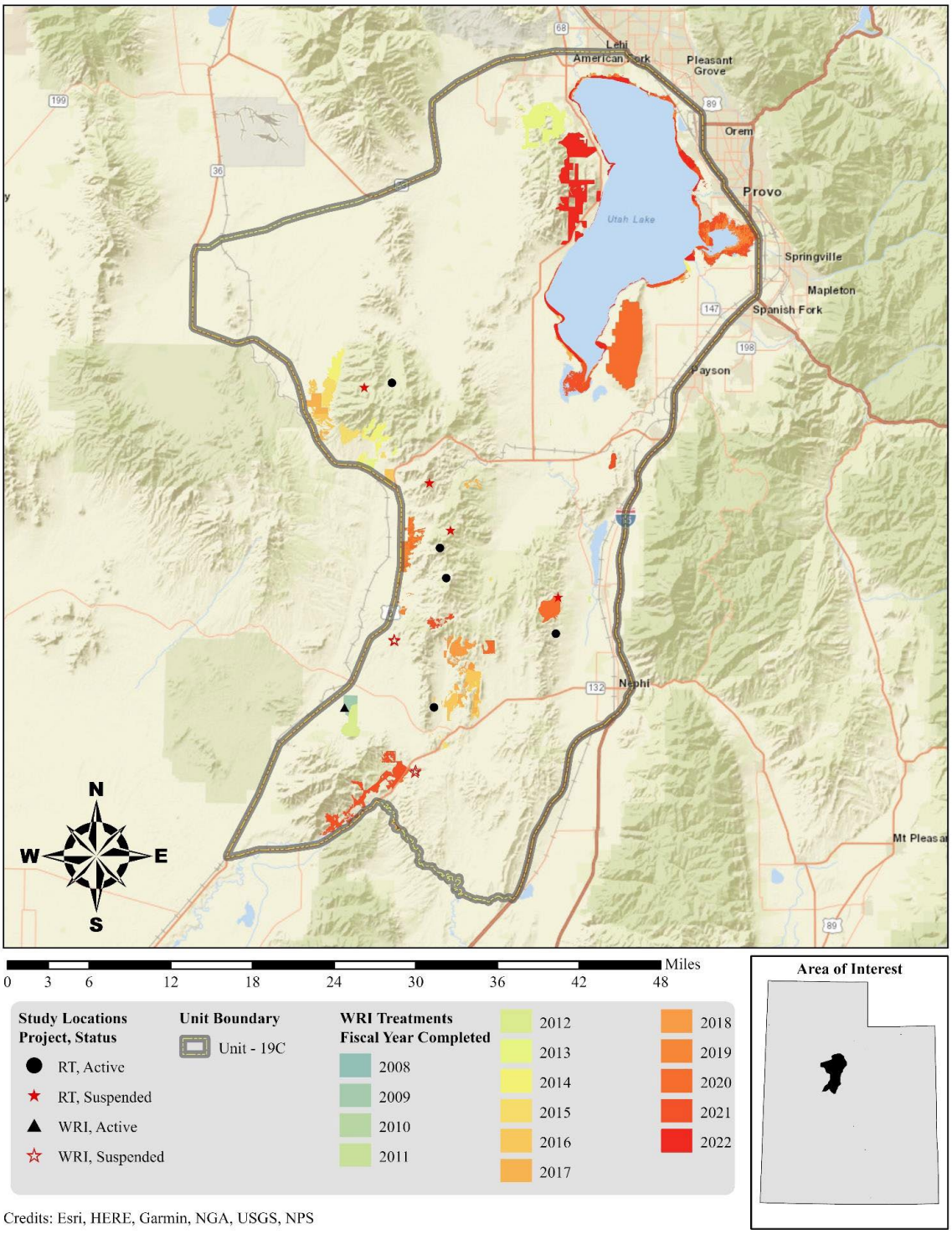
Map 1: Watershed Restoration Initiative (WRI) treatments by fiscal year completed for Oquirrh.



