



Monthly Climate Report

NWS Reno

Issued: 04/08/2023

Includes previous Drought update (DGT) and Hydro Report (E5)

Synopsis:

While April finally brought some periods of spring-like temperatures, a few cold weather systems did give us a reminder of the winter not yet ready to let go of its grip on the eastern Sierra and western NV. Temperatures were still below average (Figure 1), but not to the extent as what occurred during the previous few months. Precipitation was also below average (Figure 2), which was overall good news as it didn't exacerbate the rate of snow melt into area rivers and creeks. Overall, considering the extreme extent of the winter snowpack, the snow melt in April was relatively orderly as the warmest periods were short duration and not accompanied by rain.

Weather Events:

The first storm of April came on the 2nd-3rd with the main effects being strong winds in the Sierra, northeast CA, and western NV. Gusts upwards of 90-130 mph were recorded along the Sierra crests, and gusts upwards of 50-60 mph were recorded in northeast CA and western NV. This was then followed by light snowfall of 2-4" around the Tahoe basin and 5-10" for higher elevations near the Sierra crest. The morning commute around Reno on the 3rd was impacted by slick and hazardous road conditions with up to 1" of snow and sub-freezing temperatures. As a quick note, a winter weather advisory was issued for this system and was the only winter weather product issued for the rest of April. Additionally, temperatures during the first week of April were upwards of 15-20 degrees below average.

Another weaker storm brought 3-7" of snowfall near the Sierra crest and up to 2" for the Tahoe basin on the morning of the 7th, along with a quick shot of cooler air. Temperatures finally warmed up to above average from the 8th-10th, ending the streak of 169 consecutive days in Reno with temperatures below 70 degrees (tied for 3rd longest at the airport). Parts of west central NV even surpassed 80 degrees. Increased snowmelt during this brief warmup brought higher flows on some of the area rivers and creeks as well as localized reports of nuisance flooding.

This warmup was short-lived as another dry cold front brought gusty winds and cooler temperatures for the 12th and 13th. This was followed by some warming for the weekend of the 15th-16th, with temperatures returning back to average.

The temperature rollercoaster continued as a stronger and colder storm system then dropped into northern CA for the 17th-18th. While strong winds were the main impact of this system, it also brought a quick burst of snow into western NV, northeast CA, and the Tahoe basin for the early morning of the 18th. Snowfall totals were mainly around 2-5" in the Sierra, except 5-10" for higher elevations along the Sierra crest. Up to 2" of snow also fell around Reno, producing slick and hazardous conditions for the AM commute.

Dry weather then prevailed for the remainder of April. Temperatures finally warmed up to above average for a more prolonged period starting on the 21st, with Reno reaching 80 degrees for the first time of the year on the 27th. The warmest days were the 28th-29th with highs in the mid-upper 80s for western NV valleys and mid 70s for Sierra communities.

Hydrology:

The snowmelt season finally picked up steam in April as our vast, record snowpack (Figure 3) started to finally melt with the warmer spring-like temperatures. We experienced two distinct periods of above average temperatures with enhanced snowmelt that were in-between two periods of below average temperatures with a slower melt process. With the well below average precipitation, we fortunately did not experience any instances of rain on snow flooding. Plus, the two cooler periods of the month allowed for snowmelt to occur over a longer period of time, which helped avoid more severe flooding. But, there is still a lot of snow in the Sierra left to melt!

With the first warmup, snowmelt was especially enhanced for locations below around 6,500. Snow water equivalent in the eastern Sierra peaked on the 8th just prior to the onset of the warmup (Figure 4). By the 14th, flood advisories were issued for floodgate releases for Little Last Chance Creek below Frenchman Dam as well as for a portion of the East Walker River in Lyon County for releases from Bridgeport Dam. These advisories remained in effect for the rest of the month. With the second warmup of the month, well above average temperatures caused even more enhanced snowmelt to occur region-wide and for higher elevations up to around 8,000 feet. Between the melting snow and needed flood control releases from reservoirs, several river forecast points reached minor flood stage (Bryant Creek near Markleeville and also the West Fork of the Carson at Woodfords) to moderate flood stage (East Walker at Strosnider Ditch and the Walker River at Wabuska). Additionally, many locations along the Carson River (Dayton, Deer Run Road, Tarzyn Road), East Fork of the Carson River at Gardnerville, and a few locations along the Walker River and East Fork of the Walker River reached monitor stage.

Streamflows during April remained well above average to record status in the eastern Sierra, western Nevada, as well as along the upper and lower Humboldt (Figure. 5 left side). Water year to date streamflow is generally above average to well above average draining the Sierra, while a few locations along Humboldt remain below average, a few locations are now above average for the water year flow to date (Figure 5 right side). Well above normal April-July water supply conditions are still expected through the region, with record volumes expected along the Carson and Walker Rivers (Figure 6).

