

# June 2024 Summary

This June tied with June 2021 as the hottest June on record. Apache, Coconino, Graham, La Paz, Navajo, and Pinal counties also experienced their hottest June on record, while Gila, Greenlee, Maricopa, Mohave, Yavapai, and Yuma counties recorded their 2nd hottest June on record. Although June is the driest month climatologically, precipitation was above normal in most locations. With a statewide average of 0.62 inches, Arizona ranked as the 16th wettest June on record.

June began with hot and dry conditions across the state, prompting the National Weather Service in Flagstaff, Phoenix, Tucson, and Las Vegas to issue their first Excessive Heat Warnings of the season. On June 5, Flagstaff Pulliam Airport set a record high temperature of 89°F, breaking the previous record of 88°F that was set in 2010. On June 6, new high temperature records were set at Phoenix Sky Harbor (113°F, previous record 111°F in 2016), Safford Airport (110°F, previous record 109°F in 2010), Tuzigoot National Monument (110°F, previous record 107°F in 2010), Kingman (105°F, previous record 103°F in 2013), Prescott (98°F, previous record 97°F in 1996), and Flagstaff (91°F, previous record 90°F in 2010).

Weak isolated showers occurred in portions of eastern Arizona on June 7, including Window Rock (trace), and a landspout tornado was observed near Holbrook. Record high temperatures were set in Tuzigoot (111°F, previous record 107°F in 2013), Winslow (103°F, previous record 100°F in 2010), Seligman (102°F, previous record 98°F in 2001), and Safford (108°F, previous record 107°F in 2010).

On June 10, lingering moisture in northeastern Arizona brought a trace of precipitation to Window Rock. New high temperature records were set in Winslow on the 12th (104°F, previous record 102°F in 2013) and Douglas on the 13th (105°F, previous record 103°F in 1995).

From June 13-14, a weak low pressure system brought rain to Betatakin (0.05 inches), Window Rock (0.04 inches), Prescott (0.01 inches), and the Grand Canyon (trace). A strong thunderstorm also developed in northwestern La Paz County on the 13th.

Moisture from remnants of Tropical Storm Alberto streamed into the state on June 20, bringing rain to Window Rock (0.24 inches), Natural Bridge (0.15 inches), Winslow (0.07 inches), Globe (0.04 inches), and Tucson (trace). Severe thunderstorms impacted portions of Apache, Cochise, Coconino, Gila, Graham, Maricopa, Navajo, and Pinal counties. A wind gust of 74 mph was recorded near Tonto Basin, and marble-sized hail (0.50 inches in diameter) was reported near Tonto Basin and Pine.

The legacy start date for monsoon season is marked by the first of three consecutive days that have an average dew point temperature of 54°F for Tucson and 55°F for Phoenix. This year, the legacy start date for monsoon season was June 21 for Tucson and June 22 for Phoenix.

Dr. Erinanne Saffell, Arizona State Climatologist Juliana Likourinou, Author <u>http://azclimate.asu.edu</u> © 2024 Arizona State Climate Office





An abundance of moisture led to a continuation of showers and thunderstorms in some areas through the end of the month. From June 21 to June 30, Coronado National Memorial received 2.39 inches of precipitation, Window Rock received 2.26 inches of precipitation, Bisbee-Douglas Airport received 2.15 inches of precipitation, and Springerville received 1.01 inches of precipitation. On June 21, a funnel cloud rotated for about 10 minutes near Twin Falls in Apache County. Half dollar-sized hail (1.25 inches in diameter) was estimated near Tolikan, which broke windows at Immanuel Mission School. Strong winds blew off roofs from buildings near the school. A dust storm occurred at Tucson International Airport, where winds gusted to 73 mph and visibility fell to less than a quarter of a mile. On June 22, several swift water rescues took place near Tucson, with one death that occurred. On June 23, a wind gust of 78 mph was measured at Mt Hopkins. On June 24, a dust storm occurred near ASU's Tempe campus, where visibility fell to a quarter of a mile. On June 25, pea-sized to dime-sized hail (0.25 inches to 0.75 inches in diameter) fell near Flagstaff Pulliam Airport. A record rainfall amount of 0.91 inches was also set, breaking the previous record of 0.78 inches set in 1954. Tree damage occurred near Deer Valley due to gusty winds from an outflow boundary. On June 27, flash flooding was observed in Lower Antelope Canyon, where water was 1-2 feet deep with debris, while a record rainfall amount of 0.56 inches was set in Winslow, breaking the previous record of 0.28 inches set in 1981. On June 28, marble-sized to quarter-sized hail (0.50 inches to 1.00 inches in diameter) was estimated near Greasewood Springs Community School in Navajo County. Wind damage occurred near Sacaton (metal roof blown off of a 30' x 40' shed), Arizona City (4 power poles blown down), Casa Grande (roof tiles lifted off house), and Tucson (large tree uprooted and base of 8-foot saguaro split). On June 29, a wind gust of 72 mph was measured at Pioneer Airfield, and on June 30, a dust storm occurred in portions of Maricopa and Pinal counties.

