

# Lincoln National Forest Climate Report: Water Year 2024

## Highlights

- The current average 12-month (October-September) Standardized Precipitation Index (SPI) for Lincoln National Forest is **-1.27 (Moderately Dry)**.
- Average October-September precipitation was 13.75 inches, which was **-6 inches** different from the long-term average. This value ranks 119th out of 130 years in total precipitation (Rank 1 is the wettest year).
- Average October-September temperature was 54.2 degrees F, which was **+2.1 degrees F** different from the long-term average. This value ranks 7th out of 130 years in average temperature (Rank 1 is the warmest year).
- The 1-month outlook for November predicts a **50-60% chance of drier-than-average precipitation** and a **50-60% chance of warmer-than-average temperatures**. The 3-month seasonal outlook for November-January predicts a **50-60% chance of drier-than-average precipitation** and a **60-70% chance of warmer-than-average temperatures**. (More information at NOAA Climate Prediction Center, <https://www.cpc.ncep.noaa.gov/>)

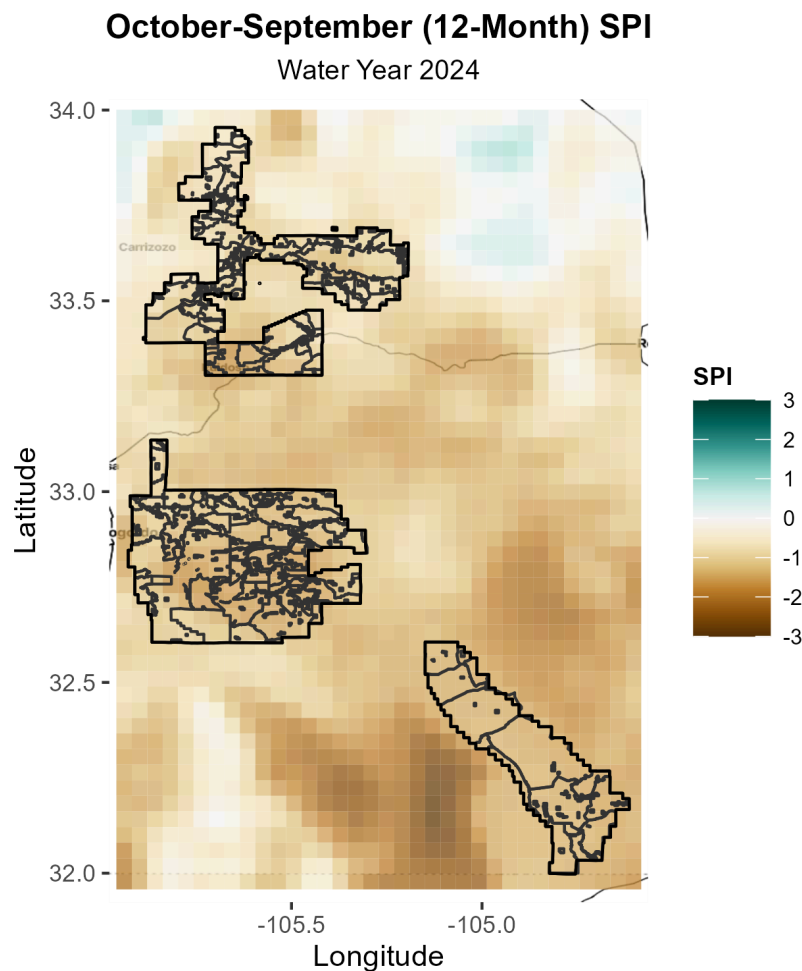


Figure 1: Lincoln National Forest drought status for Water Year 2024 (September 2024 12-Mo. SPI)

Table 1: 12mo. Water Year Drought Statistics

| District    | Minimum SPI | Mean SPI | Maximum SPI | Total Precip [in.] | Anomaly [in.] |
|-------------|-------------|----------|-------------|--------------------|---------------|
| Smokey Bear | -1.65       | -1.06    | -0.61       | 14.93              | -4.74         |
| Guadalupe   | -1.53       | -1.41    | -1.33       | 10.49              | -6.45         |
| Sacramento  | -1.73       | -1.35    | -0.86       | 14.58              | -6.64         |

*Note:*

Lincoln National Forest SPI and climate statistics for Water Year 2024 (October - September). Statistics are calculated based on the average of all PRISM grid cells lying within a District boundary.

## Seasonal Drought Summary

The Maps in *Figure 2* depict SPI values at the end of each season for districts in the Kaibab National Forest (KNF). Seasonal definitions for the KNF are as follows: **Winter ( Oct - Feb )**; **Spring ( Mar - May )**; **Summer ( Jun - Sep )**; **Fall ( - )**. *Figure 3* shows seasonal drought progression within each district. Seasonal mean SPI values and precipitation totals are shown in *Table 2*. *Figure 4* depicts monthly progression of forest-wide 12-month SPI. Mean values are calculated by averaging all grid cells lying within a district or forest boundary. SPI and precipitation values were acquired via PRISM Gridded Climate Dataset.