Drought/Climate Update:

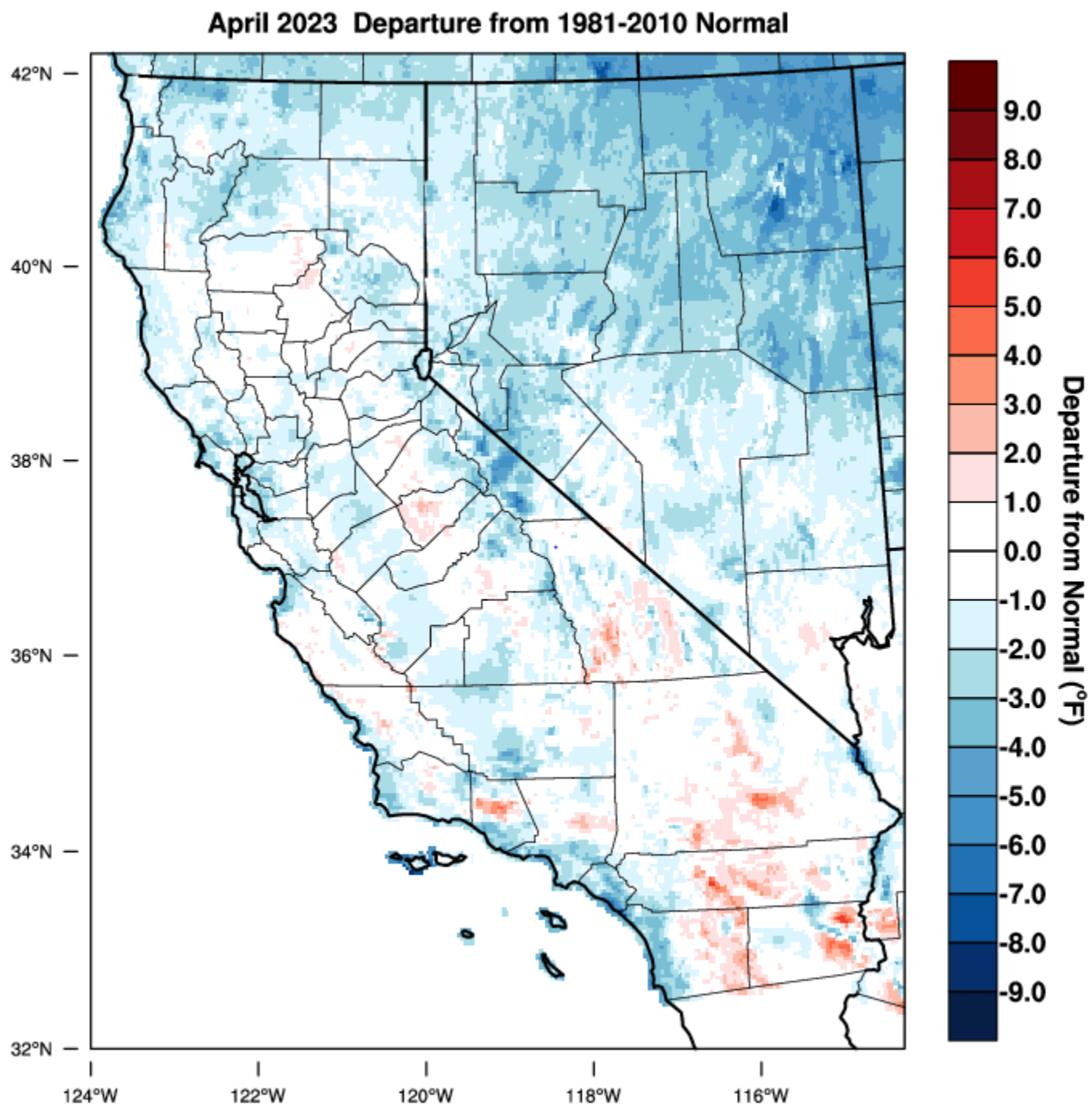
There was little change in the monthly drought status during May, with a small section of moderate (D1) drought being removed from northern Lassen County (Figure 7). Even with well below average precipitation in April, water year precipitation still remained in the top 10th percentile to record status across northeast CA, the eastern Sierra, and western NV (Figure 8). In addition, water year temperatures by the end of April (Figure 9) remain below average to well below average. The one remaining area of D1 is in Pershing County. The area has had significant agricultural impacts over the last 3 years. Conditions continue to improve, but there still remains low groundwater levels and remnant agricultural impacts. This area also has very little ground observations, so future drought updates are likely this spring.

Additional Information on Drought and Climate:

[Report Drought conditions here](#)
[Nevada statewide Drought update](#)
[NV Living with Drought](#)
[Drought Monitor](#)
[New Drought.gov](#)
[California Nevada Drought Early Warning System](#)
[NOAA CPC Drought page-](#)
[CNAP Drought tracker](#)
[California Nevada River Forecast Center](#)
[WRCC Drought Tracker](#)
[WRCC Enso page](#)
[WRCC Monthly Climate Summaries](#)
[Evaporative Demand Drought Index](#)
[US Seasonal Drought Outlook](#)

Contact NWS Reno Climate Team
rev.climate@noaa.gov 775-673-8100
<https://www.weather.gov/rev/>

