



REPUBLIC OF TÜRKİYE



MINISTRY OF ENVIRONMENT,  
URBANIZATION AND CLIMATE CHANGE

TURKISH STATE METEOROLOGICAL SERVICE

# THE STATE OF THE TÜRKİYE'S CLIMATE IN 2024



Ankara, 2025

REPUBLIC OF TÜRKİYE  
MINISTRY OF ENVIRONMENT, URBANIZATION AND CLIMATE CHANGE  
TURKISH STATE METEOROLOGICAL SERVICE

# The State of the Türkiye's Climate in 2024

Climate and Agricultural Meteorology Department  
Research Department

Ankara, 2025

# CONTENT

|  |    |
|--|----|
| 1. Summary .....                         | 1  |
| 2. Temperature .....                     | 2  |
| 3. Precipitation .....                   | 15 |
| 4. Extreme Meteorological Disaster ..... | 21 |
| References .....                         | 25 |

## 1. Summary

Climate refers to the total and average of weather events that occur every day in a place a long period. In the study, the average temperatures of 2024 were compared with the normal (1991-2020) by taking 220 stations used in climate assessment, which had 30 years of complete data and were distributed homogeneously in Turkey.

In 2024, Türkiye's mean temperature was 15.6°C, this is 1.7°C above the 1991-2020 mean value (13.9°C) which **broke the record of the last 54 years. The warmest year was 2024 with 15.6°C.** This value exceeded the previous record of 15.5°C in 2010 by 0.1 °C.

**Mean temperature records were broken in January, April, June and July in 2024.**

**The winter and summer seasons in 2024 broke the record of the last 54 years.**

There are positive temperature anomalies in Türkiye's mean temperatures since 2007 (except in 2011).

366-daily mean temperature differences in 2024, 75 days were negative, 288 days were positive and 3 days equal the normal.

In 2024, the mean temperatures in Türkiye were above the long-term mean in 220 center.

In 2024, monthly mean temperatures were above normal except in May, November.

In 2024, the lowest temperature was -31.3 °C in Ardahan in January and the highest temperature was 47.8 °C in Ceylanpınar in June.

In 2024, Türkiye's mean areal precipitation was recorded at 537.2 mm. The annual average areal precipitation for the country, based on the 1991–2020 period, is 573.4 mm. This represents a 6.3% decrease compared to the long-term average. Precipitation increased by between 20 and 40% compared to the long-term average in Giresun, Trabzon, Ardahan, and the southern areas of Lake Van.

Rize recorded the highest annual precipitation among the provinces, with 1869.8 mm. The most significant increase compared to the long-term average occurred in Trabzon, with a 27.9% rise. Conversely, Kırıkkale recorded the lowest annual precipitation at 316.1 mm, while Edirne experienced the most substantial decrease relative to the long-term average, with a decline of 35.0%.

Monthly precipitation was below normal in February, April, June, August, October, November, and December. January recorded the highest rainfall at 87.5 mm, while June was the driest month with only 11.9 mm. Seasonal precipitation was below normal in winter, summer and autumn while near normal in spring.

The number of extreme events reached 1257 in 2024 according to TSMS's Database. In 2024, the most hazardous extreme events were heavy rainfall and floods with 35%, storm with 20%, hail with 18%, heavy snow with 9%, lightning strikes with 8%, landslides with 3%, tornadoes with 2% and frost with 2%. Extreme events such as avalanches, wild fires, fog and sandstorms accounted for 1% or less of the total.

2. Temperature

In 2024, Türkiye's mean temperature was 15.6°C, this is 1.7°C above the 1991-2020 mean value (13.9°C) which **broke the record of the last 54 years**. (Table 2.1, Figure 2.1).

Table 2.1. Summary of mean temperatures in Türkiye by climatic perspective

| SUMMARY OF MEAN TEMPERATURES IN TÜRKİYE BY CLIMATIC PERSPECTIVE |      |        |      |         |             |                                 |                        |  |
|---|------|--------|------|---------|-------------|---------------------------------|------------------------|--|
|   | 2024 | Normal | 2023 | Warmest | 2nd Warmest | 2024 - Normal Period Difference | 2024 - 2023 Difference | Difference between Warmest and 2nd Warmest |
| January   | 5.7  | 2.9    | 5.3  | 2024    | 2003        | 2.8                             | 0.4                    | 0.1  |
| February  | 7.6  | 4.1    | 3.4  | 2016    | 2024        | 3.5                             | 4.2                    | 0.3  |
| March   | 9.2  | 7.7    | 9.8  | 2001    | 2018        | 1.5                             | -0.6                   | 0.4  |
| April   | 16.6 | 12.3   | 12.3 | 2024    | 1989        | 4.3                             | 4.3                    | 0.8  |
| May   | 16.9 | 17.1   | 16.4 | 2021    | 2007        | -0.2                            | 0.5                    | 0.3  |
| June  | 25.4 | 21.8   | 21.4 | 2024    | 2019        | 3.6                             | 4.0                    | 2.0  |
| July  | 26.7 | 25.0   | 25.7 | 2024    | 2000        | 1.7                             | 1.0                    | 0.3  |
| August  | 26.4 | 25.1   | 27.1 | 2010    | 2023        | 1.3                             | -0.7                   | 0.1  |
| September   | 22.2 | 20.9   | 22.4 | 2020    | 2015        | 1.3                             | -0.2                   | 0.6  |
| October   | 15.8 | 15.6   | 17.1 | 2020    | 1974        | 0.2                             | -1.3                   | 0.8  |
| November  | 9.2  | 9.3    | 12.5 | 2010    | 2023        | -0.1                            | -3.3                   | 0.0  |
| December  | 6.1  | 4.8    | 8.3  | 2023    | 2022        | 1.3                             | -2.2                   | 0.3  |
| Winter  | 7.2  | 3.9    | 5.5  | 2024    | 2010        | 3.3                             | 1.7                    | 0.5  |
| Spring  | 14.2 | 12.4   | 12.8 | 2018    | 2024        | 1.8                             | 1.4                    | 0.7  |
| Summer  | 26.1 | 24.0   | 24.7 | 2024    | 2010        | 2.1                             | 1.4                    | 1.0  |
| Autumn  | 15.7 | 15.3   | 17.4 | 2020    | 2023        | 0.4                             | -1.7                   | 0.0  |
| Annual  | 15.6 | 13.9   | 15.1 | 2024    | 2010        | 1.7                             | 0.5                    | 0.1  |

\*Note: Temperature assessment conducted across 220 stations. The normal period is defined as 1991-2020.

First Second Positive Difference Negative Difference 2024 2023

The warmest year was 2024 with 15.6 °C. This value exceeded the previous record of 15.5°C in 2010 by 0.1°C (Table 2.1).

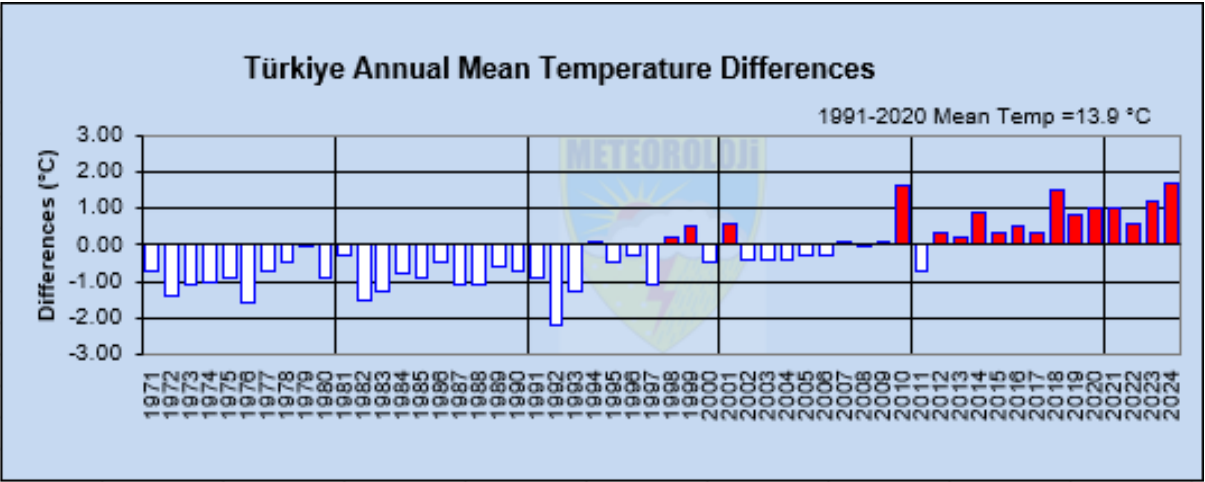


Figure 2.1. Annual mean temperature differences (URL 1).

There are positive temperature anomalies in Türkiye's mean temperatures since 2007 (except in 2011) (Fig. 2.1).



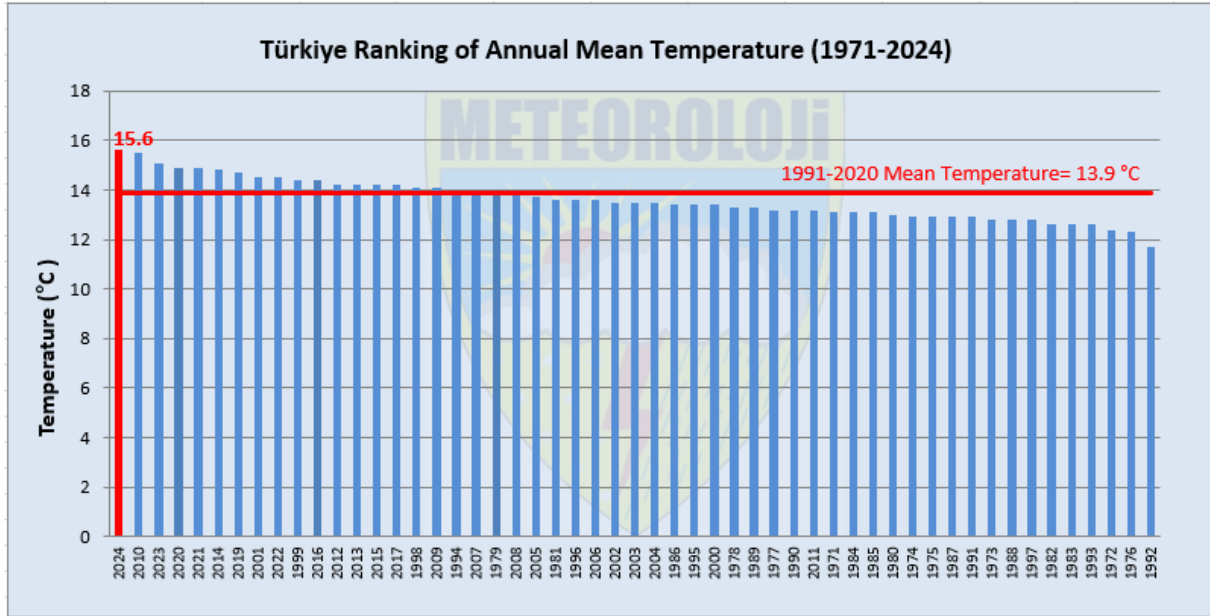


Figure 2.2. Ranking of annual mean temperature (URL 1).

The year 2024 was the warmest year with 15.6 °C (Fig. 2.2).