### Lincoln National Forest Seasonal SPI Values

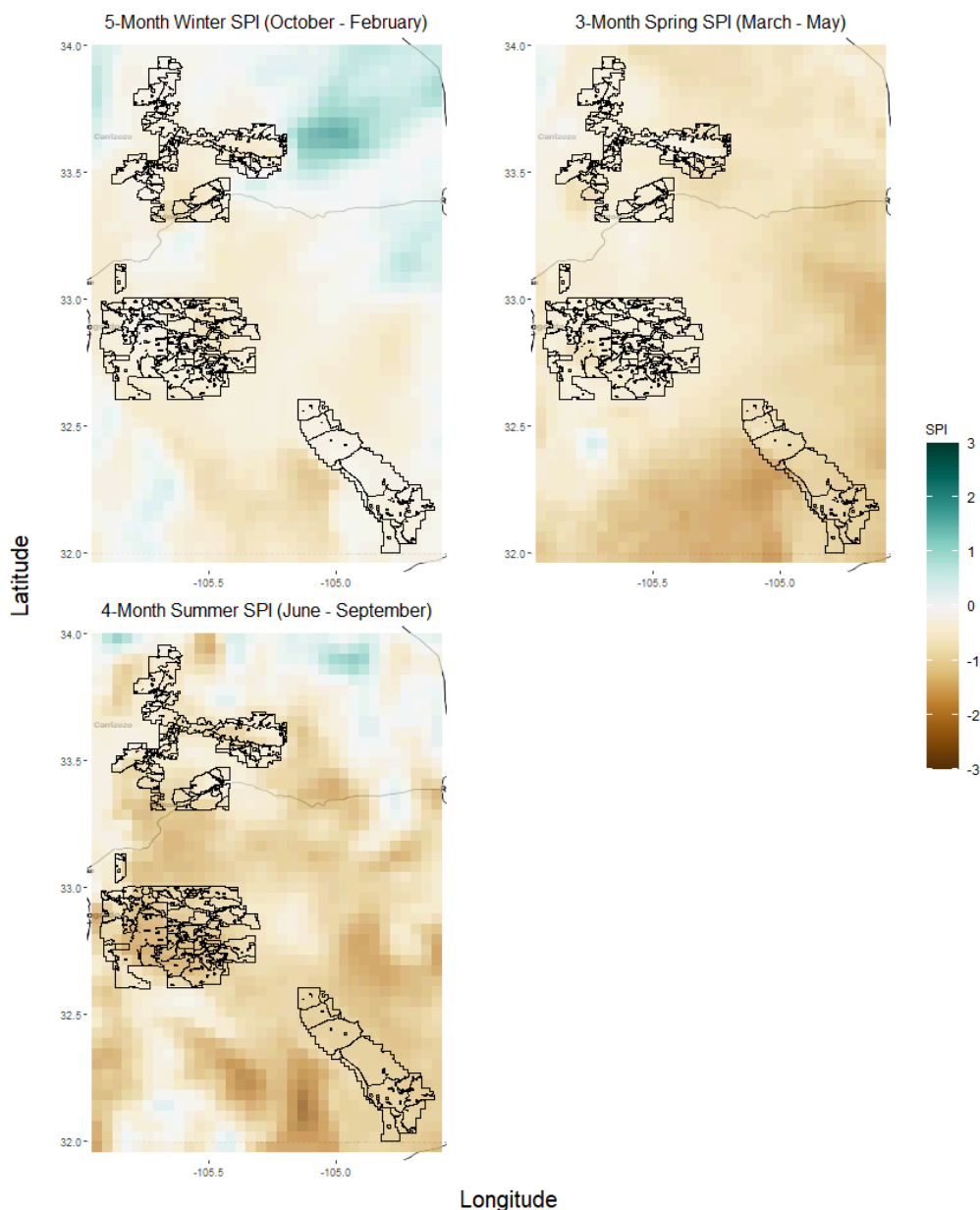


Figure 2: Lincoln National Forest end of season SPI maps for water year 2024 (September 2024 12-Mo. SPI)

## Seasonal Drought Summary (cont.)

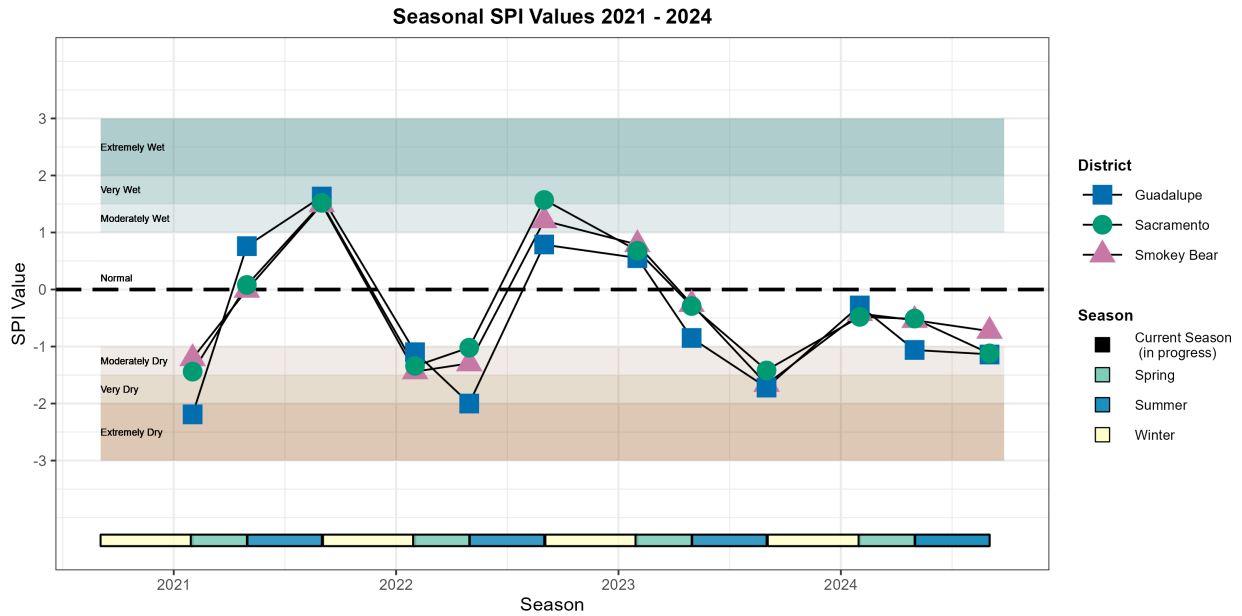


Figure 3: Lincoln National Forest seasonal SPI values (2021-2024). Seasonal monthly definitions are as follows: Winter (Oct-Feb); Spring (Mar-May); Summer (Jun-Sep); Fall (-).The displayed SPI value represents the final month within each season at a timescale of the number of months within that season. Current seasonal SPI values (black dots) are not final since the season is still in progress.

Table 2: District-level Seasonal SPI and Climate Statistics

| District    | Winter SPI | Spring SPI | Summer SPI | Fall SPI | 12-Month SPI | Winter Precip [in.] | Spring Precip [in.] | Summer Precip [in.] | Fall Precip [in.] | 12-Month Precip [in.] | Precip Anom [in.] |
|-------------|------------|------------|------------|----------|--------------|---------------------|---------------------|---------------------|-------------------|-----------------------|-------------------|
| Smokey Bear | -0.42      | -0.54      | -0.72      | -        | -1.06        | 4.25                | 1.60                | 9.08                | -                 | 14.93                 | -4.74             |
| Guadalupe   | -0.28      | -1.06      | -1.14      | -        | -1.41        | 3.21                | 0.67                | 6.60                | -                 | 10.49                 | -6.45             |
| Sacramento  | -0.48      | -0.51      | -1.13      | -        | -1.35        | 4.29                | 1.49                | 8.80                | -                 | 14.58                 | -6.64             |

**Note:**

Lincoln National Forest seasonal SPI and climate statistics by District. Values are calculated based on the average of all PRISM grid cells lying within a District boundary.

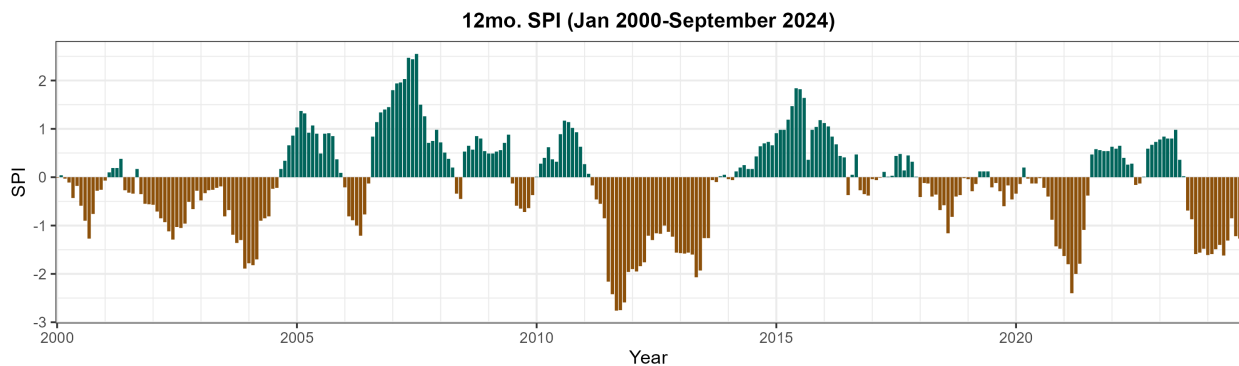
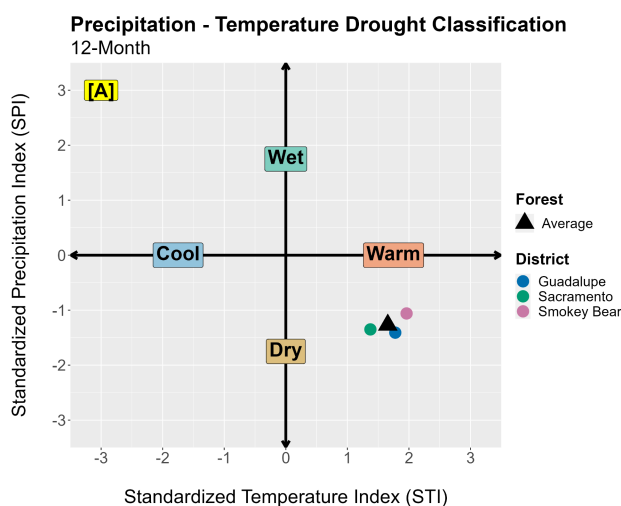