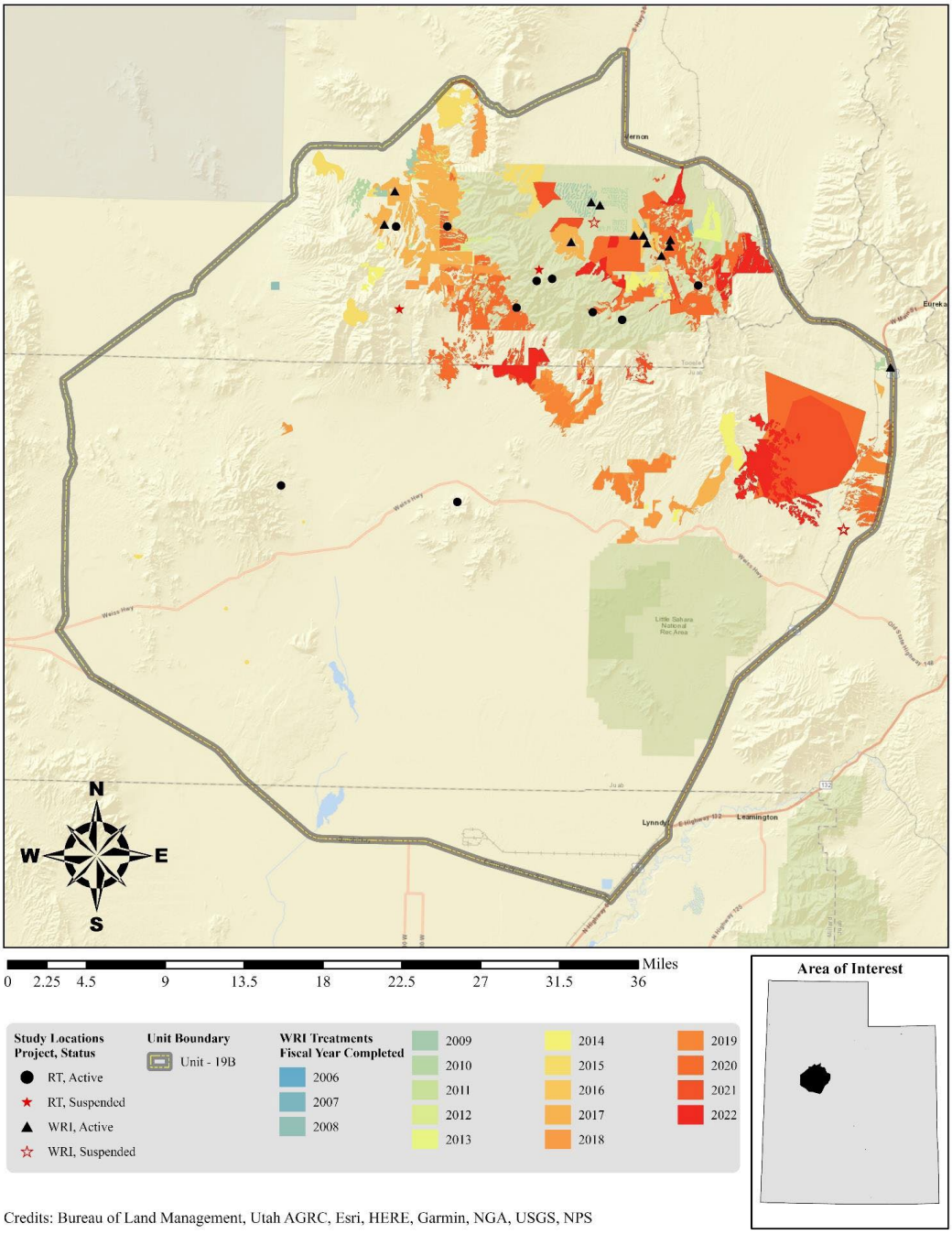
Map 2: WRI treatments by fiscal year completed for Stansbury Mountains.



Map 3: Watershed Restoration Initiative (WRI) treatments by fiscal year completed for Deep Creek and House.



Map 4: WRI treatments by fiscal year completed for Tintic.



Map 5: WRI treatments by fiscal year completed for Tintic (Vernon portion).

PERMANENT RANGE TREND SUMMARIES – WEST DESERT COMPLEX

DWR Winter Range Trend Assessment - 2021

Oquirrh

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

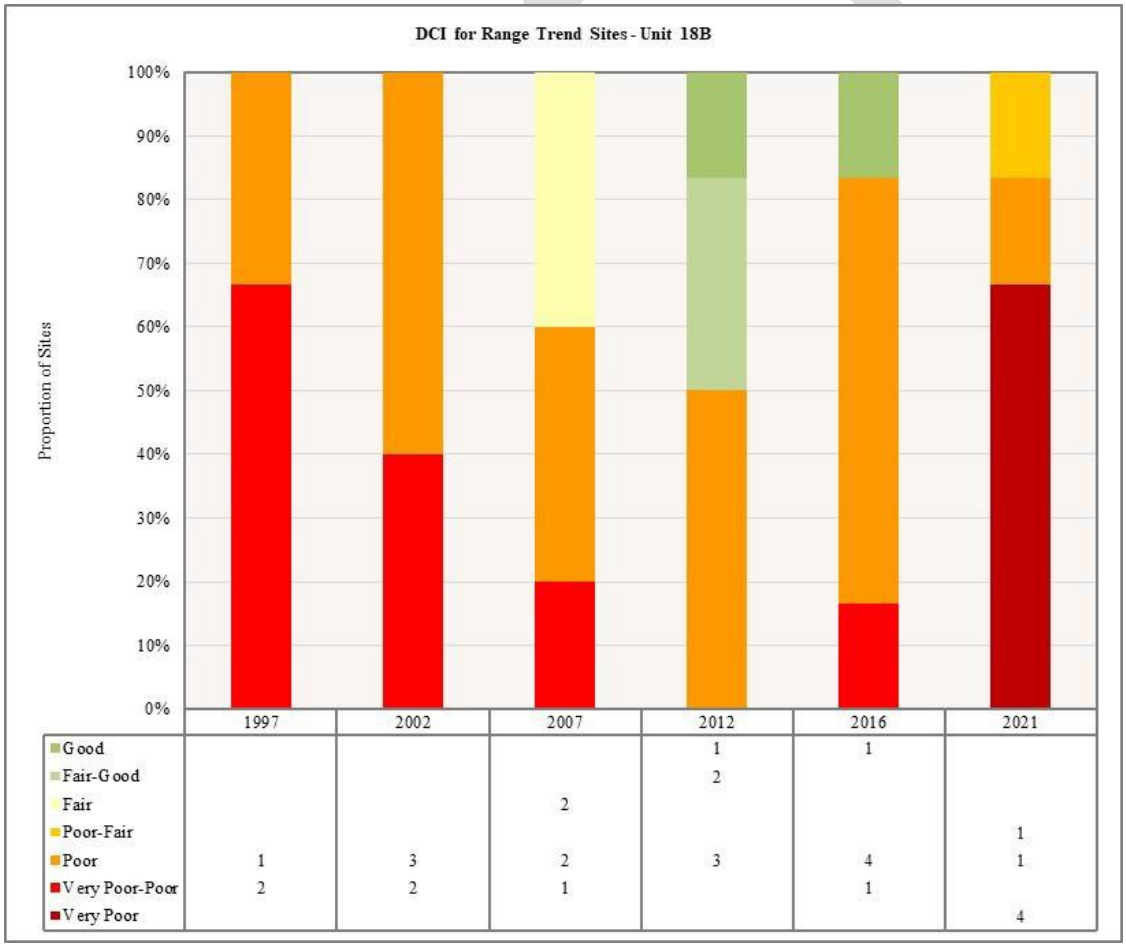


Figure 1: Oquirrh elk range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2021.