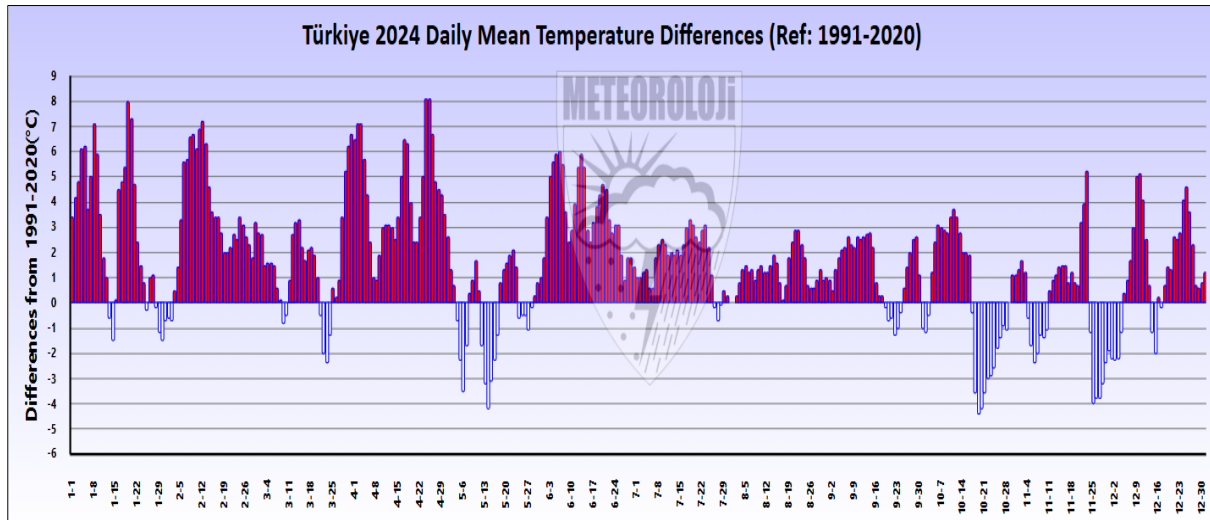
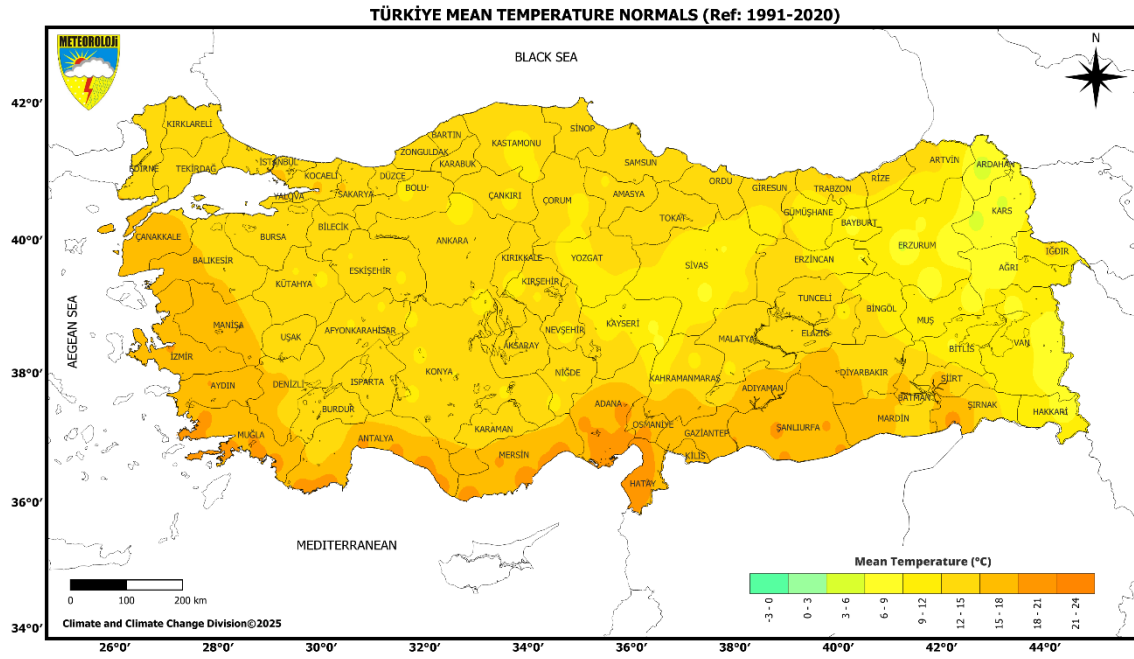
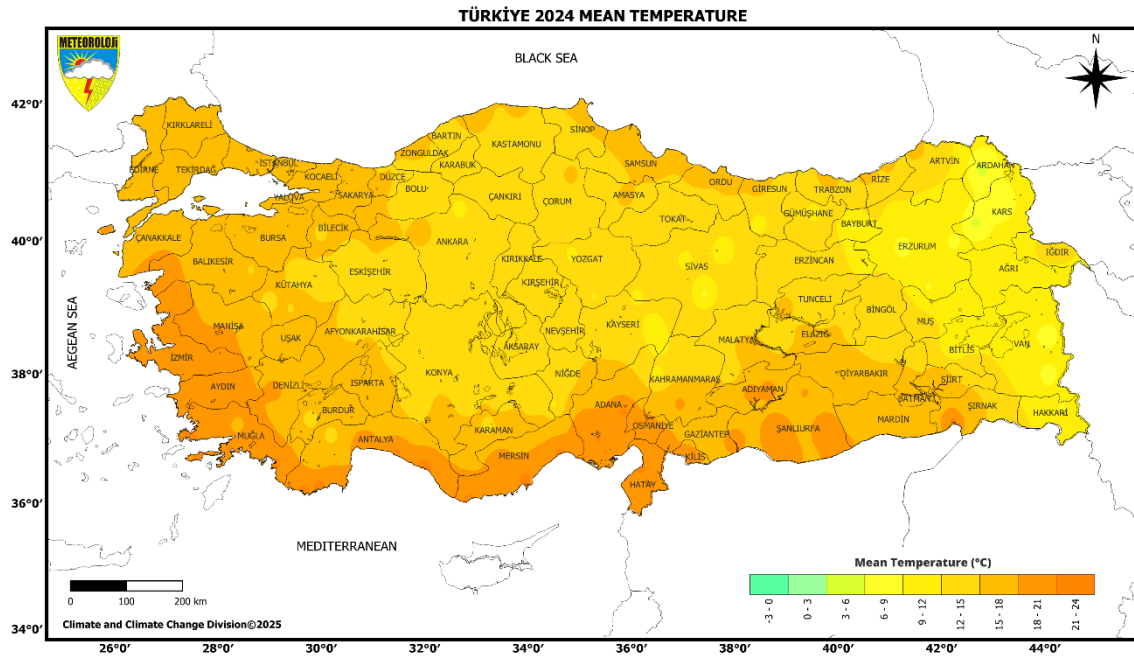


Figure 2.3. Daily mean temperature differences

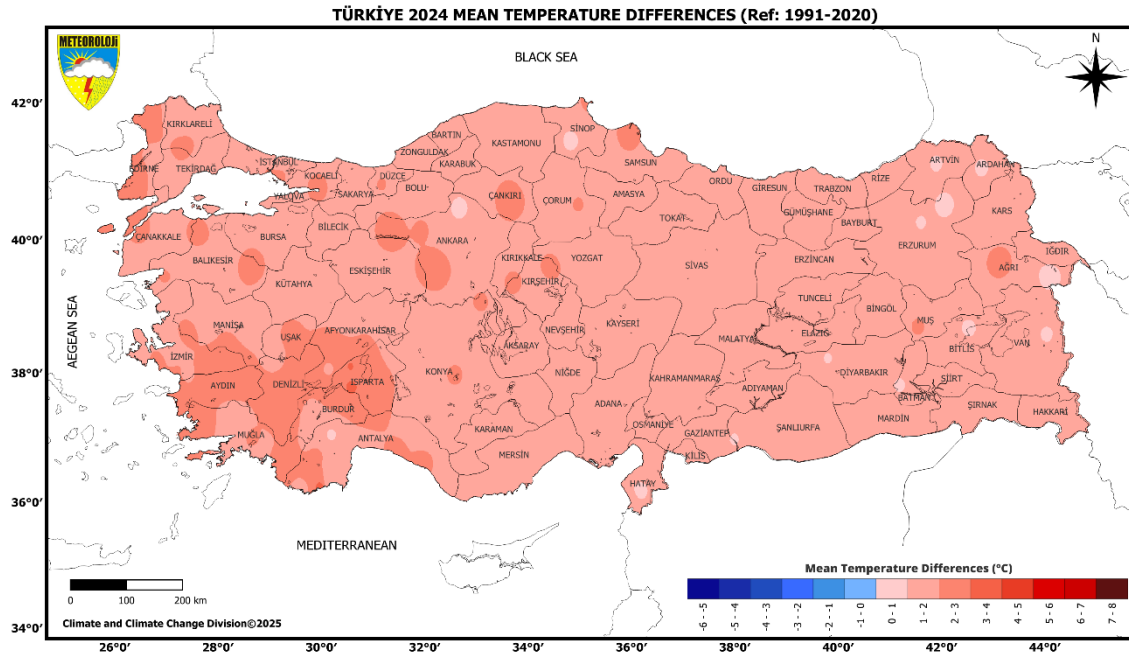
366-daily mean temperature differences in 2024, 75 days were negative, 288 days were positive and 3 days equal the normal. Daily difference values are between -4.4 °C and 8.1 °C. The average of positive differences was 2.6 °C, and the average of negative differences was -1.6 °C (Figure 2.3).



**Figure 2.4.** Türkiye's normal (1991-2020) temperature map

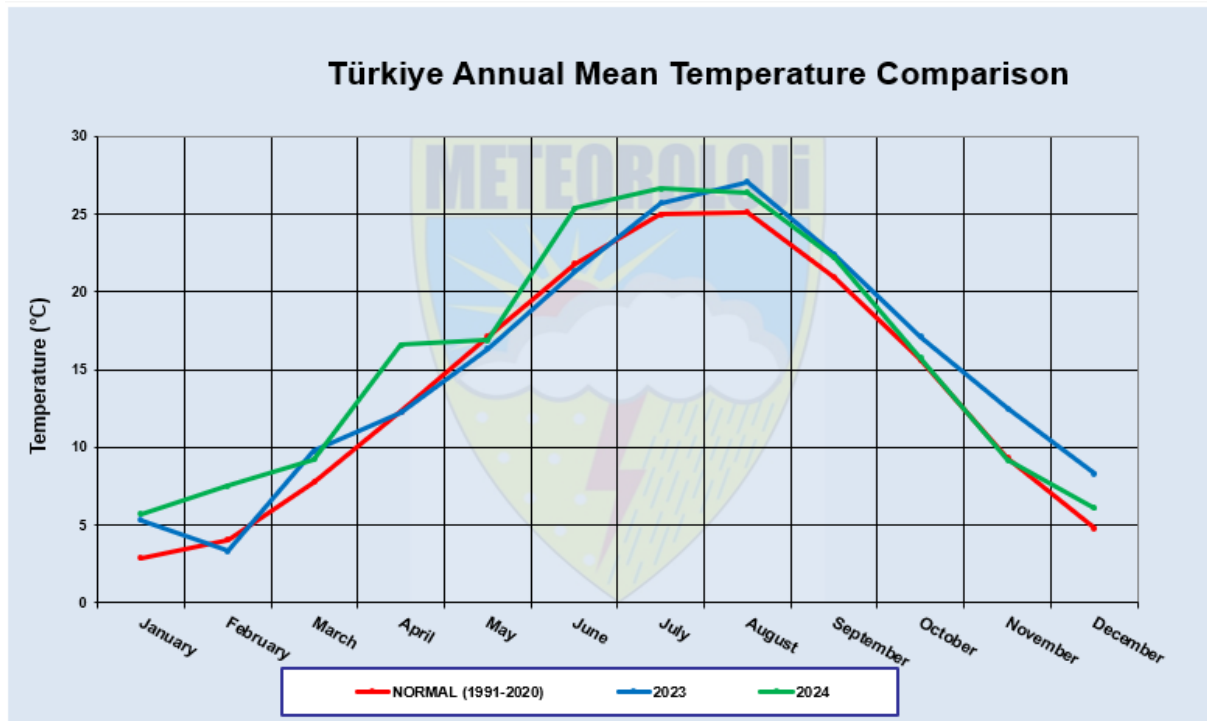


**Figure 2.5.** Türkiye's mean temperature map for 2024



**Figure 2.6.** Türkiye's 2024 mean temperature differences from 1991-2020 normal

In 2024, the mean temperatures in Türkiye were above the normal (1991-2020) in 220 center (Fig 2.6).



**Figure 2.7.** Comparison of monthly mean temperatures between normal and last year (URL 1).

In 2024, monthly mean temperatures were above normal except in May, November (Fig. 2.7).



## 2.1. Seasonal Temperature Assessment

### 2.1.1. Winter Temperature

The winter mean temperature of the years 2023-2024 was 7.2 °C, which was 3.3 °C above the seasonal normal (3.9 °C) (Fig. 2.8).

**December 2023 and January 2024 were the warmest** December and January months of the last 54 years. February 2024 was the second warmest February among the February months of the last 54 years.