Figure 4: 12mo. SPI for Lincoln National Forest (2000-2024)

## Temperature Impacts on Drought

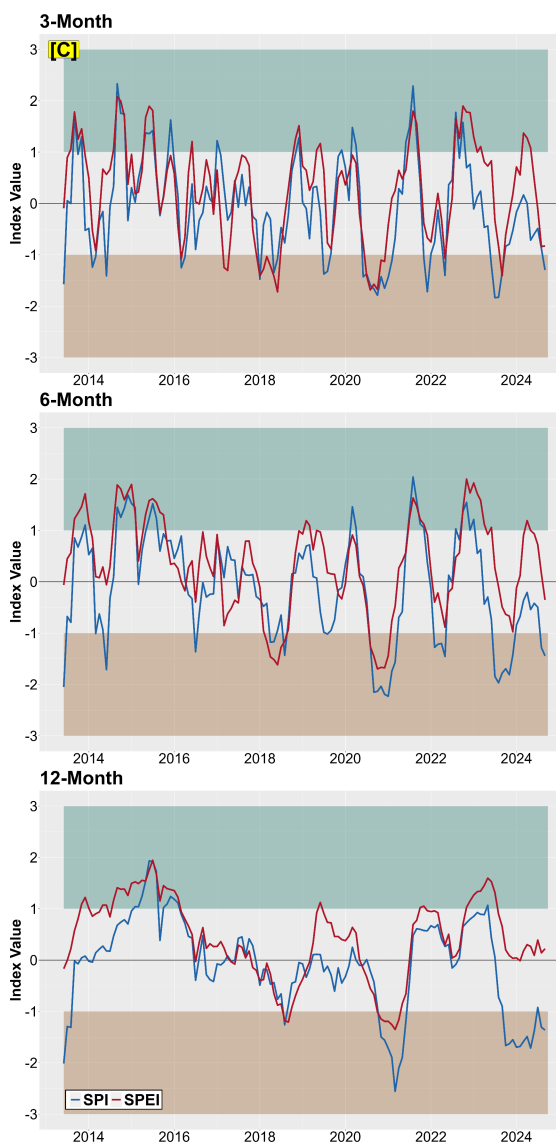
This section explores the impacts of temperature on drought development for different time length intervals. Figure [A] shows the relationship between the Standardized Precipitation Index (SPI) and Standardized Temperature Index (STI) at a 12-month timescale for the entire Forest and at each District. Table [B] shows precipitation and temperature-based climate statistics at 3-, 6-, and 12-month timescales. Figure [C] shows time series plots of the SPI and Standardized Precipitation-Evapotranspiration Index (SPEI) at 3-, 6-, and 12-month timescales. Note – the Hargreaves method is used to estimate potential evapotranspiration for the SPEI calculation.



[B]

|                    | 3-Month | 6-Month | 12-Month |
|--------------------|---------|---------|----------|
| Total Precip [in.] | 6.56    | 8.87    | 13.75    |
| Precip Anom [in.]  | -3.43   | -4.74   | -6       |
| Mean Temp [F]      | 68      | 64.8    | 54.2     |
| Temp Anom [F]      | 2.3     | 2.6     | 2.1      |
| SPI                | -1.3    | -1.44   | -1.36    |
| STI                | 1.59    | 1.95    | 1.74     |
| SPEI               | -0.83   | -0.35   | 0.22     |

[A] Drought classification quadrant of the 12-month SPI and 12-month STI (Standardized Temperature Index). [B] Table showing 3-, 6-, and 12-month climate statistics for the Lincoln National Forest. [C] Time series plots of the 3-, 6-, and 12-month SPI and SPEI.



## Station Climate Summaries

Summaries from climate stations with relatively long periods of record, minimal missing data (<10% of days), and within the area boundary are presented in the following tables (5 and 6) as reference locations. These stations are a select subset of stations that contribute to the gridded climate maps. Red circles on map indicate locations of NOAA Global Historical Climate Network stations.

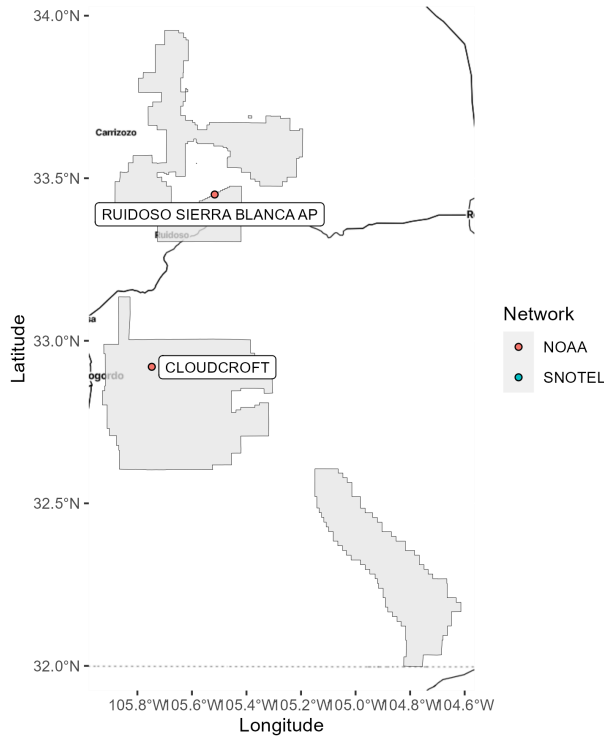


Figure 5: NOAA station(s) located within the report area boundary.

Table 3: 12mo. NOAA Climate Station Observations for the 2024 Water Year

| Station                            | Elev (ft) | POR       | Total Precip (in) | Precip Anom (in) | Days with Precip | Total Snow (in) | Avg Temp (F) | Temp Anom (F) | Freeze Days |
|------------------------------------|-----------|-----------|-------------------|------------------|------------------|-----------------|--------------|---------------|-------------|
| ALAMOGORDO WHITE SANDS REGIONAL AP | 4200      | 2014-2024 | 3.32              | -2.49            | 36               | 0.0             | 61.6         | -0.48         | 71          |
| CLOUDCROFT                         | 8723      | 2002-2024 | 17.99             | -8.99            | 82               | 63.6            | 45.7         | -0.54         | 155         |
| RUIDOSO SIERRA BLANCA AP           | 6810      | 2010-2024 | 9.56              | 1.45             | 63               | 0.0             | 54.7         | 0.94          | 105         |

Note:

Lincoln National Forest summary statistics of select NOAA stations within the Forest boundary for October 2023 through September 2024