**Data are preliminary** and are from NOAA/NCEI, the Northeast Regional Climate Center, the Southeast Regional Climate Center, and the National Weather Service Forecast Offices in Flagstaff, Phoenix, Tucson, and Las Vegas.

<u>Note</u>: Weather stations across the state have different reporting times. Official daily temperature and precipitation values are recorded at the airports from midnight to midnight, while statewide observations are taken at varying times throughout the day.

Dr. Erinanne Saffell, Arizona State Climatologist Juliana Likourinou, Author <u>http://azclimate.asu.edu</u> © 2024 Arizona State Climate Office







June 2024

The average state temperature for June was 80.6°F, tying with June 2021 as the warmest June within the period of record. The 1895-2024 mean average state temperature for June was 75.0°F, resulting in an anomaly of +5.6°F.

County	Average Temperature	Rank (130 Years)	Anomaly From the 1895-2024 mean
Apache	71.3°F	Warmest	+5.3°F
Cochise	80.4°F	3 <sup>rd</sup> warmest	+4.4°F
Coconino	74.2°F	Warmest	+6.2°F
Gila	79.0°F	2 <sup>nd</sup> warmest	+5.3°F
Graham	81.0°F	Warmest	+4.7°F
Greenlee	76.0°F	2 <sup>nd</sup> warmest	+4.6°F
La Paz	92.0°F	Warmest	+6.3°F
Maricopa	89.9°F	2 <sup>nd</sup> warmest	+5.6°F
Mohave	83.8°F	2 <sup>nd</sup> warmest	+6.6°F
Navajo	73.6°F	Warmest	+5.8°F
Pima	85.7°F	5 <sup>th</sup> warmest	+4.2°F
Pinal	88.4°F	Warmest	+5.0°F
Santa Cruz	78.6°F	4 <sup>th</sup> warmest	+4.1°F
Yavapai	78.8°F	2 <sup>nd</sup> warmest	+5.8°F
Yuma	90.7°F	2 <sup>nd</sup> warmest	+5.9°F

Period of record: 1895-2024

June 2024



The average maximum state temperature for June was 96.5°F, ranking as the 4<sup>th</sup> warmest June within the period of record. The 1895-2024 mean maximum state temperature for June was 91.5°F, resulting in an anomaly of +5.0°F.

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County	Maximum Temperature	Rank (130 Years)	Anomaly
			From the 1895-2024 mean
Apache	87.5°F	11 <sup>th</sup> warmest	+4.4°F
Cochise	96.6°F	13 <sup>th</sup> warmest	+3.8°F
Coconino	91.0°F	4 <sup>th</sup> warmest	+6.0°F
Gila	95.0°F	7 <sup>th</sup> warmest	+4.9°F
Graham	95.5°F	12 <sup>th</sup> warmest	+3.7°F
Greenlee	90.8°F	13 <sup>th</sup> warmest	+3.8°F
La Paz	106.9°F	2 <sup>nd</sup> warmest	+5.5°F
Maricopa	105.7°F	3 <sup>rd</sup> warmest	+5.2°F
Mohave	98.1°F	2 <sup>nd</sup> warmest	+5.9°F
Navajo	90.4°F	9 <sup>th</sup> warmest	+5.3°F
Pima	102.0°F	5 <sup>th</sup> warmest	+4.0°F
Pinal	103.6°F	6 <sup>th</sup> warmest	+4.0°F
Santa Cruz	95.1°F	8 <sup>th</sup> warmest	+3.9°F
Yavapai	95.3°F	5 <sup>th</sup> warmest	+5.5°F
Yuma	107.1°F	2 <sup>nd</sup> warmest	+5.7°F

### Period of record: 1895-2024

Data are from the National Centers for Environmental Information and are **preliminary**.



June 2024

The average minimum state temperature for June was 64.6°F, ranking as the warmest June within the period of record. The 1895-2024 mean minimum state temperature for June was 58.5°F, resulting in an anomaly of +6.1°F.