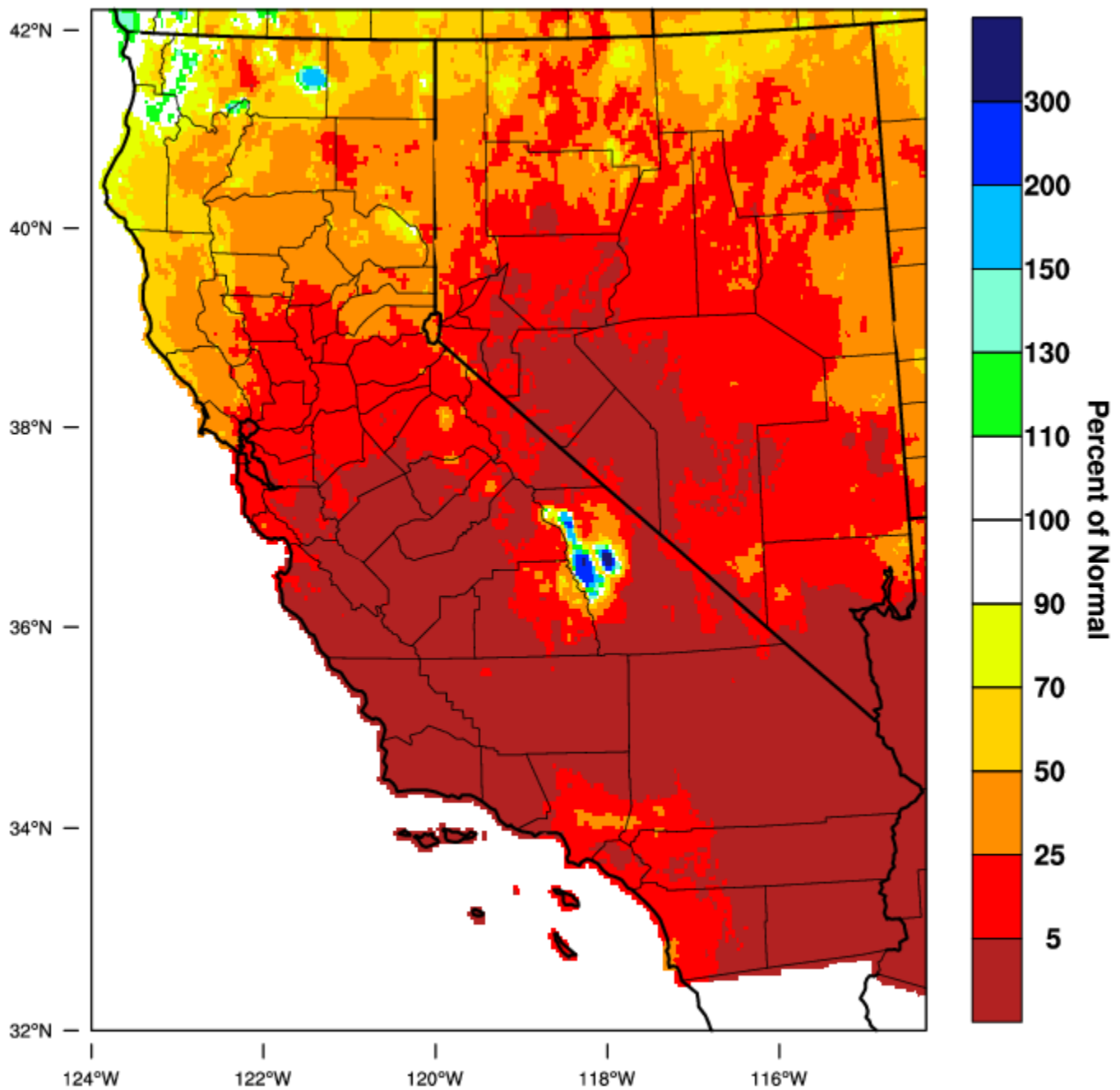
Figures.



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 2 MAY 2023

Figure 1. Departure from normal temperatures for April 2023. Data courtesy of WestWideDroughtTracker ([WWDt](#))

April 2023 Percent of 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 2 MAY 2023

Figure 2. Percent of average precipitation for April 2023. Data courtesy of WestWideDroughtTracker ([WWDT](#))