## NASA SPoRT Soil Moisture Estimates

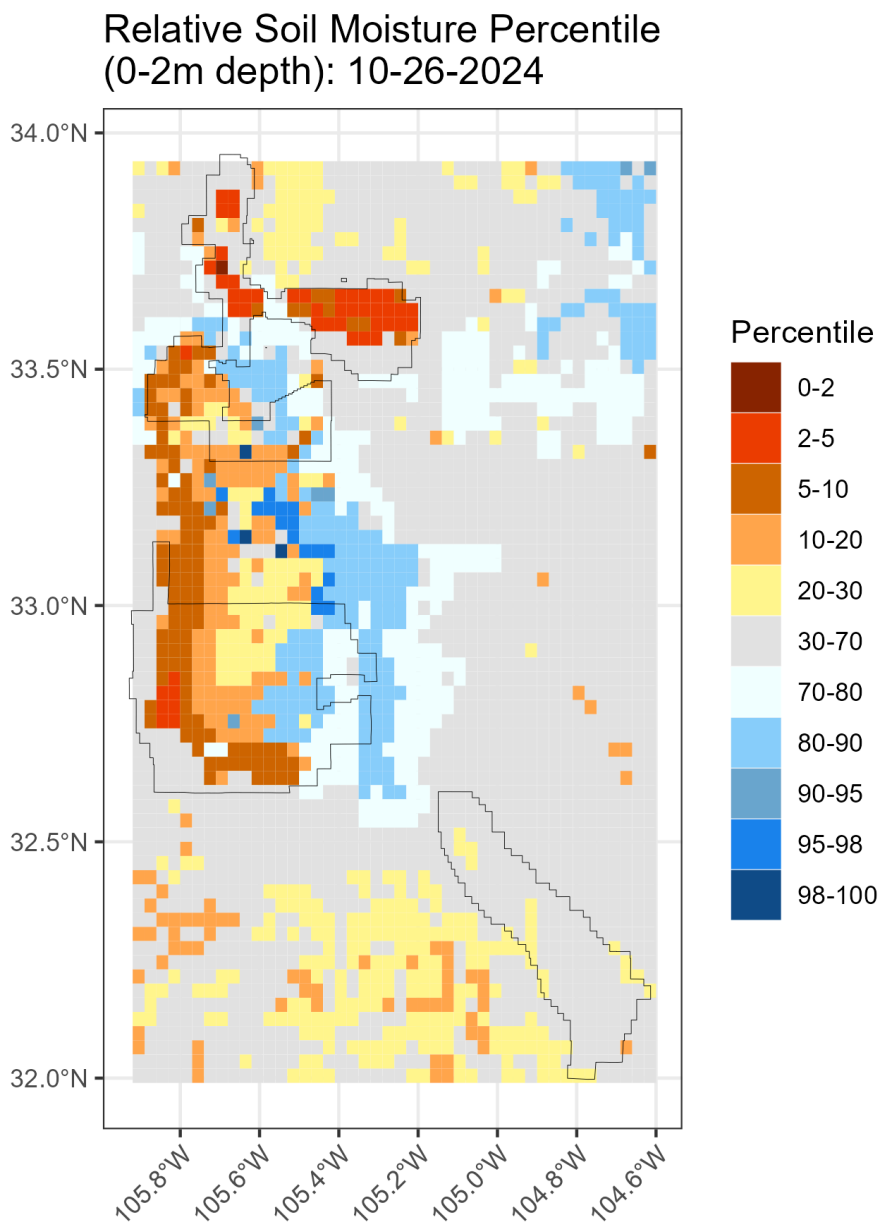


Figure 6: Integrated surface to 2 meter deep relative soil moisture estimate

Modeled soil moisture estimates are provided by the NASA Short-term Prediction Research and Transition Center. This program uses a land surface model to integrate surface weather conditions (e.g. precipitation, temperature, wind...) with surface and soil properties like vegetation cover, soil depth and type to track and make near real-time estimates of soil moisture on a 3km by 3km grid. This map displays how unusually wet or dry the relative soil moisture (based on local soil properties) is for the integrated amount from the surface to 2 meters deep. (more information at <https://weather.ndc.nasa.gov/sport/modeling/lis.html>)

## Mechanics Behind the Standardized Precipitation Index (SPI)

The SPI is a meteorological drought index which use monthly precipitation sums to calculate a time series of z-score values. The SPI uses z-score values to represent the number of standard deviations a monthly precipitation total is from the long-term mean. The sign (positive or negative) of a z-score value represents if the monthly total precipitation is above (+, water surplus) or below (-, water deficit) the long-term mean for *all other instances of that month on record*. Furthermore, the size of the z-score value represents the frequency of drought conditions (Table . Smaller SPI values (i.e. falling near zero) represent more frequent drought events while larger SPI values (positive or negative) are less frequent drought events.

Table 4: SPI Drought Categories

| SPI Value     | SPI Category   |
|---------------|----------------|
| $\geq 2$      | Extremely Wet  |
| 1.5 to 1.99   | Very Wet       |
| 1 to 1.49     | Moderately Wet |
| -0.99 to 0.99 | Near Average   |
| -1 to -1.49   | Moderately Dry |
| -1.5 to -1.99 | Very Dry       |
| $\leq -2$     | Extremely Dry  |

Note:

Table adapted from <https://drought.unl.edu/Monitoring/SPI/MapInterpretation.aspx>

An important feature of the SPI is the ability to be calculated at a variety of monthly timescales. This flexibility allows the SPI to evaluate drought conditions for different time periods. For example, a 3-month SPI calculation compares total precipitation from the 3 months with all other instances of those same 3 months on record. Land managers can assess SPI values of different timescales to interpret short and long-term drought conditions on their land.

## About the data used in this report

- PRISM Climate: The gridded used in mapping and forest and district level climate summaries is provided by the PRISM (Parameter elevation Regression on Independent Slopes Model) statistical mapping system. This system uses a weighted regression scheme to interpolate station data while accounting complexities like topography and rain shadows. The PRISM mapping system relies on a high density of stations to account for small variations in temperature and precipitation. Use caution in interpreting fine-scale patterns (or lack thereof) in regions with low station density. More information on PRISM can be found at <https://prism.oregonstate.edu/> and <https://climatedataguide.ucar.edu/climate-data/prism-high-resolution-spatial-climate-data-united-states-maxmin-temp-dewpoint>.
- Climate Stations: Station-level data used in this report consist of [NOAA Global Historical Climatology Network](#)(NOAA-GHCN) stations and USDA NRCS Snow Telemetry sites which include Cooperative Observer sites, Airports, and CoCoRAHS volunteer observations and also [USDA NRCS Snow Telemetry](#)(SNOTEL) sites. NOAA-GHCN stations consist of Cooperative Observer sites, Airports, and CoCoRAHS volunteer precipitation observations. SNOTEL sites are automated stations located in key snow monitoring locations, often in forested locations. NOAA-GHCN data were accessed through the [Regional Climate Center-Applied Climate Information System](#)(RCC-ACIS) and SNOTEL data were downloaded using the '[snotelr](#)' package. </pagebreak>

## Report Information

- This report was generated on 2024-10-26 .
- Past reports can be found at: <https://caes.arizona.edu/climatereports/>

## Contact information

Direct any questions, comments, or suggestions to:

- Mike Crimmins, Professor and Extension Specialist ([crimmins@arizona.edu](mailto:crimmins@arizona.edu))
- Trevor McKellar, Research Scientist ([tmckella@arizona.edu](mailto:tmckella@arizona.edu))

<https://cals.arizona.edu/climate>



## Appendix A: Allotment Climate Statistics

### Smokey Bear Ranger District

End of season Standardized Precipitation Index (SPI) maps and climate statistics for allotments within the Smokey Bear Ranger District of the Lincoln National Forest are shown below.