**The winter season of 2024 was the warmest** season of the past 54 years.

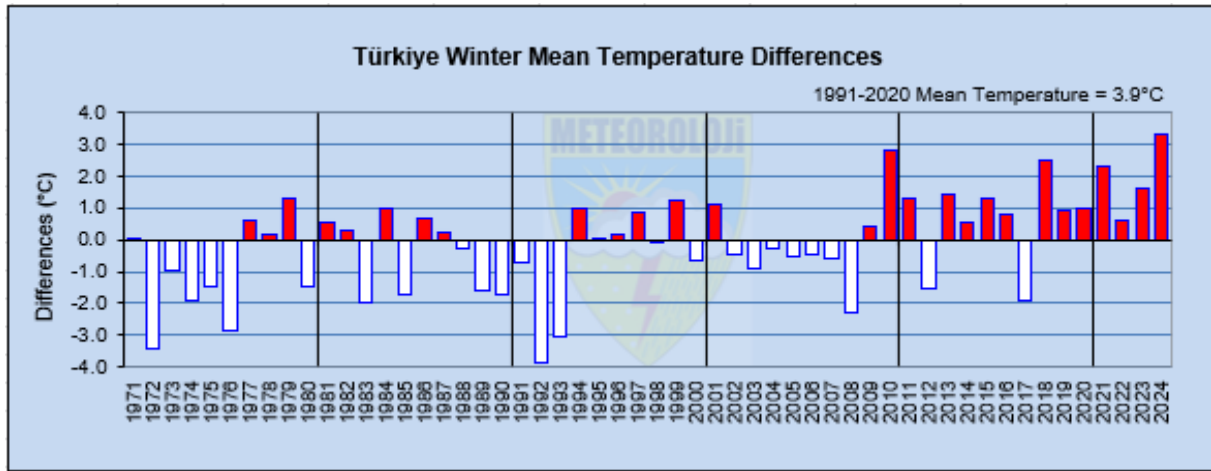


Figure 2.8. Türkiye's winter mean temperature differences

### 2.1.2. Spring Temperature

The spring mean temperature in 2024 was 14.2 °C, which was 1.8 °C above the seasonal normal (12.4 °C) (Figure 2.9).

**April 2024 was the warmest** April among the April months of the last 54 years.

The spring season of 2024 was the second warmest season of the past 54 years.

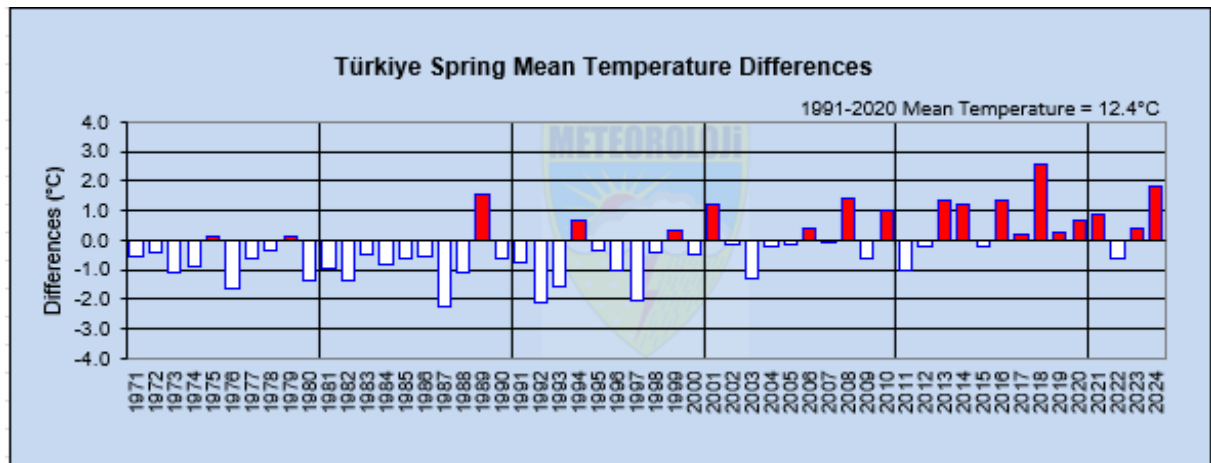


Figure 2.9. Türkiye's spring mean temperature differences

### 2.1.3. Summer Temperature

The summer mean temperature of 2024 was 26.1 °C, which was 2.1 °C above the seasonal normal (24 °C) (Fig. 2.10).

**June and July 2024 was the warmest** June and July among the April and July months of the last 54 years.

**The summer season of 2024 was the warmest** season of the past 54 years

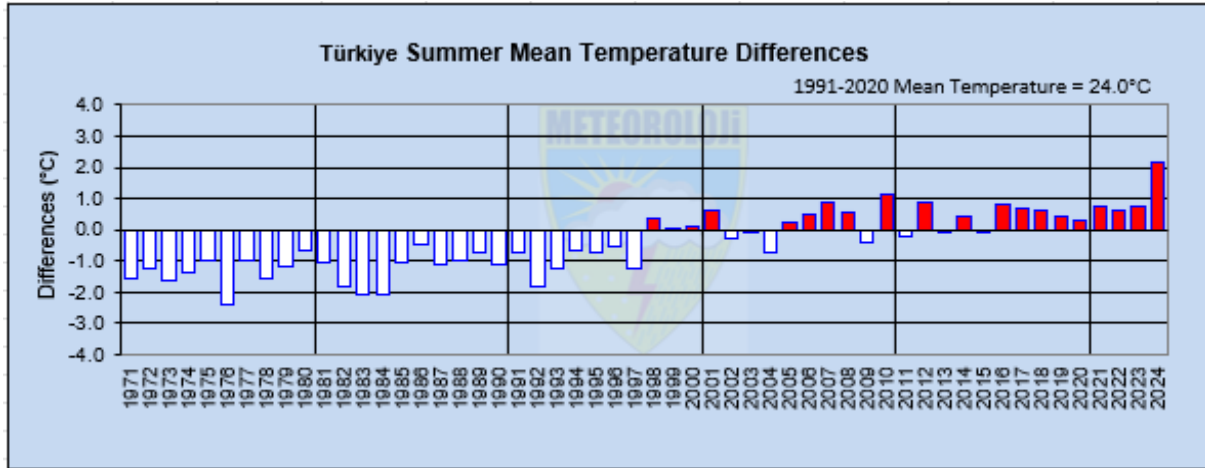


Figure 2.10. Türkiye's summer mean temperature differences

### 2.1.4. Autumn temperature

The mean temperature of the autumn season in 2024 was 15.7 °C, which was 0.4 °C above the seasonal normal (15.3 °C) (Fig. 2.11).

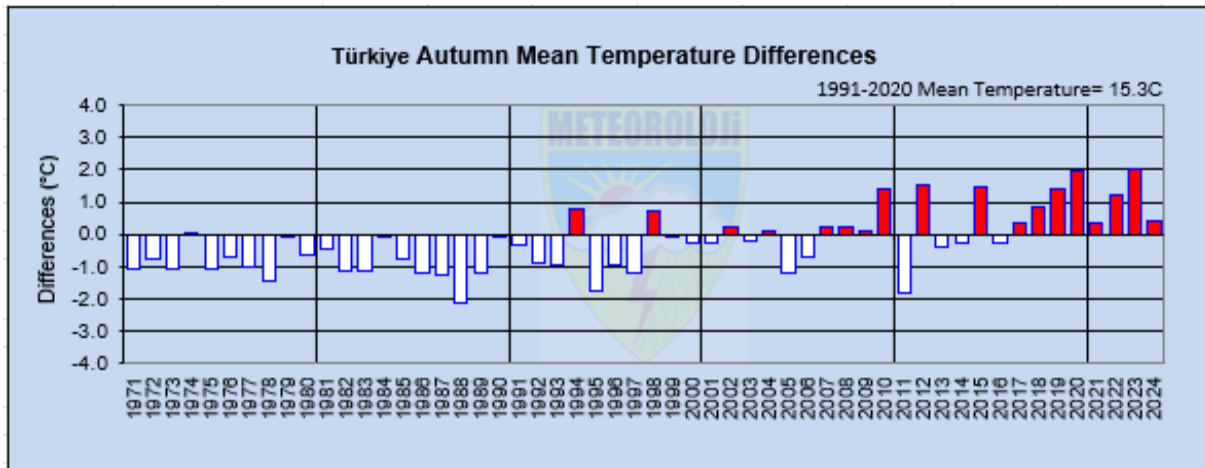
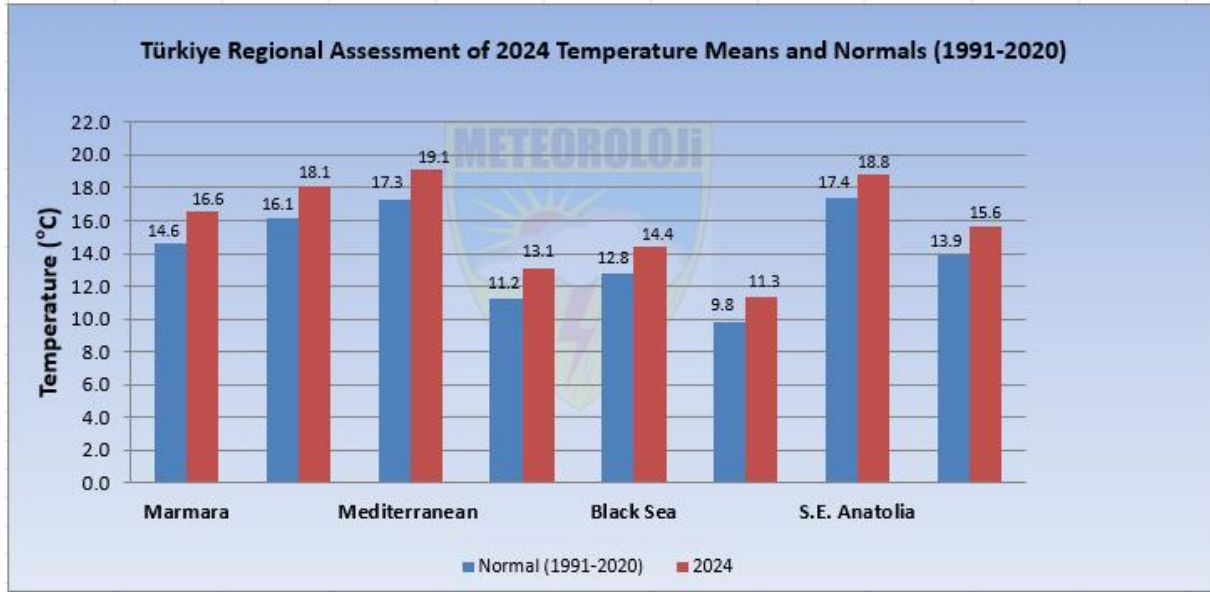


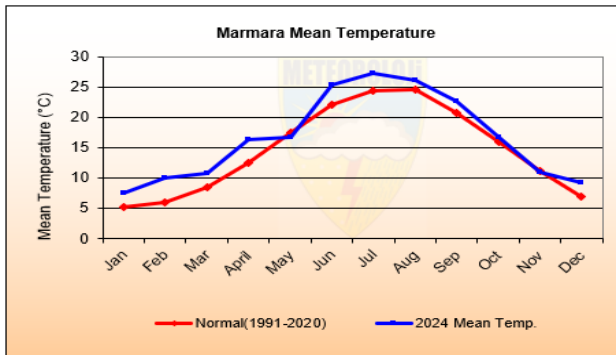
Figure 2.11. Türkiye's autumn mean temperature differences

## 2.2. Regional Temperature Assessment



**Figure 2.12.** Comparisons of the 2024 mean temperatures with the normal temperatures according to the regions (URL 1).

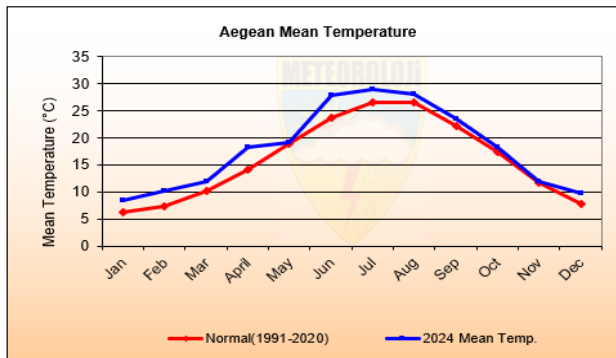
The mean temperatures of 2024 were above their seasonal normal (1991-2020) in all regions (Fig. 2.12).



**Figure 2.13.** Mean Temperature in Marmara

### 2.2.1. Marmara Region

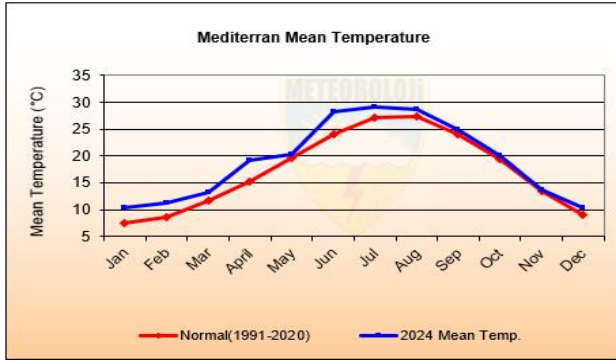
In 2024, the monthly mean temperatures of the region were below normal in May, November and above normal in other months (Fig. 2.13).