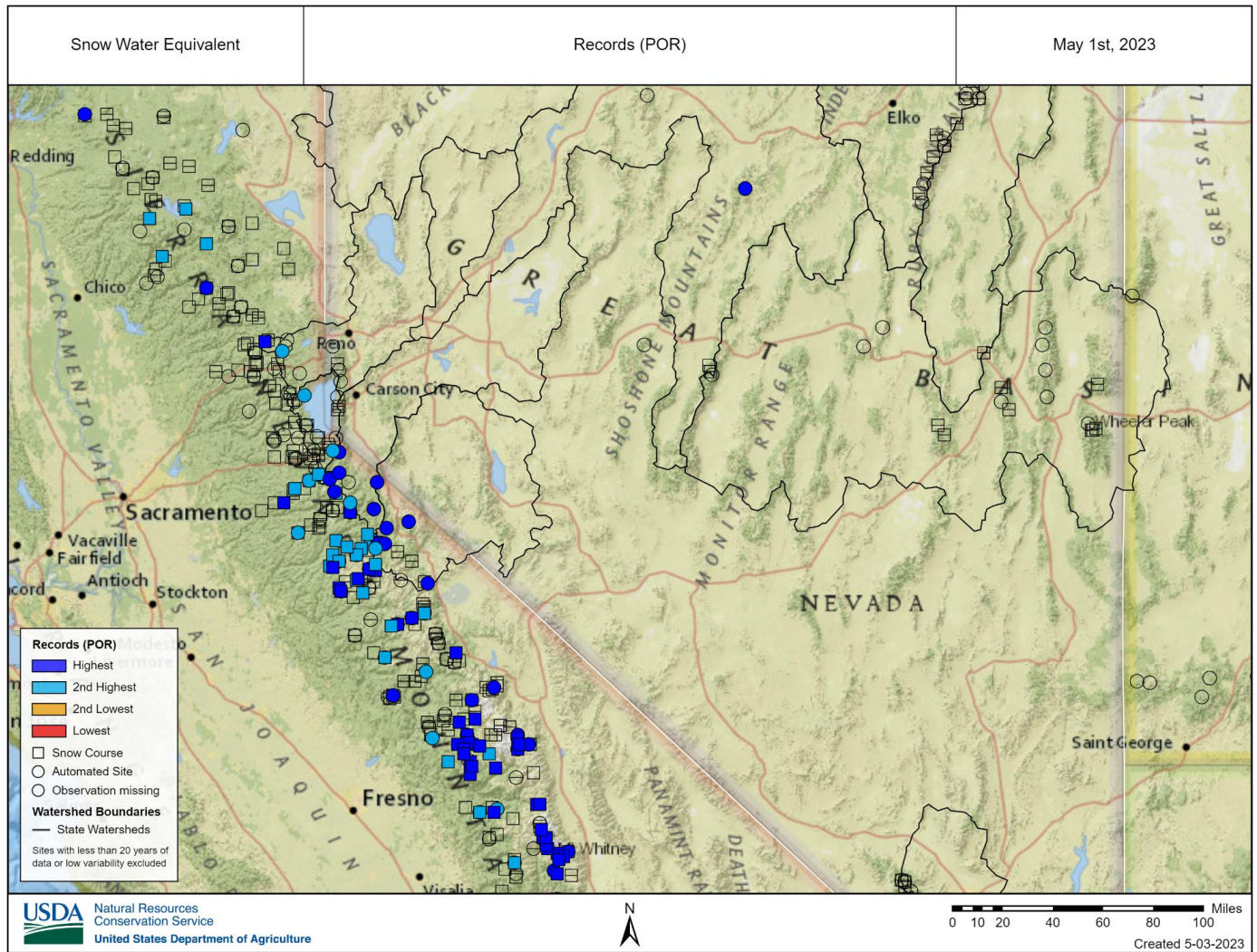


Figure 3. May 1st SNOTEL (circles) and snow course (squares) record and near record SWE. Most SNOTELs have over 40 years of record, and many snow courses have records exceeding 80 years. ([Link](#))