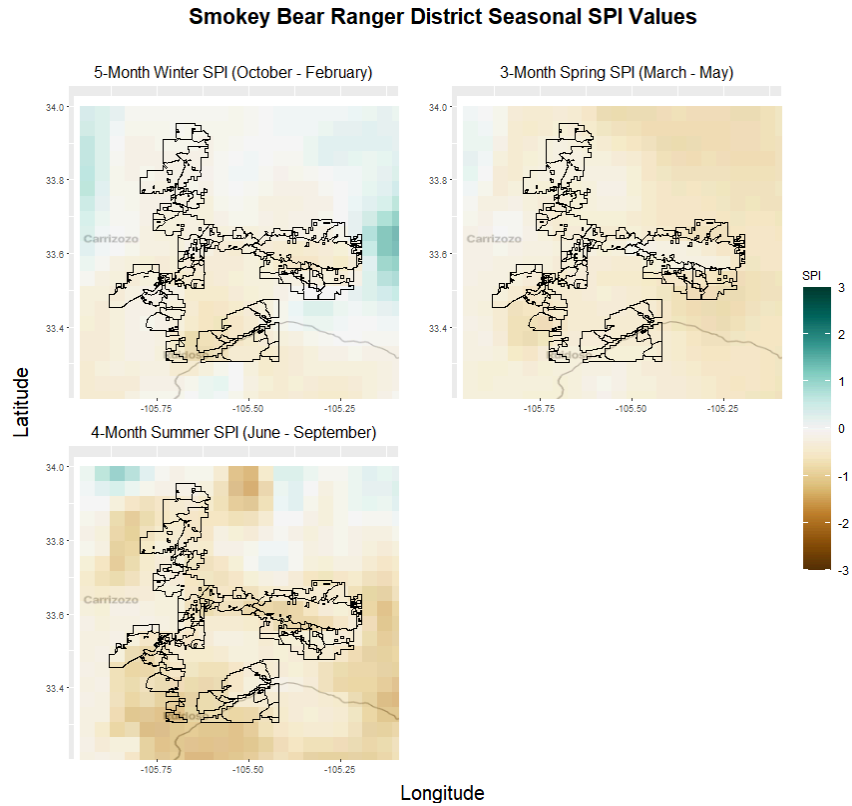


Figure 7: End of season SPI values for allotments within the Smokey Bear Ranger District.

Table 5: Allotment-level Seasonal SPI and Climate Statistics

| District      | Winter SPI | Spring SPI | Summer SPI | Fall SPI | 12-Month SPI | Winter Precip [in.] | Spring Precip [in.] | Summer Precip [in.] | Fall Precip [in.] | 12-Month Precip [in.] | Precip Anom [in.] |
|---------------|------------|------------|------------|----------|--------------|---------------------|---------------------|---------------------|-------------------|-----------------------|-------------------|
| Payton        | -0.80      | -0.52      | -0.92      | –        | -1.4         | 3.58                | 1.65                | 9.35                | –                 | 14.58                 | -5.8              |
| Indian Divide | -0.39      | -0.45      | -0.65      | –        | -0.97        | 3.88                | 1.54                | 9.01                | –                 | 14.43                 | -4.13             |
| Perry Canyon  | -0.62      | -0.48      | -0.82      | –        | -1.24        | 3.14                | 1.42                | 9.00                | –                 | 13.56                 | -4.89             |
| North Coe     | -0.40      | -0.59      | -0.56      | –        | -1           | 3.05                | 1.16                | 9.00                | –                 | 13.21                 | -3.8              |
| Benado Gap    | -0.34      | -0.51      | -0.65      | –        | -0.97        | 4.41                | 1.60                | 9.42                | –                 | 15.43                 | -4.24             |
| Latham        | -0.45      | -0.80      | -0.45      | –        | -0.99        | 2.92                | 1.01                | 9.13                | –                 | 13.05                 | -3.93             |
| Hightower     | -0.12      | -0.47      | -0.29      | –        | -0.61        | 3.92                | 1.32                | 6.96                | –                 | 12.20                 | -2.38             |
| Dry Gulch     | -0.41      | -0.54      | -0.69      | –        | -1.03        | 4.60                | 1.81                | 10.03               | –                 | 16.44                 | -4.76             |
| Finley        | -0.45      | -0.45      | -0.49      | –        | -0.87        | 4.49                | 1.66                | 8.97                | –                 | 15.13                 | -3.93             |
| Vi            | -0.49      | -0.51      | -0.72      | –        | -1.11        | 3.76                | 1.53                | 9.46                | –                 | 14.75                 | -4.91             |
| Loma Grande   | -0.26      | -0.66      | -0.88      | –        | -1.08        | 7.32                | 2.41                | 11.14               | –                 | 20.87                 | -6.47             |