Drought Index – Oquirrh

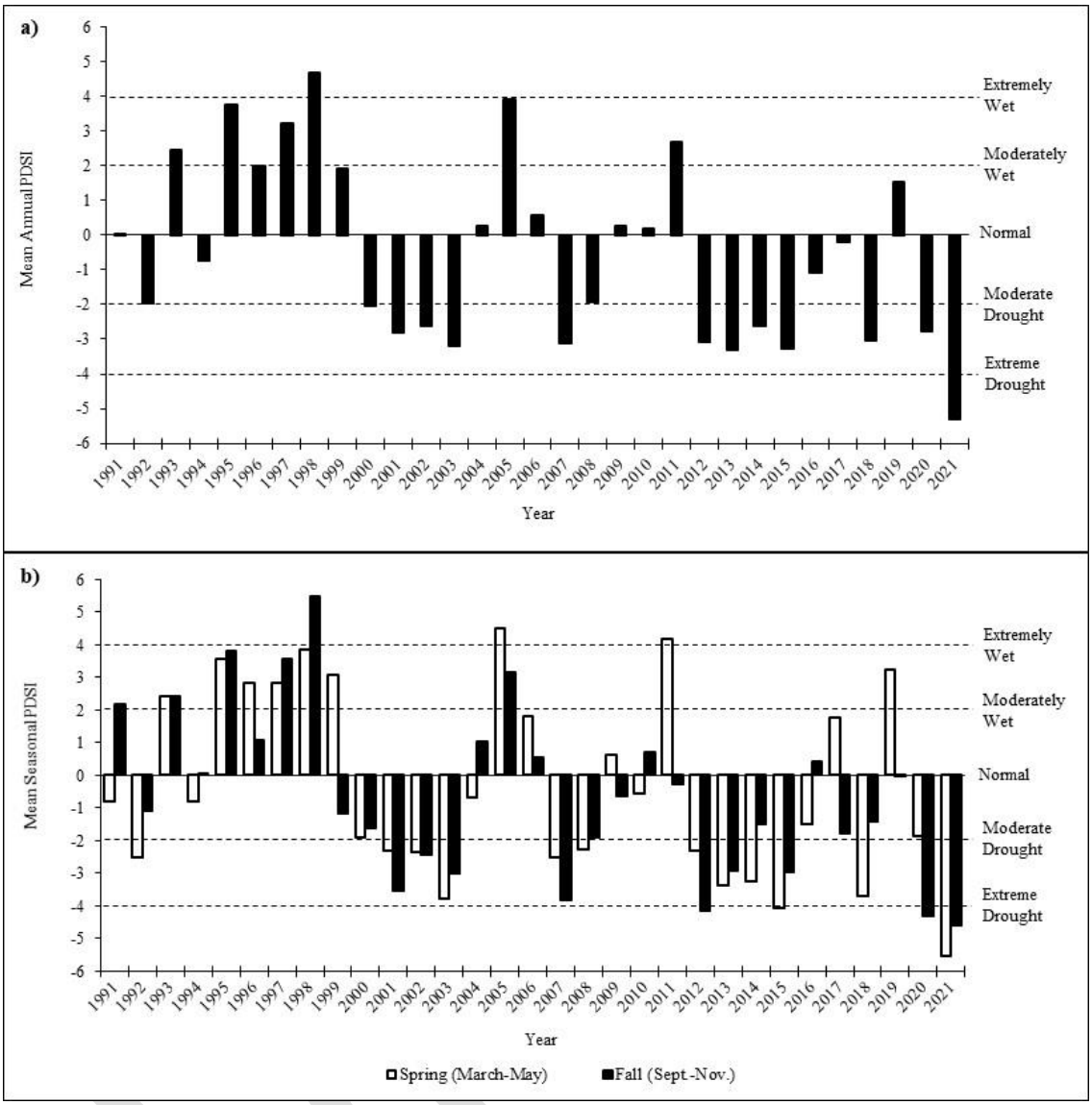


Figure 2: The 1991-2021 Palmer Drought Severity Index (PDSI) for the North Central division (Division 3). The PDSI is based on climate data gathered from 1895 to 2021. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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).

Stansbury Mountain Range

The condition of elk range within the Stansbury management unit, as a whole, has decreased from fair in 1997 to very poor 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. Elk 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 elk range assessment in 2021 for Stansbury 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 elk range will come with the addition of preferred browse species to the community.