**Figure 2.14.** Mean Temperature in Aegean

### 2.2.2. Aegean Region

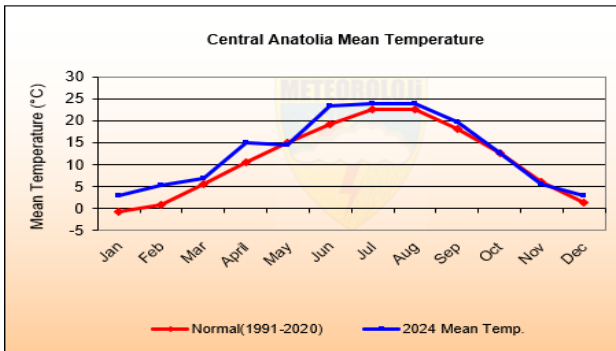
In 2024, the mean monthly temperatures of the region were above normal (Fig. 2.14).



**Figure 2.15.** Mean Temperature in the Mediterranean

### 2.2.3 Mediterranean Region

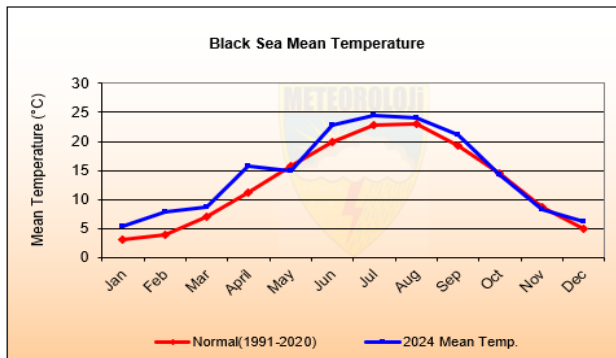
In 2024, the mean monthly temperatures of the region were above normal (Fig. 2.15).



**Figure 2.16.** Mean Temperature in Central Anatolia

### 2.2.4. Central Anatolia Region

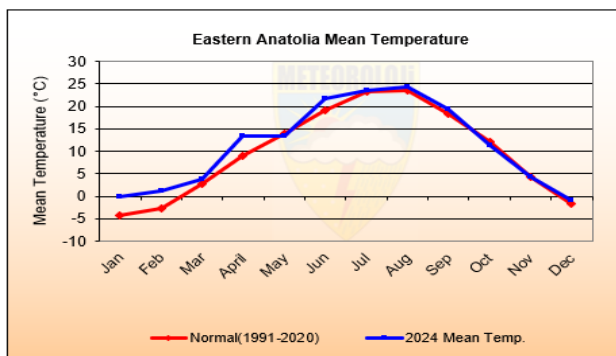
In 2024, the monthly mean temperatures of the region were below normal in May, October, November and above normal in other months. (Fig. 2.16).



**Figure 2.17.** Mean Temperature in the Black Sea

### 2.2.5. Black Sea Region

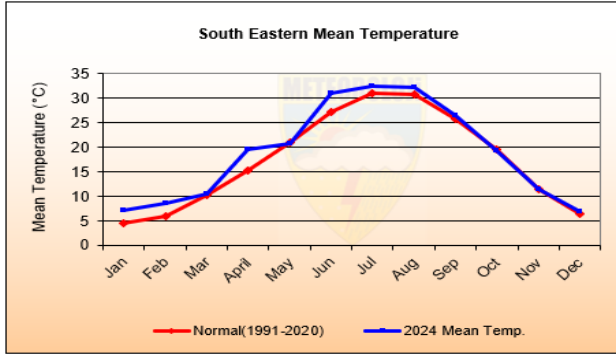
In 2024, the monthly mean temperatures of the region were below normal in May, October, November and above normal in other months (Fig. 2.17).



**Figure 2.18.** Mean Temperature in Eastern Anatolia

### 2.2.6. Eastern Anatolia Region

In 2024, the mean monthly temperatures of the region were below normal in May, October, November and above normal in other months (Fig. 2.18).



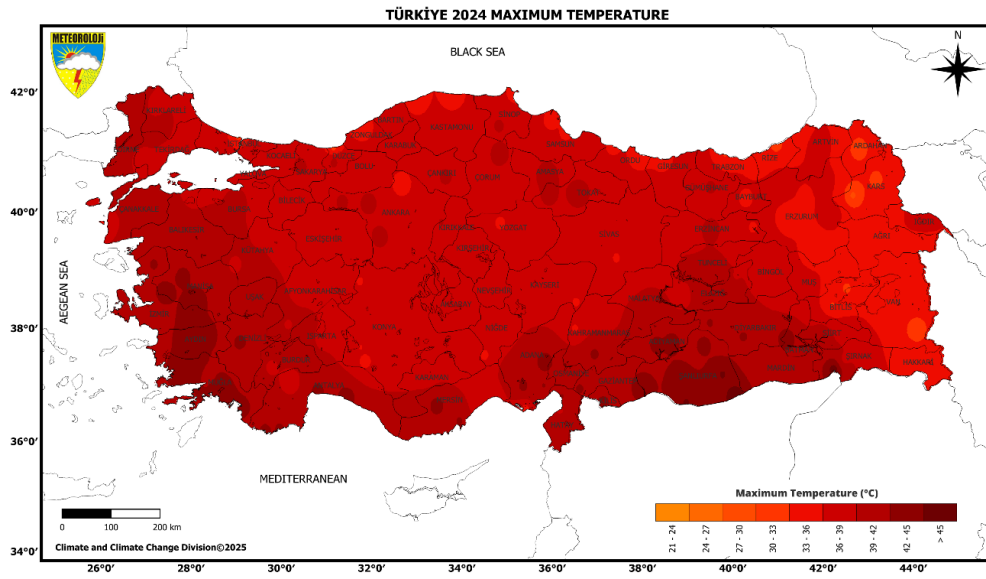
**Figure 2.19.** Mean Temperature in Southeastern Anatolia

### 2.2.7. Southeastern Anatolia Region

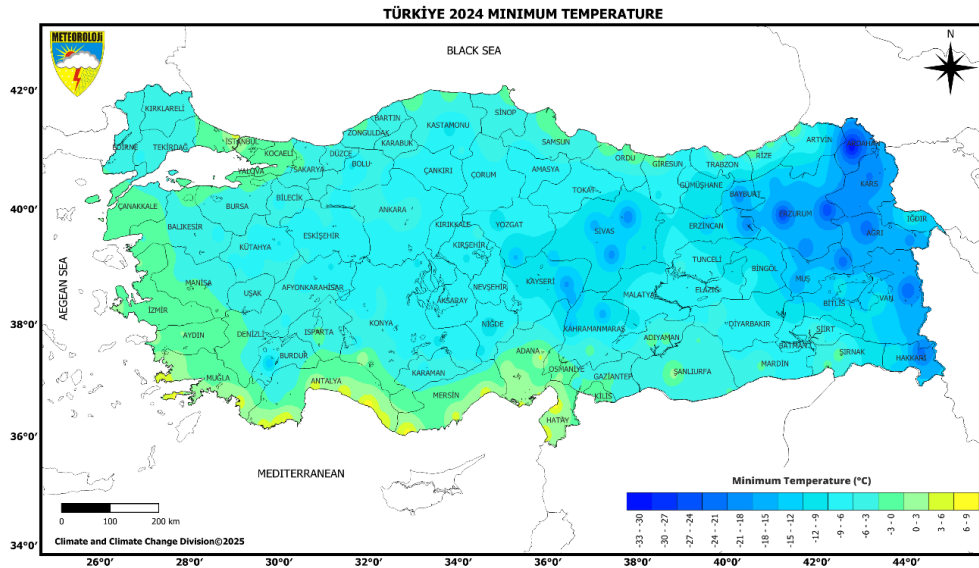
In 2024, the mean monthly temperatures of the region were below normal in May, October, November and above normal in other months (Fig. 2.19).

### 2.3. Extreme Temperature

In 2024, the lowest temperature was -31.3 °C in Ardahan in January, and the highest temperature was 47.8 °C in Ceylanpınar in June (Fig. 2.20).



**Figure 2.20.** Maximum temperature map of 2024



**Figure 2.21.** Minimum temperature map of 2024

In 2024, 137 centers broke their own records for the highest temperatures for the dates given in the Table 2.2.



**Table 2.2.** The highest temperatures recorded in 2024

| Day | Month    | Station           | 2024 Year<br>Max. Temp. (°C) | Long Term<br>Max. Temp. (°C) |
|-----|----------|-------------------|------------------------------|------------------------------|
| 19  | JANUARY  | GÖKÇEADA          | 20.7                         | 20.1                         |
| 19  | JANUARY  | LÜLEBURGAZ        | 22.8                         | 21.7                         |
| 5   | JANUARY  | ÇEŞME             | 21.1                         | 20.9                         |
| 19  | JANUARY  | AYDIN             | 23.8                         | 23.2                         |
| 21  | JANUARY  | MARMARİS          | 22.6                         | 22.5                         |
| 5   | JANUARY  | SEFERİHİSAR       | 21.2                         | 21                           |
| 5   | JANUARY  | MUT               | 20.8                         | 20.6                         |
| 5   | JANUARY  | ERDEMLİ           | 25.6                         | 24.6                         |
| 22  | JANUARY  | KALE-DEMRE        | 23.4                         | 22.4                         |
| 7   | JANUARY  | AKÇAKOCA          | 29.3                         | 26.4                         |
| 17  | JANUARY  | KIZILCAHAMAM      | 19.9                         | 17.0                         |
| 6   | FEBRUARY | EDİRNE            | 24.5                         | 23.3                         |
| 25  | FEBRUARY | FLORYA            | 22.5                         | 21.0                         |
| 14  | FEBRUARY | KARAIŞALI         | 28.7                         | 27.1                         |
| 30  | MARCH    | GÖKÇEADA          | 24.6                         | 24.2                         |
| 30  | MARCH    | UZUNKÖPRÜ         | 25.9                         | 25.6                         |
| 30  | MARCH    | LÜLEBURGAZ        | 27.7                         | 27.0                         |
| 31  | MARCH    | GEYVE             | 31.0                         | 30.3                         |
| 31  | MARCH    | GÖNEN/BALIKESİR   | 30.2                         | 30.0                         |
| 31  | MARCH    | ÇEŞME             | 26.1                         | 25.2                         |
| 30  | MARCH    | TAVŞANLI          | 28.3                         | 27.4                         |
| 31  | MARCH    | SEFERİHİSAR       | 27.8                         | 27.3                         |
| 31  | MARCH    | GÖKSUN            | 24.0                         | 23.0                         |
| 30  | MARCH    | KÖYCEĞİZ          | 29.0                         | 28.9                         |
| 30  | MARCH    | MANAVGAT          | 29.7                         | 27.7                         |
| 30  | MARCH    | YUMURTALIK        | 29.8                         | 29.2                         |
| 31  | MARCH    | KANGAL            | 22.7                         | 22.5                         |
| 31  | MARCH    | PINARBAŞI/KAYSERİ | 23.8                         | 22.9                         |
| 31  | MARCH    | GÜMÜŞHANE         | 24.2                         | 24.0                         |
| 31  | MARCH    | KIZILCAHAMAM      | 26.1                         | 24.4                         |
| 31  | MARCH    | NALLIHAN          | 27.8                         | 27.6                         |
| 31  | MARCH    | BEYPAZARI         | 27.6                         | 26.2                         |
| 31  | MARCH    | BİNGÖL            | 22.9                         | 22.3                         |
| 31  | MARCH    | ARAPGİR           | 24.0                         | 23.1                         |
| 31  | MARCH    | SARIZ             | 23.3                         | 21.8                         |
| 31  | MARCH    | VİRANŞEHİR        | 27.3                         | 26.4                         |
| 24  | APRİL    | FETHİYE           | 35.8                         | 35.7                         |
| 27  | APRİL    | ISLAHIYE          | 34.5                         | 34.4                         |
| 25  | APRİL    | GAZİPAŞA          | 32.3                         | 32.2                         |
| 26  | APRİL    | ÇANKIRI           | 31.9                         | 31.0                         |
| 25  | APRİL    | SİVAS             | 29.5                         | 29.0                         |