| District              | Winter SPI | Spring SPI | Summer SPI | Fall SPI | 12-Month SPI | Winter Precip [in.] | Spring Precip [in.] | Summer Precip [in.] | Fall Precip [in.] | 12-Month Precip [in.] | Precip Anom [in.] |
|-----------------------|------------|------------|------------|----------|--------------|---------------------|---------------------|---------------------|-------------------|-----------------------|-------------------|
| South Coe             | -0.35      | -0.60      | -0.45      | –        | -0.88        | 2.73                | 1.05                | 8.56                | –                 | 12.34                 | -3.29             |
| Haskins               | -0.27      | -0.34      | -0.69      | –        | -0.89        | 4.08                | 1.68                | 7.80                | –                 | 13.56                 | -3.54             |
| Wilderness            | -0.44      | -0.50      | -0.59      | –        | -0.96        | 4.94                | 1.76                | 9.53                | –                 | 16.24                 | -4.53             |
| Eagle Creek           | -0.53      | -0.59      | -0.50      | –        | -1           | 2.64                | 1.13                | 8.66                | –                 | 12.43                 | -3.69             |
| Capitan Gap           | -0.38      | -0.17      | -1.04      | –        | -1.13        | 5.36                | 2.35                | 10.42               | –                 | 18.13                 | -5.86             |
| Wilson                | -0.22      | -0.36      | -0.56      | –        | -0.78        | 4.01                | 1.56                | 6.88                | –                 | 12.44                 | -3.01             |
| Hale Lake             | -0.55      | -0.50      | -0.81      | –        | -1.19        | 3.23                | 1.41                | 8.94                | –                 | 13.58                 | -4.72             |
| Lower Bonito          | -0.30      | -0.68      | -0.86      | –        | -1.1         | 6.66                | 2.28                | 10.70               | –                 | 19.64                 | -6.35             |
| Kudner                | -0.55      | -0.52      | -0.54      | –        | -0.99        | 3.29                | 1.38                | 9.04                | –                 | 13.71                 | -3.98             |
| Jacks Peak            | -0.19      | -0.50      | -0.45      | –        | -0.75        | 3.76                | 1.30                | 7.17                | –                 | 12.24                 | -2.84             |
| Block                 | -0.31      | -0.70      | -0.58      | –        | -0.99        | 2.99                | 1.01                | 8.03                | –                 | 12.03                 | -3.69             |
| Fritz                 | -0.46      | -0.43      | -0.80      | –        | -1.1         | 3.82                | 1.58                | 9.29                | –                 | 14.69                 | -4.73             |
| Tucson Mountain       | -0.34      | -0.40      | -0.95      | –        | -1.14        | 4.38                | 1.73                | 9.26                | –                 | 15.37                 | -5.03             |
| Matney Spring         | -0.03      | -0.88      | -0.57      | –        | -0.91        | 3.04                | 0.79                | 8.04                | –                 | 11.87                 | -3.41             |
| Brill                 | 0.04       | -0.72      | -0.71      | –        | -0.92        | 3.09                | 1.01                | 6.93                | –                 | 11.03                 | -3.53             |
| Nogal Lake            | -0.60      | -0.53      | -0.63      | –        | -1.07        | 3.35                | 1.47                | 9.36                | –                 | 14.18                 | -4.42             |
| Vera Cruz             | -0.43      | -0.46      | -0.41      | –        | -0.82        | 3.26                | 1.33                | 8.05                | –                 | 12.64                 | -3.1              |
| Capitan Wildlife Area | -0.57      | -0.44      | -0.80      | –        | -1.16        | 4.63                | 1.93                | 10.29               | –                 | 16.85                 | -5.79             |
| Ruidoso               | -0.62      | -0.40      | -1.37      | –        | -1.59        | 4.72                | 2.15                | 9.08                | –                 | 15.95                 | -7.35             |
| Bar W                 | -0.31      | -0.53      | -0.44      | –        | -0.81        | 4.03                | 1.39                | 7.87                | –                 | 13.29                 | -3.24             |
| Cedar Creek           | -0.51      | -0.63      | -1.14      | –        | -1.4         | 6.19                | 2.29                | 10.09               | –                 | 18.57                 | -7.57             |
| Arroyo Seco           | -0.15      | -0.78      | -0.59      | –        | -0.95        | 2.77                | 0.95                | 7.08                | –                 | 10.80                 | -3.57             |
| Tully                 | -0.50      | -0.57      | -0.48      | –        | -0.97        | 2.64                | 1.12                | 8.67                | –                 | 12.42                 | -3.57             |
| Welch                 | -0.30      | -0.45      | -0.77      | –        | -1.02        | 4.35                | 1.66                | 9.39                | –                 | 15.40                 | -4.43             |
| Comery                | -0.33      | -0.37      | -0.97      | –        | -1.13        | 4.50                | 1.81                | 9.40                | –                 | 15.71                 | -5.15             |
| Alienated             | -0.58      | -0.54      | -0.60      | –        | -1.05        | 3.39                | 1.44                | 9.41                | –                 | 14.25                 | -4.32             |
| Arabella              | -0.37      | -0.71      | -0.53      | –        | -0.98        | 2.94                | 1.10                | 8.31                | –                 | 12.36                 | -3.99             |
| Salazar               | -0.36      | -0.67      | -0.51      | –        | -0.97        | 2.58                | 0.96                | 8.26                | –                 | 11.80                 | -3.46             |
| Spencer               | -0.39      | -0.53      | -0.36      | –        | -0.79        | 4.12                | 1.45                | 8.15                | –                 | 13.72                 | -3.31             |
| Diamond Peak          | -0.45      | -0.43      | -0.41      | –        | -0.82        | 4.05                | 1.58                | 8.53                | –                 | 14.16                 | -3.57             |
| Devils Canyon         | -0.52      | -0.56      | -0.52      | –        | -1.01        | 2.72                | 1.14                | 8.85                | –                 | 12.71                 | -3.74             |
| Alto                  | -0.29      | -0.82      | -0.87      | –        | -1.13        | 8.49                | 2.49                | 11.89               | –                 | 22.86                 | -7.57             |
| East Hale Lake        | -0.50      | -0.57      | -0.48      | –        | -0.97        | 2.64                | 1.12                | 8.67                | –                 | 12.42                 | -3.57             |
| Skinner               | -0.59      | -0.51      | -0.72      | –        | -1.13        | 3.59                | 1.58                | 9.39                | –                 | 14.56                 | -4.76             |
| Cavanaugh             | -0.59      | -0.52      | -0.75      | –        | -1.18        | 2.98                | 1.33                | 8.93                | –                 | 13.23                 | -4.6              |
| Church Mountain       | -0.45      | -0.48      | -0.51      | –        | -0.9         | 4.20                | 1.63                | 9.03                | –                 | 14.86                 | -3.98             |
| Gavilan               | -0.85      | -0.48      | -0.97      | –        | -1.46        | 3.48                | 1.64                | 9.20                | –                 | 14.33                 | -6.03             |
| Lone Mountain         | -0.26      | -0.41      | -0.60      | –        | -0.83        | 3.94                | 1.48                | 6.84                | –                 | 12.26                 | -3.14             |
| Pino                  | -0.34      | -0.40      | -0.46      | –        | -0.78        | 3.54                | 1.39                | 7.03                | –                 | 11.96                 | -2.98             |
| Jacob Spring          | -0.36      | -0.60      | -0.74      | –        | -1.09        | 3.20                | 1.14                | 8.21                | –                 | 12.55                 | -4.1              |
| Baca                  | -0.17      | -0.80      | -0.50      | –        | -0.9         | 3.11                | 0.93                | 8.72                | –                 | 12.75                 | -3.46             |

Note:

2024 Water year (October - September) and seasonal climate statistics for allotments within the Smokey Bear Ranger District. Seasonal monthly definitions are as follows: Winter (Oct-Feb); Spring (Mar-May); Summer (Jun-Sep); Fall (NA). All data acquired via

| District | Winter SPI | Spring SPI | Summer SPI | Fall SPI | 12-Month SPI | Winter Precip [in.] | Spring Precip [in.] | Summer Precip [in.] | Fall Precip [in.] | 12-Month Precip [in.] | Precip Anom [in.] |
|----------|------------|------------|------------|----------|--------------|---------------------|---------------------|---------------------|-------------------|-----------------------|-------------------|
| PRISM.   |            |            |            |          |              |                     |                     |                     |                   |                       |                   |

## Guadalupe Ranger District

End of season Standardized Precipitation Index (SPI) maps and climate statistics for allotments within the Guadalupe Ranger District of the Lincoln National Forest are shown below.

**Guadalupe Ranger District Seasonal SPI Values**

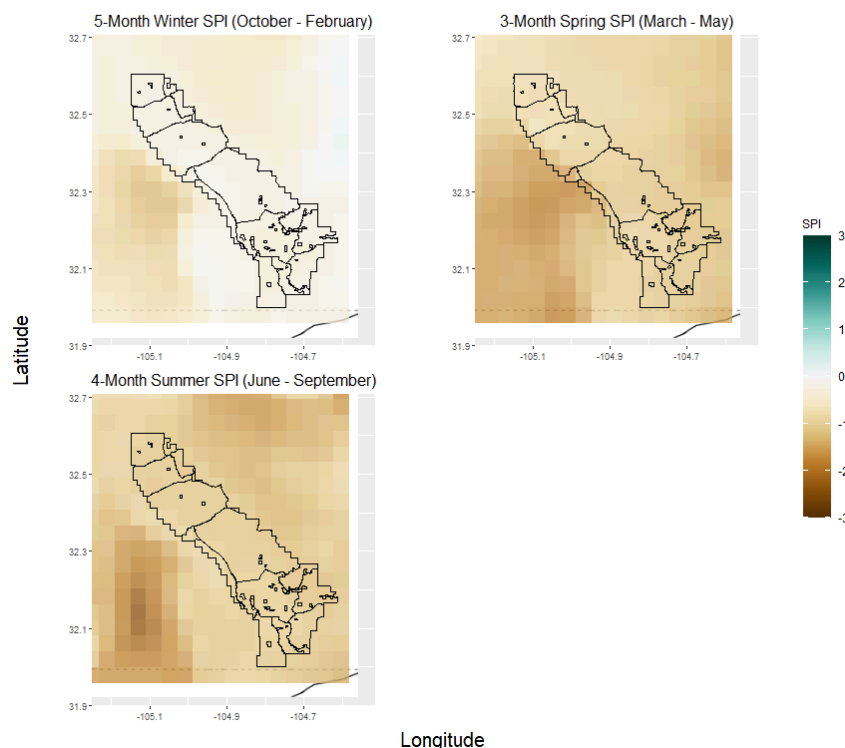


Figure 8: End of season SPI values for allotments within the Guadalupe Ranger District.