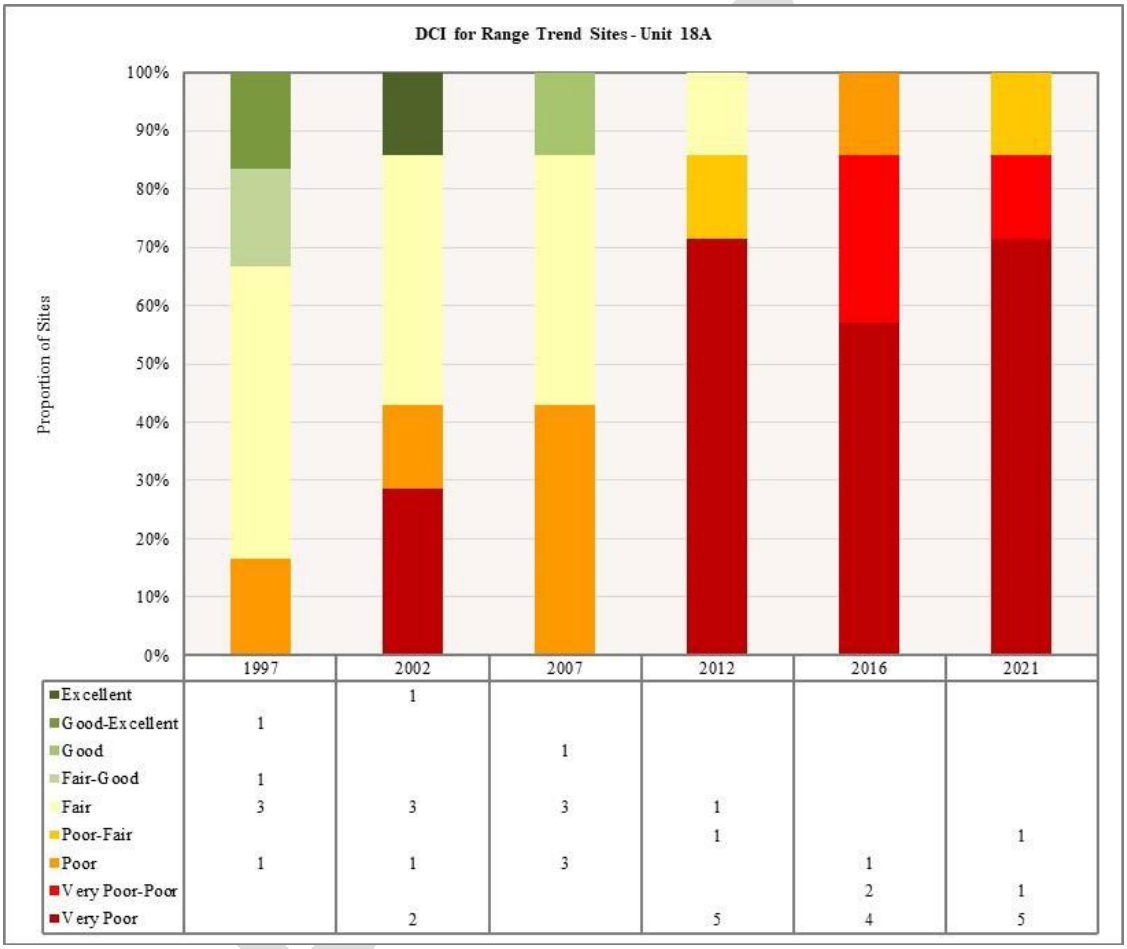


Figure 3: Stansbury Mountains elk range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2021.