County	Minimum Temperature	Rank (130 Years)	Anomaly From the 1895-2024 mean
Apache	55.2°F	Warmest	+6.2°F
Cochise	64.2°F	2 <sup>nd</sup> warmest	+5.0°F
Coconino	57.4°F	2 <sup>nd</sup> warmest	+6.4°F
Gila	63.1°F	Warmest	+5.8°F
Graham	66.4°F	Warmest	+5.6°F
Greenlee	61.3°F	Warmest	+5.7°F
La Paz	77.0°F	2 <sup>nd</sup> warmest	+7.1°F
Maricopa	74.1°F	4 <sup>th</sup> warmest	+6.1°F
Mohave	69.4°F	2 <sup>nd</sup> warmest	+7.1°F
Navajo	56.8°F	2 <sup>nd</sup> warmest	+6.4°F
Pima	69.3°F	6 <sup>th</sup> warmest	+4.4°F
Pinal	73.3°F	2 <sup>nd</sup> warmest	+6.1°F
Santa Cruz	62.1°F	4 <sup>th</sup> warmest	+4.3°F
Yavapai	62.2°F	2 <sup>nd</sup> warmest	+6.1°F
Yuma	74.2°F	5 <sup>th</sup> warmest	+5.9°F

Period of record: 1895-2024



The average state precipitation for June was 0.62 inches, ranking as the 16<sup>th</sup> wettest June within the period of record. The 1895-2024 mean state precipitation for June was 0.28 inches, resulting in an anomaly of +0.34 inches.

County	Precipitation	Rank (130 Years)	Anomaly From the 1895-2024 mean
Apache	1.28''	4 <sup>th</sup> wettest	+0.85''
Cochise	1.29''	11 <sup>th</sup> wettest	+0.78''
Coconino	0.64''	22 <sup>nd</sup> wettest	+0.30''
Gila	0.92''	16 <sup>th</sup> wettest	+0.56''
Graham	0.71"	33 <sup>rd</sup> wettest	+0.27''
Greenlee	1.15"	19 <sup>th</sup> wettest	+0.59''
La Paz	0.06''	23 <sup>rd</sup> wettest	+0.03''
Maricopa	0.14"	27 <sup>th</sup> wettest	+0.07''
Mohave	0.08''	55 <sup>th</sup> driest	-0.11"
Navajo	0.81''	8 <sup>th</sup> wettest	+0.49''
Pima	0.74''	6 <sup>th</sup> wettest	+0.51''
Pinal	0.32"	31 <sup>st</sup> wettest	+0.15"
Santa Cruz	1.70''	5 <sup>th</sup> wettest	+1.16''
Yavapai	0.66''	16 <sup>th</sup> wettest	+0.40''
Yuma	0.02''	28 <sup>th</sup> wettest	0.00''

Period of record: 1895-2024

## June Statewide Precipitation (1895 to date)

#### **Arizona Precipitation**



This chart shows average Arizona precipitation each June through the period of record (1895 to present). June 2024 ranked as the 16<sup>th</sup> wettest with an average of 0.62 inches, which is 0.34 inches above the 1895-2024 average of 0.28 inches.

## **Flagstaff Climate Statistics**

June 2024

This ranked as the hottest June on record (9/10/1898 to present). With 1.23 inches of precipitation, it ranked as the 15<sup>th</sup> wettest June on record.

Avg Max Temp:83.6°FNormal:79.1°FAvg Min Temp:49.9°FNormal:42.5°FAvg Mean Temp:66.7°FNormal:60.8°F

Highest Monthly Avg Temp: 66.7°F in 2024 Lowest Monthly Avg Temp: 53.0°F in 1965

Highest Temp this month: 91°F on 6<sup>th</sup> Lowest Temp this month: 42°F on 1<sup>st</sup>, 2<sup>nd</sup>

Record High: 96°F on 6/28/2013, 6/26/1970 Record Low: 22°F on 6/2/1955, 6/2/1951

Temperature or precipitation records this month: HiMax: 89°F on 6/5/2024, previous record 88°F on 6/5/2016, 6/5/2010

HiMax: 91°F on 6/6/2024, previous record 90°F on 6/6/2010

HiMin: 61°F on 6/23/2024, previous record 59°F on 6/23/1958

HiMin: 59°F on 6/26/2024, previous record 58°F on 6/26/1981

Precip: 0.91" on 6/25/2024, previous record 0.78" on 6/25/1954

#### Flagstaff Number of Days of:

Minimum Temp 32°F or lower0Minimum Temp 0°F or lower0Maximum Temp 90°F or higher1Maximum Temp 32°F or lower0