| Day | Month | Station        | 2024 Year<br>Max. Temp. (°C) | Long Term<br>Max. Temp. (°C) |
|-----|-------|----------------|------------------------------|------------------------------|
| 24  | APRİL | KAYSERİ        | 31.7                         | 31.2                         |
| 24  | APRİL | KONYA          | 31.0                         | 30.9                         |
| 24  | APRİL | EREĞLİ         | 32.7                         | 32.4                         |
| 25  | APRİL | ZARA           | 28.3                         | 27.8                         |
| 24  | APRİL | ÇİÇEKDAĞI      | 31.5                         | 31.3                         |
| 25  | APRİL | KANGAL         | 26.4                         | 26.0                         |
| 24  | APRİL | ÇUMRA          | 32.1                         | 31.5                         |
| 24  | APRİL | ÇORUM          | 30.6                         | 30.4                         |
| 24  | APRİL | TOKAT          | 33.8                         | 33.5                         |
| 25  | APRİL | GÜMÜŞHANE      | 30.7                         | 29.0                         |
| 28  | APRİL | BAYBURT        | 27.1                         | 25.3                         |
| 17  | APRİL | ÜNYE           | 35.3                         | 34.8                         |
| 26  | APRİL | OSMANCIK       | 33.0                         | 32.8                         |
| 28  | APRİL | İSPİR          | 30.5                         | 28.8                         |
| 29  | APRİL | OLTU           | 30.1                         | 30.0                         |
| 29  | APRİL | ERZİNCAN       | 30.3                         | 30.0                         |
| 29  | APRİL | KARS           | 26.6                         | 25.0                         |
| 29  | APRİL | AĞRI           | 27.6                         | 27.2                         |
| 29  | APRİL | BİNGÖL         | 30.5                         | 30.3                         |
| 28  | APRİL | HAKKARİ        | 25.2                         | 25.0                         |
| 29  | APRİL | SARIKAMIŞ      | 23.0                         | 22.0                         |
| 30  | APRİL | TERCAN         | 28.5                         | 27.3                         |
| 29  | APRİL | PALU           | 31.8                         | 31.4                         |
| 29  | APRİL | ŞIRNAK         | 29.8                         | 29.0                         |
| 28  | APRİL | CEYLANPINAR    | 38.9                         | 37.5                         |
| 24  | JUNE  | KÜTAHYA        | 37.5                         | 36.2                         |
| 13  | JUNE  | MANİSA         | 43.4                         | 42.4                         |
| 24  | JUNE  | UŞAK           | 40.0                         | 36.6                         |
| 24  | JUNE  | AFYONKARAHİSAR | 37.3                         | 35.8                         |
| 13  | JUNE  | İZMİR          | 41.4                         | 41.3                         |
| 12  | JUNE  | AYDIN          | 44.6                         | 44.4                         |
| 12  | JUNE  | MUĞLA          | 41.2                         | 40.8                         |
| 12  | JUNE  | SİMAV          | 37.4                         | 37.3                         |
| 24  | JUNE  | GEDİZ          | 41.4                         | 39.5                         |
| 14  | JUNE  | EMİRDAĞ        | 37.2                         | 37                           |
| 12  | JUNE  | YATAĞAN        | 43.6                         | 42.8                         |
| 24  | JUNE  | BURDUR         | 40.9                         | 38.7                         |
| 24  | JUNE  | ISPARTA        | 40                           | 36.2                         |
| 25  | JUNE  | BEYŞEHİR       | 35.9                         | 35.1                         |
| 20  | JUNE  | KAHRAMANMARAŞ  | 42.6                         | 42                           |
| 6   | JUNE  | ALANYA         | 39.4                         | 38.2                         |
| 7   | JUNE  | ANAMUR         | 41.5                         | 41                           |

| Day | Month | Station    | 2024 Year<br>Max. Temp. (°C) | Long Term<br>Max. Temp. (°C) |
|-----|-------|------------|------------------------------|------------------------------|
| 7   | JUNE  | SİLİFKE    | 42.3                         | 41.3                         |
| 7   | JUNE  | ADANA      | 43                           | 42.8                         |
| 5   | JUNE  | KAŞ        | 42.5                         | 40.6                         |
| 24  | JUNE  | SENİRKENT  | 39.6                         | 37.6                         |
| 24  | JUNE  | DİNAR      | 38.8                         | 38.1                         |
| 20  | JUNE  | GÖKSUN     | 35.1                         | 34.4                         |
| 24  | JUNE  | EĞİRDİR    | 38.2                         | 36                           |
| 12  | JUNE  | ACIPAYAM   | 39.2                         | 38.2                         |
| 24  | JUNE  | TEFENNİ    | 38.4                         | 36.5                         |
| 24  | JUNE  | ELMALI     | 38.7                         | 37.4                         |
| 13  | JUNE  | MUT        | 43.6                         | 42.1                         |
| 4   | JUNE  | DÖRTYOL    | 42.2                         | 41.6                         |
| 5   | JUNE  | KALE-DEMRE | 42.6                         | 42.4                         |
| 7   | JUNE  | GAZİPAŞA   | 40.2                         | 39.2                         |
| 4   | JUNE  | SAMANDAĞ   | 40.5                         | 39.8                         |
| 24  | JUNE  | ESKİŞEHİR  | 37.2                         | 36.6                         |
| 25  | JUNE  | AKŞEHİR    | 37.3                         | 36.2                         |
| 25  | JUNE  | KONYA      | 37                           | 36.7                         |
| 25  | JUNE  | EREĞLİ     | 37.4                         | 36.4                         |
| 25  | JUNE  | NİĞDE      | 35.7                         | 35                           |
| 14  | JUNE  | POLATLI    | 39.3                         | 37.4                         |
| 25  | JUNE  | KULU       | 37.8                         | 37                           |
| 24  | JUNE  | KANGAL     | 33.2                         | 33                           |
| 24  | JUNE  | ILGIN      | 36.6                         | 35.9                         |
| 25  | JUNE  | ÇUMRA      | 37.8                         | 37.3                         |
| 24  | JUNE  | SİVRİHİSAR | 37.4                         | 35.8                         |
| 4   | JUNE  | BARTIN     | 38.9                         | 38                           |
| 13  | JUNE  | DÜZCE      | 39.7                         | 39                           |
| 24  | JUNE  | NALLIHAN   | 39.5                         | 38.4                         |
| 20  | JUNE  | ELAZIĞ     | 39.8                         | 38.6                         |
| 18  | JUNE  | HORASAN    | 37.2                         | 34.8                         |
| 25  | JUNE  | ÇEMİŞGEZEK | 38.7                         | 38.4                         |
| 23  | JUNE  | KARAKOÇAN  | 37.1                         | 36.8                         |
| 20  | JUNE  | PALU       | 40.1                         | 40                           |
| 19  | JUNE  | SARIZ      | 33.7                         | 32                           |
| 20  | JUNE  | BASKİL     | 36.8                         | 36.2                         |
| 24  | JUNE  | ELBİSTAN   | 37.6                         | 36.6                         |
| 20  | JUNE  | DOĞANŞEHİR | 37.8                         | 36.8                         |
| 20  | JUNE  | GAZİANTEP  | 41.2                         | 40.2                         |
| 19  | JUNE  | KİLİS      | 42.7                         | 42.5                         |
| 25  | JUNE  | ADİYAMAN   | 43                           | 41.5                         |
| 20  | JUNE  | DİYARBAKIR | 42.2                         | 42                           |

| Day | Month     | Station     | 2024 Year<br>Max. Temp. (°C) | Long Term<br>Max. Temp. (°C) |
|-----|-----------|-------------|------------------------------|------------------------------|
| 20  | JUNE      | KAHTA       | 43.4                         | 41.8                         |
| 20  | JUNE      | SİVEREK     | 42.8                         | 41.8                         |
| 20  | JUNE      | VİRANŞEHİR  | 45.3                         | 44                           |
| 20  | JUNE      | BİRECİK     | 44.3                         | 44                           |
| 20  | JUNE      | CEYLANPINAR | 47.8                         | 46.9                         |
| 20  | JUNE      | AKÇAKALE    | 45.3                         | 44.2                         |
| 18  | JULY      | ÇANAKKALE   | 39.8                         | 39.2                         |
| 21  | JULY      | UŞAK        | 40.4                         | 40.2                         |
| 14  | AUGUST    | DURSUNBEY   | 40.3                         | 39.8                         |
| 14  | AUGUST    | SALİHLİ     | 43.9                         | 43.3                         |
| 21  | AUGUST    | SİNOP       | 34.2                         | 33.3                         |
| 11  | SEPTEMBER | SİNOP       | 33.5                         | 33                           |

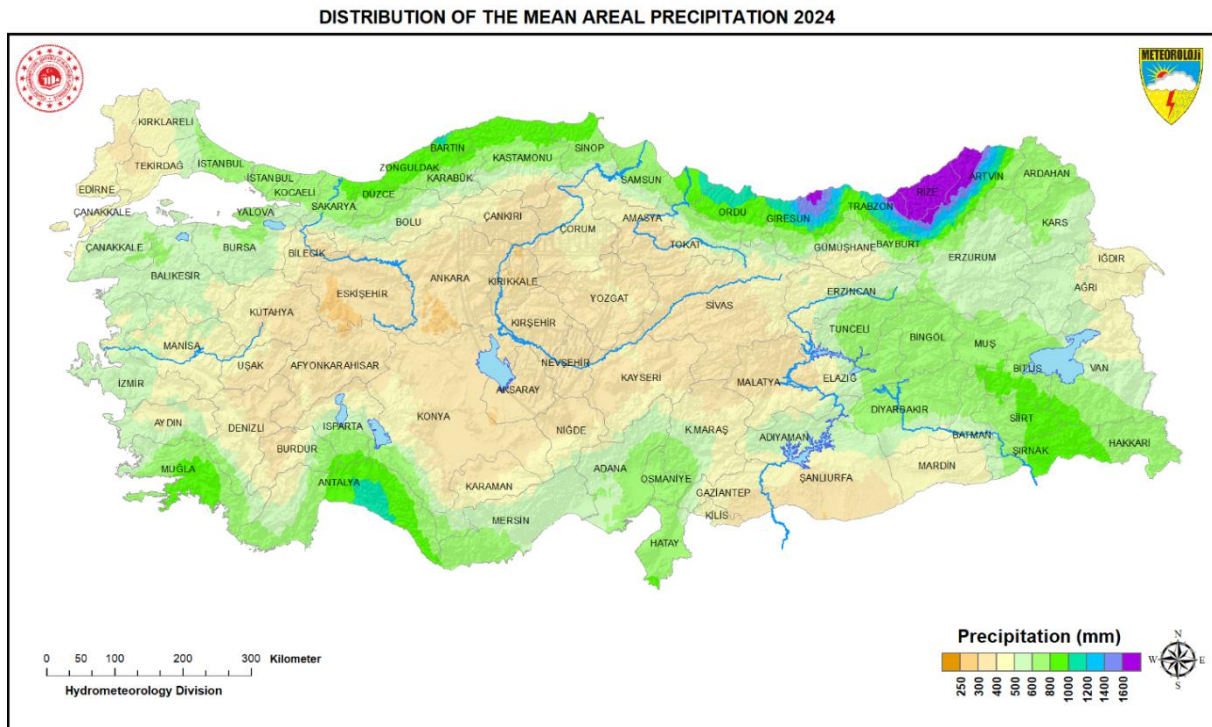
### 3. Precipitation

In 2024, Türkiye's mean areal precipitation was recorded at 537.2 mm. The annual average areal precipitation for the country, based on the 1991–2020 period, is 573.4 mm. This represents a 6.3% decrease compared to the long-term average and a 16.3% decline relative to the previous year's precipitation (Fig. 3.3).

During 2024, precipitation levels exceeded 1000 mm in Antalya, Giresun, and the eastern parts of Trabzon, Ordu, Rize, and Artvin. In contrast, precipitation was below 400 mm in western Thrace, Central Anatolia, the eastern Aegean Region, as well as in Şanlıurfa and Gaziantep (Fig.3.1).