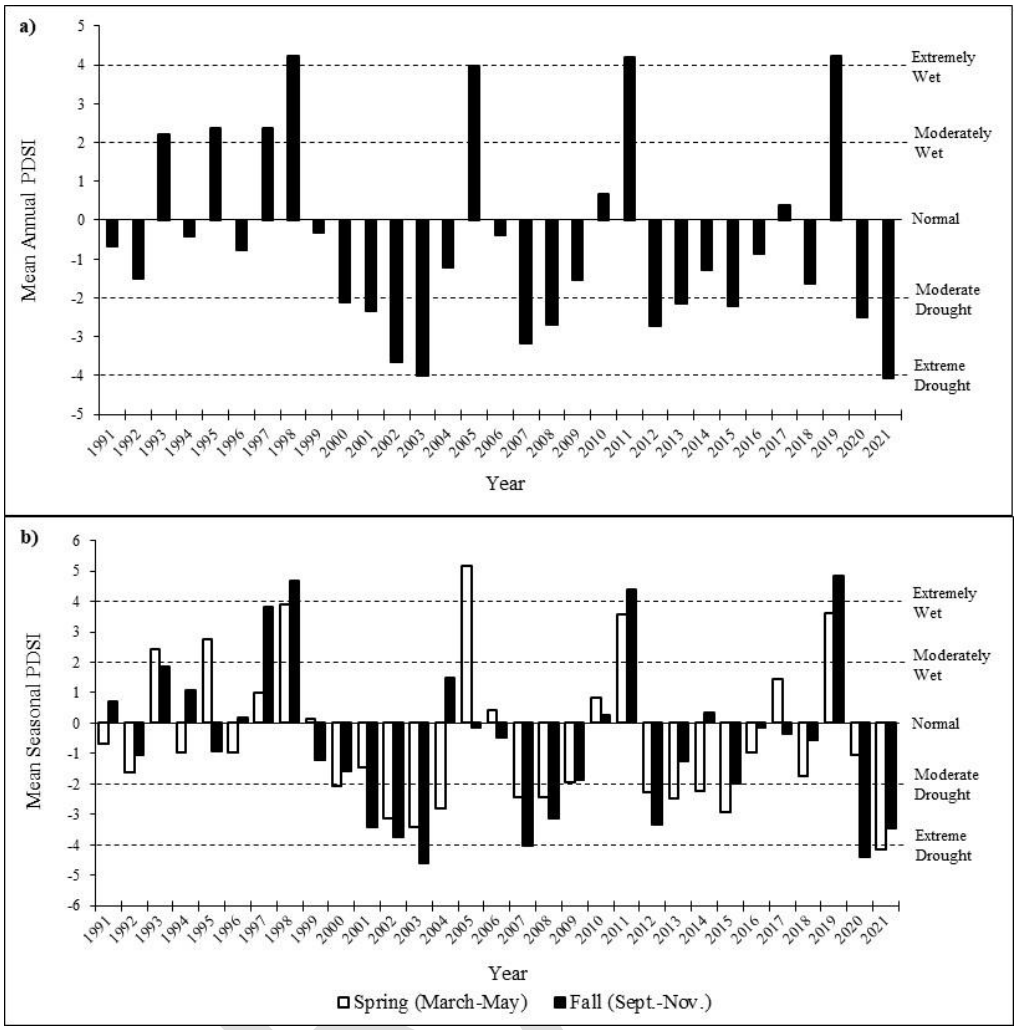
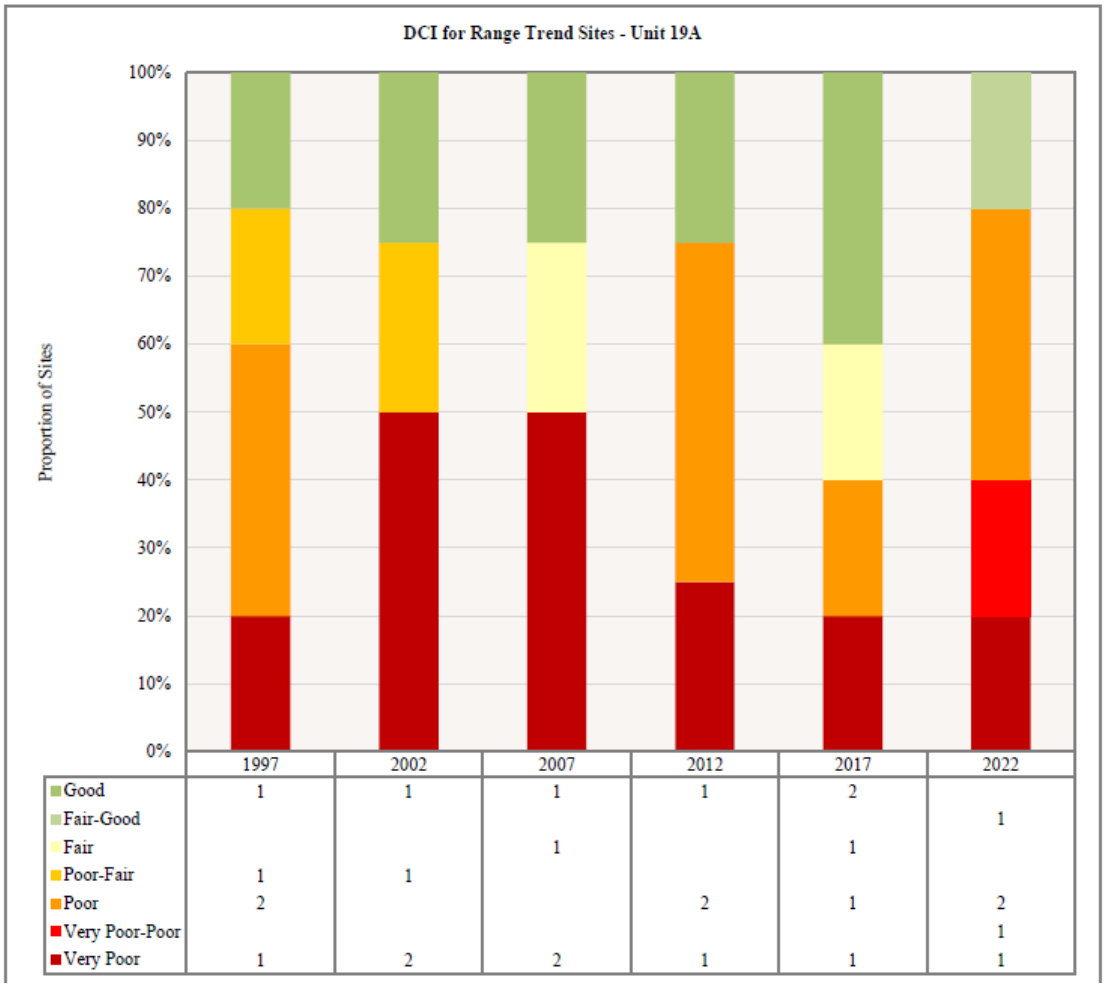


Figure 4: The 1991-2021 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2021. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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).

Deep Creek

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 Deep Creek 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 Deep Creek 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 5: Deep Creek elk range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2022.