Heating Degree Days: 26 Normal: 148 Cooling Degree Days: 85 Normal: 22 Degree base 65°F

Total June Precipitation:1.23''Normal June Precipitation:0.30''Departure from Normal:+0.93''Greatest 24-Hr Precip:0.94'' from  $25^{th} - 26^{th}$ 

Total Precipitation Year-to-Date:10.87"Departure from Normal:+2.81"Total Precip Year-to-Date (Last Year):17.88"

Total June Snowfall: 0.0" Normal: 0.0" Record June Snowfall: 0.5" in 1907

Greatest June Precipitation: 2.92" in 1955 Least June Precipitation: 0.00" in 2020 and 24 other years

Number of Days:Clear25Partly Cloudy5Cloudy0

Average Wind Speed: 7.1 mph Highest Peak Gust: 50 mph from 220° on 17<sup>th</sup>

Data are from NOAA, the Northeast Regional Climate Center, and the Southeast Regional Climate Center and are **preliminary.** 

Normals on this page are from 1991-2020

JUNE 2024 FLAGSTAFF AVERA GE DAILY TEMPERATURE								
ABO	ABOVE AVERAGE BELOW +/- 0.5°F							
S	М	т	W	Th	F	S		
						1		
2	3	4	5	6	7	8		
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30								

With 28 days of above average temperatures, 1 day of average temperatures, and 1 day of below average temperatures, Flagstaff experienced their hottest June on record.

## **Phoenix Climate Statistics**

#### June 2024

This ranked as the hottest June on record (8/6/1895 to present). With 0.01 inches of precipitation, it ranked as the 44th wettest June on record.

Avg Max Temp:109.4°FNormal:104.2°FAvg Min Temp:84.6°FNormal:78.6°FAvg Mean Temp:97.0°FNormal:91.4°F

Highest Monthly Avg Temp: 97.0°F in 2024 Lowest Monthly Avg Temp: 78.9°F in 1965

Highest Temp this month: 117°F on 21<sup>st</sup> Lowest Temp this month: 77°F on 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>

Record High: 122°F on 6/26/1990 Record Low: 49°F on 6/4/1908

<u>Temperature or precipitation records this month:</u> HiMax: 113°F on 6/6/2024, previous record 111°F on 6/6/2016

HiMax: 117°F on 6/21/2024, tying the record set on 6/21/2017

HiMin: 87°F on 6/7/2024, previous record 85°F on 6/7/1977

HiMin: 92°F on 6/21/2024, previous record 90°F on 6/21/2017

HiMin: 92°F on 6/22/2024, previous record 91°F on 6/22/2017

HiMin: 91°F on 6/23/2024, previous record 89°F on 6/23/2016, 6/23/1988

HiMin: 95°F on 6/27/2024, previous record 93°F on 6/27/1990

HiMin: 92°F on 6/28/2024, previous record 89°F on 6/28/2021

Phoenix Number of Days of:	
Minimum Temp 32°F or lower	0
Minimum Temp 0°F or lower	0
Maximum Temp 90°F or higher	30
Maximum Temp 32°F or lower	0

Heating Degree Days: 0 Normal: 0 Cooling Degree Days: 965 Normal: 792 Degree base 65°F

Total June Precipitation:	0.01"
Normal June Precipitation:	0.02"
Departure from Normal:	-0.01"
Greatest 24-Hr Precip:	$0.01^{\prime\prime}$ on $24^{th}$

Total Precipitation Year-to-Date:3.81"Departure from Normal:+0.87"Total Precip Year-to-Date (Last Year):2.88"

Greatest June Precipitation: 1.70" in 1972 Least June Precipitation: 0.00" in 2023 and 75 other years

Number of Days:Clear14Partly Cloudy16Cloudy0

Average Wind Speed: 7.6 mph Highest Peak Gust: 46 mph from 50° on 24<sup>th</sup>

Data are from NOAA, the Northeast Regional Climate Center, and the Southeast Regional Climate Center and are **preliminary.** 

Normals on this page are from 1991-2020

JUNE 2024 PHOENIX AVERAGE DAILY TEMPERATURE								
ABOVE AVERAGE BELOW								
S	М	т	W	Th	F	S		
						1		
2	3	4	5	6	7	8		
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30								

Phoenix also observed their hottest June on record, with 29 days of above average temperatures and 1 day of average temperatures.