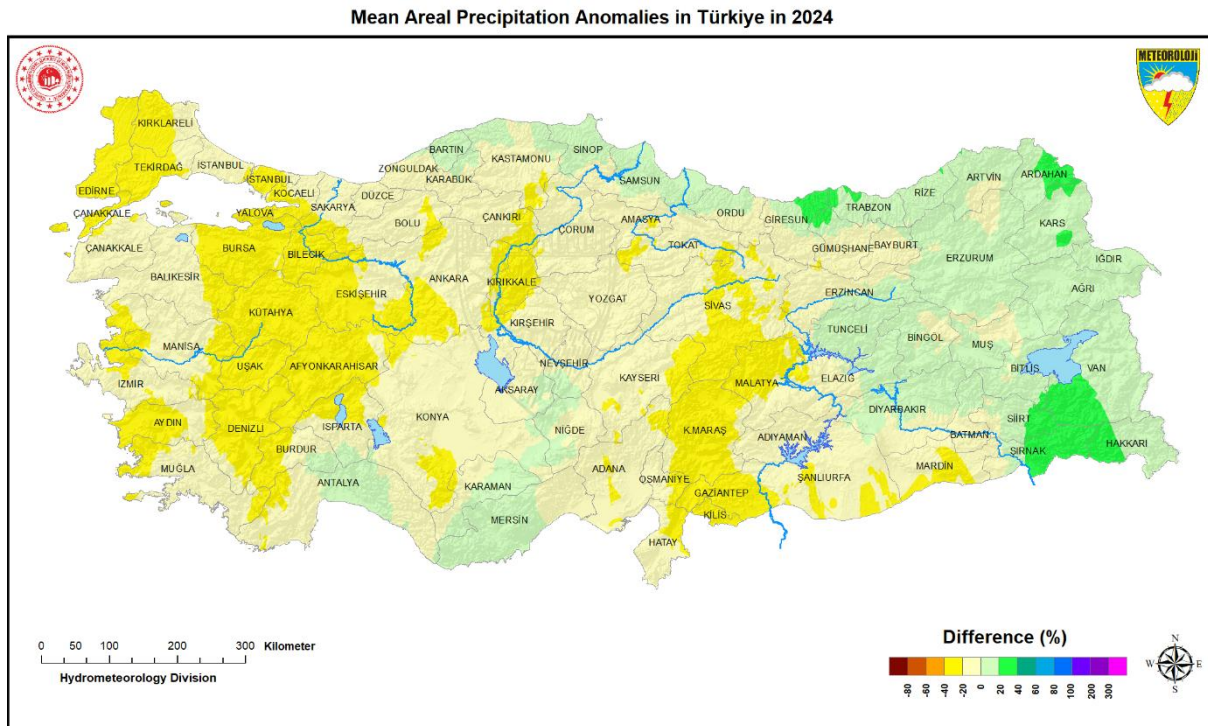
Precipitation levels increased by between 20 and 40% compared to the long-term average in Giresun, Trabzon, Ardahan, and the southern areas of Lake Van (Fig. 3.2).

Rize recorded the highest annual precipitation among the provinces, with 1869.8 mm. The most significant increase compared to the long-term average occurred in Trabzon, with a 27.9% rise. Conversely, Kırıkkale recorded the lowest annual precipitation at 316.1 mm, while Edirne experienced the most substantial decrease relative to the long-term average, with a decline of 35.0%.

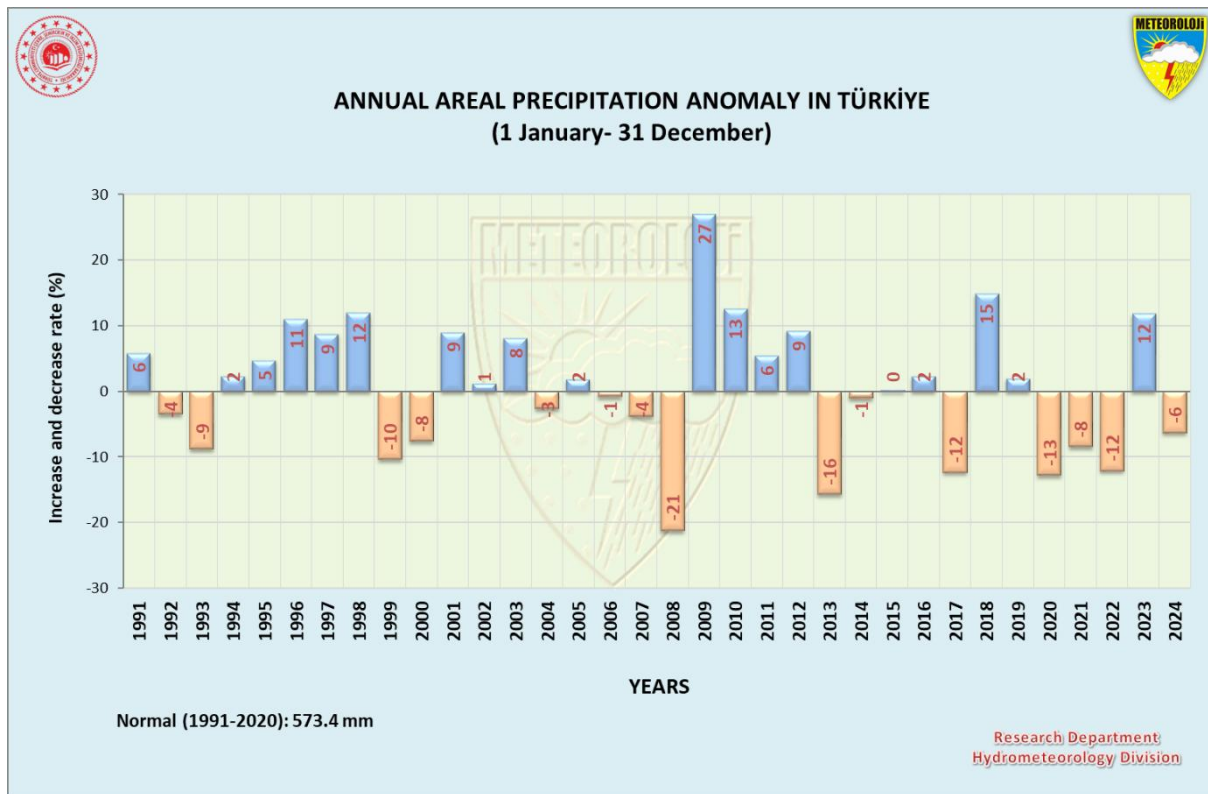


**Figure 3.1.** Distribution of the Mean Areal Precipitation in 2024 in Türkiye (URL 2).





**Figure 3.2.** Mean Areal Precipitation Anomalies in Türkiye in 2024 (URL 2).



**Figure 3.3.** Annual Areal Precipitation Anomaly in Türkiye in 2024 (URL 2).

### 3.1. Monthly Precipitation

In 2024, areal precipitation across Türkiye was below normal in February, April, June, August, October, November, and December. January recorded the highest rainfall at 87.5 mm, while June was the driest month with only 11.9 mm (Fig. 3.4).

Notably, July was the wettest over the past 15 years, whereas June was the driest during the 23 years.

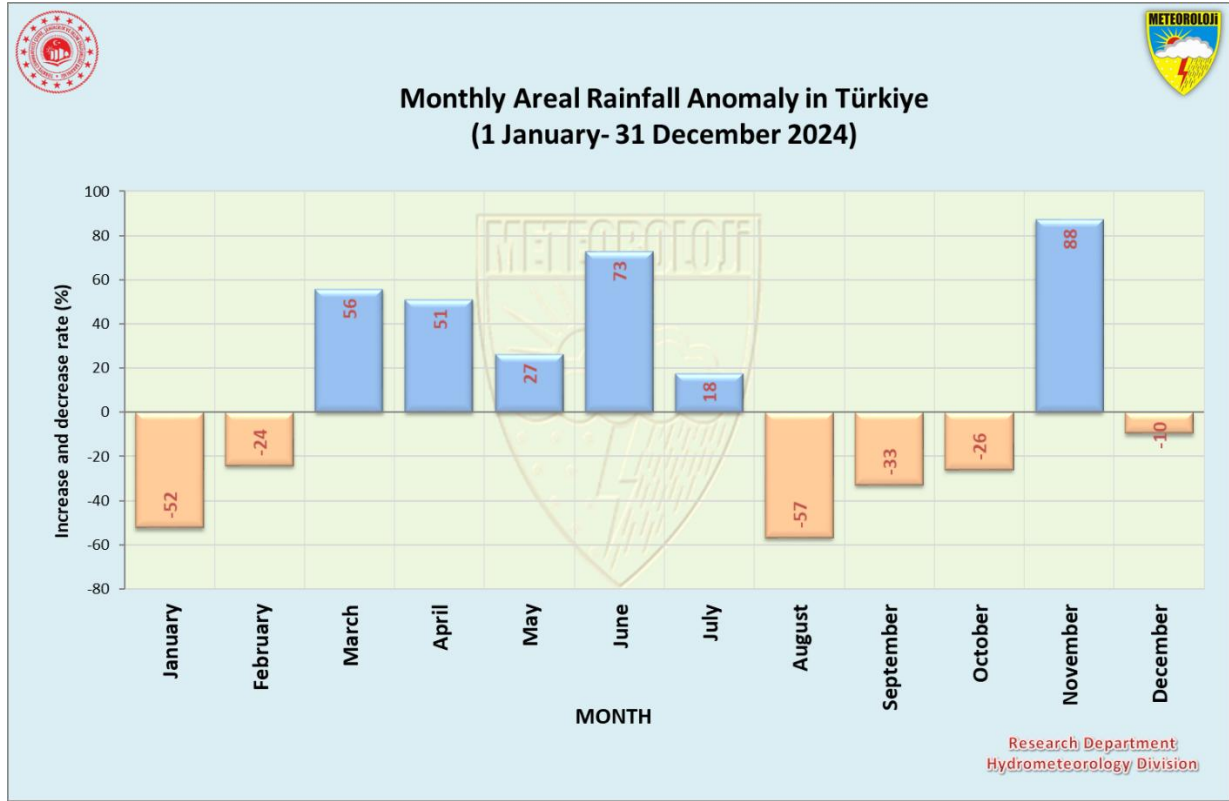


Figure 3.4. Monthly areal rainfall anomaly in Türkiye in 2024 (URL 2).

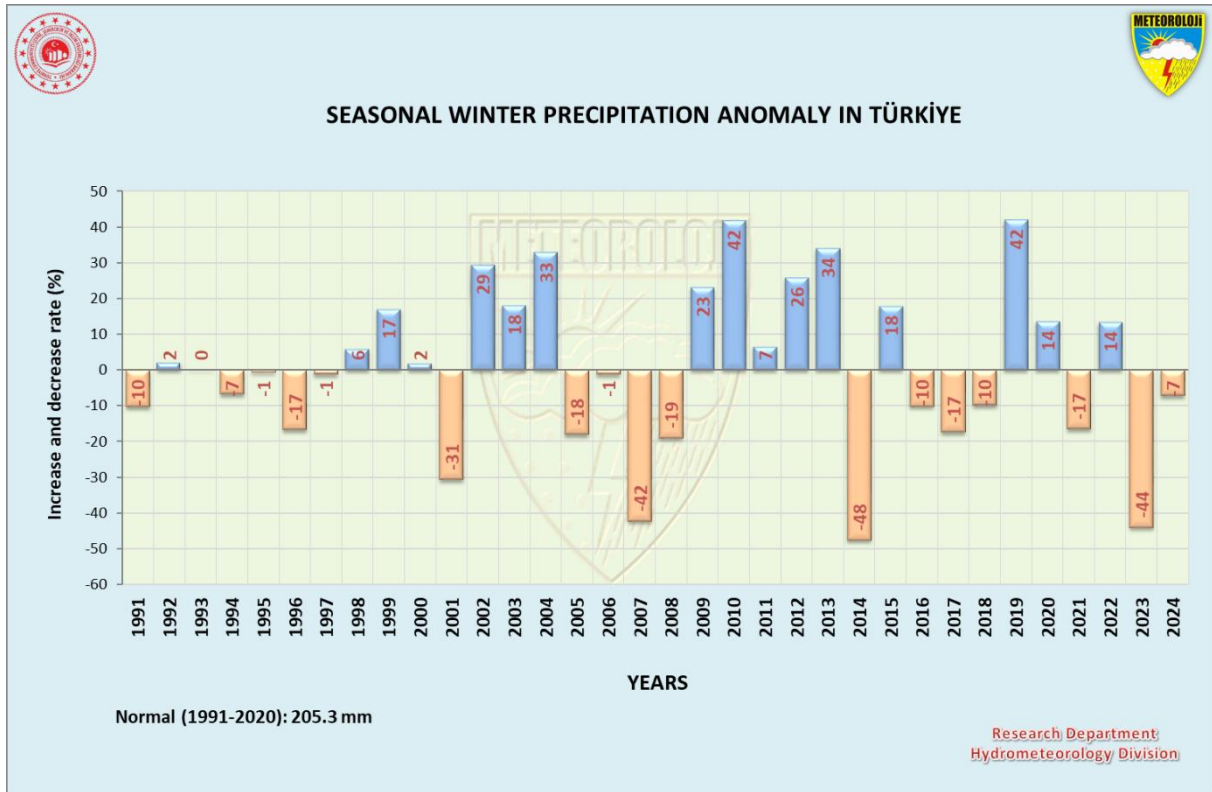
### 3.2. Seasonal Precipitation

Winter precipitation decreased by 7% compared to the seasonal average but increased by 66% relative to the previous winter (Fig.3.5).