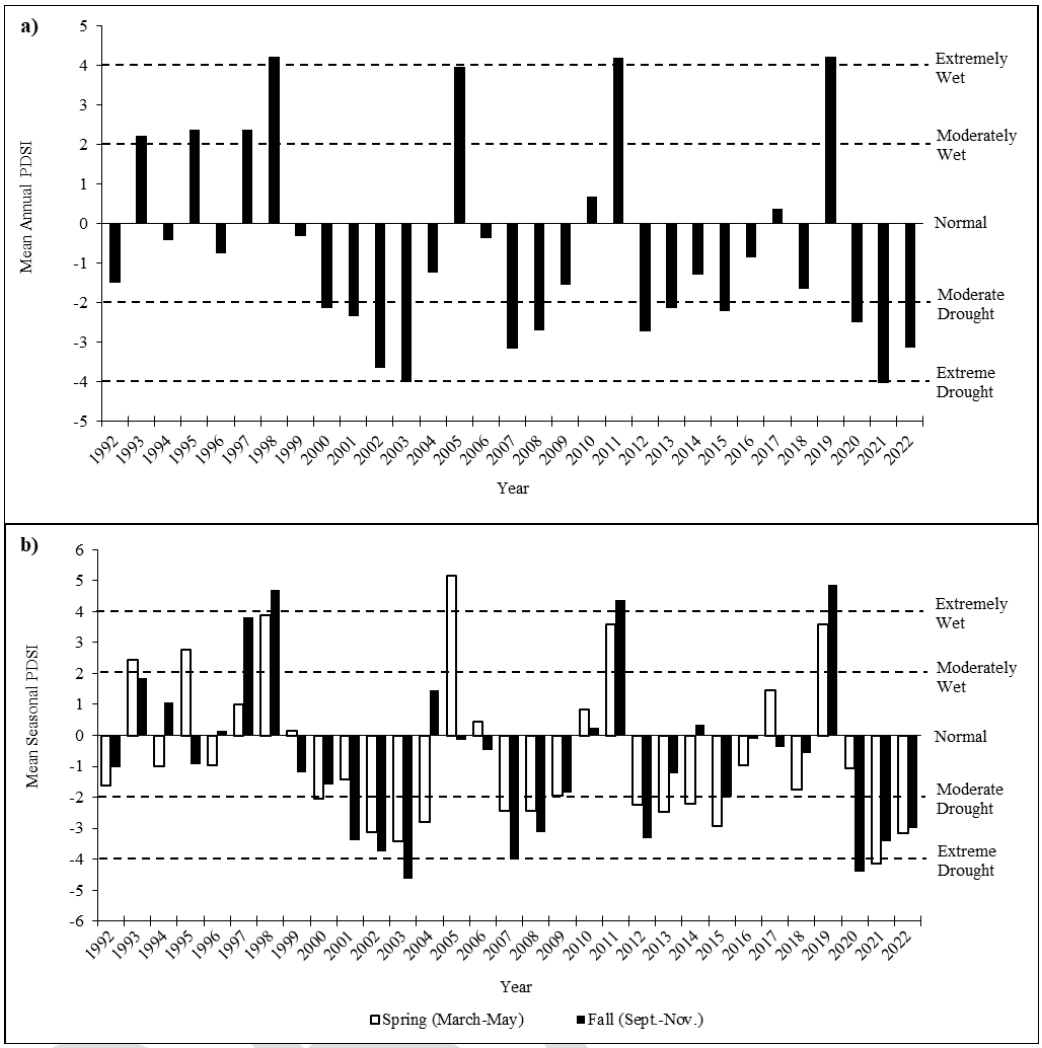
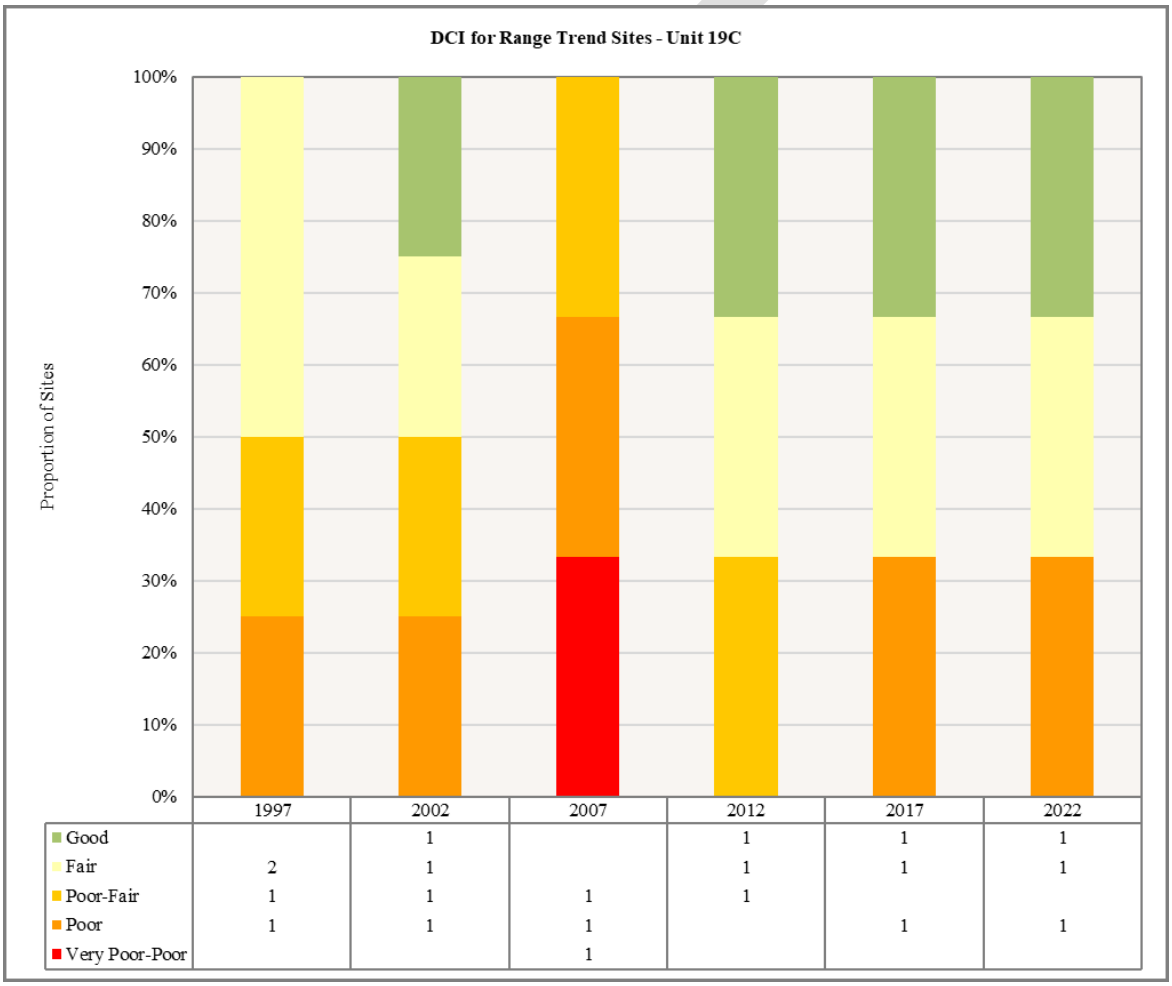


Figure 6: The 1992-2022 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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).

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 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.