## **Tucson Climate Statistics**

June 2024

This ranked as the 4 <sup>th</sup> warmest June on record (9/1/1894 to present). With 1.07 inches of precipitation, it ranked as the 10 <sup>th</sup> wettest June on record.	Heating Degree Days: 0 Normal: 0 Cooling Degree Days: 737 Normal: 634 Degree base 65°F
Avg Max Temp: 104.1°F Normal: 101.2°F Avg Min Temp: 74.5°F Normal: 71.1°F Avg Mean Temp: 89.3°F Normal: 86.1°F	Total June Precipitation:1.07"Normal June Precipitation:0.23"Departure from Normal:+0.84"Greatest 24-Hr Precip:0.70" on 28th
Highest Monthly Avg Temp: 89.8°F in 2021 Lowest Monthly Avg Temp: 77.6°F in 1965	Total Precipitation Year-to-Date:6.36"Departure from Normal:+3.45"Total Precip Year-to-Date (Last Year):3.54"
Highest Temp this month: 110°F on 20 <sup>th</sup> Lowest Temp this month: 66°F on 2 <sup>nd</sup> , 3 <sup>rd</sup>	Greatest June Precipitation: 2.07" in 1938 Least June Precipitation: 0.00" in 2023 and 32 other years
Record High: 117°F on 6/26/1990 Record Low: 43°F on 6/4/1908	<u>Number of Days:</u> Clear 28 Partly Cloudy 0
<u>Temperature or precipitation records this month:</u> HiMax: 109°F on 6/7/2024, tying the record set on 6/7/1985	Cloudy 2
	Average Wind Speed: 7.7 mph Highest Peak Gust: 73 mph from 120° on 21 <sup>st</sup>
Tucson Number of Days of:Minimum Temp 32°F or lower0Minimum Temp 0°F or lower0Maximum Temp 90°F or higher30Maximum Temp 32°F or lower0	Data are from NOAA, the Northeast Regional Climate Center, and the Southeast Regional Climate Center and are <b>preliminary.</b>

Normals on this page are from 1991-2020

JUNE 2024 TUCSON AVERA GE DAILY TEMPERATURE								
A	ABOVE AVERAGE BELOW +/- 0.5°F							
S	М	т	W	Th	F	S		
						1		
2	3	4	5	6	7	8		
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30								

This month, Tucson recorded 26 days of above average temperatures and 4 days of average temperatures.

### Cumulative Statewide Precipitation per Water Year (Oct 2023-Sept 2024)







above the October-June average of 7.25 inches.

Data are from the National Centers for Environmental Information and are preliminary.





2 5 25 50 75 100 125 150 200 400 800 Generated 7/ 1/2024 at WRCC using provisional data. NOAA Regional Climate Centers



75 80 85 90 95 100 105 110 115 120 125 Generated 7/ 1/2024 at WRCC using provisional data. NOAA Regional Climate Centers



45 50 55 80 65 70 75 80 85 90 9 Generated 7/ 1/2024 at WRCC using provisional data. NOAA Regional Climate Centers Total Precipitation (in.) 6/1/2024 - 6/30/2024



0.1 0.15 0.3 0.6 0.9 1.2 1.5 1.8 2.1 2.4 2.7 Generated 7/ 1/2024 at WRCC using provisional data. NOAA Regional Climate Centers



-2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5 Generated 7/ 1/2024 at WRCC using provisional data. NOAA Regional Climate Centers





Generated 7/ 1/2024 at WRCC using provisional data.





2 5 25 50 75 100 125 150 200 400 800 Generated 7/ 1/2024 at WRCC using provisional data. NOAA Regional Climate Centers

# Arizona - Mean Temperature

June 2024, Percentile



WestWide Drought Tracker, WRCC, Climate Engine, Data Source: PRISM Prelim, created 08 Jul 2024

Temperatures were much above normal across most of the state, with many locations experiencing their hottest June on record.

# **Arizona - Precipitation**

June 2024, Percentile



WestWide Drought Tracker, WRCC, Climate Engine, Data Source: PRISM Prelim, created 08 Jul 2024

Precipitation was above normal across much of the state, with portions of northeastern and southern counties receiving much above normal precipitation.



This map shows the standardized precipitation evapotranspiration index (SPEI) across Arizona. June precipitation and evapotranspiration totals are measured across the state and are compared to previous June precipitation and evapotranspiration totals through the period of record (1895-present). Positive values represent wet conditions, while negative values represent dry conditions.

## Short-term Drought



Moderate (D1) short-term drought slightly improved in Gila and Graham counties (15% of state), with a small improvement of Extreme (D2) short-term drought in Cochise County (3% of state). Eighty-two percent of the state is considered no longer in short-term drought.