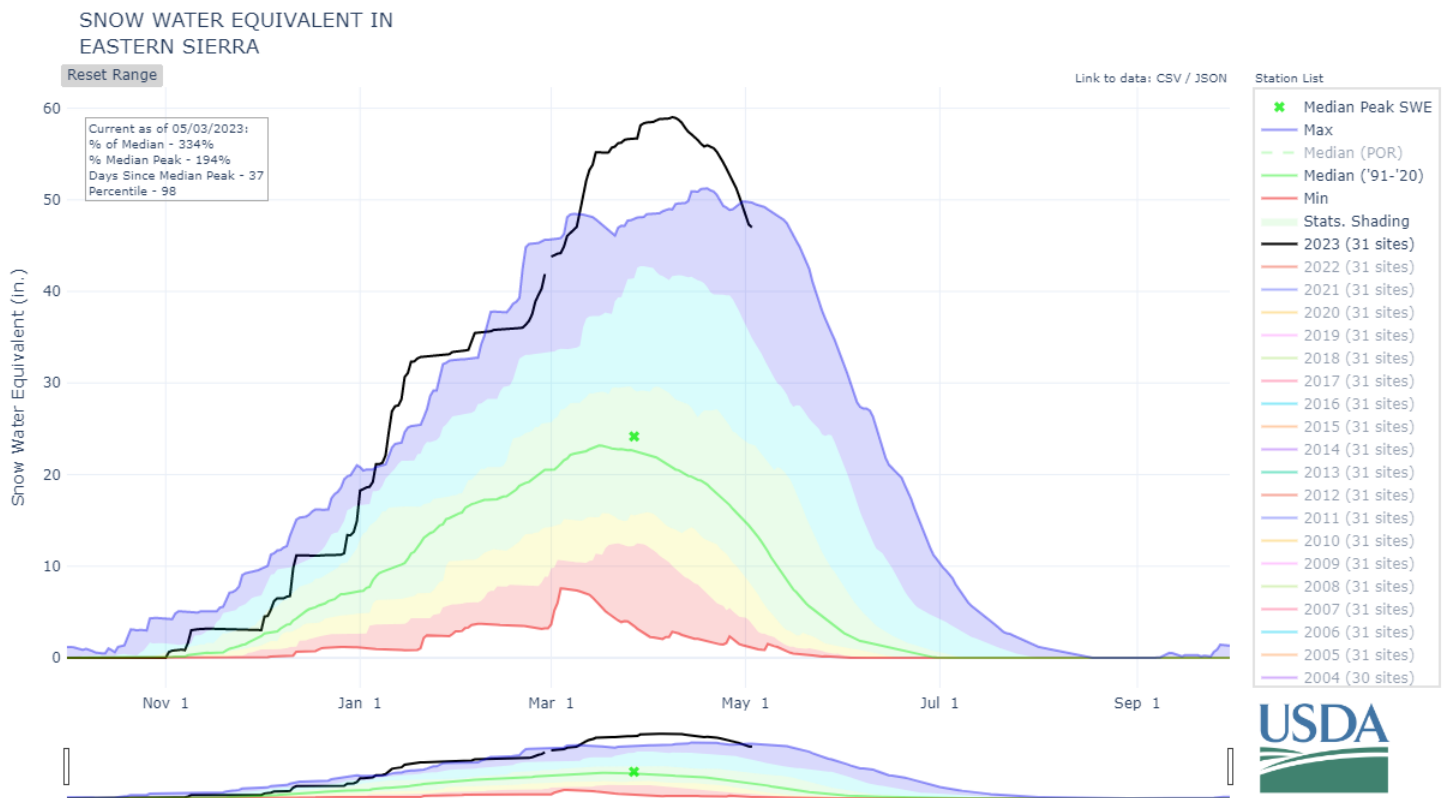


Figure 4. Snow water equivalent for Eastern Sierra watersheds (Tahoe, Truckee, Carson and Walker). Black line represents the water year 2022-2023. As of May 3rd, this area was 334% of median and 194% of the median peak. ([NRCS](#))

April 2023

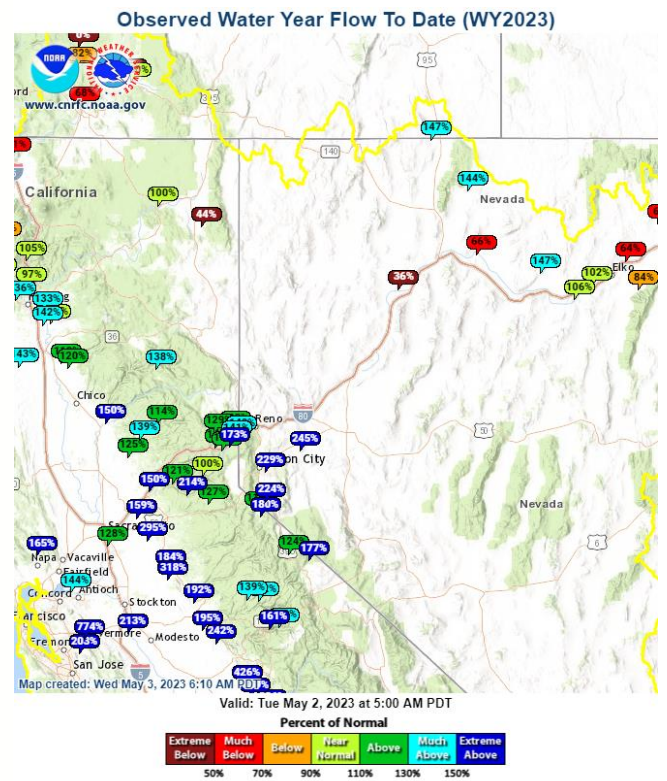
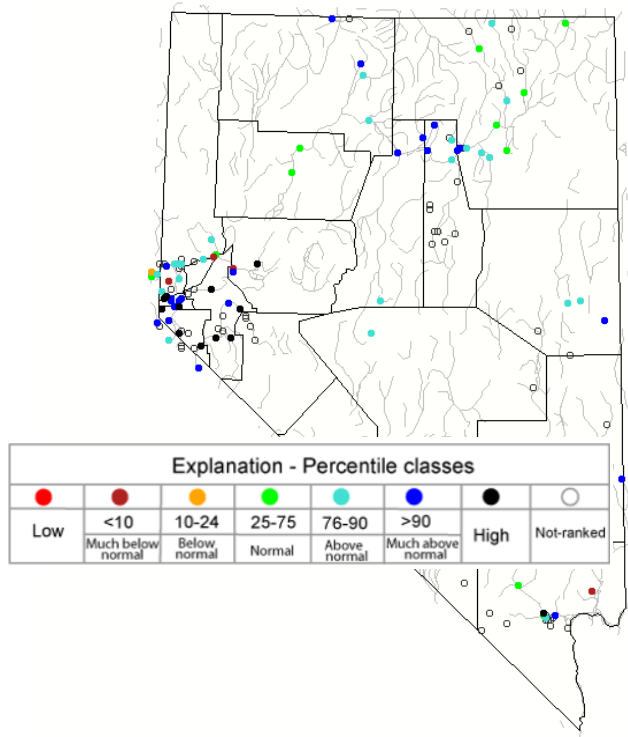


Figure 5: March monthly [USGS streamflow](#) on the left, and [CNRFC water year observed flow to date](#) on right.