	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 7: 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 – Tintic

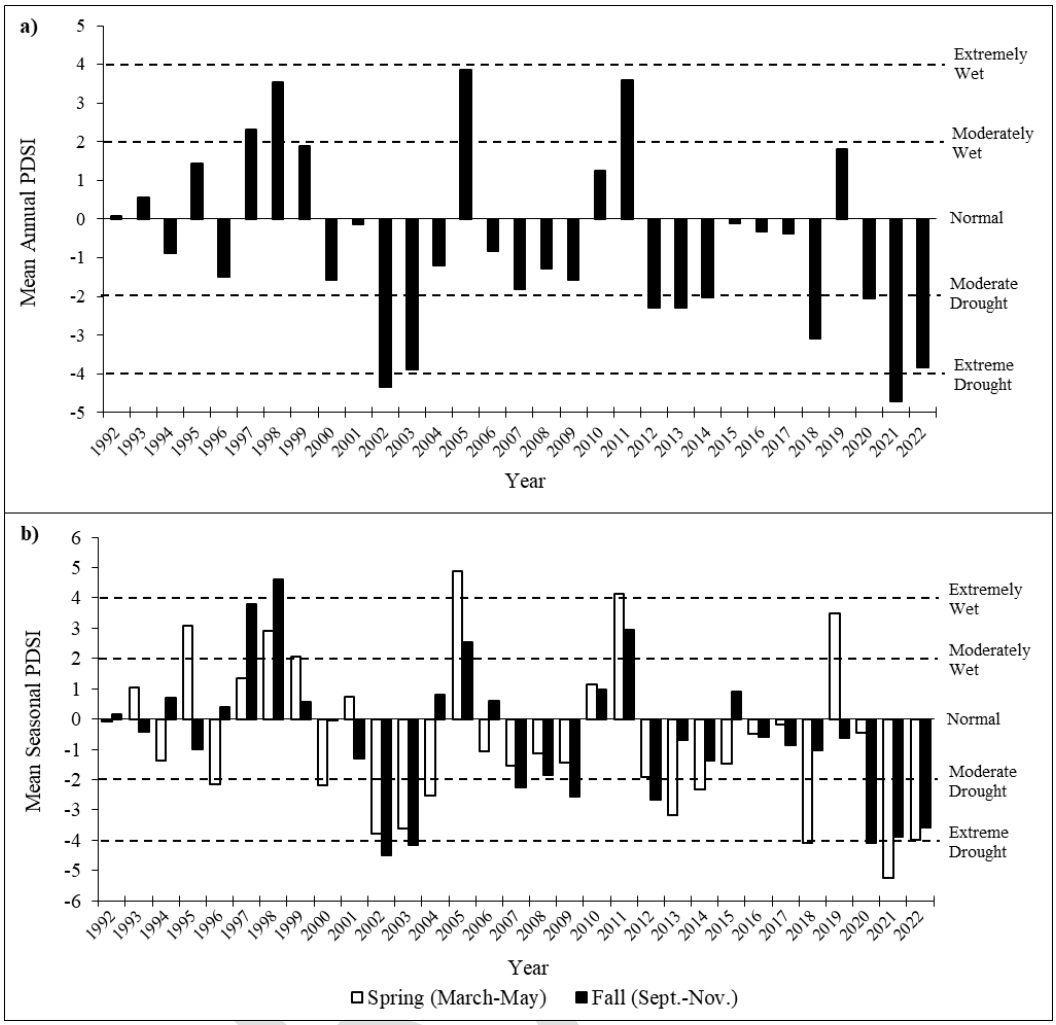


Figure 8: The 1992-2022 Palmer Drought Severity Index (PDSI) for the South Central division (Division 4). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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).

The condition of elk range within the Vernon management subunit 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 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 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 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.