**Table 6: Allotment-level Seasonal SPI and Climate Statistics**

| District        | Winter SPI | Spring SPI | Summer SPI | Fall SPI | 12-Month SPI | Winter Precip [in.] | Spring Precip [in.] | Summer Precip [in.] | Fall Precip [in.] | 12-Month Precip [in.] | Precip Anom [in.] |
|-----------------|------------|------------|------------|----------|--------------|---------------------|---------------------|---------------------|-------------------|-----------------------|-------------------|
| Sitting Bull    | -0.57      | -0.49      | -0.80      | —        | -1.15        | 2.47                | 0.61                | 4.81                | —                 | 7.89                  | -3.6              |
| Black River     | -0.42      | -0.47      | -1.39      | —        | -1.5         | 4.92                | 1.79                | 9.60                | —                 | 16.31                 | -8.04             |
| Bear Springs    | -0.70      | -0.48      | -0.96      | —        | -1.34        | 3.20                | 1.52                | 9.76                | —                 | 14.49                 | -6.59             |
| Soldier Springs | -0.59      | -0.54      | -0.97      | —        | -1.33        | 2.97                | 1.31                | 8.95                | —                 | 13.23                 | -5.96             |
| Hardin          | -0.59      | -0.46      | -0.90      | —        | -1.23        | 3.94                | 1.22                | 8.23                | —                 | 13.39                 | -5.7              |
| Rim             | -0.51      | -0.55      | -0.86      | —        | -1.22        | 2.67                | 1.18                | 8.41                | —                 | 12.25                 | -5.07             |
| Dark Canyon     | -0.43      | -0.75      | -1.48      | —        | -1.63        | 5.34                | 1.51                | 9.06                | —                 | 15.91                 | -8.98             |
| Panama          | -0.75      | -0.49      | -1.07      | —        | -1.47        | 2.74                | 1.38                | 8.91                | —                 | 13.04                 | -6.6              |
| Sargent         | -0.66      | -0.54      | -1.33      | —        | -1.64        | 3.18                | 1.39                | 8.50                | —                 | 13.07                 | -7.39             |
| Woods           | -0.38      | -0.54      | -1.20      | —        | -1.34        | 4.79                | 1.37                | 8.06                | —                 | 14.22                 | -6.59             |
| National        | -0.56      | -0.53      | -0.68      | —        | -1.1         | 3.51                | 1.03                | 8.56                | —                 | 13.10                 | -5                |
| Acrey           | -0.19      | -0.49      | -1.38      | —        | -1.3         | 7.11                | 2.17                | 10.27               | —                 | 19.55                 | -8.15             |
| Montgomery      | -0.55      | -0.53      | -0.83      | —        | -1.22        | 2.62                | 1.21                | 8.62                | —                 | 12.45                 | -5.18             |
| Mccollaum       | -0.55      | -0.47      | -0.37      | —        | -0.86        | 4.13                | 1.23                | 8.58                | —                 | 13.94                 | -3.77             |
| Prude           | -0.50      | -0.46      | -1.01      | —        | -1.26        | 3.42                | 0.96                | 6.33                | —                 | 10.71                 | -4.79             |

| District       | Winter SPI | Spring SPI | Summer SPI | Fall SPI | 12-Month SPI | Winter Precip [in.] | Spring Precip [in.] | Summer Precip [in.] | Fall Precip [in.] | 12-Month Precip [in.] | Precip Anom [in.] |
|----------------|------------|------------|------------|----------|--------------|---------------------|---------------------|---------------------|-------------------|-----------------------|-------------------|
| Last Chance    | -0.40      | -0.48      | -1.40      | –        | -1.5         | 5.33                | 1.87                | 9.92                | –                 | 17.12                 | -8.37             |
| Bullis Springs | -0.56      | -0.53      | -0.81      | –        | -1.16        | 3.12                | 0.84                | 5.79                | –                 | 9.75                  | -4.21             |
| –              | -0.72      | -0.47      | -1.22      | –        | -1.56        | 3.33                | 1.55                | 9.19                | –                 | 14.06                 | -7.41             |
| –              | -0.74      | -0.40      | -0.96      | –        | -1.31        | 3.64                | 1.80                | 10.34               | –                 | 15.77                 | -6.81             |
| –              | -0.53      | -0.42      | -1.15      | –        | -1.36        | 4.54                | 1.94                | 10.17               | –                 | 16.65                 | -7.25             |
| –              | -0.54      | -0.56      | -0.70      | –        | -1.14        | 2.39                | 1.08                | 8.35                | –                 | 11.83                 | -4.68             |
| –              | -0.37      | -0.50      | -1.16      | –        | -1.28        | 5.84                | 2.08                | 10.68               | –                 | 18.60                 | -7.43             |
| –              | -0.72      | -0.47      | -1.22      | –        | -1.56        | 3.33                | 1.55                | 9.19                | –                 | 14.06                 | -7.41             |
| –              | -0.41      | -0.48      | -0.89      | –        | -1.13        | 4.80                | 1.46                | 8.47                | –                 | 14.73                 | -5.54             |
| –              | -0.53      | -0.50      | -1.33      | –        | -1.54        | 3.96                | 1.56                | 9.07                | –                 | 14.59                 | -7.59             |
| –              | -0.48      | -0.58      | -1.16      | –        | -1.44        | 3.00                | 1.21                | 8.20                | –                 | 12.41                 | -6.07             |
| –              | -0.41      | -0.57      | -1.44      | –        | -1.55        | 5.21                | 1.71                | 9.46                | –                 | 16.38                 | -8.5              |
| –              | -0.54      | -0.40      | -1.08      | –        | -1.3         | 5.26                | 2.14                | 11.06               | –                 | 18.45                 | -7.59             |
| –              | -0.49      | -0.45      | -1.22      | –        | -1.39        | 4.68                | 1.92                | 10.01               | –                 | 16.61                 | -7.35             |
| –              | -0.51      | -0.53      | -1.21      | –        | -1.46        | 3.67                | 1.44                | 8.81                | –                 | 13.92                 | -6.82             |
| –              | -0.50      | -0.57      | -1.16      | –        | -1.45        | 3.08                | 1.25                | 8.43                | –                 | 12.76                 | -6.24             |
| –              | -0.47      | -0.50      | -1.33      | –        | -1.48        | 4.66                | 1.78                | 9.57                | –                 | 16.01                 | -7.74             |
| –              | -0.59      | -0.50      | -1.33      | –        | -1.58        | 3.79                | 1.55                | 9.07                | –                 | 14.41                 | -7.65             |
| –              | -0.53      | -0.57      | -1.18      | –        | -1.48        | 3.03                | 1.25                | 8.31                | –                 | 12.59                 | -6.35             |
| –              | -0.35      | -0.60      | -1.42      | –        | -1.5         | 4.82                | 1.34                | 8.02                | –                 | 14.18                 | -7.16             |
| –              | -0.58      | -0.59      | -0.53      | –        | -1.01        | 4.09                | 1.13                | 7.99                | –                 | 13.22                 | -4.53             |
| –              | -0.45      | -0.48      | -1.36      | –        | -1.49        | 4.72                | 1.78                | 9.55                | –                 | 16.04                 | -7.83             |
| –              | -0.23      | -0.41      | -1.26      | –        | -1.24        | 6.76                | 2.29                | 10.66               | –                 | 19.71                 | -7.77             |
| –              | -0.47      | -0.53      | -1.23      | –        | -1.45        | 3.69                | 1.38                | 8.76                | –                 | 13.83                 | -6.78             |
| –              | -0.82      | -0.46      | -0.95      | –        | -1.39        | 2.71                | 1.44                | 9.52                | –                 | 13.67                 | -6.49             |
| –              | -0.58      | -0.56      | -1.24      | –        | -1.54        | 3.13                | 1.32                | 8.48                | –                 | 12.93                 | -6.8              |
| –              | -0.55      | -0.54      | -1.23      | –        | -1.5         | 3.47                | 1.41                | 8.87                | –                 | 13.75                 | -6.96             |
| –              | -0.70      | -0.43      | -1.12      | –        | -1.43        | 3.74                | 1.77                | 9.90                | –                 | 15.41                 | -7.22             |
| –              | -0.71      | -0.51      | -0.99      | –        | -1.4         | 2.66                | 1.32                | 8.90                | –                 | 12.89                 | -6.23             |
| –              | -0.45      | -0.48      | -1.31      | –        | -1.43        | 5.38                | 1.98                | 10.28               | –                 | 17.64                 | -8.17             |
| –              | -0.43      | -0.48      | -1.08      | –        | -1.24        | 3.88                | 1.12                | 6.62                | –                 | 11.61                 | -4.99             |
| –              | -0.50      | -0.48      | -1.29      | –        | -1.46        | 4.58                | 1.82                | 9.72                | –                 | 16.12                 | -7.64             |