Forecast Water Year 2023 Volume

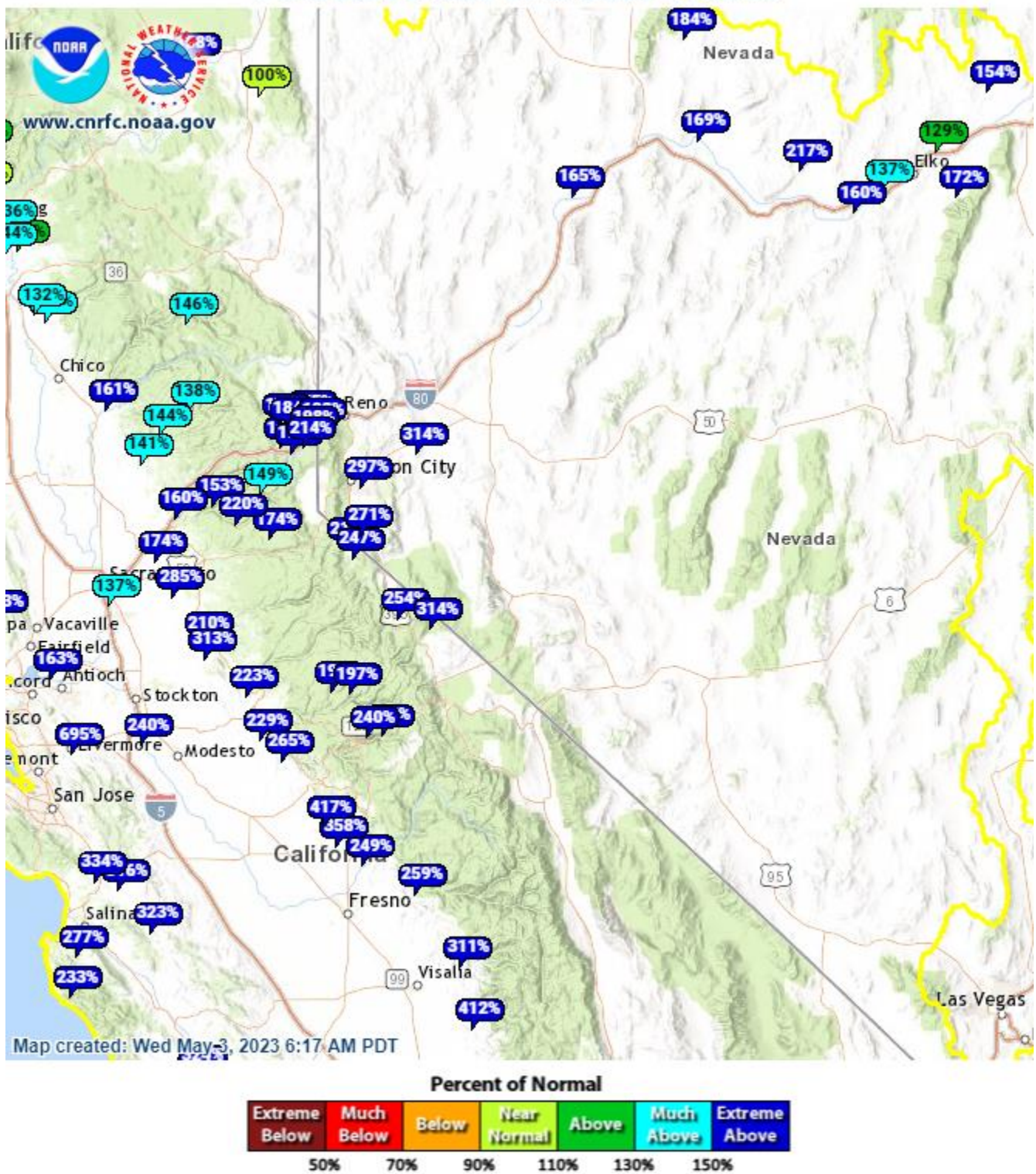


Figure 6. Median April -July water supply forecasts as percent of average. Updates available at [cnrfc.noaa.gov](https://www.cnrfc.noaa.gov)

U.S. Drought Monitor Reno, NV WFO

April 25, 2023

(Released Thursday, Apr. 27, 2023)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	46.41	53.59	8.24	0.00	0.00	0.00
Last Week 04-18-2023	46.41	53.59	8.24	0.00	0.00	0.00
3 Months Ago 01-24-2023	0.00	100.00	100.00	40.59	16.02	0.00
Start of Calendar Year 01-03-2023	0.00	100.00	100.00	60.41	16.14	0.00
Start of Water Year 09-27-2022	0.00	100.00	100.00	100.00	19.04	0.00
One Year Ago 04-26-2022	0.00	100.00	100.00	100.00	13.72	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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droughtmonitor.unl.edu