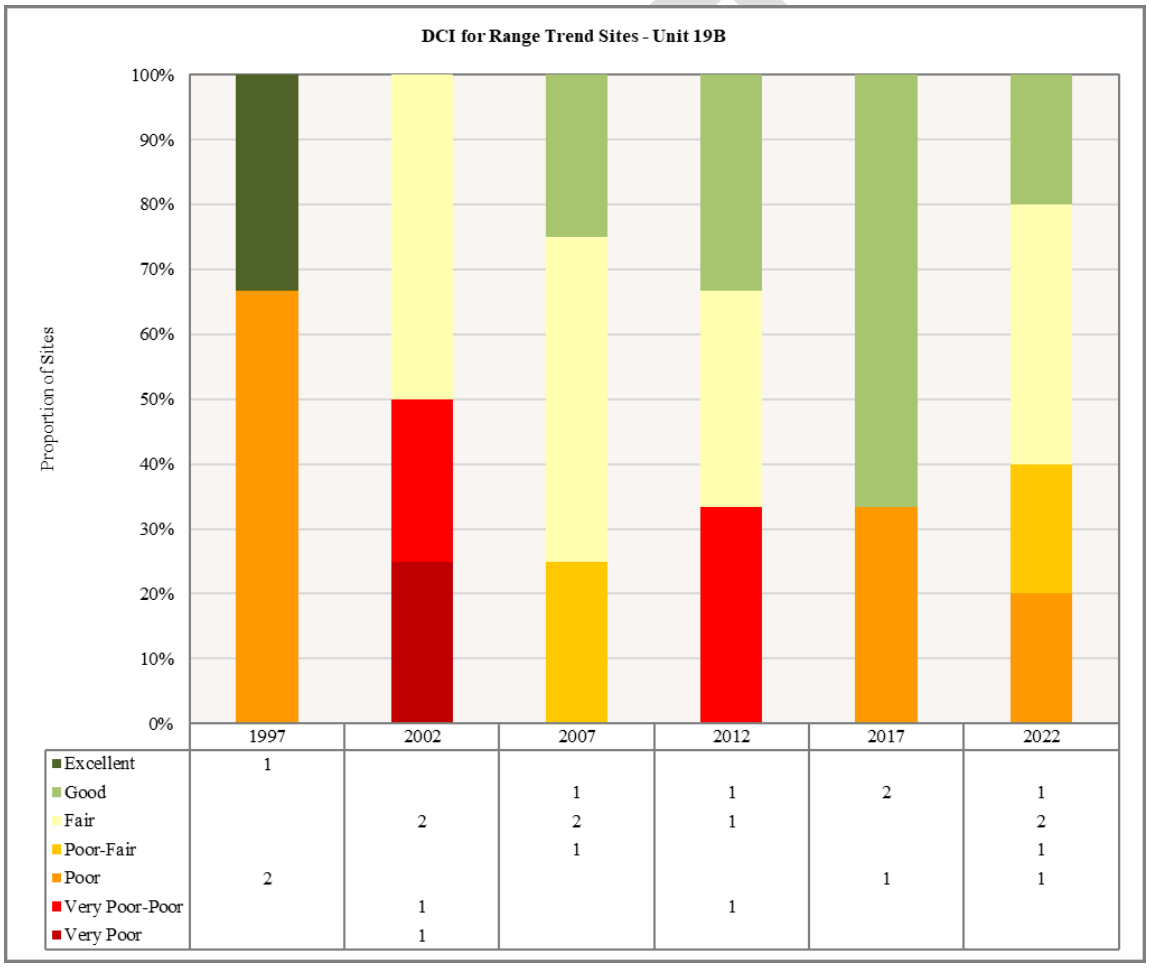


Figure 9: Vernon portion elk range Desirable Components Index (DCI) showing proportions of range sites in each condition class (Poor, Fair, Good, etc.), 1997-2022.

Drought Index – Tintic (Vernon portion)

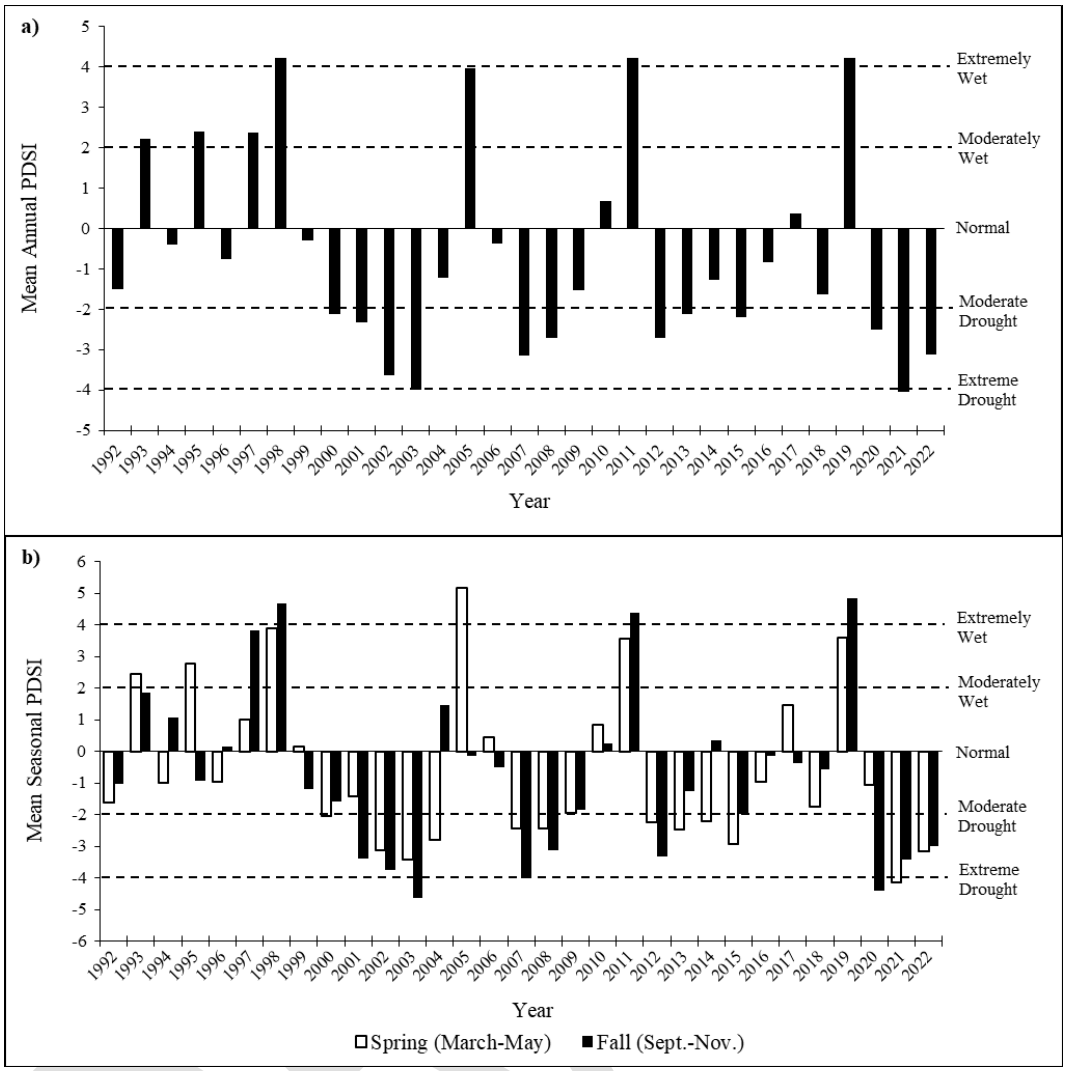


Figure 10: The 1992-2022 Palmer Drought Severity Index (PDSI) for the Western division (Division 1). The PDSI is based on climate data gathered from 1895 to 2022. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet, and negative deviations indicate drought. Classification 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 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 elk plan goals, objectives 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 Rules may also affect elk unit plans.