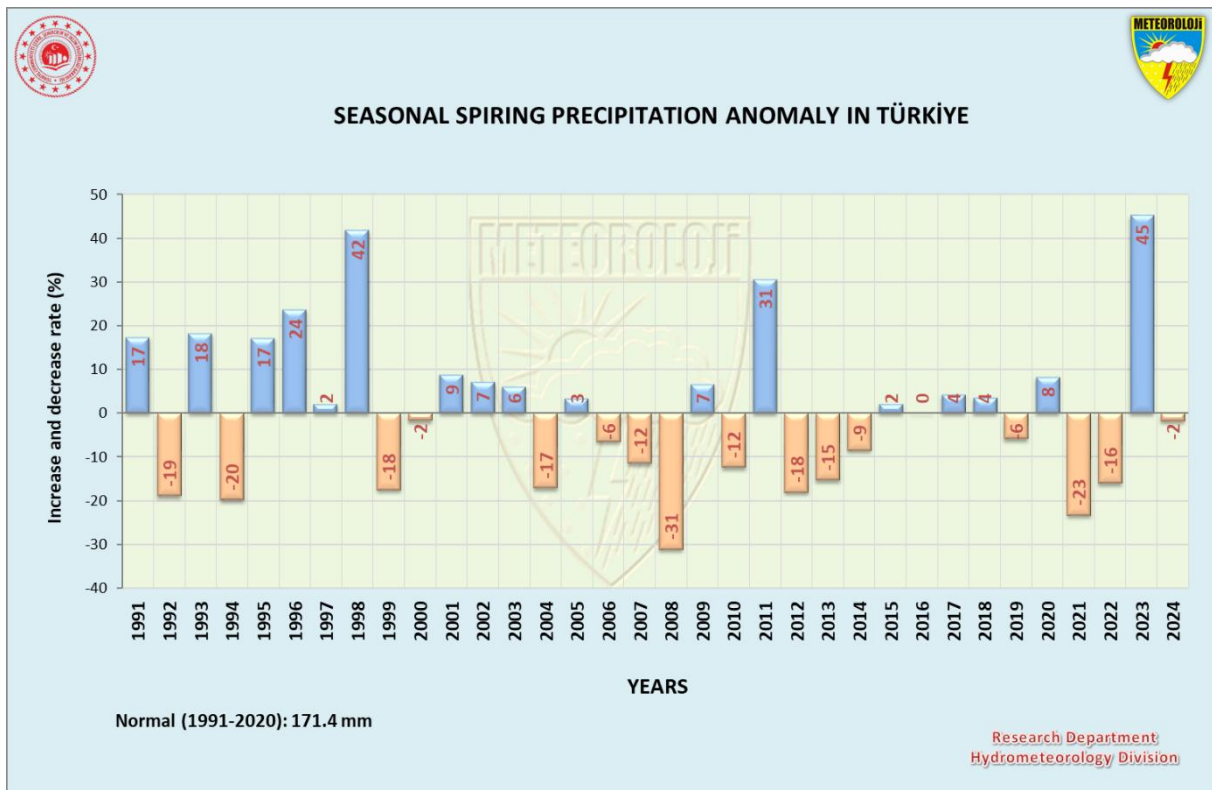
Spring precipitation was roughly close to the seasonal norm; however, it diminished by 32% compared to the previous spring season (Fig.3.6).

Summer precipitation decreased by 9% compared to the seasonal average and by 30% relative to the previous summer rainfall. Notably, the Marmara Region experienced its lowest summer precipitation in the past 21 years, the Aegean Region in the past 12 years, and the Black Sea Region over the past 11 years (Fig.3.7).

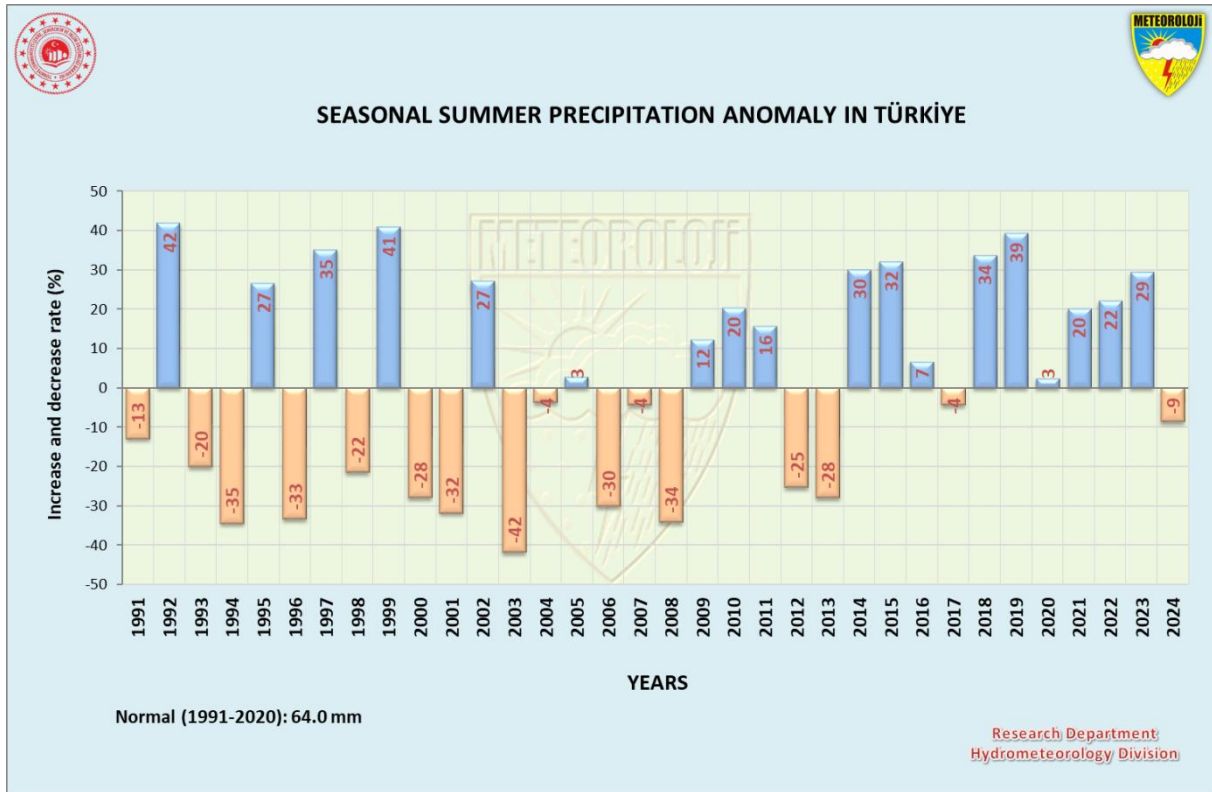
Autumn precipitation declined by 13% compared to the seasonal average and by 29% relative to the previous autumn (Fig.3.8).



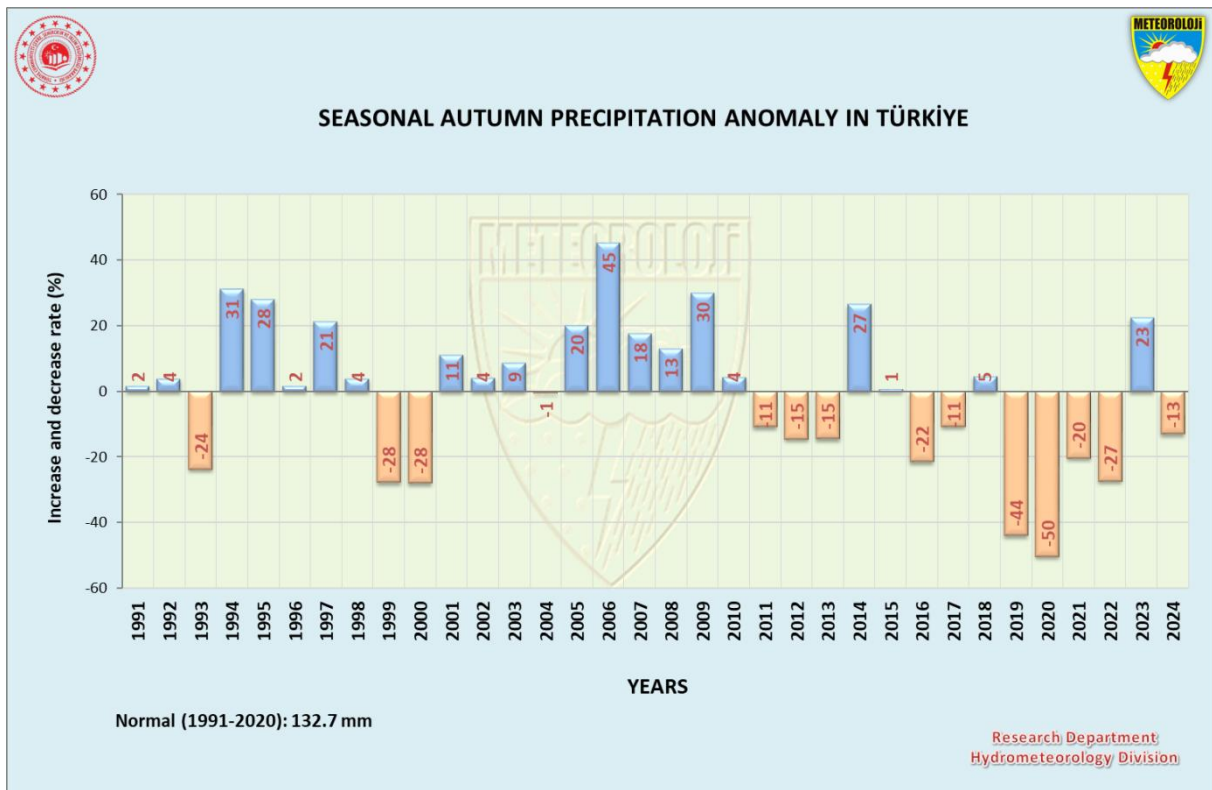
**Figure 3.5.** Winter Precipitation Anomaly in Türkiye in 2023-2024 (URL 2).



**Figure 3.6.** Spring Precipitation Anomaly in Türkiye in 2024 (URL 2).



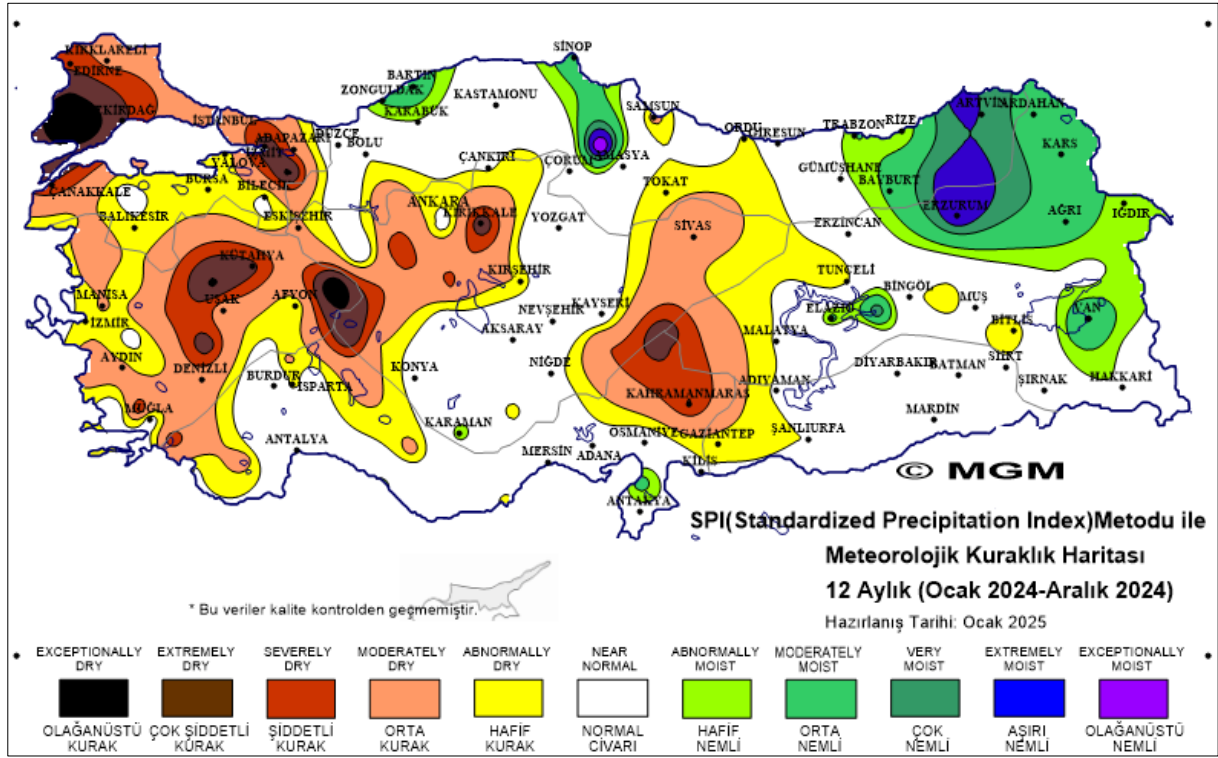
**Figure 3.7.** Summer Precipitation Anomaly in Türkiye in 2024