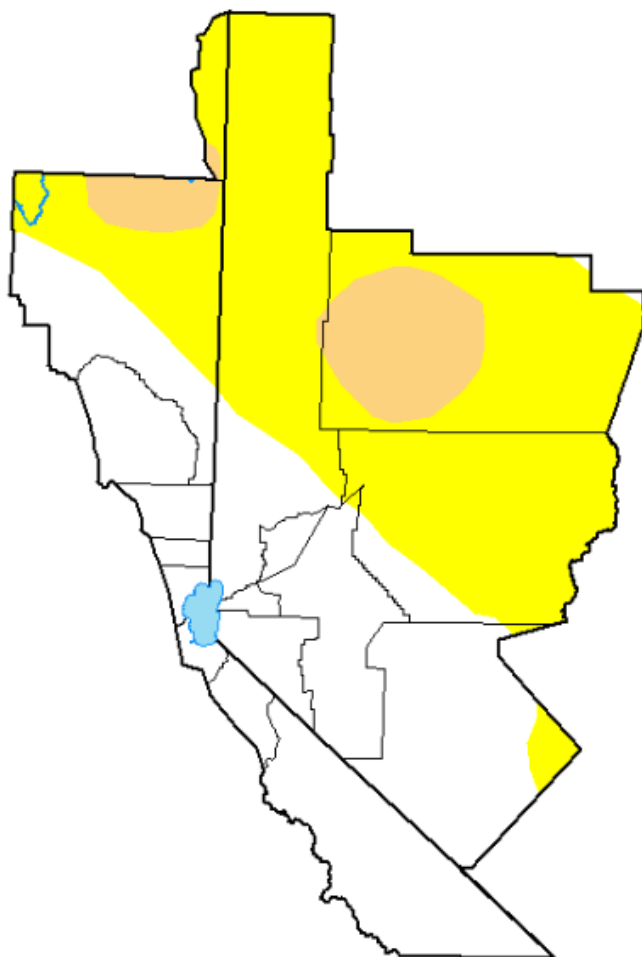
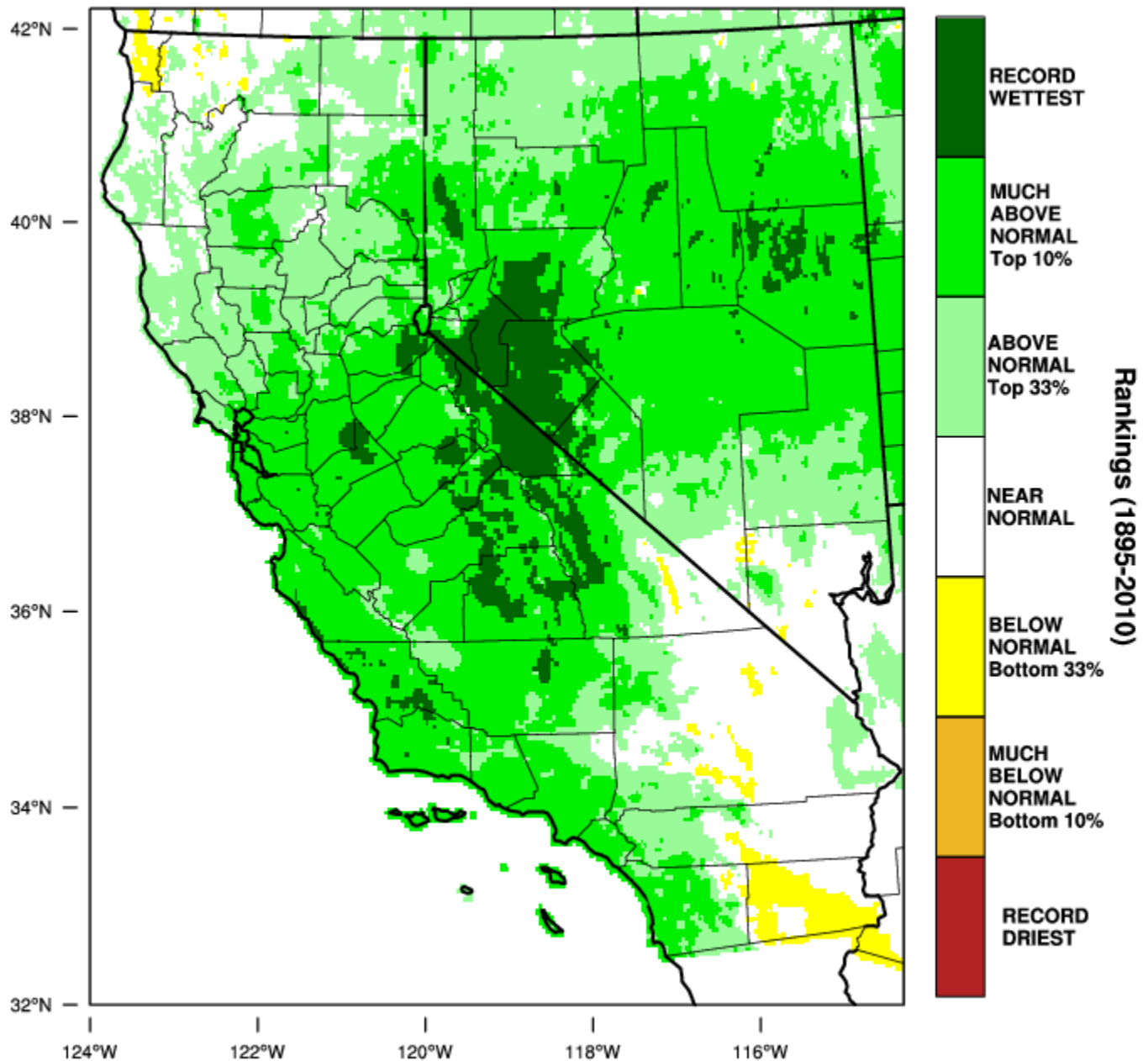