Note:

2024 Water year (October - September) and seasonal climate statistics for allotments within the Guadalupe Ranger District. Seasonal monthly definitions are as follows: Winter (Oct-Feb); Spring (Mar-May); Summer (Jun-Sep); Fall (NA). All data acquired via PRISM.

## Sacramento Ranger District

End of season Standardized Precipitation Index (SPI) maps and climate statistics for allotments within the Sacramento Ranger District of the Lincoln National Forest are shown below.

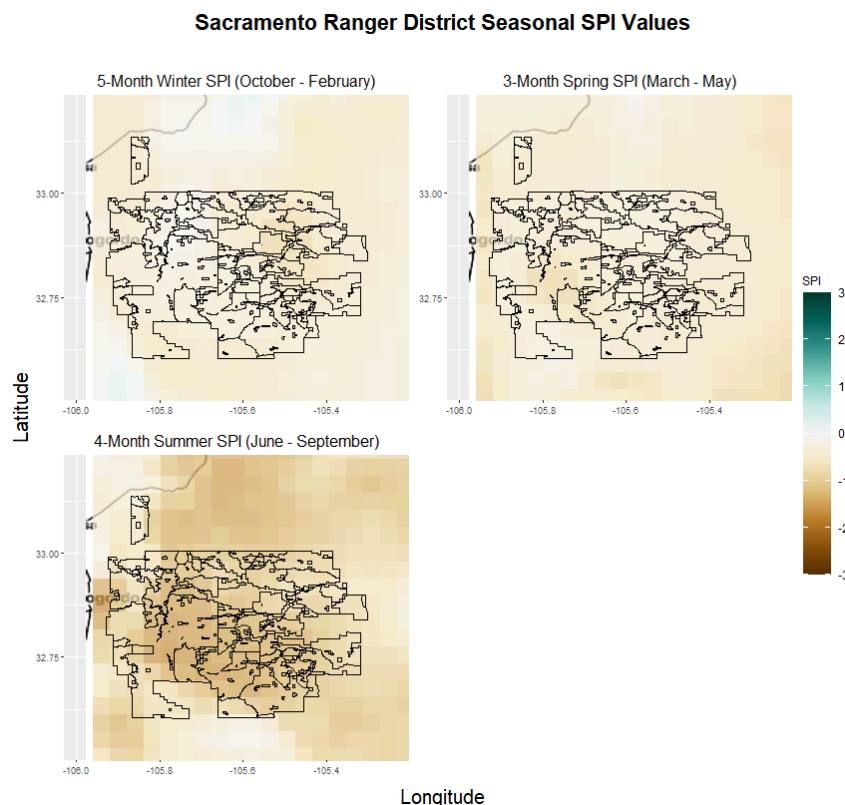


Figure 9: End of season SPI values for allotments within the Sacramento Ranger District.

Table 7: Allotment-level Seasonal SPI and Climate Statistics

| District     | Winter SPI | Spring SPI | Summer SPI | Fall SPI | 12-Month SPI | Winter Precip [in.] | Spring Precip [in.] | Summer Precip [in.] | Fall Precip [in.] | 12-Month Precip [in.] | Precip Anom [in.] |
|--------------|------------|------------|------------|----------|--------------|---------------------|---------------------|---------------------|-------------------|-----------------------|-------------------|
| Escondido    | -0.14      | -0.57      | -1.24      | –        | -1.22        | 6.71                | 1.90                | 10.14               | –                 | 18.75                 | -7.14             |
| Pendleton    | -0.80      | -0.43      | -0.79      | –        | -1.24        | 2.80                | 1.50                | 9.99                | –                 | 14.29                 | -6.05             |
| Burnt Canyon | -0.52      | -0.49      | -0.62      | –        | -1.03        | 3.38                | 1.41                | 9.32                | –                 | 14.10                 | -4.23             |
| 16 Springs   | -0.33      | -0.70      | -0.46      | –        | -0.93        | 2.99                | 1.05                | 8.99                | –                 | 13.03                 | -3.55             |
| Carrissa     | -0.54      | -0.43      | -0.58      | –        | -1           | 3.54                | 1.07                | 7.07                | –                 | 11.68                 | -4.09             |
| Cuevo        | -0.34      | -1.10      | -1.13      | –        | -1.43        | 3.35                | 0.62                | 6.45                | –                 | 10.42                 | -7.08             |
| Scott Able   | -0.65      | -0.60      | -0.55      | –        | -1.06        | 3.28                | 1.42                | 9.43                | –                 | 14.13                 | -4.31             |
| Miller Flats | -0.17      | -0.57      | -1.24      | –        | -1.24        | 6.60                | 1.95                | 10.18               | –                 | 18.74                 | -7.24             |
| Potter Hill  | -0.61      | -0.56      | -1.22      | –        | -1.51        | 5.30                | 2.30                | 9.47                | –                 | 17.07                 | -7.62             |
| Sacramento   | -0.26      | -0.47      | -0.58      | –        | -0.86        | 4.04                | 1.47                | 8.15                | –                 | 13.66                 | -3.48             |

Note:

2024 Water year (October - September) and seasonal climate statistics for allotments within the Sacramento Ranger District. Seasonal monthly definitions are as follows: Winter (Oct-Feb); Spring (Mar-May); Summer (Jun-Sep); Fall (NA). All data acquired via PRISM.