**Figure 3.8.** Autumn Precipitation Anomaly in Türkiye in 2024



### 3.3. Standardized Precipitation Index (SPI)



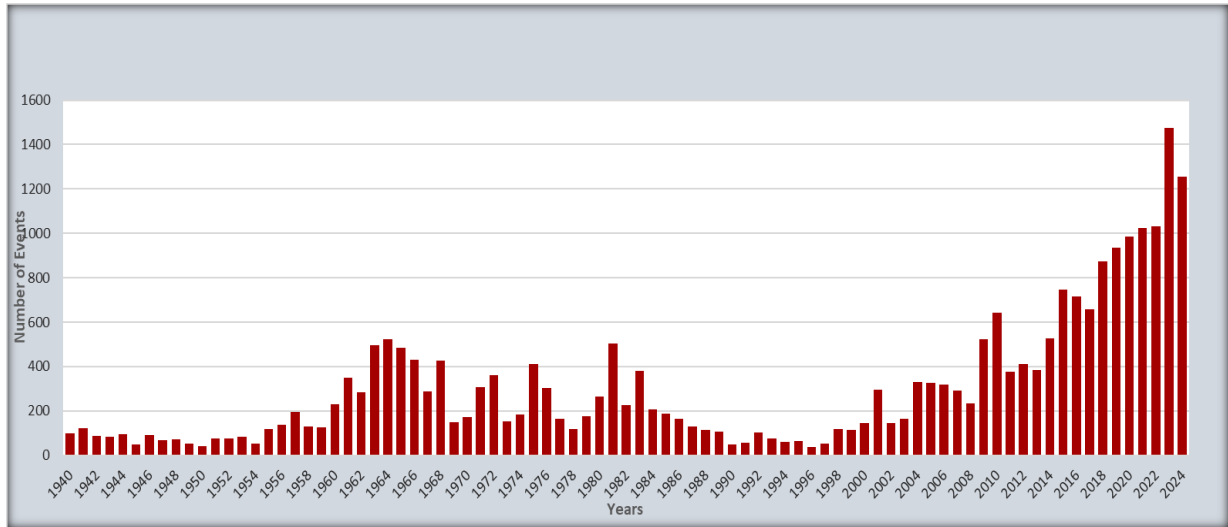
**Figure 3. 9** Standardized Precipitation Index of Türkiye (URL 3)

According to the 12-month meteorological drought map prepared according to the Standardized Precipitation Index (SPI) Method, the central and western parts of Türkiye were exceptionally and slightly dry, the east was extremely and slightly humid, while other parts were around normal (Fig. 3.9).

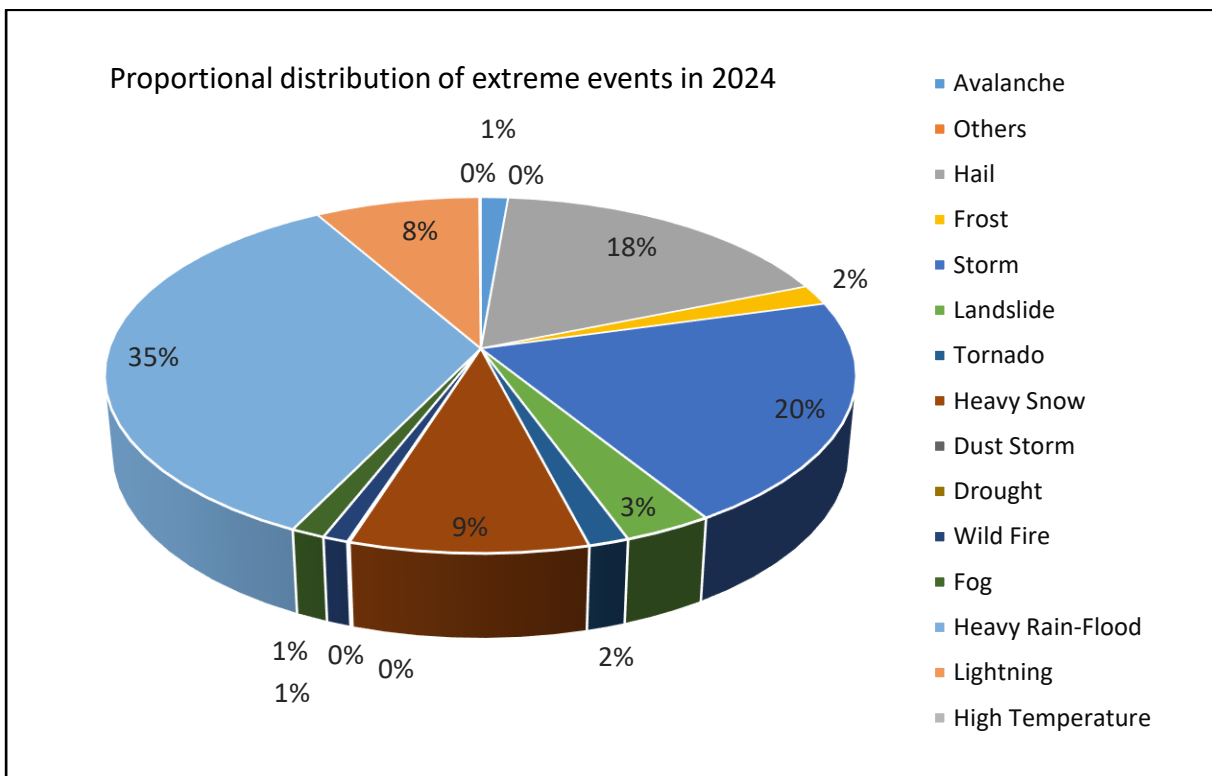


#### 4. Extreme Meteorological Events

The number of extreme events reached 1257 in 2024 according to TSMS's Database (Fig. 4.1).



**Figure 4. 1** Annual number of extreme events in Türkiye



**Figure 4. 2** Proportional distribution of extreme events in 2024

In 2024, the most hazardous extreme events were heavy rainfall and floods with 35%, storm with 20%, hail with 18%, heavy snow with 9%, lightning strikes with 8%, landslides with 3%, tornadoes with 2% and frost with 2%. Extreme events such as avalanches, wild fires, fog and sandstorms accounted for 1% or less of the total (Figure 4.2).

#### 4.1. Forest fire

On the night of August 15, 2024, a forest fire started on Mount Yamanlar, which is located in the Çiğli-Karşıyaka-Bayraklı and Bornova areas of İzmir. The fire was brought under control on August 18, 2024, and subsequently extinguished. A large portion of the southern slopes of Mount Yamanlar was either burned or damaged in the fire (Figure 4.3).



**Figure 4.3.** 15-18 August 2024, Forest fire in İzmir (Source: Anadolu Agency)

During the fire, the maximum air temperatures were as follows: in Çiğli, between 34-40°C; in Bayraklı, between 36-41°C; and in Karşıyaka, between 35-41°C. Relative humidity values dropped to 19% in Çiğli, 10% in Bayraklı, and 15% in Karşıyaka. Maximum wind speeds, coming from northern directions, were recorded at meteorological stations near these locations, ranging between 46 and 57 km/h.

The fire that started in Karatepe area of Yamanlar neighborhood in Karşıyaka district reached residential areas. Many houses and workplaces were damaged in the fire. 16 houses were burned, 87 houses and 45 workplaces were evacuated (URL 4).

The forest fire, which started in the forest area on Yamanlar Mountain, spread across the borders of 3 districts and affected an area of 2,159 hectares (URL 5).

## 4.2. Heavy Rain-Flood

On February 12, 2024, in Antalya and its surroundings, intense rain showers and thunderstorms that began in the night and increased in severity over time. The thunderstorms and hail led to flooding. Due to the heavy rain, water accumulated on roads and underpasses, causing disruptions in transportation. Many vehicles were stranded (see Figure 4.4).

Flooding also caused loss of life. The lifeless body of one person was found in a car at the Gıyaseddin Keyhüsrev Underpass on Gazi Boulevard in Kepez district (URL6).

Because of the flood, education was suspended for one day in 5 districts of the city (Aksu, Döşemealtı, Kepez, Konyaaltı, and Muratpaşa) (URL 7).



**Figure 4.4.** 12-14.02.2024, Antalya heavy rain and flood (*Source: Anadolu Agency*)

A large number of homes and businesses were flooded. Due to the rainfall, a total of 3,862 buildings were affected by flooding, including 3,297 residences, 519 businesses, and 46 public buildings (URL 8).

Agricultural areas were also damaged. 211 farmers experienced greenhouse damage across 1,200 decares of land (URL 9).

According to data from the Meteorology Regional Directorate 4, in a 24-hour period, the rainfall recorded was 304.9 kg/m<sup>2</sup> in Kepez, 233.9 kg/m<sup>2</sup> in Muratpaşa, 129.2 kg/m<sup>2</sup> in Konyaaltı, 106.9 kg/m<sup>2</sup> in Serik, and 80.2 kg/m<sup>2</sup> in Kemer (URL 6).

### 4.3. Lightning

On the afternoon of Friday, July 5, 2024, a severe thunderstorm with heavy rain, storms and hail struck Amasya province. As a result, there was damage to homes, businesses, roadways, power lines, vehicles, and agricultural lands. In the Kışlacık Village highlands of Amasya, 76 sheep in a flock gathered by three shepherds under a tree were killed by a lightning strike. One of the shepherds affected by the lightning was taken to the hospital (URL 10).



**Şekil 4.5.** 5 Temmuz 2024 Amasra Kışlacık Köyü Yaylası yıldırım düşmesi ([www.haberler.com](http://www.haberler.com))

Drivers and vehicles experiencing difficulties in traffic took shelter at gas stations. Some trees were broken and toppled due to the storm.

## References

1. URL 1, Turkish State Meteorological Service, temperature analysis <http://www.mgm.gov.tr/veridegerlendirme/sicaklik-analizi.aspx?ay>,
2. URL 2, Turkish State Meteorological Service, precipitation analysis <http://www.mgm.gov.tr/veridegerlendirme/yagis-raporu.aspx>,
3. URL 3, Turkish State Meteorological Service, drought analysis <https://www.mgm.gov.tr/veridegerlendirme/kuraklik-analizi.aspx>
4. URL 4, <https://www.aa.com.tr/tr/gundem/izmir-yamanlardaki-yanan-alanlar-havadan-goruntulendi/3306966>
5. URL5, <https://www.aa.com.tr/tr/gundem/izmir-yamanlar-yanginini-kacak-kazi-yapanlar-kayayi-patlatmak-isterken-cikarmis/3328182>
6. URL6, [https://www.ntv.com.tr/galeri/turkiye/antalyada-sel-ve-su-baskini-1-kisi-yasamini-yitirdi-3-ilcede-okullar-yarin-da-tatil-4-sehir-icin-turuncu-kodlu-uyari,Tq\\_hZgxtN0WBIBKq94EVjA/rwICIEMStUO\\_QrT4b\\_tGLQ](https://www.ntv.com.tr/galeri/turkiye/antalyada-sel-ve-su-baskini-1-kisi-yasamini-yitirdi-3-ilcede-okullar-yarin-da-tatil-4-sehir-icin-turuncu-kodlu-uyari,Tq_hZgxtN0WBIBKq94EVjA/rwICIEMStUO_QrT4b_tGLQ)
7. URL7, <https://www.aa.com.tr/tr/gundem/antalyada-selden-etkilenen-bolgede-calismalar-suruyor/3136515>
8. URL8, <https://www.aa.com.tr/tr/gundem/afad-antalyadaki-siddetli-yagislarda-3-bin-862-binada-su-baskini-meydana-geldi/3137688>
9. URL9, <https://www.aa.com.tr/tr/gundem/icisleri-bakan-yardimcisi-karaloglu-antalyada-211-ciftcimizin-1200-dekarlik-alanda-zarari-var/3136977>
10. URL10, <https://www.trthaber.com/haber/turkiye/saganak-sirasinda-yildirim-dustu-76-koyun-oldu-866833.html>





Turkish State Meteorological Service  
Kütükçü Alibey Cad. No:4 06120 Kalaba/ANKARA

Tel : (+90 312) 359 75 45

Faks : (+90 312) 360 25 51

<https://mgm.gov.tr>