Figure 7. End of April Drought Monitor Status for NWS Reno Service area. ([Drought Monitor](https://droughtmonitor.unl.edu/))

October-April 2023 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 2 MAY 2023

Figure 8. Precipitation ranking for water year to date. A majority of our region is in the top 10th to record wettest. Data courtesy of WestWideDroughtTracker ([WWDT](#))

October-April 2023 Percentile

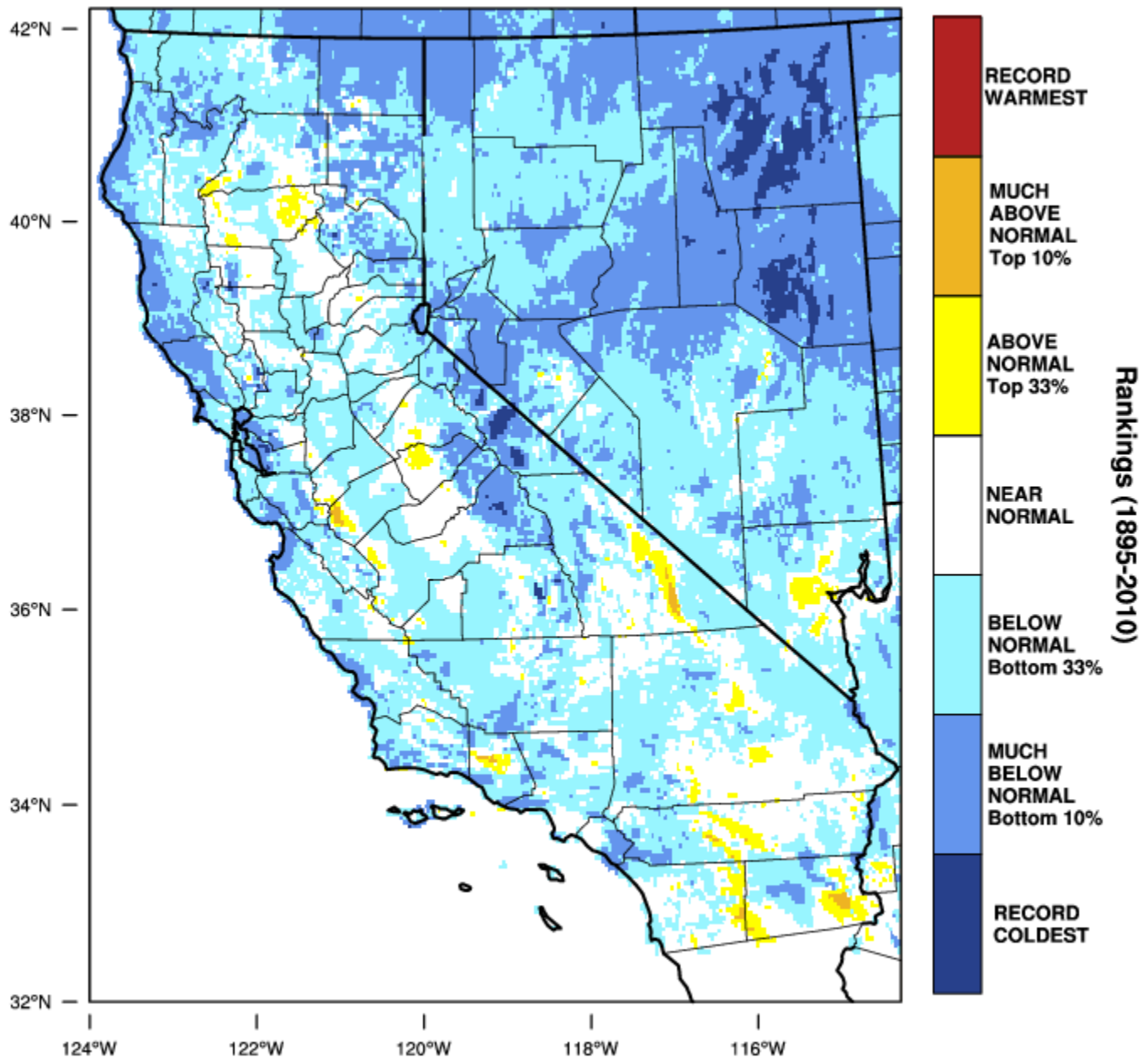


Figure 9. Temperature rankings for the water year. Data courtesy of WestWideDroughtTracker ([WWDt](https://www.wwdt.org/)).